

DESIGN DATA SHEET OF HEAT LOAD CALCULATION

Contractor : Mr Anuj Gupta
Project : Central University Rajasthan
Prepared by: Sanjeet Kumar

Site Location : At Bander Sindri Kishangar Rajasthan, India.

Geographic Location : 26.6° N

Altitude : 486 Mtrs (1594 Ft)

Note :

- 1) For unknown **Lighting Load** , Refer **ISHRAE Handbook Table-1-T-38**
- 2) For unknown **Equipment Load** , Refer **ISHRAE Handbook Table-1-T-27,28,29,30,31,32**
- 3) For unknown **CFM/Person, CFM/Sqft & Occupancy** , Refer **ISHRAE Handbook Table-1-T-53**
- 4) For **Indicated ADP**, Refer **ISHRAE Handbook Table-1-T-39,40,41** and We generally assume **Selected ADP 54°F** (otherwise its value given by Coil Manufacturer).

2nd Floor																		
	Inside Design data		Data by Heat Load Calculation							Units Selection-As per heat load						ODU Selection		
Sr. No.	Conditioned Area (Ground Floor)	Area (Sqft)	Summer TR	Monsoon TR	Summer Dehum. CFM	Monsoon Dehum. CFM	Fresh Air CFM	Max of Summer & Monsoon (TR)	Max of Summer & Monsoon (CFM)	Selected Tonnage of each Machine (Tr)	Selected Airflow (CFM)	Type of Unit	QTY	Total Tonnage (Tr)	Total CFM	ODU	CIRCUIT	TOTAL HP
1	Second Floor , Room 1	405	2.55	1.92	1317	997	77	2.55	1317	16	8000	FM AHU	1	16	8000			
2	Second Floor , Room 2	405	2.36	1.85	1207	955	77	2.36	1207									
5	Second Floor , Registrar	438	3.11	2.32	1619	1212	86	3.11	1619									
6	Second Floor , DY.Registrar	177	1.20	0.90	624	471	33	1.20	624									
7	Second Floor , Q.P Cellars 1	196	1.36	1.02	696	527	42	1.36	696									
8	Second Floor , Q.P Cellars 2	159	1.08	0.75	557	383	32	1.08	557									
9	Second Floor , Q.P Cellars 3	405	1.97	1.47	990	737	72	1.97	990									
10	Second Floor , Q.P Cellars 4	319	2.07	2.07	1064	802	63	2.07	1064									
11	Second Floor , Meeting Room	362	2.30	1.79	1176	922	74	2.30	1176	3.5	1218	VRV Ductable	1	3.5	1218	28	CKT-1	28
13	Second Floor , VIP Visiting	591	3.10	2.45	1564	1253	110	3.10	1564	22	11000	FM AHU	1	22	11000			
14	Second Floor , VC Secretariat	663	3.35	2.69	1707	1391	115	3.35	1707									
17	Second Floor , Proctor	438	2.77	2.23	1421	1159	86	2.77	1421									
18	Second Floor , Proctor 2 Room Space	423	2.15	1.73	1065	872	85	2.15	1065									
19	Second Floor , Pro Office	171	1.56	1.29	689	574	33	1.56	689									
20	Second Floor , Hall	398	2.72	2.18	1279	1034	76	2.72	1279									
21	Sotre-1	406	2.69	2.00	1462	1135	77	2.69	1462									
22	Sotre-2	406	2.69	2.00	1462	1135	77	2.69	1462									
TOTAL		6362	39.03	30.67	19902	15558	1216	39.03	19902	42	20218			42	20218			
										CHECK FIGURES								
										CFM/Sq. ft. = 3.18						CHECK FIGURES		
										Sq. Ft./Ton = 153						CFM/Sq. ft. =		
										CFM/Ton = 487						Sq. Ft./Ton =		

DESIGN DATA SHEET OF HEAT LOAD CALCULATION

Contractor : Mr. Anuj Gupta
Project : Central University Rajasthan
Prepared by: Sanjeet Kumar

Site Location : At Bander Sindri Kishangar Rajasthan, India.

