

Cornell NYCTech FAB -- 100% Construction Document Electrical Summer Calculations																				
Level	Area Description	Approx ft²	Lights Connected	Lights Demand	Power Connected	Power Demand	Misc. MEP Connected	Misc. MEP DF	Misc. MEP Demand	Kitchen Connected	Kitchen Demand	Security Connected	Security Demand	IT Equipment Connected	IT Equipment Demand	Misc. Eq. Connected	Misc. Eq. DF	Misc. Eq. Demand	Elevators Connected	Elevators Demand
Level B1																				
	LP-B1S		2147	2147																
	LP-B1N		4603	4603												1746	0.3	523.8		
	LP-LH		1594	1594																
	PP-FS-A				1620	1620	3100	0.75	2325	21411	13917									
	RP-LH				13720	11860										2160	0.3	648		
	ELP-1S		4422	4422																
	ELP-1N		4143	4143																
	RP-B1-SA				9900	9900	4151	0.75	3113							1160	0.3	348		
	RP-B1-NA				16360	13180	500	0.75	375							9052	0.3	2715.6		
	RP-B1-NB				4320	4320	624	0.75	468							10956	0.3	3286.8		
	ERP-1S						1820	0.75	1365							3600	0.3	1080		
	ERP-1N						7600	0.75	5700											
	LRRP-BS				1920	1920	500	0.75	375			23040	3840							
	LRIT-BN													7830	3960					
	SE-1						1200	0.7	840											
	ESP-1						1700	0.7	1190											
	ESP-2						1700	0.7	1190											
	PBP-1						12600	1	12600											
	NPP-1						22400	0.7	15680											
	HE-1						1800	0.4	720											
	CP-1						900	0.7	630											
	JP-1						12600	0.7	8820											
	CHWP-1&2						22447	0.70	15713.16493											
	SCHWP-1&2						11639	0.70	8147.566999											
	HHWP-1&2						28267	0.40	11306.82767											
	GWP-1&2						54040	0.70	37827.98964											
	CWP-1&2						43232	0.70	30262.4											
	CWP-3&4						22447	0.70	15713.16493											
	MODULAR HEAT RECOVERY CHILLER						535411	0.70	374787.7											
	TF-0.1						696	0.70	487.2											
	TF-0.2						696	0.70	487.2											
	TF-0.3						696	0.70	487.2											
	TF-0.4						696	0.70	487.2											
	FOP-1						900	0.00	0											
	FCU-0.1						1200	0.70	840											
	FCU-0.2						1200	0.70	840											
	FCU-0.3						1100	0.70	770											
	UH-0.1						200	0.00	0											
	UH-0.2						300	0.00	0											
	Waste Dehydrator									12471	8106									
	Pulper, Close Coupled									16628	10808									
	Sub Total Load	21164	16909	16909	47840	42800	798363		553549	50510	32832	23040	3840	7830	3960	28674		8602	0	0
	Total Connected Floor Load VA	922656																		
	Sub Total Emergency Load		8565	8565	1920	1920	9920		7440			23040	3840	7830	3960	3600		1080	0	0
	Total Emergency Connected Floor Load VA	54875																		
	Floor VA/sq.ft	43.6																		
Level 01																				
	LP-1S		4054	4054																
	LP-1N		8827	8827												1746	0.3	523.8		
	LP-FS		1735	1735																
	RP-1S-A				10050	10025	1920	0.75	1440							4536	0.3	1360.8		
	RP-1S-B				10160	10080	2520	0.75	1890							4762	0.3	1428.6		
	RP-1N-A				13220	11610										2592	0.3	777.6		
	RP-1N-B						3720	0.75	2790			720	360			600	0.3	180		
	RP-1N-C				19880	14940	3840									3024	0.3	907.2		
	PP-FS-B				3420	3420				72298	46994									
	LRIT-1N													6840	3960					
	TF-1.1						700	0.70	490											
	TF-1.2						700	0.70	490											
	TF-1.3						700	0.70	490											
	FCU-1.1						2500	0.70	1750											
	FCU-1.2						1224	0.70	857											
	FCU-1.3						1056	0.70	739											
	CUH-1.1						200	0.70	140											
	CUH-1.2						200	0.70	140											
	UH-1.1						20	0.00	0											
	UH-1.2						20	0.00	0											
	UH-1.3						30	0.00	0											
	UH-1.4						20	0.00	0											
	RFP-1						696	0.70	487											
	RFP-2						696	0.70	487											
	RFP-3						696	0.70	487											
	Sub Total Load	29282	14616	14616	56730	50075	21458		12678	72298	46994	720	360	6840	3960	17260		5178	0	0
	Total Floor Load VA	117624																		
	Sub Total Emergency Load		0	0	0	0	0		0			0	0	6840	3960	0		0	0	0

Cornell NYCTech FAB -- 100% Construction Document Electrical Summer Calculations																				
