Le Groupe CMI Experts-Conseils inc.
540 Jarry, Ste-Marie-Madeleine, Qc J0H1S0,
Tél: 450-250-2988, Fax: 450-250-2989,
info@groupecmi.com

RAPPORT DE COMPARAISON ÉNERGÉTIQUE

Sainte-Marie-Madeleine, 24 février 2026

Bâtiments	**17035 Boul. Henri-Bourassa, Québec, QC G1G 4A6**
Client	**Espace Orsainville SEC**
Ingénieurs-conseils et rédacteur	**Le groupe CMI experts-conseils Inc. 540 Jarry Ste-Marie-Madeleine, (Québec) J0H 1S0**
Architecte	**N/A**
Dossier	**26919**

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1 OBJECTIF

1.1 Ce rapport énonce les différences énergétiques des bâtiments tel qu'ils ont été construits versus une rénovation optimisant l'efficacité énergétique des composantes architecturales et des systèmes électromécaniques afin de se conformer au programme APH-Select de la SCHL. Dans ce cas, le client cherche à se conformer aux demandes de l'APH-Select de Niveau 3 pour une propriété existante.

2 EXPLICATIF

2.1 Les simulations utilisent les données météorologiques de l'ASHRAE (fichier de donnés venant de QC – Québec – Zone 6A) selon l'emplacement le plus près du projet et une température extérieure hivernale de -20˚F même si les données météorologiques de la ville en question sont plus élevées. Le but est d'avoir un comparatif et une méthodologie répétable d'une simulation à l'autre et d'assurer que le design mécanique permet un confort acceptable des locataires plus de 90% du temps tel que demandé par l'ASHRAE et le CNÉB.

2.2 La section **DONNÉES** commence par la description des bâtiments. Ensuite, il est question d'estimer les résistances thermiques des composantes architecturales et les spécifications des

systèmes électromécaniques des bâtiments tel qu'ils ont été construits. Ce sont les données utilisées dans la Simulation 1, dite de Référence.

Le même exercice est fait avec les résistances thermiques des composantes architecturales et les spécifications électromécaniques une fois qu'elles ont été optimisées. Ceci constitue la Simulation 2, dite de Concept.

2.3 La simulation de concept sert donc à optimiser les résistances thermiques des composantes architecturales ainsi que les systèmes électromécaniques afin d'atteindre l'objectif de 40% d'efficacité énergétique désiré par le client.

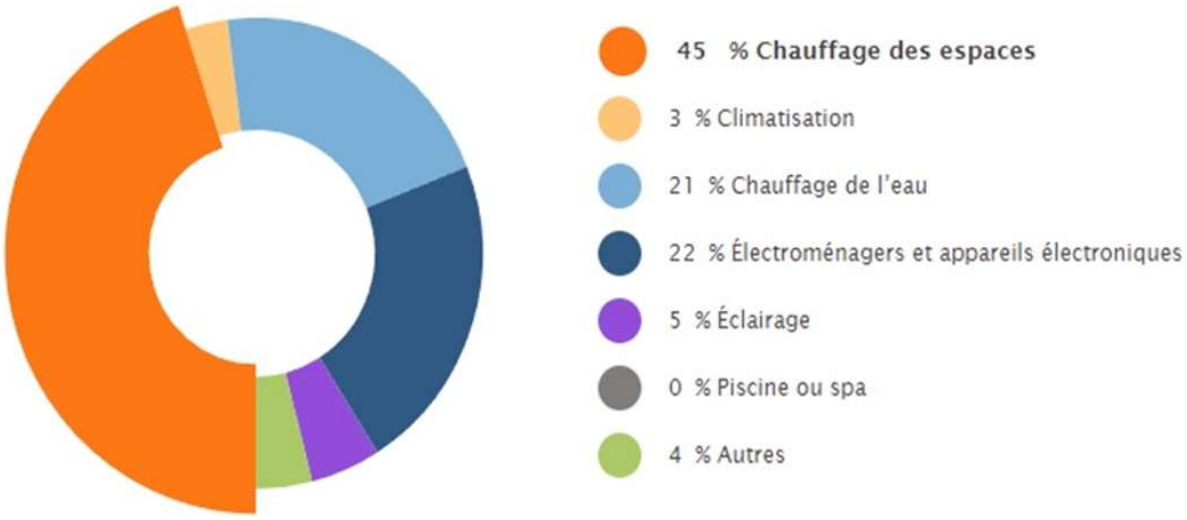
2.4 Dans la section **CONSOMMATION ET COÛTS**, il est indiqué le résultat des simulations au niveau de la consommation électrique et du coût monétaire totale annuelle pour le chauffage, la climatisation et le conditionnement de l'air.

L'économie observé dans les tableaux de cette section est attribuée directement au chauffage, à la climatisation et au conditionnement de l'air puisque le logiciel utilisé (Carrier HAP) ne prend pas en considération d'autre élément.

2.5 Dans la section **CALCULS** sont détaillées les calculassions non pris en charge par le logiciel Carrier HAP. Ces calculs sont nécessaires afin d'obtenir les résultats qui démontrent une conformation aux demandes du programme APH-Select.

Il est important de noter que plusieurs des calculs sont faits sur une base de 73%, car la part d'électricité qu'utilisent les électroménagers, les appareils électroniques et les autres charges sont sous le contrôle des occupants et n'ont pas de lien avec l'efficacité énergétique du bâtiment. Voici les pourcentages moyens de consommation électrique selon Hydro-Québec :

Figure 1 : Répartition de la consommation moyenne d'électricité par usage d'une habitation dans un multiplex ou un immeuble à logements multiple avec climatisation selon Hydro-Québec



En retirant la part qu'occupe les électroménagers, les appareils électroniques et les autres charges, un pourcentage de 73% est obtenu.

2.6 Dans la section **ANALYSES ET RÉSULTATS FINAUX** se retrouvent un résumé des données et des résultats importants qui montre la conformité des bâtiments avec les critères du programme APH-Select.

2.7 Dans la section **CONCLUSION** se retrouve la déclaration de conformité. Il y a aussi les résistances thermiques finales des composantes architecturales et les spécifications finales des systèmes électromécaniques. Finalement, il y a la signature de l'ingénieur en charge.

2.8 Abréviations :
N/A – Non applicable
N/D – Non disponible

3 DONNÉES

3.1 L'immeuble est une construction existante qui contient cinq niveaux dont un sous-sol. Ce dernier est un garage souterrain. Suite au sous-sol, les quatre niveaux suivants contiennent chacun huit logements. Pour un total de trente-deux logements.

Les couloirs et les SAS ne sont pas ventilés.

Le bâtiment est cent pourcent électrique. Il y a des thermopompes et des plinthes électriques pour chauffer et climatiser les logements. Il y a aussi des échangeurs d'air pour conditionner l'air frais entrant et des chauffe-eaux électriques pour chauffer l'eau.

Tableau 1 : Résistances thermiques

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Composante	Résistance Thermique (R)
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	Murs extérieurs	21.5
			Murs fondation	17
			Toit	31
			Dalle	2
		2 (Concept)	Murs extérieurs	21.5
			Murs fondation	17
			Toit	31
			Dalle	5

Tableau 2 : Spécifications des fenêtres et des portes

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Spécification	
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	U=	0.3
			SHGC =	0.35
		2 (Concept)	U =	0.3
			SHGC =	0.35

Tableau 3 : Spécifications des thermopompes

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Spécification	Valeurs 9 MBH	Valeurs 12 MBH
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	SEER2	N/A	20.8
			HSPF	N/A	N/A
			COP	N/A	N/A
			T (°F) min.	N/A	N/A
		2 (Concept)	SEER2	30.0	28
			HSPF2	11.2	10
			COP	4.4	4.55
			T (°F) min.	-22	-22

Tableau 4 : Spécifications des échangeurs d'air

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Efficacité moyenne (%)	CFM	˚ F
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	56	100	32
		2 (Concept)	56	100	32

Tableau 5 : Éclairage

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Type d'éclairage	Efficacité (Lumens/Watt)
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	DEL	N/A
		2 (Concept)	DEL	N/A

Tableau 6 : Appareils de plomberie

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Débit (USGPM)
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	2.5
		2 (Concept)	1.75

4 CONSOMMATION ET COÛTS

Tableau 7 : Consommation d'hydro-électricité et/ou de gaz annuelle pour le chauffage, la climatisation et le conditionnement de l'air

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Consommation (KWH)
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	251191
		2 (Concept)	125842

Tableau 8 : Coût annuel d'hydro-électricité et/ou de gaz pour le chauffage, la climatisation et le conditionnement de l'air

Bâtiment	Nbr de bâtiments identiques où ces données s'appliquent	Simulation	Coût ($)
17035 Boul. Henri-Bourassa, Québec	1	1 (Référence)	24550
		2 (Concept)	12299

5 CALCULS

5.1 Calcul du gain par rapport au chauffage, à la climatisation et au conditionnement de l'air

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation en lien avec le chauffage, à la climatisation et au conditionnement de l'air pour la Simulation 1 de Référence (Voir Tableau 7)
	$\boldsymbol{B}$	Consommation en lien avec le chauffage, à la climatisation et au conditionnement de l'air pour la Simulation 2 de Concept (Voir Tableau 7)
Constante	$\frac{\mathbf{100}}{\mathbf{73}}$	Résultat remis sur 73% (Voir point 2.5)
	$\mathbf{48}\ \%$	Pourcentage de la consommation d'hydro-électricité correspondant au chauffage et à la climatisation selon Hydro-Québec. (Voir Figure 1)

Exemple de calcul :

$$\frac{\boldsymbol{A\,(KWH) - B(KWH)}}{\boldsymbol{A(KWH)}} \times \frac{\mathbf{100}}{\mathbf{73}} \times \mathbf{48}\,\% = \boldsymbol{Gain}\,(\%)$$

Résultats :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Gain (%)
17035 Boul. Henri-Bourassa, Québec	1	32.81

5.2 Calcul du gain pour l'ajout d'appareil de plomberie à faible débit

Figure 2 : Répartition de la consommation moyenne d'eau chaude par usage d'une habitation dans un multiplex ou un immeuble à logements multiple selon Hydro-Québec

20 %

Eau chaude

Principales utilisations de l'eau chaude par les ménages*

- 34 % – Utilisation des robinets
- 25 % – Douches
- 17 % – Bains
- 15 % – Lavage des vêtements
- 4 % – Lavage de la vaisselle
- 5 % – Fuites

* Source : Centre canadien de données et d'analyse de la consommation finale d'énergie dans le secteur du bâtiment

Tableau 9 : Diminution de la charge énergétique des appareils de plomberie selon le débit

Débit (USGPM)	Diminution de la charge énergétique (%)
2.5 (Robinetterie à débit standard)	Non applicable
2	20
1.5	40
1.25	50
1	60

Légende :

		Signification
Variable	$\boldsymbol{A}$	Diminution de la charge énergétique par rapport aux appareils de plomberie faibles débits. (Voir Tableau 6 et 9)
Constante	$\frac{\mathbf{100}}{\mathbf{73}}$	Résultat remis sur 73% (Voir point 2.5)
	$\mathbf{20}$ %	Pourcentage de la consommation d'hydro-électricité correspondant à l'utilisation de l'eau chaude. (Voir Figure 2)

Exemple de calcul :

$$\boldsymbol{A}(\%) \times \frac{\mathbf{100}}{\mathbf{73}} \times \mathbf{20}\% = \boldsymbol{Gain}(\%)$$

Résultat :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Gain (%)
17035 Boul. Henri-Bourassa, Québec	1	8.22

5.3 Calcul du gain par rapport à l'éclairage

Tableau 10 : Gain selon l'efficacité de l'éclairage

Efficacité (Lumens/Watt)	Diminution de la charge énergétique (%)
50	N/A
75	25
100	50

Légende :

		Signification
Variable	$\boldsymbol{A}$	Diminution de la charge énergétique par rapport à l'éclairage (Voir Tableau 5 et 10)
Constante	$\frac{\mathbf{100}}{\mathbf{73}}$	Résultat remis sur 73% (Voir point 2.5)
	$\mathbf{5}$ %	Pourcentage de la consommation d'hydro-électricité correspondant l'éclairage. (Voir Figure 1)

Exemple de calcul :

$$\boldsymbol{A}(\%) \times \frac{\mathbf{100}}{\mathbf{73}} \times \mathbf{5}\% = \boldsymbol{Gain}\ (\%)$$

Résultat :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Gain (%)
17035 Boul. Henri-Bourassa, Québec	1	N/A

5.4 Calcul du gain total de la Simulation 2 de Concept

Légende :

		Signification
Variable	$\boldsymbol{A}$	Gain par rapport au chauffage, à la climatisation et au conditionnement de l'air. (Voir point 5.1)
	$\boldsymbol{B}$	Gain pour l'ajout d'appareil de plomberie à faible débit. (Voir point 5.2)
	$\boldsymbol{C}$	Gain par rapport à l'éclairage. (Voir point 5.3)

Exemple de calcul :

$$\boldsymbol{A}(\%) + \boldsymbol{B}(\%) + \boldsymbol{C}(\%) = \boldsymbol{Gain\ total}\ (\%)$$

Résultat :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Gain (%)
17035 Boul. Henri-Bourassa, Québec	1	41.03

5.5 Estimation de la consommation annuelle globale de l'immeuble à partir de la consommation en chauffage et climatisation

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation en lien avec le chauffage, à la climatisation et au conditionnement de l'air pour la Simulation 1 de Référence (Voir Tableau 7)
	$\boldsymbol{B}$	Consommation globale en électricité pour la Simulation 1 de Référence
	$\boldsymbol{C}$	Diminution de la charge énergétique provoquée par le gain total. (Voir Calcul 5.4)
Constante	$\boldsymbol{\frac{100}{48}}$	Règle de trois utilisée pour estimer la consommation globale en électricité à partir de la consommation en lien avec le chauffage, à la climatisation et au conditionnement de l'air qui équivaut à 48% de la facture (Voir Figure 1)

Exemple de calcul :

$$\boldsymbol{Simulation\ 1 :\ A(KWH)\ \times \frac{100}{48} = B(KWH)}$$

$$\boldsymbol{Simulation\ 2 :\ B(KWH) - (B(KWH) \times C(\%)) = Consommation\ globale\ (KWH)}$$

Résultats :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Simulation 1 de Référence (KWH)	Simulation 2 de Concept (KWH)
17035 Boul. Henri-Bourassa, Québec	1	523315	308591

5.6 Estimation de la consommation d'hydro-électricité annuelle pour le chauffage de l'eau et de l'économie suite à l'ajout d'équipement de plomberie à faible débit

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation Globale pour la Simulation 1 de Référence (Voir Calcul 5.5)
	$\boldsymbol{B}$	Consommation pour l'eau chaude de la Simulation 1 de Référence
	$\boldsymbol{C}$	Diminution de la charge énergétique provoquée par l'utilisation d'appareils de plomberies à faibles débit. (Voir Tableau 6 et 9)
Constante	$\boldsymbol{20\%}$	Pourcentage d'hydro-électricité attribué à l'utilisation d'eau chaude selon Hydro-Québec (Voir Figure 2)

Exemple de calcul :

$$\boldsymbol{Simulation\ 1 :\ A(KWH) \times 20\% = B(KWH)}$$

$$\boldsymbol{Simulation\ 2 :\ B(KWH) \times \big(1 - C(\%)\big) =}$$
$$\boldsymbol{Consommation\ eau\ chaude\ apr\text{è}s\ \acute{e}conomie\ (KWH)}$$

Résultats :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Simulation 1 de Référence (KWH)	Simulation 2 de Concept(KWH)
17035 Boul. Henri-Bourassa, Québec	1	104663	73264

5.7 Estimation de la consommation d'hydro-électricité annuelle pour l'éclairage et de l'économie suite à l'ajout de lumières haute efficacité

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation Globale pour la Simulation 1 de Référence (Voir Calcul 5.5)
	$\boldsymbol{B}$	Consommation pour l'éclairage de la Simulation 1 de Référence
	$\boldsymbol{C}$	Diminution de la charge énergétique provoquée par l'utilisation de lumière haute efficacité. (Voir Tableau 5 et 10)
Constante	$\mathbf{5}\%$	Pourcentage d'hydro-électricité attribué à l'éclairage selon Hydro-Québec (Voir Figure 2)

Exemple de calcul :

$$\boldsymbol{Simulation}\ \mathbf{1}: \ \boldsymbol{A}(\boldsymbol{KWH}) \times \mathbf{5}\% = \boldsymbol{B}(\boldsymbol{KWH})$$

$$\boldsymbol{Simulation}\ \mathbf{2}: \ \boldsymbol{B}(\boldsymbol{KWH}) \times \big(\mathbf{1} - \boldsymbol{C}(\%)\big) = \boldsymbol{Consommation}\ \text{é}\boldsymbol{clairage\ apr}\text{è}\boldsymbol{s}\ \text{é}\boldsymbol{conomie}\ (\boldsymbol{KWH})$$

Résultat :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Simulation 1 de Référence (KWH)	Simulation 2 de Concept (KWH)
17035 Boul. Henri-Bourassa, Québec	1	26166	26166

5.8 Calcul de la quantité de GES relié à l'utilisation de l'électricité

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation Globale pour la Simulation 1 de Référence (Voir Calcul 5.5)
	$\boldsymbol{B}$	Émission de GES pour la Simulation 1 de Référence
	$\boldsymbol{C}$	Diminution de la charge énergétique provoquée par le gain total. (Voir Calcul 5.4)
Constante	$\mathbf{34.5}\boldsymbol{g\ de\ CO_2/KWH}$	Cette donnée provient d'Hydro-Québec et correspond à l'émission de CO_2 générée par l'utilisation de combustibles fossiles dans le processus de l'hydro-électricité
	$\mathbf{1000000}$	Facteur de conversion de grammes de CO_2 à tonnes de CO_2.

Exemple de calcul :

$$\boldsymbol{Simulation\ 1 :}\ \frac{\boldsymbol{A(KWH)} \times \boldsymbol{34.5 g\ de\ CO_2/KWH}}{\boldsymbol{1000000}} = \boldsymbol{B\ (T)}$$

$$\boldsymbol{Simulation\ 2 :} = \boldsymbol{B(T)} - \big(\boldsymbol{B(T)} \times \boldsymbol{C}(\%)\big) = \boldsymbol{GES\ apr\grave{e}s\ \acute{e}conomie\ (T)}$$

Résultat :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	GES Simulation 1 de Référence (T)	GES Simulation 2 de Concept (T)
17035 Boul. Henri-Bourassa, Québec	1	18.1	10.6

5.9 Conversion de KWH en GJ pour la consommation globale

Légende :

		Signification
Variable	$\boldsymbol{A}$	Consommation Globale pour la Simulation 1 de Référence (Voir Calcul 5.5)
	$\boldsymbol{B}$	Consommation Globale pour la Simulation 2 de Concept (Voir Calcul 5.5)
Constante	$\boldsymbol{0.0036}$	Facteur de conversion de KWH à GJ.

Exemple de calcul :

$$\boldsymbol{Simulation\ 1 :}\ \boldsymbol{A(KWH)} \times \boldsymbol{0.0036(GJ/KWH)} = \boldsymbol{Consommation\ globale(GJ)}$$

$$\boldsymbol{Simulation\ 2 :}\ \boldsymbol{B(KWH)} \times \boldsymbol{0.0036(GJ/KWH)} = \boldsymbol{Consommation\ globale(GJ)}$$

Résultats :

Bâtiment	Nbr de bâtiments identiques où ces résultats s'appliquent	Consommation Simulation 1 de Référence (GJ)	Consommation Simulation 2 de Concept (GJ)
17035 Boul. Henri-Bourassa, Québec	1	1884	1111

6 ANALYSE ET RÉSULTATS FINAUX

6.1 Récapitulatif :

Tableau 10 : Récapitulatif de la consommation électrique avant et après optimisation énergétique

Définition	Bâtiment	Nbr de bâtiments identiques où ces valeurs s'appliquent	Valeur d'origine (KWH)	Valeur optimisée (KWH)	Commentaire
Consommation d'électricité totale annuelle pour le chauffage, la climatisation et le conditionnement de l'air.	17035 Boul. Henri-Bourassa, Québec	1	251191	125842	Voir point 6.2
Estimation de la consommation annuelle globale de l'immeuble à partir de la consommation en chauffage, climatisation et conditionnement de l'air.	17035 Boul. Henri-Bourassa, Québec	1	523315	308591	Voir point 6.3
Estimation de la consommation d'électricité annuelle pour l'eau chaude et de l'économie suite à l'ajout d'équipement de plomberie à faible débit.	17035 Boul. Henri-Bourassa, Québec	1	104663	73264	Voir point 6.4
Estimation de la consommation d'électricité annuelle pour l'éclairage et de l'économie suite à l'ajout de lumière haute efficacité.	17035 Boul. Henri-Bourassa, Québec	1	26166	26166	Voir point 6.5

6.2 Données provenant directement du logiciel HAP Carrier selon la Simulation 1 de Référence versus la Simulation 2 de Concept.

6.3 Il est très difficile d'évaluer la part d'électricité qu'utilisent le chauffage de l'eau chaude, l'éclairage, les électroménagers, les appareils électroniques et les autres charges, car ces éléments sont sous le contrôle des occupants. Il est alors plus précis et fiable de se baser sur les statistiques connues et éprouvées d'Hydro-Québec (Voir Figure 1).

Pour obtenir la consommation annuelle globale, il faut donc extrapoler à partir de données connues, c'est-à-dire celles de la consommation d'électricité totale annuelle pour le chauffage, la climatisation et le conditionnement de l'air qui proviennent du logiciel HAP Carrier. La logique est celle d'une règle de trois. Si les KWH du chauffage et de la climatisation correspondent à 48% de la facture d'électricité selon Hydro-Québec (Voir Figure 1), quel serait le nombre de KWH équivalant à 100% de la facture.

6.4 Pour l'estimation de la consommation annuelle du chauffage de l'eau, la part qu'occupe ce dernier dans la facture totale d'électricité selon Hydro-Québec (20%, Voir Figure 1) est multipliée par l'estimation de la consommation annuelle globale.

6.5 Pour l'estimation de la consommation annuelle de l'éclairage, la part qu'occupe ce dernier dans la facture totale d'électricité selon Hydro-Québec (5%, Voir Figure 1) est multipliée par l'estimation de la consommation annuelle globale.

Tableau 11 : Résultats finaux des simulations en GJ prenant en considération le nombre de bâtiments identiques

	Immeuble évalué (E)	Immeuble de référence (R)	Économies d'énergie (en %) (R-E)/R x 100
Consommation d'énergie annuelle totale (GJ/année)	**1111**	**1884**	**41.03**
Émissions de gaz à effet de serre annuelles totales (nombre de tonnes d'équivalent CO2 par année)	**10.6**	**18.1**	**41.03**

7 CONCLUSION

7.1 La rénovation des immeubles du présent rapport dépasse le pourcentage d'efficacité énergétique demandé par le niveau 3 de l'APH-Select, soit de 40% par rapport à la performance énergétique de la propriété existante. Le projet est donc conforme aux demandent de l'APH-Select Niveau 3 pour une propriété existante.

7.2 Par conséquent, le client fera financer son bâtiment par un programme correspondant au Niveau 3 de l'APH-Select.

Tableau 12 : Spécifications finales des composantes architecturales et des systèmes électromécaniques

Bâtiment	Nombre de bâtiments identiques	Spécification				Statut par rapport à la Simulation 1
17035 Boul. Henri-Bourassa, Québec	1	Résistance Thermique (R)				Idem
		Murs extérieurs	Murs sous-sol	Toiture	Dalle	
		21.5	17	31	5	
		Échangeur d'air				Idem
		Efficacité =	56	CFM =	100	
		Thermopompes				Améliorée
		MBH	SEER2	COP	T (ºF) Min.	
		9	30.0	4.4	-22	
		12	28	4.55	-22	
		18	N/A	N/A	N/A	
		24	N/A	N/A	N/A	
		Fenêtres et Porte Vitrées				Idem
		U =	0.3	SC =	0.35	
		Débit des appareils de plomberie				Amélioré
		USGPM =	1.75			
		Éclairage DEL				N/A
		Lumens/Watt =		N/A		
		Système de chauffage auxiliaire				Idem
		Plinthe Électrique				

Tableau 13 : Emplacement des thermopompes

		Systèmes VRF			
		MBH	EER	COP	Récupération d'énergie (%)
Zones	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
		Thermopompes Bi-Bloc			
		MBH	SEER2	COP	T (ºF) Min.
Zones	Logements 101, 102, 103, 106, 107, 201, 202, 203, 206, 207, 301, 302, 303, 306, 307, 402, 403, 406	9	30	4.4	-22
	Logements 104, 105, 108, 204, 205, 208, 304, 305, 308, 401, 404, 405, 407, 408	12	28	4.55	-22
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A

7.3 Sceau de l'ingénieur

Approuvé par Charles Morissette ing.

CM/cm

Groupe CMI, 540 Jarry, Ste-Marie-Madeleine, Québec, J0H 1S0
tél.: 450.250.2988 téléc.: 450.250.2989 courriel: charles.morissette@groupecmi.com

Design Weather Parameters

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:36 AM

Design Parameters:

Location	**Quebec City Beauport, QC, Canada**	
Latitude	**46.84**	°N (+ : north, - : south)
Longitude	**-71.20**	°E (+ : east, - : west)
Elevation	**33.0**	ft
Climate Zone	**6A - Cold Humid**	
Local Time Zone	**-5.0**	hours from GMT (+ : east, - : west)
Summer Design Condition	**0.4% Cooling**	
Summer Design Dry-Bulb	**85.9**	F
Summer Coincident Wet-Bulb	**70.0**	F
Summer Daily Range	**16.8**	F
Hottest Month	**July**	
Winter Design Condition	**User Defined**	
Winter Design Dry-Bulb	**-20.0**	F
Winter Design Wet-Bulb	**-20.0**	F
Outdoor Air CO2 Level	**400**	ppm
Average Ground Reflectance	**0.20**	
Soil Conductivity	**0.800**	BTU/(hr ft F)
Design Cooling Months	**January to December**	
Consider Daylight Savings Time	**Yes**	
Daylight Savings Begins	**March 12**	
Daylight Savings Ends	**November 5**	
Simulation Weather Data	**Beauport (TMYx_2004_2018)**	
Current Data is	**User Defined**	

Design Day Maximum Solar Fluxes

(The flux values are expressed in BTU/(hr sqft))

Month	N	NNE	NE	ENE	E	ESE	SE	SSE	S
January	17.3	17.3	17.3	83.3	153.0	218.6	260.1	282.5	289.1
February	23.4	23.4	52.4	131.6	198.1	250.6	279.0	290.3	289.3
March*	29.6	31.8	106.3	170.9	228.8	261.3	272.8	267.8	261.3
April*	33.2	88.0	153.5	211.2	246.8	256.1	242.9	224.3	214.5
May*	56.8	118.9	184.9	225.0	247.5	238.4	215.6	186.3	174.4
June*	65.2	125.5	184.4	218.2	236.5	224.3	197.5	168.2	155.0
July*	51.6	113.6	170.8	212.2	232.7	227.8	204.4	179.2	166.2
August*	32.4	82.4	140.1	198.0	229.3	240.9	229.6	212.2	202.3
September*	27.3	37.0	96.9	163.4	207.9	243.0	250.4	245.9	241.9
October*	21.2	21.2	52.5	114.6	179.5	226.3	254.5	263.7	265.4
November	16.3	16.3	17.3	76.5	141.9	199.6	240.9	263.8	269.9
December	15.3	15.3	15.3	57.5	122.0	184.1	229.0	255.5	265.4
Month	**SSW**	**SW**	**WSW**	**W**	**WNW**	**NW**	**NNW**	**HOR**	**Mult**
January	282.5	261.7	217.0	155.5	79.4	19.1	17.3	124.6	1.00
February	289.9	278.3	251.0	197.3	131.9	50.7	23.4	176.7	1.00
March*	267.0	272.1	258.3	230.0	170.9	105.3	34.1	227.8	1.00
April*	224.6	245.6	255.8	246.0	210.6	156.2	83.0	269.1	1.00
May*	187.5	217.0	241.6	243.9	228.5	181.9	122.9	289.5	1.00
June*	169.0	199.2	226.6	233.6	222.4	180.5	128.3	289.8	1.00
July*	179.6	206.2	228.7	229.7	213.9	168.6	114.3	279.4	1.00
August*	212.2	231.1	240.1	229.7	196.8	145.1	78.5	255.8	1.00
September*	243.8	248.6	241.7	212.0	162.5	95.6	36.6	212.0	1.00
October*	263.8	254.6	226.0	179.8	114.0	52.7	21.2	159.5	1.00
November	263.8	241.2	199.1	142.4	76.1	17.9	16.3	115.6	1.00
December	257.6	229.3	183.3	121.4	58.3	15.3	15.3	100.1	1.00

Mult. = User-defined solar multiplier factor.
* : Daylight Saving Month

building1

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026
Prepared by: Groupe CMI 11:36 AM

1. General Information

Building building1
Default Level-to-Level Height ..... 9' 8 1/8"
Default Ceiling Space ..... Yes
Default Floor-to-Ceiling Height ..... 8' 2 1/8"
Default Raised Floor ..... No
Default Window Opening Elevation ..... 1' 6"
Validation Errors ..... None
Notes ..... None

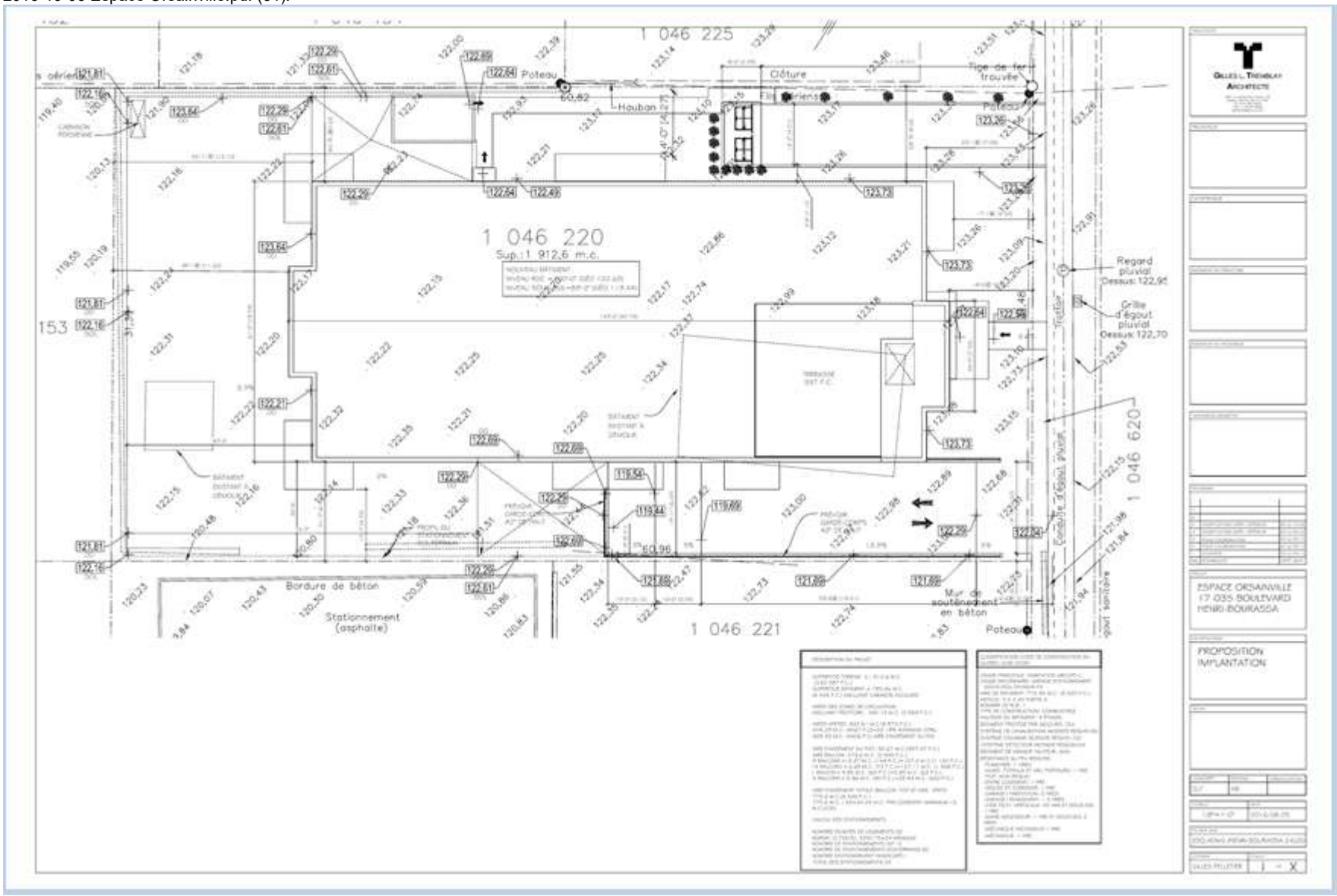
2. Floor Plan Images

2.1. Summary of Floor Plan Images

Floor Plan Image	North Orientation (deg)	Scale	Used in Level(s)
2016-10-06 Espace Orsainville.pdf (01)	-	-	
2016-10-06 Espace Orsainville.pdf (02)	-	-	
2016-10-06 Espace Orsainville.pdf (03)	-	-	
2016-10-06 Espace Orsainville.pdf (08)	-	-	
38	0.0	-	
Niveau 2 et 3	38.0	1/8" = 1'	2E, 3E
Niveau 4	38.0	1/8" = 1'	4E
RDC	38.0	1/8" = 1'	RDC
SOUS-SOL	38.0	1/8" = 1'	SS

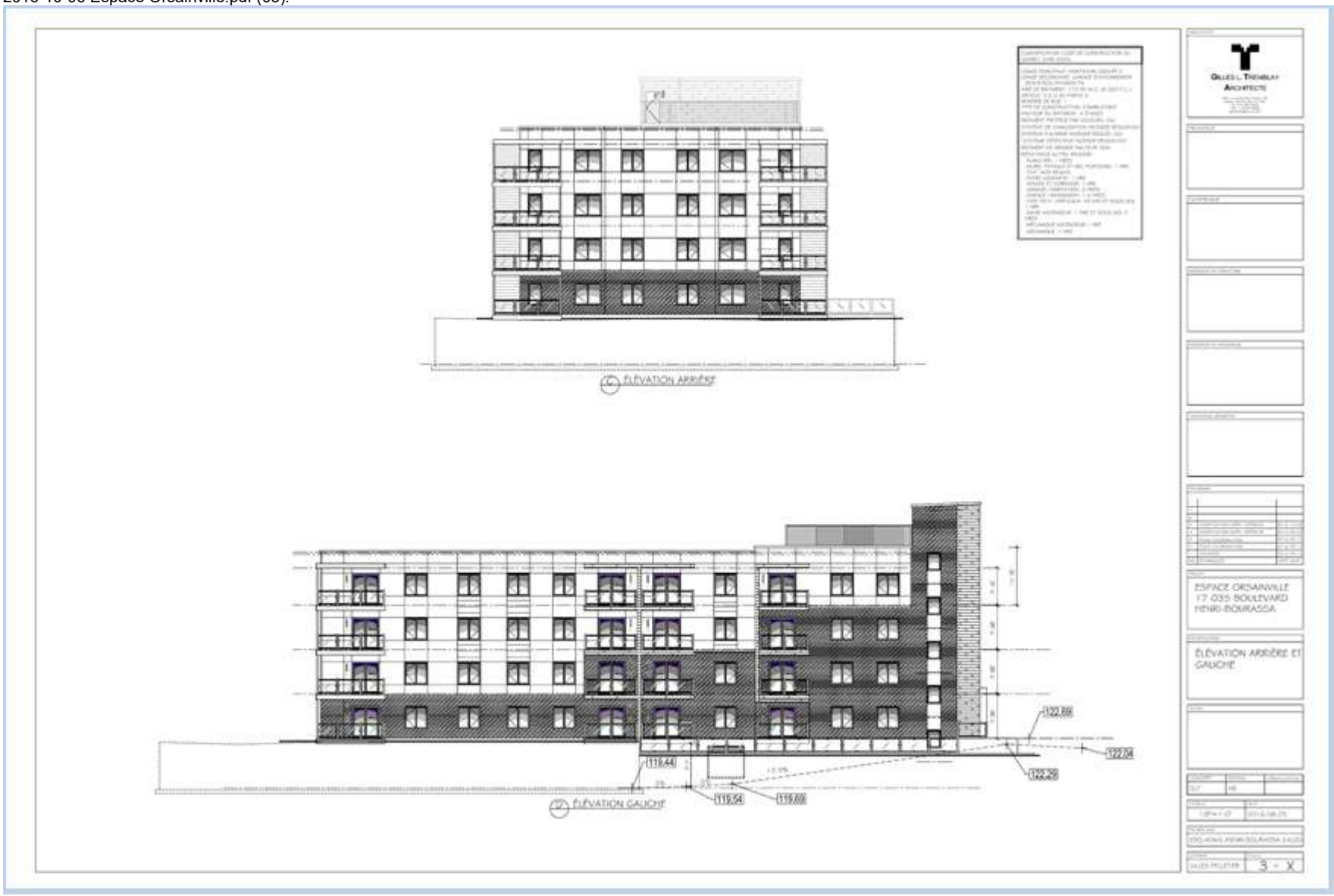
2.2. Floor Plan Images

2016-10-06 Espace Orsainville.pdf (01):

