



UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

FACULTAD DE INGENIERÍA

Proyecto de aire acondicionado y ventilación para la construcción del edificio sede del Poder Judicial de la Federación en Celaya, Guanajuato.

INFORME DE ACTIVIDADES PROFESIONALES

Que para obtener el título de
Ing. Mecánico Electricista

P R E S E N T A

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INTRODUCCIÓN

Durante miles de años el hombre advirtió que las corrientes de aire mitigaban la alta temperatura del ambiente en zonas de climas extremos, pero era incapaz de hacer algo al respecto. A lo máximo que llegó fue a refugiarse en cuevas o a meterse en el agua. Pero llegó un día en que comenzó a idear cómo podría disminuir la temperatura del ambiente a su antojo, y experimentó comenzando a esparcir gotas de agua a las corriente de aire.

La historia del aire acondicionado o enfriamiento artificial en forma empieza desde la época de los egipcios que ya utilizaban métodos para reducir el calor mediante el enfriamiento de las piedras.

Sin embargo la idea de crear un aparato al que hoy en día llamamos climatizador, parte del ingeniero estadounidense Willis Carrier quien en 1902 inventó la primera unidad de aire acondicionado eléctrica moderna al tratar de resolver un problema de humedad que estaba causando que las páginas de las revistas se arrugaran en la empresa de litografía para la cual trabajaba.

A pesar de los avances en las tecnologías de refrigeración en los años 30 y 40, estos sistemas eran demasiado grandes y caros para los hogares

Poco a poco se logró edificar sitios específicos que mantenían en condiciones ambientales más confortables y que auxiliados con un tratamiento del aire agregando humedad o secándolo comenzaron a mejorar las condiciones dentro de los recintos, logrando ventilar los espacios de manera aceptable. Tomando muy en cuenta que en todos los recintos la ganancia o pérdida de calor dependería del tipo de materiales a utilizar como por ejemplo: el tipo de muro (de concreto, ladrillo, etc.), vidrio (transparente, ahumado, espesor del vidrio, con película reflejante, etc.), losa, entepiso, etc.; y adicional a la orientación del recinto con respecto al sol y a la estación del año (periodo con ciertas condiciones climáticas). Hasta nuestros días que logra diseñar sistemas de acondicionamiento de aire para cada aplicación, controlando las condiciones de temperatura y humedad necesaria para lograr ambientes de confort dentro de un recinto, no importando las condiciones ambientales del lugar.

Para nuestro caso en particular se tomaron en consideración los estándares nacionales e internacionales que indican los parámetros de temperatura y humedad que mantienen las condiciones de confort para las áreas de oficinas, centros de computo, comedor, área de cocina y áreas asignadas como bodegas.

OBJETIVO DEL TRABAJO

Las necesidades actuales del Poder Judicial de la Federación como parte de un programa nacional, es instrumentar y poner en vigor un Nuevo Sistema Procesal Penal Acusatorio en toda la República Mexicana. Y para este caso en particular el Consejo de la Judicatura Federal tiene asignado un predio ubicado en calle Quetzalli No. 901, fraccionamiento los Álamos CP 38020 Celaya Guanajuato; cuya superficie para esta construcción es de 2,425 m² destinada para la Nueva Sede del Poder Judicial de Federación en esa entidad. En donde el objetivo es la aplicación de las nuevas tecnologías de sistemas de aire acondicionado y calefacción con refrigerante de volumen variable (VRV), con refrigerante ecológico a las áreas de oficinas y áreas públicas, dando como resultado un ambiente de confort, un ahorro de energía, la ventaja de llevar un solo recorrido de tuberías de cobre e ir distribuyendo a las evaporadoras con la tubería requerida.

Para el caso del Site de cómputo se especificó un sistema de aire acondicionado de precisión que garantiza las condiciones de temperatura y humedad durante todos los días del año.

Para áreas independientes de jueces y titulares se especificaron equipos unitarios divididos con refrigerante ecológico conectados a circuitos eléctricos de emergencia.

El alcance también incluye mantener las condiciones apropiadas de la calidad del aire dentro del inmueble, contando con sistema de extracción y renovación de aire.

En el primer capítulo se inicia la descripción de la empresa, dando fe que es una empresa nacional con carácter de servicios de arquitectura e ingeniería integral, que bajo un mismo techo da soluciones integrales a cada tipo de inmueble, ya sea de carácter residencial, comercial e industrial.

En el segundo capítulo se hace mención de las responsabilidades y funciones que me competen dentro de la empresa, que garantizan la coordinación de trabajo en equipo con las demás disciplinas de ingeniería y arquitectura.

En el tercer capítulo se describe nuestra colaboración dentro de la empresa, donde se muestra el proyecto de aire acondicionado y ventilación para la construcción del edificio Poder Judicial de la Federación en Celaya, Guanajuato.

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DESCRIPCIÓN DE LA EMPRESA

EMPRESA: IEMBK S.A. DE C.V.

TRABAJO:

Proyecto de aire acondicionado y ventilación para la construcción del edificio sede del Poder Judicial de la Federación en Celaya, Guanajuato.

IEMBK S.A. DE C.V.- es la asociación de un grupo de expertos altamente calificados en sus respectivas especialidades, con experiencia mayor a 15 años que se han unido para proporcionar servicios integrales de asesoría técnica en obras de todo tipo de construcción en el más alto nivel profesional bajo la razón social de "IEMBK, S.A. de C.V." (Integral Engineering & Management of Buildings).

VISIÓN

Con una clara conciencia de las necesidades actuales, de México está a la búsqueda de nuevas metodologías que le permitan lograr mayores niveles de competitividad bajo un esquema de profesionalismo.

MISIÓN

Con el propósito de ofrecer al cliente soluciones integrales a proyectos dentro de la industria de la construcción para áreas comerciales e industriales; ofrecer las siguientes funciones:

1.-) PLANEACIÓN

- 1.1.) Estudios de Factibilidad Técnico y Financiera.
- 1.2.) Elaboración de Proyectos Integrales.
- 1.3.) Levantamientos Topográficos.
- 1.4.) Evaluación de Alternativas y Prioridades.
- 1.5.) Programación y Control de Obras y Proyectos.
- 1.6.) Análisis de Precios Unitarios y Presupuestos Base.
- 1.7.) Selección de Equipos.

2.-) COORDINACIÓN INTEGRAL Y SUPERVISIÓN DE OBRAS Y PROYECTOS

- 2.1.) Elaboración y Seguimiento de Programas de Ruta Crítica.
- 2.2.) Controles de Avances, de Calidad y de Costos.
- 2.3.) Informes Técnicos y Financieros.

2.4.) Coordinación de la Construcción

3.-) ARQUITECTURA , URBANISMO Y CONSTRUCCIÓN

3.1.) Planes Maestros de Desarrollo Urbano Integral.

3.2.) Planos Reguladores.

3.3.) Diseño Urbano y de Fraccionamientos.

3.4.) Movimiento de Terracerías.

3.5.) Instalaciones.

3.6.) Pavimentos.

3.7.) Centros Hospitalarios.

3.8.) Edificación.

3.9) Docencia e Investigación

4.-) VIALIDAD Y TRANSPORTE

4.1.) Estudio Integral de Vialidad y Transporte.

4.2.) Análisis de Alternativas y Evaluación de su Costo Beneficio.

4.3.) Estudio de Prioridades a Corto y Mediano Plazo.

4.4.) Programa y Etapas de Trabajo.

4.5.) Proyectos Ejecutivos.

4.6.) Elaboración de Presupuestos Base.

4.7.) Coordinación y Supervisión de Obra.

4.8.) Informes Técnicos y Financieros.

5.-) OBRAS HIDRÁULICAS

5.1.) Sistemas de Agua Potable.

5.2.) Sistemas de Alcantarillado.

5.3.) Sistemas de Recuperación.

5.4.) Plantas de Tratamiento.

5.5.) Sistemas de Riego.

5.6.) Sistemas de Bombeo.

5.7.) Evaluaciones.

6.-) ELECTRICIDAD Y MECÁNICA

6.1.) Distribución.

6.2.) Fuerza y Alumbrado.

6.3.) Controles.

6.4.) Pararrayos y Tierras.

6.5.) Aire Acondicionado.

6.6.) Manejo de Materiales.

6.7.) Control de Polvos.

7.-) PLANTAS INDUSTRIALES

7.1.) Estudios de Localización.

7.2.) Servicios de Apoyo.

7.3.) Anteproyectos.

7.4.) Arreglo General.

7.5.) Proyectos Definitivos.

7.6.) Coordinación.

8-) ESTRUCTURAS

8.1.) Edificios.

8.2.) Tanques.

8.3.) Silos.

8.4.) Puentes.

8.5.) Estructuras Especiales.

FILOSOFÍA

Nuestra filosofía es ofrecer los servicios que originen, doten y propicien un óptimo aprovechamiento de los recursos energéticos y/o materiales de cualquier tipo de inmueble para obtener el máximo desempeño tanto en su operación, como en el desarrollo de las actividades de sus ocupantes, gracias a un entorno de seguridad para bienes y personas y al confort necesario para usuarios y visitantes.

El reto de IEMBK es convertir a las empresas y espacios comunes en organizaciones inteligentes y productivas, evitando además, que los empresarios sean sorprendidos con tecnologías obsoletas a altos costos.

IEMBK trabaja en la búsqueda de soluciones que permitan disminuir los costos de operación y mantenimiento para poder ofrecer mejores precios y, ante todo, dar respuesta a las necesidades específicas del cliente con la más alta calidad.

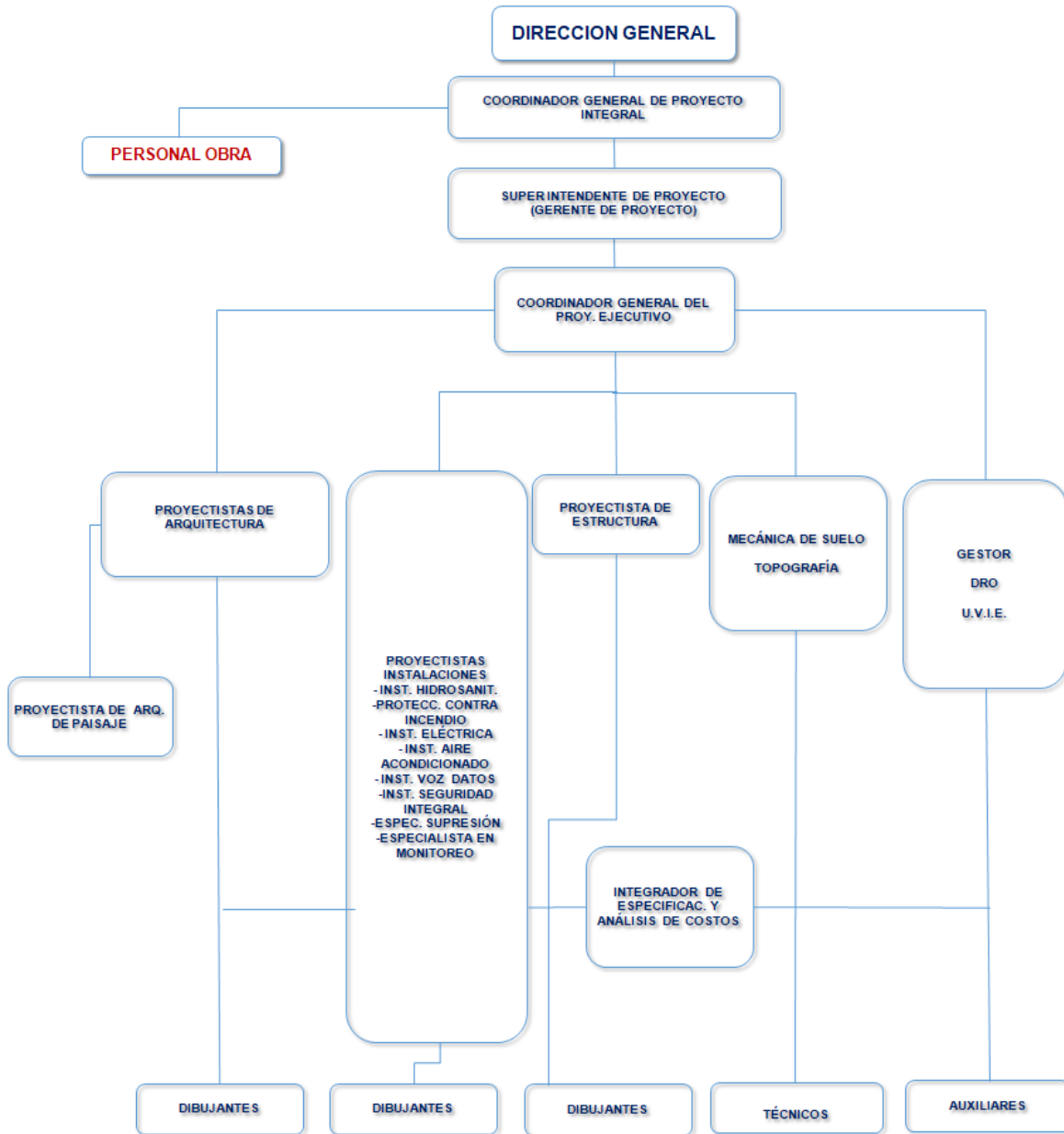
IEMBK busca conseguir la confianza de nuestros clientes a través del apego total a la ética y al profesionalismo, fortaleciendo nuestra experiencia a través de soluciones de calidad, eficientes e innovadoras.

OFICINAS CENTRALES

Calle Nápoles No. 49 3er Piso, Col. Juárez, México DF. Delegación Cuauhtémoc

C.P.06600 T/F 19989940/41 iembk_1@yahoo.com.mx

ORGANIGRAMA - IEMBK, S.A. DE C.V.



DESCRIPCIÓN DEL PUESTO DE TRABAJO

Durante más de 10 años se me asignó la responsabilidad del departamento de aire acondicionado y ventilación (Instalación de Aire Acondicionado) donde las actividades a desempeñar son:

- Atender de manera directa al departamento de arquitectura ó al desarrollador del inmueble para definir los criterios y alcances del proyecto de aire acondicionado y ventilación según sea el tipo de edificación.
- Coordinar con el departamento de arquitectura y estructuras para la asignación de áreas para equipos, pasos en losas y muros; así como solicitar los tipos de acabados tanto interior como exterior del inmueble, planos de distribución de mobiliario, alzados, orientación del inmueble con respecto al norte geográfico.
- Calcular las cargas térmicas y ventilación del inmueble de acuerdo a métodos de cálculo aprobados por normas internacionales que nos permitan dimensionar las capacidades y características de los equipos de aire acondicionado y ventilación.
- Realizar un análisis de las ventajas y desventajas de los diferentes tipos de sistemas de aire acondicionado y ventilación para el tipo de inmueble a acondicionar, considerando los factores de costos, ahorro de energía, tiempo de entrega, mantenimientos, vida útil, etc.
- Selección de equipos por medio de software autorizados por fabricantes de equipos de aire acondicionado, así como la especificación de materiales como tuberías, válvulas, lámina negra o galvanizada para ductos, aislamiento para ductos y tuberías, soportes para equipos y materiales, etc.
- Distribución de equipos, trayectorias de tuberías y ductos, canalización de tuberías de control, ubicación de instrumentación y control, generación de cuadro de equipos, detalles, y alzados; todo esto representados en planos ejecutivos de obra.
- Asesoría, supervisión y apoyo directo en la obra del inmueble, donde se atestigua que el desarrollo de la obra sea de acuerdo al proyecto ejecutivo, coordinando el cruce de otras instalaciones con el sistema de aire acondicionado y ventilación.
- Emitir la secuencia de operación del sistema de aire acondicionado y ventilación para que sea la programada en los sistemas de control y automatización.
- Asistir a las pruebas y los arranques de los equipos verificando que cumplan con las especificaciones de desempeño de cada unidad.

NORMAS Y REGLAMENTOS

Actualmente en México no existe un reglamento o normatividad oficial que sea mandatorio para la aplicación de las buenas prácticas de cálculos y selección de sistemas de aire acondicionado, pero en la industria dedicada a esta especialidad recomienda aplicar las siguientes normas nacionales e internacionales:

- ASHRAE.- American Society of Heating, Refrigerating and Air Conditioning Engineers
- AMCA.- Air Movement and Control Association
- SMACNA.- Sheet Metal and Air Conditioning Contractors National Association
- ASME.- American Society of Mechanical Engineers
- UMC.- Uniform Mechanical Code
- Normas de Diseño del IMSS
- AMERIC.- Asociación Mexicana de Empresas del Ramo de Instalaciones para la Construcción

HERRAMIENTAS DE CÁLCULO Y SELECCIÓN DE EQUIPOS (SOFTWARE)

- AutoCAD.- software de dibujo técnico.
- Tracer 700 (software de Trane - Método de cálculo)
- Hisense VRF design.- software de cálculo y selección de equipos de sistema VRF de la marca Hisense.
- Ductziser.- Software para cálculo de dimensión de ductos.
- Software de Office

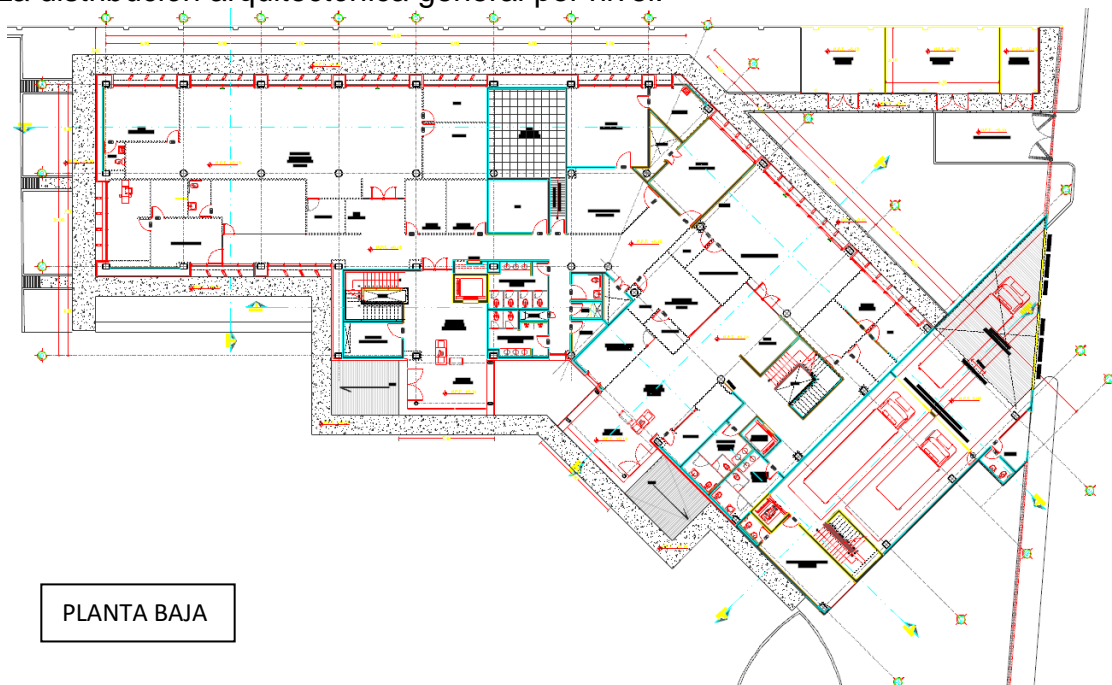
DESCRIPCIÓN DE LA PARTICIPACIÓN DEL ALUMNO EN LA EMPRESA

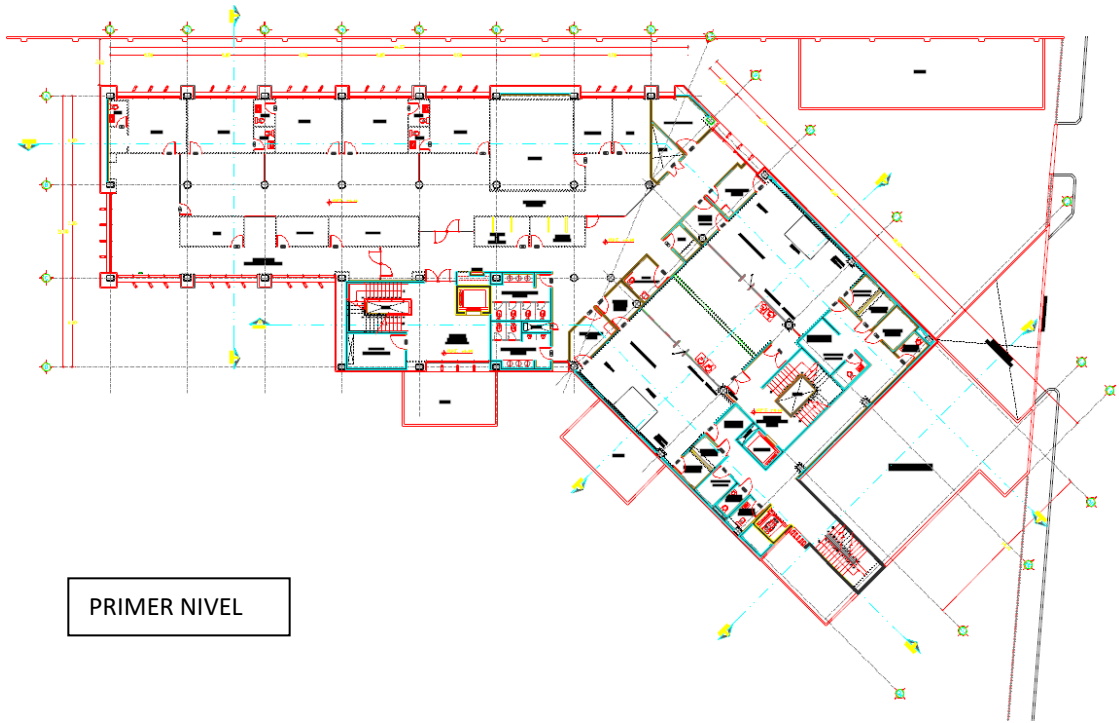
ANTECEDENTES DEL PROYECTO

Las necesidades actuales del Poder Judicial de la Federación como parte de un programa nacional es instrumentar y poner en vigor un Nuevo Sistema Procesal Penal Acusatorio en toda la República Mexicana. Y para este caso en particular el Consejo de la Judicatura Federal tiene un predio ubicado en calle Quetzalli No. 901, fraccionamiento los Álamos CP 38020 Celaya Guanajuato; cuya superficie para esta construcción es de 2,425 m² con las siguientes superficies asignadas por área:

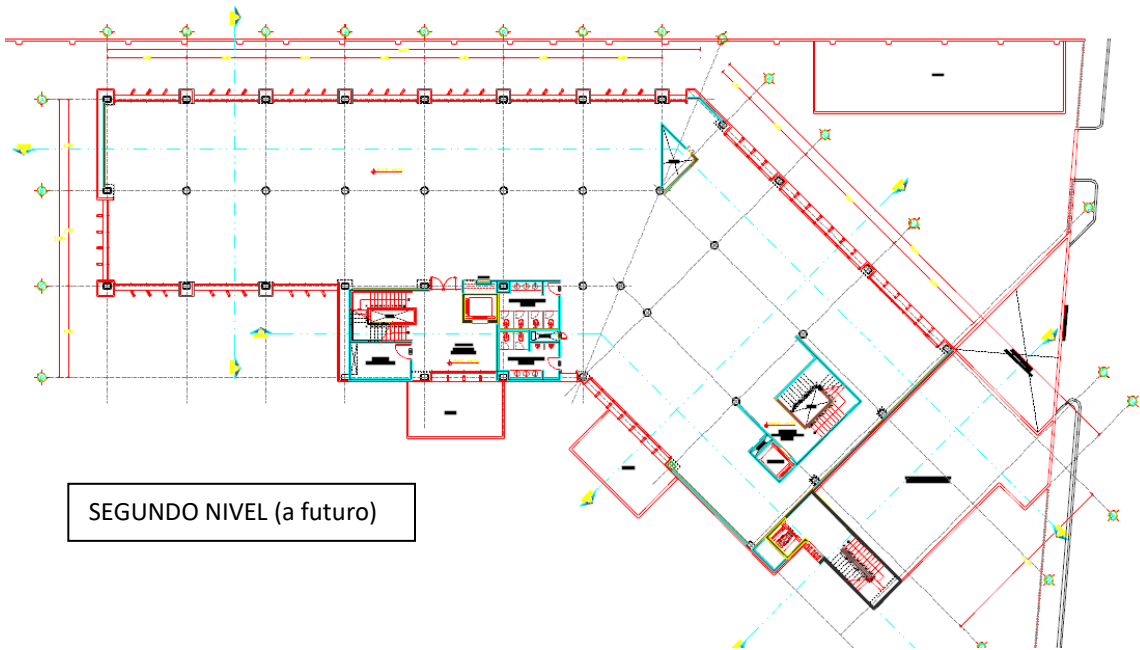
RESUMEN DE SUPERFICIES ESTIMADAS CENTRO DE JUSTICIA PENAL FEDERAL EN CELAYA, GUANAJUATO		
ÁREA		METROS CUADRADOS
EDIFICIO PRINCIPAL	PLANTA BAJA – CENTRO DE JUSTICIA	1,364
	ZONA DE SEGURIDAD – CENTRO DE JUSTICIA	240
	PRIMER NIVEL – CENTRO DE JUSTICIA	1,299
	SEGUNDO NIVEL - DISPONIBLE PARA ADECUACIONES	1,299
	TOTAL DE EDIFICIO PRINCIPAL	3,962
EDIFICIOS COMPLEMENTARIOS	SUBESTACIÓN ELÉCTRICA	80
	CUARTO DE BOMBEO	50
	TOTAL DE EDIFICIOS COMPLEMENTARIOS	130
SUPERFICIE TOTAL DE CONSTRUCCIÓN		4,092
EXTERIORES	PLAZOLETAS DE ACCESO, PASOS PEATONALES CUBIERTOS, JARDINES, MUROS DE COLINDANCIA Y REJAS PERIMETRALES (278 m), INGRESOS VEHICULARES, ZONA DE SEGURIDAD PARA TRASLADO DE IMPUTADOS, ZONAS DE SERVICIOS CON ESTACIONAMIENTO DE SERVICIO.	691
SUPERFICIE DEL PREDIO		2,425

