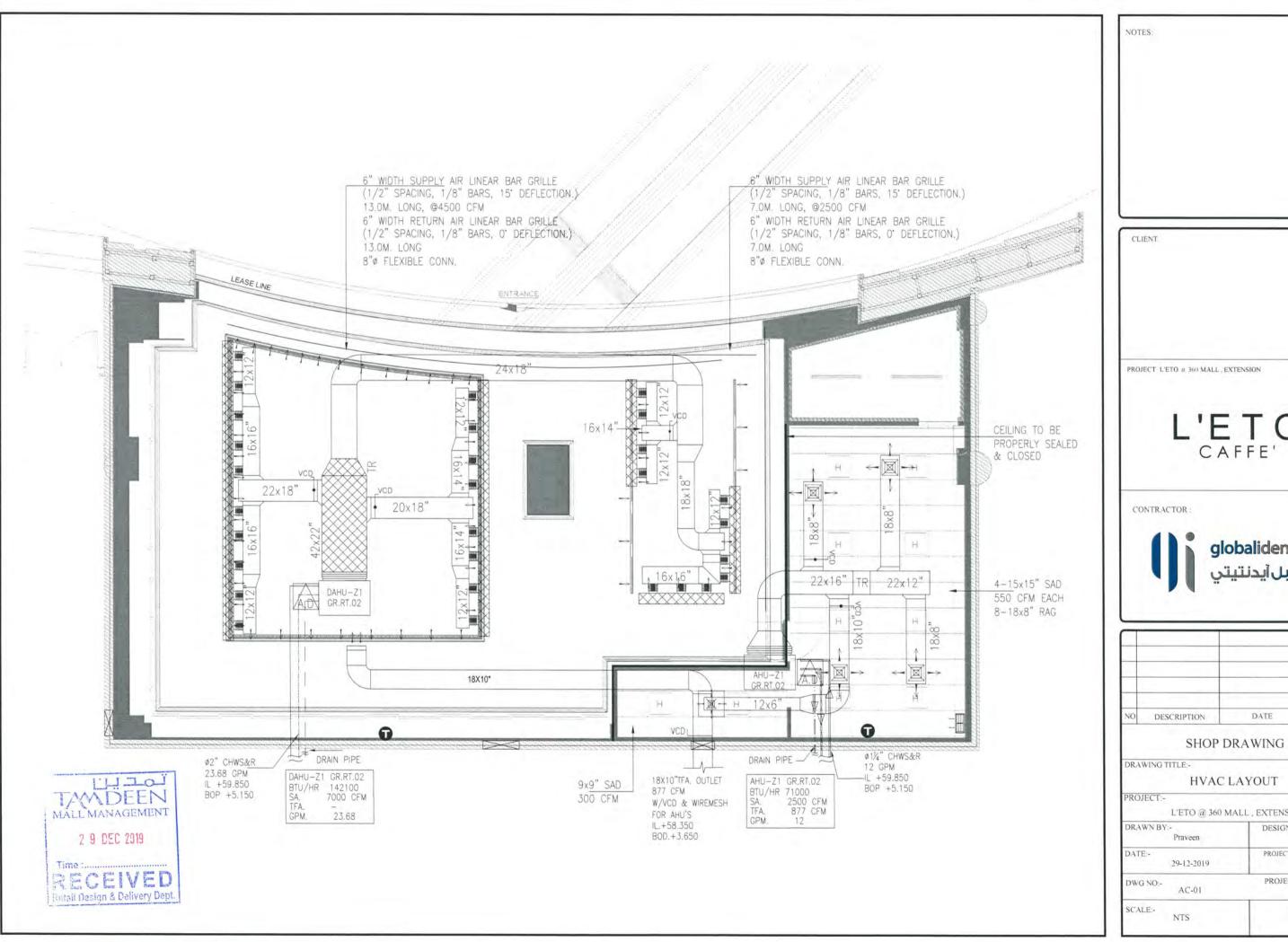


				RETAIL DES	GN & D	ELIVERY	SUBMIT	TAL &	TRANSMITTAL F	ORM				MALL MANAGEMENT
M	ALL / PROPERTY N	NAME: 360	MALL Extensio	n	BRANI	NAME:				L'ETO			UNIT NUMBER	G-05
	SUBMITTAL / TRA	NSMITTAL NO.:				5	00	14		SUE	BMITTAL DATE	E:	2	9/Dec/19
AL	STOR and/or OTHORIZED RESENTATIVE	NAME of In	vestor / Author	ized Representa	tive		CON	TACT N	lo. of Investor / i	Authorized Represe	entative	E-mail Address	of Investor / Auti	norized Representative
	NTRACTOR'S		COMPANY N	NAME			NA	ME of	Contractor's Proj	ect Manager	CONT	ACT No.	E-n	nail Address
	JTHORIZED RESENTATIVE		Global Ide	ntity					Eng hany		666	51805	hany@global-id.	net /kevork@global-id.net
		ONE (1) SUBMI	ITTAL / TRANSI	AITTAL for each	SUBMI	TTAL TYP	E			□ NE	EW SUBMITTAL	V	RE-SUBMITTAL	OTHERS
	DRAW	ING TITLE / DESCRIP	TION			NO.					RD&	D ACTION		
100		SUBMITTAL TYPE			NO.	COF		10/19	CODE					
ITEM NO.		GN; ARCHITECTURAL & N GE; HOARDING; KFD/FIR		DRAWING NO	REVISION	ELECTRONIC (CD)	HARDCOPY (A3 ONLY)	A	APPROVED AS			COMMENTS /	REMARKS	
-	FIGHTING, EM	ERGENCY & EXIT; AS BUI	LT; MATERIAL		REVI	ECTR (CE	ARD(В	NOTED REVISE &					
	2000	ICATIONS; SURVEYS; INS	SURANCE, ETC.	1				X	RESUBMIT					
1	HVAC LAYOUT			AC-01		1	1							
2	KITCHEN VENTIL	ATION LAYOUT		AC-02		1	1						***************************************	
3	HEAT LOAD CALC	CULATION		AC-03		1	1							
4	HEAT LOAD CALC	CULATION		AC-04		1	1							