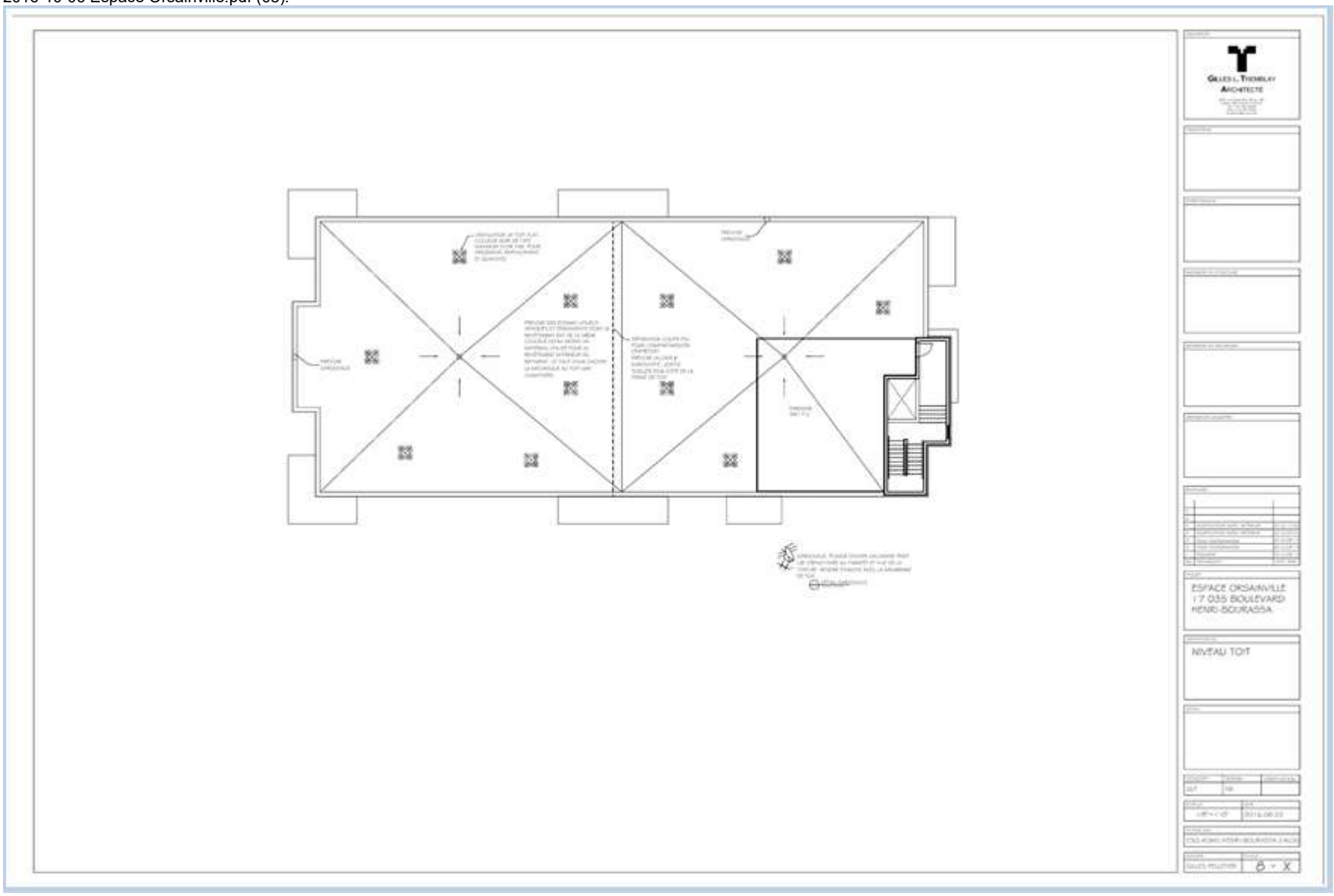


2016-10-06 Espace Orsainville.pdf (02):

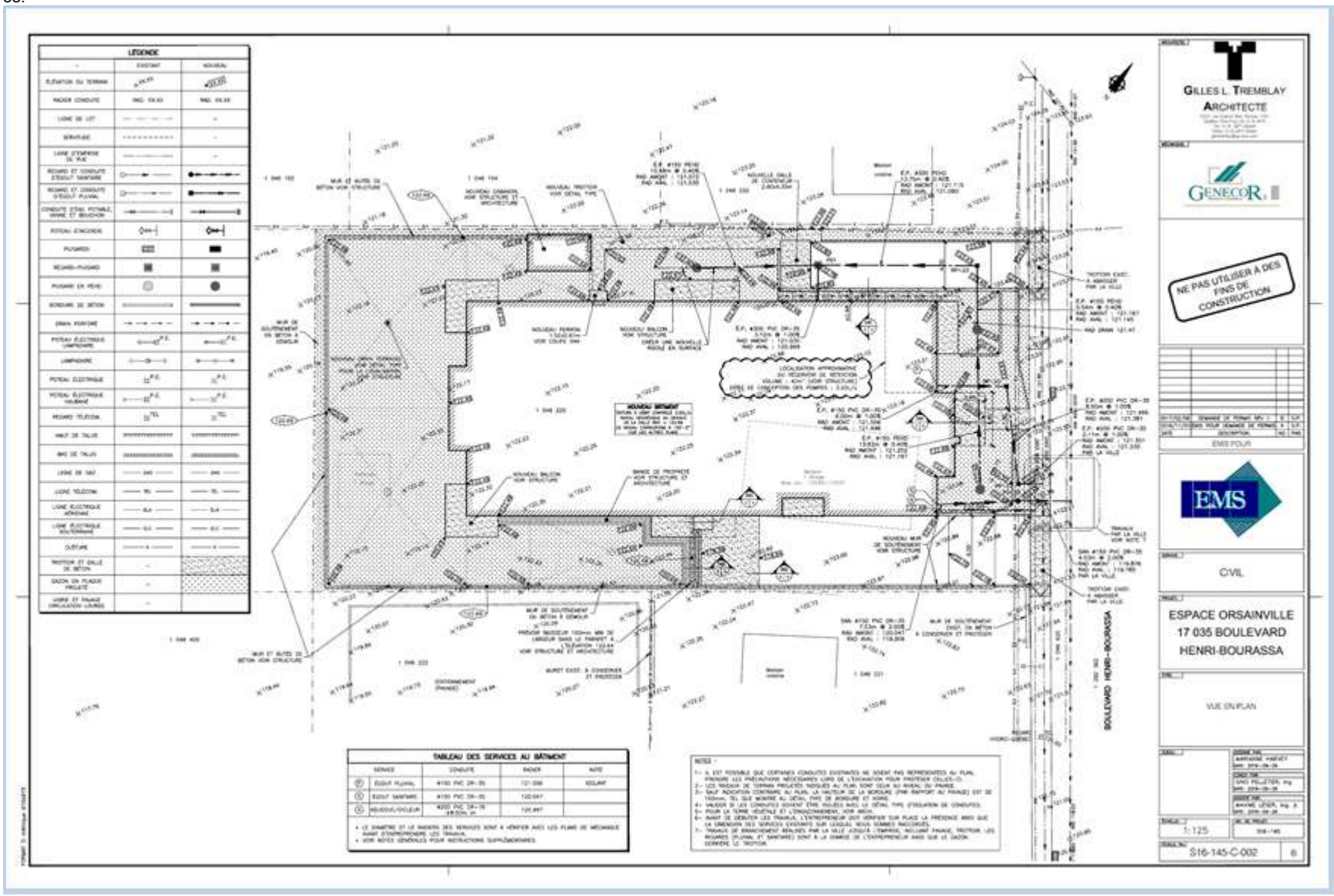
2016-10-06 Espace Orsainville.pdf (03):



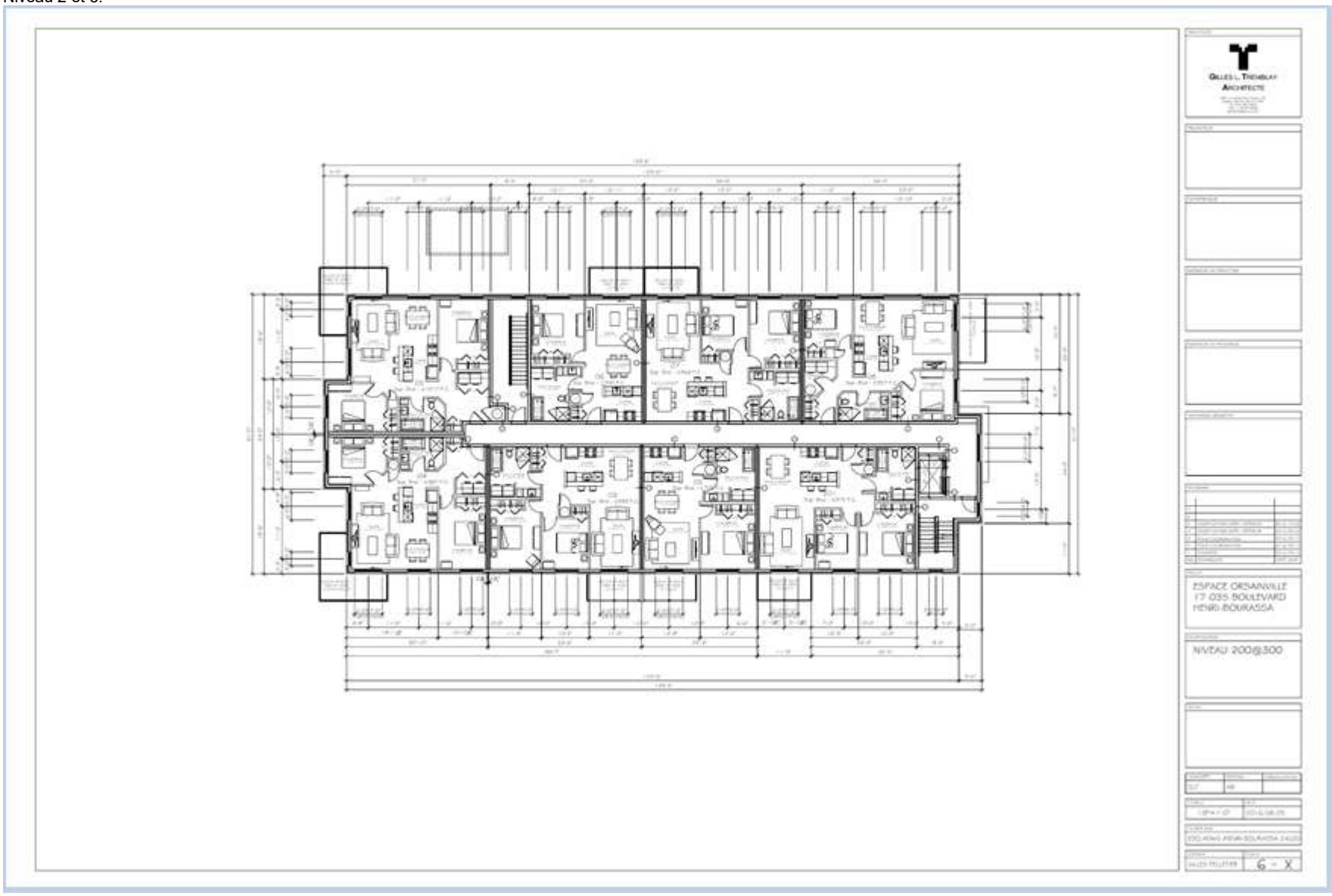
2016-10-06 Espace Orsainville.pdf (08):



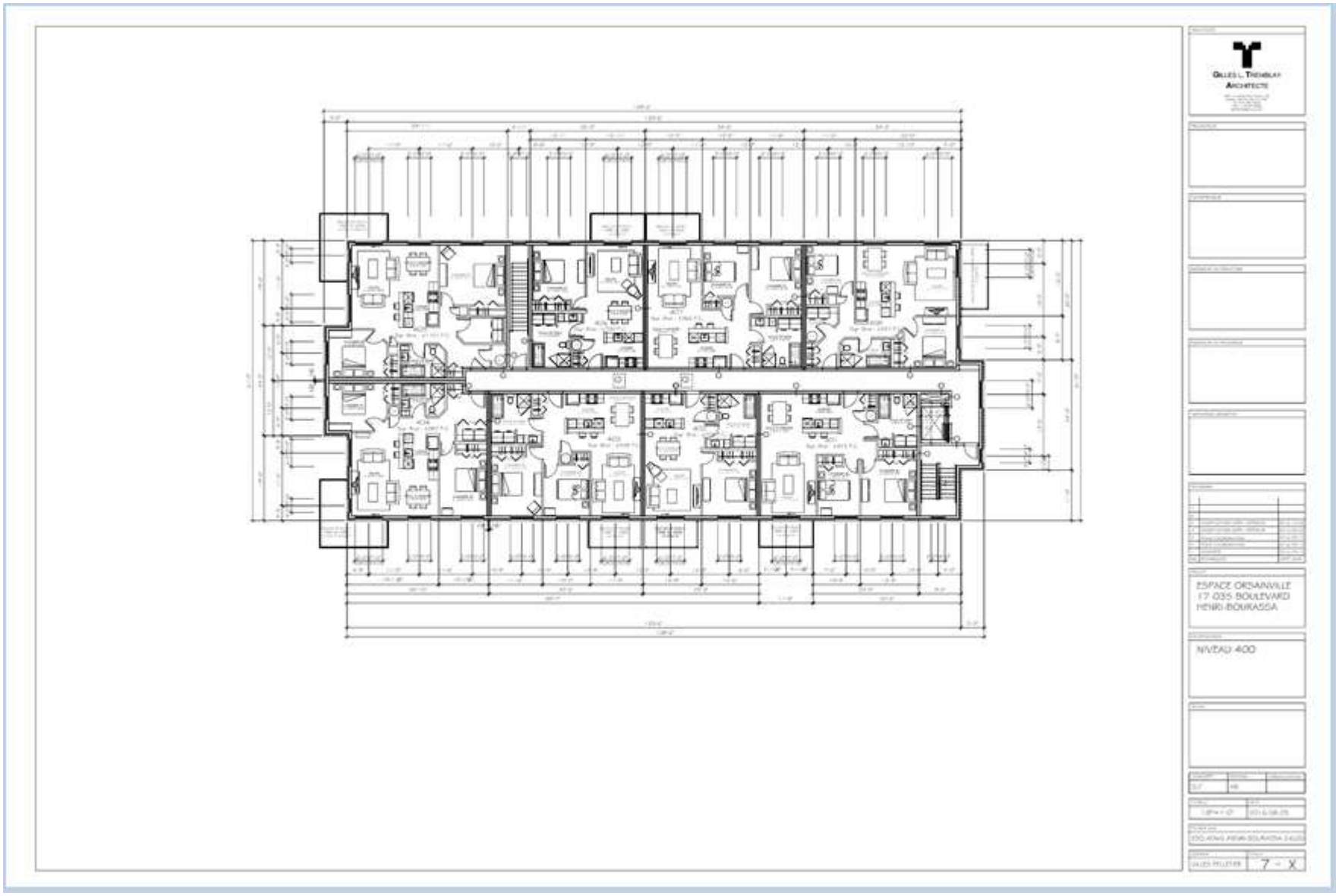
38:


LÉGENDE
EXISTANT
NOUVEAU
GILLES L. TREMBLAY
ARCHITECTE
GENECOR
NE PAS UTILISER À DES FINS DE CONSTRUCTION
EMS
CIVIL
ESPACE ORSAINVILLE
17 035 BOULEVARD
HENRI-BOURASSA
VUE EN PLAN
1:125
S16-145-C-002
TABLEAU DES SERVICES AU BÂTIMENT
BOULEVARD HENRI-BOURASSA

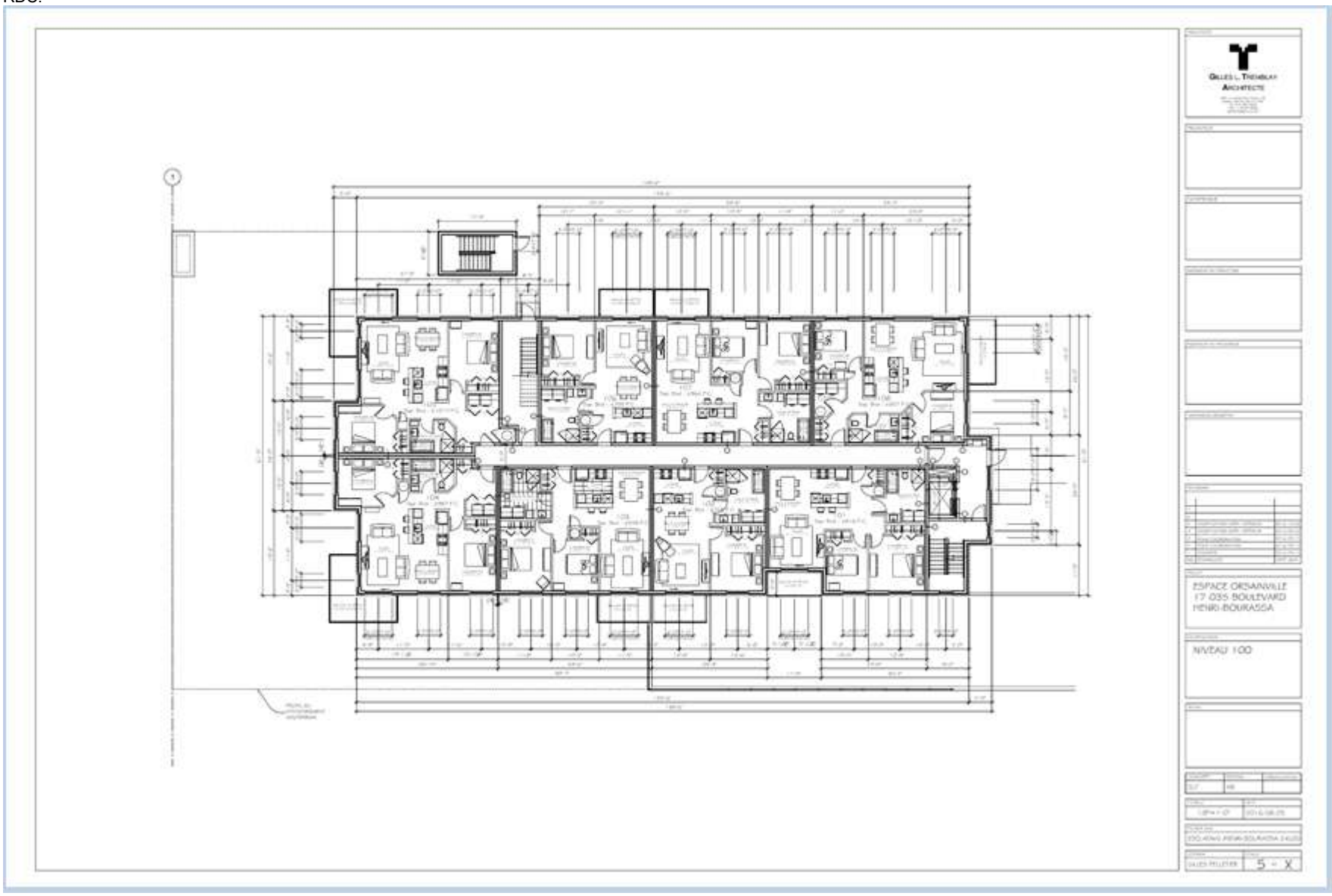
Niveau 2 et 3:


GILLES L. TREMBLAY
ARCHITECTE
ESPACE ORSANVILLE
17 035 BOULEVARD
HENRI-BOURASSA
NIVEAU 200@300

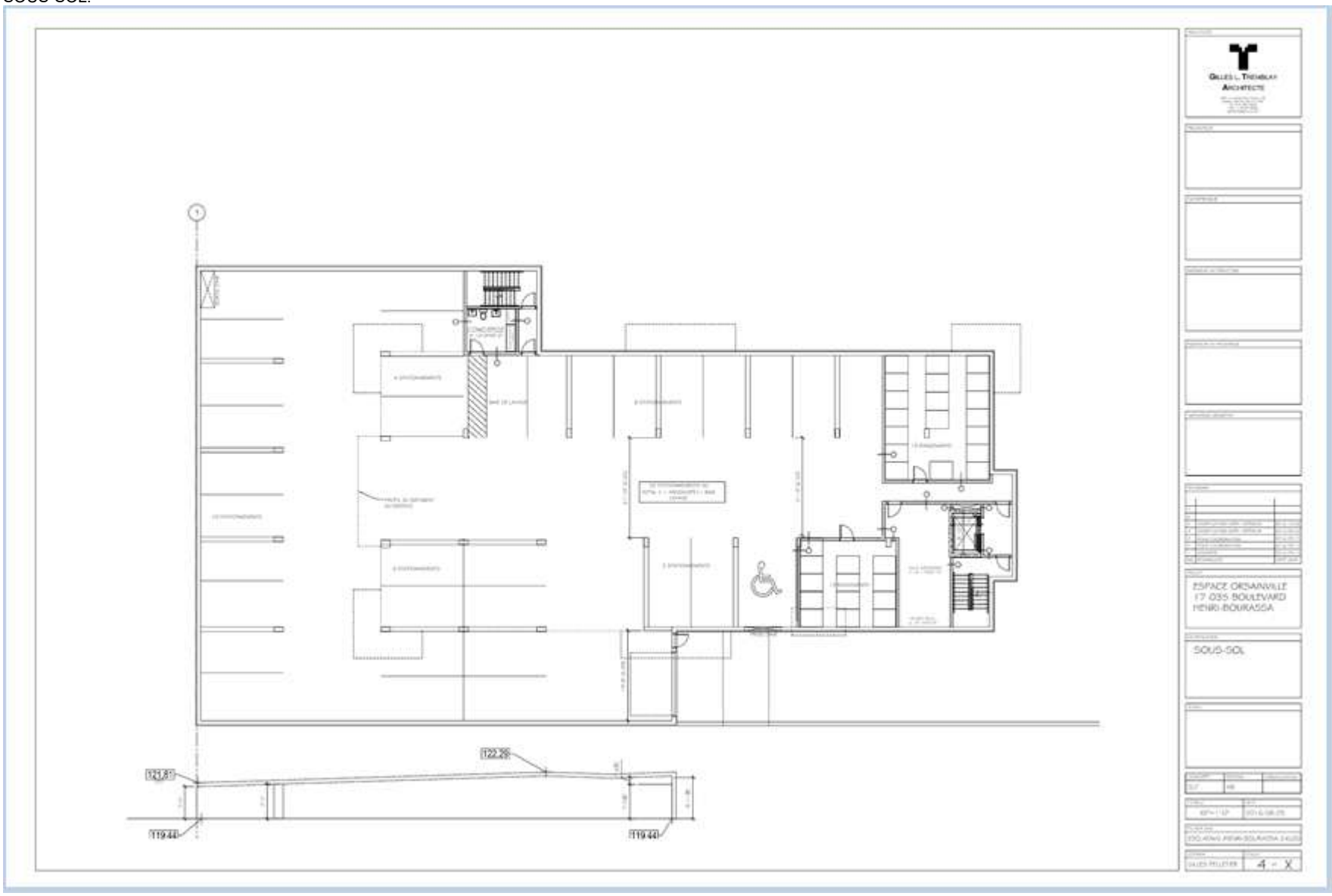
Niveau 4:


GILLES L. TREMBLAY
ARCHITECTE
ESPACE ORSANVILLE
17 035 BOULEVARD
HENRI-BOURASSA
NIVEAU 400

RDC:


GILLES L. TREMBLAY
ARCHITECTE
ESPACE ORSAINVILLE
17 035 BOULEVARD
HENRI-BOURASSA
NIVEAU 100

SOUS-SOL:


GILLES L. TREMBLAY
ARCHITECTE
ESPACE ORSAINVILLE
17 035 BOULEVARD
HENRI-BOURASSA
SOUS-SOL
121.81
122.28
119.44
119.44

3. Levels

Level	Vertical Position	Override General Defaults	Level-to-Level Height	Floor-to-Ceiling Height	Default Opening Elevation	Raised Floor Height	Associated Floor Plan Image
4E	Above 3E	Yes	9' 8 1/8"	8' 1 1/4"	1' 6"	-	Niveau 4
3E	Above 2E	No	9' 8 1/8"	8' 2 1/8"	1' 6"	-	Niveau 2 et 3
2E	Above RDC	No	9' 8 1/8"	8' 2 1/8"	1' 6"	-	Niveau 2 et 3
RDC	At-grade	No	9' 8 1/8"	8' 2 1/8"	1' 6"	-	RDC
SS	Below RDC	Yes	9' 3"	8' 2 1/8"	1' 6"	-	SOUS-SOL

4. Walls & Spaces, Roofs

4.1. Building Summary

Level	Space Count	Floor Area (sqft)	Volume (cuft)	Interior Wall Gross Area (sqft)	Exterior Wall Gross Area (sqft)
4E	11	8164.5	78943.9	7750.3	3929.9
3E	11	8165.3	79044.4	7880.7	3931.3
2E	2	8165.6	79047.9	3896.9	3929.9
RDC	3	8102.0	78464.0	3979.1	4028.8
SS	3	13964.1	123022.2	860.4	5128.0
Total	30	46561.5	438522.3	24367.4	20948.0

4.2. Building Summary (Roof Levels)

Level	Section Count	Total Roof Area (sqft)	Heat Transfer Area (sqft)	Exterior Wall Gross Area (sqft)
Implied Roofs	12	8215.8	8215.8	0.0

4.3. Space Details

Space	Floor Area (sqft)	Volume (cuft)	Interior Wall Gross Area (sqft)	Exterior Wall Gross Area (sqft)	Multi-Level	Floor-to-Ceiling Height	Raised Floor Height	Notes
4E								
4E 401	954.9	7733.8	727.8	280.1	No	8' 1 1/4"	-	

Space	Floor Area (sqft)	Volume (cuft)	Interior Wall Gross Area (sqft)	Exterior Wall Gross Area (sqft)	Multi-Level	Floor-to-Ceiling Height	Raised Floor Height	Notes
4E 402	695.4	5641.3	652.1	204.3	No	8' 1 1/4"	-	
4E 403	927.0	7509.0	719.7	271.9	No	8' 1 1/4"	-	
4E 404	969.7	7854.1	533.5	533.4	No	8' 1 1/4"	-	
4E 405	1080.4	8751.0	565.9	565.9	No	8' 1 1/4"	-	
4E 406	691.2	5598.9	650.8	202.6	No	8' 1 1/4"	-	
4E 407	951.8	7709.1	727.1	278.9	No	8' 1 1/4"	-	
4E 408	930.2	7534.2	509.9	483.4	No	8' 1 1/4"	-	
4E Corridor	654.8	5303.5	1931.3	186.9	No	8' 1 1/4"	-	
4E ESC1	140.2	1136.6	489.3	41.1	No	8' 1 1/4"	-	
4E ESC2	168.9	1367.9	243.0	243.0	No	8' 1 1/4"	-	
Ceiling/Floor Spaces	-	12804.6	-	638.3	-	-	-	
3E								
3E 301	955.8	7813.6	734.9	283.0	No	8' 2 1/8"	-	
3E 302	698.5	5710.2	658.7	206.8	No	8' 2 1/8"	-	
3E 303	925.3	7564.0	725.8	274.0	No	8' 2 1/8"	-	
3E 304	971.0	7938.0	538.7	538.7	No	8' 2 1/8"	-	
3E 305	989.6	8089.9	598.8	540.2	No	8' 2 1/8"	-	
3E 306	688.9	5631.5	656.1	203.8	No	8' 2 1/8"	-	
3E 307	954.1	7799.8	734.5	282.2	No	8' 2 1/8"	-	
3E 308	930.2	7604.2	514.7	488.0	No	8' 2 1/8"	-	
3E Corridor	654.8	5352.9	1949.2	188.7	No	8' 2 1/8"	-	
3E ESC1	228.3	1866.3	524.0	71.7	No	8' 2 1/8"	-	
3E ESC2	168.9	1380.7	245.3	245.3	No	8' 2 1/8"	-	
Ceiling/Floor Spaces	-	12293.3	-	609.0	-	-	-	
2E								
2E Corridor	654.8	5352.9	1948.5	188.6	No	8' 2 1/8"	-	
2E x 8 Log	7510.8	61400.1	1948.5	3132.3	No	8' 2 1/8"	-	
Ceiling/Floor Spaces	-	12294.8	-	609.0	-	-	-	

Space	Floor Area (sqft)	Volume (cuft)	Interior Wall Gross Area (sqft)	Exterior Wall Gross Area (sqft)	Multi-Level	Floor-to-Ceiling Height	Raised Floor Height	Notes
RDC								
RDC Corridor	496.5	4059.3	1697.9	0.0	No	8' 2 1/8"	-	
RDC SAS	157.9	1293.7	332.7	188.6	No	8' 2 1/8"	-	
RDC x 8 Log	7447.7	60884.3	1948.5	3214.8	No	8' 2 1/8"	-	
Ceiling/Floor Spaces	-	12226.8	-	625.5	-	-	-	
SS								
SS SAS1	49.9	408.1	163.4	83.0	No	8' 2 1/8"	-	
SS SAS2	81.8	668.7	210.1	94.9	No	8' 2 1/8"	-	
SS Stationnement	13832.4	113124.8	486.9	4355.3	No	8' 2 1/8"	-	
Ceiling/Floor Spaces	-	8820.6	-	594.8	-	-	-	

4.4. Unmodeled Space Details

Unmodeled Spaces	Level	Notes
2E ASC	2E	
3E ASC	3E	
4E ASC	4E	
RDC ASC	RDC	
SS ASC	SS	

4.5. Roof Details

Name	Shape	Total Area (sqft)	Heat Transfer Area (sqft)	Pitch		Notes
				Pitch A	Pitch B	
4E						
Ceiling Space for 4E 401	Flat	954.9	954.9	-	-	
Ceiling Space for 4E 402	Flat	696.5	696.5	-	-	
Ceiling Space for 4E 403	Flat	927.1	927.1	-	-	
Ceiling Space for 4E 404	Flat	969.7	969.7	-	-	
Ceiling Space for 4E 405	Flat	1080.4	1080.4	-	-	

Name	Shape	Total Area (sqft)	Heat Transfer Area (sqft)	Pitch		Notes
				Pitch A	Pitch B	
Ceiling Space for 4E 406	Flat	691.3	691.3	-	-	
Ceiling Space for 4E 407	Flat	951.8	951.8	-	-	
Ceiling Space for 4E 408	Flat	930.2	930.2	-	-	
Ceiling Space for 4E Corridor	Flat	654.8	654.8	-	-	
Ceiling Space for 4E ESC1	Flat	140.3	140.3	-	-	
Ceiling Space for 4E ESC2	Flat	168.9	168.9	-	-	
SS						
Ceiling Space for SS SAS1	Flat	49.9	49.9	-	-	

4.6. Summary of Wall Groups

Wall Group	Interior Wall Gross Area (sqft)	Exterior Wall Gross Area (sqft)	Notes
Default	24367.4	20948.0	
Air Walls	0.0	0.0	

5. Openings

5.1. Schedule of Window Openings

Tag	Count	Total Area (sqft)	Width	Height	Elevation	Exterior Shade	Notes
F1 5x5	68	1699.0	5'	5'	1' 6"	None	
F2 6x5	15	450.2	6'	5'	1' 6"	None	
F3 3x4	11	131.9	3'	4'	2' 6"	None	
F4 3x5	9	134.8	3'	5'	1' 6"	None	

5.2. Schedule of Door Openings

Tag	Count	Total Area (sqft)	Width	Height	Shade	Notes
PE Vitrée	1	63.0	9'	7'	None	
PO	Not used	-	3' 4"	7'	None	
PP	32	1344.5	6'	7'	None	

5.3. Schedule of Skylight Openings

None

a) Space Model REF

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026
Prepared by: Groupe CMI 11:36 AM

1. General Information

Space Model ..... a) Space Model REF
Building building1
Infiltration Model ..... Constant Infiltration
Notes:

2. Spaces

The space model contains 30 spaces with total floor area of 46,562 sqft.

2.1. Ventilation

Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
1	2E Corridor	2E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
2	2E x 8 Log	2E	7510.8	(None)	User Defined	400.0	CFM	0.00	CFM/sqft	0.0	CFM
3	3E 301	3E	955.8	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
4	3E 302	3E	698.5	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
5	3E 303	3E	925.3	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
6	3E 304	3E	971.0	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
7	3E 305	3E	989.6	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
8	3E 306	3E	688.9	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
9	3E 307	3E	954.1	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
10	3E 308	3E	930.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
11	3E Corridor	3E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
12	3E ESC1	3E	228.3	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
13	3E ESC2	3E	168.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
14	4E 401	4E	954.9	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
15	4E 402	4E	695.4	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
16	4E 403	4E	927.0	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
17	4E 404	4E	969.7	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
18	4E 405	4E	1080.4	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
19	4E 406	4E	691.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM

a) Space Model REF

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC
Prepared by: Groupe CMI

02/23/2026
11:36 AM

Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
20	4E 407	4E	951.8	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
21	4E 408	4E	930.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
22	4E Corridor	4E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
23	4E ESC1	4E	140.2	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
24	4E ESC2	4E	168.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
25	RDC Corridor	RDC	496.5	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
26	RDC SAS	RDC	157.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
27	RDC x 8 Log	RDC	7447.7	(None)	User Defined	400.0	CFM	0.00	CFM/sqft	0.0	CFM
28	SS SAS1	SS	49.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
29	SS SAS2	SS	81.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
30	SS Stationnement	SS	13832.4	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM

2.2. Overhead Lighting and Daylighting Control

Index	Space	Overhead Lighting							Daylighting Control		
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
1	2E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
2	2E x 8 Log	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
3	3E 301	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
4	3E 302	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
5	3E 303	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
6	3E 304	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
7	3E 305	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
8	3E 306	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
9	3E 307	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
10	3E 308	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
11	3E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
12	3E ESC1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
13	3E ESC2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
14	4E 401	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
15	4E 402	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
16	4E 403	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
17	4E 404	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
18	4E 405	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
19	4E 406	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
20	4E 407	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
21	4E 408	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---

Index	Space	Overhead Lighting							Daylighting Control		
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
22	4E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
23	4E ESC1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
24	4E ESC2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
25	RDC Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
26	RDC SAS	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
27	RDC x 8 Log	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
28	SS SAS1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
29	SS SAS2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
30	SS Stationnement	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---

2.3. Task Lighting, Electric Equipment and Miscellaneous Heat Gain

Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
1	2E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
2	2E x 8 Log	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
3	3E 301	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
4	3E 302	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
5	3E 303	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
6	3E 304	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
7	3E 305	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
8	3E 306	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
9	3E 307	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
10	3E 308	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
11	3E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
12	3E ESC1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
13	3E ESC2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
14	4E 401	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
15	4E 402	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
16	4E 403	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
17	4E 404	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
18	4E 405	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
19	4E 406	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
20	4E 407	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
21	4E 408	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
22	4E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
23	4E ESC1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
24	4E ESC2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
25	RDC Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
26	RDC SAS	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)

a) Space Model REF

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026
Prepared by: Groupe CMI 11:36 AM

Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
27	RDC x 8 Log	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
28	SS SAS1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
29	SS SAS2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
30	SS Stationnement	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)

2.4. Occupancy and Infiltration

Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Constant Cooling Airflow	Constant Heating Airflow	Constant Simulation Airflow	Units	Occurs
1	2E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
2	2E x 8 Log	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
3	3E 301	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
4	3E 302	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
5	3E 303	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
6	3E 304	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
7	3E 305	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
8	3E 306	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
9	3E 307	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
10	3E 308	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
11	3E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
12	3E ESC1	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
13	3E ESC2	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
14	4E 401	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
15	4E 402	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
16	4E 403	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
17	4E 404	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
18	4E 405	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
19	4E 406	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
20	4E 407	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
21	4E 408	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
22	4E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
23	4E ESC1	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
24	4E ESC2	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
25	RDC Corridor	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
26	RDC SAS	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours

a) Space Model REF

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026
Prepared by: Groupe CMI 11:36 AM

Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Constant Cooling Airflow	Constant Heating Airflow	Constant Simulation Airflow	Units	Occurs
27	RDC x 8 Log	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
28	SS SAS1	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
29	SS SAS2	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
30	SS Stationnement	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied

3. Zoning

Zone	Space	Level
2E Corridor		
	2E Corridor	2E
2E x 8 Log		
	2E x 8 Log	2E
3E 301		
	3E 301	3E
3E 302		
	3E 302	3E
3E 303		
	3E 303	3E
3E 304		
	3E 304	3E
3E 305		
	3E 305	3E
3E 306		
	3E 306	3E
3E 307		
	3E 307	3E
3E 308		
	3E 308	3E
3E Corridor		
	3E Corridor	3E
3E ESC1		
	3E ESC1	3E
3E ESC2		
	3E ESC2	3E
4E 401		

Zone	Space	Level
	4E 401	4E
4E 402		
	4E 402	4E
4E 403		
	4E 403	4E
4E 404		
	4E 404	4E
4E 405		
	4E 405	4E
4E 406		
	4E 406	4E
4E 407		
	4E 407	4E
4E 408		
	4E 408	4E
4E Corridor		
	4E Corridor	4E
4E ESC1		
	4E ESC1	4E
4E ESC2		
	4E ESC2	4E
RDC Corridor		
	RDC Corridor	RDC
RDC SAS		
	RDC SAS	RDC
RDC x 8 Log		
	RDC x 8 Log	RDC
SS SAS1		
	SS SAS1	SS

Zone	Space	Level
SS SAS2		
	SS SAS2	SS
SS Stationnement		
	SS Stationnement	SS
Unconditioned (no spaces)		
Unassigned (no spaces)		

4. Assemblies

Category	Surface Group	Selected Assembly
Exterior Above Grade Wall		
	Default	R=21.5
Exterior Below Grade Wall		
	Default	R=17
Interior Wall		
	Default	Default Wall
Roof		
	Default	R=31
Ceiling		
	Interior Ceilings	Default Ceiling
Floor Above Space		
	Interior Floors Above Space	Default Floor
Slab Floor Below Grade		
	Below Grade Floors	R=5
Floor Above Ambient		
	Floor Above Ambient	R = 21.5

5. Windows & Doors

Category	Tag	Width x Height, Elevation	Selected Assembly
Window			
	F1 5x5	5' x 5' , 1' 6"	U=0.3 SHGC=0.35
	F2 6x5	6' x 5' , 1' 6"	U=0.3 SHGC=0.35
	F3 3x4	3' x 4' , 2' 6"	U=0.3 SHGC=0.35
	F4 3x5	3' x 5' , 1' 6"	U=0.3 SHGC=0.35
Door			
	PE Vitrée	9' x 7'	U=0.3 SHGC=0.35
	PP	6' x 7'	U=0.3 SHGC=0.35

ASHRAE 90.1 Vertical Glazing Summary:

Total Window Opening Glazing Area ..... 2415.9 sqft
Total Door Opening Glazing Area ..... 1407.5 sqft
Total Gross Above Grade Wall Area ..... 15819.9 sqft
Window-to-wall Ratio (WWR) ..... 18.3 %

1. General Information

Space Model ..... b) Space Model CPT
Building building1
Infiltration Model ..... Constant Infiltration
Notes:

2. Spaces

The space model contains 30 spaces with total floor area of 46,562 sqft.