La distribución arquitectónica general por nivel:

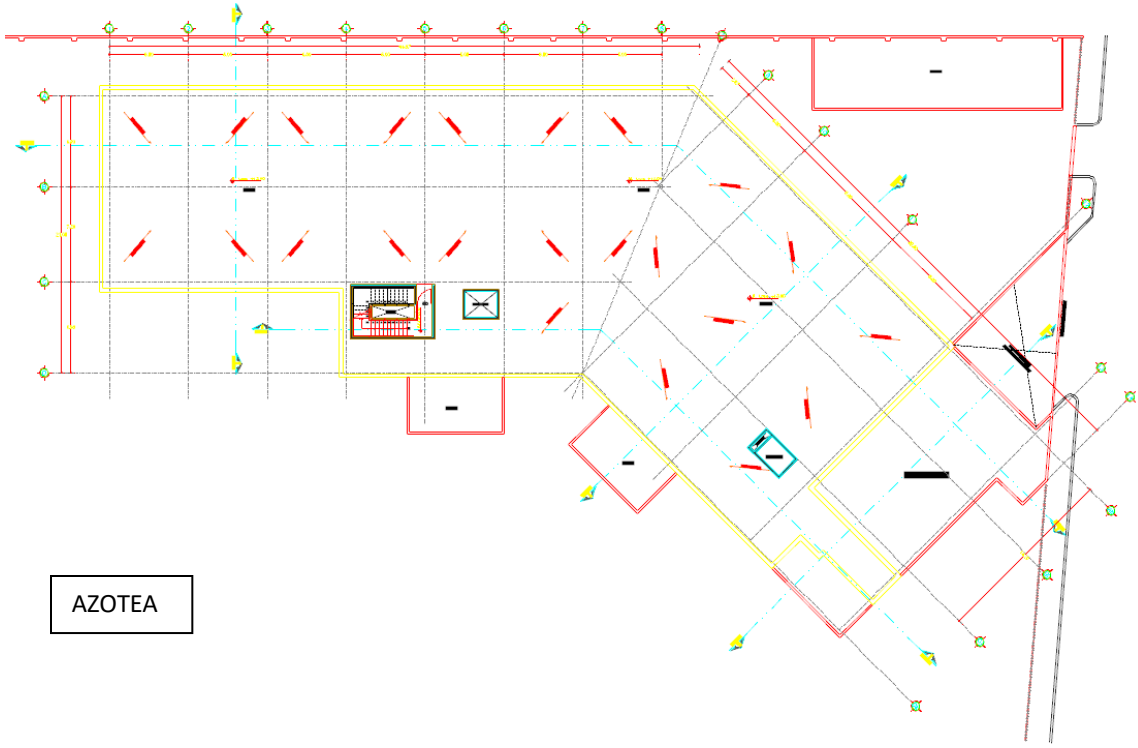




PRIMER NIVEL



SEGUNDO NIVEL (a futuro)



AZOTEA

BASES DE DISEÑO

Las condiciones climatológicas están basadas en la especificación Publicada por AMERIC (Asociación Mexicana de Empresas del Ramo de Instalaciones para la Construcción, A.C.)

Ubicación:

Localización Geográfica.	Celaya, Guanajuato.
Latitud Norte.	20° 50'
Longitud Oeste.	100° 80'
Altura S.N.M.	1,752 m
Presión Barométrica	622 mm Hg

Condiciones de diseño:

VERANO:

Temperatura de Bulbo Seco	100 °F (37.7 °C)
Temperatura de Bulbo Húmedo	68.0°F (20.00 °C)

INVIERNO:

Temperatura de Bulbo Seco	32 °F (0 °C)
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CONDICIONES INTERIORES DE DISEÑO

ÁREA	AIRE ACONDICIONADO			
	TEMPERATURA DE DISEÑO (TEMPERATURA DE BULBO SECO)	HUMEDAD RELATIVA HR	CAMBIOS DE AIRE POR HORA	CONTROL DE TEMPERATURA
Oficina de Titular	Verano: 24°C, Invierno: 21	Verano: 50%	-	Independiente
Sala de Sesiones	Verano: 24°C, Invierno: 21	Verano: 50%	-	Independiente
Defensor Público y 1 Oficial	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Secretario o Jefe de Departamento y 2 Oficiales	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Correspondencia Común	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
SISE	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Oficialía de Partes	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Actuario:1 actuario y 1 oficial	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central *
Secretario (Sección de Trámite o Secretaría de Acuerdos)	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Oficial (Sección de Trámite o Secretaría de Acuerdos)	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Secretario de Tesis y 1 Oficial	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Estación de Café	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Archivos	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Papelería	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Copias	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Vestíbulos	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Pasillos	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Bodegas	-	-	10	-
Área Secretarial	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Espera	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Sanitario de Titular	-	-	20	-
E.R. (SITE)	18°C a 22°C	50%	-	Independiente con control de humedad
I.D.F.	18°C a 22°C	50%	-	Independiente
Cuarto de monitoreo y control	20°C a 24°C	50%	-	Independiente
Cuarto de vigilancia	Verano: 24°C, Invierno: 21	Verano: 50%	-	Independiente
Sanitarios Generales (Servidores Públicos y Visitantes)	-	-	20	-
Cuarto Eléctrico	-	-	30	-
Aseo	-	-	20	-
Artículos de delito	-	-	20	-
Vestíbulo de Acceso al Edificio	Verano: 24°C, Invierno: 21	Verano: 50%	-	Central
Extracción de Campanas en cocina	-	-	80 ppm	-

CÁLCULO TÉRMICO

Para realizar el cálculo térmico en cada área a acondicionar se utilizó el software Tracer 700, el cual se apega a los criterios del ASHRAE para el análisis de ganancias ó pérdidas de calor en un inmueble de acuerdo a los siguientes factores:

- Ganancia de calor por radiación solar de acuerdo a la situación geográfica del inmueble.
- Ganancia de calor total a través de muros y techos exteriores.
- Ganancia de calor por superficies interiores.
- Ganancia de calor por cargas eléctricas.
- Ganancia de calor por número de personas en el inmueble.
- Ganancia de calor por toma de aire exterior.

CJPF Celaya

Location	Celaya, Guanajuato	
Building owner	Consejo de la Judicatura Federal	
Program user		
Company		
Comments		
By	Trane	
Dataset name	G:\CJPF CELAYA\CJPF CELAYA.TRC	
Calculation time	12:04 PM on 11/16/2017	
TRACE® 700 version	6.2.2	
Location	Celaya, Guanajuato	
Latitude	20.5	deg
Longitude	100.8	deg
Time Zone	6	
Elevation	5,747	ft
Barometric pressure	24.5	in. Hg
Air density	0.0620	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	0.9098	Btu/h·cfm·°F
Latent heat factor	4,004.7	Btu·min/h·cu ft
Enthalpy factor	3.7218	lb·min/hr·cu ft
Summer design dry bulb	100	°F
Summer design wet bulb	68	°F
Winter design dry bulb	32	°F
Summer clearness number	1.00	
Winter clearness number	1.00	
Summer ground reflectance	0.20	
Winter ground reflectance	0.20	
Carbon Dioxide Level	400	ppm
Design simulation period	January - December	
Cooling load methodology	TETD-TA1	
Heating load methodology	UATD	



Ejemplo de valores principales a considerar para la selección de equipos.

Room Checksums

By Trane

PB Area 20 Coordinacion de Seguridad

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES					
Peaked at Time: Mo/Hr: 5 / 15				Mo/Hr: 5 / 17				Mo/Hr: Heating Design			Cooling			Heating		
Outside Air: OADB/WB/HR: 87 / 86 / 237				OADB: 84				OADB: 32			SADB			Ra Plenum		
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)	SADB	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict		
Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens		76.1	76.1	76.5	0.0	0.0	0.0		
Envelope Loads																
Skylite Solar	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Skylite Cond	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Roof Cond	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Glass Solar	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Glass/Door Cond	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Wall Cond	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0.0	0.0		
Partition/Door	125		125	2	157	3	-575	38.64	-575	-575	38.64	0.0	0.0	0.0		
Floor	0		0	0	0	0	0	0.00	0	0	0	0	0	0		
Adjacent Floor	0		0	0	0	0	0	0.00	0	0	0	0	0	0		
Infiltration	0		0	0	0	0	0	0.00	0	0	0	0	0	0		
Sub Total ==>	125		125	2	157	3	-575	38.64	-575	-575	38.64	0.0	0.0	0.0		
Internal Loads																
Lights	2,112	0	2,112	30	2,112	40	0	0.00	0	0	0	0	0	0		
People	900	0	900	13	500	9	0	0.00	0	0	0	0	0	0		
Misc	2,389	0	2,389	34	2,389	45	0	0.00	0	0	0	0	0	0		
Sub Total ==>	5,401	0	5,401	77	5,001	94	0	0.00	0	0	0	0	0	0		
Ceiling Load																
Ventilation Load	105	-105	0	0	139	3	-97	0.00	0	0	0	0	0	0		
Adj Air Trans Heat	0	0	1,515	22	0	0	-519	34.82	0	0	0	0	0	0		
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Exhaust Heat	0	-15	-15	0	0	0	13	-9.90	0	0	0	0	0	0		
Sup. Fan Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Ret. Fan Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Duct Heat Pkup	0	0	0	0	0	0	-409	27.44	0	0	0	0	0	0		
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0		
Grand Total ==>	5,632	-120	7,027	100.00	5,298	100.00	-672	-1,489	100.00							

AIRFLOWS		
	Cooling	Heating
Diffuser	348	348
Terminal	348	348
Main Fan	348	348
Sec Fan	0	0
Nom Vent	15	15
AHU Vent	15	15
Infil	0	0
MinStop/Rh	0	0
Return	348	348
Exhaust	15	15
Rm Exh	0	0
Auxiliary	0	0
Leakage Dwn	0	0
Leakage Ups	0	0

ENGINEERING CKS		
	Cooling	Heating
% OA	4.3	4.3
cfm/ft²	1.12	1.12
cfm/ton	594.25	
ft³/ton	528.47	
Btu/hr-ft²	22.71	-4.81
No. People	2	

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION					
	Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg		
	ton	MBh	cfm	°F °F	gr/lb		ft² (%)		MBh	cfm	°F	°F		
Main Clg	0.6	7.0	5.3	348	76.5 63.4	86.1	58.3 56.3	80.0	-1.5	348	67.4	72.1		
Aux Clg	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0		
Opt Vent	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0		
Total	0.6	7.0	5.3	348	76.5 63.4	86.1	58.3 56.3	80.0	-1.5	348	67.4	72.1		

calor total en TR y BTU/Hr

calor sensible en BTU/Hr

caudal de aire en ft³/min

temperatura de bulbo seco y húmedo a la entrada y salida del serpentín

Room Checksums
By Trane

PB Area 01 Juez Administrador

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time: Mo/Hr: 3 / 18				Mo/Hr: 3 / 18				Mo/Hr: Heating Design						
Outside Air: OADB/WB/HR: 75 / 75 / 182				OADB: 75				OADB: 32						
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB	Cooling	Heating			
Envelope Loads									Ra Plenum	80.7	71.7			
SkyLite Solar	0	0	0	0	0	0	0	0	Return	78.3	69.0			
SkyLite Cond	0	0	0	0	0	0	0	0	Ret/OA	76.3	68.4			
Roof Cond	0	0	0	0	0	0	0	0	Fn MtrTD	0.0	0.0			
Glass Solar	10,154	0	52	10,154	59	0	0	0	Fn BldTD	0.0	0.0			
Glass/Door Cond	22	0	22	22	0	-348	-348	8.62	Fn Frict	0.0	0.0			
Wall Cond	738	785	1,524	81	738	-879	-1,828	48.86						
Partition/Door	74	0	74	0	74	-859	-859	18.88						
Floor	0	0	0	0	0	0	0	0						
Adjacent Floor	0	0	0	0	0	0	0	0						
Infiltration	0	0	0	0	0	0	0	0						
Sub Total ==>	10,888	785	11,774	61	10,988	-1,888	-2,836	72.67						
Internal Loads														
Lights	1,824	0	1,824	9	1,824	0	0	0.00						
People	1,350	0	1,350	7	750	0	0	0.00						
Misc	3,413	0	3,413	18	3,413	0	0	0.00						
Sub Total ==>	6,587	0	6,587	34	5,987	0	0	0.00						
Ceiling Load	112	-112	0	0	112	-83	0	0.00						
Ventilation Load	0	0	1,064	5	0	0	-778	19.94						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00						
Ov/Undr Sizing	0	0	0	0	0	0	20	-0.62						
Exhaust Heat	-27	-27	0	0	0	0	0	0.00						
Sup. Fan Heat	0	0	0	0	0	0	0	0.00						
Ret. Fan Heat	0	0	0	0	0	0	0	0.00						
Duct Heat PkUp	0	0	0	0	0	0	-309	7.91						
Underfr. Sup Ht PkUp	0	0	0	0	0	0	0	0.00						
Supply Air Leakage	0	0	0	0	0	0	0	0.00						
Grand Total ==>	17,687	647	18,397	100.00	17,087	-1,969	-3,901	100.00						

COOLING COIL SELECTION				AREAS				HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Gross Total	Glass	Leave DB/WB/HR	Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	MBh	cfm °F °F gr/lb		R² (%)	°F °F gr/lb	MBh	cfm	°F	°F	
Main Clg	1.6	19.4	1,310 78.3 62.3 80.7	Floor	287	60.7 57.1 79.7	Main Htg	-3.9	1,310	68.4	71.7
Aux Clg	0.0	0.0	0 0.0 0.0 0.0	Part	45	0.0 0.0 0.0	Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0 0.0 0.0 0.0	Int Door	0	0.0 0.0 0.0	Preheat	0.0	0	0.0	0.0
Total	1.6	19.4		ExFlr	0		Humidif	0.0	0	0.0	0.0
				Roof	0	0 0 0	Opt Vent	0.0	0	0.0	0.0
				Wall	393	129 33	Total	-3.9			
				Ext Door	0	0 0 0					

Room Checksums
By Trane

PB Area 02 Despachos Log Admvo

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time: Mo/Hr: 4 / 17				Mo/Hr: 3 / 18				Mo/Hr: Heating Design						
Outside Air: OADB/WB/HR: 82 / 82 / 206				OADB: 75				OADB: 32						
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB	Cooling	Heating			
Envelope Loads									Ra Plenum	59.8	70.7			
SkyLite Solar	0	0	0	0	0	0	0	0	Return	78.4	69.0			
SkyLite Cond	0	0	0	0	0	0	0	0	Ret/OA	76.5	68.0			
Roof Cond	0	0	0	0	0	0	0	0	Fn MtrTD	0.0	0.0			
Glass Solar	32,028	0	34	34,424	44	0	0	0	Fn BldTD	0.0	0.0			
Glass/Door Cond	217	0	217	29	0	-1,044	-1,044	7.42	Fn Frict	0.0	0.0			
Wall Cond	163	1,088	1,252	209	0	-229	-1,798	12.77						
Partition/Door	444	0	444	207	0	-1,898	-1,898	13.26						
Floor	0	0	0	0	0	0	0	0						
Adjacent Floor	0	0	0	0	0	0	0	0						
Infiltration	0	0	0	0	0	0	0	0						
Sub Total ==>	32,852	1,088	33,940	38	34,888	-3,140	-4,709	33.45						
Internal Loads														
Lights	11,782	0	11,782	13	11,782	0	0	0.00						
People	9,450	0	9,450	10	5,250	0	0	0.00						
Misc	25,788	0	25,788	28	25,788	0	0	0.00						
Sub Total ==>	46,980	0	46,980	50	42,780	0	0	0.00						
Ceiling Load	752	-752	0	0	720	-538	0	0.00						
Ventilation Load	0	0	12,480	13	0	0	-5,445	38.69						
Adj Air Trans Heat	0	0	0	0	0	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00						
Ov/Undr Sizing	0	0	0	0	0	0	141	-1.00						
Exhaust Heat	-197	-197	0	0	0	0	0	0.00						
Sup. Fan Heat	0	0	0	0	0	0	0	0.00						
Ret. Fan Heat	0	0	0	0	0	0	0	0.00						
Duct Heat PkUp	0	0	0	0	0	0	-4,083	28.86						
Underfr. Sup Ht PkUp	0	0	0	0	0	0	0	0.00						
Supply Air Leakage	0	0	0	0	0	0	0	0.00						
Grand Total ==>	80,584	139	83,183	100.00	78,388	-3,878	-14,075	100.00						

COOLING COIL SELECTION				AREAS				HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Gross Total	Glass	Leave DB/WB/HR	Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	MBh	cfm °F °F gr/lb		R² (%)	°F °F gr/lb	MBh	cfm	°F	°F	
Main Clg	7.8	93.2	77.6 5,681 78.5 62.8 82.8	Floor	1,723	59.8 57.0 80.8	Main Htg	-14.1	5,681	68.0	70.7
Aux Clg	0.0	0.0	0 0.0 0.0 0.0	Part	127	0.0 0.0 0.0	Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0 0.0 0.0 0.0	Int Door	0	0.0 0.0 0.0	Preheat	0.0	0	0.0	0.0
Total	7.8	93.2		ExFlr	0		Humidif	0.0	0	0.0	0.0
				Roof	0	0 0 0	Opt Vent	0.0	0	0.0	0.0
				Wall	650	388 80	Total	-14.1			
				Ext Door	0	0 0 0					

Room Checksums
By Trane

PB Area 05 Consultorio Medico

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 12 / 14		Mo/Hr: 12 / 14		Mo/Hr: Heating Design					SADB	Cooling	Heating	
Outside Air:		OADB/WB/HR: 73 / 73 / 149		OADB: 73		OADB: 32					Ra Plenum	61.0	71.3	
	Space Sens. + Lat	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	Return	75.2	69.0		
	Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		Ret/OA	75.1	68.4		
Envelope Loads														
SkyLite Solar	0	0	0	0	0	0	0	0	0	0	0	0		
SkyLite Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Roof Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Glass Solar	12,000	0	12,000	62	12,000	68	0	0	0	0	0	0		
Glass/Door Cond	-47	0	-47	0	-47	0	-435	-435	11.33	Fn MtrTD	0.0	0.0		
Wall Cond	308	449	757	4	308	2	0	-860	42.38	Fn BltTD	0.0	0.0		
Partition/Door	-142	0	-142	-1	-142	-1	0	-564	15.47	Fn Frict	0.0	0.0		
Floor	0	0	0	0	0	0	0	0	0					
Adjacent Floor	0	0	0	0	0	0	0	0	0					
Infiltration	0	0	0	0	0	0	0	0	0					
Sub Total ==>	12,786	449	13,235	65	12,786	66	-1,099	-2,658	69.18					
Internal Loads														
Lights	1,660	0	1,660	8	1,660	9	0	0	0.00					
People	1,350	0	1,350	7	750	4	0	0	0.00					
Misc	3,413	0	3,413	17	3,413	18	0	0	0.00					
Sub Total ==>	6,423	0	6,423	31	5,823	31	0	0	0.00					
Ceiling Load														
Ventilation Load	14	-14	0	0	14	0	-78	0	0.00					
Adj Air Trans Heat	0	0	844	4	0	0	0	-778	20.25					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0.00					
Ov/Undr Sizing	0	0	0	0	0	0	0	20	-0.53					
Exhaust Heat	-4	-4	0	0	0	0	0	0	0.00					
Sup. Fan Heat	0	0	0	0	0	0	0	0	0.00					
Ret. Fan Heat	0	0	0	0	0	0	0	0	0.00					
Duct Heat PkUp	0	0	0	0	0	0	-428	0	0.00					
Underfr. Sup Ht PkUp	0	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00					
Grand Total ==>	19,223	432	20,498	100.00	18,823	100.00	-1,775	-3,842	100.00					

COOLING COIL SELECTION				AREAS				HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Gross Total	Glass	Capacity	Coil Airflow	Ent	Lvg			
ton	MBh	cfm	°F °F gr/lb	ft²	(%)	MBh	cfm	°F	°F			
Main Clg	1.7	20.5	75.1 61.9 80.6	Floor	243	-3.8	1,480	68.4	71.3			
Aux Clg	0.0	0.0	0 0.0 0.0 0.0	Part	40	0.0	0.0	0.0	0.0			
Opt Vent	0.0	0.0	0 0.0 0.0 0.0	Int Door	0	0.0	0.0	0.0	0.0			
Total	1.7	20.5		ExFlr	0	0.0	0.0	0.0	0.0			
				Roof	0	0.0	0.0	0.0	0.0			
				Wall	397	161	41	0.0	0.0			
				Ext Door	0	0	0	0.0	0.0			

Room Checksums
By Trane

PB Area 06 Lactancia

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 5 / 17		Mo/Hr: Heating Design					SADB	Cooling	Heating	
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 84		OADB: 32					Ra Plenum	51.9	69.5	
	Space Sens. + Lat	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	Return	76.1	69.0		
	Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		Ret/OA	76.4	61.0		
Envelope Loads														
SkyLite Solar	0	0	0	0	0	0	0	0	0	0	0	0		
SkyLite Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Roof Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Glass Solar	0	0	0	0	0	0	0	0	0	0	0	0		
Glass/Door Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Wall Cond	0	0	0	0	0	0	0	0	0	0	0	0		
Partition/Door	228	0	228	7	319	22	-1,200	-1,200	68.87	Fn MtrTD	0.0	0.0		
Floor	0	0	0	0	0	0	0	0	0	Fn BltTD	0.0	0.0		
Adjacent Floor	0	0	0	0	0	0	0	0	0	Fn Frict	0.0	0.0		
Infiltration	0	0	0	0	0	0	0	0	0					
Sub Total ==>	228	0	228	7	319	22	-1,200	-1,200	68.87					
Internal Loads														
Lights	598	0	598	19	598	41	0	0	0.00					
People	900	0	900	28	500	34	0	0	0.00					
Misc	0	0	0	0	0	0	0	0	0.00					
Sub Total ==>	1,498	0	1,498	46	1,098	75	0	0	0.00					
Ceiling Load														
Ventilation Load	30	-30	0	0	39	3	-27	0	0.00					
Adj Air Trans Heat	0	0	1,512	47	0	0	0	-519	28.90					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0.00					
Ov/Undr Sizing	0	0	0	0	0	0	0	13	-0.75					
Exhaust Heat	-15	-15	0	0	0	0	0	0	0.00					
Sup. Fan Heat	0	0	0	0	0	0	0	0	0.00					
Ret. Fan Heat	0	0	0	0	0	0	0	0	0.00					
Duct Heat PkUp	0	0	0	0	0	0	-89	4.66	0.00					
Underfr. Sup Ht PkUp	0	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00					
Grand Total ==>	1,755	-44	3,222	100.00	1,455	100.00	-1,227	-1,795	100.00					

COOLING COIL SELECTION				AREAS				HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Gross Total	Glass	Capacity	Coil Airflow	Ent	Lvg			
ton	MBh	cfm	°F °F gr/lb	ft²	(%)	MBh	cfm	°F	°F			
Main Clg	0.3	3.2	78.4 68.7 113.7	Floor	87	-1.8	69	61.0	69.5			
Aux Clg	0.0	0.0	0 0.0 0.0 0.0	Part	81	0.0	0.0	0.0	0.0			
Opt Vent	0.0	0.0	0 0.0 0.0 0.0	Int Door	0	0.0	0.0	0.0	0.0			
Total	0.3	3.2		ExFlr	0	0.0	0.0	0.0	0.0			
				Roof	0	0	0	0.0	0.0			
				Wall	0	0	0	0.0	0.0			
				Ext Door	0	0	0	0.0	0.0			

Room Checksums

By Trane

PB Area 07 Secretaria SM

Room Checksums for PB Area 07. Includes sections for COOLING COIL PEAK, CLG SPACE PEAK, HEATING COIL PEAK, TEMPERATURES, AIRFLOWS, and ENGINEERING CKS.

Room Checksums for PB Area 07. Includes sections for COOLING COIL SELECTION, AREAS, and HEATING COIL SELECTION.

Room Checksums

By Trane

PB Area 08 Ludoteca

Room Checksums for PB Area 08. Includes sections for COOLING COIL PEAK, CLG SPACE PEAK, HEATING COIL PEAK, TEMPERATURES, AIRFLOWS, and ENGINEERING CKS.