5	HEAT LOAD CALC	CULATION		AC-05		1	1							
6	HEAT LOAD CALC			AC-06		1	1							
7	HEAT LOAD CALC	CULATION	EEN	AC-07		1	1							
		MALLMANA	GEMENT											
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		Time: 2:0	20											
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R	eceived By:	MEP Engineer	Sr. MEP Ma	nager	ect Mar Project	ager / Manager	The second second	1000	neral Manager neral Manager	Name:	Eng	hany	reviewed in detail and a	e above submitted Items have been are correct in the strict comformance irement except as otherwise stated.
										Tel. No.:	666	51805] /3	**************************************
Name	e/Signature/Date	Name/Signature/Date	Name/Signatu	ire/Date Nam	e/Signatu	ure/Date	N	ame/Sig	gnature/Date	Date:	29/1	Dec/19	Authorize	d Signature / Date 2

NOTE: DOCUMENTS & DRAWING SUBMITTAL(S) MUST BE SUBMITTED AT 360 MALL EXPANSION - CENTER MANAGEMENT OFFICE FROM 8:00AM TO 3:30PM (SUNDAY TO THURSDAY). SUBMITTAL(S) AFTER 3:30PM WILL BE STAMPED THE

- <u>ALL DRAWING SUBMITTALS MUST BE IN</u>: A) A3 SIZE PAPER; B) COLOR; C) SOFTCOPY ON CD WHICH INCLUDES AUTOCAD DRAWINGS (DWG) & ACROBAT (PDF) FILES.
 IF NEEDED, Project Managers / Asst. PM MAY REQUEST DRAWINGS IN OTHER PAPER SIZE OTHER THAN A3.
- OTHER DOCUMENTS SUCH AS INSURANCE(Original), CERTFICATIONS, LETTERS, CATALOGUES, SPECIFICATIONS, ETC. SHOULD BE SUBMITTED ONLY IN A4 or A3 PAPER SIZE TOGETHER WITH SOFTCOPY ON CD.