2.1. Ventilation

Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
1	2E Corridor	2E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
2	2E x 8 Log	2E	7510.8	(None)	User Defined	400.0	CFM	0.00	CFM/sqft	0.0	CFM
3	3E 301	3E	955.8	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
4	3E 302	3E	698.5	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
5	3E 303	3E	925.3	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
6	3E 304	3E	971.0	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
7	3E 305	3E	989.6	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
8	3E 306	3E	688.9	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
9	3E 307	3E	954.1	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
10	3E 308	3E	930.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
11	3E Corridor	3E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
12	3E ESC1	3E	228.3	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
13	3E ESC2	3E	168.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
14	4E 401	4E	954.9	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
15	4E 402	4E	695.4	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
16	4E 403	4E	927.0	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
17	4E 404	4E	969.7	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM

Index	Space	Level	Floor Area (sqft)	Space Type	Ventilation						
					ASHRAE Standard 62.1-2019 Space Usage	OA Requirement 1		OA Requirement 2		Direct Exhaust	
						Airflow	Units	Airflow	Units	Airflow	Units
18	4E 405	4E	1080.4	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
19	4E 406	4E	691.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
20	4E 407	4E	951.8	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
21	4E 408	4E	930.2	(None)	User Defined	50.0	CFM	0.00	CFM/sqft	0.0	CFM
22	4E Corridor	4E	654.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
23	4E ESC1	4E	140.2	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
24	4E ESC2	4E	168.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
25	RDC Corridor	RDC	496.5	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
26	RDC SAS	RDC	157.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
27	RDC x 8 Log	RDC	7447.7	(None)	User Defined	400.0	CFM	0.00	CFM/sqft	0.0	CFM
28	SS SAS1	SS	49.9	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
29	SS SAS2	SS	81.8	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM
30	SS Stationnement	SS	13832.4	(None)	User Defined	0.0	CFM/person	0.00	CFM/sqft	0.0	CFM

2.2. Overhead Lighting and Daylighting Control

Index	Space	Overhead Lighting							Daylighting Control		
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
1	2E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
2	2E x 8 Log	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
3	3E 301	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
4	3E 302	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
5	3E 303	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
6	3E 304	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
7	3E 305	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
8	3E 306	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
9	3E 307	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
10	3E 308	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
11	3E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
12	3E ESC1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
13	3E ESC2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
14	4E 401	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
15	4E 402	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
16	4E 403	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
17	4E 404	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
18	4E 405	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
19	4E 406	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
20	4E 407	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
21	4E 408	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---

Index	Space	Overhead Lighting							Daylighting Control		
		ASHRAE Standard 90.1-2019		Power	Units	Lighting Type	Schedule	Power Multi.	Control Type	Illum. Setpoint	Units
		Lighting Method	Space Usage								
22	4E Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
23	4E ESC1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
24	4E ESC2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
25	RDC Corridor	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
26	RDC SAS	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
27	RDC x 8 Log	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
28	SS SAS1	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
29	SS SAS2	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---
30	SS Stationnement	Building Area	User Defined	0.00	W/sqft	Fluorescent: Recessed, no Lens, Unvented	(None)	1.00	Not Used	---	---

2.3. Task Lighting, Electric Equipment and Miscellaneous Heat Gain

Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
1	2E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
2	2E x 8 Log	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
3	3E 301	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
4	3E 302	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
5	3E 303	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
6	3E 304	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
7	3E 305	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
8	3E 306	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
9	3E 307	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
10	3E 308	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
11	3E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
12	3E ESC1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
13	3E ESC2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
14	4E 401	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
15	4E 402	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
16	4E 403	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
17	4E 404	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
18	4E 405	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
19	4E 406	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
20	4E 407	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
21	4E 408	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
22	4E Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
23	4E ESC1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
24	4E ESC2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
25	RDC Corridor	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
26	RDC SAS	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)

Index	Space	Task Lighting			Electric Equipment			Miscellaneous Heat Gain			
		Power	Units	Schedule	Power	Units	Schedule	Sens. (BTU/hr)	Schedule	Latent (BTU/hr)	Schedule
27	RDC x 8 Log	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
28	SS SAS1	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
29	SS SAS2	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)
30	SS Stationnement	0.00	W/sqft	(None)	0.00	W/sqft	(None)	0	(None)	0	(None)

2.4. Occupancy and Infiltration

Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Constant Cooling Airflow	Constant Heating Airflow	Constant Simulation Airflow	Units	Occurs
1	2E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
2	2E x 8 Log	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
3	3E 301	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
4	3E 302	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
5	3E 303	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
6	3E 304	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
7	3E 305	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
8	3E 306	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
9	3E 307	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
10	3E 308	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
11	3E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
12	3E ESC1	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
13	3E ESC2	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
14	4E 401	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
15	4E 402	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
16	4E 403	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
17	4E 404	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
18	4E 405	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
19	4E 406	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
20	4E 407	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
21	4E 408	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
22	4E Corridor	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
23	4E ESC1	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
24	4E ESC2	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
25	RDC Corridor	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
26	RDC SAS	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours

b) Space Model CPT

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026
Prepared by: Groupe CMI 11:36 AM

Index	Space	Occupants						Infiltration				
		Occupancy	Units	Schedule	Activity Level	Sens. (BTU/hr/person)	Latent (BTU/hr/person)	Constant Cooling Airflow	Constant Heating Airflow	Constant Simulation Airflow	Units	Occurs
27	RDC x 8 Log	0	People	(None)	User Defined	245.0	205.0	0.00	0.10	0.10	CFM/sqft	All Hours
28	SS SAS1	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
29	SS SAS2	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied
30	SS Stationnement	0	People	(None)	User Defined	245.0	205.0	0.0	0.0	0.0	CFM	Unoccupied

3. Zoning

Zone	Space	Level
2E Corridor		
	2E Corridor	2E
2E x 8 Log		
	2E x 8 Log	2E
3E 301		
	3E 301	3E
3E 302		
	3E 302	3E
3E 303		
	3E 303	3E
3E 304		
	3E 304	3E
3E 305		
	3E 305	3E
3E 306		
	3E 306	3E
3E 307		
	3E 307	3E
3E 308		
	3E 308	3E
3E Corridor		
	3E Corridor	3E
3E ESC1		
	3E ESC1	3E
3E ESC2		
	3E ESC2	3E
4E 401		

Zone	Space	Level
	4E 401	4E
4E 402		
	4E 402	4E
4E 403		
	4E 403	4E
4E 404		
	4E 404	4E
4E 405		
	4E 405	4E
4E 406		
	4E 406	4E
4E 407		
	4E 407	4E
4E 408		
	4E 408	4E
4E Corridor		
	4E Corridor	4E
4E ESC1		
	4E ESC1	4E
4E ESC2		
	4E ESC2	4E
RDC Corridor		
	RDC Corridor	RDC
RDC SAS		
	RDC SAS	RDC
RDC x 8 Log		
	RDC x 8 Log	RDC
SS SAS1		
	SS SAS1	SS

Zone	Space	Level
SS SAS2		
	SS SAS2	SS
SS Stationnement		
	SS Stationnement	SS
Unconditioned (no spaces)		
Unassigned (no spaces)		

4. Assemblies

Category	Surface Group	Selected Assembly
Exterior Above Grade Wall		
	Default	R=21.5
Exterior Below Grade Wall		
	Default	R=17
Interior Wall		
	Default	Default Wall
Roof		
	Default	R=31
Ceiling		
	Interior Ceilings	Default Ceiling
Floor Above Space		
	Interior Floors Above Space	Default Floor
Slab Floor Below Grade		
	Below Grade Floors	R=5
Floor Above Ambient		
	Floor Above Ambient	R = 21.5

5. Windows & Doors

Category	Tag	Width x Height, Elevation	Selected Assembly
Window			
	F1 5x5	5' x 5' , 1' 6"	U=0.3 SHGC=0.35
	F2 6x5	6' x 5' , 1' 6"	U=0.3 SHGC=0.35
	F3 3x4	3' x 4' , 2' 6"	U=0.3 SHGC=0.35
	F4 3x5	3' x 5' , 1' 6"	U=0.3 SHGC=0.35
Door			
	PE Vitrée	9' x 7'	U=0.3 SHGC=0.35
	PP	6' x 7'	U=0.3 SHGC=0.35

ASHRAE 90.1 Vertical Glazing Summary:

Total Window Opening Glazing Area ..... 2415.9 sqft
Total Door Opening Glazing Area ..... 1407.5 sqft
Total Gross Above Grade Wall Area ..... 15819.9 sqft
Window-to-wall Ratio (WWR) ..... 18.3 %

1. General Details:

Air System Name ..... **01 2E x 8 Log REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	2E x 8 Log

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**3031.5**	CFM
Ventilation Airflow	**400.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	3031.5	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**34.9**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**96.0**	MBH
AHRI Performance Rating	**20.800**	SEER2
DX System Configuration	**1-stage, 1 compressor, 1 circuit**	
Low Temperature Cutoff OAT	**0.0**	F

1. General Details:

Air System Name ..... **02 2E x 8 Log CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	2E x 8 Log

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **3031.5** CFM
Ventilation Airflow ..... **400.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	3031.5	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **34.9** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **81.0** MBH
AHRI Performance Rating **29.187** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **103.0** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **81.0** MBH
AHRI Performance Rating ..... **4.460** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **03 3E 301 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 301

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**394.2**	CFM
Ventilation Airflow	**50.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	394.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**7.2**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**12.0**	MBH
AHRI Performance Rating	**20.800**	SEER2
DX System Configuration	**1-stage, 1 compressor, 1 circuit**	
Low Temperature Cutoff OAT	**0.0**	F

1. General Details:

Air System Name ..... **04 3E 301 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 301

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **394.2** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	394.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.2** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **10.4** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **05 3E 302 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 302

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **289.6** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	289.6	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.3** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **06 3E 302 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 302

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **289.6** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	289.6	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.3** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **8.2** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **07 3E 303 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 303

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **393.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	393.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **08 3E 303 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 303

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **393.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	393.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **10.2** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **09 3E 304 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 304

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **515.2** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	515.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **9.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **10 3E 304 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 304

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**515.2**	CFM
Ventilation Airflow	**50.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	515.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**9.1**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**12.0**	MBH
AHRI Performance Rating	**28.000**	SEER2
DX System Configuration	**2-stage, 2 compressors, 2 circuits**	
Low Temperature Cutoff OAT	**0.0**	F

Central Heating Unit - ASHP

Estimated Maximum Load	**16.3**	MBH
Design OADB	**47.0**	F
Design EDB	**70.0**	F
Equipment Sizing	**User-Defined**	
Gross Heating Capacity	**12.0**	MBH
AHRI Performance Rating	**4.550**	COP
Cutoff OAT	**-22.0**	F

Auxiliary Heating:

Auxiliary Heating Type	**Electric Resistance**	
Auxiliary Heating Upper Cutoff	**70.0**	F

1. General Details:

Air System Name ..... **11 3E 305 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 305

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **540.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	540.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **10.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **12 3E 305 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 305

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **540.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	540.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **10.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **16.4** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **13 3E 306 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 306

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **214.6** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	214.6	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **4.0** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **14 3E 306 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 306

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **214.6** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	214.6	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **4.0** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **8.0** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **15 3E 307 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 307

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **284.9** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	284.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.2** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **16 3E 307 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 307

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **284.9** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	284.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.2** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **10.2** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **17 3E 308 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 308

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **471.7** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	471.7	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.0** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **18 3E 308 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E 308

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **471.7** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	471.7	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.0** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **15.3** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **19 4E 401 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 401

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **391.9** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	391.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.4** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **20 4E 401 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 401

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **391.9** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	391.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.4** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **12.8** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **21 4E 402 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 402

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **286.8** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	286.8	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.4** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **22 4E 402 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 402

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**286.8**	CFM
Ventilation Airflow	**50.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	286.8	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**5.4**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**9.0**	MBH
AHRI Performance Rating	**30.000**	SEER2
DX System Configuration	**2-stage, 2 compressors, 2 circuits**	
Low Temperature Cutoff OAT	**0.0**	F

Central Heating Unit - ASHP

Estimated Maximum Load	**10.0**	MBH
Design OADB	**47.0**	F
Design EDB	**70.0**	F
Equipment Sizing	**User-Defined**	
Gross Heating Capacity	**9.0**	MBH
AHRI Performance Rating	**4.400**	COP
Cutoff OAT	**-22.0**	F

Auxiliary Heating:

Auxiliary Heating Type	**Electric Resistance**	
Auxiliary Heating Upper Cutoff	**70.0**	F

1. General Details:

Air System Name ..... **23 4E 403 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 403

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **383.2** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	383.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.3** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **24 4E 403 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 403

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **383.2** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	383.2	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.3** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **12.6** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **25 4E 404 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 404

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **626.8** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	626.8	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **9.7** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **26 4E 404 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 404

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **626.8** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	626.8	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **9.7** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **19.1** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **27 4E 405 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 405

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **665.5** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	665.5	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **12.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **28 4E 405 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 405

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **665.5** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	665.5	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **12.1** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **20.2** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **29 4E 406 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 406

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **286.4** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	286.4	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.5** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **30 4E 406 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 406

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **286.4** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	286.4	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **5.5** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **9.0** MBH
AHRI Performance Rating **30.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **9.9** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **9.0** MBH
AHRI Performance Rating ..... **4.400** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **31 4E 407 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 407

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **393.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	393.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **7.2** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **32 4E 407 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 407

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**393.0**	CFM
Ventilation Airflow	**50.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	393.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**7.2**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**12.0**	MBH
AHRI Performance Rating	**28.000**	SEER2
DX System Configuration	**2-stage, 2 compressors, 2 circuits**	
Low Temperature Cutoff OAT	**0.0**	F

Central Heating Unit - ASHP

Estimated Maximum Load	**12.9**	MBH
Design OADB	**47.0**	F
Design EDB	**70.0**	F
Equipment Sizing	**User-Defined**	
Gross Heating Capacity	**12.0**	MBH
AHRI Performance Rating	**4.550**	COP
Cutoff OAT	**-22.0**	F

Auxiliary Heating:

Auxiliary Heating Type	**Electric Resistance**	
Auxiliary Heating Upper Cutoff	**70.0**	F

1. General Details:

Air System Name ..... **33 4E 408 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 408

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **579.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	579.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **6.7** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **34 4E 408 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E 408

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **579.0** CFM
Ventilation Airflow ..... **50.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	579.0	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **6.7** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **12.0** MBH
AHRI Performance Rating **28.000** SEER2
DX System Configuration ..... **2-stage, 2 compressors, 2 circuits**
Low Temperature Cutoff OAT ..... **0.0** F

Central Heating Unit - ASHP

Estimated Maximum Load ..... **17.8** MBH
Design OADB ..... **47.0** F
Design EDB ..... **70.0** F
Equipment Sizing ..... **User-Defined**
Gross Heating Capacity ..... **12.0** MBH
AHRI Performance Rating ..... **4.550** COP
Cutoff OAT ..... **-22.0** F

Auxiliary Heating:

Auxiliary Heating Type ..... **Electric Resistance**
Auxiliary Heating Upper Cutoff ..... **70.0** F

1. General Details:

Air System Name ..... **35 RDC x 8 Log REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	RDC x 8 Log

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **58.0** F
Supply Fan Airflow ..... **2998.9** CFM
Ventilation Airflow ..... **400.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Sum of space airflow rates**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	2998.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load ..... **34.2** MBH
Design OADB ..... **95.0** F
Design EWB ..... **67.0** F
Equipment Sizing ..... **User-Defined**
Gross Cooling Capacity ..... **96.0** MBH
AHRI Performance Rating **20.800** SEER2
DX System Configuration ..... **1-stage, 1 compressor, 1 circuit**
Low Temperature Cutoff OAT ..... **0.0** F

1. General Details:

Air System Name ..... **36 RDC x 8 Log CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Air-to-Air Energy Recovery Data:

Recovery Type ..... **Sensible Heat**
Thermal Efficiency ..... **56** %
Input kW ..... **0.000** kW
Schedule ..... **JFMAMJJASOND**

Central Cooling Data:

Supply Air Temperature ..... **58.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Air Source Heat Pump**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	RDC x 8 Log

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature	**58.0**	F
Supply Fan Airflow	**2998.9**	CFM
Ventilation Airflow	**400.0**	CFM
Heating Supply Temperature	**95.0**	F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	2998.9	-	-	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**34.2**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**81.0**	MBH
AHRI Performance Rating	**29.187**	SEER2
DX System Configuration	**2-stage, 2 compressors, 2 circuits**	
Low Temperature Cutoff OAT	**0.0**	F

Central Heating Unit - ASHP

Estimated Maximum Load	**99.8**	MBH
Design OADB	**47.0**	F
Design EDB	**70.0**	F
Equipment Sizing	**User-Defined**	
Gross Heating Capacity	**81.0**	MBH
AHRI Performance Rating	**4.460**	COP
Cutoff OAT	**-22.0**	F

Auxiliary Heating:

Auxiliary Heating Type	**Electric Resistance**	
Auxiliary Heating Upper Cutoff	**70.0**	F

1. General Details:

Air System Name ..... **37 3E ESC1 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E ESC1

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **65.0** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	65.0	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **38 3E ESC1 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E ESC1

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **65.0** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	65.0	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **39 4E ESC1 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E ESC1

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **59.6** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	59.6	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **40 4E ESC1 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E ESC1

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **59.6** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	59.6	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **41 4E ESC2 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E ESC2

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **212.1** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	212.1	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **42 4E ESC2 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	4E ESC2

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **212.1** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	212.1	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **43 SS Stationnement REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	SS Stationnement

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **1306.9** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	1306.9	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **44 SS Stationnement CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	SS Stationnement

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **1306.9** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	1306.9	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **45 Couloir et SAS REF**
Equipment Type ..... **Packaged Rooftop Units**
Air System Type ..... **VAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Preheat Coil Data:

Setpoint ..... **55.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Coil position ..... **Downstream of Mixing Point**

Central Cooling Data:

Supply Air Temperature ..... **55.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	2E Corridor
2	3E Corridor
3	4E Corridor
4	RDC Corridor
5	RDC SAS
6	SS SAS1
7	SS SAS2

Number of zones **7**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0
2	75.0	80.0	70.0	65.0	1.50	100	0.0
3	75.0	80.0	70.0	65.0	1.50	100	0.0
4	75.0	80.0	70.0	65.0	1.50	100	0.0
5	75.0	80.0	70.0	65.0	1.50	100	0.0
6	75.0	80.0	70.0	65.0	1.50	100	0.0
7	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
2	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
3	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
4	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
5	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
6	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
7	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **55.0** F
Supply Fan Airflow ..... **749.3** CFM
Ventilation Airflow ..... **0.0** CFM

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	175.7	-	0.0	-
2	174.0	-	0.0	-
3	250.1	-	10.8	-
4	24.0	-	0.0	-
5	186.2	-	8.1	-
6	13.4	-	0.0	-
7	17.4	-	0.0	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**7.8**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**1.0**	MBH
AHRI Performance Rating	**11.000**	EER
DX System Configuration	**1-stage, 1 compressor, 1 circuit**	
Low Temperature Cutoff OAT	**0.0**	F

1. General Details:

Air System Name ..... **46 Couloir et SAS CPT**
Equipment Type ..... **Packaged Rooftop Units**
Air System Type ..... **VAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Preheat Coil Data:

Setpoint ..... **55.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Coil position ..... **Downstream of Mixing Point**

Central Cooling Data:

Supply Air Temperature ..... **55.0** F
Cooling Source ..... **Air-Cooled DX**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Constant Temperature - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **0.00** kW

% Airflow	100	90	80	70	60	50
% kW	100	91	81	72	61	54

% Airflow	40	30	20	10	0
% kW	46	40	33	27	21

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	2E Corridor
2	3E Corridor
3	4E Corridor
4	RDC Corridor
5	RDC SAS
6	SS SAS1
7	SS SAS2

Number of zones **7**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0
2	75.0	80.0	70.0	65.0	1.50	100	0.0
3	75.0	80.0	70.0	65.0	1.50	100	0.0
4	75.0	80.0	70.0	65.0	1.50	100	0.0
5	75.0	80.0	70.0	65.0	1.50	100	0.0
6	75.0	80.0	70.0	65.0	1.50	100	0.0
7	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
2	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
3	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
4	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
5	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
6	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-
7	VAV box with RH (Dual Maximum)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	95.0 F	-	-

Reheat Coil Source ..... **Electric Resistance**
Reheat Coil Schedule ..... **JFMAMJJASOND**

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Cooling Supply Temperature ..... **55.0** F
Supply Fan Airflow ..... **749.3** CFM
Ventilation Airflow ..... **0.0** CFM

Hydronic Sizing Specifications:

Chilled Water Supply Temperature ..... **44.0** F
Chilled Water Delta-T ..... **10.0** F
Hot Water Supply Temperature ..... **140.0** F
Hot Water Delta-T ..... **20.0** F

Safety Factors:

Cooling Sensible ..... **15** %
Cooling Latent ..... **15** %
Heating ..... **15** %

Zone Sizing Data:

Zone Airflow Sizing Method ..... **Peak zone sensible load**
Space Airflow Sizing Method ..... **Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	175.7	-	0.0	-
2	174.0	-	0.0	-
3	250.1	-	10.8	-
4	24.0	-	0.0	-
5	186.2	-	8.1	-
6	13.4	-	0.0	-
7	17.4	-	0.0	-

5. Equipment Data

Central Cooling Unit - Air-Cooled DX

Estimated Maximum Load	**7.8**	MBH
Design OADB	**95.0**	F
Design EWB	**67.0**	F
Equipment Sizing	**User-Defined**	
Gross Cooling Capacity	**1.0**	MBH
AHRI Performance Rating	**11.000**	EER
DX System Configuration	**1-stage, 1 compressor, 1 circuit**	
Low Temperature Cutoff OAT	**0.0**	F

1. General Details:

Air System Name ..... **47 3E ESC2 REF**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **a) Space Model REF**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E ESC2

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **192.5** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	192.5	-	-	-

5. Equipment Data

No equipment data required for this system.

1. General Details:

Air System Name ..... **48 3E ESC2 CPT**
Equipment Type ..... **Split AHU**
Air System Type ..... **Single Zone CAV**
Space Model: ..... **b) Space Model CPT**
Notes:

2. System Components:

Ventilation Air Data:

Airflow Control ..... **Constant Ventilation Airflow**
Ventilation Sizing Method ..... **Sum of Space OA Airflows**
Unocc. Damper Position ..... **Closed**
Damper Leak Rate ..... **0** %

Central Heating Data:

Supply Temperature ..... **95.0** F
Heating Source ..... **Electric Resistance**
Schedule ..... **JFMAMJJASOND**
Capacity Control ..... **Cycled or Staged Capacity - Fan On**

Supply Fan Data:

Fan Type ..... **Forward Curved**
Configuration ..... **Draw-thru**
Fan Performance ..... **2.00** in wg
Overall Efficiency ..... **100** %
Fan Control ..... **1-speed, cooling and heating**

Duct System Data:

Supply Duct Data:

Duct Leakage ..... **0** %

Return Duct or Plenum Data:

Return Air Via ..... **Ducted Return**

3. Zone Components:

Assigned Zones:

Zone	Zone Name
1	3E ESC2

Number of zones **1**

Thermostats and Zone Data:

Zone	Cooling T-Stat Occ. (F)	Cooling T-Stat Unocc. (F)	Heating T-Stat Occ. (F)	Heating T-Stat Unocc. (F)	T-Stat Throttling Range (F)	Diversity Factor (%)	Direct Exhaust Fan (kW)
1	75.0	80.0	70.0	65.0	1.50	100	0.0

Thermostat Schedule **24h/24h**
Unoccupied Cooling is ..... **Available**

Supply Terminals Data:

Zone	Terminal Type	Air Distribution	Air Distribution Effectiveness Specification	Air Distribution Effectiveness	Minimum Airflow	Design Supply Temp.	Fan Perf.	Fan Efficiency
1	Diffuser (no reheat)	Ceiling supply / ceiling return	Not Used	-	0.00 CFM/person	-	-	-

4. Sizing Data (Computer-Generated):

System Sizing Data:

Sizing Data:

Supply Fan Airflow ..... **192.5** CFM
Ventilation Airflow ..... **0.0** CFM
Heating Supply Temperature ..... **95.0** F

Hydronic Sizing Specifications:

Chilled Water Supply Temperature	**44.0**	F
Chilled Water Delta-T	**10.0**	F
Hot Water Supply Temperature	**140.0**	F
Hot Water Delta-T	**20.0**	F

Safety Factors:

Cooling Sensible	**15**	%
Cooling Latent	**15**	%
Heating	**15**	%

Zone Sizing Data:

Zone Airflow Sizing Method	**Sum of space airflow rates**
Space Airflow Sizing Method	**Individual peak space loads**

Zone	Supply Airflow (CFM)	Zone Htg Unit (MBH)	Reheat Coil (MBH)	FPMBX Fan (CFM)
1	192.5	-	-	-

5. Equipment Data

No equipment data required for this system.

a) Alternative REF Input Data

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

1. General Details:

Name ..... **a) Alternative REF**
Energy Sim. Status ..... **Calculated**
Baseline-90° Status ..... **Not Calculated**
Baseline-180° Status ..... **Not Calculated**
Baseline-270° Status ..... **Not Calculated**

2. Plants Included in this Alternative:

(none)

3. Air Systems Included in this Alternative:

Air System	# Zones
01 2E x 8 Log REF	1
03 3E 301 REF	1
05 3E 302 REF	1
07 3E 303 REF	1
09 3E 304 REF	1
11 3E 305 REF	1
13 3E 306 REF	1
15 3E 307 REF	1
17 3E 308 REF	1
19 4E 401 REF	1
21 4E 402 REF	1
23 4E 403 REF	1
25 4E 404 REF	1
27 4E 405 REF	1
29 4E 406 REF	1
31 4E 407 REF	1
33 4E 408 REF	1
35 RDC x 8 Log REF	1
37 3E ESC1 REF	1
39 4E ESC1 REF	1
41 4E ESC2 REF	1
43 SS Stationnement REF	1
45 Couloir et SAS REF	7
47 3E ESC2 REF	1

4. Space Models Included in this Alternative:

Summary Calculation Status:

Design Sizing ..... **Calculated**
Energy Simulation ..... **Calculated**

Space Model: a) Space Model REF (for building1)

Design Sizing ..... **Calculated**
Energy Simulation ..... **Calculated**

Zone	Air System
2E Corridor	45 Couloir et SAS REF
2E x 8 Log	01 2E x 8 Log REF
3E 301	03 3E 301 REF
3E 302	05 3E 302 REF
3E 303	07 3E 303 REF
3E 304	09 3E 304 REF
3E 305	11 3E 305 REF
3E 306	13 3E 306 REF
3E 307	15 3E 307 REF
3E 308	17 3E 308 REF
3E Corridor	45 Couloir et SAS REF
3E ESC1	37 3E ESC1 REF
3E ESC2	47 3E ESC2 REF
4E 401	19 4E 401 REF

4E 402	21 4E 402 REF
4E 403	23 4E 403 REF
4E 404	25 4E 404 REF
4E 405	27 4E 405 REF
4E 406	29 4E 406 REF
4E 407	31 4E 407 REF
4E 408	33 4E 408 REF
4E Corridor	45 Couloir et SAS REF
4E ESC1	39 4E ESC1 REF
4E ESC2	41 4E ESC2 REF
RDC Corridor	45 Couloir et SAS REF
RDC SAS	45 Couloir et SAS REF
RDC x 8 Log	35 RDC x 8 Log REF
SS SAS1	45 Couloir et SAS REF
SS SAS2	45 Couloir et SAS REF
SS Stationnement	43 SS Stationnement REF

5. Miscellaneous Energy

(no items defined)

6. Meters

Electric ..... **Default Electric Rate**

7. Miscellaneous Data

Average Building Power Factor ..... **100.00** %
Source Electric Generating Efficiency ..... **90.00** %
Additional Floor Area ..... **0.0** sqft

1. General Details:

Name ..... **b) Alternative CPT**
Energy Sim. Status ..... **Calculated**
Baseline-90° Status ..... **Not Calculated**
Baseline-180° Status ..... **Not Calculated**
Baseline-270° Status ..... **Not Calculated**

2. Plants Included in this Alternative:

(none)

3. Air Systems Included in this Alternative:

Air System	# Zones
02 2E x 8 Log CPT	1
04 3E 301 CPT	1
06 3E 302 CPT	1
08 3E 303 CPT	1
10 3E 304 CPT	1
12 3E 305 CPT	1
14 3E 306 CPT	1
16 3E 307 CPT	1
18 3E 308 CPT	1
20 4E 401 CPT	1
22 4E 402 CPT	1
24 4E 403 CPT	1
26 4E 404 CPT	1
28 4E 405 CPT	1
30 4E 406 CPT	1
32 4E 407 CPT	1
34 4E 408 CPT	1
36 RDC x 8 Log CPT	1
38 3E ESC1 CPT	1
40 4E ESC1 CPT	1
42 4E ESC2 CPT	1
44 SS Stationnement CPT	1
46 Couloir et SAS CPT	7
48 3E ESC2 CPT	1

4. Space Models Included in this Alternative:

Summary Calculation Status:
Design Sizing ..... **Calculated**
Energy Simulation ..... **Calculated**

Space Model: b) Space Model CPT (for building1)
Design Sizing ..... **Calculated**
Energy Simulation ..... **Calculated**

Zone	Air System
2E Corridor	46 Couloir et SAS CPT
2E x 8 Log	02 2E x 8 Log CPT
3E 301	04 3E 301 CPT
3E 302	06 3E 302 CPT
3E 303	08 3E 303 CPT
3E 304	10 3E 304 CPT
3E 305	12 3E 305 CPT
3E 306	14 3E 306 CPT
3E 307	16 3E 307 CPT
3E 308	18 3E 308 CPT
3E Corridor	46 Couloir et SAS CPT
3E ESC1	38 3E ESC1 CPT
3E ESC2	48 3E ESC2 CPT
4E 401	20 4E 401 CPT

4E 402	22 4E 402 CPT
4E 403	24 4E 403 CPT
4E 404	26 4E 404 CPT
4E 405	28 4E 405 CPT
4E 406	30 4E 406 CPT
4E 407	32 4E 407 CPT
4E 408	34 4E 408 CPT
4E Corridor	46 Couloir et SAS CPT
4E ESC1	40 4E ESC1 CPT
4E ESC2	42 4E ESC2 CPT
RDC Corridor	46 Couloir et SAS CPT
RDC SAS	46 Couloir et SAS CPT
RDC x 8 Log	36 RDC x 8 Log CPT
SS SAS1	46 Couloir et SAS CPT
SS SAS2	46 Couloir et SAS CPT
SS Stationnement	44 SS Stationnement CPT

5. Miscellaneous Energy

(no items defined)

6. Meters

Electric ..... **Default Electric Rate**

7. Miscellaneous Data

Average Building Power Factor ..... **100.00** %
Source Electric Generating Efficiency ..... **90.00** %
Additional Floor Area ..... **0.0** sqft

Air System Sizing Summary for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**01 2E x 8 Log REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**7510.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**34.9**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**34.9**	MBH	Entering DB / WB	**75.6 / 66.9**	F
Coil CFM at peak load	**3032**	CFM	Leaving DB / WB	**65.2 / 63.4**	F
Sum of peak zone CFM	**3032**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1042.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2583.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**4.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**103.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**3032**	CFM	BTU/(hr sqft)	**13.7**	
Max coil CFM	**3032**	CFM	Ent. DB / Lvg DB	**64.8 / 96.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**3032**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.40**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**400**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **01 2E x 8 Log REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **7510.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
2E x 8 Log	3032	3032	0.40	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
2E x 8 Log	33.3	July 17:00	81.8	7510.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
2E x 8 Log						
2E x 8 Log	33.3	July 17:00	3032	81.8	7510.8	0.40

Air System Heat Balance Summary for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	32987	-8	-	85858	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	3032 CFM	0	-	3032 CFM	0	-
Ventilation Load	400 CFM	1851	12	400 CFM	17087	0
Supply Fan Load	3032 CFM	0	-	3032 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**34838**	**4**	**-**	**102945**	**0**
Central Cooling Coil	-	34884	0	-	0	0
Central Heating Coil	-	0	-	-	102993	-
>> Total Conditioning	**-**	**34884**	**0**	**-**	**102993**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	2216 sqft	3627	-	2216 sqft	6493	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	581 sqft	2876	-	581 sqft	6281	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	336 sqft	1238	-	336 sqft	3638	-
Floor Convection	7511 sqft	8877	-	7511 sqft	7814	-
Interior Wall Convection	1948 sqft	1581	-	1948 sqft	1075	-
Ceiling Convection	7511 sqft	10733	-	7511 sqft	9217	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	313 CFM	36572	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	4340	0	15%	10663	0
>> Total Zone Loads	**-**	**33273**	**0**	**-**	**81753**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	400	400	1851	12
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	400	400	2415	0
Vent - Return Mixing	Outlet	75.6	0.01211	3032	400	-	-
Central Cooling Coil	Outlet	65.2	0.01211	3032	400	34884	0
Central Heating Coil	Outlet	65.2	0.01211	3032	400	0	-
Supply Fan	Outlet	65.2	0.01211	3032	400	0	-
Cold Supply Duct	Outlet	65.2	0.01211	3032	400	-	-
Zone Air	-	75.0	0.01211	3032	400	32987	-8
Return Air	Outlet	75.0	0.01211	3032	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E x 8 Log	32987	Cooling	32987	75.0	3032	400	0	0

System Psychrometrics for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	400	400	-17087	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	400	400	-21808	0
Vent - Return Mixing	Outlet	64.8	0.00026	3032	400	-	-
Central Cooling Coil	Outlet	64.8	0.00026	3032	400	0	0
Central Heating Coil	Outlet	96.2	0.00026	3032	400	102993	-
Supply Fan	Outlet	96.2	0.00026	3032	400	0	-
Cold Supply Duct	Outlet	96.2	0.00026	3032	400	-	-
Zone Air	-	70.0	0.00026	3032	400	-85858	0
Return Air	Outlet	70.0	0.00026	3032	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E x 8 Log	-85858	Heating	-85858	70.0	3032	400	0	0

Air System Sizing Summary for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**03 3E 301 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**955.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.2**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.6**	MBH	Entering DB / WB	**75.1 / 65.2**	F
Coil CFM at peak load	**394**	CFM	Leaving DB / WB	**59.9 / 59.4**	F
Sum of peak zone CFM	**394**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.916**		Design supply temp.	**58.0**	F
CFM/Ton	**656.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1592.4**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.5**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.4**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**394**	CFM	BTU/(hr sqft)	**10.8**	
Max coil CFM	**394**	CFM	Ent. DB / Lvg DB	**65.0 / 89.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**394**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **03 3E 301 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **955.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 301	394	394	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 301	7.2	September 10:00	7.6	955.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 301						
3E 301	7.2	September 10:00	394	7.6	955.8	0.41

Air System Heat Balance Summary for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6550	184	-	8223	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	394 CFM	0	-	394 CFM	0	-
Ventilation Load	50 CFM	44	294	50 CFM	2136	0
Supply Fan Load	394 CFM	0	-	394 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6594**	**477**	**-**	**10359**	**0**
Central Cooling Coil	-	6597	606	-	0	0
Central Heating Coil	-	0	-	-	10365	-
>> Total Conditioning	**-**	**6597**	**606**	**-**	**10365**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	191 sqft	291	-	191 sqft	495	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	475	-	50 sqft	531	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	397	-	42 sqft	447	-
Floor Convection	956 sqft	2224	-	956 sqft	628	-
Interior Wall Convection	735 sqft	878	-	735 sqft	324	-
Ceiling Convection	956 sqft	1826	-	956 sqft	875	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3304	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	914	0	15%	990	0
>> Total Zone Loads	**-**	**7006**	**0**	**-**	**7593**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	294
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01101	394	400	-	-
Central Cooling Coil	Outlet	59.9	0.01070	394	400	6597	606
Central Heating Coil	Outlet	59.9	0.01070	394	400	0	-
Supply Fan	Outlet	59.9	0.01070	394	400	0	-
Cold Supply Duct	Outlet	59.9	0.01070	394	400	-	-
Zone Air	-	75.0	0.01080	394	400	6550	184
Return Air	Outlet	75.0	0.01085	394	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 301	6548	Cooling	6550	75.0	394	400	0	0

System Psychrometrics for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	394	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	394	400	0	0
Central Heating Coil	Outlet	89.3	0.00026	394	400	10365	-
Supply Fan	Outlet	89.3	0.00026	394	400	0	-
Cold Supply Duct	Outlet	89.3	0.00026	394	400	-	-
Zone Air	-	70.0	0.00026	394	400	-8223	0
Return Air	Outlet	70.0	0.00026	394	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 301	-8223	Heating	-8223	70.0	394	400	0	0

Air System Sizing Summary for 05 3E 302 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**05 3E 302 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**698.5**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**5.3**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**290**	CFM	Leaving DB / WB	**60.1 / 59.6**	F
Sum of peak zone CFM	**290**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.907**		Design supply temp.	**58.0**	F
CFM/Ton	**655.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1581.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**290**	CFM	BTU/(hr sqft)	**11.7**	
Max coil CFM	**290**	CFM	Ent. DB / Lvg DB	**63.2 / 89.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**290**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 05 3E 302 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **05 3E 302 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **698.5** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 302	290	290	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 302	5.3	September 10:00	5.6	698.5

