

**TOWN OF TRUMBULL
CONNECTICUT**

Town Hall
5866 Main Street
Trumbull, Connecticut 06611



Trumbull Community Center Study and Building Committee
Thursday, September 28, 2017
7:00 PM
Long Hill Conference Room, Trumbull Town Hall

Present: Co-Chairmen Joseph Pifko and Daniel Marconi, Lori Hayes-O'Brien, Jeannine Stauder and Joseph Costa

Also Present: Lynn Arnow, Chief of Staff; Thomas Arcari from Quissenberry Arcari, Jesse Voss and Graham Curtis from DTC; Greg Raucci and Darin Antolini from Bismark; Marie Allen, Director of the Southwestern CT Commission on Aging; Michele Jakab, Director of the Trumbull Senior Center; Michael Mocciae, Acting Director and Dan Gagne, Program Coordinator for the Trumbull Parks & Recreation

Absent: Commissioners Richard Seaman, David Preusch and Dawn Cantafio

The meeting was called to order by Mr. Marconi at 7:05 pm followed by the Pledge of Allegiance. Mr. Pifko requested a moment of silence for Rachel Yahwak, a past member of the Committee, who passed away earlier in the month.

Past Minutes

Motion was made by Mr. Marconi to approve the minutes of July 27, 2017 as written. Seconded by Mrs. Stauder and approved with one abstention by Mrs. Hayes-O'Brien. Motion was made by Mr. Marconi to approve the minutes of August 24, 2017 as written. Seconded by Mrs. Stauder and approved with one abstention by Mr. Costa.

Public Comment

No public comment.

Motion was made by Mrs. Hayes-O'Brien to move the New Business portion of the agenda before Old Business to accommodate the guest speakers. Seconded by Mr. Marconi and approved.

Marie Allen, Director of the Southwestern CT Commission on Aging, presented a program on senior centers in the southwest region of CT. The power point is posted on the Committee's website. Mrs. Allen noted that a senior center is a reflection of the community and it elevates and enhances the entire town. It is considered a designated community focal point for State and federal programs within the community. Some highlights covered included:

1. Population statistics for the State and specifics on the Fairfield County demographics from 2003-2013.
2. Trumbull's population – noted that 70% of women live alone and are an average of 75 years old.
3. Role of the senior center – reduces isolation; healthy aging, health promotion and disease prevention; connection to community services and financial assistance.
4. Enhanced role – lifetime learning; volunteer opportunities; gateway to care

Seniors want to be a part of the community but need programs that fit their needs. Many do not want to go to another community. They also want to connect in a meaningful way.

Mrs. Allen discussed the values of mixed use centers which usually have activities for seniors during the day and extend hours into the evening for other activities for the community. Location is also important especially with regard to bus lines.

Mrs. Hayes-O'Brien questioned the impact on the EMS system. Mrs. Jakab noted she has been working with EMS Chief Laucella on fall prevention programs and is making more family connections in certain circumstances. She noted that many residents are aging in place which increases the EMS responses.

Mrs. Allen left the meeting at 7:37 pm.

Mrs. Jakab and Mr. Gagne spoke on the programming possibilities of a new community center/senior center. A proposed schedule was presented noting all the expected activities fit into the schedule including some new programs from the Recreation Department. Mrs. Hayes-O'Brien asked if they had spoken with individuals at Trumbull High School regarding programs to consider moving some of them to the center. Mr. Gagne noted little discussion has been held but reiterated that not all programs would fit into the new facility.

Mr. Mocciae felt that the facility would be a great senior center but a better community center as a multi-use facility is the way to proceed. Quality of programming is enhanced tremendously if you own your own building.

Discussion was held regarding the pool component. Mr. Mocciae felt the competition teams should remain at Hillcrest as the pool being looked at for the center is better suited for recreational programming. Mr. Arcari agreed that the programming possibilities are limitless in this situation.

The staffing component was discussed. Mrs. Arnow noted discussions have been held regarding staffing. Potential staffing might include a clerk at the primary desk, administration for the recreation programs, possible park ranger for the trailhead, senior center staff would be on the upper level for the senior programming, administrative staff after the senior center staff leave for the day. These are suggestions but there is not a firm

staffing model at this time. It is actively being discussed. Mr. Pifko asked Mrs. Jakab to come back to the Committee with a more realistic staffing model that reflects the needs of the center.

Mr. Gagne discussed the possible increase in teen programs and how having space at the new center would be beneficial for socialization of the high school students and increase the potential for the youth programs in town.

Mr. Pifko presented to the Committee a portion of a Comprehensive Performance Review of the current Senior Center. He read the following pertinent finding with regard to the current structure:

“Finding #8: Due to age and original intended use of the structure, the facility is not conducive to its current purpose.

- There is no dedicated area for comfortable congregation. This area would allow for sharing and socialization. Many rooms are small, and lack flexibility for use. Seniors may have difficulty finding those with whom they wish to spend time. The staff has limited lines of visibility, which poses safety concerns, a priority to Senior Center management.
- Larger parties, classes or events must occur singly to accommodate attendees.
- Office workers are required to share space and telephones.
- There is no security system and there are no cameras.
- The building is often difficult or expensive to refurbish or maintain:
 - o The floors have asbestos
 - o There is no loading dock for deliveries
 - o Light fixtures are difficult to replace
- Parking space cannot be expanded.

Recommendation: The Town is currently considering building a community center which would include space for Senior Center and Social Service personnel and activities.

Management Response:

For best Senior Center Practice and Social Work Practice the current facility is not conducive to helping the Senior Center or Social Services meet their goals in serving the community. The layout of the building does not allow for congregation and socialization. Members are tucked away in classrooms where engagement with staff, volunteers, and other members does not occur. Rooms do not serve as multipurpose rooms, therefore limiting significant use of the building. Our Social Service department is in a shared office space where the client right to privacy and anonymity is unprotected.”

Mrs. Jakab, Mr. Mocciaie and Mr. Gagne left the meeting at 8:08 pm.

DTC Engineering presented their Energy Summary Model comparing the proposed new community center and existing facilities (copy posted on Committee’s website). Proposed energy usage for the new center is approximately \$75,507. Energy cost for the existing pool facilities at Hillcrest is \$60,000 - \$70,000) and the Senior Center is \$21,772. It was noted that high efficiency equipment and significant high energy code

requirements means more HVAC for less dollars. The new center would be a healthier environment although it is only about 10% less in expense. It was also noted that the current Senior Center is not totally air-conditioned at this time whereas the new building would be.

HVAC systems were discussed relating to the pool and gym areas.

It was recommended to note the Senior Center Energy Cost Budget noted on the Summary Sheet for \$19,818 covers a fully 100% cooled building as compared to the current center which is not fully cooled.

Mrs. Arnow brought up that the center will be an American Red Cross shelter and by law will need to house the pets of those individuals in the shelter. What effect will the housing of numerous pets be on the ventilation system? Mr. Arcari noted that when the detailed design is done, the units will be adjusted as necessary to accommodate this requirement. Discussion was also held regarding the need for a generator at the center. Mr. Arcari noted the center would need an independent source of energy which means a diesel generator. The entire building would need to be powered due to the environmental issues associated with the pool being off line for any length of time.

Mrs. Arnow noted the town has several Memorandums of Understanding (MOU) with various businesses in town for supplies during a power outage due to a storm. The location near Stop & Shop eliminates traveling long distances to obtain and deliver such supplies.

Old Business

1. Mr. Arcari and Mrs. Arnow noted the website is being updated and that the timeline will be in place soon. Mr. Arcari will look into slowing down the flip of the pages which has not been corrected.
2. Mr. Pifko presented for approval one invoice from QA for \$771.90 to cover web design and concept design. While the Committee members reviewed the invoice, Mr. Pifko noted that Mr. Flannigan, the City Planner from Bristol, sent a letter stating he was impressed with the design of the property. Motion was made by Mr. Marconi to approve the payment of the first invoice for \$771.90. Seconded by Mr. Costa and approved unanimously. Mr. Pifko presented a second invoice from QA which had been presented previously for approval but noted that Mrs. Arnow had asked for a more specific breakdown of costs. This invoice is for \$23,349.39. Mrs. Arnow noted the work described is within the scope of work with QA. Further discussion. Motion was made by Mr. Costa to authorize the payment of the QA invoice up to the \$23,349.39 amount after the financial breakdown is received by Mrs. Arnow. Seconded by Mr. Marconi and approved unanimously.
3. Mrs. Hayes-O'Brien felt the Committee should be making another presentation to the Town Council since the last presentation was in February. Mr. Pifko has spoken with Mr. Massaro regarding the project but she felt that a more formal presentation should be made to the Town Council. Several topics could be updated such as staffing and insurance. Mrs. Hayes-O'Brien suggested the Committee ask to be placed on the agenda for a more formal presentation.

Next Meeting

The next scheduled meeting will be October 19 at 7:00 pm. The Committee agreed they should do a wrap up of the project and write a formal recommendation/summary report for the Town Council.

Adjournment

There being no further business, motion was made by Mr. Marconi, to adjourn the meeting at 8:54 pm. Seconded by Mr. Pifko and approved unanimously.

Respectfully submitted,

Barbara Crandall
Clerk



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Trumbull Community Center Energy Model Summary

September 28, 2017

New Community Center

Pool Energy Cost Budget (3,400 Square Foot Pool & 6,600 Square Foot Space)	\$45,435
Gym Energy Cost Budget (8,000 Square Feet)	\$ 5,783
Senior Center Energy Cost Budget (18,750 Square Feet)	\$19,818
Lower Level Energy Cost Budget (4,700 Square Feet)	\$4,471
<hr/>	
Total	\$75,507

Existing Facilities

Hillcrest Pool Facility Energy Cost	\$60,000 - \$70,000
Senior Center Energy Cost (19,000-21,000 Square Feet)	\$21,772

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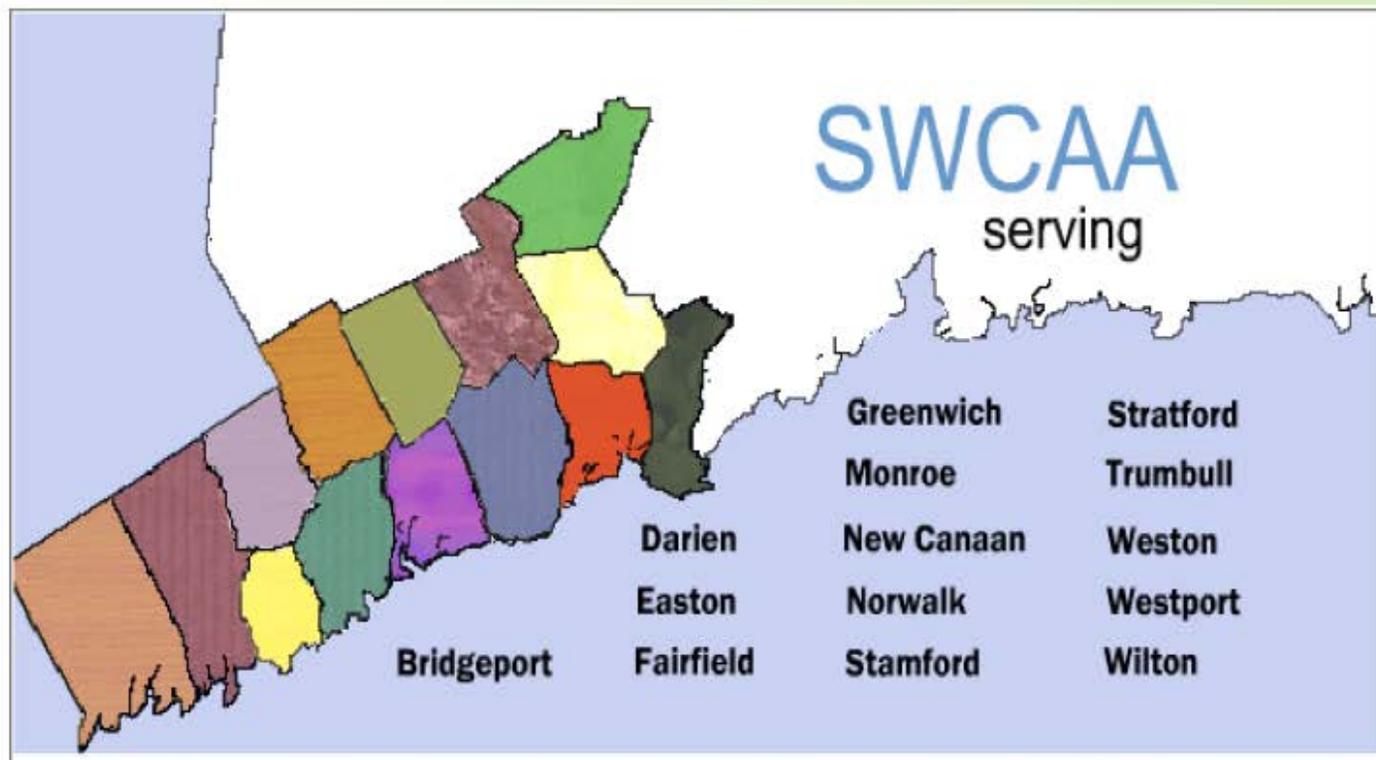
Senior Center Programs	New Senior Programming
P & R Programs	New P&R Programming

FRIDAY

	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm
Fitness/Cardio Room		Feldenkrais	Mom/Tot Sing Along		Balance and Core	Strength Training	Possible Silver Sneakers Program		Teen Dance Class*		YOGA*	TKO Karate*		
Multi Purpose 1	Congregate Lunch 9am-1pm					Bingo		After School Programs*		Little League Banquet		Middle School Dance*		
Multi Purpose 2		Sittercise (*grant)	Tai Chi (*grant)											
Multi Purpose 3	CHOIR, SMILE A WHILE, PRACTICE													
Games	ADULT BILLIARDS AND TABLE TENNIS											Teen Game Night		
Cards	ADULT MAHJONG, POKER, PINOCHLE, CHESS, DOMINOES AND OTHERS													
Arts and Crafts 1		Multi-Generational Art*				OPEN ART STUDIO			After School Arts*			Teen Art Class*		
Arts and Crafts 2	Painting, Sketch				Knit/Crochet/ Quilt				Support Groups					
Classroom 1	Support Groups				Lunch and Learn				After School Nature*		TYA Programs*			
Classroom 2			Computer Classes *						Medicare Benefits Counseling	VA Benefits Counseling	TYA Programs*			
Classroom 3	Adult Education Classes *								After School Music*		TYA Programs*			
Nurse/Salon	NURSE AND OTHER HEALTH SERVICES *													
Conference Room	Meeting Space for Non-Profits, Community Organizations OR *													
Pool	Lap Swim		Aquacize*		Adult Swim Lessons	Cardio Rehab Class	Adult Open Swim		Special Needs Swim Lessons	Water Polo*		Teen Innertube Water polo*		
Gym		Walking Group		Pickleball			Open Gym		Youth Intramurals*			Family Open Gym		

* Denotes potential revenue

Southwestern CT
**Agency
on Aging**
& Independent Living

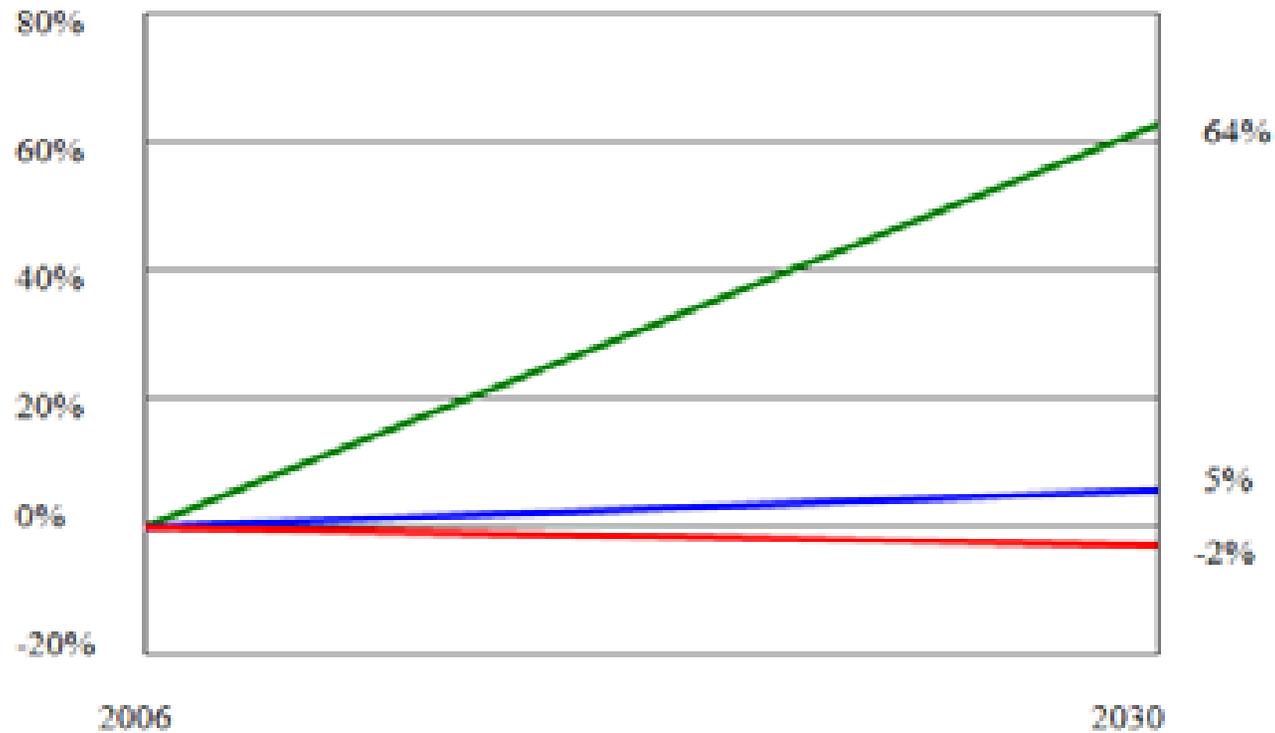


Federal Definition

A place where older adults come together for services and activities that reflect their experience and skills, respond to their diverse needs and interests, enhance their dignity, support their independence and encourage their involvement in the Center and the community.