Room Checksums for PB Area 08. Includes sections for COOLING COIL SELECTION, AREAS, and HEATING COIL SELECTION.

Room Checksums

By Trane

PB Area 09 Papeleria

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES			
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 5 / 18		Mo/Hr: Heating Design		Mo/Hr: Heating Design							
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 80		OADB: 80		OADB: 32							
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB	Cooling	Heating				
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h								
Envelope Loads															
Skyllite Solar	0	0	0	0	0	0	0	0.00	Ra Plenum	57.8	70.2				
Skyllite Cond	0	0	0	0	0	0	0	0.00	Return	76.1	69.0				
Roof Cond	0	0	0	0	0	0	0	0.00	Ret/OA	76.7	66.9				
Glass Solar	0	0	0	0	0	0	0	0.00	Fn MtrTD	0.0	0.0				
Glass/Door Cond	0	0	0	0	0	0	0	0.00	Fn BldTD	0.0	0.0				
Wall Cond	0	0	0	0	0	0	0	0.00	Fn Frict	0.0	0.0				
Partition/Door	0	0	0	0	0	0	0	0.00	AIRFLOWS						
Floor	0	0	0	0	0	0	0	0.00		Cooling	Heating				
Adjacent Floor	0	0	0	0	0	0	0	0.00	Diffuser	131	131				
Infiltration	0	0	0	0	0	0	0	0.00	Terminal	131	131				
Sub Total ==>	0	0	0	0	0	0	0	0.00	Main Fan	131	131				
Internal Loads															
Lights	568	0	568	19	568	28	0	0.00	Sec Fan	0	0				
People	450	0	450	15	250	12	0	0.00	Nom Vent	8	8				
Misc	1,195	0	1,195	40	1,195	58	0	0.00	AHU Vent	8	8				
Sub Total ==>	2,213	0	2,213	75	2,013	98	0	0.00	Infil	0	0				
Ceiling Load															
Ventilation Load	28	-28	0	0	39	2	-26	0.00	MinStop/Rh	0	0				
Adj Air Trans Heat	0	0	0	0	0	0	-259	65.50	Return	131	131				
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	Exhaust	8	8				
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	Rm Exh	0	0				
Exhaust Heat	-7	-7	0	0	0	0	7	-1.70	Auxiliary	0	0				
Sup. Fan Heat	0	0	0	0	0	0	0	0.00	Leakage Dwn	0	0				
Ret. Fan Heat	0	0	0	0	0	0	0	0.00	Leakage Ups	0	0				
Duct Heat Pkup	0	0	0	0	0	0	0	0.00	ENGINEERING CKS						
Underflr Sup Ht Pkup	0	0	0	0	0	0	-143	36.20	% OA	5.7	5.7				
Supply Air Leakage	0	0	0	0	0	0	0	0.00	cfm/ft²	1.57	1.57				
Grand Total ==>	2,241	-36	2,963	100.00	2,052	100.00	-26	-396	100.00	cfm/ton	529.78				
AREAS															
Gross Total			Glass			Gross Total			Glass						
83			0			83			0						
HEATING COIL SELECTION															
Capacity		Coil Airflow		Enter DB/WB/HR		Leave DB/WB/HR		Capacity		Coil Airflow		Ent		Lvg	
MBh		cfm		°F °F		°F °F		MBh		cfm		°F		°F	
0.3		2.1		76.7 63.9		88.4		57.8 56.0		79.1		0.0		0.0	
0.0		0.0		0.0 0.0		0.0		0.0 0.0		0.0		0.0		0.0	
0.0		0.0		0.0 0.0		0.0		0.0 0.0		0.0		0.0		0.0	
0.3		3.0						0.0		0.0		0.0		0.0	

Room Checksums

By Trane

PB Area 10 Pasillo interior

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES			
Peaked at Time:		Mo/Hr: 5 / 11		Mo/Hr: 3 / 11		Mo/Hr: Heating Design		Mo/Hr: Heating Design							
Outside Air:		OADB/WB/HR: 75 / 75 / 162		OADB: 69		OADB: 69		OADB: 32							
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB	Cooling	Heating				
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h								
Envelope Loads															
Skyllite Solar	0	0	0	0	0	0	0	0.00	Ra Plenum	59.1	74.7				
Skyllite Cond	0	0	0	0	0	0	0	0.00	Return	74.9	69.0				
Roof Cond	0	0	0	0	0	0	0	0.00	Ret/OA	74.9	67.3				
Glass Solar	9,763	0	9,763	49	11,270	69	0	0.00	Fn MtrTD	0.0	0.0				
Glass/Door Cond	-138	0	-138	-1	-413	-3	-1,746	22.89	Fn BldTD	0.0	0.0				
Wall Cond	33	234	267	1	2	0	-895	11.73	Fn Frict	0.0	0.0				
Partition/Door	-655	-655	-3	-1,132	-7	-2,754	-2,754	36.09	AIRFLOWS						
Floor	0	0	0	0	0	0	0	0.00		Cooling	Heating				
Adjacent Floor	0	0	0	0	0	0	0	0.00	Diffuser	1,135	1,135				
Infiltration	0	0	0	0	0	0	0	0.00	Terminal	1,135	1,135				
Sub Total ==>	9,003	234	9,237	47	9,727	59	-4,614	-5,395	70.72	Main Fan	1,135	1,135			
Internal Loads															
Lights	5,003	0	5,003	25	5,003	31	0	0.00	Sec Fan	0	0				
People	3,150	0	3,150	16	1,750	11	0	0.00	Nom Vent	53	53				
Misc	0	0	0	0	0	0	0	0.00	AHU Vent	53	53				
Sub Total ==>	8,153	0	8,153	41	6,753	41	0	0.00	Infil	0	0				
Ceiling Load															
Ventilation Load	-22	22	0	0	-88	-1	-229	0.00	MinStop/Rh	0	0				
Adj Air Trans Heat	0	0	2,463	12	0	0	-1,815	23.79	Return	1,135	1,135				
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	Exhaust	53	53				
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	Rm Exh	0	0				
Exhaust Heat	5	5	0	0	0	0	47	-0.62	Auxiliary	0	0				
Sup. Fan Heat	0	0	0	0	0	0	0	0.00	Leakage Dwn	0	0				
Ret. Fan Heat	0	0	0	0	0	0	0	0.00	Leakage Ups	0	0				
Duct Heat Pkup	0	0	0	0	0	0	0	0.00	ENGINEERING CKS						
Underflr Sup Ht Pkup	0	0	0	0	0	0	-466	6.11	% OA	4.6	4.6				
Supply Air Leakage	0	0	0	0	0	0	0	0.00	cfm/ft²	1.55	1.55				
Grand Total ==>	17,133	261	19,857	100.00	16,391	100.00	-4,843	-7,629	100.00	cfm/ton	688.12				
AREAS															
Gross Total			Glass			Gross Total			Glass						
733			187			733			187						
HEATING COIL SELECTION															
Capacity		Coil Airflow		Enter DB/WB/HR		Leave DB/WB/HR		Capacity		Coil Airflow		Ent		Lvg	
MBh		cfm		°F °F		°F °F		MBh		cfm		°F		°F	
1.7		19.9		74.9 62.4		83.3		59.1 56.2		78.0		-7.6		-7.6	
0.0		0.0		0.0 0.0		0.0		0.0 0.0		0.0		0.0		0.0	
0.0		0.0		0.0 0.0		0.0		0.0 0.0		0.0		0.0		0.0	
1.7		19.9						0.0		0.0		0.0		0.0	

Room Checksums

By Trane

PB Area 11 Testigo Protegido

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES				
Peaked at Time: Mo/Hr: 5 / 15				Mo/Hr: 5 / 18				Mo/Hr: Heating Design				Cooling Heating				
Outside Air: OADB/WB/HR: 87 / 86 / 237				OADB: 80				OADB: 32				SADB 56.3 70.2				
Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)	SADB	Ra Plenum	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Envelope Loads				Envelope Loads				Envelope Loads				AIRFLOWS				
SkyLite Solar	0	0	0	0	0	0	0	0.00	SADB	56.3	70.2					
SkyLite Cond	0	0	0	0	0	0	0	0.00	Ra Plenum	76.1	69.0					
Roof Cond	0	0	0	0	0	0	0	0.00	Return	76.1	69.0					
Glass Solar	0	0	0	0	0	0	0	0.00	Ret/OA	77.1	65.5					
Glass/Door Cond	0	0	0	0	0	0	0	0.00	Fn MtrTD	0.0	0.0					
Wall Cond	0	0	0	0	0	0	0	0.00	Fn BldTD	0.0	0.0					
Partition/Door	0	0	0	0	0	0	0	0.00	Fn Frict	0.0	0.0					
Floor	0	0	0	0	0	0	0	0.00	ENGINEERING CKS							
Adjacent Floor	0	0	0	0	0	0	0	0.00	% OA	9.4	9.4					
Infiltration	0	0	0	0	0	0	0	0.00	cfm/ft²	2.30	2.30					
Sub Total ==>	0	0	0	0	0	0	0	0.00	cfm/ton	418.62						
Internal Loads				Internal Loads				Internal Loads				ft³/ton	182.25			
Lights	950	0	950	10	950	17	0	0.00	Btu/hr-ft²	65.84	-9.63					
People	1,800	0	1,800	20	1,000	18	0	0.00	No. People	4						
Misc	3,413	0	3,413	37	3,413	63	0	0.00								
Sub Total ==>	6,163	0	6,163	67	5,363	99	0	0.00								
Ceiling Load	47	-47	0	0	65	1	-43	0.00								
Ventilation Load	0	0	3,027	33	0	0	0	-1.037	77.39							
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0							
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0							
Ov/Undr Sizing	0	0	0	0	0	0	0	0	0							
Exhaust Heat	0	-29	-29	0	0	0	0	27	-2.01							
Sup. Fan Heat	0	0	0	0	0	0	0	0	0.00							
Ret. Fan Heat	0	0	0	0	0	0	0	0	0.00							
Duct Heat PkUp	0	0	0	0	0	0	0	0	0.00							
Underflr Sup Ht PkUp	0	0	0	0	0	0	0	-330	24.62							
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00							
Grand Total ==>	6,210	-77	9,160	100.00	5,428	100.00	-43	-1,340	100.00							

PB Area 12 Justicia Alternativa

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES				
Peaked at Time: Mo/Hr: 5 / 15				Mo/Hr: 5 / 18				Mo/Hr: Heating Design				Cooling Heating				
Outside Air: OADB/WB/HR: 87 / 86 / 237				OADB: 80				OADB: 32				SADB 54.9 70.2				
Space Sens. + Lat. Btu/h	Plenum Sens. + Lat Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)	SADB	Ra Plenum	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict	
Envelope Loads				Envelope Loads				Envelope Loads				AIRFLOWS				
SkyLite Solar	0	0	0	0	0	0	0	0.00	SADB	54.9	70.2					
SkyLite Cond	0	0	0	0	0	0	0	0.00	Ra Plenum	76.1	69.0					
Roof Cond	0	0	0	0	0	0	0	0.00	Return	76.1	69.0					
Glass Solar	0	0	0	0	0	0	0	0.00	Ret/OA	77.6	63.9					
Glass/Door Cond	0	0	0	0	0	0	0	0.00	Fn MtrTD	0.0	0.0					
Wall Cond	0	0	0	0	0	0	0	0.00	Fn BldTD	0.0	0.0					
Partition/Door	0	0	0	0	0	0	0	0.00	Fn Frict	0.0	0.0					
Floor	0	0	0	0	0	0	0	0.00	ENGINEERING CKS							
Adjacent Floor	0	0	0	0	0	0	0	0.00	% OA	13.9	13.9					
Infiltration	0	0	0	0	0	0	0	0.00	cfm/ft²	2.37	2.37					
Sub Total ==>	0	0	0	0	0	0	0	0.00	cfm/ton	335.78						
Internal Loads				Internal Loads				Internal Loads				ft³/ton	141.90			
Lights	931	0	931	8	931	16	0	0.00	Btu/hr-ft²	84.57	-13.54					
People	2,700	0	2,700	23	1,500	25	0	0.00	No. People	6						
Misc	3,413	0	3,413	30	3,413	58	0	0.00								
Sub Total ==>	7,044	0	7,044	61	5,844	99	0	0.00								
Ceiling Load	46	-46	0	0	64	1	-43	0.00								
Ventilation Load	0	0	4,538	39	0	0	0	-1.556	84.21							
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0							
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0.00							
Ov/Undr Sizing	0	0	0	0	0	0	0	0	0.00							
Exhaust Heat	0	-44	-44	0	0	0	0	40	-2.18							
Sup. Fan Heat	0	0	0	0	0	0	0	0	0.00							
Ret. Fan Heat	0	0	0	0	0	0	0	0	0.00							
Duct Heat PkUp	0	0	0	0	0	0	0	0	0.00							
Underflr Sup Ht PkUp	0	0	0	0	0	0	0	-332	17.97							
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00							
Grand Total ==>	7,091	-90	11,538	100.00	5,908	100.00	-43	-1,847	100.00							

Room Checksums

By Trane

PB Area 13 Bodega

Table with 4 main sections: COOLING COIL PEAK, CLG SPACE PEAK, HEATING COIL PEAK, and TEMPERATURES. Includes sub-sections for AIRFLOWS and ENGINEERING CKS.

Table with 3 main sections: COOLING COIL SELECTION, AREAS, and HEATING COIL SELECTION. Includes sub-sections for Capacity, Coil Airflow, and Ent/F.

Room Checksums

By Trane

PB Area 14 Control de acceso

Table with 4 main sections: COOLING COIL PEAK, CLG SPACE PEAK, HEATING COIL PEAK, and TEMPERATURES. Includes sub-sections for AIRFLOWS and ENGINEERING CKS.

Table with 3 main sections: COOLING COIL SELECTION, AREAS, and HEATING COIL SELECTION. Includes sub-sections for Capacity, Coil Airflow, and Ent/F.

Room Checksums
By Trane

PB Area 19 CECOM de Seguridad

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 4 / 18				Mo/Hr: 3 / 18				Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 79 / 79 / 184				OADB: 75				OADB: 32					
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total	SADB	Cooling	Heating		
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)					
Envelope Loads													
Skyllite Solar	0	0	0	0	0	0	0	0	Ra Plenum	61.8	71.2		
Skyllite Cond	0	0	0	0	0	0	0	0	Return	76.4	69.0		
Roof Cond	0	0	0	0	0	0	0	0	Ret/OA	76.5	68.8		
Glass Solar	10,590	0	10,590	40	10,996	44	0	0	Fn MtrTD	0.0	0.0		
Glass/Door Cond	51	0	51	0	17	0	-348	-348	Fn BltTD	0.0	0.0		
Wall Cond	72	484	556	2	62	0	-76	-599	Fn Frict	0.0	0.0		
Partition/Door	374	0	374	1	204	1	-1,763	37.52					
Floor	0	0	0	0	0	0	0	0					
Adjacent Floor	0	0	0	0	0	0	0	0					
Infiltration	0	0	0	0	0	0	0	0					
Sub Total ==>	11,087	484	11,572	44	11,279	45	-2,188	-2,710					
Internal Loads													
Lights	2,862	0	2,862	11	2,862	11	0	0					
People	900	0	900	3	500	2	0	0					
Misc	10,239	0	10,239	39	10,239	41	0	0					
Sub Total ==>	14,001	0	14,001	53	13,601	54	0	0					
Ceiling Load	190	-190	0	0	175	1	-131	0					
Ventilation Load	0	0	946	4	0	0	0	-519					
Adj Air Trans Heat	0	0	0	0	0	0	0	0					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0					
Ov/Undr Sizing	0	0	0	0	0	0	0	13					
Exhaust Heat	0	-20	-20	0	0	0	0	-0.29					
Sup. Fan Heat	0	0	0	0	0	0	0	0					
Ret. Fan Heat	0	0	0	0	0	0	0	0					
Duct Heat Pkup	0	0	0	0	0	0	-1,483	31.56					
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0					
Supply Air Leakage	0	0	0	0	0	0	0	0					
Grand Total ==>	25,279	274	26,499	100.00	25,056	100.00	-2,318	-4,698					

COOLING COIL SELECTION								AREAS			HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg			
ton	MBh	cfm	°F °F	gr/lb	ft²	ft²	(%)	MBh	cfm	°F	°F			
Main Clg	2.2	26.5	25.2	2,091	76.5	62.3	80.3	419	-4.7	2,091	68.8	71.2		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	120	0.0	0	0	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	Int Door	0.0	0	0	0		
								EXFlr	0	0	0	0		
Total	2.2	26.5						Roof	0	0	0	0		
								Wall	217	129	60			
								Ext Door	0	0	0			
								Humidif	0.0	0	0	0		
								Opt Vent	0.0	0	0	0		
								Total	-4.7					

Room Checksums
By Trane

PB Area 20 Coordinacion de Seguridad

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 5 / 15				Mo/Hr: 5 / 17				Mo/Hr: Heating Design					
Outside Air: OADB/WB/HR: 87 / 86 / 237				OADB: 84				OADB: 32					
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total	SADB	Cooling	Heating		
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)					
Envelope Loads													
Skyllite Solar	0	0	0	0	0	0	0	0	Ra Plenum	58.3	72.1		
Skyllite Cond	0	0	0	0	0	0	0	0	Return	76.1	69.0		
Roof Cond	0	0	0	0	0	0	0	0	Ret/OA	76.5	67.4		
Glass Solar	0	0	0	0	0	0	0	0	Fn MtrTD	0.0	0.0		
Glass/Door Cond	0	0	0	0	0	0	0	0	Fn BltTD	0.0	0.0		
Wall Cond	0	0	0	0	0	0	0	0	Fn Frict	0.0	0.0		
Partition/Door	125	0	125	2	157	3	-575	38.64					
Floor	0	0	0	0	0	0	0	0					
Adjacent Floor	0	0	0	0	0	0	0	0					
Infiltration	0	0	0	0	0	0	0	0					
Sub Total ==>	125	0	125	2	157	3	-575	-575					
Internal Loads													
Lights	2,112	0	2,112	30	2,112	40	0	0					
People	900	0	900	13	500	9	0	0					
Misc	2,389	0	2,389	34	2,389	45	0	0					
Sub Total ==>	5,401	0	5,401	77	5,001	94	0	0					
Ceiling Load	105	-105	0	0	139	3	-97	0					
Ventilation Load	0	0	1,515	22	0	0	0	-519					
Adj Air Trans Heat	0	0	0	0	0	0	0	0					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0					
Ov/Undr Sizing	0	0	0	0	0	0	0	13					
Exhaust Heat	0	-15	-15	0	0	0	0	-0.90					
Sup. Fan Heat	0	0	0	0	0	0	0	0					
Ret. Fan Heat	0	0	0	0	0	0	0	0					
Duct Heat Pkup	0	0	0	0	0	0	-409	27.44					
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0					
Supply Air Leakage	0	0	0	0	0	0	0	0					
Grand Total ==>	5,632	-120	7,027	100.00	5,298	100.00	-672	-1,489					

COOLING COIL SELECTION								AREAS			HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg			
ton	MBh	cfm	°F °F	gr/lb	ft²	ft²	(%)	MBh	cfm	°F	°F			
Main Clg	0.6	7.0	5.3	348	76.5	63.4	86.1	309	-1.5	348	67.4	72.1		
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	39	0.0	0	0	0		
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	Int Door	0.0	0	0	0		
								EXFlr	0	0	0	0		
Total	0.6	7.0						Roof	0	0	0	0		
								Wall	0	0	0			
								Ext Door	0	0	0			
								Humidif	0.0	0	0	0		
								Opt Vent	0.0	0	0	0		
								Total	-1.5					

Room Checksums

By Trane

PB Area 25 Archivo Papeleria Defensoria

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 5 / 18		Mo/Hr: Heating Design						Cooling	Heating	
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 80		OADB: 32						SADB	58.3	70.3
Sens. + Lat.	Space	Plenum	Net	Percent	Space	Percent	Space Peak	Coil Peak	Percent					
Btu/h	Sens. + Lat	Sens. + Lat	Total	Of Total	Sensible	Of Total	Space Sens	Tot Sens	Of Total					
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)					
Envelope Loads				Envelope Loads				Envelope Loads				AIRFLOWS		
SkyLite Solar	0	0	0	0	0	0	SkyLite Solar	0	0	0.00	Diffuser	158	158	
SkyLite Cond	0	0	0	0	0	0	SkyLite Cond	0	0	0.00	Terminal	158	158	
Roof Cond	0	0	0	0	0	0	Roof Cond	0	0	0.00	Main Fan	158	158	
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00	Sec Fan	0	0	
Glass/Door Cond	0	0	0	0	0	0	Glass/Door Cond	0	0	0.00	Nom Vent	8	8	
Wall Cond	0	0	0	0	0	0	Wall Cond	0	0	0.00	AHU Vent	8	8	
Partition/Door	0	0	0	0	0	0	Partition/Door	0	0	0.00	Infil	0	0	
Floor	0	0	0	0	0	0	Floor	0	0	0.00	MinStop/Rh	0	0	
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0.00	Return	158	158	
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00	Exhaust	8	8	
Sub Total ==>	0	0	0	0	0	0	Sub Total ==>	0	0	0.00	Rm Exh	0	0	
Internal Loads				Internal Loads				Internal Loads				ENGINEERING CKS		
Lights	899	0	899	27	899	37	Lights	0	0	0.00	% OA	4.8	4.8	
People	450	0	450	14	250	10	People	0	0	0.00	cfm/ft²	1.20	1.20	
Misc	1,195	0	1,195	36	1,195	50	Misc	0	0	0.00	cfm/ton	574.98	574.98	
Sub Total ==>	2,544	0	2,544	77	2,344	97	Sub Total ==>	0	0	0.00	ft³/ton	479.84	479.84	
Ceiling Load	45	-45	0	0	62	3	Ceiling Load	-41	0	0.00	Btu/hr-ft²	25.01	-3.30	
Ventilation Load	0	0	757	23	0	0	Ventilation Load	0	-259	59.58	No. People	1	1	
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0				
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00				
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	7	-1.54	0.00				
Exhaust Heat	-7	-7	0	0	0	0	OA Preheat Diff.	0	0	0.00				
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0.00				
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0.00				
Duct Heat PkUp	0	0	0	0	0	0	System Plenum Heat	-183	41.96	0.00				
Underflr Sup Ht PkUp	0	0	0	0	0	0	Underflr Sup Ht PkUp	0	0	0.00				
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0.00				
Grand Total ==>	2,588	-52	3,294	100.00	2,405	100.00	Grand Total ==>	-41	-435	100.00				

Room Checksums

By Trane

PB Area 26 Oficina de Corr Comun

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 5 / 17		Mo/Hr: Heating Design						Cooling	Heating	
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 84		OADB: 32						SADB	58.7	70.6
Sens. + Lat.	Space	Plenum	Net	Percent	Space	Percent	Space Peak	Coil Peak	Percent					
Btu/h	Sens. + Lat	Sens. + Lat	Total	Of Total	Sensible	Of Total	Space Sens	Tot Sens	Of Total					
	Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)					
Envelope Loads				Envelope Loads				Envelope Loads				AIRFLOWS		
SkyLite Solar	0	0	0	0	0	0	SkyLite Solar	0	0	0.00	Diffuser	630	630	
SkyLite Cond	0	0	0	0	0	0	SkyLite Cond	0	0	0.00	Terminal	630	630	
Roof Cond	0	0	0	0	0	0	Roof Cond	0	0	0.00	Main Fan	630	630	
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00	Sec Fan	0	0	
Glass/Door Cond	0	0	0	0	0	0	Glass/Door Cond	0	0	0.00	Nom Vent	23	23	
Wall Cond	0	0	0	0	0	0	Wall Cond	0	0	0.00	AHU Vent	23	23	
Partition/Door	58	0	58	0	73	1	Partition/Door	-266	-266	15.96	Infil	0	0	
Floor	0	0	0	0	0	0	Floor	0	0	0.00	MinStop/Rh	0	0	
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0.00	Return	630	630	
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00	Exhaust	23	23	
Sub Total ==>	58	0	58	0	73	1	Sub Total ==>	-266	-266	15.96	Rm Exh	0	0	
Internal Loads				Internal Loads				Internal Loads				ENGINEERING CKS		
Lights	1,744	0	1,744	14	1,744	19	Lights	0	0	0.00	% OA	3.6	3.6	
People	1,350	0	1,350	11	750	8	People	0	0	0.00	cfm/ft²	2.47	2.47	
Misc	6,655	0	6,655	55	6,655	71	Misc	0	0	0.00	cfm/ton	627.21	627.21	
Sub Total ==>	9,749	0	9,749	81	9,149	98	Sub Total ==>	0	0	0.00	ft³/ton	254.23	254.23	
Ceiling Load	87	-87	0	0	115	1	Ceiling Load	-80	0	0.00	Btu/hr-ft²	47.20	-6.53	
Ventilation Load	0	0	2,272	19	0	0	Ventilation Load	0	-778	46.61	No. People	3	3	
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0				
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00				
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	20	-1.21	0.00				
Exhaust Heat	-22	-22	0	0	0	0	OA Preheat Diff.	0	0	0.00				
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0.00				
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0.00				
Duct Heat PkUp	0	0	0	0	0	0	System Plenum Heat	-645	38.64	0.00				
Underflr Sup Ht PkUp	0	0	0	0	0	0	Underflr Sup Ht PkUp	0	0	0.00				
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0.00				
Grand Total ==>	9,894	-109	12,057	100.00	9,337	100.00	Grand Total ==>	-346	-1,669	100.00				