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 302						
3E 302	5.3	September 10:00	290	5.6	698.5	0.41

Air System Heat Balance Summary for 05 3E 302 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4758	124	-	6026	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	290 CFM	0	-	290 CFM	0	-
Ventilation Load	50 CFM	44	280	50 CFM	2136	0
Supply Fan Load	290 CFM	0	-	290 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4803**	**404**	**-**	**8162**	**0**
Central Cooling Coil	-	4806	494	-	0	0
Central Heating Coil	-	0	-	-	8168	-
>> Total Conditioning	**-**	**4806**	**494**	**-**	**8168**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	140 sqft	208	-	140 sqft	361	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	237	-	25 sqft	265	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	395	-	42 sqft	446	-
Floor Convection	698 sqft	1583	-	698 sqft	446	-
Interior Wall Convection	659 sqft	740	-	659 sqft	286	-
Ceiling Convection	698 sqft	1283	-	698 sqft	625	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	21 CFM	2415	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	667	0	15%	727	0
>> Total Zone Loads	**-**	**5113**	**0**	**-**	**5570**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 05 3E 302 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	280
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01112	290	400	-	-
Central Cooling Coil	Outlet	60.1	0.01077	290	400	4806	494
Central Heating Coil	Outlet	60.1	0.01077	290	400	0	-
Supply Fan	Outlet	60.1	0.01077	290	400	0	-
Cold Supply Duct	Outlet	60.1	0.01077	290	400	-	-
Zone Air	-	75.0	0.01086	290	400	4758	124
Return Air	Outlet	75.0	0.01091	290	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 302	4757	Cooling	4758	75.0	290	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.2	0.00026	290	400	-	-
Central Cooling Coil	Outlet	63.2	0.00026	290	400	0	0
Central Heating Coil	Outlet	89.2	0.00026	290	400	8168	-
Supply Fan	Outlet	89.2	0.00026	290	400	0	-
Cold Supply Duct	Outlet	89.2	0.00026	290	400	-	-
Zone Air	-	70.0	0.00026	290	400	-6026	0
Return Air	Outlet	70.0	0.00026	290	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 302	-6026	Heating	-6026	70.0	290	400	0	0

Air System Sizing Summary for 07 3E 303 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**07 3E 303 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**925.3**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.1**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**393**	CFM	Leaving DB / WB	**60.1 / 59.6**	F
Sum of peak zone CFM	**393**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.918**		Design supply temp.	**58.0**	F
CFM/Ton	**665.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1567.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.7**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**393**	CFM	BTU/(hr sqft)	**11.0**	
Max coil CFM	**393**	CFM	Ent. DB / Lvg DB	**65.0 / 88.9**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**393**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.42**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 07 3E 303 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **07 3E 303 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **925.3** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 303	393	393	0.42	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 303	7.2	September 10:00	7.4	925.3

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 303						
3E 303	7.2	September 10:00	393	7.4	925.3	0.42

Air System Heat Balance Summary for 07 3E 303 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6455	175	-	8038	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	393 CFM	0	-	393 CFM	0	-
Ventilation Load	50 CFM	44	281	50 CFM	2136	0
Supply Fan Load	393 CFM	0	-	393 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6499**	**456**	**-**	**10173**	**0**
Central Cooling Coil	-	6502	581	-	0	0
Central Heating Coil	-	0	-	-	10179	-
>> Total Conditioning	**-**	**6502**	**581**	**-**	**10179**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	182 sqft	281	-	182 sqft	473	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	476	-	50 sqft	530	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	399	-	42 sqft	447	-
Floor Convection	925 sqft	2211	-	925 sqft	618	-
Interior Wall Convection	726 sqft	848	-	726 sqft	328	-
Ceiling Convection	925 sqft	1802	-	925 sqft	858	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	27 CFM	3199	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	903	0	15%	968	0
>> Total Zone Loads	**-**	**6919**	**0**	**-**	**7420**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 07 3E 303 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	281
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01106	393	400	-	-
Central Cooling Coil	Outlet	60.1	0.01076	393	400	6502	581
Central Heating Coil	Outlet	60.1	0.01076	393	400	0	-
Supply Fan	Outlet	60.1	0.01076	393	400	0	-
Cold Supply Duct	Outlet	60.1	0.01076	393	400	-	-
Zone Air	-	75.0	0.01085	393	400	6455	175
Return Air	Outlet	75.0	0.01091	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 303	6453	Cooling	6455	75.0	393	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	393	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	393	400	0	0
Central Heating Coil	Outlet	88.9	0.00026	393	400	10179	-
Supply Fan	Outlet	88.9	0.00026	393	400	0	-
Cold Supply Duct	Outlet	88.9	0.00026	393	400	-	-
Zone Air	-	70.0	0.00026	393	400	-8038	0
Return Air	Outlet	70.0	0.00026	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 303	-8038	Heating	-8038	70.0	393	400	0	0

Air System Sizing Summary for 09 3E 304 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**09 3E 304 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**971.0**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**September 12:00**	
Total coil load	**9.1**	MBH	OA DB / WB	**76.0 / 65.8**	F
Sensible coil load	**8.7**	MBH	Entering DB / WB	**75.0 / 64.8**	F
Coil CFM at peak load	**515**	CFM	Leaving DB / WB	**59.8 / 59.2**	F
Sum of peak zone CFM	**515**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.954**		Design supply temp.	**58.0**	F
CFM/Ton	**681.1**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1283.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**9.3**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**16.3**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**515**	CFM	BTU/(hr sqft)	**16.8**	
Max coil CFM	**515**	CFM	Ent. DB / Lvg DB	**66.2 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**515**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.53**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 09 3E 304 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **09 3E 304 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **971.0** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 304	515	515	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 304	9.2	September 13:00	13.9	971.0

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 304						
3E 304	9.2	September 13:00	515	13.9	971.0	0.53

Air System Heat Balance Summary for 09 3E 304 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - SEPTEMBER 12:00			DESIGN HEATING		
	OA DB / WB 76.0 F / 65.8 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	8634	165	-	14166	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	515 CFM	0	-	515 CFM	0	-
Ventilation Load	50 CFM	26	119	50 CFM	2136	0
Supply Fan Load	515 CFM	0	-	515 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**8661**	**284**	**-**	**16302**	**0**
Central Cooling Coil	-	8662	415	-	0	0
Central Heating Coil	-	0	-	-	16308	-
>> Total Conditioning	**-**	**8662**	**415**	**-**	**16308**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - SEPTEMBER 12:00			DESIGN HEATING		
	OA DB / WB 76.0 F / 65.8 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	377 sqft	810	-	377 sqft	1167	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	998	-	120 sqft	1330	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	384	-	42 sqft	461	-
Floor Convection	971 sqft	2171	-	971 sqft	1099	-
Interior Wall Convection	539 sqft	954	-	539 sqft	390	-
Ceiling Convection	971 sqft	2640	-	971 sqft	1345	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	54 CFM	6288	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1193	0	15%	1812	0
>> Total Zone Loads	**-**	**9150**	**0**	**-**	**13893**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 09 3E 304 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT SEPTEMBER 12:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.1	0.01122	50	400	26	119
Air-to-Air Energy Recovery	Outlet	75.5	0.01122	50	400	34	0
Vent - Return Mixing	Outlet	75.0	0.01077	515	400	-	-
Central Cooling Coil	Outlet	59.8	0.01061	515	400	8662	415
Central Heating Coil	Outlet	59.8	0.01061	515	400	0	-
Supply Fan	Outlet	59.8	0.01061	515	400	0	-
Cold Supply Duct	Outlet	59.8	0.01061	515	400	-	-
Zone Air	-	75.0	0.01067	515	400	8634	165
Return Air	Outlet	75.0	0.01072	515	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 304	8633	Cooling	8634	75.0	515	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.2	0.00026	515	400	-	-
Central Cooling Coil	Outlet	66.2	0.00026	515	400	0	0
Central Heating Coil	Outlet	95.4	0.00026	515	400	16308	-
Supply Fan	Outlet	95.4	0.00026	515	400	0	-
Cold Supply Duct	Outlet	95.4	0.00026	515	400	-	-
Zone Air	-	70.0	0.00026	515	400	-14166	0
Return Air	Outlet	70.0	0.00026	515	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 304	-14166	Heating	-14166	70.0	515	400	0	0

Air System Sizing Summary for 11 3E 305 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**11 3E 305 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**989.6**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**10.1**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**9.5**	MBH	Entering DB / WB	**75.4 / 65.0**	F
Coil CFM at peak load	**540**	CFM	Leaving DB / WB	**59.5 / 59.0**	F
Sum of peak zone CFM	**540**	CFM	Resulting RH	**57**	%
Sensible heat ratio	**0.938**		Design supply temp.	**58.0**	F
CFM/Ton	**640.4**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1173.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**10.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**16.4**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**540**	CFM	BTU/(hr sqft)	**16.6**	
Max coil CFM	**540**	CFM	Ent. DB / Lvg DB	**66.3 / 94.5**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**540**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.55**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 11 3E 305 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **11 3E 305 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **989.6** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 305	540	540	0.55	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 305	9.9	July 17:00	14.0	989.6

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 305						
3E 305	9.9	July 17:00	540	14.0	989.6	0.55

Air System Heat Balance Summary for 11 3E 305 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	9251	143	-	14308	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	540 CFM	0	-	540 CFM	0	-
Ventilation Load	50 CFM	231	346	50 CFM	2136	0
Supply Fan Load	540 CFM	0	-	540 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**9482**	**489**	**-**	**16444**	**0**
Central Cooling Coil	-	9491	628	-	0	0
Central Heating Coil	-	0	-	-	16450	-
>> Total Conditioning	**-**	**9491**	**628**	**-**	**16450**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	378 sqft	985	-	378 sqft	1168	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	1078	-	120 sqft	1335	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	353	-	42 sqft	472	-
Floor Convection	990 sqft	2239	-	990 sqft	1106	-
Interior Wall Convection	599 sqft	1087	-	599 sqft	419	-
Ceiling Convection	990 sqft	2869	-	990 sqft	1353	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	54 CFM	6309	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1292	0	15%	1824	0
>> Total Zone Loads	**-**	**9903**	**0**	**-**	**13985**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 11 3E 305 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	346
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.4	0.01079	540	400	-	-
Central Cooling Coil	Outlet	59.5	0.01055	540	400	9491	628
Central Heating Coil	Outlet	59.5	0.01055	540	400	0	-
Supply Fan	Outlet	59.5	0.01055	540	400	0	-
Cold Supply Duct	Outlet	59.5	0.01055	540	400	-	-
Zone Air	-	75.0	0.01061	540	400	9251	143
Return Air	Outlet	75.0	0.01065	540	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 305	9249	Cooling	9251	75.0	540	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.3	0.00026	540	400	-	-
Central Cooling Coil	Outlet	66.3	0.00026	540	400	0	0
Central Heating Coil	Outlet	94.5	0.00026	540	400	16450	-
Supply Fan	Outlet	94.5	0.00026	540	400	0	-
Cold Supply Duct	Outlet	94.5	0.00026	540	400	-	-
Zone Air	-	70.0	0.00026	540	400	-14308	0
Return Air	Outlet	70.0	0.00026	540	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 305	-14308	Heating	-14308	70.0	540	400	0	0

Air System Sizing Summary for 13 3E 306 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**13 3E 306 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**688.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.3**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**4.0**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**3.5**	MBH	Entering DB / WB	**76.0 / 66.6**	F
Coil CFM at peak load	**215**	CFM	Leaving DB / WB	**61.4 / 60.9**	F
Sum of peak zone CFM	**215**	CFM	Resulting RH	**63**	%
Sensible heat ratio	**0.869**		Design supply temp.	**58.0**	F
CFM/Ton	**647.2**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2077.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**215**	CFM	BTU/(hr sqft)	**11.7**	
Max coil CFM	**215**	CFM	Ent. DB / Lvg DB	**60.8 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**215**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.31**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 13 3E 306 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **13 3E 306 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **688.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 306	215	215	0.31	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 306	3.9	June 18:00	5.5	688.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 306						
3E 306	3.9	June 18:00	215	5.5	688.9	0.31

Air System Heat Balance Summary for 13 3E 306 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	3219	300	-	5898	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	215 CFM	0	-	215 CFM	0	-
Ventilation Load	50 CFM	231	89	50 CFM	2136	0
Supply Fan Load	215 CFM	0	-	215 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**3451**	**389**	**-**	**8034**	**0**
Central Cooling Coil	-	3457	522	-	0	0
Central Heating Coil	-	0	-	-	8040	-
>> Total Conditioning	**-**	**3457**	**522**	**-**	**8040**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	137 sqft	158	-	137 sqft	354	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	169	-	25 sqft	272	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	278	-	42 sqft	457	-
Floor Convection	689 sqft	928	-	689 sqft	448	-
Interior Wall Convection	656 sqft	556	-	656 sqft	285	-
Ceiling Convection	689 sqft	912	-	689 sqft	624	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2382	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	450	0	15%	723	0
>> Total Zone Loads	**-**	**3452**	**0**	**-**	**5545**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 13 3E 306 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	89
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	76.0	0.01183	215	400	-	-
Central Cooling Coil	Outlet	61.4	0.01133	215	400	3457	522
Central Heating Coil	Outlet	61.4	0.01133	215	400	0	-
Supply Fan	Outlet	61.4	0.01133	215	400	0	-
Cold Supply Duct	Outlet	61.4	0.01133	215	400	-	-
Zone Air	-	75.0	0.01163	215	400	3219	300
Return Air	Outlet	75.0	0.01174	215	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 306	3218	Cooling	3219	75.0	215	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	60.8	0.00026	215	400	-	-
Central Cooling Coil	Outlet	60.8	0.00026	215	400	0	0
Central Heating Coil	Outlet	95.4	0.00026	215	400	8040	-
Supply Fan	Outlet	95.4	0.00026	215	400	0	-
Cold Supply Duct	Outlet	95.4	0.00026	215	400	-	-
Zone Air	-	70.0	0.00026	215	400	-5898	0
Return Air	Outlet	70.0	0.00026	215	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 306	-5898	Heating	-5898	70.0	215	400	0	0

Air System Sizing Summary for 15 3E 307 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**15 3E 307 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**954.1**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**4.5**	MBH	Entering DB / WB	**75.8 / 66.5**	F
Coil CFM at peak load	**285**	CFM	Leaving DB / WB	**61.3 / 60.9**	F
Sum of peak zone CFM	**285**	CFM	Resulting RH	**63**	%
Sensible heat ratio	**0.868**		Design supply temp.	**58.0**	F
CFM/Ton	**653.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2189.8**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.5**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**285**	CFM	BTU/(hr sqft)	**10.7**	
Max coil CFM	**285**	CFM	Ent. DB / Lvg DB	**63.0 / 96.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**285**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.30**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 15 3E 307 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **15 3E 307 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **954.1** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 307	285	285	0.30	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 307	5.2	June 18:00	7.6	954.1

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 307						
3E 307	5.2	June 18:00	285	7.6	954.1	0.30

Air System Heat Balance Summary for 15 3E 307 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4301	417	-	8101	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	285 CFM	0	-	285 CFM	0	-
Ventilation Load	50 CFM	231	94	50 CFM	2136	0
Supply Fan Load	285 CFM	0	-	285 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4533**	**512**	**-**	**10237**	**0**
Central Cooling Coil	-	4539	689	-	0	0
Central Heating Coil	-	0	-	-	10243	-
>> Total Conditioning	**-**	**4539**	**689**	**-**	**10243**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	190 sqft	221	-	190 sqft	494	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	337	-	50 sqft	545	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	275	-	42 sqft	457	-
Floor Convection	954 sqft	1344	-	954 sqft	636	-
Interior Wall Convection	735 sqft	577	-	735 sqft	331	-
Ceiling Convection	954 sqft	1264	-	954 sqft	884	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3293	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	603	0	15%	996	0
>> Total Zone Loads	**-**	**4620**	**0**	**-**	**7635**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 15 3E 307 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	94
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.8	0.01179	285	400	-	-
Central Cooling Coil	Outlet	61.3	0.01129	285	400	4539	689
Central Heating Coil	Outlet	61.3	0.01129	285	400	0	-
Supply Fan	Outlet	61.3	0.01129	285	400	0	-
Cold Supply Duct	Outlet	61.3	0.01129	285	400	-	-
Zone Air	-	75.0	0.01160	285	400	4301	417
Return Air	Outlet	75.0	0.01172	285	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 307	4299	Cooling	4301	75.0	285	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.0	0.00026	285	400	-	-
Central Cooling Coil	Outlet	63.0	0.00026	285	400	0	0
Central Heating Coil	Outlet	96.3	0.00026	285	400	10243	-
Supply Fan	Outlet	96.3	0.00026	285	400	0	-
Cold Supply Duct	Outlet	96.3	0.00026	285	400	-	-
Zone Air	-	70.0	0.00026	285	400	-8101	0
Return Air	Outlet	70.0	0.00026	285	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 307	-8101	Heating	-8101	70.0	285	400	0	0

Air System Sizing Summary for 17 3E 308 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name	**17 3E 308 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**930.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.0**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**5.0**	MBH	Entering DB / WB	**75.5 / 66.8**	F
Coil CFM at peak load	**472**	CFM	Leaving DB / WB	**65.8 / 63.6**	F
Sum of peak zone CFM	**472**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1122.3**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2213.2**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.4**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.3**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**472**	CFM	BTU/(hr sqft)	**16.5**	
Max coil CFM	**472**	CFM	Ent. DB / Lvg DB	**65.8 / 95.9**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**472**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.51**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 17 3E 308 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

Air System Information

Air System Name ..... **17 3E 308 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **930.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 308	472	472	0.51	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 308	5.1	June 18:00	12.7	930.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 308						
3E 308	5.1	June 18:00	472	12.7	930.2	0.51

Air System Heat Balance Summary for 17 3E 308 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:46 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4806	-1	-	13192	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	472 CFM	0	-	472 CFM	0	-
Ventilation Load	50 CFM	231	2	50 CFM	2136	0
Supply Fan Load	472 CFM	0	-	472 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**5038**	**1**	**-**	**15328**	**0**
Central Cooling Coil	-	5043	0	-	0	0
Central Heating Coil	-	0	-	-	15334	-
>> Total Conditioning	**-**	**5043**	**0**	**-**	**15334**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	341 sqft	439	-	341 sqft	1048	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	105 sqft	598	-	105 sqft	1172	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	98	-	42 sqft	478	-
Floor Convection	930 sqft	1337	-	930 sqft	1039	-
Interior Wall Convection	515 sqft	418	-	515 sqft	355	-
Ceiling Convection	930 sqft	1345	-	930 sqft	1268	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	49 CFM	5701	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	635	0	15%	1659	0
>> Total Zone Loads	**-**	**4872**	**0**	**-**	**12720**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 17 3E 308 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:46 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	2
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.5	0.01211	472	400	-	-
Central Cooling Coil	Outlet	65.8	0.01211	472	400	5043	0
Central Heating Coil	Outlet	65.8	0.01211	472	400	0	-
Supply Fan	Outlet	65.8	0.01211	472	400	0	-
Cold Supply Duct	Outlet	65.8	0.01211	472	400	-	-
Zone Air	-	75.0	0.01211	472	400	4806	-1
Return Air	Outlet	75.0	0.01211	472	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 308	4806	Cooling	4806	75.0	472	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.8	0.00026	472	400	-	-
Central Cooling Coil	Outlet	65.8	0.00026	472	400	0	0
Central Heating Coil	Outlet	95.9	0.00026	472	400	15334	-
Supply Fan	Outlet	95.9	0.00026	472	400	0	-
Cold Supply Duct	Outlet	95.9	0.00026	472	400	-	-
Zone Air	-	70.0	0.00026	472	400	-13192	0
Return Air	Outlet	70.0	0.00026	472	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 308	-13192	Heating	-13192	70.0	472	400	0	0

Air System Sizing Summary for 19 4E 401 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**19 4E 401 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**954.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.4**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.6**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**392**	CFM	Leaving DB / WB	**59.8 / 59.3**	F
Sum of peak zone CFM	**392**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.894**		Design supply temp.	**58.0**	F
CFM/Ton	**635.0**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1547.1**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**392**	CFM	BTU/(hr sqft)	**13.4**	
Max coil CFM	**392**	CFM	Ent. DB / Lvg DB	**64.9 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**392**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 19 4E 401 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **19 4E 401 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **954.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 401	392	392	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 401	7.1	August 11:00	10.6	954.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 401						
4E 401	7.1	August 11:00	392	10.6	954.9	0.41

Air System Heat Balance Summary for 19 4E 401 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6571	314	-	10683	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	392 CFM	0	-	392 CFM	0	-
Ventilation Load	50 CFM	44	273	50 CFM	2136	0
Supply Fan Load	392 CFM	0	-	392 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6615**	**587**	**-**	**12819**	**0**
Central Cooling Coil	-	6618	788	-	0	0
Central Heating Coil	-	0	-	-	12825	-
>> Total Conditioning	**-**	**6618**	**788**	**-**	**12825**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	188 sqft	296	-	188 sqft	541	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	474	-	50 sqft	529	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	395	-	42 sqft	445	-
Floor Convection	955 sqft	2121	-	955 sqft	913	-
Interior Wall Convection	728 sqft	888	-	728 sqft	432	-
Ceiling Convection	955 sqft	1849	-	955 sqft	3054	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3277	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	903	0	15%	1379	0
>> Total Zone Loads	**-**	**6927**	**0**	**-**	**10569**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 19 4E 401 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	273
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01109	392	400	-	-
Central Cooling Coil	Outlet	59.8	0.01068	392	400	6618	788
Central Heating Coil	Outlet	59.8	0.01068	392	400	0	-
Supply Fan	Outlet	59.8	0.01068	392	400	0	-
Cold Supply Duct	Outlet	59.8	0.01068	392	400	-	-
Zone Air	-	75.0	0.01085	392	400	6571	314
Return Air	Outlet	75.0	0.01094	392	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 401	6568	Cooling	6571	75.0	392	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	64.9	0.00026	392	400	-	-
Central Cooling Coil	Outlet	64.9	0.00026	392	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	392	400	12825	-
Supply Fan	Outlet	95.2	0.00026	392	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	392	400	-	-
Zone Air	-	70.0	0.00026	392	400	-10683	0
Return Air	Outlet	70.0	0.00026	392	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 401	-10683	Heating	-10683	70.0	392	400	0	0

Air System Sizing Summary for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**21 4E 402 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**695.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**5.4**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.1 / 65.5**	F
Coil CFM at peak load	**287**	CFM	Leaving DB / WB	**60.0 / 59.5**	F
Sum of peak zone CFM	**287**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.888**		Design supply temp.	**58.0**	F
CFM/Ton	**638.5**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1548.1**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**287**	CFM	BTU/(hr sqft)	**14.3**	
Max coil CFM	**287**	CFM	Ent. DB / Lvg DB	**63.1 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**287**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **21 4E 402 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **695.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 402	287	287	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 402	5.1	August 11:00	7.7	695.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 402						
4E 402	5.1	August 11:00	287	7.7	695.4	0.41

Air System Heat Balance Summary for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4737	210	-	7814	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	287 CFM	0	-	287 CFM	0	-
Ventilation Load	50 CFM	44	258	50 CFM	2136	0
Supply Fan Load	287 CFM	0	-	287 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4781**	**468**	**-**	**9950**	**0**
Central Cooling Coil	-	4784	606	-	0	0
Central Heating Coil	-	0	-	-	9956	-
>> Total Conditioning	**-**	**4784**	**606**	**-**	**9956**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	137 sqft	202	-	137 sqft	392	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	235	-	25 sqft	264	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	393	-	42 sqft	444	-
Floor Convection	695 sqft	1565	-	695 sqft	644	-
Interior Wall Convection	652 sqft	726	-	652 sqft	381	-
Ceiling Convection	696 sqft	1243	-	696 sqft	2211	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2388	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	655	0	15%	1009	0
>> Total Zone Loads	**-**	**5019**	**0**	**-**	**7734**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	258
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01119	287	400	-	-
Central Cooling Coil	Outlet	60.0	0.01076	287	400	4784	606
Central Heating Coil	Outlet	60.0	0.01076	287	400	0	-
Supply Fan	Outlet	60.0	0.01076	287	400	0	-
Cold Supply Duct	Outlet	60.0	0.01076	287	400	-	-
Zone Air	-	75.0	0.01092	287	400	4737	210
Return Air	Outlet	75.0	0.01100	287	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 402	4735	Cooling	4737	75.0	287	400	0	0

System Psychrometrics for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.1	0.00026	287	400	-	-
Central Cooling Coil	Outlet	63.1	0.00026	287	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	287	400	9956	-
Supply Fan	Outlet	95.2	0.00026	287	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	287	400	-	-
Zone Air	-	70.0	0.00026	287	400	-7814	0
Return Air	Outlet	70.0	0.00026	287	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 402	-7814	Heating	-7814	70.0	287	400	0	0

Air System Sizing Summary for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**23 4E 403 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**927.0**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.3**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**75.1 / 65.2**	F
Coil CFM at peak load	**383**	CFM	Leaving DB / WB	**59.7 / 59.2**	F
Sum of peak zone CFM	**383**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.895**		Design supply temp.	**58.0**	F
CFM/Ton	**630.9**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1526.2**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.9**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**383**	CFM	BTU/(hr sqft)	**13.6**	
Max coil CFM	**383**	CFM	Ent. DB / Lvg DB	**64.8 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**383**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **23 4E 403 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **927.0** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 403	383	383	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 403	7.0	August 11:00	10.3	927.0

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 403						
4E 403	7.0	August 11:00	383	10.3	927.0	0.41

Air System Heat Balance Summary for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6473	293	-	10443	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	383 CFM	0	-	383 CFM	0	-
Ventilation Load	50 CFM	44	286	50 CFM	2136	0
Supply Fan Load	383 CFM	0	-	383 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6517**	**578**	**-**	**12578**	**0**
Central Cooling Coil	-	6520	769	-	0	0
Central Heating Coil	-	0	-	-	12584	-
>> Total Conditioning	**-**	**6520**	**769**	**-**	**12584**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	180 sqft	287	-	180 sqft	519	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	473	-	50 sqft	528	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	398	-	42 sqft	445	-
Floor Convection	927 sqft	2104	-	927 sqft	896	-
Interior Wall Convection	720 sqft	879	-	720 sqft	436	-
Ceiling Convection	927 sqft	1829	-	927 sqft	2982	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	27 CFM	3181	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	895	0	15%	1348	0
>> Total Zone Loads	**-**	**6865**	**0**	**-**	**10335**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	286
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01105	383	400	-	-
Central Cooling Coil	Outlet	59.7	0.01064	383	400	6520	769
Central Heating Coil	Outlet	59.7	0.01064	383	400	0	-
Supply Fan	Outlet	59.7	0.01064	383	400	0	-
Cold Supply Duct	Outlet	59.7	0.01064	383	400	-	-
Zone Air	-	75.0	0.01080	383	400	6473	293
Return Air	Outlet	75.0	0.01089	383	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 403	6471	Cooling	6473	75.0	383	400	0	0

System Psychrometrics for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	64.8	0.00026	383	400	-	-
Central Cooling Coil	Outlet	64.8	0.00026	383	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	383	400	12584	-
Supply Fan	Outlet	95.2	0.00026	383	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	383	400	-	-
Zone Air	-	70.0	0.00026	383	400	-10443	0
Return Air	Outlet	70.0	0.00026	383	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 403	-10443	Heating	-10443	70.0	383	400	0	0

Air System Sizing Summary for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**25 4E 404 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**969.7**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**August 15:00**	
Total coil load	**9.7**	MBH	OA DB / WB	**85.9 / 70.0**	F
Sensible coil load	**9.4**	MBH	Entering DB / WB	**75.4 / 65.8**	F
Coil CFM at peak load	**627**	CFM	Leaving DB / WB	**61.8 / 61.1**	F
Sum of peak zone CFM	**627**	CFM	Resulting RH	**61**	%
Sensible heat ratio	**0.970**		Design supply temp.	**58.0**	F
CFM/Ton	**775.4**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1199.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**10.0**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**19.1**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**627**	CFM	BTU/(hr sqft)	**19.7**	
Max coil CFM	**627**	CFM	Ent. DB / Lvg DB	**66.8 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**627**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.65**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **25 4E 404 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **969.7** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 404	627	627	0.65	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 404	9.7	September 13:00	16.9	969.7

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 404						
4E 404	9.7	September 13:00	627	16.9	969.7	0.65

Air System Heat Balance Summary for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 85.9 F / 70.0 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	9148	53	-	16991	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	627 CFM	0	-	627 CFM	0	-
Ventilation Load	50 CFM	257	181	50 CFM	2136	0
Supply Fan Load	627 CFM	0	-	627 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**9405**	**234**	**-**	**19127**	**0**
Central Cooling Coil	-	9413	288	-	0	0
Central Heating Coil	-	0	-	-	19133	-
>> Total Conditioning	**-**	**9413**	**288**	**-**	**19133**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 85.9 F / 70.0 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	371 sqft	988	-	371 sqft	1235	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	960	-	120 sqft	1419	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	131	-	42 sqft	492	-
Floor Convection	970 sqft	2009	-	970 sqft	1238	-
Interior Wall Convection	533 sqft	811	-	533 sqft	454	-
Ceiling Convection	970 sqft	3389	-	970 sqft	3626	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	53 CFM	6237	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1243	0	15%	2205	0
>> Total Zone Loads	**-**	**9531**	**0**	**-**	**16904**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 15:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	85.8	0.01211	50	400	257	181
Air-to-Air Energy Recovery	Outlet	79.8	0.01211	50	400	335	0
Vent - Return Mixing	Outlet	75.4	0.01141	627	400	-	-
Central Cooling Coil	Outlet	61.8	0.01132	627	400	9413	288
Central Heating Coil	Outlet	61.8	0.01132	627	400	0	-
Supply Fan	Outlet	61.8	0.01132	627	400	0	-
Cold Supply Duct	Outlet	61.8	0.01132	627	400	-	-
Zone Air	-	75.0	0.01133	627	400	9148	53
Return Air	Outlet	75.0	0.01135	627	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 404	9147	Cooling	9148	75.0	627	400	0	0

System Psychrometrics for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.8	0.00026	627	400	-	-
Central Cooling Coil	Outlet	66.8	0.00026	627	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	627	400	19133	-
Supply Fan	Outlet	95.1	0.00026	627	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	627	400	-	-
Zone Air	-	70.0	0.00026	627	400	-16991	0
Return Air	Outlet	70.0	0.00026	627	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 404	-16991	Heating	-16991	70.0	627	400	0	0

Air System Sizing Summary for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**27 4E 405 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1080.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**12.1**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**11.5**	MBH	Entering DB / WB	**75.3 / 64.9**	F
Coil CFM at peak load	**665**	CFM	Leaving DB / WB	**59.6 / 59.1**	F
Sum of peak zone CFM	**665**	CFM	Resulting RH	**57**	%
Sensible heat ratio	**0.951**		Design supply temp.	**58.0**	F
CFM/Ton	**659.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1071.0**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**11.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**20.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**665**	CFM	BTU/(hr sqft)	**18.7**	
Max coil CFM	**665**	CFM	Ent. DB / Lvg DB	**67.0 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**665**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.62**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **27 4E 405 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1080.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 405	665	665	0.62	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 405	11.9	July 17:00	17.9	1080.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 405						
4E 405	11.9	July 17:00	665	17.9	1080.4	0.62

Air System Heat Balance Summary for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	11267	121	-	18039	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	665 CFM	0	-	665 CFM	0	-
Ventilation Load	50 CFM	231	341	50 CFM	2136	0
Supply Fan Load	665 CFM	0	-	665 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**11498**	**462**	**-**	**20175**	**0**
Central Cooling Coil	-	11507	598	-	0	0
Central Heating Coil	-	0	-	-	20181	-
>> Total Conditioning	**-**	**11507**	**598**	**-**	**20181**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	404 sqft	1043	-	404 sqft	1322	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	1107	-	120 sqft	1409	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	362	-	42 sqft	498	-
Floor Convection	1080 sqft	2385	-	1080 sqft	1337	-
Interior Wall Convection	566 sqft	1055	-	566 sqft	454	-
Ceiling Convection	1080 sqft	4380	-	1080 sqft	3968	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	57 CFM	6618	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1550	0	15%	2341	0
>> Total Zone Loads	**-**	**11881**	**0**	**-**	**17947**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	341
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.3	0.01078	665	400	-	-
Central Cooling Coil	Outlet	59.6	0.01060	665	400	11507	598
Central Heating Coil	Outlet	59.6	0.01060	665	400	0	-
Supply Fan	Outlet	59.6	0.01060	665	400	0	-
Cold Supply Duct	Outlet	59.6	0.01060	665	400	-	-
Zone Air	-	75.0	0.01064	665	400	11267	121
Return Air	Outlet	75.0	0.01068	665	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 405	11266	Cooling	11267	75.0	665	400	0	0

System Psychrometrics for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	67.0	0.00026	665	400	-	-
Central Cooling Coil	Outlet	67.0	0.00026	665	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	665	400	20181	-
Supply Fan	Outlet	95.1	0.00026	665	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	665	400	-	-
Zone Air	-	70.0	0.00026	665	400	-18039	0
Return Air	Outlet	70.0	0.00026	665	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 405	-18039	Heating	-18039	70.0	665	400	0	0

Air System Sizing Summary for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**29 4E 406 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**691.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.5**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.5**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.8 / 66.0**	F
Coil CFM at peak load	**286**	CFM	Leaving DB / WB	**60.4 / 60.0**	F
Sum of peak zone CFM	**286**	CFM	Resulting RH	**60**	%
Sensible heat ratio	**0.877**		Design supply temp.	**58.0**	F
CFM/Ton	**623.0**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1503.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**8.0**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**286**	CFM	BTU/(hr sqft)	**14.4**	
Max coil CFM	**286**	CFM	Ent. DB / Lvg DB	**63.1 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**286**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **29 4E 406 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **691.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 406	286	286	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 406	5.2	June 18:00	7.7	691.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 406						
4E 406	5.2	June 18:00	286	7.7	691.2	0.41

Air System Heat Balance Summary for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4602	299	-	7802	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	286 CFM	0	-	286 CFM	0	-
Ventilation Load	50 CFM	231	192	50 CFM	2136	0
Supply Fan Load	286 CFM	0	-	286 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4833**	**491**	**-**	**9937**	**0**
Central Cooling Coil	-	4841	676	-	0	0
Central Heating Coil	-	0	-	-	9944	-
>> Total Conditioning	**-**	**4841**	**676**	**-**	**9944**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	136 sqft	178	-	136 sqft	389	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	183	-	25 sqft	271	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	304	-	42 sqft	455	-
Floor Convection	691 sqft	1092	-	691 sqft	647	-
Interior Wall Convection	651 sqft	648	-	651 sqft	378	-
Ceiling Convection	691 sqft	1849	-	691 sqft	2206	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2371	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	638	0	15%	1007	0
>> Total Zone Loads	**-**	**4892**	**0**	**-**	**7723**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	192
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.8	0.01145	286	400	-	-
Central Cooling Coil	Outlet	60.4	0.01096	286	400	4841	676
Central Heating Coil	Outlet	60.4	0.01096	286	400	0	-
Supply Fan	Outlet	60.4	0.01096	286	400	0	-
Cold Supply Duct	Outlet	60.4	0.01096	286	400	-	-
Zone Air	-	75.0	0.01118	286	400	4602	299
Return Air	Outlet	75.0	0.01131	286	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 406	4600	Cooling	4602	75.0	286	400	0	0

System Psychrometrics for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.1	0.00026	286	400	-	-
Central Cooling Coil	Outlet	63.1	0.00026	286	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	286	400	9944	-
Supply Fan	Outlet	95.2	0.00026	286	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	286	400	-	-
Zone Air	-	70.0	0.00026	286	400	-7802	0
Return Air	Outlet	70.0	0.00026	286	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 406	-7802	Heating	-7802	70.0	286	400	0	0

Air System Sizing Summary for 31 4E 407 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**31 4E 407 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**951.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**7.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**6.4**	MBH	Entering DB / WB	**75.5 / 66.0**	F
Coil CFM at peak load	**393**	CFM	Leaving DB / WB	**60.7 / 60.3**	F
Sum of peak zone CFM	**393**	CFM	Resulting RH	**61**	%
Sensible heat ratio	**0.888**		Design supply temp.	**58.0**	F
CFM/Ton	**651.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1578.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**393**	CFM	BTU/(hr sqft)	**13.5**	
Max coil CFM	**393**	CFM	Ent. DB / Lvg DB	**65.0 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**393**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 31 4E 407 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **31 4E 407 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **951.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 407	393	393	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 407	7.0	June 18:00	10.6	951.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 407						
4E 407	7.0	June 18:00	393	10.6	951.8	0.41

Air System Heat Balance Summary for 31 4E 407 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6189	393	-	10709	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	393 CFM	0	-	393 CFM	0	-
Ventilation Load	50 CFM	231	175	50 CFM	2136	0
Supply Fan Load	393 CFM	0	-	393 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6420**	**567**	**-**	**12845**	**0**
Central Cooling Coil	-	6427	807	-	0	0
Central Heating Coil	-	0	-	-	12851	-
>> Total Conditioning	**-**	**6427**	**807**	**-**	**12851**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	187 sqft	246	-	187 sqft	538	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	364	-	50 sqft	543	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	301	-	42 sqft	455	-
Floor Convection	952 sqft	1574	-	952 sqft	921	-
Interior Wall Convection	727 sqft	661	-	727 sqft	441	-
Ceiling Convection	952 sqft	2545	-	952 sqft	3059	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3259	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	854	0	15%	1382	0
>> Total Zone Loads	**-**	**6545**	**0**	**-**	**10598**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 31 4E 407 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	175
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.5	0.01147	393	400	-	-
Central Cooling Coil	Outlet	60.7	0.01105	393	400	6427	807
Central Heating Coil	Outlet	60.7	0.01105	393	400	0	-
Supply Fan	Outlet	60.7	0.01105	393	400	0	-
Cold Supply Duct	Outlet	60.7	0.01105	393	400	-	-
Zone Air	-	75.0	0.01126	393	400	6189	393
Return Air	Outlet	75.0	0.01138	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 407	6186	Cooling	6189	75.0	393	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	393	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	393	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	393	400	12851	-
Supply Fan	Outlet	95.2	0.00026	393	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	393	400	-	-
Zone Air	-	70.0	0.00026	393	400	-10709	0
Return Air	Outlet	70.0	0.00026	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 407	-10709	Heating	-10709	70.0	393	400	0	0