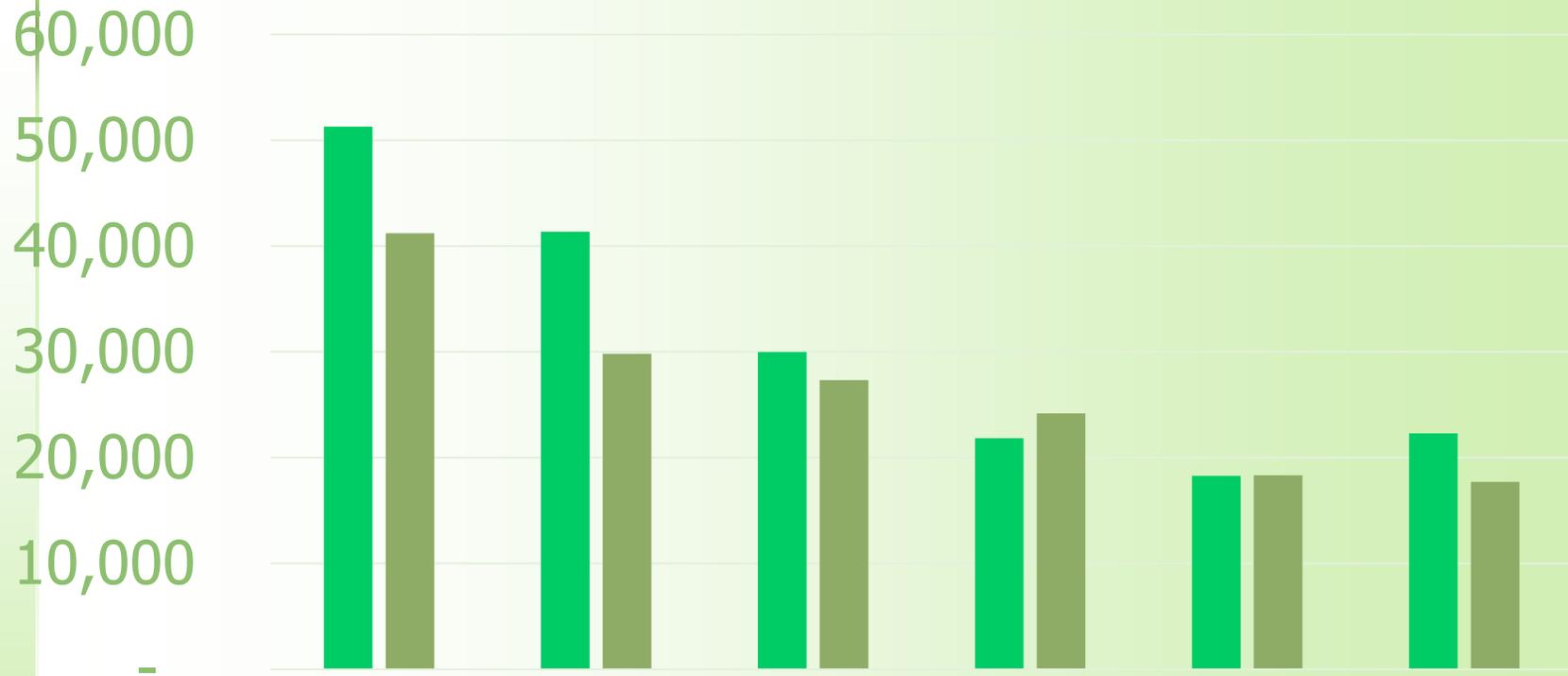
Designated Community Focal Points

Connecticut's Population Projection



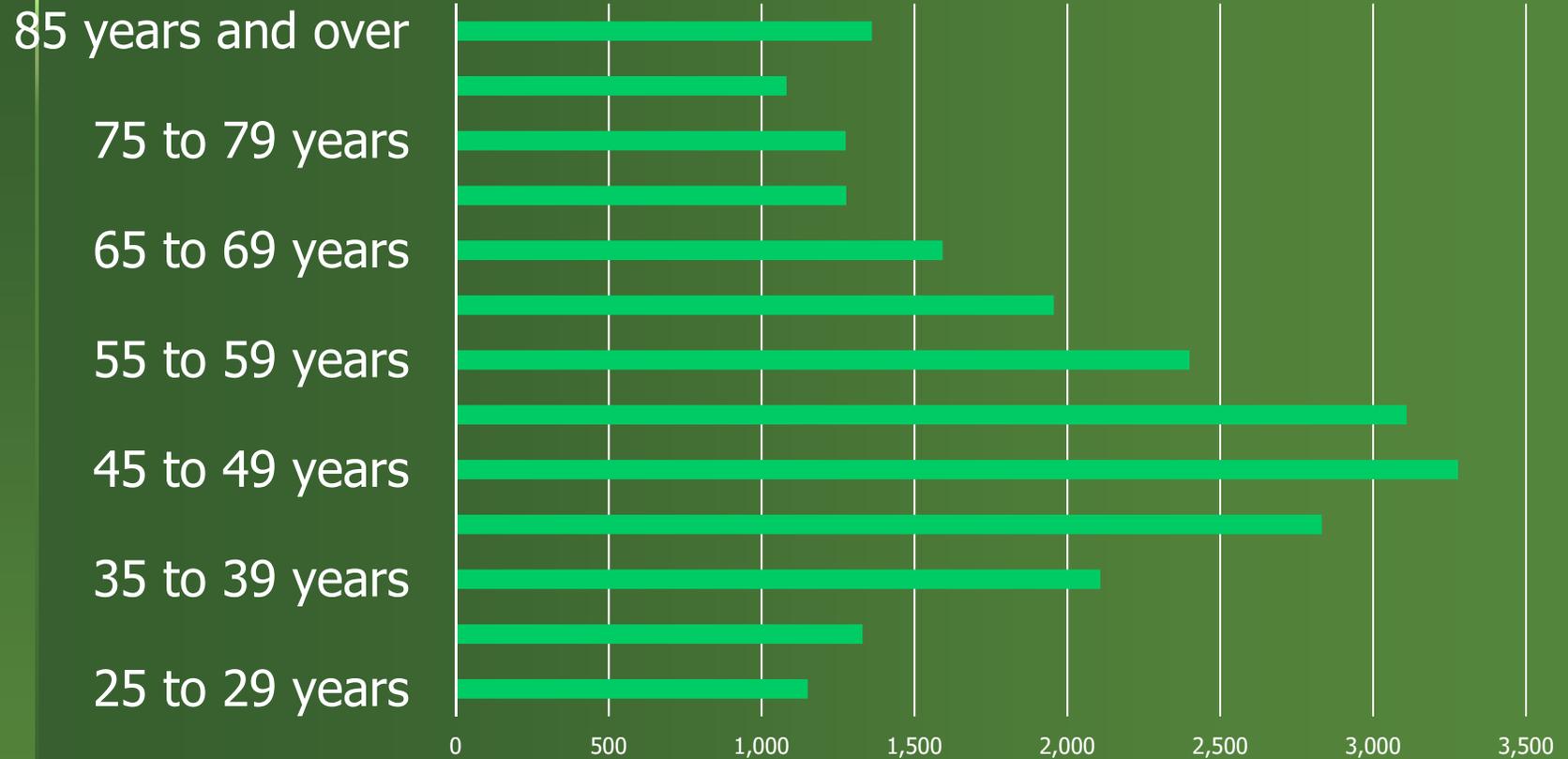
- Growth in CT population age 65+
- Growth in total CT population
- Growth in CT population age 21 to 64

Fairfield County Demographics 2003 v 2013



60-64 yrs 65-69 yrs 70-74 yrs 75-79 yrs 80-84 yrs 85+ yrs
■ Fairfield County Population 2013
■ Fairfield County Population 2003

Trumbull's Population



<https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

Participant Profile

- Approximately 70% of senior center participants are women; half of them live alone.
- Senior center participants have higher levels of health, social interaction, life satisfaction and lower levels of income.
- The average age of participants is 75.
- 75% of participants visit their center 1 to 3 times per week. They spend an average of 3.3 hours per visit.

Senior Center's Role



Reduce Isolation

- Reduced burden on EMT and mental health services
- Good neighbors make good citizens



Healthy Aging, Health Promotion and Disease Prevention

- Reduced burden on town EMT, Hospital, Public Health and State Medicaid



Connect to community services & financial assistance

- One stop shopping reduce on-demand transportation
- Financial assistance helps to remain home

Enhanced Role



Lifetime Learning

- Informed citizenry
- Serve on key community committees



Volunteer Opportunities

- Giving back to support education, safety, charity on the local level



Gateway to Care

- Early detection of need reducing crisis interventions

Community Assessment

- What people most want is to be part of a full community that includes people of all ages and abilities
- One size does not fit all
- Allegiance to *MY* community
- Desirable destinations

Trumbull's Potential

- Continue to evolve and adapt to today's senior
- Build linkages with strategic partners, expand collaborations
- Become a community haven where all residents understand its value and support its growth



Credits & Contacts

- Krout, J. (1989). The nature and correlates of senior center linkages. *Journal of Applied Gerontology*, 8(3), 307.
- National Council on Aging (NCOA), <http://www.ncoa.org>
- Paradasani, M. (2004a). Senior centers: Focal points of community-based services for the elderly. *Activities, Adaptation, & Aging*, 28(4), 27-44
- SWCAA (2009). Needs Assessment of the Bridgeport Community in consideration of senior center consolidation
- Presented by: Marie Allen, Executive Director, Southwestern CT Agency on Aging & Independent Living (SWCAA)
mallen@swcaa.org www.swcaa.org (203) 814-3661

Trumbull Community Center Energy Model



Trumbull Community Center
Old Church Hill Road
Trumbull, Connecticut

September 28, 2017



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Trumbull Community Center

Energy Model Summary

September 28, 2017

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Existing Facilities

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Energy Cost Budget / PRM Summary

POOL

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

* Alt-1 TRUMBULL COMMUNITY				
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	40.2	2	14
Space Heating	Gas	1,039.6	60	759
Space Cooling	Electricity	261.9	15	112
Pumps	Electricity	0.8	0	2
Heat Rejection	Electricity	10.0	1	8
Fans - Conditioned	Electricity	308.2	18	63
Stand-alone Base Utilities	Electricity	59.8	3	7
Total Building Consumption		1,720.5		

* Alt-1 TRUMBULL COMMUNITY		
Total	Number of hours heating load not met	0
	Number of hours cooling load not met	0

* Alt-1 TRUMBULL COMMUNITY		
	Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity	680.9	31,921
Gas	1,039.6	13,514
Total	1,720	45,435

Energy Cost Budget / PRM Summary

GYM

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

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* Alt-1 TRUMBULL COMMUNITY				
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	49.0	26	17
Space Heating	Gas	89.2	47	59
Space Cooling	Electricity	9.7	5	30
Heat Rejection	Electricity	0.9	0	4
Fans - Conditioned	Electricity	39.0	21	36
Total Building Consumption		187.8		

* Alt-1 TRUMBULL COMMUNITY		
Total	Number of hours heating load not met	0
	Number of hours cooling load not met	0

* Alt-1 TRUMBULL COMMUNITY		
	Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity	98.6	4,624
Gas	89.2	1,159
Total	188	5,783

Energy Cost Budget / PRM Summary

SENIOR CENTER

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

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		* Alt-1 TRUMBULL COMMUNITY		
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	60.9	12	38
Space Heating	Electricity	36.2	7	24
	Gas	131.2	25	148
Space Cooling	Electricity	29.9	6	104
Fans - Conditioned	Electricity	58.7	11	45
Receptacles - Conditioned	Electricity	42.2	8	15
Stand-alone Base Utilities	Electricity	158.5	31	55
Total Building Consumption		517.6		

		* Alt-1 TRUMBULL COMMUNITY	
Total	Number of hours heating load not met	0	
	Number of hours cooling load not met	0	

		* Alt-1 TRUMBULL COMMUNITY	
		Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity		386.4	18,112
Gas		131.2	1,706
Total		518	19,818

Energy Cost Budget / PRM Summary

1ST FLOOR SPACES

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

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* Alt-1 TRUMBULL COMMUNITY				
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	17.9	10	10
Space Heating	Electricity	14.5	8	6
	Gas	106.0	62	33
Space Cooling	Electricity	12.2	7	6
Fans - Conditioned	Electricity	10.4	6	6
Receptacles - Conditioned	Electricity	10.9	6	5
Total Building Consumption		172.0		

* Alt-1 TRUMBULL COMMUNITY		
Total	Number of hours heating load not met	0
	Number of hours cooling load not met	0

* Alt-1 TRUMBULL COMMUNITY		
	Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity	66.0	3,093
Gas	106.0	1,378
Total	172	4,471



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Trumbull Community Center

HVAC Narrative

June 15, 2017

General

Complete new mechanical systems are to be provided for the entire building, including both the renovated portions of the building and new additions. The new systems will be designed in accordance with the requirements of the following codes and standards:

- 2012 International Mechanical Code (IMC)
- 2012 International Energy Conservation Code (IECC)
- 2005 Connecticut State Building Code (CSBC)
- Other State and Local Codes
- ASHRAE Standard 62.1

Design Conditions, Heating/Cooling Load Calculations

Outdoor Design Conditions:

Cooling design condition – 91.0 deg. F Dry Bulb
73.0 deg. F Wet Bulb

Heating design condition – 2.0 deg. F Dry Bulb
0.3 deg. F Wet Bulb

Inside Design Conditions:

Cooling design condition – 74.0 deg. F – Occupied
80.0 deg. F – Unoccupied

Heating design condition – 72.0 deg. F – Occupied
60.0 deg. F – Unoccupied

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Proposed System Types

Most areas of the building except for the Gym and Pool Area will be served by a combination of variable refrigerant flow (VRF) systems (Mitsubishi, Daikin, or similar) with heat recovery and dedicated outdoor air units (DOAS). For conceptual estimating, it is anticipated that the VRF systems with heat recovery will have a total capacity of 80 tons. These systems will provide heating and cooling to the spaces they serve. A VRF system consists of an outdoor condensing unit located on the roof, indoor ducted fan-coil units supplying air to each space, and refrigerant piping connecting the indoor and outdoor units. One DOAS unit (Aaon or similar) will be provided to supply ventilation air to all spaces served by VRF systems. The DOAS unit will be a gas-fired, variable air volume, packaged rooftop unit with an energy recovery wheel, which will provide heating, ventilation, and cooling to the space. This unit will include modulating gas input for heating, variable capacity direct expansion (DX) cooling, an energy recovery wheel to conserve energy by transferring energy from exhaust air to the incoming outdoor air, and hot-gas reheat coil for dehumidification. It will distribute ventilation air via ductwork to the spaces. Relief and exhaust air will be ducted back to an exhaust fan in the dedicated outdoor air unit, allowing energy from this air to be used to temper the incoming outdoor air.

The Gym will be served by one variable air volume air-handling unit (Aaon or similar) with hot water heating and variable capacity direct expansion (DX) cooling (condensing unit located on the roof) with hot-gas reheat for dehumidification control. This unit will provide heating, cooling, and ventilation to the space, and will have an approximate cooling capacity of 20-tons and an airflow of 8,000 cfm. This unit will incorporate demand control ventilation, which will modulate the amount of outside air based on occupancy and carbon dioxide levels. Air will be distributed via exposed ducts at the ceiling of the Gym.

The Pool Area will be served by a dedicated pool unit (PoolPak or similar), with hot water heating (reheat), direct expansion (DX) cooling (condensing unit located on roof), heat recovery, and an integral pool water condenser / heater. This unit will provide heating, cooling, dehumidification, and ventilation to the space. Its cooling capacity will be approximately 35-tons with an airflow of 11,500 cfm. The air temperature in the pool area will be maintained at 85 degrees F for both comfort reasons, and to minimize pool water evaporation and eliminate window condensation. Budget equipment pricing for this unit is \$160,000. A water-to-water heat exchanger will use heating hot water to heat the pool water to 83 degrees F.

Heating hot water will be provided by a new boiler plant located in the Mezzanine above the Locker Rooms. Two or three gas-fired, high efficiency, condensing boilers (Aerco or similar) will provide hot water for the Gym air-handling unit, pool unit, pool water heat exchanger, and radiant ceiling panels serving the Upper Level.

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Piping Materials:

Refrigerant piping will be Type L copper tube with soldered joints. All refrigerant piping will be insulated, including liquid, suction, hot-gas, discharge, and heat-recovery piping.

Heating hot water piping will be Schedule 40 steel pipe with welded joints for piping 2-1/2" and larger, and Type L copper piping with soldered joints for piping 2" and smaller.

HVAC System Controls – Alternate #1

The building control system will be a complete direct digital control (DDC) system employing the latest, best available technology for energy saving strategies, and will include BACnet and Web enabled interfaces, microcomputer workstation, application software, control units, sensors, thermostats, temperature and pressure transmitters, gauges, valves, dampers, operators, relays, and other equipment and appurtenances, including electrical wiring. The system will provide 365 day scheduling with override, monitoring, reporting, alarming and set point controlling capabilities for all HVAC equipment and zones. The VRF systems utilize self-contained controls that are in addition to the DDC controls. The DDC system will monitor the self-contained controls of the VRF systems.

HVAC System Controls – Alternate #2

The HVAC system controls will be packaged DDC controls provided by the equipment manufacturers. The VRF systems will utilize self-contained controls, which will all tie back into a master VRF system controller. This master controller will include a Web enabled interface, and provide scheduling with override, monitoring, reporting, alarming, and set point controlling capabilities for all VRF system equipment and zones. The DOAS units, Gym system, and Pool Area system will utilize full, packaged DDC controls provided by the unit manufacturer.

Location	TRUMBULL, CT	
Building owner		
Program user		
Company		
Comments		
By		
Dataset name		
Calculation time	11:25 AM on 09/22/2017	
TRACE® 700 version	6.3.2	
Location	Hartford, Connecticut	
Latitude	41.0	deg
Longitude	72.0	deg
Time Zone	5	
Elevation	15	ft
Barometric pressure	29.9	in. Hg
Air density	0.0760	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.1147	Btu/h·cfm·°F
Latent heat factor	4,906.9	Btu·min/h·cu ft
Enthalpy factor	4.5604	lb·min/hr·cu ft
Summer design dry bulb	88.0	°F
Summer design wet bulb	73.0	°F
Winter design dry bulb	7.0	°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	



Energy Cost Budget / PRM Summary

POOL

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Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

		* Alt-1 TRUMBULL COMMUNITY		
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	40.2	2	14
Space Heating	Gas	1,039.6	60	759
Space Cooling	Electricity	261.9	15	112
Pumps	Electricity	0.8	0	2
Heat Rejection	Electricity	10.0	1	8
Fans - Conditioned	Electricity	308.2	18	63
Stand-alone Base Utilities	Electricity	59.8	3	7
Total Building Consumption		1,720.5		

		* Alt-1 TRUMBULL COMMUNITY	
Total	Number of hours heating load not met		0
	Number of hours cooling load not met		0

		* Alt-1 TRUMBULL COMMUNITY	
		Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity		680.9	31,921
Gas		1,039.6	13,514
Total		1,720	45,435

MONTHLY ENERGY CONSUMPTION

By Yeaton Associates Inc.