Level	Area Description	Approx ft²	Lights Connected	Lights Demand	Power Connected	Power Demand	Misc. MEP Connected	Misc. MEP DF	Misc. MEP Demand	Kitchen Connected	Kitchen Demand	Security Connected	Security Demand	IT Equipment Connected	IT Equipment Demand	Misc. Eq. Connected	Misc. Eq. DF	Misc. Eq. Demand	Elevators Connected	Elevators Demand
	Total Emergency Connected Floor Load VA	6840																		
	Floor VA/sq.ft	4.0																		
Level 02																				
	LP-2S		4078	4078																
	LP-2N		8121	8121																
	ELP-2S		3402	3402																
	ELP-2N		4346	4346			1500	0.75	1125											
	RP-2S-A				14260	12130	1920	0.75	1440							2592	0.3	777.6		
	RP-2S-B				18020	14010	2120	0.75	1590							658	0.3	197.4		
	RP-2N-A				12420	11210	1920	0.75	1440							874	0.3	262.2		
	RP-2N-B				9940	9940	2920	0.75	2190							5520	0.3	1656		
	RP-2N-C				16380	13190	1920	0.75	1440							2160	0.3	648		
	ERP-2S						700	0.75	525											
	ERP-2N						1500	0.75	1125							480	0.3	144		
	LRIT-2S													16440	8760	1296	0.3	388.8		
	LRIT-2N													6840	3960	2016	0.3	604.8		
	TF-2.1						696	0.70	487											
	TF-2.2						696	0.70	487											
	FCU-2.1						600	0.70	420											
	FCU-2.2						1100	0.70	770											
	FCU-2.3						1400	0.70	980											
	Sub Total Load	32035	19947	19947	71020	60480	18992		14019	0	0	0	0	23280	12720	15596		4679	0	0
	Total Floor Load VA	148835																		
	Sub Total Emergency Load		7748	7748	0	0	3700		2775			0	0	23280	12720	3792		1138	0	0
	Total Emergency Connected Floor Load VA	38520																		
	Floor VA/sq.ft	4.6																		
Level 03																				
	LP-3S		4294	4294																
	LP-3N		7873	7873																
	RP-3S-A				14670	12335	1920	0.75	1440							2376	0.3	712.8		
	RP-3S-B				15020	12510	2120	0.75	1590							1080	0.3	324		
	RP-3N-A				11340	10670	1920	0.75	1440							864	0.3	259.2		
	RP-3N-B				9400	9400	2920	0.75	2190							1600	0.3	480		
	RP-3N-C				17460	13730	1920	0.75	1440							4104	0.3	1231.2		
	LRIT-3S													6840	3960					
	LRIT-3N													6840	3960					
	TF-3.1						696	0.70	487											
	TF-3.2						696	0.70	487											
	FCU-3.1						1100	0.70	770											
	FCU-3.2						1100	0.70	770											
	FCU-3.3						1400	0.70	980											
	Sub Total Load	30569	12167	12167	67890	58645	15792		11594	0	0	0	0	13680	7920	10024		3007	0	0
	Total Floor Load VA	119553																		
	Sub Total Emergency Load		0	0	0	0	0		0			0	0	13680	7920	0		0	0	0
	Total Emergency Connected Floor Load VA	13680																		
	Floor VA/sq.ft	3.9																		
Level 04																				
	LP-4S		4599	4599																
	LP-4N		9214	9214																
	ELP-4S		4878	4878																
	ELP-4N		2478	2478																
	RP-4S-A				13790	11895	1920	0.75	1440							3456	0.3	1036.8		
	RP-4S-B				18420	14210	1920	0.75	1440							1728	0.3	518.4		
	RP-4N-A				11340	10670	1920	0.75	1440							864	0.3	259.2		
	RP-4N-B				10480	10240	2920	0.75	2190							1600	0.3	480		
	RP-4N-C				16740	13370	1920	0.75	1440							3456	0.3	1036.8		
	ERP-4S						3114	0.75	2336											
	ERP-4N						2000	0.75	1500											
	LRIT-4S													7650	4680					
	LRIT-4N													6840	3960					
	TF-4.1						696	0.70	487											
	TF-4.2						696	0.70	487											
	FCU-4.1						1100	0.70	770											
	FCU-4.2						1100	0.70	770											
	FCU-4.3						1400	0.70	980											
	Sub Total Load	30308	21169	21169	70770	60385	20706		15279.9	0	0	0	0	14490	8640	11104		3331.2	0	0
	Total Floor Load VA	138239																		
	Sub Total Emergency Load		7356	7356	0	0	5114		3836			0	0	14490	8640	0		0	0	0
	Total Emergency Connected Floor Load VA	26960																		

Cornell NYCTech FAB -- 100% Construction Document Electrical Summer Calculations																					
			Lights	Lights	Power	Power	Misc. MEP	Misc. MEP	Misc. MEP	Kitchen	Kitchen	Security	Security	IT Equipment	IT Equipment	Misc. Eq.	Misc. Eq.	Misc. Eq.	Elevators	Elevators	
