HUD-0001677 ORIGINAL

GCR 79-165

Volume 15
Part II of II

HUD UTILITIES DEMONSTRATION SERIES

DETAILED INITIAL COST DATA FOR ALTERNATE ENERGY SYSTEMS FOR THE SUMMIT PLAZA COMPLEX JERSEY CITY, N.J.

Prepared for
U.S. Department of Commerce
National Bureau of Standards
Center for Mechanical Engineering and Process Technology
Washington, D.C. 20234

hudmius
MODULAR INTEGRATED UTILITY SYSTEMS
improving community utility services by supplying electricity, heating, cooling, and water/ processing liquid and solid wastes/ conserving energy and natural resources/ minimizing environmental impact

Sponsored by
Department of Housing and Urban Development
Energy, Building Technology and Standards Division
Office of Policy Development and Research
Washington, D.C. 20410

May 1979

FILE COPY

GCR 79-165

DETAILED INITIAL COST DATA FOR ALTERNATIVE ENERGY SYSTEMS FOR THE SUMMIT PLAZA COMPLEX JERSEY CITY, N.J.

H. D. Nottingham and Associates Inc.
McLean, Virginia

Prepared for
U.S. Department of Commerce
National Bureau of Standards
Center for Mechanical Engineering and Process Technology
Washington, D.C. 20234

Sponsored by
Department of Housing and Urban Development
Energy, Building Technology and Standards Division
Office of Policy Development and Research
Washington, D.C. 20410

May 1979

U.S. DEPARTMENT OF COMMERCE, Juanita M. Kreps, *Secretary*
Jordan J. Baruch, *Assistant Secretary for Science and Technology*
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, *Director*

Summit Plaza is a residential/commercial development located in Jersey City, New Jersey. It consists of four apartment buildings, a commercial/office building, and a school building. The four apartment buildings are named Camci, Descon-Concordia, Shelley A and Shelley B and contain a total of 506,780 square feet of space. The commercial/office building contains 49,130 square feet and the school building contains 17,870 square feet. The total development contains 485 apartment units and 573,780 square feet of occupied space.

The Summit Plaza development is served by a Total Energy System. The Total Energy System in use has the following characteristics:

- Electric power for the development is generated on-site by diesel engine generators.
- Waste heat recovered from the diesel generators is used for building heating, for generation of domestic hot water, and to fuel absorption type water chillers to provide building cooling.
- When heating requirements are larger than can be met by the diesel engine heat recovery system, supplemental oil-fired boilers are used to increase the heat supplied to meet the heating demand.

The purpose of this report is to derive detailed estimates of the construction costs of alternate energy systems which might be used for comparison to the existing Total Energy plant at Summit Plaza. The alternate systems included in this report were the twelve systems analyzed in a related NBS publication:

"Design, Cost and Operating Data for Alternate Energy Systems for the Summit Plaza Complex, Jersey City, New Jersey."

The alternate systems included are the following:

System 1 - The existing Total Energy plant.

System 2 - The existing Total Energy plant operated such that it sells electric power to the local electric utility company under certain conditions. The construction cost for this system is identical to that for System 1.

System 3 - A Total Energy plant similar to but having higher efficiency diesel engine generators than System 1.

System 4 - A Total Energy plant having both electric driven and absorption water chillers.

System 5 - A central heating and cooling plant using electric driven water chillers and oil fired boilers. Electricity is purchased from the local utility company for this and all subsequent systems.

System 6 - A central heating and cooling plant using absorption water chillers and oil fired boilers.

System 7 - A central heating and cooling plant using diesel driven centrifugal and absorption water chillers and oil fired boilers.

System 8 - Individual heating/cooling plants for each building-- each plant would consist of an electric driven water chiller and an oil fired boiler.

System 9 - Individual heating/cooling plants for each building-- each plant would consist of an electric driven water chiller and an electric boiler.

System 10 - Incremental heating and cooling units for each space.