Room Checksums

By Trane

PB Area 27 Papeleria OCC

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 5 / 18		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Cooling	Heating	
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 80		OADB: 32		OADB: 32		OADB: 32		SADB	70.2	
	Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)					
	Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens						
Envelope Loads														
Skyliite Solar	0	0	0	0	0	0	0	0	0.00					
Skyliite Cond	0	0	0	0	0	0	0	0	0.00					
Roof Cond	0	0	0	0	0	0	0	0	0.00					
Glass Solar	0	0	0	0	0	0	0	0	0.00					
Glass/Door Cond	0	0	0	0	0	0	0	0	0.00					
Wall Cond	0	0	0	0	0	0	0	0	0.00					
Partition/Door	0	0	0	0	0	0	0	0	0.00					
Floor	0	0	0	0	0	0	0	0	0.00					
Adjacent Floor	0	0	0	0	0	0	0	0	0.00					
Infiltration	0	0	0	0	0	0	0	0	0.00					
Sub Total ==>	0	0	0	0	0	0	0	0	0.00					
Internal Loads														
Lights	388	0	388	14	388	21	0	0	0.00					
People	450	0	450	16	250	13	0	0	0.00					
Misc	1,195	0	1,195	43	1,195	64	0	0	0.00					
Sub Total ==>	2,032	0	2,032	73	1,832	99	0	0	0.00					
Ceiling Load	19	-19	0	0	27	1	-18	0	0.00					
Ventilation Load	0	0	757	27	0	0	0	-259	69.19					
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0.00					
Ov/Undr Sizing	0	0	0	0	0	0	0	7	-1.79					
Exhaust Heat	-7	-7	-7	0	0	0	0	0	0.00					
OA Preheat Diff.	0	0	0	0	0	0	0	0	0.00					
RA Preheat Diff.	0	0	0	0	0	0	0	0	0.00					
Additional Reheat	0	0	0	0	0	0	0	0	0.00					
System Plenum Heat	0	0	0	0	0	0	0	-122	32.61					
Underflr Sup Ht Pkupp	0	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00					
Sub Total ==>	2,052	-27	2,782	100.00	1,859	100.00	-18	-375	100.00					

COOLING COIL SELECTION							AREAS			HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter	DB/WB/HR	Leave	DB/WB/HR	Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	cfm	"F	"F	"F	"F	ft²	ft²	(%)	MBh	cfm	"F	"F	
Main Clg	0.2	2.8	117	76.8	64.1	89.5	57			Main Htg	-0.4	117	66.6	70.2
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0			Preheat	0.0	0	0.0	0.0
Total	0.2	2.8								Humidif	0.0	0	0.0	0.0
										Opt Vent	0.0	0	0.0	0.0
										Total	-0.4			

Room Checksums

By Trane

PB Area 28 Sala de Videoconferencias

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 15		Mo/Hr: 11 / 12		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Mo/Hr: Heating Design		Cooling	Heating	
Outside Air:		OADB/WB/HR: 87 / 86 / 237		OADB: 70		OADB: 32		OADB: 32		OADB: 32		SADB	75.9	
	Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)					
	Btu/h	Btu/h	Btu/h		Btu/h		Space Sens	Tot Sens						
Envelope Loads														
Skyliite Solar	0	0	0	0	0	0	0	0	0.00					
Skyliite Cond	0	0	0	0	0	0	0	0	0.00					
Roof Cond	0	0	0	0	0	0	0	0	0.00					
Glass Solar	471	0	471	2	2,801	28	0	0	0.00					
Glass/Door Cond	25	0	25	0	-19	0	-87	-87	1.31					
Wall Cond	263	217	481	2	114	1	-392	-721	10.86					
Partition/Door	446	0	446	2	-888	-9	-2,345	-2,345	35.29					
Floor	0	0	0	0	0	0	0	0	0.00					
Adjacent Floor	0	0	0	0	0	0	0	0	0.00					
Infiltration	0	0	0	0	0	0	0	0	0.00					
Sub Total ==>	1,205	217	1,423	7	2,008	20	-2,824	-3,153	47.46					
Internal Loads														
Lights	1,277	0	1,277	6	1,277	13	0	0	0.00					
People	5,850	0	5,850	27	3,250	33	0	0	0.00					
Misc	3,413	0	3,413	16	3,413	34	0	0	0.00					
Sub Total ==>	10,540	0	10,540	49	7,940	80	0	0	0.00					
Ceiling Load	64	-64	0	0	-14	0	-58	0	0.00					
Ventilation Load	0	0	9,833	45	0	0	0	-3,371	50.73					
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0					
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0.00					
Ov/Undr Sizing	0	0	0	0	0	0	0	87	-1.32					
Exhaust Heat	-95	-95	-95	0	0	0	0	0	0.00					
OA Preheat Diff.	0	0	0	0	0	0	0	0	0.00					
RA Preheat Diff.	0	0	0	0	0	0	0	0	0.00					
Additional Reheat	0	0	0	0	0	0	0	0	0.00					
System Plenum Heat	0	0	0	0	0	0	0	-208	3.13					
Underflr Sup Ht Pkupp	0	0	0	0	0	0	0	0	0.00					
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00					
Sub Total ==>	11,809	58	21,700	100.00	9,933	100.00	-2,882	-6,644	100.00					

COOLING COIL SELECTION							AREAS			HEATING COIL SELECTION				
Total Capacity	Sens Cap.	Coil Airflow	Enter	DB/WB/HR	Leave	DB/WB/HR	Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	cfm	"F	"F	"F	"F	ft²	ft²	(%)	MBh	cfm	"F	"F	
Main Clg	1.8	21.7	534	78.0	67.7	108.3	187			Main Htg	-6.6	534	62.3	75.9
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	159			Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0			Preheat	0.0	0	0.0	0.0
Total	1.8	21.7								Humidif	0.0	0	0.0	0.0
										Opt Vent	0.0	0	0.0	0.0
										Total	-6.6			

Room Checksums

By Trane

N1 Area 03 Titular

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES				
Peaked at Time: Mo/Hr: 4 / 18				Mo/Hr: 4 / 18				Mo/Hr: Heating Design			Cooling Heating				
Outside Air: OADB/WB/HR: 79 / 79 / 184				OADB: 79				OADB: 32			SADB				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)	SADB	Cooling	Heating				
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		60.5	60.5	74.7				
Envelope Loads				Envelope Loads		Envelope Loads			Ra Plenum	75.4	69.4				
Skyllite Solar	0	0	0	Skyllite Solar	0	Skyllite Solar	0	0.00	Return	75.4	69.4				
Skyllite Cond	0	0	0	Skyllite Cond	0	Skyllite Cond	0	0.00	Ret/OA	75.5	68.8				
Roof Cond	0	0	0	Roof Cond	0	Roof Cond	0	0.00	Fn MtrTD	0.0	0.0				
Glass Solar	10,590	0	10,590	Glass Solar	60	Glass Solar	0	0.00	Fn BldTD	0.0	0.0				
Glass/Door Cond	51	0	51	Glass/Door Cond	51	Glass/Door Cond	-348	-4.82	Fn Frict	0.0	0.0				
Wall Cond	72	499	571	Wall Cond	72	Wall Cond	-76	-8.36							
Partition/Door	1,111	0	1,111	Partition/Door	6	Partition/Door	-5,232	-72.40							
Floor	0	0	0	Floor	0	Floor	0	0.00							
Adjacent Floor	0	0	0	Adjacent Floor	0	Adjacent Floor	0	0.00							
Infiltration	0	0	0	Infiltration	0	Infiltration	0	0.00							
Sub Total ==>	11,824	499	12,323	61	11,824	67	-5,656	85.58							
Internal Loads				Internal Loads		Internal Loads									
Lights	1,617	0	1,617	Lights	9	Lights	0	0.00							
People	1,350	0	1,350	People	4	People	0	0.00							
Misc	3,413	0	3,413	Misc	19	Misc	0	0.00							
Sub Total ==>	6,380	0	6,380	32	5,780	33	0	0.00							
Ceiling Load	31	-31	0	Ceiling Load	-47	Ceiling Load	0	0.00							
Ventilation Load	0	0	1,419	Ventilation Load	0	Ventilation Load	-778	10.76							
Adj Air Trans Heat	0	0	0	Adj Air Trans Heat	0	Adj Air Trans Heat	0	0							
Dehumid. Ov Sizing	0	0	0	Ov/Undr Sizing	0	Ov/Undr Sizing	0	0.00							
Exhaust Heat	0	-9	-9	Exhaust Heat	0	Exhaust Heat	13	-0.18							
Sup. Fan Heat	0	0	0	OA Preheat Diff.	0	OA Preheat Diff.	0	0.00							
Rel. Fan Heat	0	0	0	RA Preheat Diff.	0	RA Preheat Diff.	0	0.00							
Duct Heat PkUp	0	0	0	Additional Reheat	-277	Additional Reheat	-277	3.83	% OA	Cooling	Heating				
Underflr Sup Ht PkUp	0	0	0	System Plenum Heat	0	System Plenum Heat	-277	3.83	cfm/ft ²	1.7	1.7				
Supply Air Leakage	0	0	0	Underflr Sup Ht PkUp	0	Underflr Sup Ht PkUp	0	0.00	cfm/ton	798.16	5.65				
				Supply Air Leakage	0	Supply Air Leakage	0	0.00	ft ³ /ton	141.30					
Grand Total ==>	18,235	459	20,113	100.00	17,635	100.00	-5,703	-7.226	100.00	Btu/hr-ft ²	84.93	-30.51			
										No. People	3				
COOLING COIL SELECTION															
Total Capacity	Sens. Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	AREAS		Gross Total	Glass	HEATING COIL SELECTION						
ton	MBh	cfm	*F *F	gr/lb	Gross Total		Glass	Capacity Coil Airflow Ent Lvg							
						ft ² (%)		MBh cfm *F							
Main Clg	1.7	20.1	18.2	1,338	75.5	62.2	81.3	60.5	56.9	78.9	Main Htg	-7.2	1,338	68.8	74.7
Aux Clg	0.0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	Aux Htg	0.0	0	0	0.0
Opt Vent	0.0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	Preheat	0.0	0	0	0.0
Total	1.7	20.1									Humidif	0.0	0	0	0.0
											Opt Vent	0.0	0	0	0.0
											Total	-7.2			

Room Checksums

By Trane

N1 Area 04 Titular

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES				
Peaked at Time: Mo/Hr: 4 / 18				Mo/Hr: 4 / 18				Mo/Hr: Heating Design			Cooling Heating				
Outside Air: OADB/WB/HR: 79 / 79 / 184				OADB: 79				OADB: 32			SADB				
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)	SADB	Cooling	Heating				
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		60.5	60.5	74.7				
Envelope Loads				Envelope Loads		Envelope Loads			Ra Plenum	75.4	69.4				
Skyllite Solar	0	0	0	Skyllite Solar	0	Skyllite Solar	0	0.00	Return	75.4	69.4				
Skyllite Cond	0	0	0	Skyllite Cond	0	Skyllite Cond	0	0.00	Ret/OA	75.5	68.8				
Roof Cond	0	0	0	Roof Cond	0	Roof Cond	0	0.00	Fn MtrTD	0.0	0.0				
Glass Solar	10,590	0	10,590	Glass Solar	60	Glass Solar	0	0.00	Fn BldTD	0.0	0.0				
Glass/Door Cond	51	0	51	Glass/Door Cond	51	Glass/Door Cond	-348	-4.82	Fn Frict	0.0	0.0				
Wall Cond	72	499	571	Wall Cond	72	Wall Cond	-76	-8.36							
Partition/Door	1,111	0	1,111	Partition/Door	6	Partition/Door	-5,232	-72.40							
Floor	0	0	0	Floor	0	Floor	0	0.00							
Adjacent Floor	0	0	0	Adjacent Floor	0	Adjacent Floor	0	0.00							
Infiltration	0	0	0	Infiltration	0	Infiltration	0	0.00							
Sub Total ==>	11,824	499	12,323	61	11,824	67	-5,656	85.58							
Internal Loads				Internal Loads		Internal Loads									
Lights	1,617	0	1,617	Lights	9	Lights	0	0.00							
People	1,350	0	1,350	People	4	People	0	0.00							
Misc	3,413	0	3,413	Misc	19	Misc	0	0.00							
Sub Total ==>	6,380	0	6,380	32	5,780	33	0	0.00							
Ceiling Load	31	-31	0	Ceiling Load	-47	Ceiling Load	0	0.00							
Ventilation Load	0	0	1,419	Ventilation Load	0	Ventilation Load	-778	10.76							
Adj Air Trans Heat	0	0	0	Adj Air Trans Heat	0	Adj Air Trans Heat	0	0							
Dehumid. Ov Sizing	0	0	0	Ov/Undr Sizing	0	Ov/Undr Sizing	0	0.00							
Exhaust Heat	0	-9	-9	Exhaust Heat	0	Exhaust Heat	13	-0.18							
Sup. Fan Heat	0	0	0	OA Preheat Diff.	0	OA Preheat Diff.	0	0.00							
Rel. Fan Heat	0	0	0	RA Preheat Diff.	0	RA Preheat Diff.	0	0.00							
Duct Heat PkUp	0	0	0	Additional Reheat	-277	Additional Reheat	-277	3.83	% OA	Cooling	Heating				
Underflr Sup Ht PkUp	0	0	0	System Plenum Heat	0	System Plenum Heat	-277	3.83	cfm/ft ²	1.7	1.7				
Supply Air Leakage	0	0	0	Underflr Sup Ht PkUp	0	Underflr Sup Ht PkUp	0	0.00	cfm/ton	798.16	5.65				
				Supply Air Leakage	0	Supply Air Leakage	0	0.00	ft ³ /ton	141.30					
Grand Total ==>	18,235	459	20,113	100.00	17,635	100.00	-5,703	-7.226	100.00	Btu/hr-ft ²	84.93	-30.51			
										No. People	3				
COOLING COIL SELECTION															
Total Capacity	Sens. Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	AREAS		Gross Total	Glass	HEATING COIL SELECTION						
ton	MBh	cfm	*F *F	gr/lb	Gross Total		Glass	Capacity Coil Airflow Ent Lvg							
						ft ² (%)		MBh cfm *F							
Main Clg	1.7	20.1	18.2	1,338	75.5	62.2	81.3	60.5	56.9	78.9	Main Htg	-7.2	1,338	68.8	74.7
Aux Clg	0.0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	Aux Htg	0.0	0	0	0.0
Opt Vent	0.0	0.0	0.0	0	0	0.0	0.0	0	0	0.0	Preheat	0.0	0	0	0.0
Total	1.7	20.1									Humidif	0.0	0	0	0.0
											Opt Vent	0.0	0	0	0.0
											Total	-7.2			

Room Checksums

By Trane

N1 Area 09 Circulacion Titulares

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time: Mo/Hr: 5 / 16				Mo/Hr: 5 / 17				Mo/Hr: Heating Design				Cooling Heating		
Outside Air: OADB/WB/HR: 86 / 85 / 231				OADB: 84				OADB: 32				SADB 57.4 81.2		
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB Ra Plenum	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict
Envelope Loads														
SkyLite Solar	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
SkyLite Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Roof Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Glass Solar	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Glass/Door Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Wall Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Partition/Door	6,168	0	6,168	11	6,653	17	-25,006	78.31	0	0	0	0	0	0
Floor	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Adjacent Floor	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Infiltration	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Sub Total ==>	6,168	0	6,168	11	6,653	17	-25,006	78.31						
Internal Loads														
Lights	14,297	0	14,297	25	14,297	36	0	0.00	0	0	0	0	0	0
People	9,000	0	9,000	16	5,000	13	0	0.00	0	0	0	0	0	0
Misc	13,652	0	13,652	24	13,652	34	0	0.00	0	0	0	0	0	0
Sub Total ==>	36,949	0	36,949	64	32,949	83	0	0.00	0	0	0	0	0	0
Ceiling Load	210	-210	0	0	254	1	-413	0.00	0	0	0	0	0	0
Ventilation Load	0	0	14,434	25	0	0	-5,186	16.24	0	0	0	0	0	0
Adj Air Trans Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Exhaust Heat	0	-43	-43	0	0	0	85	-0.27	0	0	0	0	0	0
OA Preheat Diff.	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
RA Preheat Diff.	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Additional Reheat	0	0	0	0	0	0	-1,826	5.72	0	0	0	0	0	0
System Plenum Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Underflr Sup Ht PkUp	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Grand Total ==>	43,327	-254	57,508	100.00	39,856	100.00	-25,419	100.00						

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION							
Total Capacity ton	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F	DB/WB/HR °F	Leave DB/WB/HR °F	Gross Total	Glass ft² (%)	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	
Main Clg	4.8	57.5	40.6	2,493	76.0	63.7	88.6	57.4	55.6	78.0		Main Htg	-31.9	2,493	67.1	81.2
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0		Preheat	0.0	0	0.0	0.0
Total	4.8	57.5										Humidif	0.0	0	0.0	0.0
												Opt Vent	0.0	0	0.0	0.0
												Total	-31.9			

Room Checksums

By Trane

N1 Area 10 Cafe

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time: Mo/Hr: 5 / 15				Mo/Hr: 5 / 17				Mo/Hr: Heating Design				Cooling Heating		
Outside Air: OADB/WB/HR: 87 / 86 / 237				OADB: 84				OADB: 32				SADB 56.2 75.8		
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	SADB Ra Plenum	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict
Envelope Loads														
SkyLite Solar	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
SkyLite Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Roof Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Glass Solar	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Glass/Door Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Wall Cond	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Partition/Door	331	0	331	4	463	8	-1,739	58.52	0	0	0	0	0	0
Floor	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Adjacent Floor	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Infiltration	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Sub Total ==>	331	0	331	4	463	8	-1,739	58.52						
Internal Loads														
Lights	805	0	805	9	805	14	0	0.00	0	0	0	0	0	0
People	1,800	0	1,800	19	1,000	18	0	0.00	0	0	0	0	0	0
Misc	3,413	0	3,413	36	3,413	60	0	0.00	0	0	0	0	0	0
Sub Total ==>	6,018	0	6,018	64	5,218	92	0	0.00	0	0	0	0	0	0
Ceiling Load	9	-9	0	0	14	0	-23	0.00	0	0	0	0	0	0
Ventilation Load	0	0	3,026	32	0	0	-1,037	34.91	0	0	0	0	0	0
Adj Air Trans Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Exhaust Heat	0	-7	-7	0	0	0	17	-0.57	0	0	0	0	0	0
OA Preheat Diff.	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
RA Preheat Diff.	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Additional Reheat	0	0	0	0	0	0	-212	7.14	0	0	0	0	0	0
System Plenum Heat	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Underflr Sup Ht PkUp	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Supply Air Leakage	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0
Grand Total ==>	6,358	-16	9,368	100.00	5,695	100.00	-1,762	100.00						

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION							
Total Capacity ton	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F	DB/WB/HR °F	Leave DB/WB/HR °F	Gross Total	Glass ft² (%)	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	
Main Clg	0.8	9.4	5.9	333	76.3	64.7	93.7	56.2	54.9	76.9		Main Htg	-3.0	333	66.0	75.8
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0		Aux Htg	0.0	0	0.0	0.0
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0		Preheat	0.0	0	0.0	0.0
Total	0.8	9.4										Humidif	0.0	0	0.0	0.0
												Opt Vent	0.0	0	0.0	0.0
												Total	-3.0			

Room Checksums

By Trane

N1 Area 19 Videograbacion

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 18		Mo/Hr: 5 / 18		Mo/Hr: Heating Design					SADB	Cooling	Heating	
Outside Air:		OADB/WB/HR: 80 / 80 / 194		OADB: 80		OADB: 32					Ra Plenum	61.6	72.3	
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	Space Peak	Coil Peak	Percent	Return	75.5	69.4
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)	Ret/OA	75.5	69.1
Envelope Loads													AIRFLOWS	
Skyliite Solar	0	0	0	0	0	0	0	0	0	0	0	Diffuser	2,115	2,115
Skyliite Cond	0	0	0	0	0	0	0	0	0	0	0	Terminal	2,115	2,115
Roof Cond	0	0	0	0	0	0	0	0	0	0	0	Main Fan	2,115	2,115
Glass Solar	2,324	0	2,324	8	2,324	9	0	0	0	0	0	Sec Fan	0	0
Glass/Door Cond	17	0	17	0	17	0	-87	-1.44	0	0	0	Nom Vent	15	15
Wall Cond	623	437	1,061	4	623	2	-745	-12.67	0	0	0	AHU Vent	15	15
Partition/Door	858	0	858	3	858	3	-3,491	-57.62	0	0	0	Infil	0	0
Floor	0	0	0	0	0	0	0	0	0	0	0	Min Stop/Rh	0	0
Adjacent Floor	0	0	0	0	0	0	0	0	0	0	0	Return	2,115	2,115
Infiltration	0	0	0	0	0	0	0	0	0	0	0	Exhaust	15	15
Sub Total ==>	3,822	437	4,260	15	3,822	15	-4,323	-79.97	0	0	0	Rm Exh	0	0
Internal Loads													ENGINEERING CKS	
Lights	941	0	941	3	941	4	0	0	0	0	0	% OA	0.7	0.7
People	900	0	900	3	500	2	0	0	0	0	0	cfm/ft²	15.34	15.34
Misc	20,478	0	20,478	74	20,478	79	0	0	0	0	0	cfm/ton	918.68	
Sub Total ==>	22,319	0	22,319	81	21,919	85	0	0	0	0	0	ft³/ton	59.87	
Ceiling Load													Btu/hr-ft²	
Ventilation	0	-20	0	0	20	0	-27	0	0	0	0	No. People	200.42	-43.95
Adj Air Trans Heat	0	0	1,053	4	0	0	-519	8.56	0	0	0			
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0	0	0			
Ov/Undr Sizing	0	0	0	0	0	0	9	-0.14	0	0	0			
Exhaust Heat	-6	-6	0	0	0	0	0	0	0	0	0			
Sup. Fan Heat	0	0	0	0	0	0	0	0	0	0	0			
Ret. Fan Heat	0	0	0	0	0	0	0	0	0	0	0			
Duct Heat Pkup	0	0	0	0	0	0	-703	11.61	0	0	0			
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0	0	0	0			
Supply Air Leakage	0	0	0	0	0	0	0	0	0	0	0			
Grand Total ==>	26,161	412	27,625	100.00	25,761	100.00	-4,350	-6,058	100.00					

COOLING COIL SELECTION				AREAS				HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR	Gross Total	Glass	Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	MBh	°F °F	°F °F		ft² (%)	MBh	cfm	°F	°F	
Main Clg	2.3	27.6	26.3	2,115	75.5	62.0	80.3	61.6	57.4	79.6	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	2.3	27.6									

Room Checksums

By Trane

N1 Area 20 Pasillo interior

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 17		Mo/Hr: 5 / 17		Mo/Hr: Heating Design					SADB	Cooling	Heating	
Outside Air:		OADB/WB/HR: 84 / 83 / 216		OADB: 84		OADB: 32					Ra Plenum	57.2	95.2	
Space Sens. + Lat.	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak Space Sens	Coil Peak Tot Sens	Percent Of Total (%)	Space Peak	Coil Peak	Percent	Return	75.4	69.4
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Btu/h	Btu/h	(%)	Btu/h	Btu/h	(%)	Ret/OA	75.9	67.0
Envelope Loads													AIRFLOWS	
Skyliite Solar	0	0	0	0	0	0	0	0	0	0	0	Diffuser	1,385	1,385
Skyliite Cond	0	0	0	0	0	0	0	0	0	0	0	Terminal	1,385	1,385
Roof Cond	0	0	0	0	0	0	0	0	0	0	0	Main Fan	1,385	1,385
Glass Solar	2,001	0	2,001	6	2,001	9	0	0	0	0	0	Sec Fan	0	0
Glass/Door Cond	294	0	294	1	294	1	-1,169	-3.28	0	0	0	Nom Vent	90	90
Wall Cond	52	357	408	1	52	0	-76	-0.64	0	0	0	AHU Vent	90	90
Partition/Door	8,065	0	8,065	25	8,065	36	-30,310	-85.01	0	0	0	Infil	0	0
Floor	0	0	0	0	0	0	0	0	0	0	0	Min Stop/Rh	0	0
Adjacent Floor	0	0	0	0	0	0	0	0	0	0	0	Return	1,385	1,385
Infiltration	0	0	0	0	0	0	0	0	0	0	0	Exhaust	90	90
Sub Total ==>	10,412	357	10,769	33	10,412	46	-31,555	-89.98	0	0	0	Rm Exh	0	0
Internal Loads													ENGINEERING CKS	
Lights	8,858	0	8,858	27	8,858	39	0	0	0	0	0	Auxiliary	0	0
People	5,400	0	5,400	17	3,000	13	0	0	0	0	0	Leakage Dwn	0	0
Misc	0	0	0	0	0	0	0	0	0	0	0	Leakage Ups	0	0
Sub Total ==>	14,258	0	14,258	44	11,858	53	0	0	0	0	0	% OA	6.5	6.5
Ceiling Load													cfm/ft²	
Ventilation	0	-157	0	0	157	1	-256	0	0	0	0	cfm/ton	1.07	1.07
Adj Air Trans Heat	0	0	7,718	24	0	0	-3,111	8.73	0	0	0	cfm/ton	508.13	
Dehumid. Ov Sizing	0	0	0	0	0	0	0	0	0	0	0	ft³/ton	476.01	
Ov/Undr Sizing	0	-31	0	0	0	0	51	-0.14	0	0	0	Btu/hr-ft²	25.21	-27.48
Exhaust Heat	0	0	0	0	0	0	0	0	0	0	0	No. People	12	
Sup. Fan Heat	0	0	0	0	0	0	0	0	0	0	0			
Ret. Fan Heat	0	0	0	0	0	0	0	0	0	0	0			
Duct Heat Pkup	0	0	0	0	0	0	-513	1.44	0	0	0			
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0	0	0	0			
Supply Air Leakage	0	0	0	0	0	0	0	0	0	0	0			
Grand Total ==>	24,827	168	32,713	100.00	22,427	100.00	-31,811	-35,656	100.00					