Air System Sizing Summary for 33 4E 408 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**33 4E 408 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**930.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**6.7**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**6.7**	MBH	Entering DB / WB	**75.4 / 66.8**	F
Coil CFM at peak load	**579**	CFM	Leaving DB / WB	**64.8 / 63.3**	F
Sum of peak zone CFM	**579**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1030.6**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1655.9**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**17.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**579**	CFM	BTU/(hr sqft)	**19.2**	
Max coil CFM	**579**	CFM	Ent. DB / Lvg DB	**66.6 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**579**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.62**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 33 4E 408 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **33 4E 408 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **930.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 408	579	579	0.62	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 408	6.8	June 17:00	15.6	930.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 408						
4E 408	6.8	June 17:00	579	15.6	930.2	0.62

Air System Heat Balance Summary for 33 4E 408 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6504	-1	-	15696	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	579 CFM	0	-	579 CFM	0	-
Ventilation Load	50 CFM	231	2	50 CFM	2136	0
Supply Fan Load	579 CFM	0	-	579 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6735**	**1**	**-**	**17832**	**0**
Central Cooling Coil	-	6741	0	-	0	0
Central Heating Coil	-	0	-	-	17838	-
>> Total Conditioning	**-**	**6741**	**0**	**-**	**17838**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	336 sqft	484	-	336 sqft	1111	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	105 sqft	647	-	105 sqft	1254	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	112	-	42 sqft	511	-
Floor Convection	930 sqft	1554	-	930 sqft	1177	-
Interior Wall Convection	510 sqft	472	-	510 sqft	416	-
Ceiling Convection	930 sqft	2605	-	930 sqft	3450	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	48 CFM	5658	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	881	0	15%	2036	0
>> Total Zone Loads	**-**	**6755**	**0**	**-**	**15613**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 33 4E 408 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	2
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.4	0.01211	579	400	-	-
Central Cooling Coil	Outlet	64.8	0.01211	579	400	6741	0
Central Heating Coil	Outlet	64.8	0.01211	579	400	0	-
Supply Fan	Outlet	64.8	0.01211	579	400	0	-
Cold Supply Duct	Outlet	64.8	0.01211	579	400	-	-
Zone Air	-	75.0	0.01211	579	400	6504	-1
Return Air	Outlet	75.0	0.01211	579	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 408	6504	Cooling	6504	75.0	579	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.6	0.00026	579	400	-	-
Central Cooling Coil	Outlet	66.6	0.00026	579	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	579	400	17838	-
Supply Fan	Outlet	95.1	0.00026	579	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	579	400	-	-
Zone Air	-	70.0	0.00026	579	400	-15696	0
Return Air	Outlet	70.0	0.00026	579	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 408	-15696	Heating	-15696	70.0	579	400	0	0

Air System Sizing Summary for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**35 RDC x 8 Log REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**7447.7**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**34.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**34.2**	MBH	Entering DB / WB	**75.6 / 66.9**	F
Coil CFM at peak load	**2999**	CFM	Leaving DB / WB	**65.2 / 63.5**	F
Sum of peak zone CFM	**2999**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1051.2**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2610.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**4.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**99.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**2999**	CFM	BTU/(hr sqft)	**13.4**	
Max coil CFM	**2999**	CFM	Ent. DB / Lvg DB	**64.7 / 95.5**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**2999**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.40**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**400**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **35 RDC x 8 Log REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **7447.7** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
RDC x 8 Log	2999	2999	0.40	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
RDC x 8 Log	32.0	July 17:00	80.9	7447.7

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
RDC x 8 Log						
RDC x 8 Log	32.0	July 17:00	2999	80.9	7447.7	0.40

Air System Heat Balance Summary for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	32335	-8	-	82671	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	2999 CFM	0	-	2999 CFM	0	-
Ventilation Load	400 CFM	1851	12	400 CFM	17087	0
Supply Fan Load	2999 CFM	0	-	2999 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**34186**	**4**	**-**	**99757**	**0**
Central Cooling Coil	-	34232	0	-	0	0
Central Heating Coil	-	0	-	-	99806	-
>> Total Conditioning	**-**	**34232**	**0**	**-**	**99806**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	2295 sqft	3688	-	2295 sqft	6624	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	584 sqft	2875	-	584 sqft	6254	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	336 sqft	1212	-	336 sqft	3595	-
Floor Convection	7448 sqft	8121	-	7448 sqft	6204	-
Interior Wall Convection	1948 sqft	1520	-	1948 sqft	990	-
Ceiling Convection	7448 sqft	10402	-	7448 sqft	9143	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	321 CFM	37515	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	4173	0	15%	10549	0
>> Total Zone Loads	**-**	**31991**	**0**	**-**	**80873**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	400	400	1851	12
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	400	400	2415	0
Vent - Return Mixing	Outlet	75.6	0.01211	2999	400	-	-
Central Cooling Coil	Outlet	65.2	0.01211	2999	400	34232	0
Central Heating Coil	Outlet	65.2	0.01211	2999	400	0	-
Supply Fan	Outlet	65.2	0.01211	2999	400	0	-
Cold Supply Duct	Outlet	65.2	0.01211	2999	400	-	-
Zone Air	-	75.0	0.01211	2999	400	32335	-8
Return Air	Outlet	75.0	0.01211	2999	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
RDC x 8 Log	32335	Cooling	32335	75.0	2999	400	0	0

System Psychrometrics for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	400	400	-17087	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	400	400	-21808	0
Vent - Return Mixing	Outlet	64.7	0.00026	2999	400	-	-
Central Cooling Coil	Outlet	64.7	0.00026	2999	400	0	0
Central Heating Coil	Outlet	95.5	0.00026	2999	400	99806	-
Supply Fan	Outlet	95.5	0.00026	2999	400	0	-
Cold Supply Duct	Outlet	95.5	0.00026	2999	400	-	-
Zone Air	-	70.0	0.00026	2999	400	-82671	0
Return Air	Outlet	70.0	0.00026	2999	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
RDC x 8 Log	-82671	Heating	-82671	70.0	2999	400	0	0

Air System Sizing Summary for 37 3E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**37 3E ESC1 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**228.3**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Heating Coil Sizing Data

Max coil load	**1.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**65**	CFM	BTU/(hr sqft)	**7.8**	
Max coil CFM	**65**	CFM	Ent. DB / Lvg DB	**70.0 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**65**	CFM	Fan motor BHP	**0.02**	BHP
Design CFM/sqft	**0.28**	CFM/sqft	Fan motor kW	**0.02**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 37 3E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **37 3E ESC1 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **228.3** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E ESC1	65	65	0.28	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E ESC1	0.0	February 13:00	1.8	228.3

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E ESC1						
3E ESC1	0.0	February 13:00	65	1.8	228.3	0.28

Air System Heat Balance Summary for 37 3E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	1839	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	65 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	65 CFM	-52	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**1787**	**0**
Central Heating Coil	-	-	-	-	1787	-
>> Total Conditioning	-	-	-	-	**1787**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	60 sqft	-	-	60 sqft	145	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	12 sqft	-	-	12 sqft	129	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	228 sqft	-	-	228 sqft	101	-
Interior Wall Convection	524 sqft	-	-	524 sqft	163	-
Ceiling Convection	228 sqft	-	-	228 sqft	151	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	7 CFM	835	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	229	0
>> Total Zone Loads	-	-	-	-	**1753**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	65	400	-	-
Central Heating Coil	Outlet	95.4	0.00026	65	400	1787	-
Supply Fan	Outlet	96.2	0.00026	65	400	52	-
Cold Supply Duct	Outlet	96.2	0.00026	65	400	-	-
Zone Air	-	70.0	0.00026	65	400	-1839	0
Return Air	Outlet	70.0	0.00026	65	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E ESC1	-1839	Heating	-1839	70.0	65	400	0	0

Air System Sizing Summary for 39 4E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**39 4E ESC1 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**140.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Heating Coil Sizing Data

Max coil load	**1.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**60**	CFM	BTU/(hr sqft)	**11.2**	
Max coil CFM	**60**	CFM	Ent. DB / Lvg DB	**70.0 / 94.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**60**	CFM	Fan motor BHP	**0.02**	BHP
Design CFM/sqft	**0.42**	CFM/sqft	Fan motor kW	**0.01**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 39 4E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **39 4E ESC1 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **140.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E ESC1	60	60	0.42	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E ESC1	0.0	June 16:00	1.6	140.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E ESC1						
4E ESC1	0.0	June 16:00	60	1.6	140.2	0.42

Air System Heat Balance Summary for 39 4E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	1618	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	60 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	60 CFM	-48	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**1570**	**0**
Central Heating Coil	-	-	-	-	1570	-
>> Total Conditioning	-	-	-	-	**1570**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	29 sqft	-	-	29 sqft	79	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	12 sqft	-	-	12 sqft	127	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	140 sqft	-	-	140 sqft	89	-
Interior Wall Convection	489 sqft	-	-	489 sqft	208	-
Ceiling Convection	140 sqft	-	-	140 sqft	410	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	4 CFM	483	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	210	0
>> Total Zone Loads	-	-	-	-	**1607**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	60	400	-	-
Central Heating Coil	Outlet	94.4	0.00026	60	400	1570	-
Supply Fan	Outlet	95.1	0.00026	60	400	48	-
Cold Supply Duct	Outlet	95.1	0.00026	60	400	-	-
Zone Air	-	70.0	0.00026	60	400	-1618	0
Return Air	Outlet	70.0	0.00026	60	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E ESC1	-1618	Heating	-1618	70.0	60	400	0	0

Air System Sizing Summary for 41 4E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**41 4E ESC2 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**168.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Heating Coil Sizing Data

Max coil load	**5.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**212**	CFM	BTU/(hr sqft)	**33.0**	
Max coil CFM	**212**	CFM	Ent. DB / Lvg DB	**70.0 / 94.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**212**	CFM	Fan motor BHP	**0.06**	BHP
Design CFM/sqft	**1.26**	CFM/sqft	Fan motor kW	**0.05**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 41 4E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **41 4E ESC2 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **168.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E ESC2	212	212	1.26	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E ESC2	0.0	August 7:00	5.7	168.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E ESC2						
4E ESC2	0.0	August 7:00	212	5.7	168.9	1.26

Air System Heat Balance Summary for 41 4E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	5735	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	212 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	212 CFM	-170	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**5565**	**0**
Central Heating Coil	-	-	-	-	5565	-
>> Total Conditioning	-	-	-	-	**5565**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	219 sqft	-	-	219 sqft	780	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	24 sqft	-	-	24 sqft	337	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	169 sqft	-	-	169 sqft	181	-
Interior Wall Convection	243 sqft	-	-	243 sqft	197	-
Ceiling Convection	169 sqft	-	-	169 sqft	638	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	24 CFM	2840	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	746	0
>> Total Zone Loads	-	-	-	-	**5719**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	212	400	-	-
Central Heating Coil	Outlet	94.3	0.00026	212	400	5565	-
Supply Fan	Outlet	95.0	0.00026	212	400	170	-
Cold Supply Duct	Outlet	95.0	0.00026	212	400	-	-
Zone Air	-	70.0	0.00026	212	400	-5735	0
Return Air	Outlet	70.0	0.00026	212	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E ESC2	-5735	Heating	-5735	70.0	212	400	0	0

Air System Sizing Summary for 43 SS Stationnement REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**43 SS Stationnement REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**13832.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Heating Coil Sizing Data

Max coil load	**34.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**1307**	CFM	BTU/(hr sqft)	**2.5**	
Max coil CFM	**1307**	CFM	Ent. DB / Lvg DB	**70.0 / 94.7**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**1307**	CFM	Fan motor BHP	**0.39**	BHP
Design CFM/sqft	**0.09**	CFM/sqft	Fan motor kW	**0.31**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 43 SS Stationnement REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **43 SS Stationnement REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **13832.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
SS Stationnement	1307	1307	0.09	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
SS Stationnement	0.0	January 9:00	35.2	13832.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
SS Stationnement						
SS Stationnement	0.0	January 9:00	1307	35.2	13832.4	0.09

Air System Heat Balance Summary for 43 SS Stationnement REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	35990	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	1307 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	1307 CFM	-1046	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**34944**	**0**
Central Heating Coil	-	-	-	-	34944	-
>> Total Conditioning	-	-	-	-	**34944**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	4355 sqft	-	-	4355 sqft	8857	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	0 sqft	-	-	0 sqft	0	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	13832 sqft	-	-	13832 sqft	20799	-
Interior Wall Convection	487 sqft	-	-	487 sqft	12	-
Ceiling Convection	13832 sqft	-	-	13832 sqft	979	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	0 CFM	0	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	4597	0
>> Total Zone Loads	-	-	-	-	**35244**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	1307	400	-	-
Central Heating Coil	Outlet	94.7	0.00026	1307	400	34944	-
Supply Fan	Outlet	95.5	0.00026	1307	400	1046	-
Cold Supply Duct	Outlet	95.5	0.00026	1307	400	-	-
Zone Air	-	70.0	0.00026	1307	400	-35990	0
Return Air	Outlet	70.0	0.00026	1307	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
SS Stationnement	-35990	Heating	-35990	70.0	1307	400	0	0

Air System Sizing Summary for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**45 Couloir et SAS REF**		Number of zones	**7**	
Equipment Class	**PKG ROOF**		Floor Area	**2750.4**	sqft
Air System Type	**VAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Peak zone sensible load**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 8:00**	
Total coil load	**7.8**	MBH	OA DB / WB	**70.6 / 65.2**	F
Sensible coil load	**7.8**	MBH	Entering DB / WB	**75.0 / 53.4**	F
Coil CFM at peak load	**356**	CFM	Leaving DB / WB	**55.0 / 44.4**	F
Sum of peak zone CFM	**841**	CFM	Resulting RH	**21**	%
Sensible heat ratio	**1.000**		Design supply temp.	**55.0**	F
CFM/Ton	**551.1**		Zone T-stat Check	**7 of 7**	OK
sqft/Ton	**4251.9**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**2.8**				
Water flow @ 10.0 F rise	**N/A**				

Preheat Coil Sizing Data

No heating coil loads occurred during this calculation.

Supply Fan Sizing Data

Design CFM	**749**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM occurs at	**June 8:00**		Fan motor kW	**0.00**	kW
Design CFM/sqft	**0.27**	CFM/sqft			
Sum of peak zone CFM	**841**	CFM			
VAV Fan Diversity	**10.9**	%			

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **45 Couloir et SAS REF**
Equipment Class ..... **PKG ROOF**
Air System Type ..... **VAV**
Number of zones **7**
Floor Area ..... **2750.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Peak zone sensible load**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
2E Corridor	176	2	0.27	0.0	-	0.0	-	0
3E Corridor	174	2	0.27	0.0	-	0.0	-	0
4E Corridor	250	3	0.38	10.8	-	0.0	-	0
RDC Corridor	24	0	0.05	0.0	-	0.0	-	0
RDC SAS	186	2	1.18	8.1	-	0.0	-	0
SS SAS1	13	0	0.27	0.0	-	0.0	-	0
SS SAS2	17	0	0.21	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
2E Corridor	2.0	June 8:00	4.7	654.8
3E Corridor	1.9	June 8:00	4.7	654.8
4E Corridor	2.1	July 16:00	6.7	654.8
RDC Corridor	0.5	July 19:00	0.3	496.5
RDC SAS	3.8	June 7:00	5.0	157.9
SS SAS1	0.0	July 0:00	0.4	49.9
SS SAS2	0.0	July 0:00	0.5	81.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
2E Corridor						
2E Corridor	2.0	June 8:00	176	4.7	654.8	0.27
3E Corridor						
3E Corridor	1.9	June 8:00	174	4.7	654.8	0.27
4E Corridor						
4E Corridor	2.1	July 16:00	250	6.7	654.8	0.38
RDC Corridor						
RDC Corridor	0.5	July 19:00	24	0.3	496.5	0.05
RDC SAS						
RDC SAS	3.8	June 7:00	186	5.0	157.9	1.18
SS SAS1						
SS SAS1	0.0	July 0:00	13	0.4	49.9	0.27
SS SAS2						
SS SAS2	0.0	July 0:00	17	0.5	81.8	0.21

Air System Heat Balance Summary for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 8:00			DESIGN HEATING		
	OA DB / WB 70.6 F / 65.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	7762	1	-	11816	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	356 CFM	0	-	440 CFM	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	356 CFM	0	-	440 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**7762**	**1**	**-**	**11816**	**0**
Central Cooling Coil	-	7763	0	-	-7060	0
Preheat Coil	-	0	-	-	0	-
Terminal Reheat Coils	-	0	-	-	18876	-
>> Total Conditioning	**-**	**7763**	**0**	**-**	**11817**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 8:00			DESIGN HEATING		
	OA DB / WB 70.6 F / 65.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	778 sqft	512	-	778 sqft	1993	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	90 sqft	494	-	90 sqft	989	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	63 sqft	630	-	63 sqft	882	-
Floor Convection	2750 sqft	1790	-	2750 sqft	1474	-
Interior Wall Convection	8233 sqft	3354	-	8233 sqft	2320	-
Ceiling Convection	2751 sqft	1434	-	2751 sqft	2987	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	75 CFM	8784	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1232	0	15%	2914	0
>> Total Zone Loads	**-**	**9444**	**0**	**-**	**22343**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 8:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	71.0	0.01210	0	400	0	0
Vent - Return Mixing	Outlet	75.0	0.00376	356	400	-	-
Preheat Coil	Outlet	75.0	0.00376	356	400	0	-
Central Cooling Coil	Outlet	55.0	0.00376	356	400	7763	0
Supply Fan	Outlet	55.0	0.00376	356	400	0	-
Cold Supply Duct	Outlet	55.0	0.00376	356	400	-	-
Zone Air	-	75.0	0.00383	356	400	7762	1
Return Air	Outlet	75.0	0.00376	356	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E Corridor	1433	Cooling	1433	75.0	66	400	0	0
3E Corridor	1445	Cooling	1445	75.0	66	400	0	0
4E Corridor	1190	Cooling	1190	75.0	55	400	0	0
RDC Corridor	145	Cooling	145	75.0	7	400	0	0
RDC SAS	3531	Cooling	3531	75.0	162	400	0	0
SS SAS1	9	Cooling	9	75.0	0	400	0	0
SS SAS2	9	Cooling	9	75.0	0	400	0	0

System Psychrometrics for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	69.8	0.00026	440	400	-	-
Preheat Coil	Outlet	69.8	0.00026	440	400	0	-
Central Cooling Coil	Outlet	55.0	0.00026	440	400	7060	0
Supply Fan	Outlet	55.0	0.00026	440	400	0	-
Cold Supply Duct	Outlet	55.0	0.00026	440	400	-	-
Zone Air	-	63.6	0.00026	440	400	-11816	0
Return Air	Outlet	69.8	0.00026	440	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E Corridor	-22919	Heating	7	58.8	2	400	0	0
3E Corridor	-22557	Heating	7	59.0	2	400	0	0
4E Corridor	-7017	Heating	-6780	69.9	250	400	10820	0
RDC Corridor	-1686	Heating	4	68.5	0	400	0	0
RDC SAS	-5178	Heating	-5055	69.9	186	400	8056	0
SS SAS1	-2692	Heating	0	54.9	0	400	0	0
SS SAS2	-4728	Heating	-1	52.0	0	400	0	0

Air System Sizing Summary for 47 3E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**47 3E ESC2 REF**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**168.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Heating Coil Sizing Data

Max coil load	**5.1**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**193**	CFM	BTU/(hr sqft)	**30.4**	
Max coil CFM	**193**	CFM	Ent. DB / Lvg DB	**70.0 / 94.6**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**193**	CFM	Fan motor BHP	**0.06**	BHP
Design CFM/sqft	**1.14**	CFM/sqft	Fan motor kW	**0.05**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 47 3E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **47 3E ESC2 REF**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **168.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E ESC2	193	193	1.14	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E ESC2	0.0	September 9:00	5.2	168.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E ESC2						
3E ESC2	0.0	September 9:00	193	5.2	168.9	1.14

Air System Heat Balance Summary for 47 3E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	5287	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	193 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	193 CFM	-154	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**5133**	**0**
Central Heating Coil	-	-	-	-	5133	-
>> Total Conditioning	-	-	-	-	**5133**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	221 sqft	-	-	221 sqft	759	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	24 sqft	-	-	24 sqft	326	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	169 sqft	-	-	169 sqft	168	-
Interior Wall Convection	245 sqft	-	-	245 sqft	181	-
Ceiling Convection	169 sqft	-	-	169 sqft	220	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	24 CFM	2862	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	677	0
>> Total Zone Loads	-	-	-	-	**5192**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	193	400	-	-
Central Heating Coil	Outlet	94.6	0.00026	193	400	5133	-
Supply Fan	Outlet	95.4	0.00026	193	400	154	-
Cold Supply Duct	Outlet	95.4	0.00026	193	400	-	-
Zone Air	-	70.0	0.00026	193	400	-5287	0
Return Air	Outlet	70.0	0.00026	193	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E ESC2	-5287	Heating	-5287	70.0	193	400	0	0

Air System Sizing Summary for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**02 2E x 8 Log CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**7510.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**34.9**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**34.9**	MBH	Entering DB / WB	**75.6 / 66.9**	F
Coil CFM at peak load	**3032**	CFM	Leaving DB / WB	**65.2 / 63.4**	F
Sum of peak zone CFM	**3032**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1042.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2583.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**4.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**103.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**3032**	CFM	BTU/(hr sqft)	**13.7**	
Max coil CFM	**3032**	CFM	Ent. DB / Lvg DB	**64.8 / 96.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**3032**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.40**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**400**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **02 2E x 8 Log CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **7510.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
2E x 8 Log	3032	3032	0.40	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
2E x 8 Log	33.3	July 17:00	81.8	7510.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
2E x 8 Log						
2E x 8 Log	33.3	July 17:00	3032	81.8	7510.8	0.40

Air System Heat Balance Summary for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	32987	-8	-	85858	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	3032 CFM	0	-	3032 CFM	0	-
Ventilation Load	400 CFM	1851	12	400 CFM	17087	0
Supply Fan Load	3032 CFM	0	-	3032 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**34838**	**4**	**-**	**102945**	**0**
Central Cooling Coil	-	34884	0	-	0	0
Central Heating Coil	-	0	-	-	102993	-
>> Total Conditioning	**-**	**34884**	**0**	**-**	**102993**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	2216 sqft	3627	-	2216 sqft	6493	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	581 sqft	2876	-	581 sqft	6281	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	336 sqft	1238	-	336 sqft	3638	-
Floor Convection	7511 sqft	8877	-	7511 sqft	7814	-
Interior Wall Convection	1948 sqft	1581	-	1948 sqft	1075	-
Ceiling Convection	7511 sqft	10733	-	7511 sqft	9217	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	313 CFM	36572	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	4340	0	15%	10663	0
>> Total Zone Loads	**-**	**33273**	**0**	**-**	**81753**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	400	400	1851	12
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	400	400	2415	0
Vent - Return Mixing	Outlet	75.6	0.01211	3032	400	-	-
Central Cooling Coil	Outlet	65.2	0.01211	3032	400	34884	0
Central Heating Coil	Outlet	65.2	0.01211	3032	400	0	-
Supply Fan	Outlet	65.2	0.01211	3032	400	0	-
Cold Supply Duct	Outlet	65.2	0.01211	3032	400	-	-
Zone Air	-	75.0	0.01211	3032	400	32987	-8
Return Air	Outlet	75.0	0.01211	3032	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E x 8 Log	32987	Cooling	32987	75.0	3032	400	0	0

System Psychrometrics for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	400	400	-17087	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	400	400	-21808	0
Vent - Return Mixing	Outlet	64.8	0.00026	3032	400	-	-
Central Cooling Coil	Outlet	64.8	0.00026	3032	400	0	0
Central Heating Coil	Outlet	96.2	0.00026	3032	400	102993	-
Supply Fan	Outlet	96.2	0.00026	3032	400	0	-
Cold Supply Duct	Outlet	96.2	0.00026	3032	400	-	-
Zone Air	-	70.0	0.00026	3032	400	-85858	0
Return Air	Outlet	70.0	0.00026	3032	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E x 8 Log	-85858	Heating	-85858	70.0	3032	400	0	0

Air System Sizing Summary for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**04 3E 301 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**955.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.2**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.6**	MBH	Entering DB / WB	**75.1 / 65.2**	F
Coil CFM at peak load	**394**	CFM	Leaving DB / WB	**59.9 / 59.4**	F
Sum of peak zone CFM	**394**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.916**		Design supply temp.	**58.0**	F
CFM/Ton	**656.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1592.4**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.5**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.4**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**394**	CFM	BTU/(hr sqft)	**10.8**	
Max coil CFM	**394**	CFM	Ent. DB / Lvg DB	**65.0 / 89.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**394**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **04 3E 301 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **955.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 301	394	394	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 301	7.2	September 10:00	7.6	955.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 301						
3E 301	7.2	September 10:00	394	7.6	955.8	0.41

Air System Heat Balance Summary for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6550	184	-	8223	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	394 CFM	0	-	394 CFM	0	-
Ventilation Load	50 CFM	44	294	50 CFM	2136	0
Supply Fan Load	394 CFM	0	-	394 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6594**	**477**	**-**	**10359**	**0**
Central Cooling Coil	-	6597	606	-	0	0
Central Heating Coil	-	0	-	-	10365	-
>> Total Conditioning	**-**	**6597**	**606**	**-**	**10365**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	191 sqft	291	-	191 sqft	495	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	475	-	50 sqft	531	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	397	-	42 sqft	447	-
Floor Convection	956 sqft	2224	-	956 sqft	628	-
Interior Wall Convection	735 sqft	878	-	735 sqft	324	-
Ceiling Convection	956 sqft	1826	-	956 sqft	875	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3304	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	914	0	15%	990	0
>> Total Zone Loads	**-**	**7006**	**0**	**-**	**7593**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	294
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01101	394	400	-	-
Central Cooling Coil	Outlet	59.9	0.01070	394	400	6597	606
Central Heating Coil	Outlet	59.9	0.01070	394	400	0	-
Supply Fan	Outlet	59.9	0.01070	394	400	0	-
Cold Supply Duct	Outlet	59.9	0.01070	394	400	-	-
Zone Air	-	75.0	0.01080	394	400	6550	184
Return Air	Outlet	75.0	0.01085	394	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 301	6548	Cooling	6550	75.0	394	400	0	0

System Psychrometrics for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	394	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	394	400	0	0
Central Heating Coil	Outlet	89.3	0.00026	394	400	10365	-
Supply Fan	Outlet	89.3	0.00026	394	400	0	-
Cold Supply Duct	Outlet	89.3	0.00026	394	400	-	-
Zone Air	-	70.0	0.00026	394	400	-8223	0
Return Air	Outlet	70.0	0.00026	394	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 301	-8223	Heating	-8223	70.0	394	400	0	0

Air System Sizing Summary for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**06 3E 302 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**698.5**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**5.3**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**290**	CFM	Leaving DB / WB	**60.1 / 59.6**	F
Sum of peak zone CFM	**290**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.907**		Design supply temp.	**58.0**	F
CFM/Ton	**655.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1581.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**290**	CFM	BTU/(hr sqft)	**11.7**	
Max coil CFM	**290**	CFM	Ent. DB / Lvg DB	**63.2 / 89.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**290**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **06 3E 302 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **698.5** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 302	290	290	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 302	5.3	September 10:00	5.6	698.5

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 302						
3E 302	5.3	September 10:00	290	5.6	698.5	0.41

Air System Heat Balance Summary for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4758	124	-	6026	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	290 CFM	0	-	290 CFM	0	-
Ventilation Load	50 CFM	44	280	50 CFM	2136	0
Supply Fan Load	290 CFM	0	-	290 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4803**	**404**	**-**	**8162**	**0**
Central Cooling Coil	-	4806	494	-	0	0
Central Heating Coil	-	0	-	-	8168	-
>> Total Conditioning	**-**	**4806**	**494**	**-**	**8168**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	140 sqft	208	-	140 sqft	361	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	237	-	25 sqft	265	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	395	-	42 sqft	446	-
Floor Convection	698 sqft	1583	-	698 sqft	446	-
Interior Wall Convection	659 sqft	740	-	659 sqft	286	-
Ceiling Convection	698 sqft	1283	-	698 sqft	625	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	21 CFM	2415	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	667	0	15%	727	0
>> Total Zone Loads	**-**	**5113**	**0**	**-**	**5570**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	280
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01112	290	400	-	-
Central Cooling Coil	Outlet	60.1	0.01077	290	400	4806	494
Central Heating Coil	Outlet	60.1	0.01077	290	400	0	-
Supply Fan	Outlet	60.1	0.01077	290	400	0	-
Cold Supply Duct	Outlet	60.1	0.01077	290	400	-	-
Zone Air	-	75.0	0.01086	290	400	4758	124
Return Air	Outlet	75.0	0.01091	290	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 302	4757	Cooling	4758	75.0	290	400	0	0

System Psychrometrics for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.2	0.00026	290	400	-	-
Central Cooling Coil	Outlet	63.2	0.00026	290	400	0	0
Central Heating Coil	Outlet	89.2	0.00026	290	400	8168	-
Supply Fan	Outlet	89.2	0.00026	290	400	0	-
Cold Supply Duct	Outlet	89.2	0.00026	290	400	-	-
Zone Air	-	70.0	0.00026	290	400	-6026	0
Return Air	Outlet	70.0	0.00026	290	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 302	-6026	Heating	-6026	70.0	290	400	0	0

Air System Sizing Summary for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**08 3E 303 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**925.3**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.1**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**393**	CFM	Leaving DB / WB	**60.1 / 59.6**	F
Sum of peak zone CFM	**393**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.918**		Design supply temp.	**58.0**	F
CFM/Ton	**665.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1567.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.7**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**393**	CFM	BTU/(hr sqft)	**11.0**	
Max coil CFM	**393**	CFM	Ent. DB / Lvg DB	**65.0 / 88.9**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**393**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.42**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **08 3E 303 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **925.3** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 303	393	393	0.42	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 303	7.2	September 10:00	7.4	925.3

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 303						
3E 303	7.2	September 10:00	393	7.4	925.3	0.42

Air System Heat Balance Summary for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6455	175	-	8038	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	393 CFM	0	-	393 CFM	0	-
Ventilation Load	50 CFM	44	281	50 CFM	2136	0
Supply Fan Load	393 CFM	0	-	393 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6499**	**456**	**-**	**10173**	**0**
Central Cooling Coil	-	6502	581	-	0	0
Central Heating Coil	-	0	-	-	10179	-
>> Total Conditioning	**-**	**6502**	**581**	**-**	**10179**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	182 sqft	281	-	182 sqft	473	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	476	-	50 sqft	530	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	399	-	42 sqft	447	-
Floor Convection	925 sqft	2211	-	925 sqft	618	-
Interior Wall Convection	726 sqft	848	-	726 sqft	328	-
Ceiling Convection	925 sqft	1802	-	925 sqft	858	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	27 CFM	3199	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	903	0	15%	968	0
>> Total Zone Loads	**-**	**6919**	**0**	**-**	**7420**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	281
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01106	393	400	-	-
Central Cooling Coil	Outlet	60.1	0.01076	393	400	6502	581
Central Heating Coil	Outlet	60.1	0.01076	393	400	0	-
Supply Fan	Outlet	60.1	0.01076	393	400	0	-
Cold Supply Duct	Outlet	60.1	0.01076	393	400	-	-
Zone Air	-	75.0	0.01085	393	400	6455	175
Return Air	Outlet	75.0	0.01091	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 303	6453	Cooling	6455	75.0	393	400	0	0

System Psychrometrics for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	393	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	393	400	0	0
Central Heating Coil	Outlet	88.9	0.00026	393	400	10179	-
Supply Fan	Outlet	88.9	0.00026	393	400	0	-
Cold Supply Duct	Outlet	88.9	0.00026	393	400	-	-
Zone Air	-	70.0	0.00026	393	400	-8038	0
Return Air	Outlet	70.0	0.00026	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 303	-8038	Heating	-8038	70.0	393	400	0	0

Air System Sizing Summary for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**10 3E 304 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**971.0**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**September 12:00**	
Total coil load	**9.1**	MBH	OA DB / WB	**76.0 / 65.8**	F
Sensible coil load	**8.7**	MBH	Entering DB / WB	**75.0 / 64.8**	F
Coil CFM at peak load	**515**	CFM	Leaving DB / WB	**59.8 / 59.2**	F
Sum of peak zone CFM	**515**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.954**		Design supply temp.	**58.0**	F
CFM/Ton	**681.1**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1283.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**9.3**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**16.3**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**515**	CFM	BTU/(hr sqft)	**16.8**	
Max coil CFM	**515**	CFM	Ent. DB / Lvg DB	**66.2 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**515**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.53**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **10 3E 304 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **971.0** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 304	515	515	0.53	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 304	9.2	September 13:00	13.9	971.0

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 304						
3E 304	9.2	September 13:00	515	13.9	971.0	0.53

Air System Heat Balance Summary for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - SEPTEMBER 12:00			DESIGN HEATING		
	OA DB / WB 76.0 F / 65.8 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	8634	165	-	14166	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	515 CFM	0	-	515 CFM	0	-
Ventilation Load	50 CFM	26	119	50 CFM	2136	0
Supply Fan Load	515 CFM	0	-	515 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**8661**	**284**	**-**	**16302**	**0**
Central Cooling Coil	-	8662	415	-	0	0
Central Heating Coil	-	0	-	-	16308	-
>> Total Conditioning	**-**	**8662**	**415**	**-**	**16308**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - SEPTEMBER 12:00			DESIGN HEATING		
	OA DB / WB 76.0 F / 65.8 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	377 sqft	810	-	377 sqft	1167	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	998	-	120 sqft	1330	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	384	-	42 sqft	461	-
Floor Convection	971 sqft	2171	-	971 sqft	1099	-
Interior Wall Convection	539 sqft	954	-	539 sqft	390	-
Ceiling Convection	971 sqft	2640	-	971 sqft	1345	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	54 CFM	6288	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1193	0	15%	1812	0
>> Total Zone Loads	**-**	**9150**	**0**	**-**	**13893**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT SEPTEMBER 12:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.1	0.01122	50	400	26	119
Air-to-Air Energy Recovery	Outlet	75.5	0.01122	50	400	34	0
Vent - Return Mixing	Outlet	75.0	0.01077	515	400	-	-
Central Cooling Coil	Outlet	59.8	0.01061	515	400	8662	415
Central Heating Coil	Outlet	59.8	0.01061	515	400	0	-
Supply Fan	Outlet	59.8	0.01061	515	400	0	-
Cold Supply Duct	Outlet	59.8	0.01061	515	400	-	-
Zone Air	-	75.0	0.01067	515	400	8634	165
Return Air	Outlet	75.0	0.01072	515	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 304	8633	Cooling	8634	75.0	515	400	0	0

System Psychrometrics for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.2	0.00026	515	400	-	-
Central Cooling Coil	Outlet	66.2	0.00026	515	400	0	0
Central Heating Coil	Outlet	95.4	0.00026	515	400	16308	-
Supply Fan	Outlet	95.4	0.00026	515	400	0	-
Cold Supply Duct	Outlet	95.4	0.00026	515	400	-	-
Zone Air	-	70.0	0.00026	515	400	-14166	0
Return Air	Outlet	70.0	0.00026	515	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 304	-14166	Heating	-14166	70.0	515	400	0	0

Air System Sizing Summary for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**12 3E 305 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**989.6**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**10.1**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**9.5**	MBH	Entering DB / WB	**75.4 / 65.0**	F
Coil CFM at peak load	**540**	CFM	Leaving DB / WB	**59.5 / 59.0**	F
Sum of peak zone CFM	**540**	CFM	Resulting RH	**57**	%
Sensible heat ratio	**0.938**		Design supply temp.	**58.0**	F
CFM/Ton	**640.4**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1173.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**10.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**16.4**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**540**	CFM	BTU/(hr sqft)	**16.6**	
Max coil CFM	**540**	CFM	Ent. DB / Lvg DB	**66.3 / 94.5**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**540**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.55**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **12 3E 305 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **989.6** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 305	540	540	0.55	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 305	9.9	July 17:00	14.0	989.6

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 305						
3E 305	9.9	July 17:00	540	14.0	989.6	0.55

Air System Heat Balance Summary for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	9251	143	-	14308	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	540 CFM	0	-	540 CFM	0	-
Ventilation Load	50 CFM	231	346	50 CFM	2136	0
Supply Fan Load	540 CFM	0	-	540 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**9482**	**489**	**-**	**16444**	**0**
Central Cooling Coil	-	9491	628	-	0	0
Central Heating Coil	-	0	-	-	16450	-
>> Total Conditioning	**-**	**9491**	**628**	**-**	**16450**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	378 sqft	985	-	378 sqft	1168	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	1078	-	120 sqft	1335	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	353	-	42 sqft	472	-
Floor Convection	990 sqft	2239	-	990 sqft	1106	-
Interior Wall Convection	599 sqft	1087	-	599 sqft	419	-
Ceiling Convection	990 sqft	2869	-	990 sqft	1353	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	54 CFM	6309	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1292	0	15%	1824	0
>> Total Zone Loads	**-**	**9903**	**0**	**-**	**13985**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	346
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.4	0.01079	540	400	-	-
Central Cooling Coil	Outlet	59.5	0.01055	540	400	9491	628
Central Heating Coil	Outlet	59.5	0.01055	540	400	0	-
Supply Fan	Outlet	59.5	0.01055	540	400	0	-
Cold Supply Duct	Outlet	59.5	0.01055	540	400	-	-
Zone Air	-	75.0	0.01061	540	400	9251	143
Return Air	Outlet	75.0	0.01065	540	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 305	9249	Cooling	9251	75.0	540	400	0	0