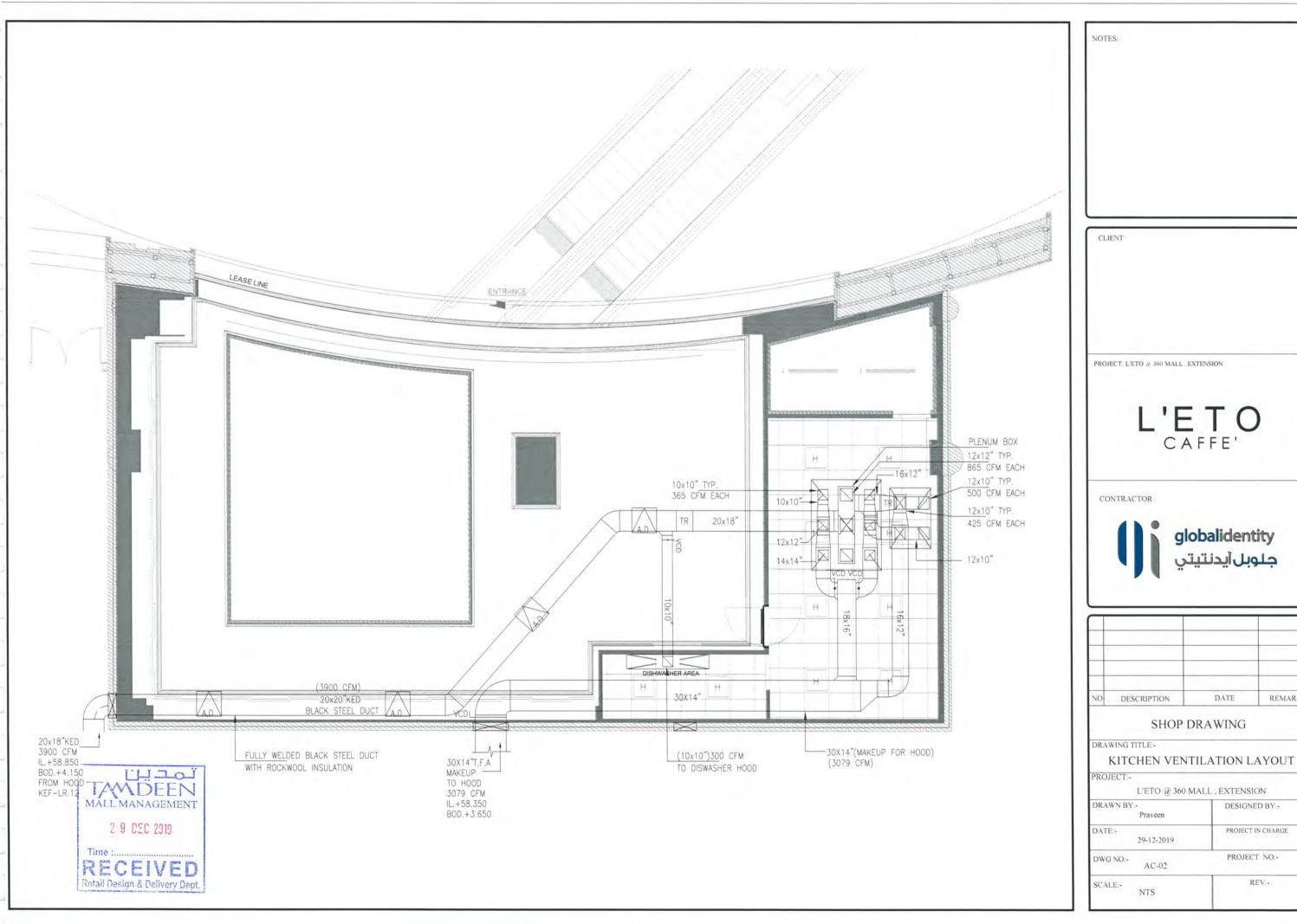


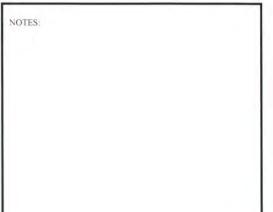
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NO	DESCRIPTION	DATE	REMARKS