Room Checksums

By Trane

N1 Area 23 Exclusa testigo

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES					
Peaked at Time:		Mo/Hr: 5 / 16		Mo/Hr: 5 / 17		Mo/Hr: Heating Design			Cooling			Heating				
Outside Air:		OADB/WB/HR: 86 / 85 / 231		OADB: 84		OADB: 32			SADB			100.8				
Space Sens. + Lat	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict			
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		75.3	76.4	0.0	0.0	0.0			
Envelope Loads				Envelope Loads							AIRFLOWS					
Skyllite Solar	0	0	0	0	0	Skyllite Solar	0	0	71	71	Cooling			Heating		
Skyllite Cond	0	0	0	0	0	Skyllite Cond	0	0	71	71	Terminal			71		
Roof Cond	0	0	0	0	0	Roof Cond	0	0	71	71	Main Fan			71		
Glass Solar	0	0	0	0	0	Glass Solar	0	0	0	0	Sec Fan			0		
Glass/Door Cond	0	0	0	0	0	Glass/Door Cond	0	0	0	0	Nom Vent			8		
Wall Cond	0	0	0	0	0	Wall Cond	0	0	0	0	AHU Vent			8		
Partition/Door	488	0	488	23	527	42	Partition/Door	-1,980	-1,980	86.51	Infil			0		
Floor	0	0	0	0	0	0	Floor	0	0	0	MinStop/Rh			0		
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0	Return			71		
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0	Exhaust			8		
Sub Total ==>	488	0	488	23	527	42	Sub Total ==>	-1,980	-1,980	86.51	Rm Exh			0		
Internal Loads				Internal Loads							Auxiliary			0		
Lights	465	0	465	22	465	37	Lights	0	0	0	Leakage Dwn			0		
People	450	0	450	21	250	21	People	0	0	0	Leakage Ups			0		
Misc	0	0	0	0	0	0	Misc	0	0	0						
Sub Total ==>	915	0	915	43	715	57	Sub Total ==>	0	0	0						
Ceiling Load	7	-7	0	0	8	1	Ceiling Load	-13	0	0						
Ventilation Load	0	0	722	34	0	0	Ventilation Load	0	-259	11.33						
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0						
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	4	-0.19	4						
Exhaust Heat	-2	-2	0	0	0	0	OA Preheat Diff.	0	0	0						
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0						
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0						
Duct Heat Pkup	0	0	0	0	0	0	System Plenum Heat	-54	2.35	54						
Underflr Sup Ht Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0	0						
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0						
Grand Total ==>	1,410	-9	2,123	100.00	1,250	100.00	Grand Total ==>	-1,993	-2,288	100.00						

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION					
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR		Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg		
ton	MBh	MBh	°F	°F	gri/b		ft²	(%)	MBh	cfm	°F	°F		
Main Clg	0.2	2.1	71	76.4	65.0	95.5	55.7	54.7	76.6	Main Htg	-2.3	71	65.4	100.8
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Aux Htg	0.0	0	0	0
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Preheat	0.0	0	0	0
Total	0.2	2.1								Humidif	0.0	0	0	0
										Opt Vent	0.0	0	0	0
										Total	-2.3			

Room Checksums

By Trane

N1 Area 24 Receso Titular

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK			TEMPERATURES					
Peaked at Time:		Mo/Hr: 5 / 16		Mo/Hr: 5 / 17		Mo/Hr: Heating Design			Cooling			Heating				
Outside Air:		OADB/WB/HR: 86 / 85 / 231		OADB: 84		OADB: 32			SADB			100.8				
Space Sens. + Lat	Plenum Sens. + Lat	Net Total	Percent Of Total (%)	Space Sensible	Percent Of Total (%)	Space Peak	Coil Peak	Percent Of Total (%)	Return	Ret/OA	Fn MtrTD	Fn BldTD	Fn Frict			
Btu/h	Btu/h	Btu/h		Btu/h		Btu/h	Btu/h		75.3	75.8	0.0	0.0	0.0			
Envelope Loads				Envelope Loads							AIRFLOWS					
Skyllite Solar	0	0	0	0	0	Skyllite Solar	0	0	159	159	Cooling			Heating		
Skyllite Cond	0	0	0	0	0	Skyllite Cond	0	0	159	159	Terminal			159		
Roof Cond	0	0	0	0	0	Roof Cond	0	0	159	159	Main Fan			159		
Glass Solar	0	0	0	0	0	Glass Solar	0	0	0	0	Sec Fan			0		
Glass/Door Cond	0	0	0	0	0	Glass/Door Cond	0	0	0	0	Nom Vent			8		
Wall Cond	0	0	0	0	0	Wall Cond	0	0	0	0	AHU Vent			8		
Partition/Door	337	0	337	10	364	15	Partition/Door	-1,367	-1,367	79.00	Infil			0		
Floor	0	0	0	0	0	0	Floor	0	0	0	MinStop/Rh			0		
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0	Return			159		
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0	Exhaust			8		
Sub Total ==>	337	0	337	10	364	15	Sub Total ==>	-1,367	-1,367	79.00	Rm Exh			0		
Internal Loads				Internal Loads							Auxiliary			0		
Lights	633	0	633	19	633	26	Lights	0	0	0	Leakage Dwn			0		
People	450	0	450	13	250	10	People	0	0	0	Leakage Ups			0		
Misc	1,195	0	1,195	36	1,195	49	Misc	0	0	0						
Sub Total ==>	2,278	0	2,278	68	2,078	85	Sub Total ==>	0	0	0						
Ceiling Load	9	-9	0	0	11	0	Ceiling Load	-18	0	0						
Ventilation Load	0	0	722	22	0	0	Ventilation Load	0	-259	14.98						
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0						
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0						
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	4	-0.25	4						
Exhaust Heat	-2	-2	0	0	0	0	OA Preheat Diff.	0	0	0						
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0						
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0						
Duct Heat Pkup	0	0	0	0	0	0	System Plenum Heat	-108	6.26	108						
Underflr Sup Ht Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0	0						
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0						
Grand Total ==>	2,624	-11	3,335	100.00	2,453	100.00	Grand Total ==>	-1,386	-1,731	100.00						

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION					
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR	Leave DB/WB/HR		Gross Total	Glass		Capacity	Coil Airflow	Ent	Lvg		
ton	MBh	MBh	°F	°F	gri/b		ft²	(%)	MBh	cfm	°F	°F		
Main Clg	0.3	3.3	159	75.8	63.3	86.6	58.1	55.9	78.4	Main Htg	-1.7	159	67.6	79.6
Aux Clg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Aux Htg	0.0	0	0	0
Opt Vent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Preheat	0.0	0	0	0
Total	0.3	3.3								Humidif	0.0	0	0	0
										Opt Vent	0.0	0	0	0
										Total	-1.7			

Room Checksums

By Trane

N1 Area 31 Entrevista imputado

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 6 / 20		Mo/Hr: 6 / 20		Mo/Hr: 6 / 20		Mo/Hr: Heating Design						
Outside Air:		OADB/WB/HR: 72 / 72 / 144		OADB: 72		OADB: 72		OADB: 32						
Envelope Loads	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat. Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)	Envelope Loads	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)	SADB	Cooling	Heating	
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00	59.2	88.1		
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00	75.5	69.4		
Roof Cond	0	0	0	0	0	0	Roof Cond	0	0	0.00	75.5	67.8		
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00	0.0	0.0		
Glass/Door Cond	0	0	0	0	0	0	Glass/Door Cond	0	0	0.00	0.0	0.0		
Wall Cond	2,759	1,474	4,233	56	2,759	53	Wall Cond	-4,618	-7,098	106.98				
Partition/Door	109		109	1	109	2	Partition/Door	-1,286	-1,286	19.39				
Floor	0	0	0	0	0	0	Floor	0	0	0.00				
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0.00				
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00				
Sub Total ==>	2,869	1,474	4,343	58	2,869	55	Sub Total ==>	-5,904	-8,385	126.37				
Internal Loads				Internal Loads				Internal Loads				AIRFLOWS		
Lights	596	0	596	8	596	12	Lights	0	0	0.00	Diffuser	Cooling	Heating	
People	900	0	900	12	500	10	People	0	0	0.00	Terminal	360	360	
Misc	1,195	0	1,195	16	1,195	23	Misc	0	0	0.00	Main Fan	360	360	
Sub Total ==>	2,690	0	2,690	36	2,290	44	Sub Total ==>	0	0	0.00	Sec Fan	0	0	
Ceiling Load	14	-14	0	0	14	0	Ceiling Load	-17	0	0.00	Nom Vent	15	15	
Ventilation Load	0	0	507	7	0	0	Ventilation Load	0	-519	7.82	AHU Vent	15	15	
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0.00	Infil	0	0	
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00	MinStop/Rh	0	0	
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	9	-0.13	0.00	Return	360	360	
Exhaust Heat	-7	-7	0	0	0	0	OA Preheat Diff.	0	0	0.00	Exhaust	15	15	
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0.00	Rm Exh	0	0	
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0.00	Auxiliary	0	0	
Duct Heat Pkup	0	0	0	0	0	0	System Plenum Heat	2,260	-34.06	0.00	Leakage Dwn	0	0	
Underflr Sup Ht Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0	0.00	Leakage Ups	0	0	
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0.00				
Grand Total ==>	5,572	1,454	7,533	100.00	5,172	100.00	Grand Total ==>	-5,921	-6,635	100.00				

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION				
Total Capacity ton	Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F °F	Leave DB/WB/HR °F °F	Gross Total	Glass ft² (%)	Main Htg	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	
Main Clg	0.6	7.5	6.6	360	75.3 62.3	82.2	59.2 54.8	71.5	-6.6	360	67.8	88.1	
Aux Clg	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0	
Total	0.6	7.5							0.0	0	0.0	0.0	

Room Checksums

By Trane

N1 Area 32 Resguardo imputado

COOLING COIL PEAK				CLG SPACE PEAK				HEATING COIL PEAK				TEMPERATURES		
Peaked at Time:		Mo/Hr: 5 / 16		Mo/Hr: 5 / 18		Mo/Hr: 5 / 18		Mo/Hr: Heating Design						
Outside Air:		OADB/WB/HR: 86 / 85 / 231		OADB: 80		OADB: 80		OADB: 32						
Envelope Loads	Space Sens. + Lat. Btu/h	Plenum Sens. + Lat. Btu/h	Net Total Btu/h	Percent Of Total (%)	Space Sensible Btu/h	Percent Of Total (%)	Envelope Loads	Space Peak Space Sens Btu/h	Coil Peak Tot Sens Btu/h	Percent Of Total (%)	SADB	Cooling	Heating	
Skylite Solar	0	0	0	0	0	0	Skylite Solar	0	0	0.00	50.9	99.9		
Skylite Cond	0	0	0	0	0	0	Skylite Cond	0	0	0.00	75.3	69.4		
Roof Cond	0	0	0	0	0	0	Roof Cond	0	0	0.00	75.3	69.4		
Glass Solar	0	0	0	0	0	0	Glass Solar	0	0	0.00	78.2	59.2		
Glass/Door Cond	0	0	0	0	0	0	Glass/Door Cond	0	0	0.00	0.0	0.0		
Wall Cond	241	130	371	8	250	14	Wall Cond	-373	-573	18.79				
Partition/Door	359		359	8	436	24	Partition/Door	-1,853	-1,853	60.81				
Floor	0	0	0	0	0	0	Floor	0	0	0.00				
Adjacent Floor	0	0	0	0	0	0	Adjacent Floor	0	0	0.00				
Infiltration	0	0	0	0	0	0	Infiltration	0	0	0.00				
Sub Total ==>	600	130	729	16	686	38	Sub Total ==>	-2,226	-2,426	79.60				
Internal Loads				Internal Loads				Internal Loads				AIRFLOWS		
Lights	356	0	356	8	356	20	Lights	0	0	0.00	Diffuser	Cooling	Heating	
People	1,350	0	1,350	29	750	42	People	0	0	0.00	Terminal	82	82	
Misc	0	0	0	0	0	0	Misc	0	0	0.00	Main Fan	82	82	
Sub Total ==>	1,706	0	1,706	37	1,106	61	Sub Total ==>	0	0	0.00	Sec Fan	0	0	
Ceiling Load	5	-5	0	0	7	0	Ceiling Load	-10	0	0.00	Nom Vent	23	23	
Ventilation Load	0	0	2,165	47	0	0	Ventilation Load	0	-778	25.52	AHU Vent	23	23	
Adj Air Trans Heat	0	0	0	0	0	0	Adj Air Trans Heat	0	0	0.00	Infil	0	0	
Dehumid. Ov Sizing	0	0	0	0	0	0	Ov/Undr Sizing	0	0	0.00	MinStop/Rh	0	0	
Ov/Undr Sizing	0	0	0	0	0	0	Exhaust Heat	13	-0.42	0.00	Return	82	82	
Exhaust Heat	-6	-6	0	0	0	0	OA Preheat Diff.	0	0	0.00	Exhaust	23	23	
Sup. Fan Heat	0	0	0	0	0	0	RA Preheat Diff.	0	0	0.00	Rm Exh	0	0	
Ret. Fan Heat	0	0	0	0	0	0	Additional Reheat	0	0	0.00	Auxiliary	0	0	
Duct Heat Pkup	0	0	0	0	0	0	System Plenum Heat	143	-4.70	0.00	Leakage Dwn	0	0	
Underflr Sup Ht Pkup	0	0	0	0	0	0	Underflr Sup Ht Pkup	0	0	0.00	Leakage Ups	0	0	
Supply Air Leakage	0	0	0	0	0	0	Supply Air Leakage	0	0	0.00				
Grand Total ==>	2,311	118	4,594	100.00	1,799	100.00	Grand Total ==>	-2,236	-3,048	100.00				

COOLING COIL SELECTION						AREAS			HEATING COIL SELECTION				
Total Capacity ton	Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F °F	Leave DB/WB/HR °F °F	Gross Total	Glass ft² (%)	Main Htg	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F	
Main Clg	0.4	4.6	2.1	82	78.2 69.7	120.9	50.9 50.8	67.4	-3.1	82	59.2	99.9	
Aux Clg	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0 0.0	0.0	0.0 0.0	0.0	0.0	0	0.0	0.0	
Total	0.4	4.6							0.0	0	0.0	0.0	

SYSTEM LOAD PROFILES

By Trane

Planta Baja
Planta Baja

Percent Design Load	---- Cooling Load ----			---- Heating Load ----			---- Cooling Airflow ----			---- Heating Airflow----		
	Cap. (Tons)	Hours (%)	Hours	Cap. (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.8	0	0	-7,687.5	0	0	1,726.8	0	0	0.0	0	0
5 - 10	5.6	0	0	-15,375.1	0	0	3,453.5	0	0	0.0	0	0
10 - 15	8.5	0	0	-23,062.6	0	0	5,180.3	0	0	0.0	0	0
15 - 20	11.3	0	0	-30,750.1	0	0	6,907.1	0	0	0.0	0	0
20 - 25	14.1	0	0	-38,437.7	0	0	8,633.8	0	0	0.0	0	0
25 - 30	16.9	0	0	-46,125.2	0	0	10,360.6	0	0	0.0	0	0
30 - 35	19.8	0	0	-53,812.7	0	0	12,087.4	0	0	0.0	0	0
35 - 40	22.6	8	661	-61,500.3	0	0	13,814.1	0	0	0.0	0	0
40 - 45	25.4	12	1,094	-69,187.8	0	0	15,540.9	0	0	0.0	0	0
45 - 50	28.2	17	1,497	-76,875.3	0	0	17,267.7	0	0	0.0	0	0
50 - 55	31.1	12	1,093	-84,562.8	0	0	18,994.4	0	0	0.0	0	0
55 - 60	33.9	11	1,002	-92,250.4	0	0	20,721.2	0	0	0.0	0	0
60 - 65	36.7	10	912	-99,937.9	0	0	22,448.0	0	0	0.0	0	0
65 - 70	39.5	12	1,069	-107,625.4	0	0	24,174.7	0	0	0.0	0	0
70 - 75	42.3	5	453	-115,313.0	0	0	25,901.5	0	0	0.0	0	0
75 - 80	45.2	5	460	-123,000.5	0	0	27,628.3	0	0	0.0	0	0
80 - 85	48.0	5	397	-130,688.0	0	0	29,355.1	0	0	0.0	0	0
85 - 90	50.8	1	122	-138,375.6	0	0	31,081.8	0	0	0.0	0	0
90 - 95	53.6	0	0	-146,063.1	0	0	32,808.6	0	0	0.0	0	0
95 - 100	56.5	0	0	-153,750.6	0	0	34,535.4	100	8,760	0.0	0	0
Hours Off	0.0	0	0	0.0	0	8,760	0.0	0	0	0.0	0	8,760

SYSTEM LOAD PROFILES

By Trane

Planta Baja
System Totals

Percent Design Load	---- Cooling Load ----			---- Heating Load ----			---- Cooling Airflow ----			---- Heating Airflow----		
	Cap. (Tons)	Hours (%)	Hours	Cap. (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.8	0	0	-7,687.5	0	0	1,726.8	0	0	0.0	0	0
5 - 10	5.6	0	0	-15,375.1	0	0	3,453.5	0	0	0.0	0	0
10 - 15	8.5	0	0	-23,062.6	0	0	5,180.3	0	0	0.0	0	0
15 - 20	11.3	0	0	-30,750.1	0	0	6,907.1	0	0	0.0	0	0
20 - 25	14.1	0	0	-38,437.7	0	0	8,633.8	0	0	0.0	0	0
25 - 30	16.9	0	0	-46,125.2	0	0	10,360.6	0	0	0.0	0	0
30 - 35	19.8	0	0	-53,812.7	0	0	12,087.4	0	0	0.0	0	0
35 - 40	22.6	8	661	-61,500.3	0	0	13,814.1	0	0	0.0	0	0
40 - 45	25.4	12	1,094	-69,187.8	0	0	15,540.9	0	0	0.0	0	0
45 - 50	28.2	17	1,497	-76,875.3	0	0	17,267.7	0	0	0.0	0	0
50 - 55	31.1	12	1,093	-84,562.8	0	0	18,994.4	0	0	0.0	0	0
55 - 60	33.9	11	1,002	-92,250.4	0	0	20,721.2	0	0	0.0	0	0
60 - 65	36.7	10	912	-99,937.9	0	0	22,448.0	0	0	0.0	0	0
65 - 70	39.5	12	1,069	-107,625.4	0	0	24,174.7	0	0	0.0	0	0
70 - 75	42.3	5	453	-115,313.0	0	0	25,901.5	0	0	0.0	0	0
75 - 80	45.2	5	460	-123,000.5	0	0	27,628.3	0	0	0.0	0	0
80 - 85	48.0	5	397	-130,688.0	0	0	29,355.1	0	0	0.0	0	0
85 - 90	50.8	1	122	-138,375.6	0	0	31,081.8	0	0	0.0	0	0
90 - 95	53.6	0	0	-146,063.1	0	0	32,808.6	0	0	0.0	0	0
95 - 100	56.5	0	0	-153,750.6	0	0	34,535.4	100	8,760	0.0	0	0
Hours Off	0.0	0	0	0.0	0	8,760	0.0	0	0	0.0	0	8,760

SYSTEM LOAD PROFILES

By Trane

Primer Nivel
Primer Nivel

Percent Design Load	--- Cooling Load ---			--- Heating Load ---			--- Cooling Airflow ---			--- Heating Airflow---		
	Cap. (Tons)	Hours (%)	Hours	Cap. (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.4	0	0	-15,670.3	66	757	1,353.3	0	0	0.0	0	0
5 - 10	4.7	2	186	-31,340.5	34	394	2,706.5	0	0	0.0	0	0
10 - 15	7.1	8	688	-47,010.8	0	0	4,059.8	0	0	0.0	0	0
15 - 20	9.4	8	728	-62,681.0	0	0	5,413.1	0	0	0.0	0	0
20 - 25	11.8	13	1,129	-78,351.3	0	0	6,766.3	0	0	0.0	0	0
25 - 30	14.1	11	971	-94,021.5	0	0	8,119.6	0	0	0.0	0	0
30 - 35	16.5	8	733	-109,691.8	0	0	9,472.8	0	0	0.0	0	0
35 - 40	18.8	8	733	-125,362.0	0	0	10,826.1	0	0	0.0	0	0
40 - 45	21.2	8	741	-141,032.3	0	0	12,179.4	0	0	0.0	0	0
45 - 50	23.5	5	455	-156,702.5	0	0	13,532.6	0	0	0.0	0	0
50 - 55	25.9	5	458	-172,372.8	0	0	14,885.9	0	0	0.0	0	0
55 - 60	28.3	4	366	-188,043.0	0	0	16,239.1	0	0	0.0	0	0
60 - 65	30.6	4	318	-203,713.3	0	0	17,592.4	0	0	0.0	0	0
65 - 70	33.0	3	275	-219,383.5	0	0	18,945.7	0	0	0.0	0	0
70 - 75	35.3	3	269	-235,053.8	0	0	20,298.9	0	0	0.0	0	0
75 - 80	37.7	4	344	-250,724.0	0	0	21,652.2	0	0	0.0	0	0
80 - 85	40.0	2	213	-266,394.3	0	0	23,005.5	0	0	0.0	0	0
85 - 90	42.4	2	153	-282,064.5	0	0	24,358.7	0	0	0.0	0	0
90 - 95	44.7	0	0	-297,734.8	0	0	25,712.0	0	0	0.0	0	0
95 - 100	47.1	0	0	-313,405.0	0	0	27,065.2	100	8,760	0.0	0	0
Hours Off	0.0	0	0	0.0	0	7,609	0.0	0	0	0.0	0	8,760

SYSTEM LOAD PROFILES

By Trane

Primer Nivel
System Totals

Percent Design Load	--- Cooling Load ---			--- Heating Load ---			--- Cooling Airflow ---			--- Heating Airflow---		
	Cap. (Tons)	Hours (%)	Hours	Cap. (Btuh)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours	Cap. (Cfm)	Hours (%)	Hours
0 - 5	2.4	0	0	-15,670.3	66	757	1,353.3	0	0	0.0	0	0
5 - 10	4.7	2	186	-31,340.5	34	394	2,706.5	0	0	0.0	0	0
10 - 15	7.1	8	688	-47,010.8	0	0	4,059.8	0	0	0.0	0	0
15 - 20	9.4	8	728	-62,681.0	0	0	5,413.1	0	0	0.0	0	0
20 - 25	11.8	13	1,129	-78,351.3	0	0	6,766.3	0	0	0.0	0	0
25 - 30	14.1	11	971	-94,021.5	0	0	8,119.6	0	0	0.0	0	0
30 - 35	16.5	8	733	-109,691.8	0	0	9,472.8	0	0	0.0	0	0
35 - 40	18.8	8	733	-125,362.0	0	0	10,826.1	0	0	0.0	0	0
40 - 45	21.2	8	741	-141,032.3	0	0	12,179.4	0	0	0.0	0	0
45 - 50	23.5	5	455	-156,702.5	0	0	13,532.6	0	0	0.0	0	0
50 - 55	25.9	5	458	-172,372.8	0	0	14,885.9	0	0	0.0	0	0
55 - 60	28.3	4	366	-188,043.0	0	0	16,239.1	0	0	0.0	0	0
60 - 65	30.6	4	318	-203,713.3	0	0	17,592.4	0	0	0.0	0	0
65 - 70	33.0	3	275	-219,383.5	0	0	18,945.7	0	0	0.0	0	0
70 - 75	35.3	3	269	-235,053.8	0	0	20,298.9	0	0	0.0	0	0
75 - 80	37.7	4	344	-250,724.0	0	0	21,652.2	0	0	0.0	0	0
80 - 85	40.0	2	213	-266,394.3	0	0	23,005.5	0	0	0.0	0	0
85 - 90	42.4	2	153	-282,064.5	0	0	24,358.7	0	0	0.0	0	0
90 - 95	44.7	0	0	-297,734.8	0	0	25,712.0	0	0	0.0	0	0
95 - 100	47.1	0	0	-313,405.0	0	0	27,065.2	100	8,760	0.0	0	0
Hours Off	0.0	0	0	0.0	0	7,609	0.0	0	0	0.0	0	8,760

CÁLCULO DE VENTILACIÓN

El cálculo de la ventilación para la renovación de aire exterior viene indicada en la hoja que indica "System Checksums" del Cálculo Térmico.