Level	Area Description	Approx ft²	Connected	Demand	Connected	Demand	Connected	DF	Demand	Connected	Demand	Connected	Demand	Connected	Demand	Connected	DF	Demand	Connected	Demand	
	Floor VA/sq.ft	4.6																			
Roof																					
	LP-R		2999	2999																	
	RP-R		1500	1500	8640	8640	1000	0.75	750												
	ERP-GP				7440	7440															
	FA CUTOUT P						400	0.75	300												
	AHU-1 WORKSPACE N (supply)						64017	0.70	44812												
	AHU-1 WORKSPACE N (return)						33255	0.70	23279												
	AHU-1 WORKSPACE N (recovery wheels)						915	0.70	640												
	AHU-2 WORKSPACE S (supply)						33255	0.70	23279												
	AHU-2 WORKSPACE S (return)						17459	0.70	12221												
	AHU-2 WORKSPACE S (recovery wheels)						915	0.70	640												
	AHU-3 CAFÉ (supply)						22447	0.70	15713												
	AHU-3 CAFÉ (return)						11639	0.70	8148												
	AHU-3 CAFÉ (recovery wheels)						915	0.70	640												
	AHU-4 SEMINAR (supply)						43232	0.70	30262												
	AHU-4 SEMINAR (return)						33255	0.70	23279												
	AHU-4 SEMINAR (recovery wheels)						915	0.70	640												
	AHU-5 CONFERENCE (supply)						43232	0.70	30262												
	AHU-5 CONFERENCE (return)						17459	0.70	12221												
	AHU-5 CONFERENCE (recovery wheels)						915	0.70	640												
	SEF-1 (only operating in smoke condition. Assumes AHUs shutdown.)						22447	0.00	0												
	SEF-2 (only operating in smoke condition. Assumes AHUs shutdown.)						22447	0.00	0												
	SEF-3 (only operating in smoke conditio. Assumes AHUs shutdown.)						11639	0.00	0												
	SEF-4 (only operating in smoke condition. Assumes AHUs shutdown.)						11639	0.00	0												
	SEF-5 (only operating in smoke condition. Assumes AHUs shutdown.)						22447	0.00	0												
	SEF-6 (only operating in smoke condition. Assumes AHUs shutdown.)						22447	0.00	0												
	SEF-7 (only operating in smoke condition. Assumes AHUs shutdown.)						17459	0.00	0												
	EF-5.1						2827	0.70	1979												
	EF-5.2						1330	0.70	931												
	TOILET EXHAUST (TX-5.1)						3991	0.70	2793												
	SF-5.1						696	0.70	487												
	SF-5.2						696	0.70	487												
	CT-1						9145	0.70	6402												
	CT-1 SUPPLY HEAT TRACE						1920	0.70	1344												
	CT-1 RETURN HEAT TRACE						1920	0.70	1344												
	CTF-1						1746	0.70	1222												
	FCU-5.1						528	0.70	370												
	FCU-5.2						528	0.70	370												
	UH-5.1						15	0.00	0												
	UH-5.2						15	0.00	0												
	UH-5.3						22	0.00	0												
	UH-5.4						22	0.00	0												
	UH-5.5						22	0.00	0												
	UH-5.6						15	0.00	0												
	UH-5.7						15	0.00	0												
	Sub Total Load	8752	4499	4499	16080	16080	481205.0903		245455.645	0	0	0	0	0	0	0		0	0	0	
	Total Floor Load VA	501784																			
	Sub Total Emergency Load		0	0	7440	7440	130927		300	0		0	0	0	0	0		0	0	0	
	Total Emergency Connected Floor Load VA	138367																			
	Floor VA/sq.ft	57.3																			
Miscellaneous																					
	Site Lighting			5000																	
	PE-1																		41382	37243.8	
	PE-2																		41382	37243.8	
	PE-3																		31832	28648.8	
	Total Connected Load Area (kVA)	152110																			
	Total Demand Load Area (kVA)	152110																			
	Total Connected Load (kVA)	2186	89		330		1357			123		24		66		83			115		
	Total Demand Load (kVA)	1366		94		170			853		80		4		37			25		103	
	Total Connected Emergency Load (kVA)	314	24		9		150			0		23		59		7			41		
	Total Demand Emergency Load (kVA)	195		29		9			14		0		4		33			2		103	
	Power factor	0.88																			
	Total Connected kVA	2186																			
	Diversity Factor	0.95																			
	Demand kVA	1366																			
	Demand kW	1202																			
	W/sq.ft	7.9																			
	Service ampacity @ 480Y/277V	1448																			
	20% Spare Capacity	1737																			