System Psychrometrics for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.3	0.00026	540	400	-	-
Central Cooling Coil	Outlet	66.3	0.00026	540	400	0	0
Central Heating Coil	Outlet	94.5	0.00026	540	400	16450	-
Supply Fan	Outlet	94.5	0.00026	540	400	0	-
Cold Supply Duct	Outlet	94.5	0.00026	540	400	-	-
Zone Air	-	70.0	0.00026	540	400	-14308	0
Return Air	Outlet	70.0	0.00026	540	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 305	-14308	Heating	-14308	70.0	540	400	0	0

Air System Sizing Summary for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**14 3E 306 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**688.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.3**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**4.0**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**3.5**	MBH	Entering DB / WB	**76.0 / 66.6**	F
Coil CFM at peak load	**215**	CFM	Leaving DB / WB	**61.4 / 60.9**	F
Sum of peak zone CFM	**215**	CFM	Resulting RH	**63**	%
Sensible heat ratio	**0.869**		Design supply temp.	**58.0**	F
CFM/Ton	**647.2**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2077.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**8.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**215**	CFM	BTU/(hr sqft)	**11.7**	
Max coil CFM	**215**	CFM	Ent. DB / Lvg DB	**60.8 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**215**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.31**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **14 3E 306 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **688.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 306	215	215	0.31	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 306	3.9	June 18:00	5.5	688.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 306						
3E 306	3.9	June 18:00	215	5.5	688.9	0.31

Air System Heat Balance Summary for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	3219	300	-	5898	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	215 CFM	0	-	215 CFM	0	-
Ventilation Load	50 CFM	231	89	50 CFM	2136	0
Supply Fan Load	215 CFM	0	-	215 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**3451**	**389**	**-**	**8034**	**0**
Central Cooling Coil	-	3457	522	-	0	0
Central Heating Coil	-	0	-	-	8040	-
>> Total Conditioning	**-**	**3457**	**522**	**-**	**8040**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	137 sqft	158	-	137 sqft	354	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	169	-	25 sqft	272	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	278	-	42 sqft	457	-
Floor Convection	689 sqft	928	-	689 sqft	448	-
Interior Wall Convection	656 sqft	556	-	656 sqft	285	-
Ceiling Convection	689 sqft	912	-	689 sqft	624	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2382	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	450	0	15%	723	0
>> Total Zone Loads	**-**	**3452**	**0**	**-**	**5545**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	89
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	76.0	0.01183	215	400	-	-
Central Cooling Coil	Outlet	61.4	0.01133	215	400	3457	522
Central Heating Coil	Outlet	61.4	0.01133	215	400	0	-
Supply Fan	Outlet	61.4	0.01133	215	400	0	-
Cold Supply Duct	Outlet	61.4	0.01133	215	400	-	-
Zone Air	-	75.0	0.01163	215	400	3219	300
Return Air	Outlet	75.0	0.01174	215	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 306	3218	Cooling	3219	75.0	215	400	0	0

System Psychrometrics for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	60.8	0.00026	215	400	-	-
Central Cooling Coil	Outlet	60.8	0.00026	215	400	0	0
Central Heating Coil	Outlet	95.4	0.00026	215	400	8040	-
Supply Fan	Outlet	95.4	0.00026	215	400	0	-
Cold Supply Duct	Outlet	95.4	0.00026	215	400	-	-
Zone Air	-	70.0	0.00026	215	400	-5898	0
Return Air	Outlet	70.0	0.00026	215	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 306	-5898	Heating	-5898	70.0	215	400	0	0

Air System Sizing Summary for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**16 3E 307 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**954.1**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**4.5**	MBH	Entering DB / WB	**75.8 / 66.5**	F
Coil CFM at peak load	**285**	CFM	Leaving DB / WB	**61.3 / 60.9**	F
Sum of peak zone CFM	**285**	CFM	Resulting RH	**63**	%
Sensible heat ratio	**0.868**		Design supply temp.	**58.0**	F
CFM/Ton	**653.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2189.8**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.5**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**285**	CFM	BTU/(hr sqft)	**10.7**	
Max coil CFM	**285**	CFM	Ent. DB / Lvg DB	**63.0 / 96.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**285**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.30**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **16 3E 307 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **954.1** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 307	285	285	0.30	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 307	5.2	June 18:00	7.6	954.1

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 307						
3E 307	5.2	June 18:00	285	7.6	954.1	0.30

Air System Heat Balance Summary for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4301	417	-	8101	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	285 CFM	0	-	285 CFM	0	-
Ventilation Load	50 CFM	231	94	50 CFM	2136	0
Supply Fan Load	285 CFM	0	-	285 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4533**	**512**	**-**	**10237**	**0**
Central Cooling Coil	-	4539	689	-	0	0
Central Heating Coil	-	0	-	-	10243	-
>> Total Conditioning	**-**	**4539**	**689**	**-**	**10243**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	190 sqft	221	-	190 sqft	494	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	337	-	50 sqft	545	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	275	-	42 sqft	457	-
Floor Convection	954 sqft	1344	-	954 sqft	636	-
Interior Wall Convection	735 sqft	577	-	735 sqft	331	-
Ceiling Convection	954 sqft	1264	-	954 sqft	884	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3293	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	603	0	15%	996	0
>> Total Zone Loads	**-**	**4620**	**0**	**-**	**7635**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	94
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.8	0.01179	285	400	-	-
Central Cooling Coil	Outlet	61.3	0.01129	285	400	4539	689
Central Heating Coil	Outlet	61.3	0.01129	285	400	0	-
Supply Fan	Outlet	61.3	0.01129	285	400	0	-
Cold Supply Duct	Outlet	61.3	0.01129	285	400	-	-
Zone Air	-	75.0	0.01160	285	400	4301	417
Return Air	Outlet	75.0	0.01172	285	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 307	4299	Cooling	4301	75.0	285	400	0	0

System Psychrometrics for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.0	0.00026	285	400	-	-
Central Cooling Coil	Outlet	63.0	0.00026	285	400	0	0
Central Heating Coil	Outlet	96.3	0.00026	285	400	10243	-
Supply Fan	Outlet	96.3	0.00026	285	400	0	-
Cold Supply Duct	Outlet	96.3	0.00026	285	400	-	-
Zone Air	-	70.0	0.00026	285	400	-8101	0
Return Air	Outlet	70.0	0.00026	285	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 307	-8101	Heating	-8101	70.0	285	400	0	0

Air System Sizing Summary for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**18 3E 308 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**930.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.0**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**5.0**	MBH	Entering DB / WB	**75.5 / 66.8**	F
Coil CFM at peak load	**472**	CFM	Leaving DB / WB	**65.8 / 63.6**	F
Sum of peak zone CFM	**472**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1122.3**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2213.2**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**5.4**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**15.3**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**472**	CFM	BTU/(hr sqft)	**16.5**	
Max coil CFM	**472**	CFM	Ent. DB / Lvg DB	**65.8 / 95.9**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**472**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.51**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **18 3E 308 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **930.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E 308	472	472	0.51	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E 308	5.1	June 18:00	12.7	930.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E 308						
3E 308	5.1	June 18:00	472	12.7	930.2	0.51

Air System Heat Balance Summary for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4806	-1	-	13192	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	472 CFM	0	-	472 CFM	0	-
Ventilation Load	50 CFM	231	2	50 CFM	2136	0
Supply Fan Load	472 CFM	0	-	472 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**5038**	**1**	**-**	**15328**	**0**
Central Cooling Coil	-	5043	0	-	0	0
Central Heating Coil	-	0	-	-	15334	-
>> Total Conditioning	**-**	**5043**	**0**	**-**	**15334**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	341 sqft	439	-	341 sqft	1048	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	105 sqft	598	-	105 sqft	1172	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	98	-	42 sqft	478	-
Floor Convection	930 sqft	1337	-	930 sqft	1039	-
Interior Wall Convection	515 sqft	418	-	515 sqft	355	-
Ceiling Convection	930 sqft	1345	-	930 sqft	1268	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	49 CFM	5701	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	635	0	15%	1659	0
>> Total Zone Loads	**-**	**4872**	**0**	**-**	**12720**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	2
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.5	0.01211	472	400	-	-
Central Cooling Coil	Outlet	65.8	0.01211	472	400	5043	0
Central Heating Coil	Outlet	65.8	0.01211	472	400	0	-
Supply Fan	Outlet	65.8	0.01211	472	400	0	-
Cold Supply Duct	Outlet	65.8	0.01211	472	400	-	-
Zone Air	-	75.0	0.01211	472	400	4806	-1
Return Air	Outlet	75.0	0.01211	472	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 308	4806	Cooling	4806	75.0	472	400	0	0

System Psychrometrics for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.8	0.00026	472	400	-	-
Central Cooling Coil	Outlet	65.8	0.00026	472	400	0	0
Central Heating Coil	Outlet	95.9	0.00026	472	400	15334	-
Supply Fan	Outlet	95.9	0.00026	472	400	0	-
Cold Supply Duct	Outlet	95.9	0.00026	472	400	-	-
Zone Air	-	70.0	0.00026	472	400	-13192	0
Return Air	Outlet	70.0	0.00026	472	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E 308	-13192	Heating	-13192	70.0	472	400	0	0

Air System Sizing Summary for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**20 4E 401 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**954.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.4**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.6**	MBH	Entering DB / WB	**75.1 / 65.3**	F
Coil CFM at peak load	**392**	CFM	Leaving DB / WB	**59.8 / 59.3**	F
Sum of peak zone CFM	**392**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.894**		Design supply temp.	**58.0**	F
CFM/Ton	**635.0**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1547.1**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**392**	CFM	BTU/(hr sqft)	**13.4**	
Max coil CFM	**392**	CFM	Ent. DB / Lvg DB	**64.9 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**392**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **20 4E 401 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **954.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 401	392	392	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 401	7.1	August 11:00	10.6	954.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 401						
4E 401	7.1	August 11:00	392	10.6	954.9	0.41

Air System Heat Balance Summary for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:47 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6571	314	-	10683	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	392 CFM	0	-	392 CFM	0	-
Ventilation Load	50 CFM	44	273	50 CFM	2136	0
Supply Fan Load	392 CFM	0	-	392 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6615**	**587**	**-**	**12819**	**0**
Central Cooling Coil	-	6618	788	-	0	0
Central Heating Coil	-	0	-	-	12825	-
>> Total Conditioning	**-**	**6618**	**788**	**-**	**12825**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	188 sqft	296	-	188 sqft	541	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	474	-	50 sqft	529	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	395	-	42 sqft	445	-
Floor Convection	955 sqft	2121	-	955 sqft	913	-
Interior Wall Convection	728 sqft	888	-	728 sqft	432	-
Ceiling Convection	955 sqft	1849	-	955 sqft	3054	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3277	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	903	0	15%	1379	0
>> Total Zone Loads	**-**	**6927**	**0**	**-**	**10569**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	273
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01109	392	400	-	-
Central Cooling Coil	Outlet	59.8	0.01068	392	400	6618	788
Central Heating Coil	Outlet	59.8	0.01068	392	400	0	-
Supply Fan	Outlet	59.8	0.01068	392	400	0	-
Cold Supply Duct	Outlet	59.8	0.01068	392	400	-	-
Zone Air	-	75.0	0.01085	392	400	6571	314
Return Air	Outlet	75.0	0.01094	392	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 401	6568	Cooling	6571	75.0	392	400	0	0

System Psychrometrics for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	64.9	0.00026	392	400	-	-
Central Cooling Coil	Outlet	64.9	0.00026	392	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	392	400	12825	-
Supply Fan	Outlet	95.2	0.00026	392	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	392	400	-	-
Zone Air	-	70.0	0.00026	392	400	-10683	0
Return Air	Outlet	70.0	0.00026	392	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 401	-10683	Heating	-10683	70.0	392	400	0	0

Air System Sizing Summary for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name	**22 4E 402 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**695.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.4**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**5.4**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.1 / 65.5**	F
Coil CFM at peak load	**287**	CFM	Leaving DB / WB	**60.0 / 59.5**	F
Sum of peak zone CFM	**287**	CFM	Resulting RH	**59**	%
Sensible heat ratio	**0.888**		Design supply temp.	**58.0**	F
CFM/Ton	**638.5**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1548.1**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.8**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**10.0**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**287**	CFM	BTU/(hr sqft)	**14.3**	
Max coil CFM	**287**	CFM	Ent. DB / Lvg DB	**63.1 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**287**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:47 AM

Air System Information

Air System Name ..... **22 4E 402 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **695.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 402	287	287	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 402	5.1	August 11:00	7.7	695.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 402						
4E 402	5.1	August 11:00	287	7.7	695.4	0.41

Air System Heat Balance Summary for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4737	210	-	7814	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	287 CFM	0	-	287 CFM	0	-
Ventilation Load	50 CFM	44	258	50 CFM	2136	0
Supply Fan Load	287 CFM	0	-	287 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4781**	**468**	**-**	**9950**	**0**
Central Cooling Coil	-	4784	606	-	0	0
Central Heating Coil	-	0	-	-	9956	-
>> Total Conditioning	**-**	**4784**	**606**	**-**	**9956**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	137 sqft	202	-	137 sqft	392	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	235	-	25 sqft	264	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	393	-	42 sqft	444	-
Floor Convection	695 sqft	1565	-	695 sqft	644	-
Interior Wall Convection	652 sqft	726	-	652 sqft	381	-
Ceiling Convection	696 sqft	1243	-	696 sqft	2211	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2388	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	655	0	15%	1009	0
>> Total Zone Loads	**-**	**5019**	**0**	**-**	**7734**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	258
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01119	287	400	-	-
Central Cooling Coil	Outlet	60.0	0.01076	287	400	4784	606
Central Heating Coil	Outlet	60.0	0.01076	287	400	0	-
Supply Fan	Outlet	60.0	0.01076	287	400	0	-
Cold Supply Duct	Outlet	60.0	0.01076	287	400	-	-
Zone Air	-	75.0	0.01092	287	400	4737	210
Return Air	Outlet	75.0	0.01100	287	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 402	4735	Cooling	4737	75.0	287	400	0	0

System Psychrometrics for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.1	0.00026	287	400	-	-
Central Cooling Coil	Outlet	63.1	0.00026	287	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	287	400	9956	-
Supply Fan	Outlet	95.2	0.00026	287	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	287	400	-	-
Zone Air	-	70.0	0.00026	287	400	-7814	0
Return Air	Outlet	70.0	0.00026	287	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 402	-7814	Heating	-7814	70.0	287	400	0	0

Air System Sizing Summary for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**24 4E 403 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**927.0**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**August 10:00**	
Total coil load	**7.3**	MBH	OA DB / WB	**76.7 / 67.2**	F
Sensible coil load	**6.5**	MBH	Entering DB / WB	**75.1 / 65.2**	F
Coil CFM at peak load	**383**	CFM	Leaving DB / WB	**59.7 / 59.2**	F
Sum of peak zone CFM	**383**	CFM	Resulting RH	**58**	%
Sensible heat ratio	**0.895**		Design supply temp.	**58.0**	F
CFM/Ton	**630.9**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1526.2**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.9**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**383**	CFM	BTU/(hr sqft)	**13.6**	
Max coil CFM	**383**	CFM	Ent. DB / Lvg DB	**64.8 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**383**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **24 4E 403 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **927.0** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 403	383	383	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 403	7.0	August 11:00	10.3	927.0

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 403						
4E 403	7.0	August 11:00	383	10.3	927.0	0.41

Air System Heat Balance Summary for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6473	293	-	10443	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	383 CFM	0	-	383 CFM	0	-
Ventilation Load	50 CFM	44	286	50 CFM	2136	0
Supply Fan Load	383 CFM	0	-	383 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6517**	**578**	**-**	**12578**	**0**
Central Cooling Coil	-	6520	769	-	0	0
Central Heating Coil	-	0	-	-	12584	-
>> Total Conditioning	**-**	**6520**	**769**	**-**	**12584**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 10:00			DESIGN HEATING		
	OA DB / WB 76.7 F / 67.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	180 sqft	287	-	180 sqft	519	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	473	-	50 sqft	528	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	398	-	42 sqft	445	-
Floor Convection	927 sqft	2104	-	927 sqft	896	-
Interior Wall Convection	720 sqft	879	-	720 sqft	436	-
Ceiling Convection	927 sqft	1829	-	927 sqft	2982	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	27 CFM	3181	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	895	0	15%	1348	0
>> Total Zone Loads	**-**	**6865**	**0**	**-**	**10335**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT AUGUST 10:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	76.9	0.01209	50	400	44	286
Air-to-Air Energy Recovery	Outlet	75.8	0.01209	50	400	58	0
Vent - Return Mixing	Outlet	75.1	0.01105	383	400	-	-
Central Cooling Coil	Outlet	59.7	0.01064	383	400	6520	769
Central Heating Coil	Outlet	59.7	0.01064	383	400	0	-
Supply Fan	Outlet	59.7	0.01064	383	400	0	-
Cold Supply Duct	Outlet	59.7	0.01064	383	400	-	-
Zone Air	-	75.0	0.01080	383	400	6473	293
Return Air	Outlet	75.0	0.01089	383	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 403	6471	Cooling	6473	75.0	383	400	0	0

System Psychrometrics for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	64.8	0.00026	383	400	-	-
Central Cooling Coil	Outlet	64.8	0.00026	383	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	383	400	12584	-
Supply Fan	Outlet	95.2	0.00026	383	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	383	400	-	-
Zone Air	-	70.0	0.00026	383	400	-10443	0
Return Air	Outlet	70.0	0.00026	383	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 403	-10443	Heating	-10443	70.0	383	400	0	0

Air System Sizing Summary for 26 4E 404 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**26 4E 404 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**969.7**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.8**	Tons	Peak coil load occurs at	**August 15:00**	
Total coil load	**9.7**	MBH	OA DB / WB	**85.9 / 70.0**	F
Sensible coil load	**9.4**	MBH	Entering DB / WB	**75.4 / 65.8**	F
Coil CFM at peak load	**627**	CFM	Leaving DB / WB	**61.8 / 61.1**	F
Sum of peak zone CFM	**627**	CFM	Resulting RH	**61**	%
Sensible heat ratio	**0.970**		Design supply temp.	**58.0**	F
CFM/Ton	**775.4**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1199.5**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**10.0**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**19.1**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**627**	CFM	BTU/(hr sqft)	**19.7**	
Max coil CFM	**627**	CFM	Ent. DB / Lvg DB	**66.8 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**627**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.65**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 26 4E 404 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **26 4E 404 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **969.7** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 404	627	627	0.65	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 404	9.7	September 13:00	16.9	969.7

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 404						
4E 404	9.7	September 13:00	627	16.9	969.7	0.65

Air System Heat Balance Summary for 26 4E 404 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 85.9 F / 70.0 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	9148	53	-	16991	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	627 CFM	0	-	627 CFM	0	-
Ventilation Load	50 CFM	257	181	50 CFM	2136	0
Supply Fan Load	627 CFM	0	-	627 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**9405**	**234**	**-**	**19127**	**0**
Central Cooling Coil	-	9413	288	-	0	0
Central Heating Coil	-	0	-	-	19133	-
>> Total Conditioning	**-**	**9413**	**288**	**-**	**19133**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - AUGUST 15:00			DESIGN HEATING		
	OA DB / WB 85.9 F / 70.0 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	371 sqft	988	-	371 sqft	1235	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	960	-	120 sqft	1419	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	131	-	42 sqft	492	-
Floor Convection	970 sqft	2009	-	970 sqft	1238	-
Interior Wall Convection	533 sqft	811	-	533 sqft	454	-
Ceiling Convection	970 sqft	3389	-	970 sqft	3626	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	53 CFM	6237	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1243	0	15%	2205	0
>> Total Zone Loads	**-**	**9531**	**0**	**-**	**16904**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 26 4E 404 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT AUGUST 15:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	85.8	0.01211	50	400	257	181
Air-to-Air Energy Recovery	Outlet	79.8	0.01211	50	400	335	0
Vent - Return Mixing	Outlet	75.4	0.01141	627	400	-	-
Central Cooling Coil	Outlet	61.8	0.01132	627	400	9413	288
Central Heating Coil	Outlet	61.8	0.01132	627	400	0	-
Supply Fan	Outlet	61.8	0.01132	627	400	0	-
Cold Supply Duct	Outlet	61.8	0.01132	627	400	-	-
Zone Air	-	75.0	0.01133	627	400	9148	53
Return Air	Outlet	75.0	0.01135	627	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 404	9147	Cooling	9148	75.0	627	400	0	0

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.8	0.00026	627	400	-	-
Central Cooling Coil	Outlet	66.8	0.00026	627	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	627	400	19133	-
Supply Fan	Outlet	95.1	0.00026	627	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	627	400	-	-
Zone Air	-	70.0	0.00026	627	400	-16991	0
Return Air	Outlet	70.0	0.00026	627	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 404	-16991	Heating	-16991	70.0	627	400	0	0

Air System Sizing Summary for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**28 4E 405 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**1080.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**1.0**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**12.1**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**11.5**	MBH	Entering DB / WB	**75.3 / 64.9**	F
Coil CFM at peak load	**665**	CFM	Leaving DB / WB	**59.6 / 59.1**	F
Sum of peak zone CFM	**665**	CFM	Resulting RH	**57**	%
Sensible heat ratio	**0.951**		Design supply temp.	**58.0**	F
CFM/Ton	**659.7**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1071.0**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**11.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**20.2**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**665**	CFM	BTU/(hr sqft)	**18.7**	
Max coil CFM	**665**	CFM	Ent. DB / Lvg DB	**67.0 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**665**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.62**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **28 4E 405 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **1080.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 405	665	665	0.62	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 405	11.9	July 17:00	17.9	1080.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 405						
4E 405	11.9	July 17:00	665	17.9	1080.4	0.62

Air System Heat Balance Summary for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	11267	121	-	18039	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	665 CFM	0	-	665 CFM	0	-
Ventilation Load	50 CFM	231	341	50 CFM	2136	0
Supply Fan Load	665 CFM	0	-	665 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**11498**	**462**	**-**	**20175**	**0**
Central Cooling Coil	-	11507	598	-	0	0
Central Heating Coil	-	0	-	-	20181	-
>> Total Conditioning	**-**	**11507**	**598**	**-**	**20181**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	404 sqft	1043	-	404 sqft	1322	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	120 sqft	1107	-	120 sqft	1409	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	362	-	42 sqft	498	-
Floor Convection	1080 sqft	2385	-	1080 sqft	1337	-
Interior Wall Convection	566 sqft	1055	-	566 sqft	454	-
Ceiling Convection	1080 sqft	4380	-	1080 sqft	3968	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	57 CFM	6618	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1550	0	15%	2341	0
>> Total Zone Loads	**-**	**11881**	**0**	**-**	**17947**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	341
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.3	0.01078	665	400	-	-
Central Cooling Coil	Outlet	59.6	0.01060	665	400	11507	598
Central Heating Coil	Outlet	59.6	0.01060	665	400	0	-
Supply Fan	Outlet	59.6	0.01060	665	400	0	-
Cold Supply Duct	Outlet	59.6	0.01060	665	400	-	-
Zone Air	-	75.0	0.01064	665	400	11267	121
Return Air	Outlet	75.0	0.01068	665	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 405	11266	Cooling	11267	75.0	665	400	0	0

System Psychrometrics for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	67.0	0.00026	665	400	-	-
Central Cooling Coil	Outlet	67.0	0.00026	665	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	665	400	20181	-
Supply Fan	Outlet	95.1	0.00026	665	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	665	400	-	-
Zone Air	-	70.0	0.00026	665	400	-18039	0
Return Air	Outlet	70.0	0.00026	665	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 405	-18039	Heating	-18039	70.0	665	400	0	0

Air System Sizing Summary for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**30 4E 406 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**691.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.5**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**5.5**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**4.8**	MBH	Entering DB / WB	**75.8 / 66.0**	F
Coil CFM at peak load	**286**	CFM	Leaving DB / WB	**60.4 / 60.0**	F
Sum of peak zone CFM	**286**	CFM	Resulting RH	**60**	%
Sensible heat ratio	**0.877**		Design supply temp.	**58.0**	F
CFM/Ton	**623.0**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1503.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**8.0**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**9.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**286**	CFM	BTU/(hr sqft)	**14.4**	
Max coil CFM	**286**	CFM	Ent. DB / Lvg DB	**63.1 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**286**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.07**	CFM/sqft			

Zone Sizing Summary for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **30 4E 406 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **691.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 406	286	286	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 406	5.2	June 18:00	7.7	691.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 406						
4E 406	5.2	June 18:00	286	7.7	691.2	0.41

Air System Heat Balance Summary for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	4602	299	-	7802	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	286 CFM	0	-	286 CFM	0	-
Ventilation Load	50 CFM	231	192	50 CFM	2136	0
Supply Fan Load	286 CFM	0	-	286 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**4833**	**491**	**-**	**9937**	**0**
Central Cooling Coil	-	4841	676	-	0	0
Central Heating Coil	-	0	-	-	9944	-
>> Total Conditioning	**-**	**4841**	**676**	**-**	**9944**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	136 sqft	178	-	136 sqft	389	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	25 sqft	183	-	25 sqft	271	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	304	-	42 sqft	455	-
Floor Convection	691 sqft	1092	-	691 sqft	647	-
Interior Wall Convection	651 sqft	648	-	651 sqft	378	-
Ceiling Convection	691 sqft	1849	-	691 sqft	2206	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	20 CFM	2371	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	638	0	15%	1007	0
>> Total Zone Loads	**-**	**4892**	**0**	**-**	**7723**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	192
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.8	0.01145	286	400	-	-
Central Cooling Coil	Outlet	60.4	0.01096	286	400	4841	676
Central Heating Coil	Outlet	60.4	0.01096	286	400	0	-
Supply Fan	Outlet	60.4	0.01096	286	400	0	-
Cold Supply Duct	Outlet	60.4	0.01096	286	400	-	-
Zone Air	-	75.0	0.01118	286	400	4602	299
Return Air	Outlet	75.0	0.01131	286	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 406	4600	Cooling	4602	75.0	286	400	0	0

System Psychrometrics for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	63.1	0.00026	286	400	-	-
Central Cooling Coil	Outlet	63.1	0.00026	286	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	286	400	9944	-
Supply Fan	Outlet	95.2	0.00026	286	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	286	400	-	-
Zone Air	-	70.0	0.00026	286	400	-7802	0
Return Air	Outlet	70.0	0.00026	286	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 406	-7802	Heating	-7802	70.0	286	400	0	0

Air System Sizing Summary for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**32 4E 407 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**951.8**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**7.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**6.4**	MBH	Entering DB / WB	**75.5 / 66.0**	F
Coil CFM at peak load	**393**	CFM	Leaving DB / WB	**60.7 / 60.3**	F
Sum of peak zone CFM	**393**	CFM	Resulting RH	**61**	%
Sensible heat ratio	**0.888**		Design supply temp.	**58.0**	F
CFM/Ton	**651.8**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1578.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**12.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**393**	CFM	BTU/(hr sqft)	**13.5**	
Max coil CFM	**393**	CFM	Ent. DB / Lvg DB	**65.0 / 95.2**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**393**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.41**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **32 4E 407 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **951.8** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 407	393	393	0.41	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 407	7.0	June 18:00	10.6	951.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 407						
4E 407	7.0	June 18:00	393	10.6	951.8	0.41

Air System Heat Balance Summary for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6189	393	-	10709	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	393 CFM	0	-	393 CFM	0	-
Ventilation Load	50 CFM	231	175	50 CFM	2136	0
Supply Fan Load	393 CFM	0	-	393 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6420**	**567**	**-**	**12845**	**0**
Central Cooling Coil	-	6427	807	-	0	0
Central Heating Coil	-	0	-	-	12851	-
>> Total Conditioning	**-**	**6427**	**807**	**-**	**12851**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	187 sqft	246	-	187 sqft	538	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	50 sqft	364	-	50 sqft	543	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	301	-	42 sqft	455	-
Floor Convection	952 sqft	1574	-	952 sqft	921	-
Interior Wall Convection	727 sqft	661	-	727 sqft	441	-
Ceiling Convection	952 sqft	2545	-	952 sqft	3059	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	28 CFM	3259	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	854	0	15%	1382	0
>> Total Zone Loads	**-**	**6545**	**0**	**-**	**10598**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	175
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	301	0
Vent - Return Mixing	Outlet	75.5	0.01147	393	400	-	-
Central Cooling Coil	Outlet	60.7	0.01105	393	400	6427	807
Central Heating Coil	Outlet	60.7	0.01105	393	400	0	-
Supply Fan	Outlet	60.7	0.01105	393	400	0	-
Cold Supply Duct	Outlet	60.7	0.01105	393	400	-	-
Zone Air	-	75.0	0.01126	393	400	6189	393
Return Air	Outlet	75.0	0.01138	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 407	6186	Cooling	6189	75.0	393	400	0	0

System Psychrometrics for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	65.0	0.00026	393	400	-	-
Central Cooling Coil	Outlet	65.0	0.00026	393	400	0	0
Central Heating Coil	Outlet	95.2	0.00026	393	400	12851	-
Supply Fan	Outlet	95.2	0.00026	393	400	0	-
Cold Supply Duct	Outlet	95.2	0.00026	393	400	-	-
Zone Air	-	70.0	0.00026	393	400	-10709	0
Return Air	Outlet	70.0	0.00026	393	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 407	-10709	Heating	-10709	70.0	393	400	0	0

Air System Sizing Summary for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**34 4E 408 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**930.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**6.7**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**6.7**	MBH	Entering DB / WB	**75.4 / 66.8**	F
Coil CFM at peak load	**579**	CFM	Leaving DB / WB	**64.8 / 63.3**	F
Sum of peak zone CFM	**579**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1030.6**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**1655.9**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**7.2**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**17.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**579**	CFM	BTU/(hr sqft)	**19.2**	
Max coil CFM	**579**	CFM	Ent. DB / Lvg DB	**66.6 / 95.1**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**579**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.62**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**50**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **34 4E 408 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **930.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E 408	579	579	0.62	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E 408	6.8	June 17:00	15.6	930.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E 408						
4E 408	6.8	June 17:00	579	15.6	930.2	0.62

Air System Heat Balance Summary for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	6504	-1	-	15696	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	579 CFM	0	-	579 CFM	0	-
Ventilation Load	50 CFM	231	2	50 CFM	2136	0
Supply Fan Load	579 CFM	0	-	579 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**6735**	**1**	**-**	**17832**	**0**
Central Cooling Coil	-	6741	0	-	0	0
Central Heating Coil	-	0	-	-	17838	-
>> Total Conditioning	**-**	**6741**	**0**	**-**	**17838**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	336 sqft	484	-	336 sqft	1111	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	105 sqft	647	-	105 sqft	1254	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	42 sqft	112	-	42 sqft	511	-
Floor Convection	930 sqft	1554	-	930 sqft	1177	-
Interior Wall Convection	510 sqft	472	-	510 sqft	416	-
Ceiling Convection	930 sqft	2605	-	930 sqft	3450	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	48 CFM	5658	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	881	0	15%	2036	0
>> Total Zone Loads	**-**	**6755**	**0**	**-**	**15613**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	50	400	231	2
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	50	400	302	0
Vent - Return Mixing	Outlet	75.4	0.01211	579	400	-	-
Central Cooling Coil	Outlet	64.8	0.01211	579	400	6741	0
Central Heating Coil	Outlet	64.8	0.01211	579	400	0	-
Supply Fan	Outlet	64.8	0.01211	579	400	0	-
Cold Supply Duct	Outlet	64.8	0.01211	579	400	-	-
Zone Air	-	75.0	0.01211	579	400	6504	-1
Return Air	Outlet	75.0	0.01211	579	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 408	6504	Cooling	6504	75.0	579	400	0	0

System Psychrometrics for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	50	400	-2136	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	50	400	-2726	0
Vent - Return Mixing	Outlet	66.6	0.00026	579	400	-	-
Central Cooling Coil	Outlet	66.6	0.00026	579	400	0	0
Central Heating Coil	Outlet	95.1	0.00026	579	400	17838	-
Supply Fan	Outlet	95.1	0.00026	579	400	0	-
Cold Supply Duct	Outlet	95.1	0.00026	579	400	-	-
Zone Air	-	70.0	0.00026	579	400	-15696	0
Return Air	Outlet	70.0	0.00026	579	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E 408	-15696	Heating	-15696	70.0	579	400	0	0

Air System Sizing Summary for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**36 RDC x 8 Log CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**7447.7**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**2.9**	Tons	Peak coil load occurs at	**July 17:00**	
Total coil load	**34.2**	MBH	OA DB / WB	**84.9 / 69.7**	F
Sensible coil load	**34.2**	MBH	Entering DB / WB	**75.6 / 66.9**	F
Coil CFM at peak load	**2999**	CFM	Leaving DB / WB	**65.2 / 63.5**	F
Sum of peak zone CFM	**2999**	CFM	Resulting RH	**65**	%
Sensible heat ratio	**1.000**		Design supply temp.	**58.0**	F
CFM/Ton	**1051.2**		Zone T-stat Check	**1 of 1**	OK
sqft/Ton	**2610.7**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**4.6**				
Water flow @ 10.0 F rise	**N/A**				

Central Heating Coil Sizing Data

Max coil load	**99.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**2999**	CFM	BTU/(hr sqft)	**13.4**	
Max coil CFM	**2999**	CFM	Ent. DB / Lvg DB	**64.7 / 95.5**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**2999**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM/sqft	**0.40**	CFM/sqft	Fan motor kW	**0.00**	kW

Outdoor Ventilation Air Data

Design airflow CFM	**400**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.05**	CFM/sqft			

Zone Sizing Summary for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **36 RDC x 8 Log CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **7447.7** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
RDC x 8 Log	2999	2999	0.40	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
RDC x 8 Log	32.0	July 17:00	80.9	7447.7

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
RDC x 8 Log						
RDC x 8 Log	32.0	July 17:00	2999	80.9	7447.7	0.40

Air System Heat Balance Summary for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	32335	-8	-	82671	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	2999 CFM	0	-	2999 CFM	0	-
Ventilation Load	400 CFM	1851	12	400 CFM	17087	0
Supply Fan Load	2999 CFM	0	-	2999 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**34186**	**4**	**-**	**99757**	**0**
Central Cooling Coil	-	34232	0	-	0	0
Central Heating Coil	-	0	-	-	99806	-
>> Total Conditioning	**-**	**34232**	**0**	**-**	**99806**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 17:00			DESIGN HEATING		
	OA DB / WB 84.9 F / 69.7 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	2295 sqft	3688	-	2295 sqft	6624	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	584 sqft	2875	-	584 sqft	6254	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	336 sqft	1212	-	336 sqft	3595	-
Floor Convection	7448 sqft	8121	-	7448 sqft	6204	-
Interior Wall Convection	1948 sqft	1520	-	1948 sqft	990	-
Ceiling Convection	7448 sqft	10402	-	7448 sqft	9143	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	321 CFM	37515	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	4173	0	15%	10549	0
>> Total Zone Loads	**-**	**31991**	**0**	**-**	**80873**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 17:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	84.8	0.01211	400	400	1851	12
Air-to-Air Energy Recovery	Outlet	79.3	0.01211	400	400	2415	0
Vent - Return Mixing	Outlet	75.6	0.01211	2999	400	-	-
Central Cooling Coil	Outlet	65.2	0.01211	2999	400	34232	0
Central Heating Coil	Outlet	65.2	0.01211	2999	400	0	-
Supply Fan	Outlet	65.2	0.01211	2999	400	0	-
Cold Supply Duct	Outlet	65.2	0.01211	2999	400	-	-
Zone Air	-	75.0	0.01211	2999	400	32335	-8
Return Air	Outlet	75.0	0.01211	2999	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
RDC x 8 Log	32335	Cooling	32335	75.0	2999	400	0	0

System Psychrometrics for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	400	400	-17087	0
Air-to-Air Energy Recovery	Outlet	30.4	0.00026	400	400	-21808	0
Vent - Return Mixing	Outlet	64.7	0.00026	2999	400	-	-
Central Cooling Coil	Outlet	64.7	0.00026	2999	400	0	0
Central Heating Coil	Outlet	95.5	0.00026	2999	400	99806	-
Supply Fan	Outlet	95.5	0.00026	2999	400	0	-
Cold Supply Duct	Outlet	95.5	0.00026	2999	400	-	-
Zone Air	-	70.0	0.00026	2999	400	-82671	0
Return Air	Outlet	70.0	0.00026	2999	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
RDC x 8 Log	-82671	Heating	-82671	70.0	2999	400	0	0

Air System Sizing Summary for 38 3E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**38 3E ESC1 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**228.3**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Heating Coil Sizing Data

Max coil load	**1.8**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**65**	CFM	BTU/(hr sqft)	**7.8**	
Max coil CFM	**65**	CFM	Ent. DB / Lvg DB	**70.0 / 95.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**65**	CFM	Fan motor BHP	**0.02**	BHP
Design CFM/sqft	**0.28**	CFM/sqft	Fan motor kW	**0.02**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 38 3E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **38 3E ESC1 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **228.3** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E ESC1	65	65	0.28	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E ESC1	0.0	February 13:00	1.8	228.3

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E ESC1						
3E ESC1	0.0	February 13:00	65	1.8	228.3	0.28