El cálculo de las extracciones de aire se presenta la siguiente tabla:

ID	DESCRIPCIÓN	AREA m ²	V m ³	VENTILACIÓN ach/mue/mch/m ²	Q _m CALCULO m ³ /h	Q _m DISEÑO m ³ /h	Q _m DISEÑO cfm	VENT. FINAL	COMENTARIOS
EDIFICIO: CENTRO DE JUSTICIA PENAL FEDERAL EN CELAYA, GUANAJUATO									
PB	SANITARIO 1	3.34	7.35	20.00	146.96	147	86	20.00	
PB	SANITARIO 2	4.90	10.78	20.00	215.60	216	127	20.00	
PB	SANITARIO MUJERES	15.00	33.00	20.00	660.00	660	388	20.00	
PB	SANITARIO HOMBRES	13.00	28.60	20.00	572.00	572	337	20.00	
PB	SANITARIO DISCAPACITADOS	4.40	9.68	20.00	193.60	194	114	20.00	
PB	ASEO	2.80	6.16	20.00	123.20	123	73	20.00	
PB	SANITARIO VISITAS MUJERES	14.70	32.34	20.00	646.80	647	381	20.00	
PB	SANITARIO VISITAS HOMBRES	14.00	30.80	20.00	616.00	616	363	20.00	
PB	SANITARIO SEGURIDAD	2.50	5.50	20.00	110.00	110	65	20.00	
1N	SANITARIO VE-03	2.90	6.38	20.00	127.60	128	75	20.00	
1N	SANITARIO VE-04	3.10	6.82	20.00	136.40	136	80	20.00	
1N	SANITARIO VE-05	3.00	6.60	20.00	132.00	132	78	20.00	
1N	SANITARIO VE-06	3.10	6.82	20.00	136.40	136	80	20.00	
1N	SANITARIO VE-07	3.00	6.60	20.00	132.00	132	78	20.00	
1N	SANITARIO MUJERES	15.00	33.00	20.00	660.00	660	388	20.00	
1N	SANITARIO HOMBRES	12.90	28.38	20.00	567.60	568	334	20.00	
1N	SANITARIO IMPUTADOS	2.60	5.72	20.00	114.40	114	67	20.00	
1N	SANITARIO CUSTODIOS	3.30	7.26	20.00	145.20	145	85	20.00	
1N	SANITARIO CUSTODIOS ESPERA	3.50	7.70	20.00	154.00	154	91	20.00	
1N	SANITARIO IMPUTADOS RESGUARDO	3.00	6.60	20.00	132.00	132	78	20.00	

SELECCIÓN DE EQUIPOS

El sistema de aire acondicionado y calefacción da servicio a todo el inmueble garantizando las condiciones de confort para los usuarios tanto en verano como en invierno, el cual utiliza tecnología de punta con características que permite el ahorro de energía, el uso refrigerante ecológico R-410 y de alta eficiencia. El objetivo es reducir los costos operativos, el respeto al medio ambiente no dañando la capa de ozono y requieran menor carga de refrigerante en la operación de los equipos.

La tecnología utilizada para estos equipos es por expansión directa y de volumen variable (VRV- variable refrigerant volume) cuyas condensadoras son enfriadas por aire del tipo bomba de calor (heat pump). Todas las unidades condensadoras se conectan al sistema BMS (Building Manager System) del inmueble con protocolo abierto BACNET (Building Automation and Control Networks).

Los factores que determinaron la selección de la marca asignada de los equipos fue la eficiencia, garantías, vida útil, tiempos de entrega, disponibilidad de refacciones y servicio técnico.

SISTEMA VRV

System1--UC-PB-A


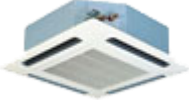



1.1 Data of ODU--AVWT-364U8SZA

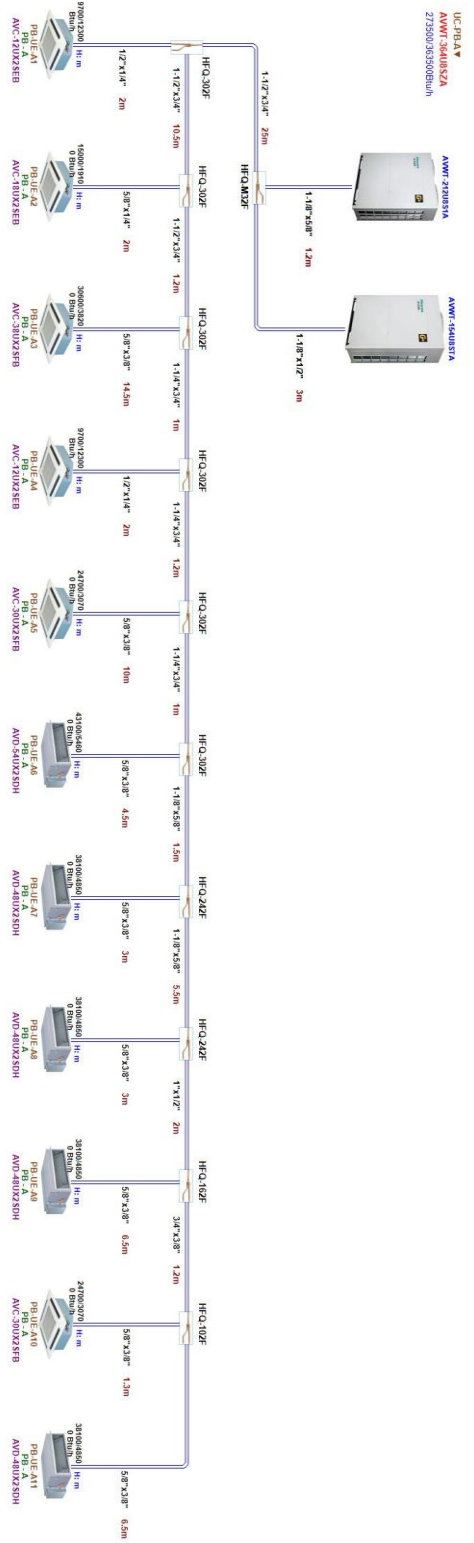
Combination Index(Cooling/Heating)	107.79/110.17 %	Connection Pipe	Gas Pipe(inch)	1-1/2"
Cooling Capacity (Corrected/Rated)(Btu/h)	273500/363500		Liquid Pipe(inch)	3/4"
Heating Capacity (Corrected/Rated)(Btu/h)	342500/406100	Dimension	Width(mm)	1350+1210
Power Supply	AC3Φ, 208V~230V/60 Hz		Height(mm)	1730
Power Input(kW)	32.70/31.40		Depth(mm)	750
Weight(Kg)	727	Noise dB(A)		72

1.2 Data of IDU

Picture	Name	Room	Model	Cooling Capacity (Corrected/Rated)(Btu/h)	Heating Capacity (Corrected/Rated)(Btu/h)	Size_HWD (mm)	Weight (kg)	Controller	Power Input (kW)	Noise dB(A)	Airflow (m³/h)
	PB-UE-A1	PB - A	AVC-12UX2SEB	9700/12300	11500/14300	248*840*840	22	HYXE-J01H	0.05	31-29-27	900
<p>tomamos los valores del ejemplo del cálculo térmico: $Q_t=7000\text{BTU}/\text{Hr}$, $Q_s=5300\text{BTU}/\text{Hr}$, 348CFM (591m³/h)</p>											
	PB-UE-A2	PB - A	AVC-18UX2SEB	15000/19100	17800/22200	248*840*840	23	HYXE-J01H	0.05	32-30-27	960
	PB-UE-A3	PB - A	AVC-38UX2SFB	30600/38200	35500/44400	298*840*840	27	HYXE-J01H	0.11	41-38-35	1920
	PB-UE-A4	PB - A	AVC-12UX2SEB	9700/12300	11500/14300	248*840*840	22	HYXE-J01H	0.05	31-29-27	900
	PB-UE-A5	PB - A	AVC-30UX2SFB	24700/30700	27300/34100	298*840*840	24	HYXE-J01H	0.09	36-34-32	1560
	PB-UE-A6	PB - A	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*80 0	56	HYXE-J01H	0.41	45-42-38	2200
	PB-UE-A7	PB - A	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*80 0	56	HYXE-J01H	0.41	44-41-36	2150
	PB-UE-A8	PB - A	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*80 0	56	HYXE-J01H	0.41	44-41-36	2150

	PB-UE-A9	PB - A	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*80 0	56	HYXE-J01H	0.41	44-41-36	2150
	PB-UE-A10	PB - A	AVC-30UX2SFB	24700/30700	27300/34100	298*840*840	24	HYXE-J01H	0.09	36-34-32	1560
	PB-UE-A11	PB - A	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*80 0	56	HYXE-J01H	0.41	44-41-36	2150

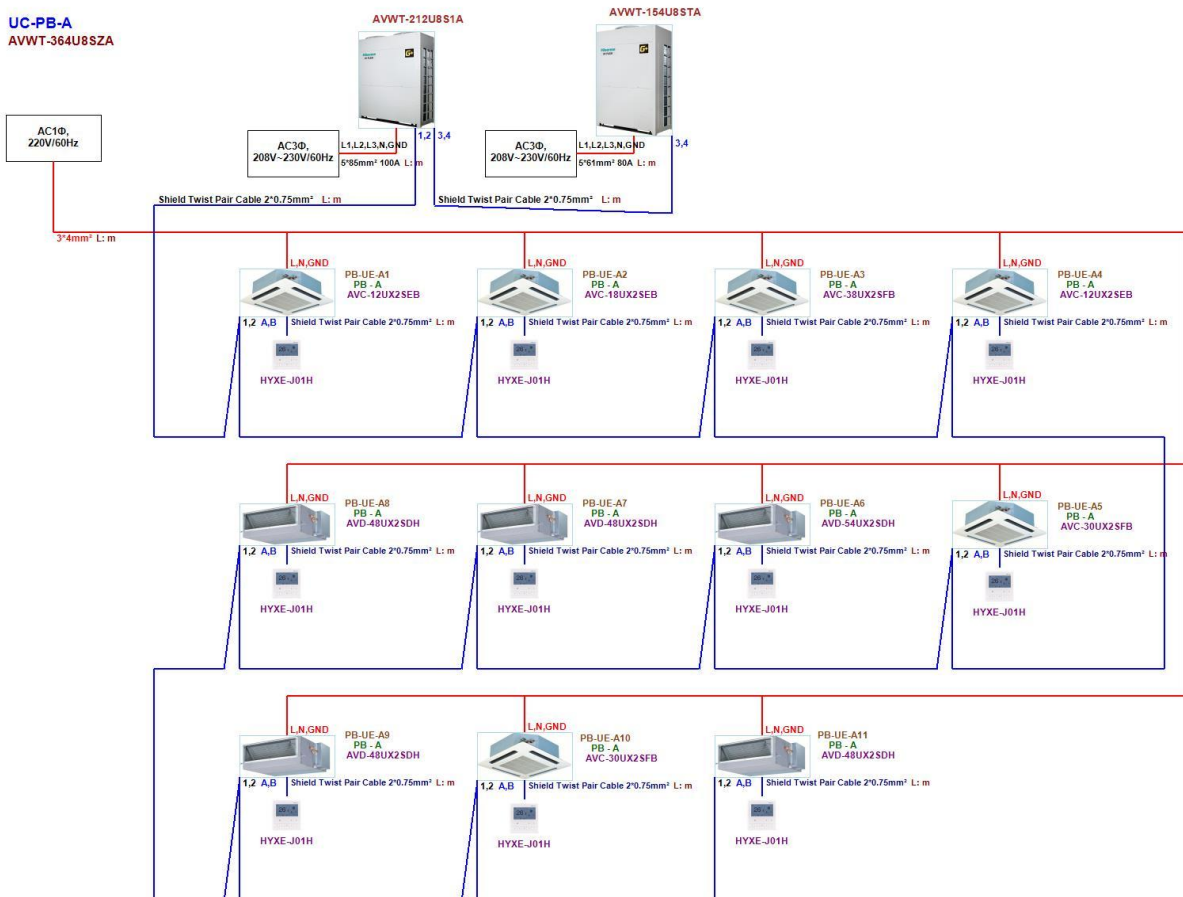
1.3 Piping



Refrigerant Charged	
Initial Refrigerant Charged:	28.7 kg
To be Provided:	17 kg
Total	45.7 kg

Liquid Pipe (inch)	Length (m)
1/4"	6
3/8"	50.5
1/2"	5
5/8"	8.2
3/4"	39.9

1.4 Wiring







2 System2--UC-PB-B









2.1 Data of ODU--AVWT-340U8SZA

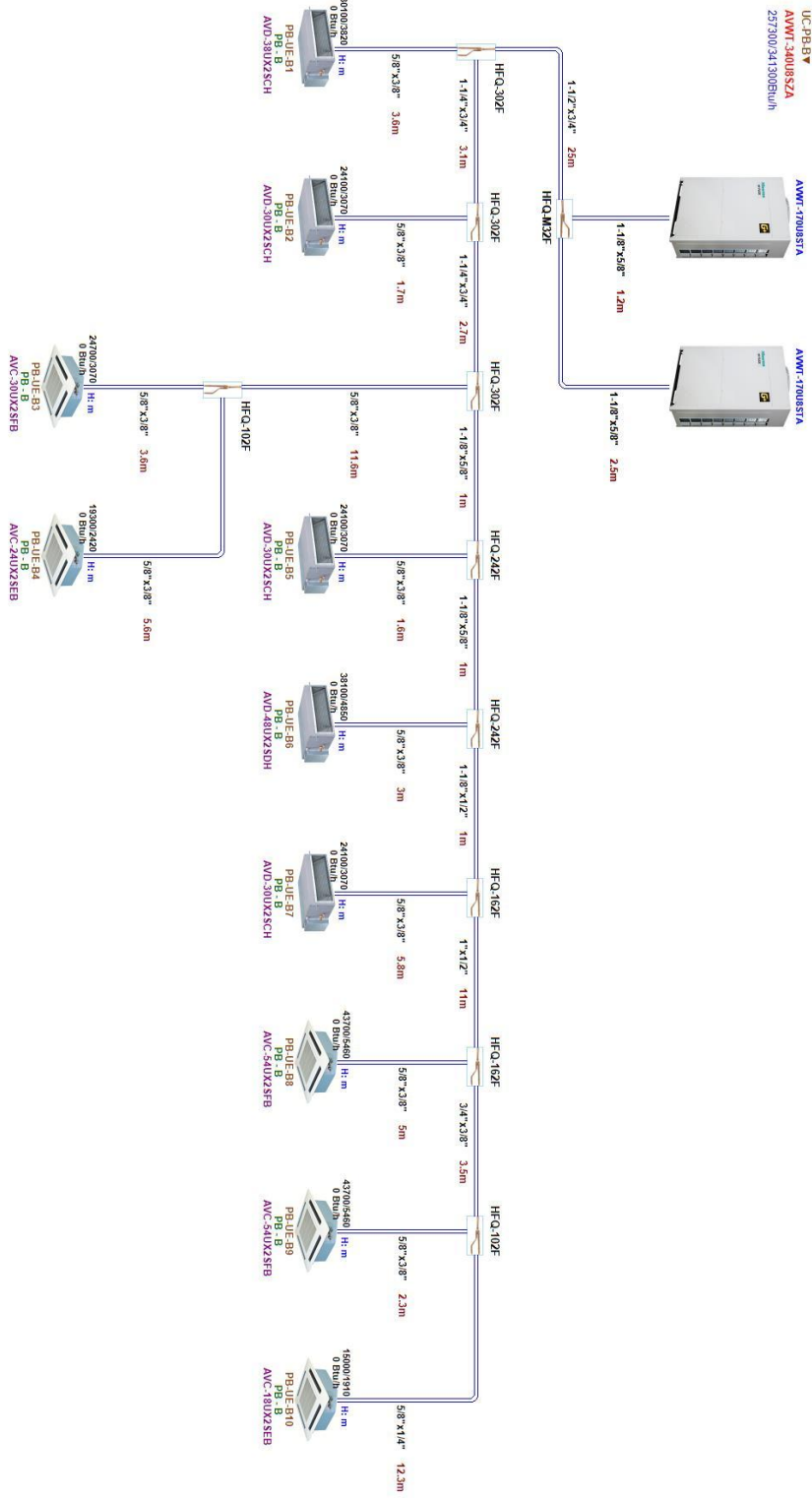
Combination Index(Cooling/Heating)	106.1/107.41%	Connection Pipe	Gas Pipe(inch)	1-1/2"
Cooling Capacity (Corrected/Rated)(Btu/h)	257300/341300		Liquid Pipe(inch)	3/4"
Heating Capacity (Corrected/Rated)(Btu/h)	317900/382200	Dimension	Width(mm)	1210+1210
Power Supply	AC3Φ, 208V~230V/60 Hz		Height(mm)	1730
Power Input(kW)	28.74/27.93		Depth(mm)	750
Weight(Kg)	666	Noise dB(A)		72

2.2 Data of IDU

Picture	Name	Room	Model	Cooling Capacity (Corrected/Rated)(Btu/h)	Heating Capacity (Corrected/Rated)(Btu/h)	Size_HWD (mm)	Weight (kg)	Controller	Power Input (kW)	Noise dB(A)	Airflow (m³/h)
	PB-UE-B1	PB - B	AVD-38UX2SCH	30100/38200	35500/44400	350*(900+75)*800	44	HYXE-J01H	0.29	43-40-36	1550
	PB-UE-B2	PB - B	AVD-30UX2SCH	24100/30700	27300/34100	350*(900+75)*800	44	HYXE-J01H	0.29	41-39-34	1550
	PB-UE-B3	PB - B	AVC-30UX2SFB	24700/30700	27300/34100	298*840*840	24	HYXE-J01H	0.09	36-34-32	1560
	PB-UE-B4	PB - B	AVC-24UX2SEB	19300/24200	23200/29000	248*840*840	23	HYXE-J01H	0.06	33-31-29	1200

	PB-UE-B5	PB - B	AVD-30UX2SCH	24100/30700	27300/34100	350*(900+75)*800	44	HYXE-J01H	0.29	41-39-34	1550
	PB-UE-B6	PB - B	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*800	56	HYXE-J01H	0.41	44-41-36	2150
	PB-UE-B7	PB - B	AVD-30UX2SCH	24100/30700	27300/34100	350*(900+75)*800	44	HYXE-J01H	0.29	41-39-34	1550
	PB-UE-B8	PB - B	AVC-54UX2SFB	43700/54600	49200/61400	298*840*840	27	HYXE-J01H	0.15	44-42-38	2220
	PB-UE-B9	PB - B	AVC-54UX2SFB	43700/54600	49200/61400	298*840*840	27	HYXE-J01H	0.15	44-42-38	2220
	PB-UE-B10	PB - B	AVC-18UX2SEB	15000/19100	17800/22200	248*840*840	23	HYXE-J01H	0.05	32-30-27	960

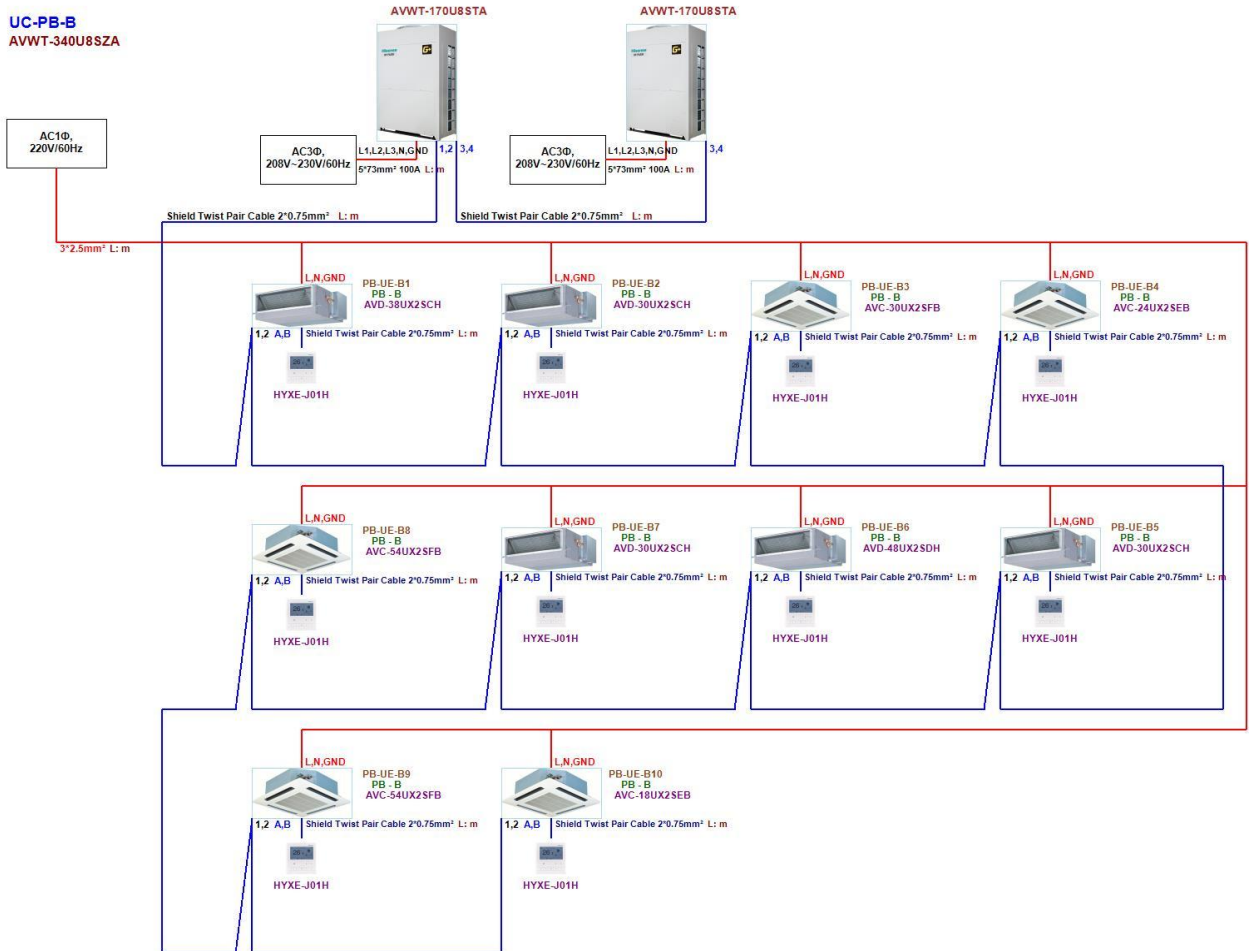
2.3 Piping



Refrigerant Charged	
Initial Refrigerant Charged:	27.4 kg
To be Provided:	14.9 kg
Total	42.3 kg