DRAWN BY:-	DESIGNED BY:-
Praveen	
DATE:-	PROJECT IN CHARGE
29-12-2019	
DWG NO:-	PROJECT NO:-
AC-01	
SCALE:-	REV:-
NTS	





NO	DESCRIPTION	DATE	REMARKS

PROJECT IN CHARGE

Air System Sizing Summary for AHU-RESTAURANT

Project Name: LETO(REV 01) Prepared by: f

12/28/2019 09:02PM

Air System Information Air System Name

AHU-RESTAURANT Equipment Class Air System Type SZCAV

Number of zones Floor Area 1684.6 ft² Kuwait City, Kuwait Location

Sizing Calculation Information

Jan to Dec Calculated Calculation Months Sizing Data ...

Zone CFM Sizing ... Space CFM Sizing ... Peak zone sensible load Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load	5.3	Ton
Total coil load	63.6	MB
Sensible coil load	58.0	MB
Coil CFM at Jan 0800	2605	CFN
Max block CFM	2605	CFN
Sum of peak zone CFM	2605	CFN
Sensible heat ratio		
CFM/Ton	491.2	
ft²/Ton	317.6	
BTU/(hr-ft²)		
Water flow @ 10.0 °F rise	12.74	gpn
		-

Load occurs at	Jan 0800	
OA DB / WB	. 67.4 / 42.1	°F
Entering DB / WB	. 75.3 / 62.0	°F
Leaving DB / WB	. 54.6 / 53.3	°F
Coil ADP	52.3	°F
Bypass Factor	0.100	
Resulting RH	47	%
Design supply temp.	57.2	°F
Zone T-stat Check	0 of 1	OF
Max zone temperature deviation	0.0	°F

Central Heating Coil Sizing Data
No central heating coil loads occurred during this calculation.

Supply Fan Sizing Data

Actual max CFM	2605	CFM
Standard CFM	2588	CFM
Actual max CFM/ft ²	. 1.55	CFM/ft ²

Outdoor Ventilation Air Data Design airflow CFM CFM/ft² 0 CFM 0.00 CFM/ft2

Fan motor BHP	2.52	BHP
Fan motor kW	2.00	kW

CFM/person	 0.00	CFM/person	

Zone Sizing Summary for AHU-RESTAURANT

Project Name: LETO(REV 01) Prepared by: f

12/28/2019 09:02PM

Air System Information

Air System Name . Equipment Class . Air System Type ... AHU-RESTAURANT SZCAV

Number of zones Floor Area 1684.6 ft² Kuwait City, Kuwait Location

Sizing Calculation Information

Jan to Dec Calculated Calculation Months Sizing Data .

Zone CFM Sizing . Space CFM Sizing Peak zone sensible load Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
AHU-RESTAURANT	2605	2605	1.55	0.0	0.00	0.0	0.00	

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
AHU-RESTAURANT	50.3	Jan 2300	0.0	1684.6

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
AHU-RESTAURANT							
RESTAURANT	1	50.3	Jan 2300	2605	0.0	1684.6	1.55

NOTES:

CLIENT

PROJECT L'ETO a 360 MALL, EXTENSION



CONTRACTOR



DESCRIPTION REMARKS

SHOP DRAWING

DRAWING TITLE:-

HEAT LOAD CALCULATION

DRAWN BY:-

L'ETO @ 360 MALL, EXTENSION

DESIGNED BY:-

Praveen PROJECT IN CHARGE 29-12-2019

DWG NO:-AC-03

REV:-SCALE:-NTS

تمدين Hourly Analysis Program 5. 1+ MALL MANAGEMENT 2 9 DEC 2019 Time :.. RECEIVED Retail Design & Delivery Dept