Geographic Location : 26.3°N

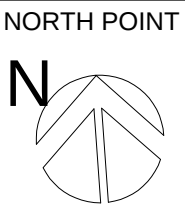
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Sr. No.	Inside Design data		Data by Heat Load Calculation								Units Selection-As per heat load						ODU Selection		
	Conditioned Area (Ground Floor)	Area (sqft)	Summer TR	Monsoon TR	Summer Dehum. CFM	Monsoon Dehum. CFM	Fresh Air CFM	Winter KW	Max of Summer & Monsoon (TR)	Max of Summer & Monsoon (CFM)	Selected Tonnage of each Machine (Tr)	Selected Airflow (CFM)	Type of Unit	QTY	Total Tonnage (Tr)	Total CFM	ODU	CIRCUIT	TOTAL HP
Ground Floor																			
	ZONE-1																		
1	Ground Floor- Library	365	2.32	1.42	1234	725	67		2.32	1234	4	1222	NON VRV Ductable	1	4	1222	NON VRV ODU		
2	Ground Floor- Room 1	407	2.29	1.55	1211	781	77		2.29	1211	20	10000	FM AHU	1	20	10000			
3	Ground floor - Room 2	407	1.99	1.44	1122	773	77		1.99	1122									
4	Ground Floor- Staff-1	407	1.99	1.44	1122	773	77		1.99	1122									
5	Server Room																		
6	Ground Floor- Retering & Registrar	445	2.60	1.86	1391	943	87		2.60	1391									
7	Ground Floor- Hall-1 & Dy Registrar	1706	7.75	5.83	4656	3193	282		7.75	4656	26	13000	FM AHU	1	26	13000			
9	Ground Floor- Hall-2& Dy Registrar	2115	9.10	6.94	5309	3704	352		9.10	5309									
10	Ground Floor- GAD Section	406	2.69	2.00	1462	1135	77		2.69	1462									
12	Ground Floor - ENT Lobby	1484	6.54	5.08	3680	2529	277		6.54	3680									
	Canteen Area- Left	406	2.69	2.00	1462	1135	77		2.69	1462									
	GAD Store	406	2.69	2.00	1462	1135	77		2.69	1462	4.5	1800	VRV Ductable	1	4.5	1800	28	CKT-1	28
11	Ground Floor -Conference Hall	595	2.76	1.94	1586	1036	111		2.76	1586									
8	Ground Floor - ENT Lobby	1484	6.54	5.08	3680	2529	277		6.54	3680	10.5	4000	CS AHU WITH VRV	1	10.5	4000			
1st Floor																			
22	1st Floor Office	160	1.32	0.87	646	411	55		1.32	646	2	600	NON VRV Cst	1	2	600	NON VRV ODU		
17	1st Floor- Establishment	368	1.92	1.22	1084	668	60		1.92	1084	24	12000	FM AHU	1	24	12000			
18	1st Floor- Recruitment Cell	407	2.18	1.48	1155	753	69		2.18	1155									
19	1st Floor- R&D Office and R&D Director	407	1.97	1.35	1116	749	62		1.97	1116									
20	1st Floor Dean Acad- RB Off	407	2.04	1.46	1152	784	77		2.04	1152									
21	1st Floor- ITC Cell	407	1.98	1.39	1115	757	69		1.98	1115									
23	1st Floor Registrar Office	760	4.11	3.09	2241	1548	158		4.11	2241	4.5	1800	VRV Ductable	1	4.5	1800	28	CKT-1	28
24	1st Floor J.R & AR	801	3.62	2.84	2105	1509	161		3.62	2105									
25	1st Floor Sec Off. UDC-LDC	629	3.01	2.20	1744	1191	113		3.01	1744									
26	1st Floor- Confrence 2	592	2.67	1.91	1530	1015	111		2.67	1530									
28	1st Floor- J.R Fin. , AR Fin	942	4.34	3.28	2559	1775	169		4.34	2559									
30	1st Floor- Int. Ad. Director & Record	407	2.25	1.75	1199	926	62		2.25	1199	25	12500	FM AHU	1	25	12500			
31	1st Floor- Executive Engg. & Dwg. Storage	406	2.39	1.90	1274	998	69		2.39	1274									
33	1st Floor- Finance Office, PS Fin.	1223	6.35	5.18	3544	2707	201		6.35	3544									
35	1st Floor JEN(E) & JEN (C)	831	5.04	3.98	2795	2096	140		5.04	2795									
36	1st Floor- Purchase	365	2.08	1.39	1083	675	82		2.08	1083									
29	1st Floor Int. St. Conc. Cell	423	2.72	2.28	1450	1161	100		2.72	1450	4	1200	NON VRV Cst	1	4	1200	NON VRV ODU		
32	1st Floor- Confrence 1	592	2.67	1.91	1530	1015	111		2.67	1530	4.5	1800	NON VRV Ductable	1	4.5	1800	NON VRV ODU		
TOTAL			20759.0	104.6	78.0	58697.9	41130.9	3780.8	0	104.6	58698	129	59922		11	121	59922		