Air System Heat Balance Summary for 38 3E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	1839	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	65 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	65 CFM	-52	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**1787**	**0**
Central Heating Coil	-	-	-	-	1787	-
>> Total Conditioning	-	-	-	-	**1787**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	60 sqft	-	-	60 sqft	145	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	12 sqft	-	-	12 sqft	129	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	228 sqft	-	-	228 sqft	101	-
Interior Wall Convection	524 sqft	-	-	524 sqft	163	-
Ceiling Convection	228 sqft	-	-	228 sqft	151	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	7 CFM	835	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	229	0
>> Total Zone Loads	-	-	-	-	**1753**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 38 3E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	65	400	-	-
Central Heating Coil	Outlet	95.4	0.00026	65	400	1787	-
Supply Fan	Outlet	96.2	0.00026	65	400	52	-
Cold Supply Duct	Outlet	96.2	0.00026	65	400	-	-
Zone Air	-	70.0	0.00026	65	400	-1839	0
Return Air	Outlet	70.0	0.00026	65	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E ESC1	-1839	Heating	-1839	70.0	65	400	0	0

Air System Sizing Summary for 40 4E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**40 4E ESC1 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**140.2**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Heating Coil Sizing Data

Max coil load	**1.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**60**	CFM	BTU/(hr sqft)	**11.2**	
Max coil CFM	**60**	CFM	Ent. DB / Lvg DB	**70.0 / 94.4**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**60**	CFM	Fan motor BHP	**0.02**	BHP
Design CFM/sqft	**0.42**	CFM/sqft	Fan motor kW	**0.01**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 40 4E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **40 4E ESC1 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **140.2** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E ESC1	60	60	0.42	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E ESC1	0.0	June 16:00	1.6	140.2

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E ESC1						
4E ESC1	0.0	June 16:00	60	1.6	140.2	0.42

Air System Heat Balance Summary for 40 4E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	1618	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	60 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	60 CFM	-48	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**1570**	**0**
Central Heating Coil	-	-	-	-	1570	-
>> Total Conditioning	-	-	-	-	**1570**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	29 sqft	-	-	29 sqft	79	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	12 sqft	-	-	12 sqft	127	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	140 sqft	-	-	140 sqft	89	-
Interior Wall Convection	489 sqft	-	-	489 sqft	208	-
Ceiling Convection	140 sqft	-	-	140 sqft	410	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	4 CFM	483	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	210	0
>> Total Zone Loads	-	-	-	-	**1607**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 40 4E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	60	400	-	-
Central Heating Coil	Outlet	94.4	0.00026	60	400	1570	-
Supply Fan	Outlet	95.1	0.00026	60	400	48	-
Cold Supply Duct	Outlet	95.1	0.00026	60	400	-	-
Zone Air	-	70.0	0.00026	60	400	-1618	0
Return Air	Outlet	70.0	0.00026	60	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E ESC1	-1618	Heating	-1618	70.0	60	400	0	0

Air System Sizing Summary for 42 4E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**42 4E ESC2 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**168.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Heating Coil Sizing Data

Max coil load	**5.6**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**212**	CFM	BTU/(hr sqft)	**33.0**	
Max coil CFM	**212**	CFM	Ent. DB / Lvg DB	**70.0 / 94.3**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**212**	CFM	Fan motor BHP	**0.06**	BHP
Design CFM/sqft	**1.26**	CFM/sqft	Fan motor kW	**0.05**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 42 4E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **42 4E ESC2 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **168.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
4E ESC2	212	212	1.26	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
4E ESC2	0.0	August 7:00	5.7	168.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
4E ESC2						
4E ESC2	0.0	August 7:00	212	5.7	168.9	1.26

Air System Heat Balance Summary for 42 4E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	5735	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	212 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	212 CFM	-170	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**5565**	**0**
Central Heating Coil	-	-	-	-	5565	-
>> Total Conditioning	-	-	-	-	**5565**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	219 sqft	-	-	219 sqft	780	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	24 sqft	-	-	24 sqft	337	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	169 sqft	-	-	169 sqft	181	-
Interior Wall Convection	243 sqft	-	-	243 sqft	197	-
Ceiling Convection	169 sqft	-	-	169 sqft	638	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	24 CFM	2840	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	746	0
>> Total Zone Loads	-	-	-	-	**5719**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 42 4E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	212	400	-	-
Central Heating Coil	Outlet	94.3	0.00026	212	400	5565	-
Supply Fan	Outlet	95.0	0.00026	212	400	170	-
Cold Supply Duct	Outlet	95.0	0.00026	212	400	-	-
Zone Air	-	70.0	0.00026	212	400	-5735	0
Return Air	Outlet	70.0	0.00026	212	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
4E ESC2	-5735	Heating	-5735	70.0	212	400	0	0

Air System Sizing Summary for 44 SS Stationnement CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**44 SS Stationnement CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**13832.4**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Sum of space airflow rates**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Heating Coil Sizing Data

Max coil load	**34.9**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**1307**	CFM	BTU/(hr sqft)	**2.5**	
Max coil CFM	**1307**	CFM	Ent. DB / Lvg DB	**70.0 / 94.7**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**1307**	CFM	Fan motor BHP	**0.39**	BHP
Design CFM/sqft	**0.09**	CFM/sqft	Fan motor kW	**0.31**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 44 SS Stationnement CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **44 SS Stationnement CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**
Number of zones **1**
Floor Area ..... **13832.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
SS Stationnement	1307	1307	0.09	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
SS Stationnement	0.0	January 9:00	35.2	13832.4

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
SS Stationnement						
SS Stationnement	0.0	January 9:00	1307	35.2	13832.4	0.09

Air System Heat Balance Summary for 44 SS Stationnement CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	35990	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	1307 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	1307 CFM	-1046	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**34944**	**0**
Central Heating Coil	-	-	-	-	34944	-
>> Total Conditioning	-	-	-	-	**34944**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	4355 sqft	-	-	4355 sqft	8857	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	0 sqft	-	-	0 sqft	0	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	13832 sqft	-	-	13832 sqft	20799	-
Interior Wall Convection	487 sqft	-	-	487 sqft	12	-
Ceiling Convection	13832 sqft	-	-	13832 sqft	979	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	0 CFM	0	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	4597	0
>> Total Zone Loads	-	-	-	-	**35244**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 44 SS Stationnement CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	1307	400	-	-
Central Heating Coil	Outlet	94.7	0.00026	1307	400	34944	-
Supply Fan	Outlet	95.5	0.00026	1307	400	1046	-
Cold Supply Duct	Outlet	95.5	0.00026	1307	400	-	-
Zone Air	-	70.0	0.00026	1307	400	-35990	0
Return Air	Outlet	70.0	0.00026	1307	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
SS Stationnement	-35990	Heating	-35990	70.0	1307	400	0	0

Air System Sizing Summary for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**46 Couloir et SAS CPT**		Number of zones	**7**	
Equipment Class	**PKG ROOF**		Floor Area	**2750.4**	sqft
Air System Type	**VAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**		Zone CFM Sizing	**Peak zone sensible load**	
Sizing Data	**Calculated**		Space CFM Sizing	**Individual peak space loads**	

Central Cooling Coil Sizing Data

Total coil load	**0.6**	Tons	Peak coil load occurs at	**July 8:00**	
Total coil load	**7.8**	MBH	OA DB / WB	**70.6 / 65.2**	F
Sensible coil load	**7.8**	MBH	Entering DB / WB	**75.0 / 53.4**	F
Coil CFM at peak load	**356**	CFM	Leaving DB / WB	**55.0 / 44.4**	F
Sum of peak zone CFM	**841**	CFM	Resulting RH	**21**	%
Sensible heat ratio	**1.000**		Design supply temp.	**55.0**	F
CFM/Ton	**551.1**		Zone T-stat Check	**7 of 7**	OK
sqft/Ton	**4251.9**		Max zone temperature deviation	**0.0**	F
BTU/(hr sqft)	**2.8**				
Water flow @ 10.0 F rise	**N/A**				

Preheat Coil Sizing Data

No heating coil loads occurred during this calculation.

Supply Fan Sizing Data

Design CFM	**749**	CFM	Fan motor BHP	**0.00**	BHP
Design CFM occurs at	**June 8:00**		Fan motor kW	**0.00**	kW
Design CFM/sqft	**0.27**	CFM/sqft			
Sum of peak zone CFM	**841**	CFM			
VAV Fan Diversity	**10.9**	%			

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **46 Couloir et SAS CPT**
Equipment Class ..... **PKG ROOF**
Air System Type ..... **VAV**
Number of zones **7**
Floor Area ..... **2750.4** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**
Zone CFM Sizing ..... **Peak zone sensible load**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
2E Corridor	176	2	0.27	0.0	-	0.0	-	0
3E Corridor	174	2	0.27	0.0	-	0.0	-	0
4E Corridor	250	3	0.38	10.8	-	0.0	-	0
RDC Corridor	24	0	0.05	0.0	-	0.0	-	0
RDC SAS	186	2	1.18	8.1	-	0.0	-	0
SS SAS1	13	0	0.27	0.0	-	0.0	-	0
SS SAS2	17	0	0.21	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
2E Corridor	2.0	June 8:00	4.7	654.8
3E Corridor	1.9	June 8:00	4.7	654.8
4E Corridor	2.1	July 16:00	6.7	654.8
RDC Corridor	0.5	July 19:00	0.3	496.5
RDC SAS	3.8	June 7:00	5.0	157.9
SS SAS1	0.0	July 0:00	0.4	49.9
SS SAS2	0.0	July 0:00	0.5	81.8

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
2E Corridor						
2E Corridor	2.0	June 8:00	176	4.7	654.8	0.27
3E Corridor						
3E Corridor	1.9	June 8:00	174	4.7	654.8	0.27
4E Corridor						
4E Corridor	2.1	July 16:00	250	6.7	654.8	0.38
RDC Corridor						
RDC Corridor	0.5	July 19:00	24	0.3	496.5	0.05
RDC SAS						
RDC SAS	3.8	June 7:00	186	5.0	157.9	1.18
SS SAS1						
SS SAS1	0.0	July 0:00	13	0.4	49.9	0.27
SS SAS2						
SS SAS2	0.0	July 0:00	17	0.5	81.8	0.21

Air System Heat Balance Summary for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING - JULY 8:00			DESIGN HEATING		
	OA DB / WB 70.6 F / 65.2 F			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	7762	1	-	11816	0
Plenum Load	-	0	0	-	0	0
Return Fan Load	356 CFM	0	-	440 CFM	0	-
Ventilation Load	0 CFM	0	0	0 CFM	0	0
Supply Fan Load	356 CFM	0	-	440 CFM	0	-
Zone Fan Coil Fans Load	-	0	-	-	0	-
>> Total System Loads	**-**	**7762**	**1**	**-**	**11816**	**0**
Central Cooling Coil	-	7763	0	-	-7060	0
Preheat Coil	-	0	-	-	0	-
Terminal Reheat Coils	-	0	-	-	18876	-
>> Total Conditioning	**-**	**7763**	**0**	**-**	**11817**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING - JULY 8:00			DESIGN HEATING		
	OA DB / WB 70.6 F / 65.2 F			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	778 sqft	512	-	778 sqft	1993	-
Roof Convection	0 sqft	0	-	0 sqft	0	-
Window Convection	90 sqft	494	-	90 sqft	989	-
Skylight Convection	0 sqft	0	-	0 sqft	0	-
Door Convection	63 sqft	630	-	63 sqft	882	-
Floor Convection	2750 sqft	1790	-	2750 sqft	1474	-
Interior Wall Convection	8233 sqft	3354	-	8233 sqft	2320	-
Ceiling Convection	2751 sqft	1434	-	2751 sqft	2987	-
Overhead Lighting Convection	0 W	0	-	0 W	0	-
Task Lighting Convection	0 W	0	-	0 W	0	-
Electric Equipment Convection	0 W	0	-	0 W	0	-
People Convection	0	0	0	0	0	0
Infiltration	0 CFM	0	0	75 CFM	8784	0
Miscellaneous Equipment	-	0	0	-	0	0
Air Internal Energy Change	-	0		-	0	0
Safety Factor	15% / 15%	1232	0	15%	2914	0
>> Total Zone Loads	**-**	**9444**	**0**	**-**	**22343**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

DESIGN COOLING DAY AT JULY 8:00

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	71.0	0.01210	0	400	0	0
Vent - Return Mixing	Outlet	75.0	0.00376	356	400	-	-
Preheat Coil	Outlet	75.0	0.00376	356	400	0	-
Central Cooling Coil	Outlet	55.0	0.00376	356	400	7763	0
Supply Fan	Outlet	55.0	0.00376	356	400	0	-
Cold Supply Duct	Outlet	55.0	0.00376	356	400	-	-
Zone Air	-	75.0	0.00383	356	400	7762	1
Return Air	Outlet	75.0	0.00376	356	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E Corridor	1433	Cooling	1433	75.0	66	400	0	0
3E Corridor	1445	Cooling	1445	75.0	66	400	0	0
4E Corridor	1190	Cooling	1190	75.0	55	400	0	0
RDC Corridor	145	Cooling	145	75.0	7	400	0	0
RDC SAS	3531	Cooling	3531	75.0	162	400	0	0
SS SAS1	9	Cooling	9	75.0	0	400	0	0
SS SAS2	9	Cooling	9	75.0	0	400	0	0

System Psychrometrics for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	69.8	0.00026	440	400	-	-
Preheat Coil	Outlet	69.8	0.00026	440	400	0	-
Central Cooling Coil	Outlet	55.0	0.00026	440	400	7060	0
Supply Fan	Outlet	55.0	0.00026	440	400	0	-
Cold Supply Duct	Outlet	55.0	0.00026	440	400	-	-
Zone Air	-	63.6	0.00026	440	400	-11816	0
Return Air	Outlet	69.8	0.00026	440	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
2E Corridor	-22919	Heating	7	58.8	2	400	0	0
3E Corridor	-22557	Heating	7	59.0	2	400	0	0
4E Corridor	-7017	Heating	-6780	69.9	250	400	10820	0
RDC Corridor	-1686	Heating	4	68.5	0	400	0	0
RDC SAS	-5178	Heating	-5055	69.9	186	400	8056	0
SS SAS1	-2692	Heating	0	54.9	0	400	0	0
SS SAS2	-4728	Heating	-1	52.0	0	400	0	0

Air System Sizing Summary for 48 3E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name	**48 3E ESC2 CPT**		Number of zones	**1**	
Equipment Class	**SPLT AHU**		Floor Area	**168.9**	sqft
Air System Type	**SZCAV**		Location	**Quebec City Beauport, QC, Canada**	

Sizing Calculation Information

Calculation Months	**Jan to Dec**	Zone CFM Sizing	**Sum of space airflow rates**
Sizing Data	**Calculated**	Space CFM Sizing	**Individual peak space loads**

Central Heating Coil Sizing Data

Max coil load	**5.1**	MBH	Load occurs at	**Design Heating**	
Coil CFM at Design Heating	**193**	CFM	BTU/(hr sqft)	**30.4**	
Max coil CFM	**193**	CFM	Ent. DB / Lvg DB	**70.0 / 94.6**	F
Water flow @ 20.0 F drop	**N/A**				

Supply Fan Sizing Data

Design CFM	**193**	CFM	Fan motor BHP	**0.06**	BHP
Design CFM/sqft	**1.14**	CFM/sqft	Fan motor kW	**0.05**	kW
			Fan total static	**2.00**	in wg

Outdoor Ventilation Air Data

Design airflow CFM	**0**	CFM	CFM/person	**0.00**	CFM/person
CFM/sqft	**0.00**	CFM/sqft			

Zone Sizing Summary for 48 3E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

Air System Information

Air System Name ..... **48 3E ESC2 CPT**
Equipment Class ..... **SPLT AHU**
Air System Type ..... **SZCAV**

Number of zones **1**
Floor Area ..... **168.9** sqft
Location ..... **Quebec City Beauport, QC, Canada**

Sizing Calculation Information

Calculation Months ..... **Jan to Dec**
Sizing Data ..... **Calculated**

Zone CFM Sizing ..... **Sum of space airflow rates**
Space CFM Sizing ..... **Individual peak space loads**

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/sqft	Reheat Coil Capacity (MBH)	Reheat Coil Water gpm @ 20.0 F	Zone Htg Unit Coil Capacity (MBH)	Zone Htg Unit Water gpm @ 20.0 F	Mixing Box Fan Airflow (CFM)
3E ESC2	193	193	1.14	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (sqft)
3E ESC2	0.0	September 9:00	5.2	168.9

Space Loads and Airflows

Zone Name / Space Name	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (sqft)	Space CFM/sqft
3E ESC2						
3E ESC2	0.0	September 9:00	193	5.2	168.9	1.14

Air System Heat Balance Summary for 48 3E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 11:48 AM

Table 1. System Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
COMPONENT LOADS	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Zone Conditioning	-	-	-	-	5287	0
Plenum Load	-	-	-	-	0	0
Return Fan Load	-	-	-	193 CFM	0	-
Ventilation Load	-	-	-	0 CFM	0	0
Supply Fan Load	-	-	-	193 CFM	-154	-
Zone Fan Coil Fans Load	-	-	-	-	0	-
>> Total System Loads	-	-	-	-	**5133**	**0**
Central Heating Coil	-	-	-	-	5133	-
>> Total Conditioning	-	-	-	-	**5133**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Table 2. Zone Heat Balance Loads

	DESIGN COOLING			DESIGN HEATING		
	NO COOLING DATA			OA DB / WB -20.0 F / -20.0 F		
Zone Heat Balance Component	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**	**Details**	**Sensible [BTU/hr]**	**Latent [BTU/hr]**
Exterior Wall Convection	221 sqft	-	-	221 sqft	759	-
Roof Convection	0 sqft	-	-	0 sqft	0	-
Window Convection	24 sqft	-	-	24 sqft	326	-
Skylight Convection	0 sqft	-	-	0 sqft	0	-
Door Convection	0 sqft	-	-	0 sqft	0	-
Floor Convection	169 sqft	-	-	169 sqft	168	-
Interior Wall Convection	245 sqft	-	-	245 sqft	181	-
Ceiling Convection	169 sqft	-	-	169 sqft	220	-
Overhead Lighting Convection	-	-	-	0 W	0	-
Task Lighting Convection	-	-	-	0 W	0	-
Electric Equipment Convection	-	-	-	0 W	0	-
People Convection	-	-	-	0	0	0
Infiltration	-	-	-	24 CFM	2862	0
Miscellaneous Equipment	-	-	-	-	0	0
Air Internal Energy Change	-	-		-	0	0
Safety Factor	15% / 15%	-	-	15%	677	0
>> Total Zone Loads	-	-	-	-	**5192**	**0**
Key:	**Positive values are cooling loads Negative values are heating loads**			**Positive values are heating loads Negative values are cooling loads**		

Note 1: Surface convection line items show the combined effects of conductive heat gain to the surface and radiative heat gains absorbed at the surface which are then convected to room air.

Note 2: Lighting, equipment, and people line items include only the direct convective heat gain from the heat source to the room air. The radiative portion of the heat gain is first absorbed by surfaces in the room and then later convected from the surface to the air. Therefore the effect of the radiative portion of the heat gain is found in the surface convection line items.

Note 3: Solar heat gain is absorbed by surfaces in the room, re-radiated to other surfaces, and finally convected from the surfaces to room air. Therefore, the effect of solar heat gain is found in the surface convection line items.

System Psychrometrics for 48 3E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 11:48 AM

WINTER DESIGN HEATING

TABLE 1: SYSTEM DATA

Component	Location	Dry-Bulb Temp (F)	Specific Humidity (lb/lb)	Airflow (CFM)	CO2 Level (ppm)	Sensible Heat (BTU/hr)	Latent Heat (BTU/hr)
Ventilation Air	Inlet	-20.0	0.00026	0	400	0	0
Vent - Return Mixing	Outlet	70.0	0.00026	193	400	-	-
Central Heating Coil	Outlet	94.6	0.00026	193	400	5133	-
Supply Fan	Outlet	95.4	0.00026	193	400	154	-
Cold Supply Duct	Outlet	95.4	0.00026	193	400	-	-
Zone Air	-	70.0	0.00026	193	400	-5287	0
Return Air	Outlet	70.0	0.00026	193	400	-	-

Air Density x Heat Capacity x Conversion Factor: At sea level = 1.080; At site altitude = 1.079 BTU/(hr-CFM-F)
Air Density x Heat of Vaporization x Conversion Factor: At sea level = 4746.6; At site altitude = 4740.9 BTU/(hr-CFM)
Site Altitude = 33.0 ft

TABLE 2: ZONE DATA

Zone Name	Zone Sensible Load (BTU/hr)	T-stat Mode	Zone Cond (BTU/hr)	Zone Temp (F)	Zone Airflow (CFM)	CO2 Level (ppm)	Terminal Heating Coil (BTU/hr)	Zone Heating Unit (BTU/hr)
3E ESC2	-5287	Heating	-5287	70.0	193	400	0	0

Annual Cost Summary

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026
Prepared by: Groupe CMI 12:06 PM

Table 1. Annual Costs

Component	a) Alternative REF ($)	b) Alternative CPT ($)
Air System Fans	369	369
Cooling	353	264
Heating	23,826	11,666
Pumps	0	0
Heat Rejection Fans	0	0
HVAC Sub-Total	**24,548**	**12,299**
Lights	0	0
Electric Equipment	0	0
Misc. Electric	0	0
Misc. Fuel Use	0	0
Non-HVAC Sub-Total	**0**	**0**
Grand Total	**24,548**	**12,299**

Table 2. Annual Cost per Unit Floor Area

Component	a) Alternative REF ($/sqft)	b) Alternative CPT ($/sqft)
Air System Fans	0.008	0.008
Cooling	0.008	0.006
Heating	0.512	0.251
Pumps	0.000	0.000
Heat Rejection Fans	0.000	0.000
HVAC Sub-Total	**0.527**	**0.264**
Lights	0.000	0.000
Electric Equipment	0.000	0.000
Misc. Electric	0.000	0.000
Misc. Fuel Use	0.000	0.000
Non-HVAC Sub-Total	**0.000**	**0.000**
Grand Total	**0.527**	**0.264**
Gross Floor Area (sqft)	46561.5	46561.5
Modeled Floor Area (sqft)	46561.5	46561.5

Note: Values in this table are calculated using the Gross Floor Area.

Table 3. Component Cost as a Percentage of Total Cost

Component	a) Alternative REF (%)	b) Alternative CPT (%)
Air System Fans	1.5	3.0
Cooling	1.4	2.2
Heating	97.1	94.9
Pumps	0.0	0.0
Heat Rejection Fans	0.0	0.0
HVAC Sub-Total	**100.0**	**100.0**
Lights	0.0	0.0
Electric Equipment	0.0	0.0
Misc. Electric	0.0	0.0
Misc. Fuel Use	0.0	0.0
Non-HVAC Sub-Total	**0.0**	**0.0**
Grand Total	**100.0**	**100.0**

Table 1. Annual Costs

Component	a) Alternative REF ($)	b) Alternative CPT ($)
HVAC Components		
Electric	24,550	12,299
Natural Gas	0	0
Fuel Oil	0	0
Propane	0	0
Remote HW	0	0
Remote Steam	0	0
Remote CW	0	0
HVAC Sub-Total	**24,550**	**12,299**
Non-HVAC Components		
Electric	0	0
Natural Gas	0	0
Fuel Oil	0	0
Propane	0	0
Remote HW	0	0
Remote Steam	0	0
Non-HVAC Sub-Total	**0**	**0**
Grand Total	**24,550**	**12,299**

Table 2. Annual Energy Consumption

Component	a) Alternative REF	b) Alternative CPT
HVAC Components		
Electric (kWh)	251,191	125,842
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0
Non-HVAC Components		
Electric (kWh)	0	0
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Totals		
Electric (kWh)	251,191	125,842
Natural Gas (na)	0	0
Fuel Oil (na)	0	0
Propane (na)	0	0
Remote HW (na)	0	0
Remote Steam (na)	0	0
Remote CW (na)	0	0

Table 3. Annual Emissions

Component	a) Alternative REF	b) Alternative CPT
CO2 Equivalent (lb)	0	0

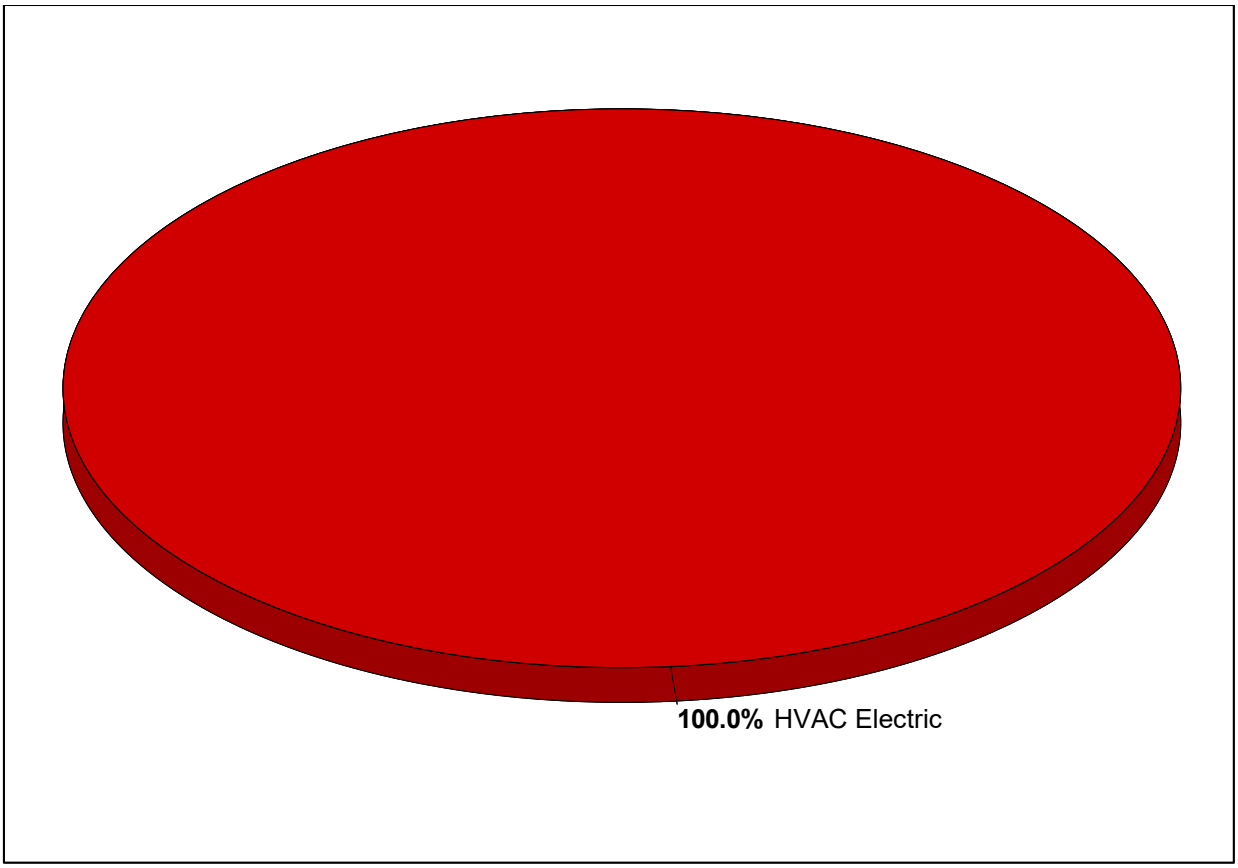
Table 4. Annual Cost per Unit Floor Area

Component	a) Alternative REF ($/sqft)	b) Alternative CPT ($/sqft)
HVAC Components		
Electric	0.527	0.264
Natural Gas	0.000	0.000
Fuel Oil	0.000	0.000
Propane	0.000	0.000
Remote HW	0.000	0.000
Remote Steam	0.000	0.000
Remote CW	0.000	0.000
HVAC Sub-Total	**0.527**	**0.264**
Non-HVAC Components		
Electric	0.000	0.000
Natural Gas	0.000	0.000
Fuel Oil	0.000	0.000
Propane	0.000	0.000
Remote HW	0.000	0.000
Remote Steam	0.000	0.000
Non-HVAC Sub-Total	**0.000**	**0.000**
Grand Total	**0.527**	**0.264**
Gross Floor Area (sqft)	46561.5	46561.5
Modeled Floor Area (sqft)	46561.5	46561.5

Note: Values in this table are calculated using the Gross Floor Area.

Table 5. Component Cost as a Percentage of Total Cost

Component	a) Alternative REF (%)	b) Alternative CPT (%)
HVAC Components		
Electric	100.0	100.0
Natural Gas	0.0	0.0
Fuel Oil	0.0	0.0
Propane	0.0	0.0
Remote HW	0.0	0.0
Remote Steam	0.0	0.0
Remote CW	0.0	0.0
HVAC Sub-Total	**100.0**	**100.0**
Non-HVAC Components		
Electric	0.0	0.0
Natural Gas	0.0	0.0
Fuel Oil	0.0	0.0
Propane	0.0	0.0
Remote HW	0.0	0.0
Remote Steam	0.0	0.0
Non-HVAC Sub-Total	**0.0**	**0.0**
Grand Total	**100.0**	**100.0**

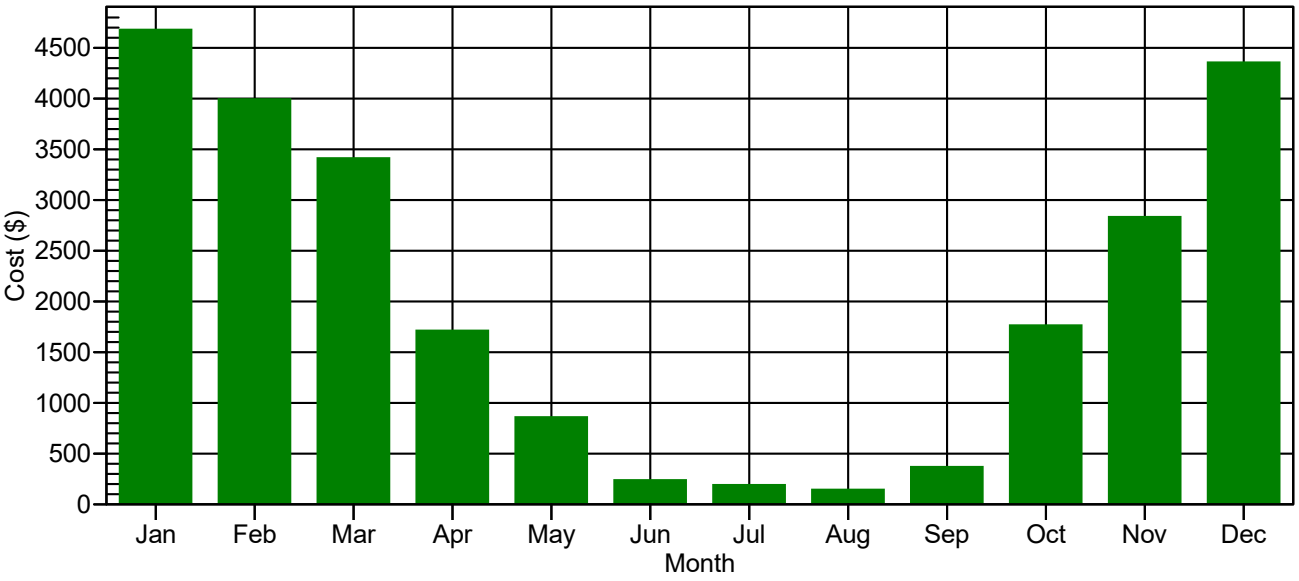


1. Annual Costs

Component	Annual Cost ($)	($/sqft)	Percent of Total (%)
HVAC Components			
Electric	24,550	0.527	100.0
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**24,550**	**0.527**	**100.0**
Non-HVAC Components			
Electric	0	0.000	0.0
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	**0**	**0.000**	**0.0**
Grand Total	**24,550**	**0.527**	**100.0**

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area ..... **46,561.5** sqft
Modeled Floor Area ..... **46,561.5** sqft



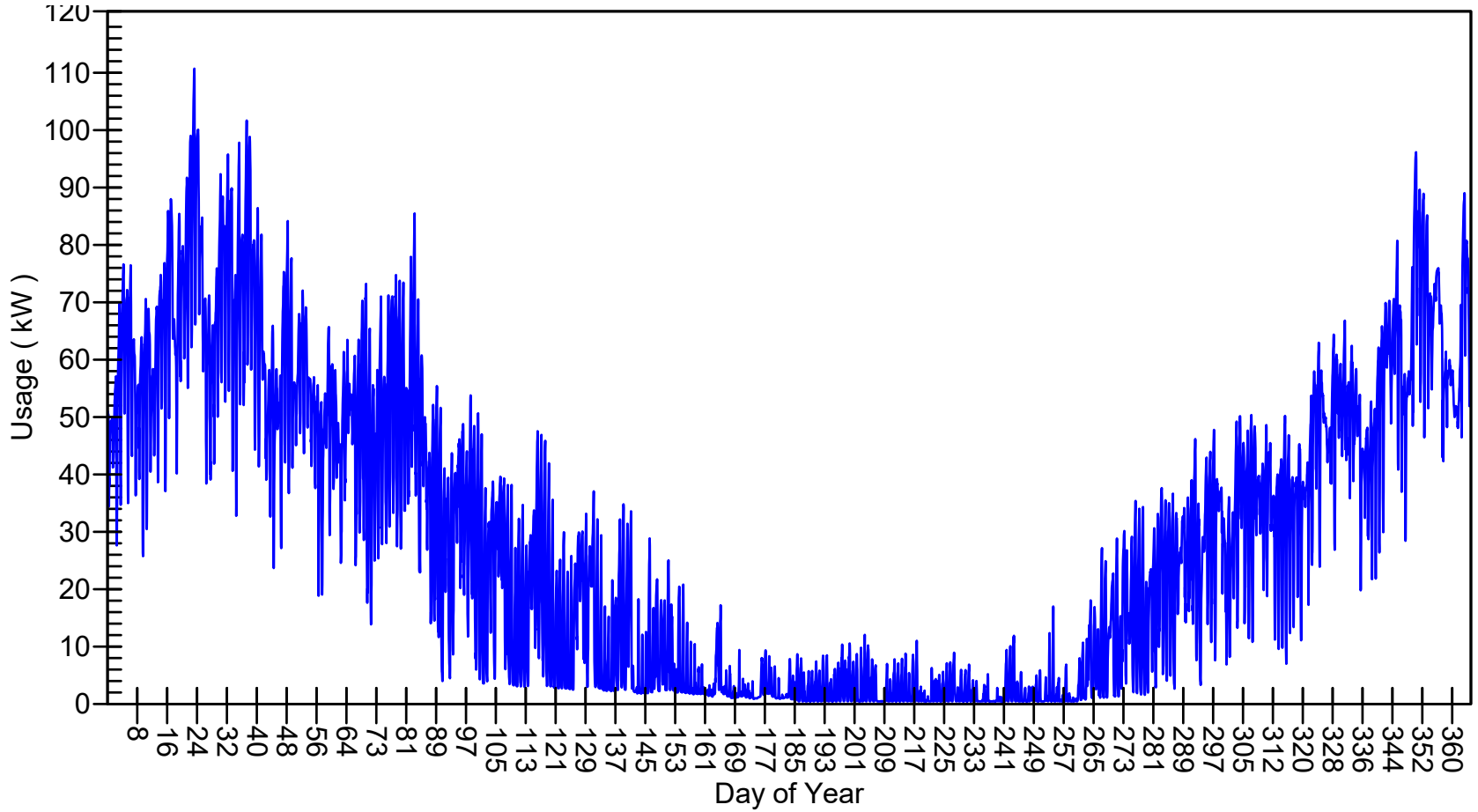
1. HVAC Costs

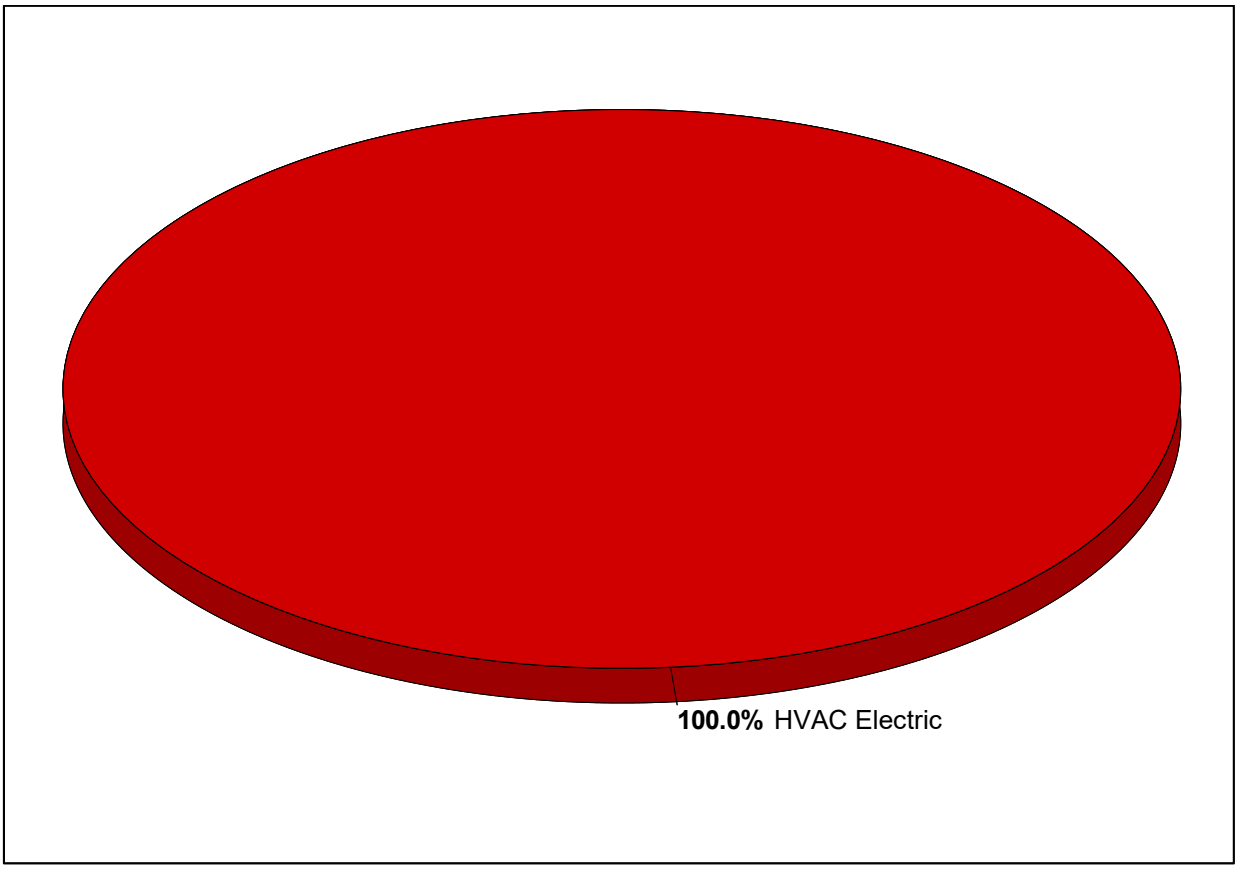
Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	4,679	0	0	0	0	0	0
February	3,993	0	0	0	0	0	0
March	3,412	0	0	0	0	0	0
April	1,712	0	0	0	0	0	0
May	859	0	0	0	0	0	0
June	238	0	0	0	0	0	0
July	190	0	0	0	0	0	0
August	144	0	0	0	0	0	0
September	368	0	0	0	0	0	0
October	1,764	0	0	0	0	0	0
November	2,833	0	0	0	0	0	0
December	4,356	0	0	0	0	0	0
Total	**24,550**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	0	0	0	0	0	0
December	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**

Electric Use Profiles - Sunday, January 1 (day 1) thru Sunday, December 31 (day 365)



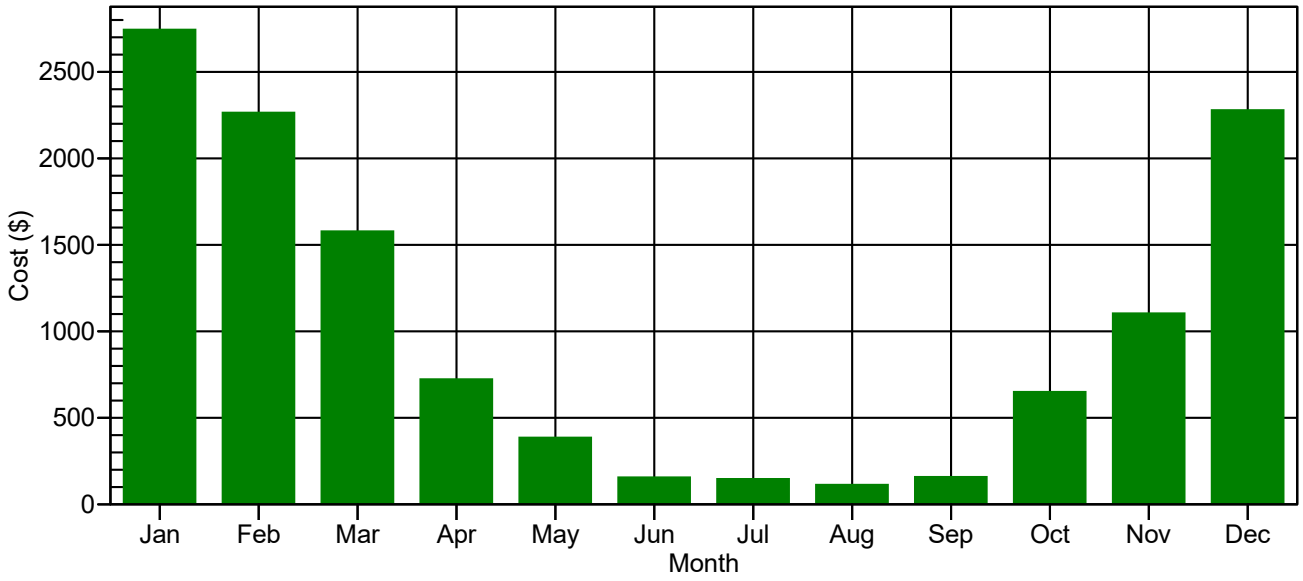


1. Annual Costs

Component	Annual Cost ($)	($/sqft)	Percent of Total (%)
HVAC Components			
Electric	12,299	0.264	100.0
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Remote Chilled Water	0	0.000	0.0
HVAC Sub-Total	**12,299**	**0.264**	**100.0**
Non-HVAC Components			
Electric	0	0.000	0.0
Natural Gas	0	0.000	0.0
Fuel Oil	0	0.000	0.0
Propane	0	0.000	0.0
Remote Hot Water	0	0.000	0.0
Remote Steam	0	0.000	0.0
Non-HVAC Sub-Total	**0**	**0.000**	**0.0**
Grand Total	**12,299**	**0.264**	**100.0**

Note: Cost per unit floor area is based on the gross building floor area.