Hourly Analysis Program 5.11

Air System Design Load Summary for AHU-RESTAURANT
Project Name: LETO(REV 01)
Prepared by: f

12/28/2019
09:02PM

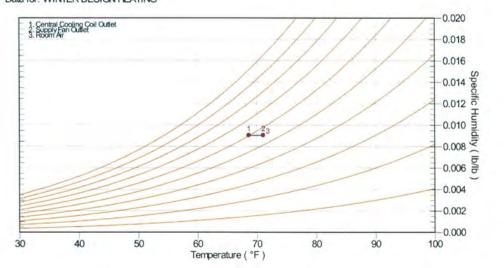
	DESI	GN COOLING		DES	IGN HEATING	
	COOLING DATA AT		-A-C	HEATING DATA A	T DES HTG	6. 2
	COOLING OA DB /	WB 67.4 °F /	42.1 °F	HEATING OA DB /	WB 40.1 °F / 3	35.6 °F
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)
Window & Skylight Solar Loads	0 ft²	0		O ft²		
Wall Transmission	O ft²	0		O ft²	0	
Roof Transmission	0 ft ²	0		O ft²	0	
Window Transmission	O ft²	0		O ft²	0	
Skylight Transmission	O ft²	0	-	O ft²	0	
Door Loads	O ft²	0	-	0 ft²	0	
Floor Transmission	O ft²	0		0 ft²	0	
Partitions	O ft²	0	-	O ft ²	0	
Ceiling	0 ft²	0		O ft²	0	
Overhead Lighting	1690 W	5767		0	0	
Task Lighting	0 W	0	-	0	0	
Electric Equipment	8750 W	29855		0	0	
People	44	10119	5285	0	0	(
Infiltration	-	0	0		0	(
Miscellaneous	-	0	0	-	0	(
Safety Factor	10% / 7%	4574	370	0%	0	(
>> Total Zone Loads		50314	5655		0	(
Zone Conditioning	-	50659	5655	-	0	(
Plenum Wall Load	0%	0	1-	0	0	-9
Plenum Roof Load	0%	0	-	0	0	
Plenum Lighting Load	0%	0		0	0	
Return Fan Load	2605 CFM	0	-	2605 CFM	0	
Ventilation Load	0 CFM	0	0	0 CFM	0	(
Supply Fan Load	2605 CFM	6824		2605 CFM	-6824	
Space Fan Coil Fans	-	0		-	0	
Duct Heat Gain / Loss	1%	503	-	1%	0	
>> Total System Loads		57987	5655	-	-6824	
Central Cooling Coil	-	57987	5658	-	-6824	-
Central Heating Coil		0		-	0	
>> Total Conditioning	-	57987	5658	-	-6824	
Key:		alues are clg lo			values are htg lo	

System Psychrometrics for AHU-RESTAURANT olect Name: LETO/REV 01) Location: Kuwait City, Kuwait Altitude: 180.0 ft. Data for: January DESIGN COOLING DAY, 0800 -0.020 -0.018 0.016 -0.014 S −0.012 ਨੇ -0.010 -0.008 💆 -0.006 ₺ -0.004-0.0020.000 40 50 90 100 Temperature (°F)

System Psychrometrics for AHU-RESTAURANT
Project Name: LETO(REV 01)
12/28/2015

Location: Kuwait City, Kuwait Altitude: 180.0 ft. Data for: WINTER DESIGN HEATING

Hourly Analysis Program 5.11

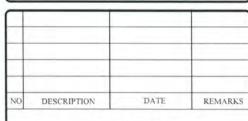


NOTES

PROJECT: L'ETO a 360 MALL EXTENSION

L'ETO
CAFFE'