Ground floor Heat Load	46
First floor Heat Load	49
Second floor Heat Load	38
After diversity load @18%	109.06
Air cooled type Chiller	110 TR
Primary Pump/ 30Mtr Head	264 USGPM

CHECK FIGURES	
CFM/Sq. ft. =	2.89
Sq. Ft./Ton =	172
CFM/Ton =	497



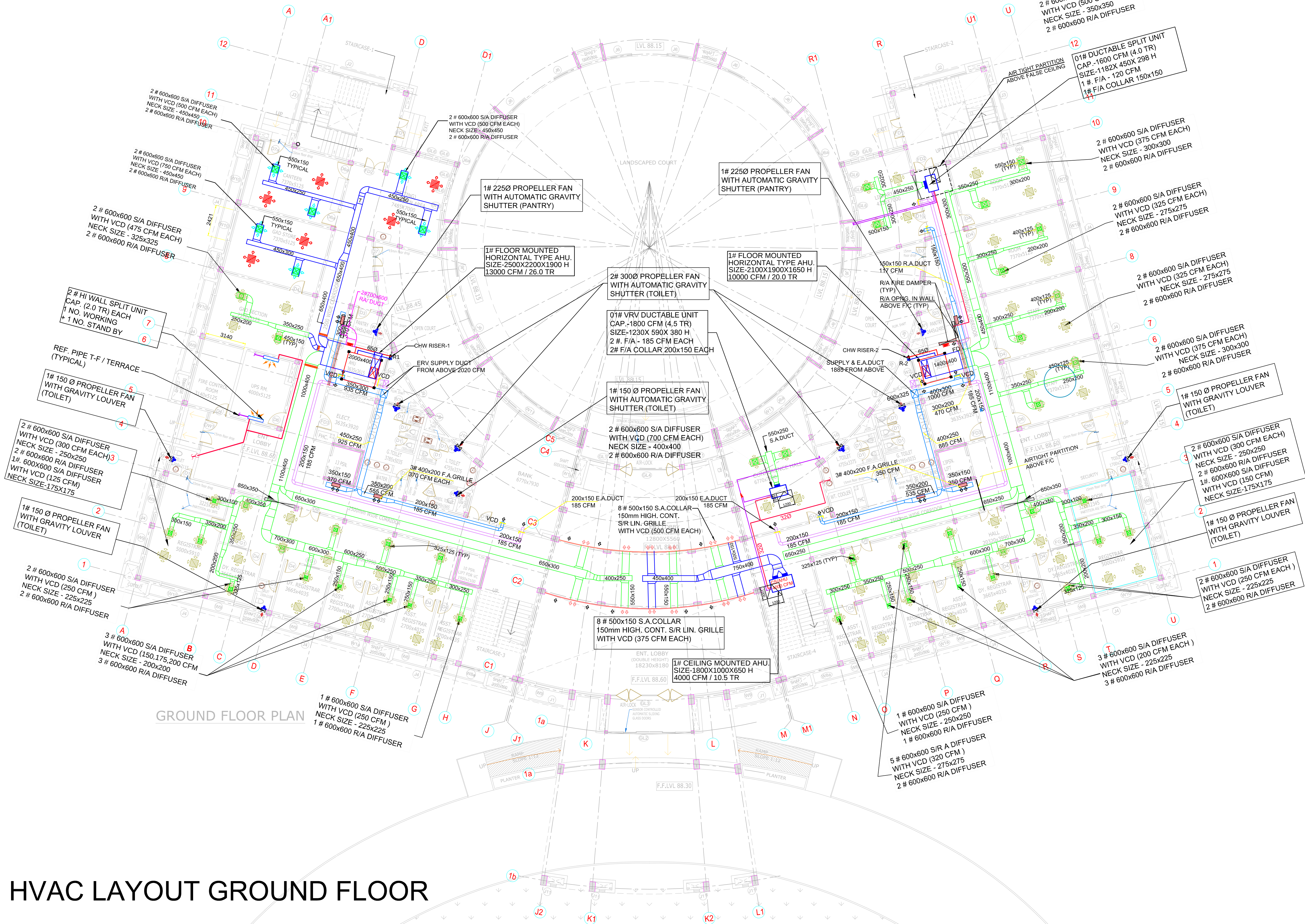
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NOTE :-