Liquid Pipe (inch)	Length (m)
1/4"	12.3
3/8"	47.3
1/2"	12
5/8"	5.7
3/4"	30.8

2.4 Wiring







3 System3--UC-1N-A









3.1 Data of ODU--AVWT-382U8SZA

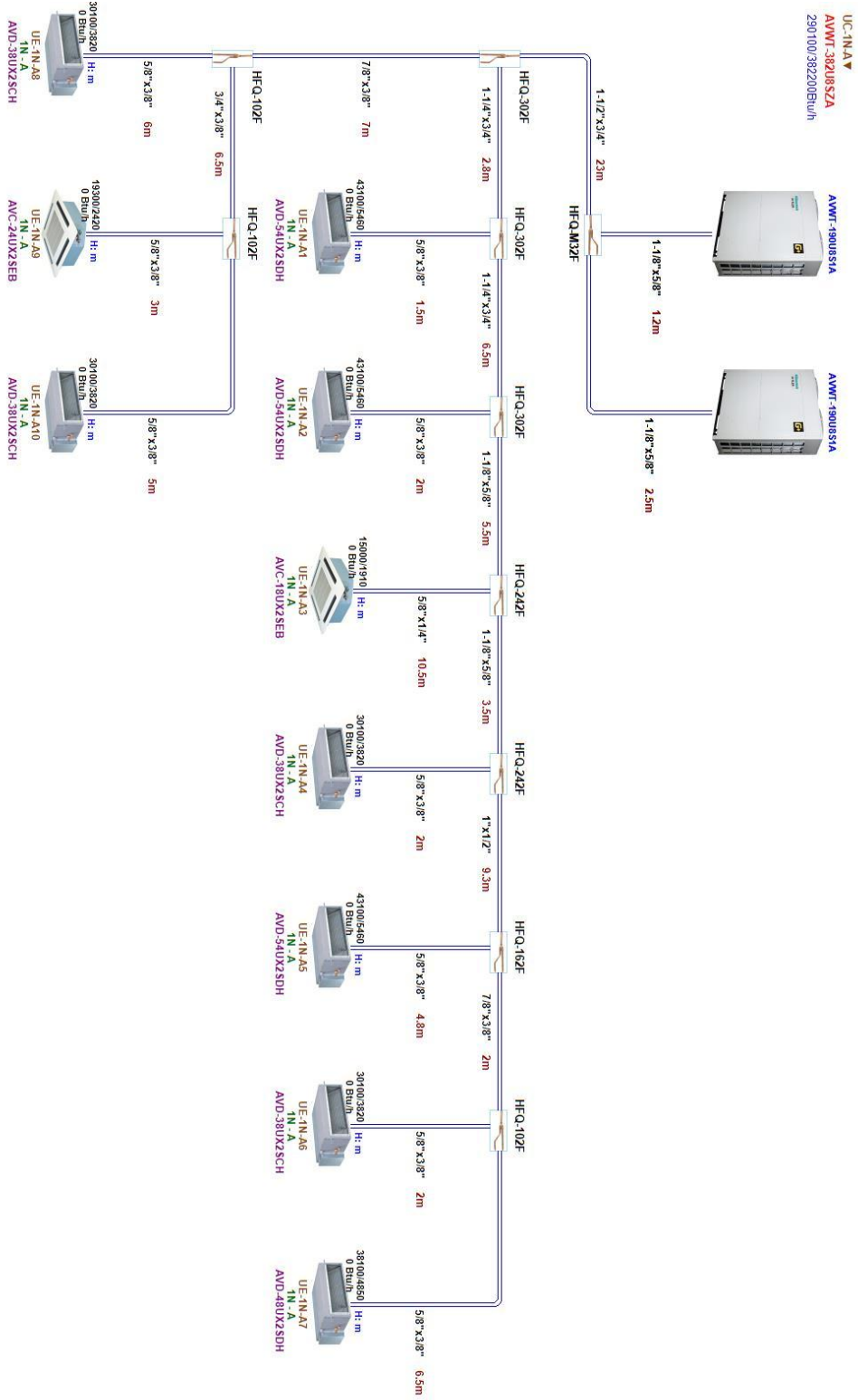
Combination Index(Cooling/Heating)	106.88/108.97 %	Connection Pipe	Gas Pipe(inch)	1-1/2"
Cooling Capacity (Corrected/Rated)(Btu/h)	290100/382200		Liquid Pipe(inch)	3/4"
Heating Capacity (Corrected/Rated)(Btu/h)	360400/430000	Dimension	Width(mm)	1350+1350
Power Supply	AC3Φ, 208V~230V/60 Hz		Height(mm)	1730
Power Input(kW)	32.84/32.81		Depth(mm)	750
Weight(Kg)	788	Noise dB(A)		74

3.2 Data of IDU

Picture	Name	Room	Model	Cooling Capacity (Corrected/Rated)(Btu/h)	Heating Capacity (Corrected/Rated)(Btu/h)	Size_HWD (mm)	Weight (kg)	Controller	Power Input (kW)	Noise dB(A)	Airflow (m³/h)
	UE-1N-A1	1N - A	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*800	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-A2	1N - A	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*800	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-A3	1N - A	AVC-18UX2SEB	15000/19100	17800/22200	248*840*840	23	HYXE-J01H	0.05	32-30-27	960
	UE-1N-A4	1N - A	AVD-38UX2SCH	30100/38200	35500/44400	350*(900+75)*800	44	HYXE-J01H	0.29	43-40-36	1550

	UE-1N-A5	1N - A	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*800	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-A6	1N - A	AVD-38UX2SCH	30100/38200	35500/44400	350*(900+75)*800	44	HYXE-J01H	0.29	43-40-36	1550
	UE-1N-A7	1N - A	AVD-48UX2SDH	38100/48500	44600/55600	350*(1300+75)*800	56	HYXE-J01H	0.41	44-41-36	2150
	UE-1N-A8	1N - A	AVD-38UX2SCH	30100/38200	35500/44400	350*(900+75)*800	44	HYXE-J01H	0.29	43-40-36	1550
	UE-1N-A9	1N - A	AVC-24UX2SEB	19300/24200	23200/29000	248*840*840	23	HYXE-J01H	0.06	33-31-29	1200
	UE-1N-A10	1N - A	AVD-38UX2SCH	30100/38200	35500/44400	350*(900+75)*800	44	HYXE-J01H	0.29	43-40-36	1550

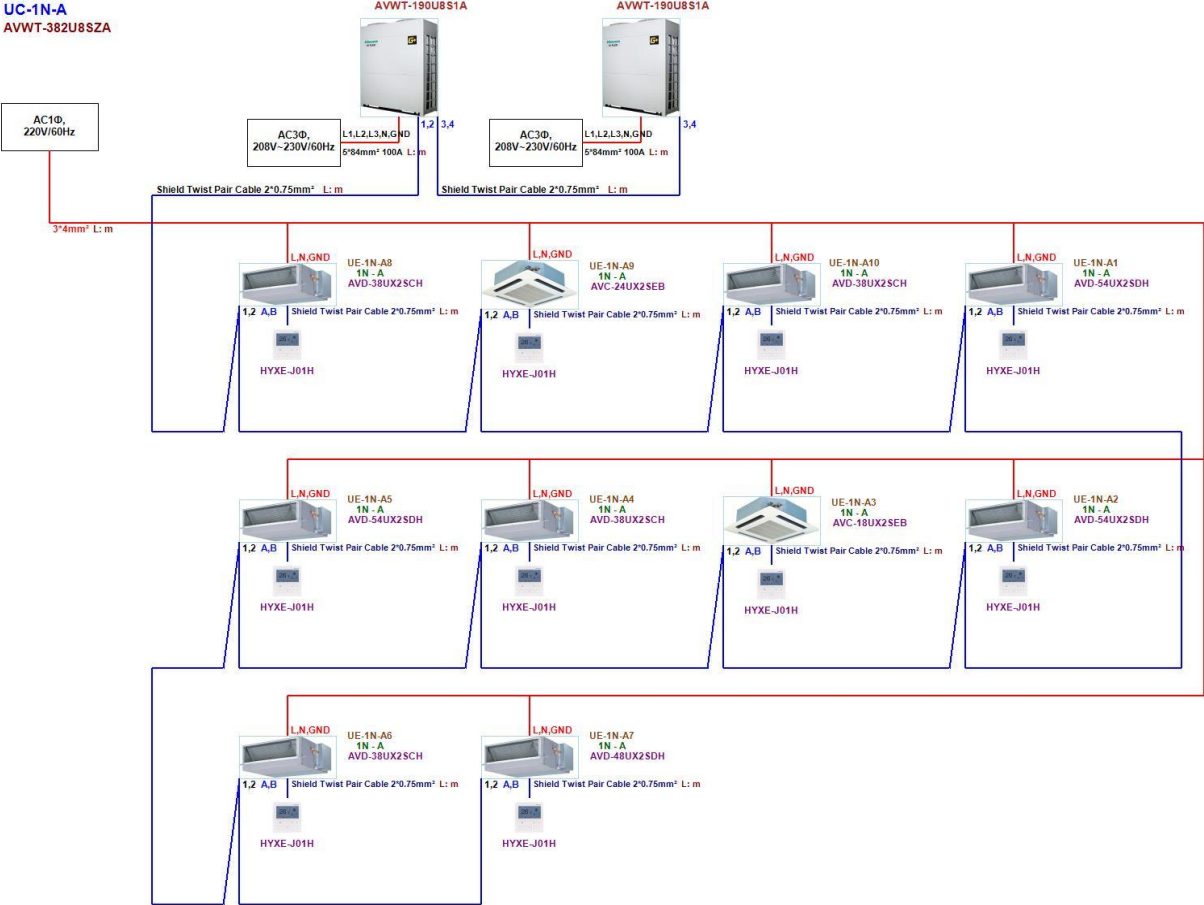
3.3 Piping



Refrigerant Charged	
Initial Refrigerant Charged:	31.4 kg
To be Provided:	16.3 kg
Total	47.7 kg

Liquid Pipe (inch)	Length (m)
1/4"	10.5
3/8"	48.3
1/2"	9.3
5/8"	12.7
3/4"	32.3

3.4 Wiring







System4--UC-1N-B



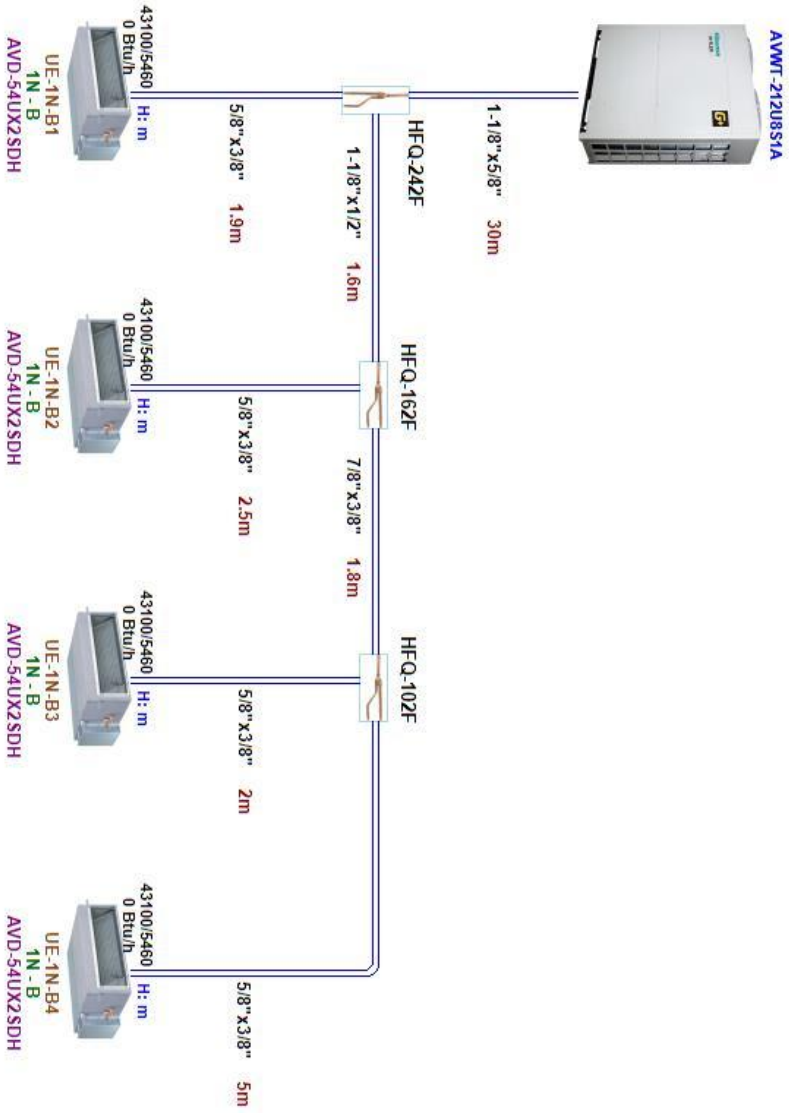
4.1 Data of ODU--AVWT-212U8S1A

Combination Index(Cooling/Heating)	104.07/104.35 %	Connection Pipe	Gas Pipe(inch)	1-1/8"
Cooling Capacity (Corrected/Rated)(Btu/h)	158300/209900		Liquid Pipe(inch)	5/8"
Heating Capacity (Corrected/Rated)(Btu/h)	193000/235500	Dimension	Width(mm)	1350
Power Supply	AC3Φ, 208V~230V/60 Hz		Height(mm)	1730
Power Input(kW)	20.10/19.11		Depth(mm)	750
Weight(Kg)	395	Noise dB(A)		69

4.2 Data of IDU

Picture	Name	Room	Model	Cooling Capacity (Corrected/Rated)(Btu/h)	Heating Capacity (Corrected/Rated)(Btu/h)	Size_HWD (mm)	Weight (kg)	Controller	Power Input (kW)	Noise dB(A)	Airflow (m³/h)
	UE-1N-B1	1N - B	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*80 0	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-B2	1N - B	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*80 0	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-B3	1N - B	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*80 0	56	HYXE-J01H	0.41	45-42-38	2200
	UE-1N-B4	1N - B	AVD-54UX2SDH	43100/54600	49200/61400	350*(1300+75)*80 0	56	HYXE-J01H	0.41	45-42-38	2200

UC-1N-B▼
AWWT-212U8S1A
158300/209900Btu/h

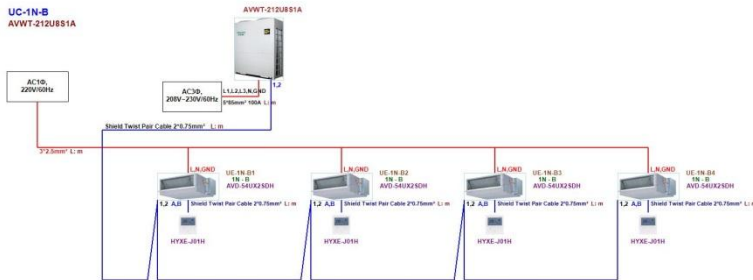


4.3 Piping

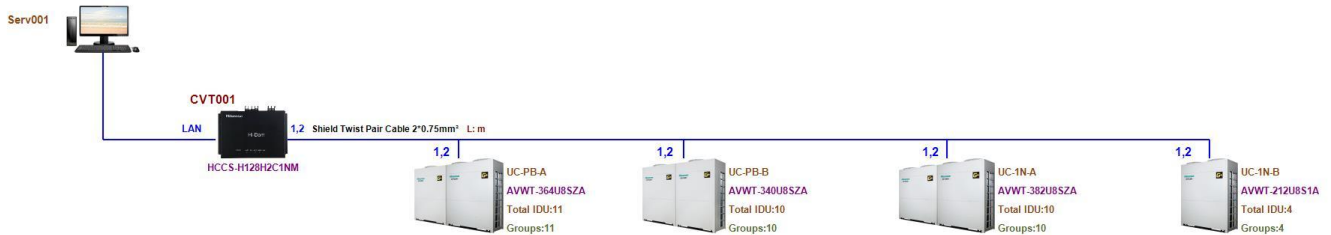
Refrigerant Charged	
Initial Refrigerant Charged:	16.2 kg
To be Provided:	7.2 kg
Total	23.4 kg

Liquid Pipe (inch)	Length (m)
3/8"	13.2
1/2"	1.6
5/8"	30

4.4 Wiring



4. Central Control



EQUIPO DE PRECISIÓN



Prepared on:
 Project: EV-1118-17
 Worksheet: CONSEJO DE LA JUDICATURA

Evaporator Section	
GTAD-02832-AO	GT AIR DOWNFLOW 28KW 3PH 208-230 V W/DRCU
Evap. Tag #:	
Quantity:	2
Voltage:	208
Phase:	3
Hertz:	60
Color:	COLOR-BLACK

Cabinet Data:	
Configuration:	Downflow
Depth (in.):	40.50
Length (in.):	53.50
Height (in.):	78.00
Shipping Weight (lbs):	875

Entering Air Conditions:	
Entering Air DB (°F):	75.0
Entering Air WB (°F):	61.0
Relative Humidity (%):	45.0
Altitude (ft):	0

Evaporator Coil	
Face Area (sq ft):	12.20
Face Velocity (ft/min):	360.7
Rows:	3
Fins per (in.):	12.0
Fin Type:	Aluminum

Calculated Data	
Gross Total Capacity (Btu/hr):	102,400
Gross Sensible Capacity (Btu/hr):	98,600
Net Total Capacity (Btu/hr):	93,200
Net Sensible Capacity:	89,500
Air Out Dry Bulb (°F):	56.2
Air Out Wet Bulb (°F):	53.6

* Net Coil Capacity equals gross capacity minus motor heat.

Evaporator EC Plug	
CFM:	4,400
ESP (inch of water):	0.50
Motor Horsepower:	3.6
Motor FLA:	8.0
Motor Quantity:	1
Blower Quantity:	1
Air Flow:	Optional Airflow
Plug Fan (mm)/Motor (kW):	500mm 2.8kW

Humidifier:	
Type:	Steam Generator
Capacity in (Lbs/hr):	10.0
KW:	3.4

parámetros principales para la selección del equipo (de cálculo térmico:
 $Q_t=92900\text{BTU/Hr}$,
 $Q_s=91800\text{BTU/Hr}$, caudal de aire= 5013CFM ,
 $TBS=55^\circ\text{F}$, $TBH=50.6^\circ\text{F}$)

Prepared on: November 23, 2017

Updated on: 11/23/2017

Reheat:			
Type:	Electric		
Capacity (BTU/hr):	45,700		
kW:	13.4		
Filters:			
Quantity:	Size 1	2	Size 2
Size (inches):	16" x 25" x 4"		20" x 25" x 4"
Efficiency:	MERV 8		MERV 8
Connection Sizes:			
Liquid Line (in. Nom.):	5/8		
Suction Line (in. Nom.):	1 3/8		
Condensate (in. Nom.):	3/4		
Humidifier (in. Nom.):	1/4		
Electrical Data:			
Unit Total Amps:	49.6		
Unit MCA:	62.0		
Unit MOP:	70		
Controls:			
dap4 Microprocessor Controller			

Accessories:		
Model Number:	GTAD-02832-AO GT AIR DOWNFLOW 28KW 3PH 208-230 V WDRCU	
Tag Number:		
Qty	Option	Description
2	OPT-5000	15KW Electric Reheat, 208/230V
2	OPT-7310	dap4
2	OPT-6511	Plug Fan, 500 mm 2.8 kW, qty 1
2	OPT-6612	Nominal Capacity 28 kW
2	OPT-5221	3 Phase
2	OPT-5062	Voltage 208V
2	OPT-6750	Liquid Line Solenoid Valve, 1/2", Single Circuit
2	OPT-5047	Black
2	OPT-5357	Evaporator Coil
2	OPT-5760	Air Flow - Optional #1
2	OPT-6854	MERV 8 Efficient Filters
2	OPT-81-230V	10 lb/hr Steam Humidifier
2	OPT-6026	Refrigerant R-410A
2	OPT-5823	CIRCUIT-SINGLE
2	OPT-7673	idap card for dap4/mini dap4
2	OPT-7327	Zone Master, dap4

Prepared on: November 23, 2017

Updated on: 11/23/2017

Remote Condensing Unit		
Model #:	GHCU-03232	
gFORCE OUTDOOR REMOTE CONDENSING UNIT 32 kW 3 PH 208-230 V		
HE Tag #:		
Qty:	2	
Ambient:	95	
Altitude (ft):	0	
Voltage:	208	
Phase:	3	
Electrical Section		
FLA:	35.9	
MCA:	44.0	
MOP:	70.0	
Compressor:		
Type:	Scroll	
Number:	1	
Refrigerant Type:	REFRIGERANT, R-410A	
FLA:	32.6	
Connection Sizes		
Liquid (in. Nom.):	1/2	
Suction (in. Nom.):	3/4	
Condenser EC Axial Fan		
Num Of Motors:	1	
Number Of Fans:	1	
HP	1.5	
Motor FLA:	3.28	
CFM:	4,800	
RPM:	1,400	
Dimensions		
Depth (in.):	58.5	
Length (in.):	48.5	
Height (in.):	44.00	
Weight		
Shipping Weight (lbs):	610	

Remote Condensing Unit Accessories		
Model Number:	GHCU-03232	
Tag Number:		
Qty	Option	Description
2	OPT-6145	Single Scroll Compressor
2	OPT-7716	Frequency - 60 Hz
2	OPT-5958	Ambient 95
2	OPT-5221	3 Phase
2	OPT-6100	HEAT EXCHANGER QTY - 1
2	OPT-5062	Voltage 208V
2	OPT-5823	CIRCUIT-SINGLE
2	OPT-5906	Condenser Coil
2	OPT-6026	Refrigerant R-410A

VENTILADOR DE INYECCIÓN DE AIRE

CDAFH



CDAFH-18/18-1,5HP/4-450RPM-(208-230-3)

Unidades de ventilación diseñadas para la inyección y extracción de aire con etapas de filtración en descarga horizontal; su estructura está fabricada en lámina de acero galvanizada que la hacen un conjunto ideal para instalaciones en intemperie, marca S&P, modelo CDAFH-18/18-1,5HP/4-450rpm-(208-230-3), con caudal 3.167 cfm y presión 0,416 Inwg.

la renovación de aire es la suma de todos los sistemas

Referencia producto: VI-01

Punto requerido

Caudal	3.105 cfm
Presión Estática	0,400 Inwg
Temperatura	30 °C
Altitud	1752 m
Densidad	0,95 Kg / m ³
Frecuencia	60 Hz
Tensión	208-230-3

Punto de trabajo

Caudal	3.167 cfm
Presión estática	0,416 Inwg @ 0,95 kg/m ³
Presión dinámica	0,057 Inwg @ 0,95 kg/m ³
Presión total	0,473 Inwg @ 0,95 kg/m ³
Potencia útil	0,430 Hp @ 0,95 kg/m ³
Velocidad descarga	5,5 m/s
Velocidad ventilador	450 rpm
Potencia específica	0,34 W/l/s

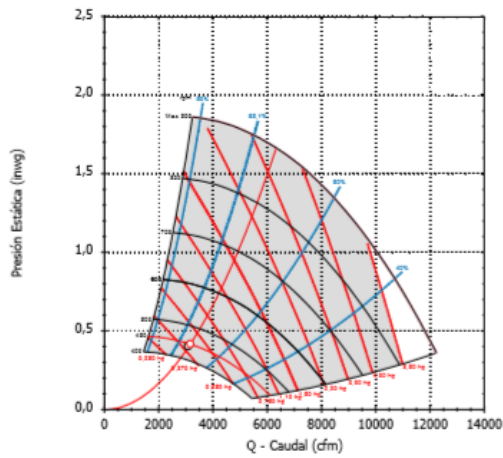
Construcción

Tamaño ventilador	18/18
Diámetro	0
Peso	190,91 kg

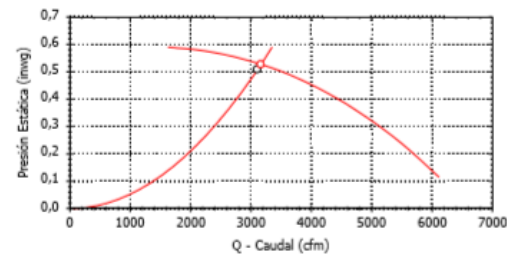
Características del motor

Número de Polos	4
Potencia motor	1,5
Velocidad motor	1755 rpm
Tensión	3-208-230/460V-60Hz
Intensidad máxima absorbida	4,3 A / 2,2 A
Índice de protección	IP54
Clase motor	B

Curva



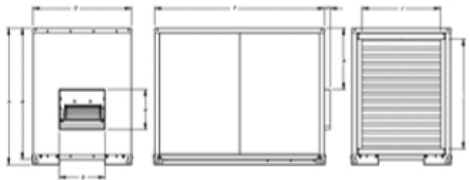
Curva (1,204 Kg / m³)



Características acústicas

	63	125	250	500	1k	2k	4k	8k	Total
Aspiración (LwA)	50	49	52	52	56	55	52	39	61
Aspiración LpA @ 1,5m	35	34	37	37	41	40	37	24	47
Descarga (LwA)	61	60	63	63	67	66	63	50	72
Descarga LpA @ 1,5m	46	45	48	48	52	51	48	35	58

Dimensiones



VENTILADOR DE EXTRACCIÓN DE AIRE

CRHL-T



CRHL-T-18-0,5HP/4-1125RPM-(208-230-3)

CRHL-T Extractor centrífugo de montaje en techo, con descarga horizontal, marca S&P, modelo CRHL-T-18-0,5HP/4-1125rpm-(208-230-3), con caudal 2.904 cfm y presión 0.451 Inwg. Cuentan con material en aluminio rechazado.