Page 4 of 5



CONTRACTOR

SHOP DRAWING
DRAWING TITLE:-

HEAT LOAD CALCULATION
PROJECT:-

L'ETO @ 360 MALL , EXTENSION

DRAWN BY Praveen

DATE 29-12-2019

DWG NO AC-04

AC-04

SCALE - NTS REV -

Hodry Analysis Program 5-12 MALL MANAGEMENT

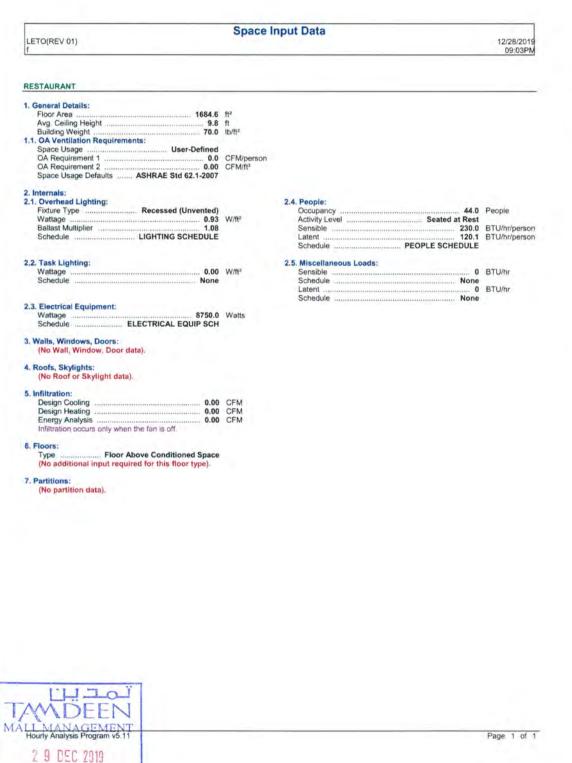
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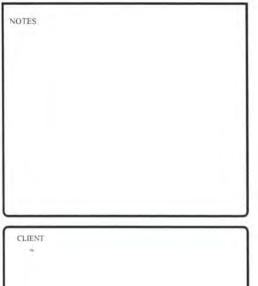
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Page 3 of 5



Project Name: LETO(REV 01) Prepared by: f	izing Su	mmary for AHU-KITCHEN	12/28/201 09:02P
Air System Information Air System Name AHU-KITCHEN Equipment Class CW AHU Air System Type SZCAV Sizing Calculation Information		Number of zones 1 Floor Area 612.5 Location Kuwait City, Kuwait	ft²
Calculation Months Jan to Dec Sizing Data Calculated		Zone CFM Sizing Peak zone sensible load Space CFM Sizing Individual peak space loads	
Central Cooling Coil Sizing Data			
Total coil load 10.8 Total coil load 129.5 Sensible coil load 90.5 Coil CFM at Jan 0100 3630 Max block CFM 3630 Sum of peak zone CFM 3630 Sensible heat ratio 0.699 CFM/Ton 336.3 ft²/Ton 56.7 BTU/(hr-ft²) 211.5 Water flow @ 10.0 °F rise 25.92	Tons MBH MBH CFM CFM CFM	Load occurs at Jan 0100 OA DB / WB 66.7 / 41.8 Entering DB / WB 82.5 / 69.3 Leaving DB / WB 59.3 / 58.1 Coil ADP 56.7 Bypass Factor 0.100 Resulting RH 52 Design supply temp. 60.8 Zone T-stat Check 0 of 1 Max zone temperature deviation 0.0	°F OK
Central Heating Coil Sizing Data No central heating coil loads occurred during this of	calculation.		
Supply Fan Sizing Data			
Actual max CFM 3630 Standard CFM 3606 Actual max CFM/ft² 5.93	CFM CFM CFM/ft²	Fan motor BHP	
Outdoor Ventilation Air Data Design airflow CFM 0 CFM/ft² 0.00		CFM/person 0,00	CFM/person