- ALL DIMENSIONS ARE IN MM UNLESS MENTIONED OTHERWISE..
- ALL SUPPLY AIR DUCTS SHALL BE INSULATED AS PER SPECIFICATIONS.
- ALL SUPPLY AIR DUCTS UP TO 3 MTR LENGTH FROM THE OUTLET OF AHU'S SHALL BE ACCOUSTICALLY LINED AS PER SPEC.
- ALL SUPPLY AIR GRILLE / DIFFUSER SHALL BE PROVIDED WITH VCD.
- OTHERS SERVICES IN THE BUILDING SHALL BE COORDINATED WITH THE DUCT LAYOUT
- ALL SUPPLY AND RETURN AIR DUCT SHALL BE PROVIDED WITH FIRE DAMPERS IN AHU ROOM WALL CROSSING / FLOOR / SLAB CROSSING.
- ALL DOORS OF AHU ROOMS SHOULD BE OPENABLE OUT SIDE.
- DUCT DAMPERS SHALL BE PROVIDED IN ALL THE T-JOINTS OF DUCTS.
- MINOR MODIFICATION IN GRILLE / DIFF. LOCATION TO BE ADJUSTED AS PER FINAL RCP LAYOUT AT SITE.
- AIR TRANSFER GRILLE/ UNDER CUT SHALL BE PROVIDED - AT THE BOTTOM OF THE EACH TOILET BY OTHER AGENCY.
- THE AHU /FCU IN FALSE CEILING IS REQUIRED ACCESS DOOR

HVAC LEGENDS:

	VOLUME CONTROL DAMPER
	NEW SUPPLY AIR DUCT
	EXISTING SUPPLY AIR DUCT
	EXISTING FRESH AIR DUCT
	EXISTING RETURN AIR DUCT
	ACOUSTIC INSULATION
	HVAC ELECTRICAL PANEL
	DUCT FLEXIBLE CONNECTOR
	DOWN THROW GRILLE
	SIDE THROW GRILLE
	CHILLED WATER S/R PIPE
	DRAIN PIPE
	AIR TIGHT PARTITION
	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER



HVAC LAYOUT GROUND FLOOR

REV.	DATE	DESCRIPTION	BY
0	25-5-23	HVAC DRAWING FOR APPROVAL	SK
1	11-7-23	REVISED AS PER CLIENT COMMENTS	SK

CLIENT
CENTRAL UNIVERSITY RAJASTHAN

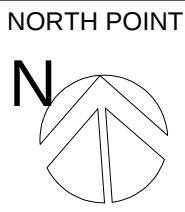
PROJECT
CENTRAL UNIVERSITY RAJASTHAN
AT BANDER SINDRI, KISHANGARH.

ARCHITECTS:-
C. P. KUKREJA ASSOCIATES
ASHIRWAD BUILDING,
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ADMIN BLOCK

DRAWING TITLE
HVAC LAYOUT GROUND FLOOR, ADMIN BLOCK
CENTRAL UNIVERSITY RAJASTHAN

DRAWN	CHECKED	APPROVED	SCALE	NAME	DATE	DRG. NO.	REV
SANJEET	SADDAM	ANUJ G.	1:125 SHEET SIZE-A1		11.07.2023	CUR-AB-HVAC-1	1



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HVAC LEGENDS:

	VOLUME CONTROL DAMPER
	NEW SUPPLY AIR DUCT
	EXISTING SUPPLY AIR DUCT
	EXISTING FRESH AIR DUCT
	EXISTING RETURN AIR DUCT
	ACOUSTIC INSULATION
	HVAC ELECTRICAL PANEL
	DUCT FLEXIBLE CONNECTOR
	DOWN THROW GRILLE
	SIDE THROW GRILLE
	CHILLED WATER S/R PIPE
	DRAIN PIPE
	AIR TIGHT PARTITION
	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER

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1	11-7-23	REVISED AS PER CLIENT COMMENTS	SK