Referencia producto: VE-01

Punto requerido

Caudal	2.900 cfm
Presión Estática	0.450 Inwg
Temperatura	30 °C
Altitud	1752 m
Densidad	0.95 Kg / m ³
Frecuencia	60 Hz
Tensión	208-230-3

Punto de trabajo

Caudal	2.904 cfm
Presión estática	0.451 Inwg @ 0.95 kg/m ³
Presión dinámica	0.086 Inwg @ 0.95 kg/m ³
Presión total	0.537 Inwg @ 0.95 kg/m ³
Presión estática estándar	0.571 Inwg @ 1.2 kg/m ³
Presión dinámica estándar	0.109 Inwg @ 1.2 kg/m ³
Presión total estándar	0.680 Inwg @ 1.2 kg/m ³
Pot Elect absorbida	0.432 hp
Rend Total	57.9 %
Potencia útil	0.425 Hp @ 0.95 kg/m ³
Potencia útil estándar	0.538 Hp @ 1.2 kg/m ³
Rend Estático	48.7 %
Velocidad descarga	6.7 m/s
Velocidad aspiración	9.5 m/s
Velocidad ventilador	1125 rpm
Potencia específica	0.37 W/l/s

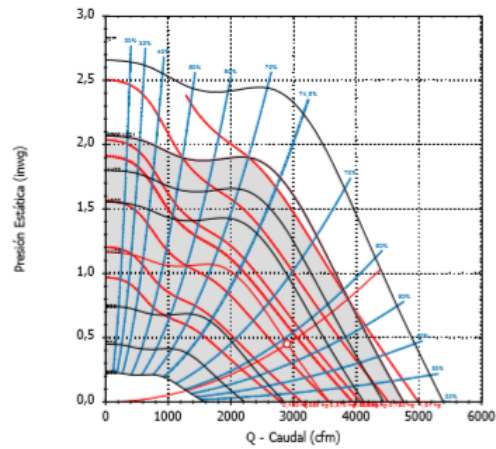
Construcción

Diámetro	18 mm
Tamaño ventilador	18
Peso	46,68 kg

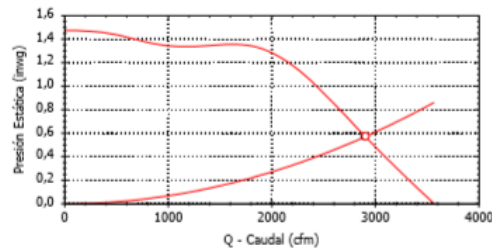
Características del motor

Número de Polos	4
Potencia motor	0.5
Tensión	3-208-230/460V-60Hz
Intensidad máxima absorbida	1.9 A / 1.0 A
Índice de protección	IP21
Clase motor	B

Curva



Curva (1,204 Kg / m³)



Características acústicas

	63	125	250	500	1k	2k	4k	8k	Total
Descarga (LwA)	73	73	73	73	73	73	73	73	82
Descarga LpA @ 1,5m	58	58	58	58	58	58	58	58	68



CONCLUSIONES

Las conclusiones del presente trabajo son:

La aplicación de las nuevas tecnologías de sistemas de aire acondicionado y calefacción con refrigerante de volumen variable (VRV) con refrigerante ecológico, dan como resultado un ahorro de energía a cargas térmicas parciales, la ventaja de llevar un solo recorrido de tuberías de cobre e ir distribuyendo a las evaporadoras la tubería con el diámetro correspondiente.

El Poder Judicial de la Federación tiene muy claro las necesidades del nuevo Sistema Procesal Penal Acusatorio en cada entidad y en este caso se aplicaron condensadoras del tipo bomba de calor (Heat Pumps), en donde el sistema VRV podrá satisfacer las demandas del inmueble ya sea en modo enfriamiento o modo calefacción.

La ventaja de contar con un sistema de comunicación de monitoreo y control del sistema VRV enlazado al BMS del inmueble podrá ser manipulado desde un solo punto sin la necesidad de posicionarse en cada una de la condesadoras, se podrá ajustar los puntos de ajuste de cada unidad evaporadora, se podrá programar sus rutinas de mantenimiento, entre otras cualidades técnicas que le dan ventaja ante un sistema convencional de aire acondicionado por medio de un sistema de expansión directa (Dx).

Para el caso de las oficinas de titulares, cuarto de monitoreo se tienen sistemas Dx independientes conectados eléctricamente al sistema emergencia debido a la importancia de mantener funcional esas áreas. El mismo caso se aplico para el cuarto del Site con un sistema Dx, en donde las variables más notorias fueron el control con precisión de temperatura y humedad; con un equipo redundante de la misma capacidad y con una tarjeta de comunicación DAP4 que permite la comunicación entre las dos unidades y el BMS para su efectivo monitoreo y control.

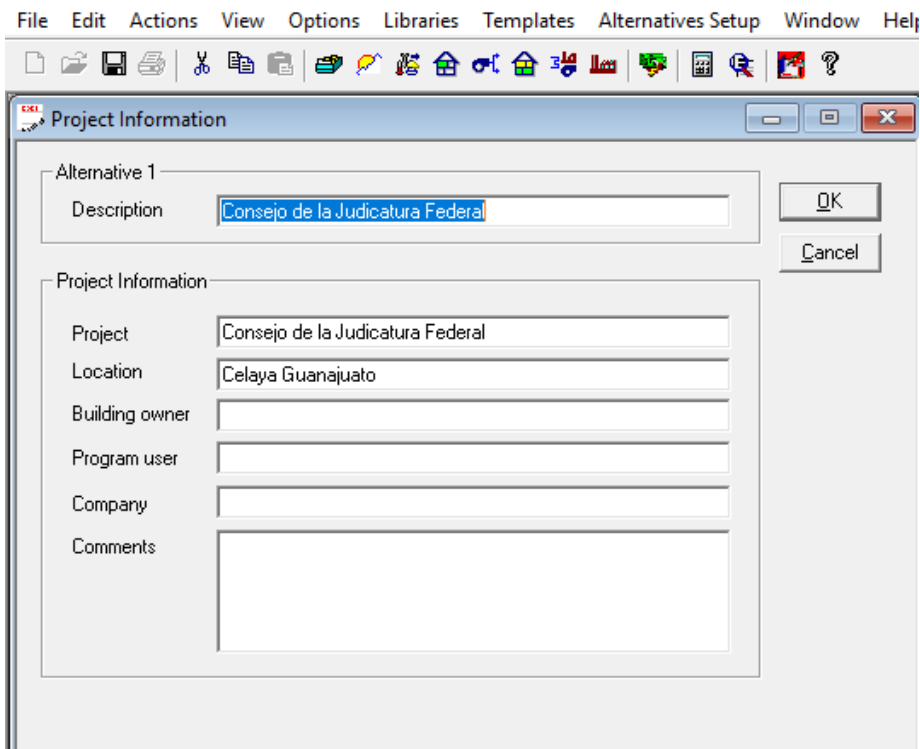
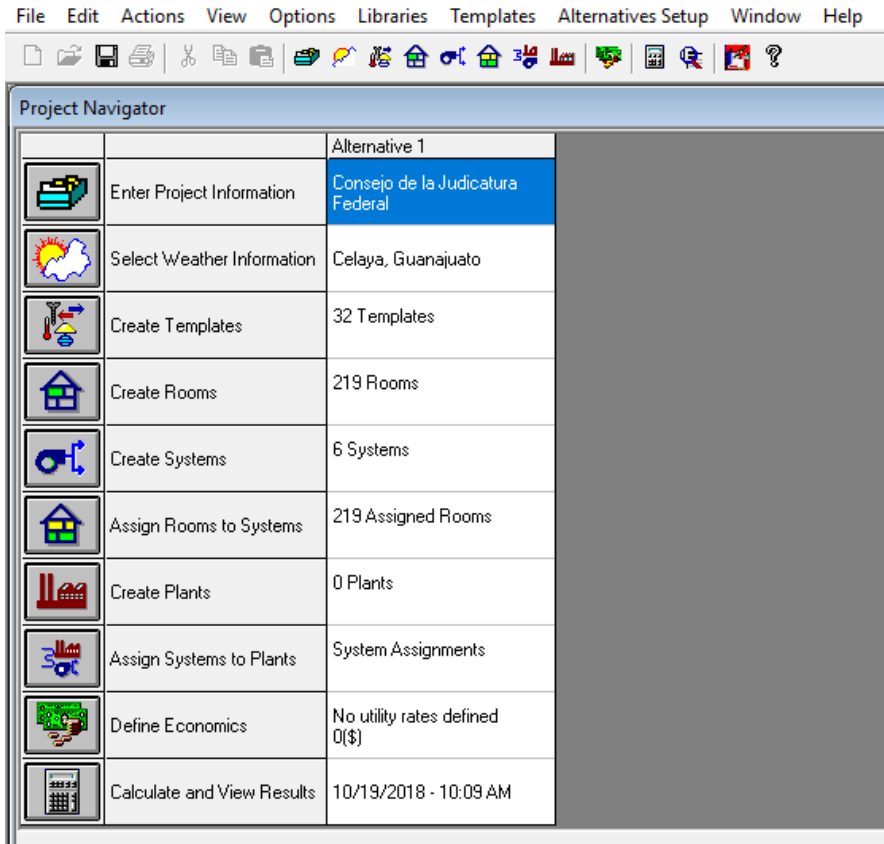
La renovación de aire es por medio de ventiladores que distribuye el aire a los puntos más cercanos a cada evaporador y se operan por medio un "timer" alojado en el cuarto de control; lo mismo ocurre para los ventiladores de extracción de aire. El monitoreo de estos ventiladores es por medio de una "dona" de corriente eléctrica la cual nos indica si los equipos están en operación.

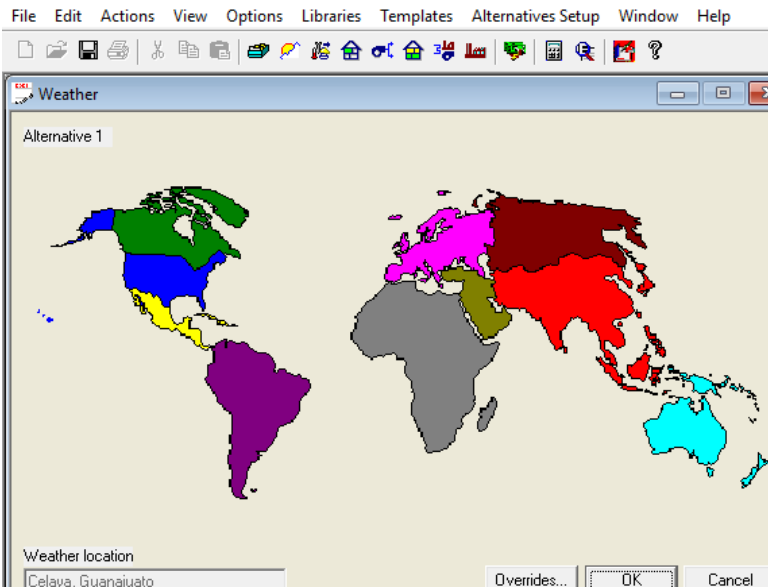
La experiencia obtenida en este proyecto fue la facilidad de modelar los sistemas VRV por medio del software del fabricante obteniendo grandes ahorros de tiempo en su implementación sin la necesidad de seleccionar manualmente a cada uno de sus dispositivos necesarios para su óptima operación.

ANEXOS

ANEXOS 1.- se anexan planos que nos indican cómo fue su distribución de las unidades de acuerdo a los requerimientos arquitectónicos del inmueble.

ANEXOS 2.- Software Tracer 700, plantillas para dar de alta el inmueble.





Weather Overrides

<p>Summer Design Cooling</p> <p> <input checked="" type="radio"/> User Override <input type="radio"/> Standard Default ----- ASHRAE MaxDB/MCWb ----- <input type="radio"/> 0.4% <input type="radio"/> 1% <input type="radio"/> 2% </p> <table border="1"> <tr> <td>Dry bulb</td> <td>100</td> <td>100</td> <td>92.8</td> <td>91.6</td> <td>91.2</td> <td>*F</td> </tr> <tr> <td>Wet bulb</td> <td>68</td> <td>68</td> <td>80.3</td> <td>79.8</td> <td>79.6</td> <td>*F</td> </tr> </table> <p><input type="checkbox"/> Weather overrides apply to entire year?</p>						Dry bulb	100	100	92.8	91.6	91.2	*F	Wet bulb	68	68	80.3	79.8	79.6	*F	<p>OK</p> <p>Cancel</p> <p>Help</p>	
Dry bulb	100	100	92.8	91.6	91.2	*F															
Wet bulb	68	68	80.3	79.8	79.6	*F															
<p>Winter Design Heating</p> <p> <input checked="" type="radio"/> User Override <input type="radio"/> Standard Default <input type="radio"/> 99.6% <input type="radio"/> 99% </p> <table border="1"> <tr> <td>Dry bulb</td> <td>32</td> <td>32</td> <td>67.6</td> <td>69.4</td> <td>*F</td> </tr> </table>						Dry bulb	32	32	67.6	69.4	*F										
Dry bulb	32	32	67.6	69.4	*F																
<p>Optional Direct Dehumidification Weather</p> <p> <input checked="" type="radio"/> None <input type="radio"/> 0.4% <input type="radio"/> 1% <input type="radio"/> 2% </p> <p>----- ASHRAE MaxDP/MCDB -----</p> <table border="1"> <tr> <td>Dry bulb</td> <td>88.2</td> <td>86.7</td> <td>86.3</td> <td>*F</td> </tr> <tr> <td>Wet bulb</td> <td>82.2</td> <td>81</td> <td>80.6</td> <td>*F</td> </tr> <tr> <td>Dew point</td> <td>80.3</td> <td>79.1</td> <td>78.8</td> <td>*F</td> </tr> </table> <p>Modeling Method: <input type="text" value="Override Design Day in DsnMo+1"/></p>						Dry bulb	88.2	86.7	86.3	*F	Wet bulb	82.2	81	80.6	*F	Dew point	80.3	79.1	78.8	*F	
Dry bulb	88.2	86.7	86.3	*F																	
Wet bulb	82.2	81	80.6	*F																	
Dew point	80.3	79.1	78.8	*F																	
<p>Seasonal Values</p> <table border="1"> <thead> <tr> <th></th> <th>Summer</th> <th>Winter</th> </tr> </thead> <tbody> <tr> <td>Clearness number</td> <td>1</td> <td>1</td> </tr> <tr> <td>Ground reflectance</td> <td>0.2</td> <td>0.2</td> </tr> </tbody> </table>							Summer	Winter	Clearness number	1	1	Ground reflectance	0.2	0.2							
	Summer	Winter																			
Clearness number	1	1																			
Ground reflectance	0.2	0.2																			
<p>Outdoor carbon dioxide level: <input type="text" value="400"/> ppm</p>																					

Internal Load Templates - Project



Alternative	Alternative 1		Apply
Description	OFICINAS		Close
People...	Type: General Office Space		New
	Density: 143 sq ft/person	Schedule: Cooling Only (Design)	Copy
	Sensible: 250 Btu/h	Latent: 200 Btu/h	Delete
Workstations...	Density: 1 workstation/person		Add Global
Lighting...	Type: Recessed fluorescent, vented return, 20% load to space		
	ASHRAE Space/Area Type:		
	Heat gain: 1.1 W/sq ft	Schedule: Cooling Only (Design)	
Miscellaneous loads...	Type: Std Office Equipment		
	Energy: 2 W/sq ft	Schedule: Cooling Only (Design)	
	Energy meter: Electricity		
Internal Load	Airflow	Thermostat	Construction
			Room

Airflow Templates - Project



Alternative	Alternative 1		Apply
Description	OFICINAS		Close
Main supply...	Cooling: To be calculated	Heating: To be calculated	New
	Cooling: To be calculated	Heating: To be calculated	Copy
Ventilation...	Apply ASHRAE Std62.1-2004/2007: No	Type: Banks or bank lobbies	Delete
	Cooling: 7.5 cfm/person	Heating: 0.06 cfm/sq ft	Add Global
	Schedule: Available (100%)		
Infiltration...	Type: None	Cooling: 0 air changes/hr	
	Heating: 0 air changes/hr	Schedule: Available (100%)	
	Schedule: Available (100%)		
Auxiliary supply...	Cooling: To be calculated	Heating: To be calculated	
Std 62.1-2004/2007...	Clg Ez: Custom	Htg Ez: Custom	
	Er: Default based on system type	DCV Min OA Intake: None	
Room exhaust...	Rate: 0 air changes/hr	Schedule: Available (100%)	
VAV control...	Clg VAV min: % Clg Airflow	Htg VAV max: % Clg Airflow	
	Schedule: Available (100%)	Type: Default	
Internal Load	Airflow	Thermostat	Construction
			Room

Thermostat Templates - Project X

Alternative Apply

Description Close

Thermostat settings...

Cooling dry bulb °F

Heating dry bulb °F

Relative humidity %

Cooling driptpoint °F

Heating driptpoint °F

Cooling schedule

Heating schedule

Sensor Locations...

Thermostat

CO2 sensor

Humidity...

Moisture capacitance

Humidistat location

New
Copy
Delete
Add Global

Internal Load Airflow **Thermostat** Construction Room

Construction Templates - Project X

Alternative Apply

Description Close

Construction...

	U-factor Btu/h-ft ² -°F
Slab <input concrete"="" lw="" type="text" value="4\"/>	<input type="text" value="0.212615"/>
Roof <input conc"="" lw="" type="text" value="4\"/>	<input type="text" value="0.213535"/>
Wall <input type="text" value="Frame Wall, No Ins"/>	<input type="text" value="0.437609"/>
Partition <input frame"="" gyp="" type="text" value="0.75\"/>	<input type="text" value="0.387955"/>

New
Copy
Delete
Add Global

Glass type...

	U-factor Btu/h-ft ² -°F	Shading coeff
Window <input type="text" value="Solarban 70XL"/>	<input type="text" value="0.26"/>	<input type="text" value="0.32"/>
Skylight <input "="" type="text" value="Single Clear 1/4\"/>	<input type="text" value="0.95"/>	<input type="text" value="0.95"/>
Door <input type="text" value="Standard Door"/>	<input type="text" value="0.2"/>	<input type="text" value="0"/>

Height...

Wall ft Pct wall area to underfloor plenum %

Fir to flr ft Room type

Plenum ft

Internal Load Airflow Thermostat **Construction** Room

Room Templates - Project



Alternative:

Description:

Templates...

Internal load:

Airflow:

Thermostat:

Construction:

File Edit Actions View Options Libraries Templates Alternatives Setup Window Help



Create Rooms - Single Worksheet



Alternative 1

Room description:

Templates...

Room:

Internal:

Airflow:

Tstat:

Constr:

Length Width

Floor...:

Roof...:

Equals floor

Wall...

Description	Length (ft)	Height (ft)	Direction	% Glass or Qty	Length (ft)	Height (ft)	Window
NOROEST	13.12336	13.77953	333	0 1	12.46719	13.77953	<input checked="" type="checkbox"/>
SURESTE	12.79528	13.77953	153	0 1	12.46719	13.77953	<input checked="" type="checkbox"/>
	0	13.77953	0	0 0	0	0	<input type="checkbox"/>

Internal loads...

People:

Lighting:

Misc loads:

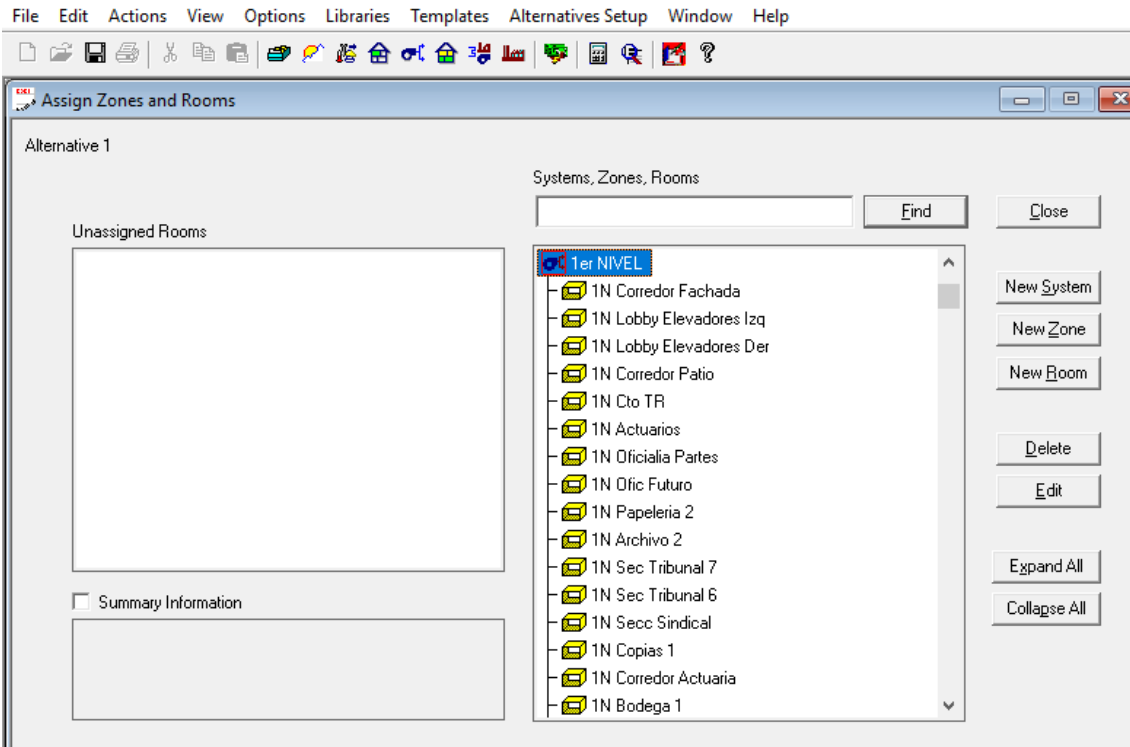
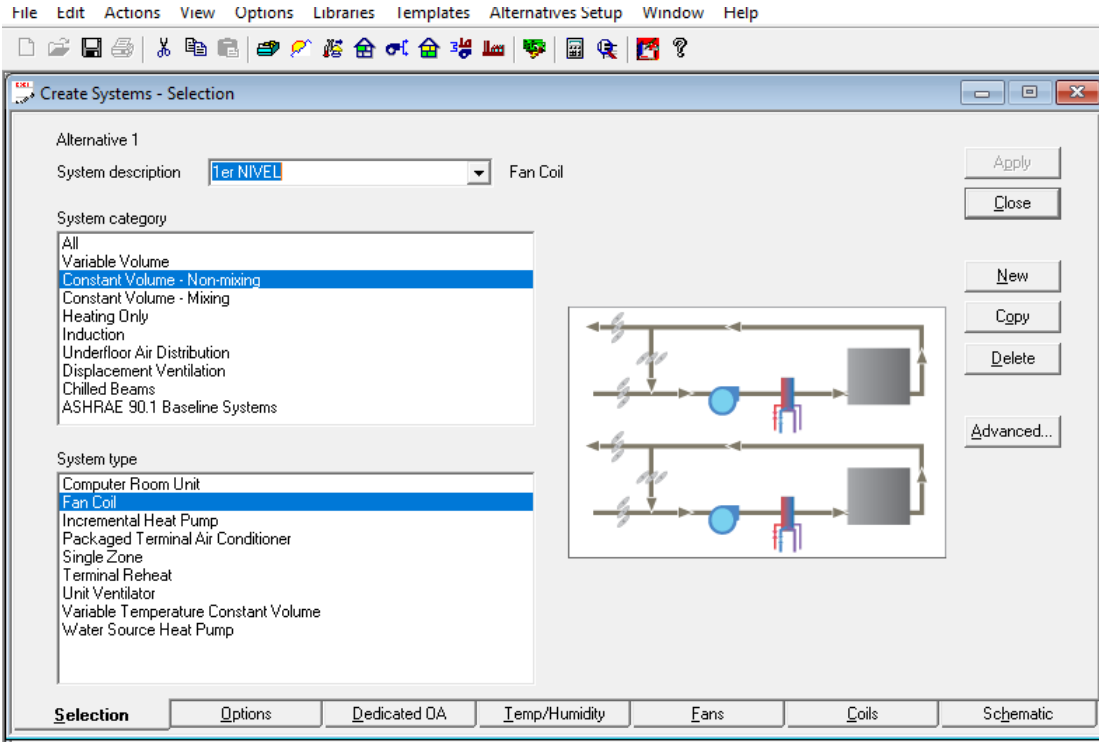
Airflows...

Cooling vent:

Heating vent:

Cooling VAV min:

Heating VAV max:



View Results ✕

Alternative: 1 2 3 4 Reports selected: 0

Summary

- Title page
- System checksums
- Zone checksums
- Room checksums
- Design cooling load
- System component selection

System

- Design airflow
- Design cooling capacity
- Design heating capacity
- Engineering checks
- ASHRAE Std 62.1-2004 +

Psychrometric State Points

- System
- Zone
- Room
- Auxiliary system

Peak Load Summary

Main Aux

- Cooling
- Heating
- Load / Airflow

Close

Print

Preview

Export...

Clear All

Checksum Select...

Design Reports

Analysis Reports

Detailed Reports

View Results ✕

Alternative: 1 2 3 4 Reports selected: 0

Profiles

- System load
- Building cooling / heating demand
- Building temperature
- Building humidity
- Cooling Tower Analysis
- Plant Load Summary

Economic

- Parameters
- Monthly utility costs
- Yearly cash flow
- Alternative comparison
- Summary

Energy Consumption

- Monthly
- Equipment
- Utility peak
- Summary
- Geothermal Summary
- Cogeneration
- Thermal storage
- Energy Cost Budget / PRM Summary
- Performance Rating Method Details
- LEED Summary
- PRM Fan Power

Close

Print

Preview

Export...

Clear All

LEED Settings

Graph Profiles and Energy

Graph Economics

Design Reports

Analysis Reports

Detailed Reports

View Results



Alternative: 1 2 3 4

Reports selected: 0

- Close
- Print
- Preview
- Export...
- Clear All

Building Envelope Loads

Cooling	Heating
<input type="checkbox"/>	<input type="checkbox"/> At time of coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of aux coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of space peak

Internal Loads

Cooling	Heating
<input type="checkbox"/>	<input type="checkbox"/> At time of coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of aux coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of space peak

Airflow Loads

Cooling	Heating
<input type="checkbox"/>	<input type="checkbox"/> At time of coil peak

Airflow Balance

Cooling	Heating
<input type="checkbox"/>	<input type="checkbox"/> At time of coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of space peak

Heat Gain / Loss

Cooling	Heating
<input type="checkbox"/>	<input type="checkbox"/> At time of coil peak
<input type="checkbox"/>	<input type="checkbox"/> At time of space peak

Building Envelope Composition

- Building U-factors
- Building areas