----- Monthly Energy Consumption -----

Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Alternative: 1 TRUMBULL COMMUNITY CENTER POOL													
Electric													
On-Pk Cons. (kWh)	14,771	13,258	14,879	15,335	16,517	21,555	24,977	24,197	19,598	16,150	15,073	14,990	211,300
On-Pk Demand (kW)	48	48	48	49	49	53	55	53	51	49	48	48	55
Gas													
On-Pk Cons. (therms)	1,163	1,044	1,086	827	788	585	599	599	623	851	964	1,119	10,249
On-Pk Demand (therms/hr)	5	4	4	2	2	1	1	1	1	2	4	4	5

Energy Consumption

Building 263,354 Btu/(ft2-year)
 Source 489,070 Btu/(ft2-year)

Environmental Impact Analysis

CO2 145,979 lbm/year
 SO2 495 gm/year
 NOX 174 gm/year

Floor Area 6,630 ft2

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER POOL

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Lights													
Electric (kWh)	987.7	893.1	1,044.2	946.8	1,016.0	1,003.3	959.5	1,044.2	946.8	1,016.0	975.0	959.5	11,792.0
Peak (kW)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Cooling Coil Condensate													
Recoverable Water (1000gal)	3.9	3.4	4.0	4.3	4.3	6.2	6.2	8.1	5.3	4.4	4.2	4.1	58.3
Peak (1000gal/Hr)	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
Bsu 1: Filter and Heater Pump													
Electric (kWh)	1,488.0	1,344.0	1,488.0	1,440.0	1,488.0	1,440.0	1,488.0	1,488.0	1,440.0	1,488.0	1,440.0	1,488.0	17,520.0
Peak (kW)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Bsu 2: Pool Heating													
Proc. Hot Water (therms)	558.0	504.0	558.0	540.0	558.0	540.0	558.0	558.0	540.0	558.0	540.0	558.0	6,570.0
Peak (therms/Hr)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Cpl 1: POOL UNIT [Sum of dsn coil capacities=45.40 tons]													
POOL UNIT [Clg Nominal Capacity/F.L.Rate=45.40 tons / 42.33 kW] (Cooling Equipment)													
Electric (kWh)	4,705.2	4,175.6	4,684.3	5,495.7	5,752.8	9,054.6	9,854.9	10,632.4	6,558.0	5,446.8	5,115.8	4,997.0	76,473.0
Peak (kW)	25.1	25.1	25.8	26.2	25.1	31.8	32.7	30.2	29.5	26.4	25.6	25.6	32.7
POOL UNIT (Cooling Equipment - Heat Recovered From Condenser Loop)													
Energy Recovered (therms)	464.6	412.0	442.3	477.5	494.5	764.1	654.7	912.0	690.5	485.9	477.4	484.6	6,760.1
Peak (therms/Hr)	3.4	3.3	3.1	2.7	2.5	3.1	2.9	3.1	3.3	2.7	3.0	3.2	3.4
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=57.43 tons / 3.18 kW]													
Electric (kWh)	67.8	63.1	96.9	209.6	254.2	454.6	517.9	546.3	309.3	192.2	129.4	86.3	2,927.6
Peak (kW)	0.4	0.5	0.7	1.3	1.4	2.2	2.4	2.2	2.1	1.2	0.8	0.6	2.4
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	14.7	13.3	14.8	18.0	19.3	31.1	37.2	32.6	21.5	17.5	16.2	15.7	251.8
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Hpl 1: POOL BOILER SPACE HEATING [Sum of dsn coil capacities=882.5 mbh]													
Boiler - 004 [Nominal Capacity/F.L.Rate=1,103 mbh / 12.53 Therms] (Heating Equipment)													
Gas (therms)	549.9	490.5	475.8	242.8	202.0	29.8	0.0	10.3	99.1	287.5	376.0	507.5	3,271.1
Peak (therms/Hr)	6.8	6.8	6.7	4.4	4.8	1.1	0.0	0.3	3.8	5.2	6.3	6.8	6.8

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER POOL

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Hpl 1: POOL BOILER SPACE HEATING [Sum of dsn coil capacities=882.5 mbh]</u>													
Var vol cnd water pump [F.L.Rate=1.87 kW] (Misc Accessory Equipment)													
Electric (kWh)	39.1	35.0	34.9	19.4	17.2	5.3	0.0	1.0	8.4	22.3	28.3	36.4	247.1
Peak (kW)	0.4	0.4	0.4	0.3	0.3	0.2	0.0	0.0	0.2	0.3	0.4	0.4	0.4
<u>Hpl 2: POOL BOILER FOR WATER HEATING [Sum of dsn coil capacities=75 mbh]</u>													
Boiler - 005 [Nominal Capacity/F.L.Rate=500 mbh / 5.68 Therms] (Heating Equipment)													
Gas (therms)	612.8	553.2	610.3	584.2	601.8	579.6	599.0	599.0	580.6	604.0	588.4	611.6	7,124.6
Peak (therms/Hr)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
<u>Sys 1: Pool</u>													
FC Centrifugal const vol [DsnAirflow/F.L.Rate=11,200 cfm / 12.71 kW] (Main Clg Fan)													
Electric (kWh)	6,969.1	6,295.7	7,032.7	6,734.1	7,000.9	6,797.6	6,937.4	7,032.7	6,734.1	7,000.9	6,765.8	6,937.4	82,238.2
Peak (kW)	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
FC Centrifugal const vol [DsnAirflow/F.L.Rate=11,200 cfm / 5.72 kW] (System Exhaust Fan)													
Electric (kWh)	480.7	440.5	498.8	464.5	565.5	771.4	1,526.6	891.3	944.8	529.2	467.3	476.6	8,057.2
Peak (kW)	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7

System Component Selection Summary

Alternative 1
System Description: Pool

System Type: Single Zone
 Number of Zones: 1
 Number of Rooms: 1

Component	Sizing Method	Location	Quantity
Cooling			
Main Clg Coil	Peak	Zone	1
Primary Clg Fan	Peak	Zone	1
Heating			
Main Htg Coil	Peak	Zone	1
Reheat Coil	Peak	Room	1
Miscellaneous			
System Exhaust Fan	Vent+Inf-RmExh	System	1
Return Fan	Return Airflow	System	1

Coil Location			Cooling Coil Selection								
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity ton MBh	Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR °F °F gr/lb	Leave DB/ WB/ HR °F °F gr/lb		
	076	POOL	Main Clg Coil	7/15	45.4 544.7	320.8	8,634	85.0 73.2 104.6	55.0	54.6	63.1

Coil Location			Heating Coil Selection					
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F	
	076	POOL	Main Htg Coil	-722.9	11,200	55.0	112.9	
		076	POOL	Reheat Coil	-374.6	11,200	55.0	85.0

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air	SADB		Clg VAV	Htg VAV
				cfm	Ach/hr	%	Clg °F	Htg °F	Minimum cfm	Maximum cfm
Pool			Return Fan	11,333						
Pool			Optional Vent Fan	2,566		100				
Pool			System Exhaust Fan	11,200						
	076	POOL	Primary Fan	11,200		22.9	66.0			
		076	POOL	Diffuser	11,200	3.3	22.9	66.0	113.0	

Entered Values

TRACE® 700 version 6.3.2

Project Name: TRUMBULL COMMUNITY CENTER
Dataset Name:
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Cooling Design Period: January thru December
Peak Hour Override: 0
Daylight Savings Period:
Summer Period:

Cooling Methodology: TETD-TA1
Heating Methodology: UATD
Infiltration Methodology: Vary with wind speed
Outside Film Methodology: Vary with wind speed
Terrain Methodology: Center of a large city

Room Circ Rate: Medium
Wall Load To Plenum: YES
Building Orientation: 0 degrees from north

Simulation Hours: Reduced year
Calendar Code: Standard (1978)
Energy Simulation Period: January thru December

Location: Hartford, Connecticut
Summer Design Dry Bulb: 88.00 °F
Summer Design Wet Bulb: 73.00 °F
Winter Design Dry Bulb: 7.00 °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

Force VAV Min => Nominal Ventilation at Design: No
Allow Energy Recovery/Transfer at Design: Yes
Retest Design Peaks: Yes
Calculate Building Block Loads: No

Close ventilation dampers during unoccupied hours: Yes

ENTERED VALUES ROOM BY ROOM

Room Description: 076 POOL

Zone Description: No Zone

System Description: Pool

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION
Floor Area: 6,630 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: NO Design Clg DB / Drift Point: 85.0 °F / 85.0 °F Design Htg DB / Drift Point: 85.0 °F / 85.0 °F Design Relative Humidity: 60 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 75 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Gym/Pool Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull Lighting Gym/Pool Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling Vent Type: None Vent Value: 2,566.00 cfm Vent Schedule: Trumbull VENT Pool Infil Type: Neutral, Tight Const. Infil Value: 0.05 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: 11,200.00 cfm Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)
		Heating None 2,566.00 cfm Neutral, Tight Const. 0.05 air changes/hr 11,200.00 cfm To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass					Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F	External Shading					
Wall - 1	320 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 2	1,455 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 3	341 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 4	399 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 5	1,884 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Window			Newington Town Hall	499	0.40	0.27	Overhang - None	None	0.00			
Opening - 2				Door			Standard Door	112	0.00	0.20	Overhang - None	None	0.00			
POOL LATENT LOAD	21,544.000 Btuh			Trumbull LOAD Pool			None							0	100	0 0.00
Floor - 1																183 0.50

SYSTEM ENTERED VALUES

Pool - Single Zone

Design Air Conditions	Max	Min		
Cooling supply:			Supply duct temperature diff: 0.0 °F	Design humidity ratio diff:
Leaving cooling coil:	65.0 °F	55.0 °F	Reheat Temperature diff: 0.0 °F	Min room relative humidity:
Heating supply:				

Direct / Indirect Dehumidification

Type: Direct dehumidification by controlling rel hum in worst case rm	Main cooling coil min Leaving Temp: 55.0 °F	Airflow at low speed:
Max room RH: 60%	Number of fan speeds: None	Airflow at medium speed:

Economizer

Type: Wet Bulb	"On" Point: °F	Max Percent OA: 100%	Schedule: Newtown Pool Economizer
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Advanced Options

Cooling coil sizing method: Peak	Supply fan motor location: Supply	Night purge schedule: Off (0%)
Cooling coil location: Zone	Return fan motor location: Return	Optimum start schedule: Off (0%)
Block cooling airflow:	Supply fan configuration: Draw Thru	Optimum stop schedule: Off (0%)
Ventilation deck location: Supply Air Deck,	Supply fan sizing: Peak	
Supply duct location: Other Upstream of Supply Fan	Fan mechanical efficiency : 75%	CO2-based DCV: None
Return air path: ROOMDK	Apply Std62 People Avg: No	System ventilation flag: Sum Room OA Reqs
	Std62 Max Vent (Z) Ratio:	
Reset per worst case room schedule: Off (0%)		Supply air path / duct location: Other
Max reset:		Space convective gains to occupied layer: 100 %
Use system default outside air reset: Yes		Underfloor plenum height:
		Conductive resistance of raised floor: 0.8 hr-ft ² -°F/Btu
		Upstream nominal leakage fraction: 0 %
		Downstream constant leakage fraction: 0 %
		Aux cooling coil losses to plenum: 0 %
Auxiliary cooling coil	Control Method	Control Type
Auxiliary heating coil	Activate After Primary System	None
Auxiliary fan	No Fan	None

Coils	Capacity	Schedule	Diversity
Main cooling:	100.0 % of Design Capacity by adjusting a	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	FC Centrifugal const vol	1.5 in. wg	0.0 in. wg	0.00102 kW/Cfm	Newtown Pool Fan	90	
Secondary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
System Exhaust	FC Centrifugal const vol	0.5 in. wg	0.0 in. wg	0.00046 kW/Cfm	Available (100%)	90	
Room Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	85	
Optional ventilation	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					No fan cycling		0.0 ft

ENTERED VALUES PLANTS

Cooling Plant: POOL UNIT

Sizing method: Peak
 Heat rejection type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Off (0%)

Geothermal Loop

TLoop Ent Bldg:	None	Flow scheme:	Fully mixed
TLoop schedule:	None	Loop fluid glycol:	0%
Flow rate:	100.00% of condenser flow rate	Heat exchanger approach:	0°F
Loop pump:	None		
Pump F.L. rate:	0.00ft water		

Equipment tag: POOL UNIT

Cooling Type: 90.1-10 Min AC SS/SP Other 240-760 MBh

POOL UNIT

Operating Mode	Capacity	Energy Rate	Pumps	Type	Full Load Consumption
Cooling:		12.8700 EER (compressor only)	Chilled water:	None	
Heat recovery:			Condenser water:	None	
Tank charging:			Heat recovery or aux cond:	None	
Tank charging & heat recovery:			Free cooling:	None	
Heat Rejection and Thermal Storage			Equipment Options		
Heat rejection type: 90.1 Min Air Cooled Condenser		Sequencing type: Single	Free clg type: None		Energy source:
Thermal storage type: None		Demand lim priority:	Fluid cooler type: None		Reject cond heat: Heating plant
T-storage capacity: 0 ton-hr		Dsn chilled water delta T: 12 °F	Load shed econ: no		Cond. heat to plant: POOL BOILER SPACE HEATING
T-storage schedule: Storage		Dsn cond water delta T: 0 °F	Evap precooling: no		Equip schedule: Available (100%)
			Hot gas reheat: Yes		
Reset Based On		Reset Curve	Max Reset TD		
Chilled Water: None		None	10,000°F		
Condenser Water: None		None	0°F		

ENTERED VALUES PLANTS

Heating Plant: POOL BOILER FOR WATER HEATING

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

POOL BOILER FOR WATER HEATING

Heating capacity: 500.0 Mbh
 Energy rate: 88.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 0.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Heating capacity: 500.0 Mbh
 Energy rate: 88.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 0.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Heating Plant: POOL BOILER SPACE HEATING

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

POOL BOILER SPACE HEATING

Heating capacity: 125.0 %Plant Capacity
 Energy rate: 88.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 30.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Base Utilities

Plant assigned to: POOL BOILER FOR WATER HEATING
 Type: Pool Heating

Description: Pool Heating
 Demand limiting priority:

Schedule: Available (100%)
 Hourly demand: 0.75 therms

Plant assigned to: Stand-alone
 Type: Misc. Pumps

Description: Filter and Heater Pump
 Demand limiting priority:

Schedule: Available (100%)
 Hourly demand: 2.00 kW

Miscellaneous accessories

Plant assigned to: POOL UNIT
 Equipment tag: All

Type: None
 Description:

Schedule: Off (0%)
 Energy: 0.00 kW

ECONOMIC PARAMETERS

Project Name: TRUMBULL COMMUNITY CENTER
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Study Life:	20 Yrs	Income Tax Rate:	0.000 %
Mortgage Life:	20 Yrs	Cost of Capital:	10.000 %
Depreciation Life:	20 Yrs	Property tax rate:	0.000 %
Mortgage Interest Rate:	10.000 %	Insurance Expense rate:	0.000 %
Percent Financed:	0.0 %		
Depreciation Method:	None	<u>Annual Inflation Rate Of</u>	
Declining Balance Taxes:	100.0 %	Maintenance Expense	0.000 %
		Replacement Expense	0.000 %
		Property Taxes	0.000 %
		Insurance Expense	0.000 %

Alt #	First Cost (\$/ton)	First Cost (\$/ft ²)	Additional First Cost	Total First Cost	Maintenance Cost (\$/ton)	Maintenance Cost (\$/ft ²)	Total Maint. Cost	Total Alt. Cost
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Location	TRUMBULL, CT	
Building owner		
Program user		
Company		
Comments		
By		
Dataset name		
Calculation time	11:28 AM on 09/22/2017	
TRACE® 700 version	6.3.2	
Location	Hartford, Connecticut	
Latitude	41.0	deg
Longitude	72.0	deg
Time Zone	5	
Elevation	15	ft
Barometric pressure	29.9	in. Hg
Air density	0.0760	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.1147	Btu/h·cfm·°F
Latent heat factor	4,906.9	Btu·min/h·cu ft
Enthalpy factor	4.5604	lb·min/hr·cu ft
Summer design dry bulb	88.0	°F
Summer design wet bulb	73.0	°F
Winter design dry bulb	7.0	°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	



Energy Cost Budget / PRM Summary

GYM

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

		* Alt-1 TRUMBULL COMMUNITY		
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	49.0	26	17
Space Heating	Gas	89.2	47	59
Space Cooling	Electricity	9.7	5	30
Heat Rejection	Electricity	0.9	0	4
Fans - Conditioned	Electricity	39.0	21	36
Total Building Consumption		187.8		

		* Alt-1 TRUMBULL COMMUNITY	
Total	Number of hours heating load not met		0
	Number of hours cooling load not met		0

		* Alt-1 TRUMBULL COMMUNITY	
		Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity		98.6	4,624
Gas		89.2	1,159
Total		188	5,783

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER GYM

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Lights													
Electric (kWh)	1,202.1	1,086.9	1,270.9	1,152.3	1,236.5	1,221.0	1,167.7	1,270.9	1,152.3	1,236.5	1,186.6	1,167.8	14,351.4
Peak (kW)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
Cooling Coil Condensate													
Recoverable Water (1000gal)	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.1	0.0	0.0	0.0	0.8
Peak (1000gal/Hr)	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
Cpl 1: GYM [Sum of dsn coil capacities=16.90 tons]													
GYM [Clg Nominal Capacity/F.L.Rate=16.90 tons / 9.38 kW] [**Orig F.L.Rate=16.23 kW] (Cooling Equipment)													
Electric (kWh)	0.0	0.0	0.0	11.5	88.9	569.5	979.6	727.1	370.5	11.4	0.0	0.0	2,758.5
Peak (kW)	2.9	2.9	2.9	3.1	3.7	6.4	8.6	7.6	6.8	3.3	2.9	2.9	8.6
90.1 Min Air Cooled Condenser [Design Heat Rejection/F.L.Rate=19.88 tons / 1.10 kW]													
Electric (kWh)	0.0	0.0	0.0	1.4	9.7	55.4	90.9	70.5	37.5	1.3	0.0	0.0	266.5
Peak (kW)	0.0	0.0	0.0	0.3	0.4	0.8	1.1	1.0	0.9	0.4	0.1	0.0	1.1
Cntl panel & interlocks - 0.05 KW [F.L.Rate=0.05 kW] (Misc Accessory Equipment)													
Electric (kWh)	0.0	0.0	0.0	3.0	10.0	19.5	20.2	19.8	17.0	3.3	0.0	0.0	92.7
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Hpl 1: GYM UNIT REHEAT [Sum of dsn coil capacities=120.7 mbh]													
GYM [Nominal Capacity/F.L.Rate=120.7 mbh / 1.51 Therms] (Heating Equipment)													
Gas (therms)	208.1	183.2	135.6	27.6	17.6	0.0	0.0	0.0	7.6	35.4	88.0	188.7	891.8
Peak (therms/Hr)	0.6	0.5	0.5	0.2	0.2	0.1	0.0	0.0	0.1	0.3	0.4	0.5	0.6
Sys 1: Gym													
Total-energy wheel (OA precondition) [Stage 1 Energy Recovery]													
Energy Recovered (therms)	0.0	0.2	0.7	6.5	3.5	7.1	22.8	7.6	1.3	6.8	5.2	0.2	61.9
Peak (therms/Hr)	0.7	0.6	0.5	0.1	0.0	0.1	0.3	0.1	0.0	0.2	0.4	0.6	0.7
Total-energy wheel (OA precondition) [Stage 1 Parasitics]													
Electric (kWh)	0.0	3.6	12.4	120.0	65.6	92.8	131.2	102.0	56.0	125.6	94.8	4.4	808.4
Peak (kW)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=5,897 cfm / 5.75 kW] (Main Clg Fan)													
Electric (kWh)	537.0	478.1	506.1	435.6	424.1	402.3	428.6	420.5	394.0	469.9	492.6	520.2	5,509.0
Peak (kW)	2.3	2.6	2.8	2.3	2.4	3.4	5.8	3.9	3.7	2.2	2.2	2.4	5.8

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER GYM

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 1: Gym													
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=6,219 cfm / 4.25 kW] (Main Return Fan)													
Electric (kWh)	404.7	371.7	388.9	483.4	387.5	412.2	491.0	420.7	332.3	521.4	499.7	400.9	5,114.4
Peak (kW)	1.8	2.0	2.1	1.4	1.4	2.6	4.3	3.0	2.8	1.6	1.7	1.8	4.3

System Component Selection Summary

Alternative 1

System Description: Gym

System Type: Single Zone Variable Air Volume

Number of Zones: 1

Number of Rooms: 1

Component	Sizing Method	Location	Quantity
Cooling			
Main Clg Coil	Block	Zone	1
Primary Clg Fan	Block	Zone	1
Heating			
Main Htg Coil	Peak	Zone	1
Miscellaneous			
System Exhaust Fan	Vent+Inf-RmExh	System	1
Return Fan	Return Airflow	System	1

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity ton	MBh	Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ °F	WB/ °F	HR gr/lb	Leave DB/ °F	WB/ °F	HR gr/lb
	052	GYMNASIUM	Main Clg Coil	7/9	16.9	202.8	125.0	5,897	74.0	63.9	73.0	55.0	52.3	54.3

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
	052	GYMNASIUM	Main Htg Coil	-120.7	3,026	53.3	89.1

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow cfm	Ach/hr	Outside Air %	SADB Clg Htg °F °F		Clg VAV Minimum cfm	Htg VAV Maximum cfm
Gym			Return Fan	6,220						
Gym			Optional Vent Fan	3,026		100				
Gym			System Exhaust Fan	3,349						
	052	GYMNASIUM	Primary Fan	5,897		51.3	56.0		3,026	3,026
	052	GYMNASIUM	VAV Box	5,897		51.3	56.0	89.0	3,026	3,026
	052	GYMNASIUM	Diffuser	5,897	1.8	51.3	56.0	89.0	3,026	3,026

Entered Values

TRACE® 700 version 6.3.2

Project Name: TRUMBULL COMMUNITY CENTER
Dataset Name:
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Cooling Design Period: January thru December
Peak Hour Override: 0
Daylight Savings Period:
Summer Period:

Cooling Methodology: TETD-TA1
Heating Methodology: UATD
Infiltration Methodology: Vary with wind speed
Outside Film Methodology: Vary with wind speed
Terrain Methodology: Center of a large city

Room Circ Rate: Medium
Wall Load To Plenum: YES
Building Orientation: 0 degrees from north

Simulation Hours: Reduced year
Calendar Code: Standard (1978)
Energy Simulation Period: January thru December

Location: Hartford, Connecticut
Summer Design Dry Bulb: 88.00 °F
Summer Design Wet Bulb: 73.00 °F
Winter Design Dry Bulb: 7.00 °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

Force VAV Min => Nominal Ventilation at Design: No
Allow Energy Recovery/Transfer at Design: Yes
Retest Design Peaks: Yes
Calculate Building Block Loads: No

Close ventilation dampers during unoccupied hours: Yes

ENTERED VALUES ROOM BY ROOM

Room Description: 052 GYMNASIUM

Zone Description: No Zone

System Description: Gym

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION
Floor Area: 8,069 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 243 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Gym/Pool Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull Lighting Gym/Pool Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Gym, stadium (play area) Vent Value: 0.00 cfm/person Vent Schedule: Trumbull VENT Gym/Pool Infil Type: Neutral, Tight Const. Infil Value: 0.10 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Gym, stadium (play area) 0.30 cfm/sq ft Neutral, Tight Const. 0.10 air changes/hr To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Wall - 1	327 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 2	595 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 3	132 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 4	725 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 5	133 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 6	596 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 7	1,009 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 8	288 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	288	0.40	0.27	Overhang - None	None	0.00		
Wall - 9	1,933 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Door			Standard Door	184	0.00	0.20	Overhang - None	None	0.00		
Opening - 2				Window			Newington Town Hall	480	0.40	0.27	Overhang - None	None	0.00		
Floor - 1	8,069 ft ²			Trumbull Floor	0.2881								Constant	70	65

SYSTEM ENTERED VALUES

Gym - Single Zone Variable Air Volume

Coils	Capacity	Schedule	Diversity
Main cooling:	100.0 % of Design Cooling Capacity	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	FC Centrifugal var freq drv	1.5 in. wg	0.0 in. wg	0.00035 kW/Cfm-in wg	Available (100%)	90	
Secondary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Return	FC Centrifugal var freq drv	0.8 in. wg	0.0 in. wg	0.00035 kW/Cfm-in wg	Available (100%)	90	
System Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
Room Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	85	
Optional ventilation	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					Cycle with occupancy 0.0 ft		

ENTERED VALUES PLANTS

Cooling Plant: GYM

Sizing method: Peak
 Heat rejection type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Off (0%)

Geothermal Loop

TLoop Ent Bldg:	None	Flow scheme:	Fully mixed
TLoop schedule:	None	Loop fluid glycol:	0%
Flow rate:	100.00% of condenser flow rate	Heat exchanger approach:	0°F
Loop pump	None		
Pump F.L. rate:	0.00ft water		

Equipment tag: GYM

Cooling Type: 90.1-10 Min AC SS/SP Elec 135-240 MBh

GYM

Operating Mode	Capacity	Energy Rate	Pumps	Type	Full Load Consumption
Cooling:		12.5000 Packaged EER	Chilled water:	None	
Heat recovery:			Condenser water:	None	
Tank charging:			Heat recovery or aux cond:	None	
Tank charging & heat recovery:			Free cooling:	None	
Heat Rejection and Thermal Storage			Equipment Options		
Heat rejection type:	90.1 Min Air Cooled Condenser	Sequencing type:	Single	Free clg type:	None
Thermal storage type:	None	Demand lim priority:		Fluid cooler type:	None
T-storage capacity:	0 ton-hr	Dsn chilled water delta T:	12 °F	Load shed econ:	no
T-storage schedule:	Storage	Dsn cond water delta T:	0 °F	Evap precooling:	no
				Hot gas reheat:	No
Reset Based On	Reset Curve	Max Reset TD			
Chilled Water:	None	10,000°F			
Condenser Water:	None	0°F			

Package energy breakout	Primary fan	Secondary fan	Exhaust fan	Optional ventilation fan	Condenser fan
Included in full load energy rate	Yes	No	No	No	Yes

Apply same fans for heat recovery energy breakout: No

Heating Plant: GYM UNIT REHEAT

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: 90.1-10 Min Gas Furnace >225 MBh

GYM UNIT REHEAT

Heating capacity:	Thermal storage type:	None
Energy rate: 80.00 % Effic.	Thermal storage capacity:	0 ton-hr
	Thermal storage schedule:	Storage
	Equipment schedule:	Available (100%)
	Demand limiting priority:	

ENTERED VALUES PLANTS

Base Utilities

Plant assigned to: Stand-alone
Type: None

Description:
Demand limiting priority:

Schedule: Off (0%)
Hourly demand: 0.00 kW

Miscellaneous accessories

Plant assigned to: GYM
Equipment tag: All

Type: None
Description:

Schedule: Off (0%)
Energy: 0.00 kW

ECONOMIC PARAMETERS

Project Name: TRUMBULL COMMUNITY CENTER
Location: TRUMBULL, CT
Building Owner:
Program User: DAVID KYLE, PE
Company: YEATON ASSOCIATES
Comments:

Study Life:	20 Yrs	Income Tax Rate:	0.000 %
Mortgage Life:	20 Yrs	Cost of Capital:	10.000 %
Depreciation Life:	20 Yrs	Property tax rate:	0.000 %
Mortgage Interest Rate:	10.000 %	Insurance Expense rate:	0.000 %
Percent Financed:	0.0 %		
Depreciation Method:	None	<u>Annual Inflation Rate Of</u>	
Declining Balance Taxes:	100.0 %	Maintenance Expense	0.000 %
		Replacement Expense	0.000 %
		Property Taxes	0.000 %
		Insurance Expense	0.000 %

Alt #	First Cost (\$/ton)	First Cost (\$/ft ²)	Additional First Cost	Total First Cost	Maintenance Cost (\$/ton)	Maintenance Cost (\$/ft ²)	Total Maint. Cost	Total Alt. Cost
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Location	TRUMBULL, CT	
Building owner		
Program user		
Company		
Comments		
By		
Dataset name		
Calculation time	11:30 AM on 09/22/2017	
TRACE® 700 version	6.3.2	
Location	Hartford, Connecticut	
Latitude	41.0	deg
Longitude	72.0	deg
Time Zone	5	
Elevation	15	ft
Barometric pressure	29.9	in. Hg
Air density	0.0760	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.1147	Btu/h·cfm·°F
Latent heat factor	4,906.9	Btu·min/h·cu ft
Enthalpy factor	4.5604	lb·min/hr·cu ft
Summer design dry bulb	88.0	°F
Summer design wet bulb	73.0	°F
Winter design dry bulb	7.0	°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	



Energy Cost Budget / PRM Summary

SENIOR CENTER

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

		* Alt-1 TRUMBULL COMMUNITY		
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	60.9	12	38
Space Heating	Electricity	36.2	7	24
	Gas	131.2	25	148
Space Cooling	Electricity	29.9	6	104
Fans - Conditioned	Electricity	58.7	11	45
Receptacles - Conditioned	Electricity	42.2	8	15
Stand-alone Base Utilities	Electricity	158.5	31	55
Total Building Consumption		517.6		

		* Alt-1 TRUMBULL COMMUNITY	
Total	Number of hours heating load not met	0	
	Number of hours cooling load not met	0	

		* Alt-1 TRUMBULL COMMUNITY	
		Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity		386.4	18,112
Gas		131.2	1,706
Total		518	19,818

MONTHLY ENERGY CONSUMPTION

----- Monthly Energy Consumption -----

Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Alternative: 1 TRUMBULL COMMUNITY CENTER 2nd FLOOR													
Electric													
On-Pk Cons. (kWh)	11,448	10,330	10,674	8,219	8,457	8,717	8,977	9,075	7,895	9,016	9,553	10,840	113,200
On-Pk Demand (kW)	50	51	52	46	50	65	70	66	61	47	50	49	70
Gas													
On-Pk Cons. (therms)	152	138	125	101	86	78	100	79	92	95	113	154	1,312
On-Pk Demand (therms/hr)	1	1	1	1	1	0	0	0	0	1	1	1	1

Energy Consumption	
Building	27,607 Btu/(ft2-year)
Source	69,199 Btu/(ft2-year)
Floor Area	18,747 ft2

Environmental Impact Analysis	
CO2	78,205 lbm/year
SO2	265 gm/year
NOX	93 gm/year

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER 2nd FLOOR

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Lights													
Electric (kWh)	1,494.6	1,351.3	1,575.4	1,433.3	1,535.0	1,514.2	1,454.2	1,575.4	1,433.3	1,535.0	1,473.8	1,454.2	17,829.6
Peak (kW)	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Misc. Ld													
Electric (kWh)	1,040.2	940.2	1,079.9	1,000.3	1,060.1	1,039.9	1,020.4	1,079.9	1,000.3	1,060.1	1,020.1	1,020.4	12,361.7
Peak (kW)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Cooling Coil Condensate													
Recoverable Water (1000gal)	0.1	0.1	0.1	0.1	0.1	1.0	1.5	1.4	0.7	0.1	0.1	0.1	5.2
Peak (1000gal/Hr)	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
Bsu 1: IT Load													
Electric (kWh)	2,376.0	2,148.0	2,496.0	2,280.0	2,436.0	2,400.0	2,316.0	2,496.0	2,280.0	2,436.0	2,340.0	2,316.0	28,320.0
Peak (kW)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Bsu 2: Exterior Lights													
Electric (kWh)	744.0	672.0	744.0	720.0	744.0	720.0	744.0	744.0	720.0	744.0	720.0	744.0	8,760.0
Peak (kW)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Bsu 3: Elevator													
Electric (kWh)	20.5	18.5	20.5	19.8	20.5	19.8	20.5	20.5	19.8	20.5	19.8	20.5	240.9
Peak (kW)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Bsu 4: Rooftop Exhaust Fan													
Electric (kWh)	756.0	684.0	828.0	720.0	792.0	792.0	720.0	828.0	720.0	792.0	756.0	720.0	9,108.0
Peak (kW)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Bsu 5: Domestic Hot Water Load													
Proc. Hot Water (therms)	86.2	77.7	73.2	85.5	79.7	72.5	92.7	73.2	85.5	79.7	79.0	92.7	977.6
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Cpl 1: VRF UPPER FLOOR [Sum of dsn coil capacities=45.14 tons]													
VRF UPPER FLOOR [Clg Nominal Capacity/F.L.Rate=45.14 tons / 42.21 kW] (Cooling Equipment - Cooling Mode)													
Electric (kWh)	11.1	13.7	31.4	55.0	113.1	571.8	951.7	651.3	282.7	40.5	25.2	9.6	2,757.2
Peak (kW)	10.2	11.3	12.7	8.5	12.7	24.2	29.2	25.1	21.2	9.3	10.8	10.4	29.2

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER 2nd FLOOR

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
<u>Cpl 1: VRF UPPER FLOOR [Sum of dsn coil capacities=45.14 tons]</u>													
VRF UPPER FLOOR [Htg Nominal Capacity/F.L.Rate=609.4 mbh / 42.92 kW] (Cooling Equipment - Heating Mode)													
Electric (kWh)	2,401.0	2,128.5	1,482.3	440.7	219.2	0.0	0.0	0.0	40.3	641.0	1,138.3	2,115.9	10,607.1
Peak (kW)	7.1	6.8	5.9	3.9	3.1	0.3	0.0	0.0	0.9	4.1	5.2	6.4	7.1
VRF UPPER FLOOR (Cooling Equipment - Heat Recovered From Condenser Loop)													
Energy Recovered (therms)	21.3	21.9	22.7	1.6	0.3	0.0	0.0	0.0	0.8	2.2	10.9	21.3	102.8
Peak (therms/Hr)	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.2	0.5
Cntl panel & interlocks - 0.5 KW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	350.0	325.5	225.0	279.0	217.0	226.5	367.5	360.0	372.0	3,802.5
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Heat pump defrost cycle [F.L.Rate=14.45 kW] (Misc Accessory Equipment)													
Electric (kWh)	537.4	485.4	380.6	0.0	0.0	0.0	0.0	0.0	0.0	112.0	238.3	447.8	2,201.4
Peak (kW)	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
<u>Hpl 1: BOILER [Sum of dsn coil capacities=668.3 mbh]</u>													
<u>Hpl 2: MAU KITCHEN [Sum of dsn coil capacities=144.8 mbh]</u>													
MAU KITCHEN [Nominal Capacity/F.L.Rate=144.8 mbh / 1.81 Therms] (Heating Equipment)													
Gas (therms)	57.3	52.5	44.6	8.1	0.0	0.0	0.0	0.0	0.0	9.2	27.2	52.8	251.7
Peak (therms/Hr)	1.2	1.1	0.8	0.5	0.4	0.0	0.0	0.0	0.0	0.7	0.8	1.1	1.2
<u>Hpl 3: DHW Boiler [Sum of dsn coil capacities=30.00 mbh]</u>													
DHW Boiler [Nominal Capacity/F.L.Rate=500 mbh / 5.32 Therms] (Heating Equipment)													
Gas (therms)	94.7	85.3	80.0	92.5	85.9	77.8	99.5	78.5	92.0	86.3	86.1	101.6	1,060.3
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
<u>Sys 1: VRF Floor 2</u>													
Total-energy wheel (OA precondition) [Stage 1 Energy Recovery]													
Energy Recovered (therms)	91.3	86.9	79.4	13.3	3.5	0.0	2.6	0.0	0.0	14.9	39.3	82.4	413.6
Peak (therms/Hr)	1.2	1.2	1.0	0.4	0.2	0.0	0.3	0.0	0.0	0.5	0.8	1.1	1.2
Total-energy wheel (OA precondition) [Stage 1 Parasitics]													
Electric (kWh)	75.6	68.4	82.8	40.0	17.6	70.4	72.0	82.8	48.0	35.2	75.6	72.0	740.4
Peak (kW)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER 2nd FLOOR

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Sys 1: VRF Floor 2													
VRF Indoor Unit Ducted - PEFY [DsnAirflow/F.L.Rate=18,477 cfm / 5.34 kW] (Main Clg Fan)													
Electric (kWh)	820.3	740.5	775.6	606.8	629.8	674.3	743.9	679.4	562.2	652.0	685.4	782.5	8,352.7
Peak (kW)	3.4	3.7	3.9	4.3	4.5	5.0	5.1	5.0	4.6	4.2	3.7	3.4	5.1
FC Centrifugal const vol [DsnAirflow/F.L.Rate=200 cfm / 0.04 kW] (Room Exhaust Fan)													
Electric (kWh)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Peak (kW)	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
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=8,685 cfm / 5.08 kW] (System Exhaust Fan)													
Electric (kWh)	231.2	237.9	264.9	180.2	197.3	260.9	243.2	243.0	182.7	177.8	214.9	235.3	2,669.4
Peak (kW)	1.7	1.7	1.6	1.6	4.4	1.6	1.6	1.6	1.6	1.6	1.7	1.7	4.4
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=7,794 cfm / 7.60 kW] (Opt. Ventilation Fan)													
Electric (kWh)	231.8	209.8	253.9	181.6	167.3	232.1	220.8	253.9	191.4	188.9	231.8	220.8	2,584.1
Peak (kW)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Sys 2: Kitchen MAU													
FC Centrifugal const vol [DsnAirflow/F.L.Rate=2,000 cfm / 0.76 kW] (Main Htg Fan)													
Electric (kWh)	314.2	275.2	263.9	169.9	176.7	173.7	169.2	180.5	166.2	190.9	232.0	286.7	2,599.0
Peak (kW)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
FC Centrifugal const vol [DsnAirflow/F.L.Rate=2,000 cfm / 0.38 kW] (Room Exhaust Fan)													
Electric (kWh)	22.4	20.2	23.2	21.5	22.8	22.3	22.0	23.2	21.5	22.8	21.9	22.0	265.7
Peak (kW)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

System Component Selection Summary

Alternative 1

System Description: Kitchen MAU

System Type: Ventilation and Heating

Number of Zones: 1

Number of Rooms: 1

Component	Sizing Method	Location	Quantity
Heating			
Main Htg Coil	Peak	System	1
Secondary Fan	Peak	System	1
Miscellaneous			
System Exhaust Fan	Vent+Inf-RmExh	System	1

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity		Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR			Leave DB/ WB/ HR		
					ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
		53 KITCHEN	Main Clg Coil	0/0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
Kitchen MAU			Main Htg Coil	-144.8	2,000	7.0	72.0

Component Location			Miscellaneous Component Selection						
System	Zone	Room	Component	Design Airflow Ach/hr	Outside Air %	SADB		Clg VAV Minimum	Htg VAV Maximum
						Clg	Htg		

System Description: VRF Floor 2

System Type: Variable Refrigerant Flow

Number of Zones: 58

Number of Rooms: 58

Component	Sizing Method	Location	Quantity
Cooling			
Main Clg Coil	Block	Room	58
Primary Clg Fan	Peak	Room	58
Optional Vent Clg Coil	Block	System	1
Heating			
Main Htg Coil	Peak	Room	58
Optional Vent Htg Coil	Peak	System	1
Miscellaneous			

System Component Selection Summary

System Exhaust Fan	Vent+Inf-RmExh	System	1	
Return Fan	Return Airflow	System	1	
Optional Vent Fan	Ventilation Airflow	System	1	
Room Exhaust Fan	RmExh Input	Room	1	Sizing not to exceed room ventilation plus infiltration airflow