CLIENT
CENTRAL UNIVERSITY RAJASTHAN

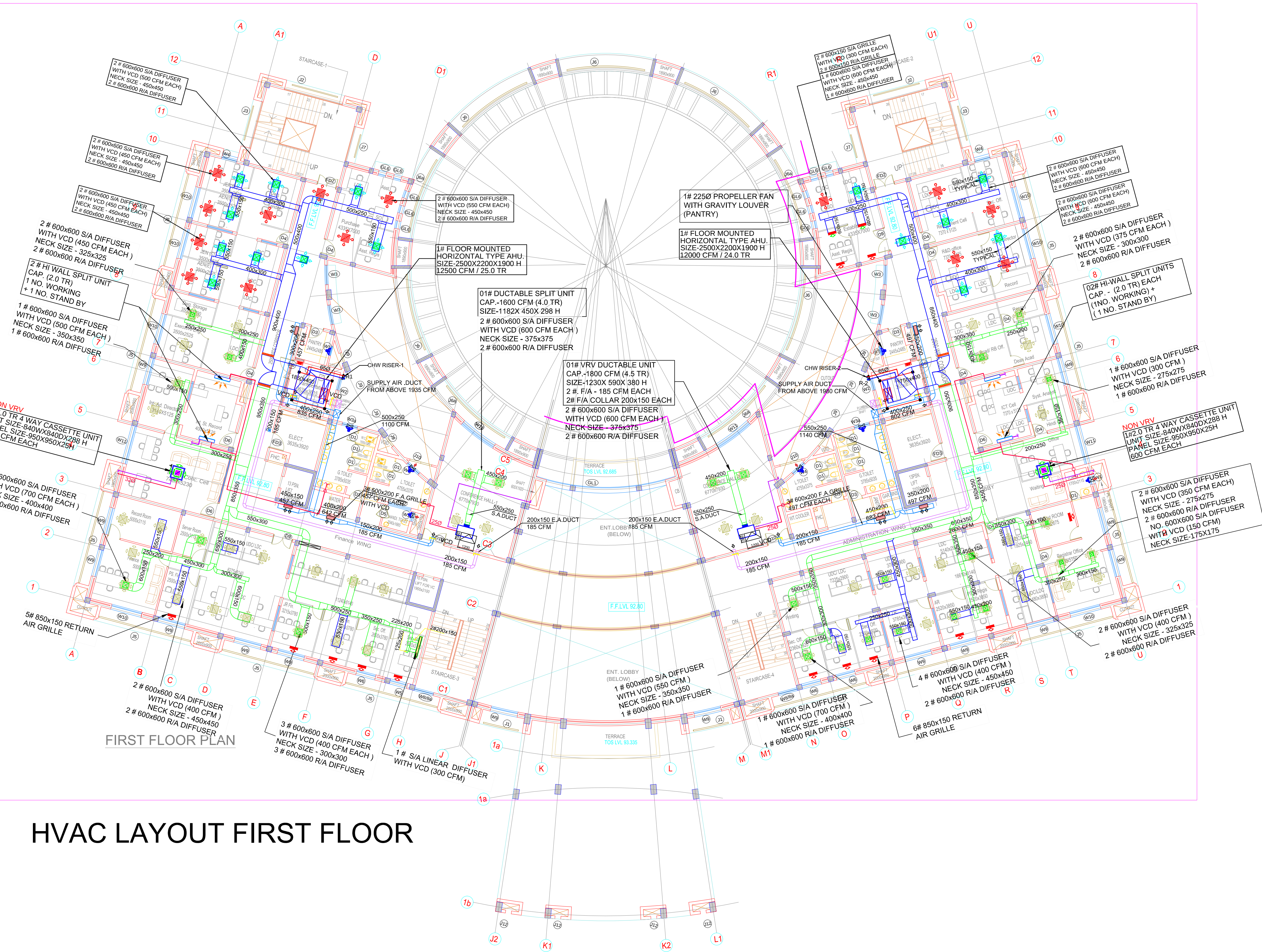
PROJECT
CENTRAL UNIVERSITY RAJASTHAN
AT BANDER SINDRI, KISHANGARH.

ARCHITECTS:-
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NEW DELHI - 110016
PHONE :- 011 26863953 FAX :- 011 26865770
EMAIL - cpka@cpkukreja.com