CLIENT	
ROJECT: L'ETO a 360 N	MALL EXTENSION
L	E T O
CONTRACTOR	
	globalidentity جلوبل آیدنتیتی

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NO	DESCRIPTION	DATE	REMARKS
	SHOP D	RAWING	
	VING TITLE - HEAT LOAD C	ALCULATI	ON
PROJ	ECT - L'ETO @ 360 M	IALL, EXTENS	ION
DRAV	VN BY - Praveen	DESIGN	ED BY -
DATE	29-12-2019	PROJECT	IN CHARGE
DWG	NO - AC-05	PROJEC	T NO -
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Hourly Analysis Program 5.11

Page 1 of 5

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Time :.....

Zone Sizing Summary for AHU-KITCHEN Project Name: LETO(REV 01) Prepared by: f 12/28/2019 09:02PM Air System Information Air System Name Equipment Class Air System Type AHU-KITCHEN CW AHU SZCAV

Sizing Calculation Information

Calculation Months		Zone CFM Sizing Peak zone sensible load
Sizing Data	Calculated	Space CFM Sizing Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (CFM)	Minimum Supply Airflow (CFM)	Zone CFM/ft²	Reheat Coil Load (MBH)	Reheat Coil Water gpm @ 20.0 °F	Zone Htg Unit Coil Load (MBH)	Zone Htg Unit Water gpm @ 20.0 °F	Mixing Box Fan Airflow (CFM)
AHU-KITCHEN	3630	3630	5.93	0.0	0.00	0.0	0.00	

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible (MBH)	Time of Peak Sensible Cooling Load	Zone Heating Load (MBH)	Zone Floor Area (ft²)
AHU-KITCHEN	84.1	Jan 2300	0.0	612.5

Space Loads and Airflows

Zone Name / Space Name	Mult.	Cooling Sensible (MBH)	Time of Peak Sensible Load	Air Flow (CFM)	Heating Load (MBH)	Floor Area (ft²)	Space CFM/ft²
AHU-KITCHEN							
KITCHEN	1	84.1	Jan 2300	3630	0.0	612.5	5.93

	Air System Design Load Summary for AHU-KITCHEN	7
Project Name: LETO(REV 01)	The second secon	12/28/2019
Prepared by: f		09:02PM

	DESI	DESIGN COOLING			DESIGN HEATING			
	COOLING DATA AT	Jan 0100		HEATING DATA A	T DES HTG			
	COOLING OA DB /	WB 66.7 °F /	41.8 °F	HEATING OA DB / WB 40.1 °F / 35.6 °F				
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Laten (BTU/hr		
Window & Skylight Solar Loads	O ft²	0	-	O ft²	-			
Wall Transmission	0 ft²	0	-	O ft²	0			
Roof Transmission	0 ft²	0		0 ft²	0			
Window Transmission	0 ft²	0	-	0 ft²	0	-		
Skylight Transmission	0 ft²	0	-	0 ft²	0			
Door Loads	0 ft²	0		0 ft²	0			
Floor Transmission	O ft²	0		O ft²	0			
Partitions	O ft²	0		0 ft²	0			
Ceiling	O ft²	0		0 ft²	0			
Overhead Lighting	615 W	2097	-	0	0			
Task Lighting	0 W	0	- 7-	0	0			
Electric Equipment	0 W	0		0	0			
People	14	4132	6368	0	0	(
Infiltration	-	0	0		0	(
Miscellaneous	-	70253	30126		0	(
Safety Factor	10% / 7%	7648	2555	0%	0	(
>> Total Zone Loads	-	84129	39048	-	0			
Zone Conditioning		84523	39048	-	0	(
Plenum Wall Load	0%	0	-	0	0			
Plenum Roof Load	0%	0		0	0			
Plenum Lighting Load	0%	0	-	0	0			
Return Fan Load	3630 CFM	0	-	3630 CFM	0			
Ventilation Load	0 CFM	0	0	0 CFM	0	(
Supply Fan Load	3630 CFM	5118	-	3630 CFM	-5118			
Space Fan Coil Fans	,	0		-	0			
Duct Heat Gain / Loss	1%	841		1%	0			
>> Total System Loads		90482	39048	-	-5118			
Central Cooling Coil		90482	39053	-	-5118			
Central Heating Coil	-	0		-	0			
>> Total Conditioning		90482	39053		-5118			
Key:		alues are clg lo			values are htg lo			