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity		Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR			Leave DB/ WB/ HR		
					ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
VRF Floor 2			Optional Vent Clg Coil	7/15	14.5	174.4	116.9	4,616	76.4	65.1	75.0	53.6	52.6	57.4
		013 DANCE & FITNESS	Main Clg Coil	7/17	3.1	36.7	16.4	2,264	69.4	60.5	64.7	54.0	54.0	62.2
		014 CARDIO	Main Clg Coil	8/17	1.0	11.4	5.1	720	69.5	60.5	64.6	54.0	54.0	62.2
		016 ARTS & CRAFTS 1	Main Clg Coil	7/17	1.7	20.6	13.0	912	70.3	60.8	64.3	54.0	52.9	58.0
		017 ARTS & CRAFTS 2	Main Clg Coil	7/17	1.8	21.2	13.4	932	70.4	60.8	64.2	54.0	52.9	57.9
		021 MENS	Main Clg Coil	7/16	0.0	0.5	0.5	28	70.8	61.1	65.3	55.0	55.0	64.5
		022 WOMENS	Main Clg Coil	7/16	0.0	0.5	0.5	28	70.8	61.1	65.3	55.0	55.0	64.5
		109 STORAGE	Main Clg Coil	9/15	0.1	0.8	0.8	38	72.8	61.4	63.0	55.0	53.9	60.2
		110 STORAGE	Main Clg Coil	12/10	0.0	0.1	0.1	10	72.8	58.9	52.4	55.0	51.8	52.4
		117 MEDICAL SERV & SHELTER STOR	Main Clg Coil	7/10	0.4	4.7	4.7	216	73.4	61.7	63.5	55.2	54.3	61.4
		122 HEALTH SCREENING NURSE	Main Clg Coil	7/16	0.1	1.2	0.8	58	71.6	61.1	64.0	55.0	54.3	62.0
		124 BATHROOM	Main Clg Coil	7/16	0.0	0.2	0.2	12	70.8	61.1	65.3	55.0	55.0	64.5
		125 CARDIO STORAGE	Main Clg Coil	9/14	0.1	0.8	0.8	34	72.2	61.2	63.5	55.0	53.7	59.5
		141 STORAGE	Main Clg Coil	7/11	0.1	0.9	0.9	39	72.4	61.4	63.9	55.2	54.0	60.3
		142 FOOD PANTRY OFFICE	Main Clg Coil	7/16	0.1	1.0	0.8	56	71.8	61.2	63.9	56.0	54.9	62.8
		143 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	8	70.8	61.1	65.3	55.0	55.0	64.5
		144 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	8	70.8	61.1	65.3	55.0	55.0	64.5
		145 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	4	70.8	61.1	65.3	55.0	55.0	64.5
		146 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	4	70.8	61.1	65.3	55.0	55.0	64.5
		149 JAN	Main Clg Coil	7/16	0.0	0.1	0.1	5	70.8	61.1	65.3	55.0	55.0	64.5
		150 OFFICE	Main Clg Coil	7/16	0.0	0.4	0.3	20	71.8	61.2	63.9	56.0	54.9	62.8
		151 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	5	70.8	61.1	65.3	55.0	55.0	64.5
		152 STORAGE	Main Clg Coil	7/16	0.0	0.2	0.2	9	70.8	61.1	65.3	55.0	55.0	64.5
		153 STORAGE	Main Clg Coil	7/16	0.0	0.2	0.2	9	70.8	61.1	65.3	55.0	55.0	64.5
		154 STORAGE	Main Clg Coil	7/16	0.0	0.2	0.2	9	70.8	61.1	65.3	55.0	55.0	64.5
		155 STORAGE	Main Clg Coil	12/10	0.0	0.1	0.1	5	72.8	58.9	52.4	55.0	51.8	52.4
		156 SEATING & LOUNGE	Main Clg Coil	7/16	0.9	10.2	6.3	396	70.9	61.0	64.5	54.0	52.0	54.8
		157 STORAGE	Main Clg Coil	7/16	0.0	0.1	0.1	6	70.8	61.1	65.3	55.0	55.0	64.5
		158 COATS	Main Clg Coil	7/16	0.0	0.1	0.1	5	70.8	60.9	64.4	55.0	54.9	64.4
		18 KILN	Main Clg Coil	12/18	0.9	11.2	11.2	250	67.8	61.3	71.0	56.0	44.9	26.6
		20 STORAGE	Main Clg Coil	7/16	0.0	0.2	0.2	10	70.8	61.1	65.3	55.0	55.0	64.5
		23 ADMINISTRATION	Main Clg Coil	7/16	0.3	3.0	2.3	164	71.8	61.2	63.9	56.0	54.9	62.8
		28 DRY FOOD STORAGE	Main Clg Coil	7/15	0.5	5.4	3.9	271	72.8	61.4	63.3	56.0	54.7	61.7
		29 GAMES	Main Clg Coil	7/14	0.3	3.2	2.1	131	71.7	61.1	63.8	54.0	52.6	57.0
		30 CARDS	Main Clg Coil	7/10	1.1	12.9	8.6	515	71.4	61.0	63.5	54.0	52.2	55.4
		32 SC ASST DIRECTOR OFFICE	Main Clg Coil	7/17	0.6	7.7	7.1	372	73.7	61.7	63.0	56.0	54.6	61.5
		33 SC DIRECTOR OFFICE	Main Clg Coil	7/17	0.3	3.5	3.0	172	73.2	61.5	63.1	56.0	54.5	61.1
		35 TRANSPORTATION	Main Clg Coil	7/17	0.6	7.3	6.7	351	73.7	61.7	63.0	56.0	54.6	61.5
		36 CONFERENCE	Main Clg Coil	7/14	0.5	5.9	3.1	289	70.1	60.8	64.7	54.0	53.7	61.3
		43 SOFT CLASS & LIBRARY	Main Clg Coil	7/17	0.9	10.8	8.3	491	72.4	61.3	63.4	54.8	53.7	59.8
		44 DIRECTOR OFFICE	Main Clg Coil	7/17	0.2	2.2	1.8	107	72.9	61.4	63.2	56.0	54.5	61.1
		46 CONFERENCE	Main Clg Coil	7/17	0.8	9.6	7.3	442	72.4	61.3	63.4	54.9	53.8	60.2
		50 MULTI-PURPOSE	Main Clg Coil	7/10	10.6	127.3	70.0	5,269	70.6	60.7	63.7	55.0	52.3	54.1

Project Name: TRUMBULL COMMUNITY CENTER
 Dataset Name: CC 2ND FL.TRC

TRACE® 700 v6.3.2 calculated at 11:30 AM on 09/22/2017
 Alternative - 1 System Component Selection Summary Page 2 of 8

System Component Selection Summary

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity		Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR			Leave DB/ WB/ HR		
					ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
		55 MENS RR	Main Clg Coil	7/16	0.0	0.5	0.5	28	70.8	61.1	65.3	55.0	55.0	64.5
		56 WOMENS RR	Main Clg Coil	7/16	0.1	0.6	0.6	32	70.8	61.1	65.3	55.0	55.0	64.5
		57 LOUNGE	Main Clg Coil	7/15	0.2	2.2	1.1	105	70.3	60.8	64.6	55.0	53.6	59.2
		60 CAFE/STORE	Main Clg Coil	7/15	0.5	6.4	4.3	264	71.7	61.2	63.9	54.0	52.7	57.4
		61 VESTIBULE	Main Clg Coil	7/15	0.4	5.0	3.6	219	73.8	61.7	63.0	56.0	53.9	58.5
		62 CLASSROOM 1	Main Clg Coil	7/10	1.3	15.4	9.7	633	71.4	60.9	63.5	55.0	52.5	54.7
		63 CLASSROOM 2	Main Clg Coil	7/10	1.3	15.7	9.9	652	71.6	61.0	63.3	55.0	52.6	55.4
		82 LOBBY FOYER	Main Clg Coil	7/17	0.5	5.7	5.4	273	73.4	61.6	63.2	55.0	54.5	62.6
		83 PLATFORM	Main Clg Coil	11/10	0.0	0.1	0.1	18	72.8	60.5	59.4	55.0	53.7	59.4
		84 GALLERY/LOUNGE	Main Clg Coil	7/16	0.2	1.8	1.0	86	70.3	60.8	64.6	54.0	53.5	60.4
		85 CORRIDOR	Main Clg Coil	7/16	0.4	4.4	3.2	290	70.8	60.9	64.4	55.0	54.9	64.4
		86 DANCE STOR	Main Clg Coil	7/16	0.0	0.3	0.3	14	70.8	61.1	65.3	55.0	55.0	64.5
		89 SHARED STORAGE	Main Clg Coil	7/16	0.0	0.3	0.3	18	70.8	61.1	65.3	55.0	55.0	64.5
		90 CLASSROOM 3	Main Clg Coil	7/10	1.3	15.4	9.7	632	71.4	60.9	63.5	55.0	52.5	54.7
		92 VESTIBULE	Main Clg Coil	7/17	0.9	10.3	8.9	463	74.1	61.8	62.8	56.0	54.2	59.9
		95 RECEPTION	Main Clg Coil	7/16	0.1	1.5	1.1	79	71.9	61.2	63.9	56.0	54.9	62.6

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
		VRF Floor 2	Optional Vent Htg Coil	-101.4	4,616	48.3	68.0
		013 DANCE & FITNESS	Main Htg Coil	-71.9	2,264	66.5	95.0
		014 CARDIO	Main Htg Coil	-22.8	720	66.6	95.0
		016 ARTS & CRAFTS 1	Main Htg Coil	-28.4	912	67.1	95.0
		017 ARTS & CRAFTS 2	Main Htg Coil	-29.0	932	67.1	95.0
		021 MENS	Main Htg Coil	-0.9	28	67.5	95.0
		022 WOMENS	Main Htg Coil	-0.9	28	67.5	95.0
		109 STORAGE	Main Htg Coil	-1.1	38	68.9	95.0
		110 STORAGE	Main Htg Coil	-0.3	10	67.5	95.0
		117 MEDICAL SERV & SHELTER STOR	Main Htg Coil	-7.0	216	69.1	98.0
		122 HEALTH SCREENING NURSE	Main Htg Coil	-1.8	58	68.1	95.0
		124 BATHROOM	Main Htg Coil	-0.4	12	67.5	95.0
		125 CARDIO STORAGE	Main Htg Coil	-1.0	34	68.5	95.0
		141 STORAGE	Main Htg Coil	-1.3	39	68.7	98.0
		142 FOOD PANTRY OFFICE	Main Htg Coil	-1.7	56	68.3	95.0
		143 STORAGE	Main Htg Coil	-0.2	8	67.5	95.0
		144 STORAGE	Main Htg Coil	-0.2	8	67.5	95.0
		145 STORAGE	Main Htg Coil	-0.1	4	67.5	95.0
		146 STORAGE	Main Htg Coil	-0.1	4	67.5	95.0
		149 JAN	Main Htg Coil	-0.1	5	67.5	95.0
		150 OFFICE	Main Htg Coil	-0.6	20	68.3	95.0
		151 STORAGE	Main Htg Coil	-0.2	5	67.5	95.0
		152 STORAGE	Main Htg Coil	-0.3	9	67.5	95.0
		153 STORAGE	Main Htg Coil	-0.3	9	67.5	95.0
		154 STORAGE	Main Htg Coil	-0.3	9	67.5	95.0
		155 STORAGE	Main Htg Coil	-0.1	5	67.5	95.0
		156 SEATING & LOUNGE	Main Htg Coil	-12.3	396	67.3	95.0

Project Name: TRUMBULL COMMUNITY CENTER
 Dataset Name: CC 2ND FL.TRC

System Component Selection Summary

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
		157 STORAGE	Main Htg Coil	-0.2	6	67.5	95.0
		158 COATS	Main Htg Coil	-0.2	5	67.5	95.0
		18 KILN	Main Htg Coil	-9.2	250	62.0	95.0
		20 STORAGE	Main Htg Coil	-0.3	10	67.5	95.0
		23 ADMINISTRATION	Main Htg Coil	-4.9	164	68.3	95.0
		28 DRY FOOD STORAGE	Main Htg Coil	-8.8	271	69.0	98.0
		29 GAMES	Main Htg Coil	-3.9	131	68.1	95.0
		30 CARDS	Main Htg Coil	-15.5	515	67.9	95.0
		32 SC ASST DIRECTOR OFFICE	Main Htg Coil	-10.5	372	69.6	95.0
		33 SC DIRECTOR OFFICE	Main Htg Coil	-5.0	172	69.2	95.0
		35 TRANSPORTATION	Main Htg Coil	-9.9	351	69.6	95.0
		36 CONFERENCE	Main Htg Coil	-9.0	289	67.0	95.0
		43 SOFT CLASS & LIBRARY	Main Htg Coil	-14.4	491	68.7	95.0
		44 DIRECTOR OFFICE	Main Htg Coil	-3.1	107	69.0	95.0
		46 CONFERENCE	Main Htg Coil	-13.0	442	68.7	95.0
		50 MULTI-PURPOSE	Main Htg Coil	-162.2	5,269	67.4	95.0
		55 MENS RR	Main Htg Coil	-0.9	28	67.5	95.0
		56 WOMENS RR	Main Htg Coil	-1.0	32	67.5	95.0
		57 LOUNGE	Main Htg Coil	-3.3	105	67.2	95.0
		60 CAFE/STORE	Main Htg Coil	-7.9	264	68.2	95.0
		61 VESTIBULE	Main Htg Coil	-6.9	219	69.6	98.0
		62 CLASSROOM 1	Main Htg Coil	-19.1	633	67.9	95.0
		63 CLASSROOM 2	Main Htg Coil	-19.5	652	68.1	95.0
		82 LOBBY FOYER	Main Htg Coil	-7.8	273	69.4	95.0
		83 PLATFORM	Main Htg Coil	-0.6	18	67.5	95.0
		84 GALLERY/LOUNGE	Main Htg Coil	-2.7	86	67.2	95.0
		85 CORRIDOR	Main Htg Coil	-8.9	290	67.5	95.0
		86 DANCE STOR	Main Htg Coil	-0.4	14	67.5	95.0
		89 SHARED STORAGE	Main Htg Coil	-0.6	18	67.5	95.0
		90 CLASSROOM 3	Main Htg Coil	-19.1	632	67.9	95.0
		92 VESTIBULE	Main Htg Coil	-13.0	463	69.9	95.0
		95 RECEPTION	Main Htg Coil	-2.4	79	68.3	95.0

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
VRF Floor 2			Return Fan	27,163						
VRF Floor 2			Optional Vent Fan	7,794		100	60.0	68.0		
VRF Floor 2			System Exhaust Fan	8,686						
		013 DANCE & FITNESS	Primary Fan	2,264	7.8	69.1	54.0			
		013 DANCE & FITNESS	Diffuser	2,264	7.8	69.1	54.0	95.0		
		014 CARDIO	Primary Fan	720	8.0	67.2	54.0			
		014 CARDIO	Diffuser	720	8.0	67.2	54.0	95.0		
		016 ARTS & CRAFTS 1	Primary Fan	912	4.7	55.6	54.0			

Project Name: TRUMBULL COMMUNITY CENTER
 Dataset Name: CC 2ND FL.TRC

System Component Selection Summary

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		016 ARTS & CRAFTS 1	Diffuser	912	4.7	55.6	54.0	95.0		
		017 ARTS & CRAFTS 2	Diffuser	932	4.8	54.5	54.0	95.0		
		017 ARTS & CRAFTS 2	Primary Fan	932	4.8	54.5	54.0			
		021 MENS	Primary Fan	28	1.1	0.0	55.0			
		021 MENS	Diffuser	28	1.1	0.0	55.0	95.0		
		022 WOMENS	Diffuser	28	1.1	0.0	55.0	95.0		
		022 WOMENS	Primary Fan	28	1.1	0.0	55.0			
		109 STORAGE	Primary Fan	38	3.0	15.0	55.0			
		109 STORAGE	Diffuser	38	3.0	15.0	55.0	95.0		
		110 STORAGE	Primary Fan	10	0.9	0.0	55.0			
		110 STORAGE	Diffuser	10	0.9	0.0	55.0	95.0		
		117 MEDICAL SERV & SHELTER STOR	Primary Fan	216	1.6	0.0	55.0			
		117 MEDICAL SERV & SHELTER STOR	Diffuser	216	1.6	0.0	55.0	98.0		
		122 HEALTH SCREENING NURSE	Diffuser	58	2.3	30.0	55.0	95.0		
		122 HEALTH SCREENING NURSE	Primary Fan	58	2.3	30.0	55.0			
		124 BATHROOM	Primary Fan	12	1.1	0.0	55.0			
		124 BATHROOM	Diffuser	12	1.1	0.0	55.0	95.0		
		125 CARDIO STORAGE	Primary Fan	34	1.7	0.0	55.0			
		125 CARDIO STORAGE	Diffuser	34	1.7	0.0	55.0	95.0		
		141 STORAGE	Primary Fan	39	2.0	0.0	55.0			
		141 STORAGE	Diffuser	39	2.0	0.0	55.0	98.0		
		142 FOOD PANTRY OFFICE	Primary Fan	56	2.7	26.5	56.0			
		142 FOOD PANTRY OFFICE	Diffuser	56	2.7	26.5	56.0	95.0		
		143 STORAGE	Primary Fan	8	1.1	0.0	55.0			
		143 STORAGE	Diffuser	8	1.1	0.0	55.0	95.0		
		144 STORAGE	Primary Fan	8	1.1	0.0	55.0			
		144 STORAGE	Diffuser	8	1.1	0.0	55.0	95.0		
		145 STORAGE	Primary Fan	4	1.1	0.0	55.0			
		145 STORAGE	Diffuser	4	1.1	0.0	55.0	95.0		
		146 STORAGE	Primary Fan	4	1.1	0.0	55.0			
		146 STORAGE	Diffuser	4	1.1	0.0	55.0	95.0		
		149 JAN	Primary Fan	5	0.9	0.0	55.0			
		149 JAN	Diffuser	5	0.9	0.0	55.0	95.0		
		150 OFFICE	Diffuser	20	2.2	26.5	56.0	95.0		
		150 OFFICE	Primary Fan	20	2.2	26.5	56.0			
		151 STORAGE	Primary Fan	5	0.9	0.0	55.0			
		151 STORAGE	Diffuser	5	0.9	0.0	55.0	95.0		

System Component Selection Summary

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		152 STORAGE	Primary Fan	9	0.9	0.0	55.0			
		152 STORAGE	Diffuser	9	0.9	0.0	55.0	95.0		
		153 STORAGE	Primary Fan	9	0.9	0.0	55.0			
		153 STORAGE	Diffuser	9	0.9	0.0	55.0	95.0		
		154 STORAGE	Diffuser	9	0.9	0.0	55.0	95.0		
		154 STORAGE	Primary Fan	9	0.9	0.0	55.0			
		155 STORAGE	Primary Fan	5	0.9	0.0	55.0			
		155 STORAGE	Diffuser	5	0.9	0.0	55.0	95.0		
		156 SEATING & LOUNGE	Primary Fan	396	1.1	47.1	54.0			
		156 SEATING & LOUNGE	Diffuser	396	1.1	47.1	54.0	95.0		
		157 STORAGE	Primary Fan	6	1.1	0.0	55.0			
		157 STORAGE	Diffuser	6	1.1	0.0	55.0	95.0		
		158 COATS	Primary Fan	5	0.9	41.4	55.0			
		158 COATS	Diffuser	5	0.9	41.4	55.0	95.0		
		18 KILN	Room Exhaust Fan	200						
		18 KILN	Primary Fan	250	20.0	80.0	56.0			
		18 KILN	Diffuser	250	20.0	80.0	56.0	95.0		
		20 STORAGE	Primary Fan	10	1.1	0.0	55.0			
		20 STORAGE	Diffuser	10	1.1	0.0	55.0	95.0		
		23 ADMINISTRATION	Diffuser	164	2.7	26.5	56.0	95.0		
		23 ADMINISTRATION	Primary Fan	164	2.7	26.5	56.0			
		28 DRY FOOD STORAGE	Primary Fan	271	2.5	17.7	56.0			
		28 DRY FOOD STORAGE	Diffuser	271	2.5	17.7	56.0	98.0		
		29 GAMES	Primary Fan	131	7.8	29.7	54.0			
		29 GAMES	Diffuser	131	7.8	29.7	54.0	95.0		
		30 CARDS	Primary Fan	515	6.9	33.9	54.0			
		30 CARDS	Diffuser	515	6.9	33.9	54.0	95.0		
		32 SC ASST DIRECTOR OFFICE	Primary Fan	372	13.5	5.3	56.0			
		32 SC ASST DIRECTOR OFFICE	Diffuser	372	13.5	5.3	56.0	95.0		
		33 SC DIRECTOR OFFICE	Diffuser	172	6.3	11.4	56.0	95.0		
		33 SC DIRECTOR OFFICE	Primary Fan	172	6.3	11.4	56.0			
		35 TRANSPORTATION	Diffuser	351	13.6	5.2	56.0	95.0		
		35 TRANSPORTATION	Primary Fan	351	13.6	5.2	56.0			
		36 CONFERENCE	Primary Fan	289	4.3	53.7	54.0			
		36 CONFERENCE	Diffuser	289	4.3	53.7	54.0	95.0		
		43 SOFT CLASS & LIBRARY	Primary Fan	491	4.9	20.4	55.0			
		43 SOFT CLASS & LIBRARY	Diffuser	491	4.9	20.4	55.0	95.0		