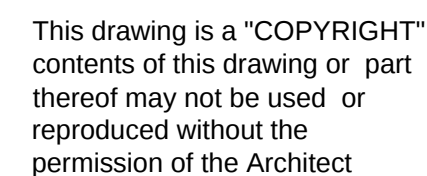
ADMIN BLOCK

DRAWING TITLE
HVAC LAYOUT FIRST FLOOR, ADMIN BLOCK
CENTRAL UNIVERSITY RAJASTHAN

DRAWN	CHECKED	APPROVED	SCALE	NAME	DATE	DRG. NO.	REV
SANJEET	SADDAM	ANUJ G.	1:150		11.07.2023	CUR-AB-HVAC-2	1



HVAC LAYOUT FIRST FLOOR



1. ALL DIMENSIONS ARE IN MM UNLESS MENTIONED OTHERWISE.
2. ALL SUPPLY AIR DUCTS SHALL BE INSULATED AS PER SPECIFICATIONS.
3. ALL SUPPLY AIR DUCTS UP TO 3 MTR LENGTH FROM THE OUTLET OF AHU'S SHALL BE ACCIDENTALLY LINED AS PER SPEC.
4. ALL SUPPLY AIR GRILLE / DIFFUSER SHALL BE PROVIDED WITH VCD.
5. ALL SERVICES IN THE BUILDING SHALL BE COORDINATED WITH THE DUCT LAYOUT
6. ALL SUPPLY AND RETURN AIR DUCT SHALL BE PROVIDED WITH FIRE DAMPERS IN AHU ROOM WALL CROSSING / FLOOR / SLAB CROSSING.
7. ALL DOORS OF AHU ROOMS SHOULD BE OPENABLE OUT SIDE.
7. DUCT DAMPERS SHALL BE PROVIDED IN ALL THE T-JOINTS OF DUCTS.
8. MINOR CONNECTIONS IN GRILLE / DIFF. LOCATION TO BE ADJUSTED AS PER FINAL RCP LAYOUT AT SITE.
9. AIR GRILLE GRILL UNDER COT SHALL BE PROVIDED . AT THE BOTTOM OF THE EACH TROY BY OTHER AGENCY
10. THE AHU /FCU IN FALSE CEILING IS REQUIRED ACCESS DOOR



REV.	DATE	DESCRIPTION	BY
0	25-5-23	HVAC DRAWING FOR APPROVAL	SK
1	11-7-23	REVISED AS PER CLIENT COMMENTS	SK

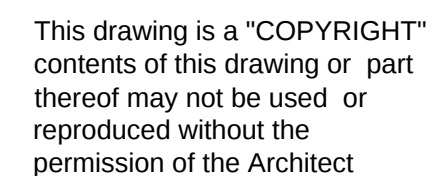
PROJECT
CENTRAL UNIVERSITY RAJASTHAN
AT BANDER SINDRI, KISHANGARH.

ARCHITECTS:-
C. P. KUKREJA ASSOCIATES
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ADMIN BLOCK

DRAWING TITLE
HVAC LAYOUT SECOND FLOOR, ADMIN BLOCK CENTRAL UNIVERSITY RAJASTHAN

	NAME	DATE	DRG. NO.	REV
DRAWN	SANJEET	11.07.2023	CUR-AB-HVAC-3	1
CHECKED	SADDAM	11.07.2023		
APPROVED	ANUJ G.	11.07.2023		
SCALE - 1:150 SHEET SIZE-A1				



1. ALL DIMENSIONS ARE IN MM UNLESS MENTIONED OTHERWISE.
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3. ALL SUPPLY AIR DUCTS UP TO 3 MTR LENGTH FROM THE OUTLET OF AHU'S SHALL BE ACoustically LINED AS PER SPEC.
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11. THE AHU /FCU IN FALSE CEILING IS REQUIRED ACCESS DOOR

	VOLUME CONTROL DAMPER
	SUPPLY AIR DUCT
	RETURN AIR DUCT
	FRESH AIR DUCT
	ACOUSTIC INSULATION
	15A PLUG & SOCKET, 1 - PHASE
	HVAC ELECTRICAL PANEL
	DUCT FLEXIBLE CONNECTOR
	DOWN THROW GRILLE
	SIDE THROW GRILLE
	CHILLED WATER S/R PIPE
	DRAIN PIPE
	AIR TIGHT PARTITION
	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER

CLIENT	CENTRAL UNIVERSITY RAJASTHAN
PROJECT	CENTRAL UNIVERSITY RAJASTHAN AT BANDER SINDRI, KISHANGARH.
ARCHITECTS:-	C. P. KUKREJA ASSOCIATES ASHIRWAD BUILDING, D-1 GREEN PARK, NEW DELHI - 110016 PHONE - 011 26863953 FAX - 011 26865770 EMAIL - cpka@cpkukreja.com

DRAWING TITLE

HVAC LAYOUT TERRACE, ADMIN BLOCK
CENTRAL UNIVERSITY RAJASTHAN

	NAME	DATE	DRG. NO.	REV
DRAWN	SANJEET	11.07.2023	CUR-AB-HVAC-4	1
CHECKED	SADDAM	11.07.2023		
APPROVED	ANUJ G.	11.07.2023		
SCALE - 1:125 SHEET SIZE-A1				