Gross Floor Area ..... **46,561.5** sqft
Modeled Floor Area ..... **46,561.5** sqft



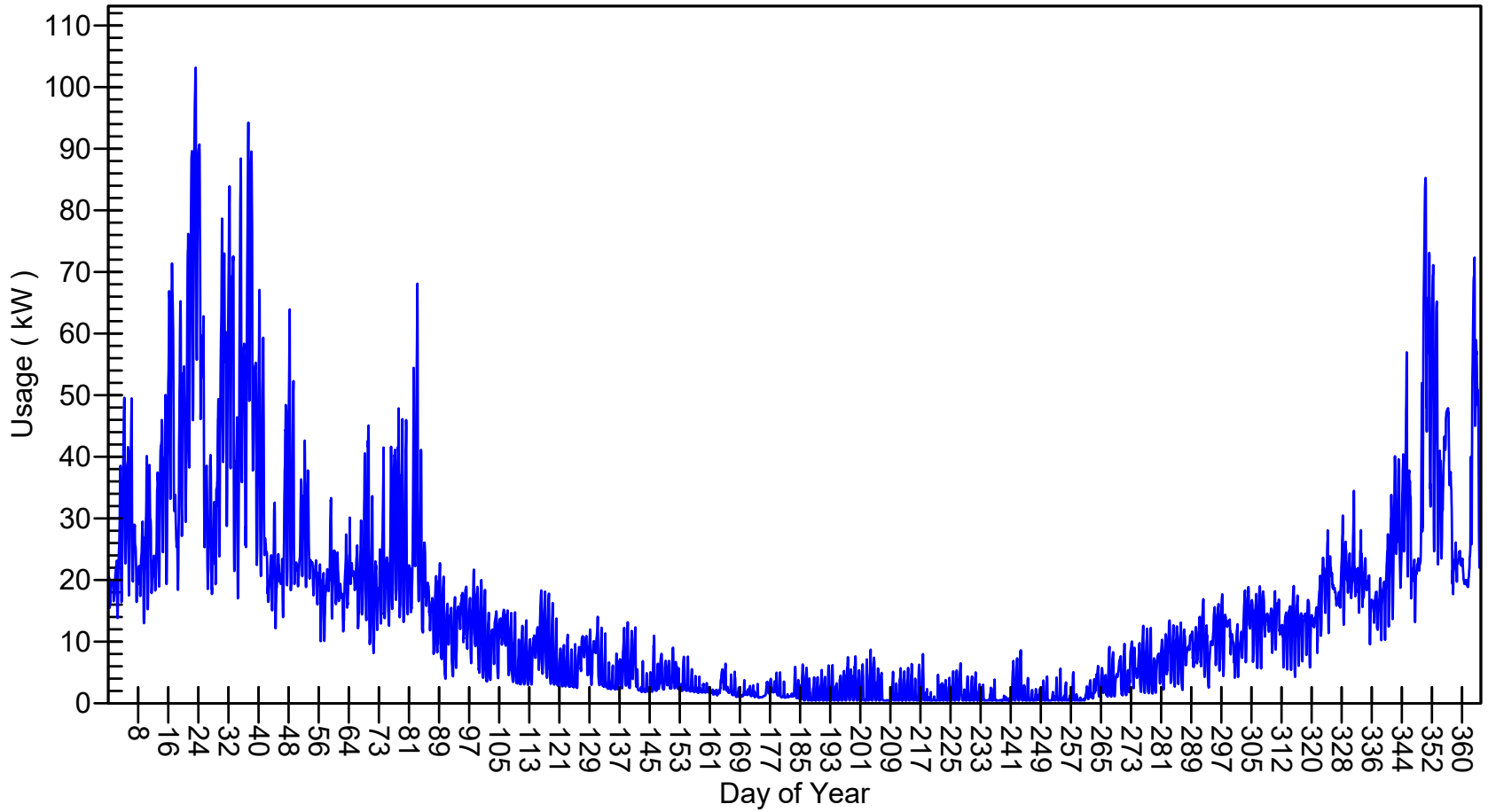
1. HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)	Remote Chilled Water ($)
January	2,745	0	0	0	0	0	0
February	2,264	0	0	0	0	0	0
March	1,578	0	0	0	0	0	0
April	722	0	0	0	0	0	0
May	385	0	0	0	0	0	0
June	155	0	0	0	0	0	0
July	146	0	0	0	0	0	0
August	112	0	0	0	0	0	0
September	158	0	0	0	0	0	0
October	650	0	0	0	0	0	0
November	1,104	0	0	0	0	0	0
December	2,279	0	0	0	0	0	0
Total	**12,299**	**0**	**0**	**0**	**0**	**0**	**0**

2. Non-HVAC Costs

Month	Electric ($)	Natural Gas ($)	Fuel Oil ($)	Propane ($)	Remote Hot Water ($)	Remote Steam ($)
January	0	0	0	0	0	0
February	0	0	0	0	0	0
March	0	0	0	0	0	0
April	0	0	0	0	0	0
May	0	0	0	0	0	0
June	0	0	0	0	0	0
July	0	0	0	0	0	0
August	0	0	0	0	0	0
September	0	0	0	0	0	0
October	0	0	0	0	0	0
November	0	0	0	0	0	0
December	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**

Electric Use Profiles - Sunday, January 1 (day 1) thru Sunday, December 31 (day 365)



Monthly Simulation Results for 01 2E x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québec, QC 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	34888	10225	0	0	0
February	0	0	29600	8675	0	0	0
March	0	0	24732	7248	0	0	0
April	0	0	11417	3346	0	0	0
May	43	3	5025	1473	0	0	0
June	614	36	628	184	0	0	0
July	7051	392	0	0	0	0	0
August	5084	281	0	0	0	0	0
September	1066	59	1985	582	0	0	0
October	0	0	12663	3711	0	0	0
November	0	0	21029	6163	0	0	0
December	0	0	32940	9654	0	0	0
Total	**13858**	**770**	**174907**	**51260**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 03 3E 301 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3275	960	0	0	0
February	0	0	2782	815	0	0	0
March	0	0	2307	676	0	0	0
April	0	0	1055	309	0	0	0
May	1	0	436	128	0	0	0
June	60	3	38	11	0	0	0
July	873	47	0	0	0	0	0
August	687	37	0	0	0	0	0
September	183	10	157	46	0	0	0
October	0	0	1161	340	0	0	0
November	0	0	1980	580	0	0	0
December	0	0	3172	930	0	0	0
Total	**1803**	**97**	**16363**	**4795**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 05 3E 302 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	2650	776	0	0	0
February	0	0	2253	660	0	0	0
March	0	0	1881	551	0	0	0
April	0	0	878	257	0	0	0
May	0	0	378	111	0	0	0
June	40	2	37	11	0	0	0
July	673	37	0	0	0	0	0
August	523	28	0	0	0	0	0
September	133	7	137	40	0	0	0
October	0	0	951	279	0	0	0
November	0	0	1602	470	0	0	0
December	0	0	2552	748	0	0	0
Total	**1369**	**75**	**13319**	**3903**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 07 3E 303 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3204	939	0	0	0
February	0	0	2722	798	0	0	0
March	0	0	2255	661	0	0	0
April	0	0	1028	301	0	0	0
May	1	0	427	125	0	0	0
June	62	3	38	11	0	0	0
July	850	46	0	0	0	0	0
August	676	36	0	0	0	0	0
September	187	10	153	45	0	0	0
October	0	0	1133	332	0	0	0
November	0	0	1938	568	0	0	0
December	0	0	3109	911	0	0	0
Total	**1776**	**96**	**16007**	**4691**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 09 3E 304 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	4983	1460	0	0	0
February	0	0	4237	1242	0	0	0
March	0	0	3451	1011	0	0	0
April	8	0	1624	476	0	0	0
May	43	2	782	229	0	0	0
June	275	15	117	34	0	0	0
July	1466	79	0	0	0	0	0
August	1265	68	0	0	0	0	0
September	488	26	302	88	0	0	0
October	11	1	1781	522	0	0	0
November	0	0	3007	881	0	0	0
December	0	0	4864	1425	0	0	0
Total	**3556**	**191**	**25148**	**7370**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 11 3E 305 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	5648	1655	0	0	0
February	0	0	4785	1402	0	0	0
March	0	0	3975	1165	0	0	0
April	17	1	1892	554	0	0	0
May	99	5	867	254	0	0	0
June	342	18	116	34	0	0	0
July	1332	73	0	0	0	0	0
August	1014	55	0	0	0	0	0
September	304	16	353	104	0	0	0
October	0	0	2092	613	0	0	0
November	0	0	3410	999	0	0	0
December	0	0	5313	1557	0	0	0
Total	**3109**	**169**	**28451**	**8338**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 13 3E 306 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3011	883	0	0	0
February	0	0	2551	748	0	0	0
March	0	0	2204	646	0	0	0
April	0	0	1057	310	0	0	0
May	6	0	428	125	0	0	0
June	45	3	40	12	0	0	0
July	534	31	0	0	0	0	0
August	314	18	0	0	0	0	0
September	34	2	176	52	0	0	0
October	0	0	1164	341	0	0	0
November	0	0	1852	543	0	0	0
December	0	0	2771	812	0	0	0
Total	**933**	**53**	**15256**	**4471**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 15 3E 307 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3776	1107	0	0	0
February	0	0	3194	936	0	0	0
March	0	0	2739	803	0	0	0
April	0	0	1285	377	0	0	0
May	9	1	502	147	0	0	0
June	64	4	43	13	0	0	0
July	665	38	0	0	0	0	0
August	395	22	0	0	0	0	0
September	45	3	208	61	0	0	0
October	0	0	1440	422	0	0	0
November	0	0	2315	679	0	0	0
December	0	0	3478	1019	0	0	0
Total	**1177**	**67**	**18981**	**5563**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 17 3E 308 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	5605	1643	0	0	0
February	0	0	4738	1389	0	0	0
March	0	0	4074	1194	0	0	0
April	0	0	1920	563	0	0	0
May	9	1	764	224	0	0	0
June	99	6	97	28	0	0	0
July	955	53	0	0	0	0	0
August	551	31	0	0	0	0	0
September	67	4	364	107	0	0	0
October	0	0	2163	634	0	0	0
November	0	0	3444	1009	0	0	0
December	0	0	5153	1510	0	0	0
Total	**1683**	**94**	**28321**	**8300**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 19 4E 401 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	4233	1241	0	0	0
February	0	0	3589	1052	0	0	0
March	0	0	2983	874	0	0	0
April	0	0	1411	414	0	0	0
May	6	0	663	194	0	0	0
June	138	8	113	33	0	0	0
July	1081	59	0	0	0	0	0
August	806	44	0	0	0	0	0
September	192	10	288	84	0	0	0
October	0	0	1564	458	0	0	0
November	0	0	2590	759	0	0	0
December	0	0	4063	1191	0	0	0
Total	**2223**	**122**	**21499**	**6301**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 21 4E 402 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3352	982	0	0	0
February	0	0	2845	834	0	0	0
March	0	0	2382	698	0	0	0
April	0	0	1141	334	0	0	0
May	4	0	547	160	0	0	0
June	99	6	98	29	0	0	0
July	835	47	0	0	0	0	0
August	616	34	0	0	0	0	0
September	140	8	237	70	0	0	0
October	0	0	1249	366	0	0	0
November	0	0	2051	601	0	0	0
December	0	0	3204	939	0	0	0
Total	**1694**	**94**	**17108**	**5014**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 23 4E 403 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	4143	1214	0	0	0
February	0	0	3513	1029	0	0	0
March	0	0	2916	855	0	0	0
April	0	0	1377	404	0	0	0
May	6	0	650	190	0	0	0
June	136	8	112	33	0	0	0
July	1045	57	0	0	0	0	0
August	785	43	0	0	0	0	0
September	193	10	283	83	0	0	0
October	0	0	1528	448	0	0	0
November	0	0	2534	743	0	0	0
December	0	0	3980	1167	0	0	0
Total	**2165**	**119**	**21035**	**6165**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 25 4E 404 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	6062	1777	0	0	0
February	0	0	5150	1509	0	0	0
March	1	0	4217	1236	0	0	0
April	24	1	2033	596	0	0	0
May	91	5	1045	306	0	0	0
June	433	23	230	67	0	0	0
July	1693	92	1	0	0	0	0
August	1409	76	7	2	0	0	0
September	538	28	472	138	0	0	0
October	14	1	2228	653	0	0	0
November	0	0	3687	1080	0	0	0
December	0	0	5871	1721	0	0	0
Total	**4203**	**226**	**31003**	**9086**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 27 4E 405 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	7067	2071	0	0	0
February	0	0	5986	1754	0	0	0
March	1	0	5005	1467	0	0	0
April	33	2	2463	722	0	0	0
May	156	8	1227	360	0	0	0
June	525	28	251	73	0	0	0
July	1643	89	1	0	0	0	0
August	1230	66	10	3	0	0	0
September	376	20	574	168	0	0	0
October	2	0	2703	792	0	0	0
November	0	0	4325	1268	0	0	0
December	0	0	6631	1943	0	0	0
Total	**3965**	**213**	**36243**	**10622**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 29 4E 406 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	3757	1101	0	0	0
February	0	0	3182	933	0	0	0
March	0	0	2746	805	0	0	0
April	0	0	1359	398	0	0	0
May	20	1	626	183	0	0	0
June	137	8	106	31	0	0	0
July	725	41	0	0	0	0	0
August	446	25	1	0	0	0	0
September	64	4	294	86	0	0	0
October	0	0	1497	439	0	0	0
November	0	0	2346	687	0	0	0
December	0	0	3467	1016	0	0	0
Total	**1392**	**79**	**19382**	**5680**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 31 4E 407 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	4800	1407	0	0	0
February	0	0	4060	1190	0	0	0
March	0	0	3482	1020	0	0	0
April	0	0	1700	498	0	0	0
May	31	2	771	226	0	0	0
June	184	10	127	37	0	0	0
July	894	50	0	0	0	0	0
August	556	31	1	0	0	0	0
September	83	5	364	107	0	0	0
October	0	0	1897	556	0	0	0
November	0	0	2993	877	0	0	0
December	0	0	4435	1300	0	0	0
Total	**1749**	**98**	**24630**	**7218**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 33 4E 408 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	6586	1930	0	0	0
February	0	0	5567	1632	0	0	0
March	0	0	4788	1403	0	0	0
April	0	0	2325	681	0	0	0
May	29	2	1023	300	0	0	0
June	243	13	196	57	0	0	0
July	1194	66	1	0	0	0	0
August	722	40	5	2	0	0	0
September	113	6	542	159	0	0	0
October	0	0	2604	763	0	0	0
November	0	0	4093	1199	0	0	0
December	0	0	6067	1778	0	0	0
Total	**2301**	**128**	**33797**	**9905**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 35 RDC x 8 Log REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)
January	0	0	34758	10187	0	0	0
February	0	0	29513	8649	0	0	0
March	0	0	24926	7305	0	0	0
April	0	0	12049	3531	0	0	0
May	35	2	5906	1731	0	0	0
June	277	17	1189	348	0	0	0
July	4251	241	2	1	0	0	0
August	3059	173	9	3	0	0	0
September	559	32	2425	711	0	0	0
October	0	0	12895	3779	0	0	0
November	0	0	21004	6156	0	0	0
December	0	0	32629	9563	0	0	0
Total	**8181**	**465**	**177305**	**51963**	**0**	**0**	**0**

Air System Simulation Results (Table 2) :

Month	Electric Equipment (kWh)
January	0
February	0
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	**0**

Monthly Simulation Results for 37 3E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	626	184	11	0	0
February	530	155	10	0	0
March	445	130	11	0	0
April	187	55	11	0	0
May	54	16	11	0	0
June	1	0	11	0	0
July	0	0	11	0	0
August	0	0	11	0	0
September	21	6	11	0	0
October	224	66	11	0	0
November	380	111	11	0	0
December	580	170	11	0	0
Total	**3049**	**894**	**134**	**0**	**0**

Monthly Simulation Results for 39 4E ESC1 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	566	166	10	0	0
February	477	140	9	0	0
March	397	116	10	0	0
April	175	51	10	0	0
May	63	18	10	0	0
June	5	2	10	0	0
July	0	0	10	0	0
August	0	0	10	0	0
September	29	9	10	0	0
October	213	62	10	0	0
November	352	103	10	0	0
December	527	154	10	0	0
Total	**2803**	**821**	**122**	**0**	**0**

Monthly Simulation Results for 41 4E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1934	567	37	0	0
February	1644	482	33	0	0
March	1415	415	37	0	0
April	697	204	36	0	0
May	332	97	37	0	0
June	71	21	36	0	0
July	0	0	37	0	0
August	1	0	37	0	0
September	154	45	36	0	0
October	736	216	37	0	0
November	1182	347	36	0	0
December	1796	526	37	0	0
Total	**9963**	**2920**	**436**	**0**	**0**

Monthly Simulation Results for 43 SS Stationnement REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	10876	3187	228	0	0
February	9997	2930	206	0	0
March	9756	2859	228	0	0
April	7209	2113	221	0	0
May	5077	1488	228	0	0
June	2629	770	221	0	0
July	141	41	228	0	0
August	0	0	228	0	0
September	694	203	221	0	0
October	3811	1117	228	0	0
November	5738	1682	221	0	0
December	8328	2441	228	0	0
Total	**64257**	**18832**	**2686**	**0**	**0**

Monthly Simulation Results for 45 Couloir et SAS REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Preheat Coil Load (kBTU)	Preheat Coil Input (kWh)	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)
January	0	0	603	43	4545	1332	0
February	0	0	563	40	3859	1131	0
March	0	0	671	48	3378	990	0
April	0	0	542	39	1719	504	0
May	0	0	387	29	785	230	0
June	0	0	304	24	177	52	0
July	0	0	553	40	9	3	0
August	0	0	440	32	21	6	0
September	0	0	343	26	411	121	0
October	0	0	625	45	1915	561	0
November	0	0	656	47	2923	857	0
December	0	0	655	47	4257	1247	0
Total	**0**	**0**	**6343**	**458**	**23998**	**7033**	**0**

Air System Simulation Results (Table 2) :

Month	Lighting (kWh)	Electric Equipment (kWh)
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
Total	**0**	**0**

Monthly Simulation Results for 47 3E ESC2 REF

(In Alternative: a) Alternative REF)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1760	516	34	0	0
February	1497	439	30	0	0
March	1290	378	34	0	0
April	629	184	33	0	0
May	291	85	34	0	0
June	50	15	33	0	0
July	0	0	34	0	0
August	0	0	34	0	0
September	123	36	33	0	0
October	658	193	34	0	0
November	1066	312	33	0	0
December	1634	479	34	0	0
Total	**8999**	**2637**	**396**	**0**	**0**

Monthly Simulation Results for 02 2E x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	26425	2831	8462	2480	0
February	0	0	23293	2436	6307	1848	0
March	0	0	23271	2191	1461	428	0
April	0	0	11417	941	0	0	0
May	43	2	5025	374	0	0	0
June	613	25	628	45	0	0	0
July	7048	278	0	0	0	0	0
August	5084	200	0	0	0	0	0
September	1065	42	1985	143	0	0	0
October	0	0	12663	980	0	0	0
November	0	0	20959	1804	70	21	0
December	0	0	27277	2712	5663	1660	0
Total	**13854**	**548**	**152944**	**14457**	**21963**	**6437**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 04 3E 301 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2636	290	638	187	0
February	0	0	2310	247	472	138	0
March	0	0	2219	213	88	26	0
April	0	0	1055	89	0	0	0
May	1	0	436	33	0	0	0
June	59	2	38	3	0	0	0
July	871	33	0	0	0	0	0
August	686	25	0	0	0	0	0
September	182	7	157	12	0	0	0
October	0	0	1161	92	0	0	0
November	0	0	1979	174	2	0	0
December	0	0	2750	280	422	124	0
Total	**1799**	**67**	**14741**	**1433**	**1622**	**475**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 06 3E 302 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2349	261	300	88	0
February	0	0	2030	220	223	65	0
March	0	0	1867	181	14	4	0
April	0	0	878	74	0	0	0
May	0	0	378	29	0	0	0
June	36	1	37	3	0	0	0
July	625	24	0	0	0	0	0
August	487	18	0	0	0	0	0
September	122	4	137	10	0	0	0
October	0	0	951	75	0	0	0
November	0	0	1602	143	0	0	0
December	0	0	2386	247	166	49	0
Total	**1270**	**48**	**12616**	**1243**	**703**	**206**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 08 3E 303 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2602	287	603	177	0
February	0	0	2276	244	446	131	0
March	0	0	2176	209	79	23	0
April	0	0	1028	87	0	0	0
May	1	0	427	32	0	0	0
June	62	2	38	3	0	0	0
July	849	32	0	0	0	0	0
August	675	25	0	0	0	0	0
September	186	7	153	11	0	0	0
October	0	0	1133	90	0	0	0
November	0	0	1936	171	1	0	0
December	0	0	2714	277	395	116	0
Total	**1772**	**66**	**14484**	**1411**	**1523**	**446**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 10 3E 304 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	3639	388	1344	394	0
February	0	0	3251	336	986	289	0
March	0	0	3168	293	283	83	0
April	8	0	1624	132	0	0	0
May	43	2	782	57	0	0	0
June	272	11	117	8	0	0	0
July	1457	59	0	0	0	0	0
August	1258	50	0	0	0	0	0
September	485	19	302	21	0	0	0
October	11	0	1781	136	0	0	0
November	0	0	2981	253	26	8	0
December	0	0	3917	385	946	277	0
Total	**3534**	**142**	**21563**	**2009**	**3586**	**1051**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 12 3E 305 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	4003	423	1644	482	0
February	0	0	3546	365	1239	363	0
March	0	0	3600	333	375	110	0
April	17	1	1892	154	0	0	0
May	99	4	867	64	0	0	0
June	339	14	116	8	0	0	0
July	1324	54	0	0	0	0	0
August	1008	41	0	0	0	0	0
September	301	12	353	25	0	0	0
October	0	0	2092	159	0	0	0
November	0	0	3370	285	40	12	0
December	0	0	4188	410	1125	330	0
Total	**3088**	**126**	**24028**	**2226**	**4423**	**1296**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 14 3E 306 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2634	284	378	111	0
February	0	0	2259	240	293	86	0
March	0	0	2184	209	20	6	0
April	0	0	1057	88	0	0	0
May	5	0	428	32	0	0	0
June	42	2	40	3	0	0	0
July	504	20	0	0	0	0	0
August	298	12	0	0	0	0	0
September	32	1	176	13	0	0	0
October	0	0	1164	91	0	0	0
November	0	0	1852	162	0	0	0
December	0	0	2568	260	203	59	0
Total	**880**	**35**	**14362**	**1382**	**893**	**262**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 16 3E 307 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2981	319	795	233	0
February	0	0	2572	270	622	182	0
March	0	0	2624	249	115	34	0
April	0	0	1285	107	0	0	0
May	8	0	502	38	0	0	0
June	58	2	43	3	0	0	0
July	614	24	0	0	0	0	0
August	366	14	0	0	0	0	0
September	41	2	208	15	0	0	0
October	0	0	1440	112	0	0	0
November	0	0	2314	201	1	0	0
December	0	0	2971	297	507	149	0
Total	**1086**	**42**	**16939**	**1612**	**2042**	**598**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 18 3E 308 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	4106	431	1498	439	0
February	0	0	3591	369	1147	336	0
March	0	0	3800	351	274	80	0
April	0	0	1920	155	0	0	0
May	9	0	764	56	0	0	0
June	99	4	97	7	0	0	0
July	950	39	0	0	0	0	0
August	549	23	0	0	0	0	0
September	67	3	364	26	0	0	0
October	0	0	2163	164	0	0	0
November	0	0	3428	289	16	5	0
December	0	0	4169	407	983	288	0
Total	**1674**	**70**	**24403**	**2253**	**3919**	**1148**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 20 4E 401 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	3518	377	716	210	0
February	0	0	3056	320	533	156	0
March	0	0	2896	271	87	26	0
April	0	0	1411	115	0	0	0
May	6	0	663	49	0	0	0
June	137	6	113	8	0	0	0
July	1080	44	0	0	0	0	0
August	805	33	0	0	0	0	0
September	192	8	288	20	0	0	0
October	0	0	1564	119	0	0	0
November	0	0	2590	222	0	0	0
December	0	0	3609	359	454	133	0
Total	**2219**	**91**	**19708**	**1859**	**1790**	**525**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 22 4E 402 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2736	297	617	181	0
February	0	0	2387	253	458	134	0
March	0	0	2296	219	86	25	0
April	0	0	1141	95	0	0	0
May	3	0	547	41	0	0	0
June	90	4	98	7	0	0	0
July	775	30	0	0	0	0	0
August	572	22	0	0	0	0	0
September	128	5	237	17	0	0	0
October	0	0	1249	98	0	0	0
November	0	0	2050	179	1	0	0
December	0	0	2806	283	399	117	0
Total	**1568**	**60**	**15548**	**1488**	**1560**	**457**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 24 4E 403 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2941	318	1202	352	0
February	0	0	2655	278	858	251	0
March	0	0	2651	249	265	78	0
April	0	0	1377	114	0	0	0
May	6	0	650	49	0	0	0
June	136	5	112	8	0	0	0
July	1043	39	0	0	0	0	0
August	784	29	0	0	0	0	0
September	193	7	283	20	0	0	0
October	0	0	1528	119	0	0	0
November	0	0	2496	215	37	11	0
December	0	0	3128	312	852	250	0
Total	**2162**	**81**	**17821**	**1682**	**3214**	**942**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 26 4E 404 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	3924	416	2138	627	0
February	0	0	3590	367	1560	457	0
March	1	0	3602	330	615	180	0
April	24	1	2033	163	0	0	0
May	91	4	1045	76	0	0	0
June	429	17	230	16	0	0	0
July	1680	68	1	0	0	0	0
August	1399	56	7	0	0	0	0
September	533	21	472	33	0	0	0
October	14	1	2228	168	0	0	0
November	0	0	3545	296	142	42	0
December	0	0	4244	413	1627	477	0
Total	**4172**	**167**	**24921**	**2279**	**6082**	**1782**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 28 4E 405 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	4242	445	2825	828	0
February	0	0	3872	393	2114	620	0
March	1	0	4087	373	918	269	0
April	33	1	2459	196	4	1	0
May	156	6	1227	89	0	0	0
June	520	21	250	17	0	0	0
July	1631	66	1	0	0	0	0
August	1222	49	10	1	0	0	0
September	372	15	574	40	0	0	0
October	2	0	2702	202	0	0	0
November	0	0	4085	338	240	70	0
December	0	0	4512	436	2119	621	0
Total	**3935**	**158**	**28023**	**2530**	**8220**	**2409**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 30 4E 406 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	2976	319	781	229	0
February	0	0	2568	270	614	180	0
March	0	0	2623	249	123	36	0
April	0	0	1359	113	0	0	0
May	19	1	626	47	0	0	0
June	125	5	106	8	0	0	0
July	672	26	0	0	0	0	0
August	415	16	1	0	0	0	0
September	58	2	294	21	0	0	0
October	0	0	1497	117	0	0	0
November	0	0	2344	203	1	0	0
December	0	0	2970	297	497	146	0
Total	**1289**	**50**	**17364**	**1644**	**2017**	**591**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 32 4E 407 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	3871	409	929	272	0
February	0	0	3326	345	734	215	0
March	0	0	3351	313	131	38	0
April	0	0	1700	138	0	0	0
May	31	1	771	56	0	0	0
June	184	8	127	9	0	0	0
July	893	37	0	0	0	0	0
August	555	23	1	0	0	0	0
September	83	4	364	26	0	0	0
October	0	0	1897	144	0	0	0
November	0	0	2992	254	1	0	0
December	0	0	3852	380	583	171	0
Total	**1745**	**73**	**22253**	**2076**	**2377**	**697**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 34 4E 408 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	4274	446	2312	678	0
February	0	0	3852	391	1715	503	0
March	0	0	4197	383	592	173	0
April	0	0	2325	186	0	0	0
May	29	1	1023	74	0	0	0
June	240	10	196	14	0	0	0
July	1185	49	1	0	0	0	0
August	717	30	5	0	0	0	0
September	112	5	542	38	0	0	0
October	0	0	2604	196	0	0	0
November	0	0	3984	331	108	32	0
December	0	0	4462	432	1604	470	0
Total	**2284**	**95**	**27465**	**2490**	**6332**	**1856**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 36 RDC x 8 Log CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Central Heating Coil Load (kBTU)	Central Unit Htg Input (kWh)	Central Unit Aux. Htg. Load (kBTU)	Central Unit Aux. Htg. Input (kWh)	Supply Fan (kWh)
January	0	0	26440	2831	8319	2438	0
February	0	0	23287	2434	6226	1825	0
March	0	0	23440	2205	1486	435	0
April	0	0	12049	989	0	0	0
May	35	2	5906	437	0	0	0
June	275	12	1189	84	0	0	0
July	4233	171	2	0	0	0	0
August	3048	123	9	1	0	0	0
September	556	23	2425	174	0	0	0
October	0	0	12895	996	0	0	0
November	0	0	20941	1802	63	18	0
December	0	0	27148	2701	5481	1606	0
Total	**8147**	**330**	**155732**	**14655**	**21573**	**6323**	**0**

Air System Simulation Results (Table 2) :

Month	Air-to-Air Energy Recovery (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	0	0	0
February	0	0	0
March	0	0	0
April	0	0	0
May	0	0	0
June	0	0	0
July	0	0	0
August	0	0	0
September	0	0	0
October	0	0	0
November	0	0	0
December	0	0	0
Total	**0**	**0**	**0**

Monthly Simulation Results for 38 3E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	626	184	11	0	0
February	530	155	10	0	0
March	445	130	11	0	0
April	187	55	11	0	0
May	54	16	11	0	0
June	1	0	11	0	0
July	0	0	11	0	0
August	0	0	11	0	0
September	21	6	11	0	0
October	224	66	11	0	0
November	380	111	11	0	0
December	580	170	11	0	0
Total	**3049**	**894**	**134**	**0**	**0**

Monthly Simulation Results for 40 4E ESC1 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	566	166	10	0	0
February	477	140	9	0	0
March	397	116	10	0	0
April	175	51	10	0	0
May	63	18	10	0	0
June	5	2	10	0	0
July	0	0	10	0	0
August	0	0	10	0	0
September	29	9	10	0	0
October	213	62	10	0	0
November	352	103	10	0	0
December	527	154	10	0	0
Total	**2803**	**821**	**122**	**0**	**0**

Monthly Simulation Results for 42 4E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1934	567	37	0	0
February	1644	482	33	0	0
March	1415	415	37	0	0
April	697	204	36	0	0
May	332	97	37	0	0
June	71	21	36	0	0
July	0	0	37	0	0
August	1	0	37	0	0
September	154	45	36	0	0
October	736	216	37	0	0
November	1182	347	36	0	0
December	1796	526	37	0	0
Total	**9963**	**2920**	**436**	**0**	**0**

Monthly Simulation Results for 44 SS Stationnement CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	10876	3187	228	0	0
February	9997	2930	206	0	0
March	9756	2859	228	0	0
April	7209	2113	221	0	0
May	5077	1488	228	0	0
June	2629	770	221	0	0
July	141	41	228	0	0
August	0	0	228	0	0
September	694	203	221	0	0
October	3811	1117	228	0	0
November	5738	1682	221	0	0
December	8328	2441	228	0	0
Total	**64256**	**18832**	**2686**	**0**	**0**

Monthly Simulation Results for 46 Couloir et SAS CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Preheat Coil Load (kBTU)	Preheat Coil Input (kWh)	Central Cooling Coil Load (kBTU)	Central Unit Clg Input (kWh)	Terminal Heating Coil Load (kBTU)	Terminal Heating Coil Input (kWh)	Supply Fan (kWh)
January	0	0	603	43	4545	1332	0
February	0	0	563	40	3859	1131	0
March	0	0	671	48	3378	990	0
April	0	0	542	39	1719	504	0
May	0	0	387	29	785	230	0
June	0	0	304	24	177	52	0
July	0	0	553	40	9	3	0
August	0	0	440	32	21	6	0
September	0	0	343	26	411	121	0
October	0	0	625	45	1915	561	0
November	0	0	656	47	2923	857	0
December	0	0	655	47	4257	1247	0
Total	**0**	**0**	**6343**	**458**	**23998**	**7033**	**0**

Air System Simulation Results (Table 2) :

Month	Lighting (kWh)	Electric Equipment (kWh)
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
Total	**0**	**0**

Monthly Simulation Results for 48 3E ESC2 CPT

(In Alternative: b) Alternative CPT)

Project: 26919 32 unités au 17035 Boul. Henri-Bourassa, Québ... 02/23/2026

Prepared by: Groupe CMI 12:06 PM

Air System Simulation Results (Table 1) :

Month	Central Heating Coil Load (kBTU)	Central Heating Coil Input (kWh)	Supply Fan (kWh)	Lighting (kWh)	Electric Equipment (kWh)
January	1760	516	34	0	0
February	1497	439	30	0	0
March	1290	378	34	0	0
April	629	184	33	0	0
May	291	85	34	0	0
June	50	15	33	0	0
July	0	0	34	0	0
August	0	0	34	0	0
September	123	36	33	0	0
October	658	193	34	0	0
November	1066	312	33	0	0
December	1634	479	34	0	0
Total	**8999**	**2637**	**396**	**0**	**0**