System Component Selection Summary

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		44 DIRECTOR OFFICE	Primary Fan	107	4.9	14.4	56.0			
		44 DIRECTOR OFFICE	Diffuser	107	4.9	14.4	56.0	95.0		
		46 CONFERENCE	Primary Fan	442	11.8	19.7	55.0			
		46 CONFERENCE	Diffuser	442	11.8	19.7	55.0	95.0		
		50 MULTI-PURPOSE	Diffuser	5,269	7.5	46.0	55.0	95.0		
		50 MULTI-PURPOSE	Primary Fan	5,269	7.5	46.0	55.0			
		55 MENS RR	Primary Fan	28	0.9	0.0	55.0			
		55 MENS RR	Diffuser	28	0.9	0.0	55.0	95.0		
		56 WOMENS RR	Primary Fan	32	0.9	0.0	55.0			
		56 WOMENS RR	Diffuser	32	0.9	0.0	55.0	95.0		
		57 LOUNGE	Primary Fan	105	2.8	49.2	55.0			
		57 LOUNGE	Diffuser	105	2.8	49.2	55.0	95.0		
		60 CAFE/STORE	Primary Fan	264	4.4	27.5	54.0			
		60 CAFE/STORE	Diffuser	264	4.4	27.5	54.0	95.0		
		61 VESTIBULE	Primary Fan	219	7.1	6.4	56.0			
		61 VESTIBULE	Diffuser	219	7.1	6.4	56.0	98.0		
		62 CLASSROOM 1	Primary Fan	633	6.9	34.2	55.0			
		62 CLASSROOM 1	Diffuser	633	6.9	34.2	55.0	95.0		
		63 CLASSROOM 2	Diffuser	652	6.5	33.8	55.0	95.0		
		63 CLASSROOM 2	Primary Fan	652	6.5	33.8	55.0			
		82 LOBBY FOYER	Primary Fan	273	4.6	8.2	55.0			
		82 LOBBY FOYER	Diffuser	273	4.6	8.2	55.0	95.0		
		83 PLATFORM	Primary Fan	18	0.9	41.4	55.0			
		83 PLATFORM	Diffuser	18	0.9	41.4	55.0	95.0		
		84 GALLERY/LOUNGE	Primary Fan	86	2.2	49.9	54.0			
		84 GALLERY/LOUNGE	Diffuser	86	2.2	49.9	54.0	95.0		
		85 CORRIDOR	Diffuser	290	0.9	41.4	55.0	95.0		
		85 CORRIDOR	Primary Fan	290	0.9	41.4	55.0			
		86 DANCE STOR	Primary Fan	14	0.9	0.0	55.0			
		86 DANCE STOR	Diffuser	14	0.9	0.0	55.0	95.0		
		89 SHARED STORAGE	Primary Fan	18	1.1	0.0	55.0			
		89 SHARED STORAGE	Diffuser	18	1.1	0.0	55.0	95.0		
		90 CLASSROOM 3	Primary Fan	632	6.9	34.2	55.0			
		90 CLASSROOM 3	Diffuser	632	6.9	34.2	55.0	95.0		
		92 VESTIBULE	Primary Fan	463	21.4	2.1	56.0			
		92 VESTIBULE	Diffuser	463	21.4	2.1	56.0	95.0		
		95 RECEPTION	Primary Fan	79	2.6	25.4	56.0			

System Component Selection Summary

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		95 RECEPTION	Diffuser	79	2.6	25.4	56.0	95.0		

Entered Values

TRACE® 700 version 6.3.2

Project Name: TRUMBULL COMMUNITY CENTER
Dataset Name:
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Cooling Design Period: January thru December
Peak Hour Override: 0
Daylight Savings Period:
Summer Period:

Cooling Methodology: TETD-TA1
Heating Methodology: UATD
Infiltration Methodology: Vary with wind speed
Outside Film Methodology: Vary with wind speed
Terrain Methodology: Center of a large city

Room Circ Rate: Medium
Wall Load To Plenum: YES
Building Orientation: 0 degrees from north

Simulation Hours: Reduced year
Calendar Code: Standard (1978)
Energy Simulation Period: January thru December

Location: Hartford, Connecticut
Summer Design Dry Bulb: 88.00 °F
Summer Design Wet Bulb: 73.00 °F
Winter Design Dry Bulb: 7.00 °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

Force VAV Min => Nominal Ventilation at Design: No
Allow Energy Recovery/Transfer at Design: Yes
Retest Design Peaks: Yes
Calculate Building Block Loads: No

Close ventilation dampers during unoccupied hours: Yes

ENTERED VALUES ROOM BY ROOM

Room Description: 53 KITCHEN

Zone Description: No Zone

System Description: Kitchen MAU

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION
<p>Floor Area: 540 ft² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft²-°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned</p>	<p>People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0</p>	<p>Cooling Heating Vent Type: 100 Percent Outdoor Air 100 Percent Outdoor Air Vent Value: 100.00 % Clg Airflow 100.00 % Htg Airflow Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Neutral, Tight Const. Infil Value: 0.30 air changes/hr 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: 2,000.00 cfm 2,000.00 cfm Aux Supply: To be calculated To be calculated Room Exhaust: 2,000.00 cfm Rm Exh Sched: Trumbull Occ Classroom/Recreational</p>

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F						External Shading
Roof - 1	540 ft ²	0	90	Trumbull	0.0254	0.70										
Wall - 1	557 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 2	244 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Window			Newington Town Hall	66	0.40	0.27	Overhang - None	None	0.00			
Misc Load 1	800.000 W			50 %			Electricity							100	100	0 60.00

ENTERED VALUES ROOM BY ROOM

Room Description: 013 DANCE & FITNESS

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION
Floor Area: 1,455 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: NO Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 25 sq ft/person People Sensible: 400 Btu/h People Latent : 400 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Heating (Area-based) Vent Type: Health club/ aerobics room Health club/ aerobics room Vent Value: 20.00 cfm/person 0.06 cfm/sq ft Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Neutral, Tight Const. Infil Value: 0.30 air changes/hr 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated To be calculated Aux Supply: To be calculated To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Roof - 1	1,455 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	100 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 2	78 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	23	0.40	0.27	Overhang - None	None	0.00		
Wall - 3	78 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	22	0.40	0.27	Overhang - None	None	0.00		
Wall - 4	426 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	120	0.40	0.27	Overhang - None	None	0.00		
Opening - 2				Window			Newington Town Hall	90	0.40	0.27	Overhang - None	None	0.00		

ENTERED VALUES ROOM BY ROOM

Room Description: 016 ARTS & CRAFTS 1

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 700 ft ² Flr-Flr Height: 16.5 ft Plenum Height: 0.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 28 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Art classroom Vent Value: 10.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Art classroom 0.18 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Roof - 1	700 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	374 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	60	0.40	0.27	Overhang - None	None	0.00		
Opening - 2				Window			Newington Town Hall	37	0.40	0.27	Overhang - None	None	0.00		
Misc Load 1	0.220 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

ENTERED VALUES

ROOM BY ROOM

Room Description: 017 ARTS & CRAFTS 2

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 700 ft ² Flr-Flr Height: 16.5 ft Plenum Height: 0.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 28 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Art classroom Vent Value: 10.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Art classroom 0.18 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F						External Shading
Roof - 1	700 ft ²	0	90	Trumbull	0.0254	0.70										
Wall - 1	188 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 2	474 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Window			Newington Town Hall	60	0.40	0.27	Overhang - None	None	0.00			
Opening - 2				Window			Newington Town Hall	35	0.40	0.27	Overhang - None	None	0.00			
Misc Load 1	0.220 W/sq ft			Trumbull lighting			Electricity							100	100	0 60.00

ENTERED VALUES

ROOM BY ROOM

Room Description: 021 MENS

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 155 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	155 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

Room Description: 022 WOMENS

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 155 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	155 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

ENTERED VALUES ROOM BY ROOM

Room Description: 117 MEDICAL SERV & SHELTER STOR

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 350 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Wall - 1	517 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 2	423 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Door			Standard Door	196	0.00	0.20	Overhang - None	None	0.00		
Opening - 2				Window			Newington Town Hall	60	0.40	0.27	Overhang - None	None	0.00		
Floor - 1	350 ft ²			6" HW Conc	0.6588							Constant	68	65	

ENTERED VALUES ROOM BY ROOM

Room Description: 122 HEALTH SCREENING NURSE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 150 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 1 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated To be calculated	Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	150 ft ²	0	90	Trumbull	0.0254	0.70									
Misc Load 1	000 Watts/workstation			Trumbull lighting			Electricity			Overhang - None	None		100	100	0 60.00

Room Description: 124 BATHROOM

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 65 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated	Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	65 ft ²	0	90	Trumbull	0.0254	0.70									

ENTERED VALUES

ROOM BY ROOM

Room Description: 125 CARDIO STORAGE
Zone Description: No Zone
System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 100 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F							
Roof - 1	100 ft ²	0	90	Trumbull	0.0254	0.70					Overhang - None	None					
Wall - 1	160 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90											

Room Description: 141 STORAGE
Zone Description: No Zone
System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 100 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F							
Roof - 1	100 ft ²	0	90	Trumbull	0.0254	0.70					Overhang - None	None					
Wall - 1	169 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90											
Wall - 2	230 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90											

ENTERED VALUES

ROOM BY ROOM

Room Description: 146 STORAGE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 22 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	22 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

Room Description: 149 JAN

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 26 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	26 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

ENTERED VALUES

ROOM BY ROOM

Room Description: 150 OFFICE
Zone Description: No Zone
System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 45 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: General Office Space # of People: 143 sq ft/person People Sensible: 250 Btu/h People Latent : 200 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated To be calculated To be calculated Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	45 ft ²	0	90	Trumbull	0.0254	0.70									
Misc Load 1	1.000 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

Room Description: 151 STORAGE
Zone Description: No Zone
System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 28 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	28 ft ²	0	90	Trumbull	0.0254	0.70									

ENTERED VALUES

ROOM BY ROOM

Room Description: 152 STORAGE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 50 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	50 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

Room Description: 153 STORAGE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 50 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	50 ft ²	0	90	Trumbull	0.0254	0.70				Overhang - None	None					

ENTERED VALUES ROOM BY ROOM

Room Description: 20 STORAGE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 55 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
						Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	55 ft ²	0	90 Trumbull	0.0254	0.70		0		Overhang - None	None					

Room Description: 23 ADMINISTRATION

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 365 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: General Office Space # of People: 143 sq ft/person People Sensible: 250 Btu/h People Latent : 200 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
						Type / Energy Type	Area ft ²	Shade Coef							
Roof - 1	365 ft ²	0	90 Trumbull	0.0254	0.70		0		Overhang - None	None					
Misc Load 1	1.000 W/sq ft		Trumbull lighting			Electricity						100	100	0	60.00

ENTERED VALUES ROOM BY ROOM

Room Description: 32 SC ASST DIRECTOR OFFICE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 165 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: General Office Space # of People: 143 sq ft/person People Sensible: 250 Btu/h People Latent : 200 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	Heating (Area-based) Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	165 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	137 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	64	0.40	0.27	Overhang - None	None	0.00		
Misc Load 1	1.000 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

ENTERED VALUES ROOM BY ROOM

Room Description: 33 SC DIRECTOR OFFICE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 165 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: General Office Space # of People: 143 sq ft/person People Sensible: 250 Btu/h People Latent : 200 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	Heating (Area-based) Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	165 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	52 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	20	0.40	0.27	Overhang - None	None	0.00		
Misc Load 1	1.000 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

ENTERED VALUES ROOM BY ROOM

Room Description: 43 SOFT CLASS & LIBRARY

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 500 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: Library # of People: 50 sq ft/person People Sensible: 245 Btu/h People Latent : 155 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F						External Shading
Roof - 1	500 ft ²	0	90	Trumbull	0.0254	0.70										
Wall - 1	51 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90										
Wall - 2	191 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Window			Newington Town Hall	40	0.40	0.27	Overhang - None	None	0.00			
Wall - 3	250 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Window			Newington Town Hall	40	0.40	0.27	Overhang - None	None	0.00			
Misc Load 1	0.220 W/sq ft			Trumbull lighting			Electricity							100	100	0 60.00

ENTERED VALUES

ROOM BY ROOM

Room Description: 61 VESTIBULE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 185 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Loose Const. Infil Value: 2.50 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Loose Const. 2.50 air changes/hr To be calculated To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Roof - 1	185 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	43 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 2	43 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 3	93 ft ²	350	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	44	0.40	0.27	Overhang - None	None	0.00		

ENTERED VALUES ROOM BY ROOM

Room Description: 62 CLASSROOM 1

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 550 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 28 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Roof - 1	550 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	192 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	60	0.40	0.27	Overhang - None	None	0.00		
Misc Load 1	0.220 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

ENTERED VALUES ROOM BY ROOM

Room Description: 90 CLASSROOM 3

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 550 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 28 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	550 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	185 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Window			Newington Town Hall	60	0.40	0.27	Overhang - None	None	0.00		
Misc Load 1	0.220 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

ENTERED VALUES

ROOM BY ROOM

Room Description: 92 VESTIBULE

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 130 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: NO Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Loose Const. Infil Value: 2.50 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	Heating (Area-based) Office space 0.06 cfm/sq ft Neutral, Loose Const. 2.50 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F					
Roof - 1	130 ft ²	0	90	Trumbull	0.0254	0.70									
Wall - 1	138 ft ²	170	0	Trumbull Community Ctr	0.0486	0.90									
Wall - 2	244 ft ²	260	0	Trumbull Community Ctr	0.0486	0.90									
Opening - 1				Door			Standard Door	46	0.00	0.20	Overhang - None	None	0.00		
Opening - 2				Window			Newington Town Hall	24	0.40	0.27	Overhang - None	None	0.00		
Opening - 3				Window			Newington Town Hall	24	0.40	0.27	Overhang - None	None	0.00		
Opening - 4				Window			Newington Town Hall	40	0.40	0.27	Overhang - None	None	0.00		

ENTERED VALUES ROOM BY ROOM

Room Description: 95 RECEPTION

Zone Description: No Zone

System Description: VRF Floor 2

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 185 ft ² Flr-Flr Height: 12.0 ft Plenum Height: 2.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 1 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person LIGHTS Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	Cooling (Peop-based) Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	Heating (Area-based) Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h·ft ² ·°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h·ft ² ·°F					
Roof - 1	185 ft ²	0	90	Trumbull	0.0254	0.70									
Misc Load 1	1.000 W/sq ft			Trumbull lighting			Electricity						100	100	0 60.00

SYSTEM ENTERED VALUES

VRF Floor 2 - Variable Refrigerant Flow

Coils	Capacity	Schedule	Diversity
Main cooling:	100.0 % of Design Capacity by adjusting a	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	VRF Indoor Unit Ducted - PEFY	0.5 in. wg	0.0 in. wg	0.00052 kW/Cfm-in wg	Available (100%)	90	
Secondary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
System Exhaust	FC Centrifugal var freq drv	0.5 in. wg	0.0 in. wg	0.00035 kW/Cfm-in wg	Available (100%)	90	
Room Exhaust	FC Centrifugal const vol	0.5 in. wg	0.0 in. wg	0.00032 kW/Cfm-in wg	Available (100%)	85	
Optional ventilation	FC Centrifugal var freq drv	1.5 in. wg	NA	0.00035 kW/Cfm-in wg	Newington Ventilation	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					Cycle with occupancy		0.0 ft

Design Air Conditions	Max	Min		
Cooling supply:	56.0 °F	54.0 °F	Supply duct temperature diff: 0.0 °F	Design humidity ratio diff:
Leaving cooling coil:			Reheat Temperature diff: 0.0 °F	Min room relative humidity:
Heating supply:	98.0 °F	95.0 °F		

Optional Ventilation			
Configuration: Dehumidify (priority) or Cool / Heat	Cooling SADB: 60 °F	Cooling SADB hi limit:	Cooling schedule: Available (100%)
Control method: Optimize Supply Air Dew Point	Heating SADB: 68 °F	Cooling SADB low limit:	Heating schedule: Available (100%)
Deck location: Ducted	Cooling SADP:	Cooling SADP hi limit: 60 °F	
Level location:		Cooling SADP low limit: 52 °F	

Stage 1 Exhaust Air Heat Recovery

Type: Total-energy wheel (OA precondition)	Sup-side deck: Ventilation upstream	Exh-side deck: System exhaust	Schedule: Available (100%)
Sensible		Latent	
Clg effectiveness at 100% airflow: 74%	Htg effectiveness at 100% airflow: 74%	Clg effectiveness at 100% airflow: 71%	Htg effectiveness at 100% airflow: 71%
Clg effectiveness at 75% airflow: 79%	HTg effectiveness at 75% airflow: 79%	Clg effectiveness at 75% airflow: 75%	HTg effectiveness at 75% airflow: 75%
Supply Side Options		Exhaust Side Options	
Design air leaving dry bulb:	Economizer lockout: Yes	Heat source:	200 °F
Design air leaving humidity ratio:	Part load control: Modulated	Fan static pressure :	0.0 in. wg
Coolant type: N/A	Static pressure drop: 1.0 in. wg	Fan static pressure drop:	1.0 in. wg
Coolant approach: N/A	Bypass dampers: Yes	Integral heat recovery:	No
		Bypass dampers:	Yes
	Parasitic energy: 0.4 kW	Frost prevention	
		Type:	Off
		Set point:	
		OA threshold:	
		Evap precooler	
		Type:	None
		Default Eff:	
		Dry Eff:	
		Max OA:	
		Min OA:	
		Swovr Oadb:	
		Drift Fraction:	
		Blowdown Rat:	
		Circ Pump:	

SYSTEM ENTERED VALUES

VRF Floor 2 - Variable Refrigerant Flow

Advanced Options

Cooling coil sizing method: Block Cooling coil location: Room Block cooling airflow: Ventilation deck location: Ducted Supply duct location: Other Return air path: DUCTED	Supply fan motor location: Supply Return fan motor location: Return Supply fan configuration: Blow Thru Supply fan sizing: Peak Fan mechanical efficiency : 75% Apply Std62 People Avg: No Std62 Max Vent (Z) Ratio:	Night purge schedule: Off (0%) Optimum start schedule: Off (0%) Optimum stop schedule: Off (0%) CO2-based DCV: Proportional Control System ventilation flag: ASHRAE Std 62.1-2004-2010 w/ Vent Reset												
Reset per worst case room schedule: Off (0%) Max reset: Use system default outside air reset: Yes	Supply air path / duct location: Other Space convective gains to occupied layer: 100 % Underfloor plenum height: Conductive resistance of raised floor: 0.8 hr-ft ² -°F/Btu Upstream nominal leakage fraction: 0 % Downstream constant leakage fraction: 0 % Aux cooling coil losses to plenum: 0 %													
<table border="1"> <thead> <tr> <th></th> <th>Control Method</th> <th>Control Type</th> </tr> </thead> <tbody> <tr> <td>Auxiliary cooling coil</td> <td>Activate After Primary System</td> <td>None</td> </tr> <tr> <td>Auxiliary heating coil</td> <td>Activate After Primary System</td> <td>None</td> </tr> <tr> <td>Auxiliary fan</td> <td>No Fan</td> <td></td> </tr> </tbody> </table>		Control Method	Control Type	Auxiliary cooling coil	Activate After Primary System	None	Auxiliary heating coil	Activate After Primary System	None	Auxiliary fan	No Fan			
	Control Method	Control Type												
Auxiliary cooling coil	Activate After Primary System	None												
Auxiliary heating coil	Activate After Primary System	None												
Auxiliary fan	No Fan													

Coils	Capacity	Schedule	Diversity
Main cooling:	100.0 % of Design Capacity by adjusting a	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	VRF Indoor Unit Ducted - PEFY	0.5 in. wg	0.0 in. wg	0.00052 kW/Cfm-in wg	Available (100%)	90	
Secondary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
System Exhaust	FC Centrifugal var freq drv	0.5 in. wg	0.0 in. wg	0.00035 kW/Cfm-in wg	Available (100%)	90	
Room Exhaust	FC Centrifugal const vol	0.5 in. wg	0.0 in. wg	0.00032 kW/Cfm-in wg	Available (100%)	85	
Optional ventilation	FC Centrifugal var freq drv	1.5 in. wg	NA	0.00035 kW/Cfm-in wg	Newington Ventilation	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					Cycle with occupancy		0.0 ft

SYSTEM ENTERED VALUES

Kitchen MAU - Ventilation and Heating

Design Air Conditions	Max	Min		
Cooling supply:			Supply duct temperature diff: 0.0 °F	Design humidity ratio diff:
Leaving cooling coil:			Reheat Temperature diff: 0.0 °F	Min room relative humidity:
Heating supply:	90.0 °F	70.0 °F		