SHOP DRAWING DRAWING TITLE:-HEAT LOAD CALCULATION Hourty Applysis Programs IT MALL MANAGEMENT Page 2 of 5 Hourly Analysis Program 5.11 Page 3 of 5 L'ETO @ 360 MALL, EXTENSION DRAWN BY:-DESIGNED BY:-2 9 DEC 2019 DWG NO:-RECEIVED AC-06 Retail Design & Delivery Dept. SCALE:-NTS

NOTES:

PROJECT L'ETO a 360 MALL EXTENSION



CONTRACTOR :



NO	DESCRIPTION	DATE	REMARKS

DESIGNED D1
PROJECT IN CHARGE

PROJECT NO:-

REV:-

System Psychrometrics for AHU-KITCHEN Project Name: LETO(REV 01) Prepared by: f 12/28/2019 09:02PM Location: Kuwait City, Kuwait Altitude: 180.0 ft. Data for: January DESIGN COOLING DAY, 0100 0.020 Central Cooling Coil Outlet
 Supply Fan Outlet
 Duct Heat
 Room Air 0.018 0.016 -0.014 0.012 ਨੇ 0.010 0.008 0.006 0.004 0.002 0.000 70 90 50 80 100 Temperature (°F) Page 4 of 5 Hourly Analysis Program 5.11 System Psychrometrics for AHU-KITCHEN Project Name: LETO(REV 01) Prepared by: f 12/28/2019 09:02PM Location: Kuwait City, Kuwait Altitude: 180.0 ft. Data for: WINTER DESIGN HEATING 0.020 Central Cooling Coil Outlet
 Supply Fan Outlet
 Room Air -0.018 0.016 -0.014 0.012 -0.010 0.008 -0.006 €

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Temperature (°F)

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2 9 DEC 2019

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Page 5 of 5

100

Space Input Data LETO(REV 01) 12/28/201 09:02PM KITCHEN General Details:
 Floor Area
 Avg. Ceiling Height
 Building Weight
 OA Ventilation Requirements: 9.8 ft 0.0 CFM/person 0.00 CFM/ft² 2. Internals: 2.1. Overhead Lighting: Fixture Type 2.4. People: Occupancy Recessed (Unvented) 14.0 People .. 0.93 W/ft² Wattage Ballast Multiplier Activity Level Sensible Schedule ... LIGHTING SCHEDULE Latent ... Schedule .. 2.2. Task Lighting: 0.00 W/ft² 70253 BTU/hr MISC SCHEDULE 30126 BTU/hr Wattage . Schedule Sensible Schedule Latent MISC SCHEDULE 2.3. Electrical Equipment: Wattage . Schedule 0.0 Watts None 3. Walls, Windows, Doors: (No Wall, Window, Door data). 4. Roofs, Skylights: (No Roof or Skylight data). 5. Infiltration: 0.00 CFM Design Cooling Design Heating 0.00 CFM 0.00 CFM .. Floor Above Conditioned Space (No additional input required for this floor type). 7. Partitions: (No partition data).

Hourly Analysis Program v5.11 Page 1 of 1

NOTES:

CLIENT

NO	DESCRIPTION	DATE	REMARKS
	SHODI	DRAWING	
	SHOPT	JK A WINCI	
DRAV	VING TITLE:- HEAT LOAD (

PROJECT:-L'ETO @ 360 MALL, EXTENSION

DRAWN BY:Praveen

DATE:
29-12-2019

DRAWN BY:PROJECT IN CHARGE

DWG NO:- PROJECT NO:-

SCALE:- REV:-