Advanced Options

Cooling coil sizing method: No Coil	Supply fan motor location: Supply	Night purge schedule: Off (0%)
Cooling coil location: Room	Return fan motor location: Return	Optimum start schedule: Off (0%)
Block cooling airflow:	Supply fan configuration: Draw Thru	Optimum stop schedule: Off (0%)
Ventilation deck location: Return/Outdoor Deck	Supply fan sizing: No Fan	
Supply duct location: Return Air	Fan mechanical efficiency : 75%	CO2-based DCV: None
Return air path: DUCTED	Apply Std62 People Avg: No	System ventilation flag: Sum Room OA Reqs
	Std62 Max Vent (Z) Ratio:	
Reset per worst case room schedule: Off (0%)		Supply air path / duct location: Return Air
Max reset:		Space convective gains to occupied layer: 100 %
Use system default outside air reset: Yes		Underfloor plenum height:
		Conductive resistance of raised floor: 0.8 hr·ft²·°F/Btu
		Upstream nominal leakage fraction: 0 %
		Downstream constant leakage fraction: 0 %
		Aux cooling coil losses to plenum: 0 %
	Control Method	Control Type
Auxiliary cooling coil	Activate After Primary System	None
Auxiliary heating coil	Activate After Primary System	None
Auxiliary fan	No Fan	

Coils	Capacity	Schedule	Diversity
Main cooling:	0.0 % of Design Capacity by adjusting airfl	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
Secondary	FC Centrifugal const vol	1.0 in. wg	NA	0.00032 kW/Cfm-in wg	Available (100%)	85	
Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
System Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
Room Exhaust	FC Centrifugal const vol	0.5 in. wg	0.0 in. wg	0.00032 kW/Cfm-in wg	Available (100%)	85	
Optional ventilation	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					Cycle with occupancy 0.0 ft		

Design Air Conditions	Max	Min		
Cooling supply:			Supply duct temperature diff: 0.0 °F	Design humidity ratio diff:
Leaving cooling coil:			Reheat Temperature diff: 0.0 °F	Min room relative humidity:
Heating supply:	90.0 °F	70.0 °F		

SYSTEM ENTERED VALUES

Kitchen MAU - Ventilation and Heating

Advanced Options

Cooling coil sizing method: No Coil Cooling coil location: Room Block cooling airflow: Ventilation deck location: Return/Outdoor Deck Supply duct location: Return Air Return air path: DUCTED	Supply fan motor location: Supply Return fan motor location: Return Supply fan configuration: Draw Thru Supply fan sizing: No Fan Fan mechanical efficiency : 75% Apply Std62 People Avg: No Std62 Max Vent (Z) Ratio:	Night purge schedule: Off (0%) Optimum start schedule: Off (0%) Optimum stop schedule: Off (0%) CO2-based DCV: None System ventilation flag: Sum Room OA Reqs												
Reset per worst case room schedule: Off (0%) Max reset: Use system default outside air reset: Yes		Supply air path / duct location: Return Air Space convective gains to occupied layer: 100 % Underfloor plenum height: Conductive resistance of raised floor: 0.8 hr-ft ² -°F/Btu Upstream nominal leakage fraction: 0 % Downstream constant leakage fraction: 0 % Aux cooling coil losses to plenum: 0 %												
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Coils	Capacity	Schedule	Diversity
Main cooling:	0.0 % of Design Capacity by adjusting airfl	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
	Primary	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90
	Secondary	FC Centrifugal const vol	1.0 in. wg	NA	0.00032 kW/Cfm-in wg	Available (100%)	85
	Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90
	System Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90
	Room Exhaust	FC Centrifugal const vol	0.5 in. wg	0.0 in. wg	0.00032 kW/Cfm-in wg	Available (100%)	85
	Optional ventilation	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	90
	Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85
	Fan Cycling				Cycle with occupancy	0.0 ft	

ECONOMIC PARAMETERS

Project Name: TRUMBULL COMMUNITY CENTER
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Study Life:	20 Yrs	Income Tax Rate:	0.000 %
Mortgage Life:	20 Yrs	Cost of Capital:	10.000 %
Depreciation Life:	20 Yrs	Property tax rate:	0.000 %
Mortgage Interest Rate:	10.000 %	Insurance Expense rate:	0.000 %
Percent Financed:	0.0 %		
Depreciation Method:	None	<u>Annual Inflation Rate Of</u>	
Declining Balance Taxes:	100.0 %	Maintenance Expense	0.000 %
		Replacement Expense	0.000 %
		Property Taxes	0.000 %
		Insurance Expense	0.000 %

Alt #	First Cost (\$/ton)	First Cost (\$/ft²)	Additional First Cost	Total First Cost	Maintenance Cost (\$/ton)	Maintenance Cost (\$/ft²)	Total Maint. Cost	Total Alt. Cost
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

ENTERED VALUES PLANTS

Cooling Plant: VRF UPPER FLOOR

Sizing method: Peak
 Heat rejection type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Off (0%)

Geothermal Loop

TLoop Ent Bldg:	None	Flow scheme:	Fully mixed
TLoop schedule:	None	Loop fluid glycol:	0%
Flow rate:	100.00% of condenser flow rate	Heat exchanger approach:	0°F
Loop pump	None		
Pump F.L. rate:	0.00ft water		

Equipment tag: VRF UPPER FLOOR

Cooling Type: Trane VRF Heat Recovery 26-36 Ton

VRF UPPER FLOOR

Operating Mode	Capacity	Energy Rate	Pumps	Type	Full Load Consumption
Cooling:		3.7600 Packaged COP	Chilled water:	None	
Heat recovery:	13.5 Mbh/ton	4.1600 Packaged COP	Condenser water:	None	
Tank charging:			Heat recovery or aux cond:	None	
Tank charging & heat recovery:			Free cooling:	None	
Heat Rejection and Thermal Storage			Equipment Options		
Heat rejection type: Included In Compressor Power		Sequencing type: Single	Free clg type: None		Energy source: BOILER
Thermal storage type: None		Demand lim priority:	Fluid cooler type: None		Reject cond heat: Heating plant
T-storage capacity: 0 ton-hr		Dsn chilled water delta T: 10 °F	Load shed econ: no		Cond. heat to plant: BOILER
T-storage schedule: Storage		Dsn cond water delta T: 0 °F	Evap precooling: no		Equip schedule: Available (100%)
			Hot gas reheat No		
Reset Based On		Reset Curve	Max Reset TD		
Chilled Water:None		None	0°F		
Condenser Water:None		None	0°F		

Package energy breakout	Primary fan	Secondary fan	Exhaust fan	Optional ventilation fan	Condenser fan
Included in full load energy rate	No	No	No	No	Yes

Apply same fans for heat recovery energy breakout: No

ENTERED VALUES PLANTS

Heating Plant: BOILER

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

BOILER

Heating capacity: 125.0 %Plant Capacity
 Energy rate: 94.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 30.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Heating Plant: DHW Boiler

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

DHW Boiler

Heating capacity: 500.0 Mbh
 Energy rate: 94.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 0.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Heating Plant: MAU KITCHEN

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: 90.1-10 Min Gas Furnace <225 MBh

MAU KITCHEN

Heating capacity:
 Energy rate: 80.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Equipment schedule: Available (100%)
 Demand limiting priority:

ENTERED VALUES PLANTS

Base Utilities

Plant assigned to: Stand-alone Type: IT Load	Description: IT Load Demand limiting priority:	Schedule: Newington General IT Load Hourly demand: 10.00 kW
Plant assigned to: Stand-alone Type: Exterior Lights	Description: Exterior Lights Demand limiting priority:	Schedule: night operation Hourly demand: 2.00 kW
Plant assigned to: Stand-alone Type: Elevator	Description: Elevator Demand limiting priority:	Schedule: Elevator Hourly demand: 0.50 kW
Plant assigned to: Stand-alone Type: Rooftop Exhaust Fan	Description: Rooftop Exhaust Fan Demand limiting priority:	Schedule: Newington Ventilation Hourly demand: 4.00 kW
Plant assigned to: DHW Boiler Type: Domestic Hot Water Load	Description: Domestic Hot Water Load Demand limiting priority:	Schedule: Trumbull DHW Schedule Hourly demand: 30.00 Mbh

Miscellaneous accessories

Plant assigned to: BOILER Equipment tag: All	Type: None Description:	Schedule: Off (0%) Energy: 0.00 kW
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Location	TRUMBULL, CT	
Building owner		
Program user		
Company		
Comments		
By		
Dataset name		
Calculation time	11:42 AM on 09/22/2017	
TRACE® 700 version	6.3.2	
Location	Hartford, Connecticut	
Latitude	41.0	deg
Longitude	72.0	deg
Time Zone	5	
Elevation	15	ft
Barometric pressure	29.9	in. Hg
Air density	0.0760	lb/cu ft
Air specific heat	0.2444	Btu/lb·°F
Density-specific heat product	1.1147	Btu/h·cfm·°F
Latent heat factor	4,906.9	Btu·min/h·cu ft
Enthalpy factor	4.5604	lb·min/hr·cu ft
Summer design dry bulb	88.0	°F
Summer design wet bulb	73.0	°F
Winter design dry bulb	7.0	°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	



Energy Cost Budget / PRM Summary

1ST FLOOR SPACES

Project Name: TRUMBULL COMMUNITY CENTER	Date: September 22, 2017
City: TRUMBULL, CT	Weather Data: Hartford, Connecticut

Note: The percentage displayed for the "Proposed/ Base %" column of the base case is actually the percentage of the total energy consumption.

* Denotes the base alternative for the ECB study.

* Alt-1 TRUMBULL COMMUNITY				
		Energy 10 ⁶ Btu/yr	Proposed / Base %	Peak kBtuh
Lighting - Conditioned	Electricity	17.9	10	10
Space Heating	Electricity	14.5	8	6
	Gas	106.0	62	33
Space Cooling	Electricity	12.2	7	6
Fans - Conditioned	Electricity	10.4	6	6
Receptacles - Conditioned	Electricity	10.9	6	5
Total Building Consumption		172.0		

* Alt-1 TRUMBULL COMMUNITY		
Total	Number of hours heating load not met	0
	Number of hours cooling load not met	0

* Alt-1 TRUMBULL COMMUNITY		
	Energy 10 ⁶ Btu/yr	Cost/yr \$/yr
Electricity	66.0	3,093
Gas	106.0	1,378
Total	172	4,471

MONTHLY ENERGY CONSUMPTION

----- Monthly Energy Consumption -----

Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Alternative: 1 TRUMBULL COMMUNITY CENTER													
Electric													
On-Pk Cons. (kWh)	2,144	1,944	1,953	1,431	1,375	1,272	1,285	1,338	1,255	1,552	1,734	2,044	19,328
On-Pk Demand (kW)	7	7	7	6	7	7	8	7	7	6	7	7	8
Gas													
On-Pk Cons. (therms)	95	85	80	93	86	78	100	79	92	86	86	102	1,060
On-Pk Demand (therms/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0

Energy Consumption	
Building	36,432 Btu/(ft2-year)
Source	65,565 Btu/(ft2-year)
Floor Area	4,721 ft2

Environmental Impact Analysis	
CO2	13,353 lbm/year
SO2	45 gm/year
NOX	16 gm/year

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Lights													
Electric (kWh)	440.4	398.2	464.4	422.3	452.4	446.3	428.4	464.4	422.3	452.4	434.3	428.4	5,254.1
Peak (kW)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Misc. Ld													
Electric (kWh)	267.9	242.2	282.2	257.0	275.1	271.3	260.8	282.2	257.0	275.1	264.1	260.8	3,195.5
Peak (kW)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Cooling Coil Condensate													
Recoverable Water (1000gal)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.4
Bsu 1: Domestic Hot Water Load													
Proc. Hot Water (therms)	86.2	77.7	73.2	85.5	79.7	72.5	92.7	73.2	85.5	79.7	79.0	92.7	977.6
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Cpl 1: VRF LOWER FLOOR [Sum of dsn coil capacities=4.43 tons]													
VRF LOWER FLOOR [Clg Nominal Capacity/F.L.Rate=4.43 tons / 3.97 kW] (Cooling Equipment - Cooling Mode)													
Electric (kWh)	0.0	0.0	0.0	-0.2	0.8	28.1	89.0	57.8	11.7	-0.1	0.0	0.0	187.2
Peak (kW)	0.0	0.0	0.0	0.0	0.1	0.4	1.3	1.0	0.5	0.0	0.0	0.0	1.3
VRF LOWER FLOOR [Htg Nominal Capacity/F.L.Rate=59.85 mbh / 4.08 kW] (Cooling Equipment - Heating Mode)													
Electric (kWh)	698.5	630.8	483.6	187.7	122.5	14.6	6.6	15.2	58.5	230.4	375.1	635.5	3,458.8
Peak (kW)	1.6	1.6	1.4	1.0	0.6	0.3	0.1	0.2	0.6	0.8	1.2	1.5	1.6
VRF LOWER FLOOR (Cooling Equipment - Heat Recovered From Condenser Loop)													
Energy Recovered (therms)	0.0	0.0	0.0	0.2	1.2	1.9	1.8	2.5	1.8	1.2	0.0	0.0	10.6
Peak (therms/Hr)	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
Cntl panel & interlocks - 0.5 kW [F.L.Rate=0.50 kW] (Misc Accessory Equipment)													
Electric (kWh)	372.0	336.0	372.0	360.0	343.0	261.0	252.0	258.5	298.0	372.0	360.0	372.0	3,956.5
Peak (kW)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Heat pump defrost cycle [F.L.Rate=1.42 kW] (Misc Accessory Equipment)													
Electric (kWh)	52.8	47.7	37.4	0.0	0.0	0.0	0.0	0.0	0.0	11.0	23.4	44.0	216.2
Peak (kW)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1

Hpl 1: BOILER [Sum of dsn coil capacities=83.73 mbh]

Hpl 2: DHW BOILER [Sum of dsn coil capacities=30.00 mbh]

EQUIPMENT ENERGY CONSUMPTION

Alternative: 1 TRUMBULL COMMUNITY CENTER

----- Monthly Consumption -----

Equipment - Utility	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Hpl 2: DHW BOILER [Sum of dsn coil capacities=30.00 mbh]													
DHW BOILER [Nominal Capacity/F.L.Rate=37.50 mbh / 0.40 Therms] (Heating Equipment)													
Gas (therms)	94.7	85.3	80.0	92.5	85.9	77.8	99.5	78.5	92.0	86.3	86.1	101.6	1,060.3
Peak (therms/Hr)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Sys 1: VRF Floor 1													
Total-energy wheel (OA precondition) [Stage 1 Energy Recovery]													
Energy Recovered (therms)	18.3	17.4	15.7	2.7	0.7	0.0	0.0	0.0	0.0	3.0	7.7	16.5	82.0
Peak (therms/Hr)	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2
Total-energy wheel (OA precondition) [Stage 1 Parasitics]													
Electric (kWh)	75.6	68.4	82.8	40.0	17.6	72.0	72.0	82.8	56.0	35.2	75.6	72.0	750.0
Peak (kW)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
VRF Indoor Unit Ducted - PEFY [DsnAirflow/F.L.Rate=2,326 cfm / 0.67 kW] (Main Clg Fan)													
Electric (kWh)	152.4	138.0	135.6	98.9	95.1	90.3	94.5	90.4	81.9	109.3	121.8	147.5	1,355.7
Peak (kW)	0.4	0.4	0.3	0.3	0.4	0.5	0.5	0.5	0.4	0.3	0.3	0.4	0.5
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=1,161 cfm / 0.68 kW] (System Exhaust Fan)													
Electric (kWh)	43.5	45.8	50.3	34.1	40.2	49.8	45.2	44.4	35.8	33.8	39.7	44.9	507.3
Peak (kW)	0.3	0.3	0.3	0.2	0.7	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.7
FC Centrifugal var freq drv [DsnAirflow/F.L.Rate=982.5 cfm / 0.96 kW] (Opt. Ventilation Fan)													
Electric (kWh)	41.1	37.2	44.4	31.5	28.5	39.1	36.8	42.5	33.8	32.7	40.3	39.1	446.8
Peak (kW)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

System Component Selection Summary

Alternative 1

System Description: VRF Floor 1

System Type: Variable Refrigerant Flow

Number of Zones: 16

Number of Rooms: 16

Component	Sizing Method	Location	Quantity
Cooling			
Main Clg Coil	Block	Room	16
Primary Clg Fan	Peak	Room	16
Optional Vent Clg Coil	Block	System	1
Heating			
Main Htg Coil	Peak	Room	16
Optional Vent Htg Coil	Peak	System	1
Miscellaneous			
System Exhaust Fan	Vent+Inf-RmExh	System	1
Return Fan	Return Airflow	System	1
Optional Vent Fan	Ventilation Airflow	System	1

Coil Location			Cooling Coil Selection											
System	Zone	Room	Component	Time Of Peak Mo/Hr	Total Capacity		Sensible Capacity MBh	Airflow At Coil Peak cfm	Enter DB/ WB/ HR			Leave DB/ WB/ HR		
					ton	MBh			°F	°F	gr/lb	°F	°F	gr/lb
VRF Floor 1			Optional Vent Clg Coil	7/15	1.7	19.9	13.6	574	75.1	64.3	73.0	53.9	52.7	57.4
		067 LOBBY/FOYER	Main Clg Coil	7/11	1.2	13.8	11.3	657	72.7	61.3	63.1	56.0	54.1	59.6
		073 POOL STORAGE	Main Clg Coil	7/17	0.1	1.2	1.2	54	73.2	61.7	64.2	56.0	54.5	60.9
		074 POOL MECHANICAL	Main Clg Coil	7/17	0.2	2.4	2.4	117	71.9	61.4	64.5	56.0	54.4	60.8
		108 CHEM & ELEC	Main Clg Coil	7/17	0.2	1.8	1.8	88	73.8	61.8	63.4	56.0	54.7	62.0
		113 FAMILY LOCKER	Main Clg Coil	7/22	0.7	8.9	2.6	281	74.2	64.9	77.5	56.0	54.6	61.5
		119 LOCKER CORRIDOR	Main Clg Coil	7/15	0.0	0.5	0.3	37	69.7	60.7	64.9	56.0	55.5	64.9
		127 LIFEGUARD OFFICE	Main Clg Coil	7/17	0.3	3.7	3.2	175	73.1	61.6	63.6	56.0	54.4	60.7
		128 WOMENS LOCKER	Main Clg Coil	7/22	0.5	5.8	1.8	204	74.2	64.9	77.5	56.0	55.8	66.3
		129 MENS LOCKER	Main Clg Coil	7/22	0.5	5.8	1.8	204	74.2	64.9	77.5	56.0	55.8	66.3
		131 PARKS & REC OPEN OFFICE	Main Clg Coil	7/14	0.1	0.6	0.4	30	70.1	60.8	64.7	54.0	54.0	62.2
		132 PARKS & REC OPEN OFFICE	Main Clg Coil	7/15	0.0	0.2	0.1	17	69.7	60.7	64.9	56.0	55.5	64.9
		134 STORAGE	Main Clg Coil	12/10	0.0	0.0	0.0	1	72.3	57.9	48.9	56.0	51.3	48.9
		137 STORAGE	Main Clg Coil	12/10	0.0	0.0	0.0	1	72.3	57.9	48.9	56.0	51.3	48.9
		138 VESTIBULE	Main Clg Coil	7/10	0.7	8.4	6.8	314	73.9	61.7	62.9	54.7	52.5	55.5
		139 MECHANICAL	Main Clg Coil	7/17	0.2	2.0	2.0	96	73.4	61.8	63.9	56.0	54.6	61.3
		140 GYM STORAGE	Main Clg Coil	9/14	0.1	1.0	0.9	51	72.8	61.4	63.1	56.0	54.7	61.9

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
VRF Floor 1			Optional Vent Htg Coil	-10.3	574	51.9	68.0
		067 LOBBY/FOYER	Main Htg Coil	-19.2	657	68.8	95.0

System Component Selection Summary

Coil Location			Heating Coil Selection				
System	Zone	Room	Component	Total Capacity MBh	Airflow cfm	Entering Dry Bulb °F	Leaving Dry Bulb °F
		073 POOL STORAGE	Main Htg Coil	-1.8	54	68.6	98.0
		074 POOL MECHANICAL	Main Htg Coil	-3.9	117	68.3	98.0
		108 CHEM & ELEC	Main Htg Coil	-2.8	88	69.4	98.0
		113 FAMILY LOCKER	Main Htg Coil	-9.2	281	65.6	95.0
		119 LOCKER CORRIDOR	Main Htg Coil	-1.3	37	66.7	98.0
		127 LIFEGUARD OFFICE	Main Htg Coil	-5.7	175	68.7	98.0
		128 WOMENS LOCKER	Main Htg Coil	-6.7	204	65.6	95.0
		129 MENS LOCKER	Main Htg Coil	-6.7	204	65.6	95.0
		131 PARKS & REC OPEN OFFICE	Main Htg Coil	-0.9	30	67.0	95.0
		132 PARKS & REC OPEN OFFICE	Main Htg Coil	-0.6	17	66.7	98.0
		134 STORAGE	Main Htg Coil	0.0	1	66.7	95.0
		137 STORAGE	Main Htg Coil	0.0	1	66.7	95.0
		138 VESTIBULE	Main Htg Coil	-9.8	314	69.8	97.7
		139 MECHANICAL	Main Htg Coil	-3.1	96	68.9	98.0
		140 GYM STORAGE	Main Htg Coil	-1.7	51	68.1	98.0

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air	SADB		Cig VAV	Htg VAV
				cfm	Ach/hr	%	Cig °F	Htg °F	Minimum cfm	Maximum cfm
VRF Floor 1			System Exhaust Fan	1,162						
VRF Floor 1			Optional Vent Fan	983		100	60.0	68.0		
VRF Floor 1			Return Fan	3,488						
		067 LOBBY/FOYER	Diffuser	657	2.6	18.3	56.0	95.0		
		067 LOBBY/FOYER	Primary Fan	657	2.6	18.3	56.0			
		073 POOL STORAGE	Primary Fan	54	0.9	0.0	56.0			
		073 POOL STORAGE	Diffuser	54	0.9	0.0	56.0	98.0		
		074 POOL MECHANICAL	Diffuser	117	1.5	0.0	56.0	98.0		
		074 POOL MECHANICAL	Primary Fan	117	1.5	0.0	56.0			
		108 CHEM & ELEC	Diffuser	88	2.2	0.0	56.0	98.0		
		108 CHEM & ELEC	Primary Fan	88	2.2	0.0	56.0			
		113 FAMILY LOCKER	Primary Fan	281	2.0	100	56.0			
		113 FAMILY LOCKER	Diffuser	281	2.0	100	56.0	95.0		
		119 LOCKER CORRIDOR	Primary Fan	37	0.5	61.2	56.0			
		119 LOCKER CORRIDOR	Diffuser	37	0.5	61.2	56.0	98.0		
		127 LIFEGUARD OFFICE	Diffuser	175	1.3	18.3	56.0	98.0		
		127 LIFEGUARD OFFICE	Primary Fan	175	1.3	18.3	56.0			
		128 WOMENS LOCKER	Diffuser	204	2.0	100	56.0	95.0		
		128 WOMENS LOCKER	Primary Fan	204	2.0	100	56.0			
		129 MENS LOCKER	Diffuser	204	2.0	100	56.0	95.0		
		129 MENS LOCKER	Primary Fan	204	2.0	100	56.0			

System Component Selection Summary

Component Location			Miscellaneous Component Selection							
System	Zone	Room	Component	Design Airflow		Outside Air %	SADB		Clg VAV Minimum cfm	Htg VAV Maximum cfm
				cfm	Ach/hr		Clg °F	Htg °F		
		131 PARKS & REC OPEN OFFICE	Primary Fan	30	1.0	53.5	54.0			
		131 PARKS & REC OPEN OFFICE	Diffuser	30	1.0	53.5	54.0	95.0		
		132 PARKS & REC OPEN OFFICE	Diffuser	17	0.5	61.2	56.0	98.0		
		132 PARKS & REC OPEN OFFICE	Primary Fan	17	0.5	61.2	56.0			
		134 STORAGE	Diffuser	1	0.6	0.0	56.0	95.0		
		134 STORAGE	Primary Fan	1	0.6	0.0	56.0			
		137 STORAGE	Primary Fan	1	0.6	0.0	56.0			
		137 STORAGE	Diffuser	1	0.6	0.0	56.0	95.0		
		138 VESTIBULE	Diffuser	314	7.7	4.2	55.0	98.0		
		138 VESTIBULE	Primary Fan	314	7.7	4.2	55.0			
		139 MECHANICAL	Diffuser	96	1.2	0.0	56.0	98.0		
		139 MECHANICAL	Primary Fan	96	1.2	0.0	56.0			
		140 GYM STORAGE	Diffuser	51	0.6	29.3	56.0	98.0		
		140 GYM STORAGE	Primary Fan	51	0.6	29.3	56.0			

Entered Values

TRACE® 700 version 6.3.2

Project Name: TRUMBULL COMMUNITY CENTER
Dataset Name:
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Cooling Design Period: January thru December
Peak Hour Override: 0
Daylight Savings Period:
Summer Period:

Cooling Methodology: TETD-TA1
Heating Methodology: UATD
Infiltration Methodology: Vary with wind speed
Outside Film Methodology: Vary with wind speed
Terrain Methodology: Center of a large city

Room Circ Rate: Medium
Wall Load To Plenum: YES
Building Orientation: 0 degrees from north

Simulation Hours: Reduced year
Calendar Code: Standard (1978)
Energy Simulation Period: January thru December

Location: Hartford, Connecticut
Summer Design Dry Bulb: 88.00 °F
Summer Design Wet Bulb: 73.00 °F
Winter Design Dry Bulb: 7.00 °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

Force VAV Min => Nominal Ventilation at Design: No
Allow Energy Recovery/Transfer at Design: Yes
Retest Design Peaks: Yes
Calculate Building Block Loads: No

Close ventilation dampers during unoccupied hours: Yes

ENTERED VALUES ROOM BY ROOM

Room Description: 067 LOBBY/FOYER

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 1,100 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Fir: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 6 People People Sensible: 245 Btu/h People Latent : 155 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Tight Const. Infil Value: 0.30 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Tight Const. 0.30 air changes/hr To be calculated To be calculated To be calculated To be calculated Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Tilt	Const Type / Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass				Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
							Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F						External Shading
Wall - 2	511 ft ²	80	0	Trumbull Community Ctr	0.0486	0.90										
Opening - 1				Door			Standard Door	26	0.00	0.20	Overhang - None	None	0.00			
Opening - 2				Window			Newington Town Hall	120	0.40	0.27	Overhang - None	None	0.00			
Misc Load 1	1,200.000 W			Trumbull lighting			Electricity							100	100	0 60.00
Floor - 1	1,100 ft ²			6" HW Conc	0.6588								Constant	70	65	

ENTERED VALUES ROOM BY ROOM

Room Description: 073 POOL STORAGE

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 145 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h-ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
									U Value Btu/h-ft ² ·°F	U Value Btu/h-ft ² ·°F								
Wall - 1	277 ft ²	260	0 Trumbull Community Ctr	0.0486	0.90													
Floor - 1																		12 0.50
Floor - 2	145 ft ²		1	0.6588									Constant	68	65			

Room Description: 074 POOL MECHANICAL

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 400 ft ² Flr-Flr Height: 14.0 ft Plenum Height: 2.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h-ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef	
									U Value Btu/h-ft ² ·°F	U Value Btu/h-ft ² ·°F								
Wall - 1	434 ft ²	260	0 Trumbull Community Ctr	0.0486	0.90													
Floor - 1																		31 0.50
Floor - 2	400 ft ²		1	0.6588									Constant	68	65			

ENTERED VALUES

ROOM BY ROOM

Room Description: 119 LOCKER CORRIDOR

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 300 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Pct Frc/ Loss Coef
									U Value Btu/h·ft ² ·°F	U Value Btu/h·ft ² ·°F							
Floor - 1	300 ft ²		6" HW Conc	0.6588										Constant	70	65	

Room Description: 127 LIFEGUARD OFFICE

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 345 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 1 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Pct Frc/ Loss Coef
									U Value Btu/h·ft ² ·°F	U Value Btu/h·ft ² ·°F							
Wall - 1	327 ft ²	170	0 Trumbull Community Ctr	0.0486	0.90												
Wall - 2	665 ft ²	260	0 Trumbull Community Ctr	0.0486	0.90												
Misc Load 1	000 Watts/workstation		Trumbull lighting			Electricity								100	100	0	60.00
Floor - 1																41	0.50
Floor - 2	345 ft ²		1	0.6588									Constant	68	65		

ENTERED VALUES ROOM BY ROOM

Room Description: 128 WOMENS LOCKER
Zone Description: No Zone
System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 435 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 5 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 0.00 cfm/person Vent Schedule: Trumbull VENT Pool Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.38 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Ref	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Pct Frc/ Loss Coef
									U Value Btu/h·ft ² ·°F	U Value Btu/h·ft ² ·°F							
Floor - 1	435 ft ²		6" HW Conc	0.6588									Constant	70	65		

Room Description: 129 MENS LOCKER
Zone Description: No Zone
System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 435 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4" LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 5 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 0.00 cfm/person Vent Schedule: Trumbull VENT Pool Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.38 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Area ft ²	Shade Coef	Glass		External Shading	Internal Shading	Adj Temp/ Grnd Ref	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Pct Frc/ Loss Coef
									U Value Btu/h·ft ² ·°F	U Value Btu/h·ft ² ·°F							
Floor - 1	435 ft ²		6" HW Conc	0.6588									Constant	70	65		

ENTERED VALUES

ROOM BY ROOM

Room Description: 131 PARKS & REC OPEN OFFICE

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 135 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: General Office Space # of People: 143 sq ft/person People Sensible: 250 Btu/h People Latent : 200 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated To be calculated To be calculated Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Shade Coef	U Value Btu/h·ft ² ·°F	Internal Shading							
Misc Load 1	1.000 W/sq ft		Trumbull lighting			Electricity										0 60.00
Floor - 1	135 ft ²		6* HW Conc	0.6588								Constant	70	65		

Room Description: 132 PARKS & REC OPEN OFFICE

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 135 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² ·°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Office Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Office Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%)	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h·ft ² ·°F	Alpha	Type / Energy Type	Glass			External Shading	Internal Shading	Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
							Shade Coef	U Value Btu/h·ft ² ·°F	Internal Shading							
Floor - 1	135 ft ²		6* HW Conc	0.6588								Constant	70	65		

ENTERED VALUES

ROOM BY ROOM

Room Description: 138 VESTIBULE

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 175 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 10.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Classroom/Recreational Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Trumbull VENT Classroom/Recreational Infil Type: Neutral, Loose Const. Infil Value: 2.50 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft Neutral, Loose Const. 2.50 air changes/hr To be calculated To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass					Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
						Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F	External Shading					
Wall - 1	404 ft ²	80	0 Trumbull Community Ctr	0.0486	0.90										
Opening - 1			Window			Newington Town Hall	81	0.40	0.27	Overhang - None	None	0.00			
Floor - 1	175 ft ²		6* HW Conc	0.6588								Constant	70	65	

Room Description: 139 MECHANICAL

Zone Description: No Zone

System Description: VRF Floor 1

GENERAL INFORMATION	PEOPLE	AIRFLOW INFORMATION	
Floor Area: 200 ft ² Flr-Flr Height: 24.0 ft Plenum Height: 0.0 ft Height Above Flr: Slab Cnstr Type: 4* LW Concrete Room Mass: Time delay based on actual mass Ceiling R-Value: 1.786 hr-ft ² -°F/Btu Is There Carpet?: YES Design Clg DB / Drift Point: 74.0 °F / 74.0 °F Design Htg DB / Drift Point: 70.0 °F / 70.0 °F Design Relative Humidity: 50 % Moisture Capacitance: Medium Clg Tstat: None Htg Tstat: None Thermostat Location:Room Floor Multiplier: 1 Humidistat Location:Room Room Multiplier: 1 CO2 Sensor Location:Room Room Type:Conditioned	People Type: None # of People: 0 People People Sensible: 250 Btu/h People Latent : 250 Btu/h People Schedule: Trumbull Occ Classroom/Recreational Workstation: 1.0 workstation/person Lighting Type: Recessed fluorescent, not vented, 80% load to space Fixture Type: RECFL-NV % Load to RA: 20 % Lighting Schedule: Trumbull lighting Storage Lighting Amount: 0.6 W/sq ft Ballast Factor: 1.0	<u>Cooling (Peop-based)</u> Vent Type: Office space Vent Value: 5.00 cfm/person Vent Schedule: Off (0%) Infil Type: None Infil Value: 0.00 air changes/hr Infil Schedule: Available (100%) Vav Airflow: Vav Sched: Available (100%) Supply: To be calculated Aux Supply: To be calculated Room Exhaust: Rm Exh Sched: Available (100%) Std 62.1-2004 Cooling Ez: Ceiling clg supply, ceiling return 100 % Heating Ez: Ceiling supply > Trm+15°F(8°C), ceiling return 80 % Er: Default based on system type	<u>Heating (Area-based)</u> Office space 0.06 cfm/sq ft None 0.00 air changes/hr To be calculated To be calculated

Description	Area/ Amount	Dir	Const Type / Tilt Schedule	U Value Btu/h-ft ² -°F	Alpha	Glass					Adj Temp/ Grnd Refl	Pct Sen/ Cool Tmp	Pct Rm/ Heat Tmp	Pct Ret/ Perm Len	Rad Frc/ Loss Coef
						Type / Energy Type	Area ft ²	Shade Coef	U Value Btu/h-ft ² -°F	External Shading					
Wall - 1	418 ft ²	260	0 Trumbull Community Ctr	0.0486	0.90										
Wall - 2	343 ft ²	170	0 Trumbull Community Ctr	0.0486	0.90										
Floor - 1	200 ft ²		6* HW Conc	0.6588								Constant	68	65	

SYSTEM ENTERED VALUES

VRF Floor 1 - Variable Refrigerant Flow

Coils	Capacity	Schedule	Diversity
Main cooling:	100.0 % of Design Capacity by adjusting a	Available (100%)	People 100%
Aux cooling:		Available (100%)	Lights 100%
Main heating:	100.0 % of Design Capacity	Available (100%)	Misc loads 100%
Aux heating:		Available (100%)	
Preheat:	100.0% of Design Capacity	Available (100%)	
Reheat:	100.0 % of Design Capacity	Available (100%)	
Humidification:	100.0 % of Design Capacity	Available (100%)	

Fans	Type	Static Press.	90.1 SP Adj	Full Load Energy Rate	Schedule	Efficiency	Priority
Primary	VRF Indoor Unit Ducted - PEFY	0.5 in. wg	0.0 in. wg	0.00052 kW/Cfm-in wg	Available (100%)	90	
Secondary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Return	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	90	
System Exhaust	FC Centrifugal var freq drv	0.5 in. wg	0.0 in. wg	0.00035 kW/Cfm-in wg	Available (100%)	90	
Room Exhaust	None	0.0 in. wg	0.0 in. wg	0.00000 kW	Available (100%)	85	
Optional ventilation	FC Centrifugal var freq drv	1.5 in. wg	NA	0.00035 kW/Cfm-in wg	Newington Ventilation	90	
Auxiliary	None	0.0 in. wg	NA	0.00000 kW	Available (100%)	85	
Fan Cycling					Cycle with occupancy 0.0 ft		

ENTERED VALUES PLANTS

Cooling Plant: VRF LOWER FLOOR

Sizing method: Peak
 Heat rejection type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Off (0%)

Geothermal Loop

TLoop Ent Bldg:	None	Flow scheme:	Fully mixed
TLoop schedule:	None	Loop fluid glycol:	0%
Flow rate:	100.00% of condenser flow rate	Heat exchanger approach:	0°F
Loop pump:	None		
Pump F.L. rate:	0.00ft water		

Equipment tag: VRF LOWER FLOOR

Cooling Type: Trane VRF Heat Recovery 14-24 Ton

VRF LOWER FLOOR

Operating Mode	Capacity	Energy Rate	Pumps	Type	Full Load Consumption
Cooling:		3.9300 Packaged COP	Chilled water:	None	
Heat recovery:	13.5 Mbh/ton	4.3000 Packaged COP	Condenser water:	None	
Tank charging:			Heat recovery or aux cond:	None	
Tank charging & heat recovery:			Free cooling:	None	
Heat Rejection and Thermal Storage			Equipment Options		
Heat rejection type:	Included In Compressor Power	Sequencing type:	Single	Free clg type:	None
Thermal storage type:	None	Demand lim priority:		Fluid cooler type:	None
T-storage capacity:	0 ton-hr	Dsn chilled water delta T:	10 °F	Load shed econ:	no
T-storage schedule:	Storage	Dsn cond water delta T:	0 °F	Evap precooling:	no
				Hot gas reheat:	No
Reset Based On	Reset Curve	Max Reset TD			
Chilled Water:	None	0°F			
Condenser Water:	None	0°F			

Package energy breakout	Primary fan	Secondary fan	Exhaust fan	Optional ventilation fan	Condenser fan
Included in full load energy rate	No	No	No	No	Yes

Apply same fans for heat recovery energy breakout: No

ENTERED VALUES PLANTS

Heating Plant: BOILER

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

BOILER

Heating capacity: 125.0 %Plant Capacity
 Energy rate: 94.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 30.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Heating Plant: DHW BOILER

Sizing method: Peak
 Cogeneration type: None
 Secondary distribution pump: None
 Secondary pump consumption: 0 Ft Water
 Thermal storage type: None
 Thermal storage capacity: 0 ton-hr

Heating Type: ModCon 500

DHW BOILER

Heating capacity: 125.0 %Plant Capacity
 Energy rate: 94.00 % Effic.

Thermal storage type: None
 Thermal storage capacity: 0 ton-hr
 Thermal storage schedule: Storage

Hot water pump type: Var vol cnd water pump
 Hot water pump cons: 0.00 Ft Water

Equipment schedule: Available (100%)
 Demand limiting priority:

Base Utilities

Plant assigned to: DHW BOILER
 Type: Domestic Hot Water Load

Description: Domestic Hot Water Load
 Demand limiting priority:

Schedule: Trumbull DHW Schedule
 Hourly demand: 30.00 Mbh

Miscellaneous accessories

Plant assigned to: VRF LOWER FLOOR
 Equipment tag: All

Type: None
 Description:

Schedule: Off (0%)
 Energy: 0.00 kW

ECONOMIC PARAMETERS

Project Name: TRUMBULL COMMUNITY CENTER
Location: TRUMBULL, CT
Building Owner:
Program User:
Company:
Comments:

Study Life:	20 Yrs	Income Tax Rate:	0.000 %
Mortgage Life:	20 Yrs	Cost of Capital:	10.000 %
Depreciation Life:	20 Yrs	Property tax rate:	0.000 %
Mortgage Interest Rate:	10.000 %	Insurance Expense rate:	0.000 %
Percent Financed:	0.0 %		
Depreciation Method:	None	<u>Annual Inflation Rate Of</u>	
Declining Balance Taxes:	100.0 %	Maintenance Expense	0.000 %
		Replacement Expense	0.000 %
		Property Taxes	0.000 %
		Insurance Expense	0.000 %

Alt #	First Cost (\$/ton)	First Cost (\$/ft²)	Additional First Cost	Total First Cost	Maintenance Cost (\$/ton)	Maintenance Cost (\$/ft²)	Total Maint. Cost	Total Alt. Cost
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