System 11 - Individual heat pumps for each space.

System 12 - Individual self-contained air conditioning units with electric heat in each space.

SUMMARY

CONSTRUCTION COSTS

SYSTEM	COST
1	$7,331,291
2	7,331,291
3	7,947,495
4	7,318,205
5	5,835,878
6	5,861,258
7	6,621,302
8	5,026,990
9	4,963,177
10	4,119,539
11	4,196,508
12	3,989,117

SYSTEMS 1/2
TOTAL ENERGY SYSTEM
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEMS 1/2

SYSTEMS 1/2 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Building	$2,335,802	$ 203,164	$2,538,966
Site Distribution System	303,344	194,237	497,581
Camci	414,602	475,673	890,275
Commercial Building	260,065	80,207	340,272
Descon-Concordia	415,021	450,115	865,136
School	77,857	69,975	147,832
Shelley A	490,508	499,400	989,908
Shelley B	147,013	151,498	298,511
Building Floorspace	---	---	762,810
TOTAL	$4,444,212	$2,124,269	$7,331,291

Unit Cost = $7,331,291 ÷ 573,780 Ft^2 = $12.77/$Ft^2$

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	EQUIPMENT:							
	Diesel Generators-500KW	EA	5	10,000	75,000	50,000	375,000	$425,000
	Heat Recovery Silencers	EA	5	500	7,600	2,500	38,000	40,500
	Exhaust Mufflers	EA	5	100	700	500	3,500	4,000
	Exhaust Ductwork, S.S.	#	4,000	1.60	1.10	6,400	4,400	10,800
	Diesel Exh.Fan, 36,000 cfm	EA	1	400	2,500	400	2,500	2,900
	Fuel Oil Tanks:							
	25,000 Gallon	EA	3	5,000	10,000	15,000	30,000	45,000
	4,000 Gallon	EA	2	500	2,000	1,000	4,000	5,000
	1,000 Gallon	EA	3	100	500	300	1,500	1,800
	550 Gallon	EA	1	80	300	80	300	380
	Boiler - 400 HP	EA	2	2,000	40,000	4,000	80,000	84,000
	Absorp. Chiller - 550Tn	EA	2	2,000	55,000	4,000	110,000	114,000
	Cooling Tower -1,600Tn	EA	2	2,000	23,000	4,000	46,000	50,000
	Dry Cooler - 580 Ton	EA	1	1,000	8,000	1,000	8,000	9,000
	Pumps:							
	Primary Hot Water	EA	3	200	2,400	600	7,200	7,800
	Absorber Hot Water	EA	3	200	2,400	600	7,200	7,800
	Secondary Hot Water	EA	4	200	2,400	800	9,600	10,400
	Chilled Water	EA	2	300	3,900	600	7,800	8,400
	Condenser Water	EA	3	300	3,900	900	11,700	12,600
	Raw Water	EA	3	250	2,900	750	8,700	9,450
	Misc. Hot Water	EA	2	100	200	200	400	600
	Misc. Pumps	EA	8	100	500	800	4,000	4,800
	Heat Exchangers:							
	750 GPM	EA	2	1,000	10,000	2,000	20,000	22,000
	100-300 GPM	EA	4	500	3,000	2,000	12,000	14,000
	Air Compressors:							
	54 cfm	EA	2	500	10,000	1,000	20,000	21,000
	6 cfm	EA	1	300	1,000	300	1,000	1,300
	Expansion Tanks	EA	4	50	1,000	200	4,000	4,200
	Miscellaneous Tanks:							
	380 Gallon	EA	1	40	200	40	200	240
	20 Gallon	EA	6	25	25	150	150	300
	Sub-Total, Equipment					100,120	817,150	917,270
	HVAC Systems:							
	Air Handling Unit 40,000 cfm	EA	1	1,000	12,000	1,000	12,000	13,000
	Supply Air Fan 4,000 cfm	EA	1	200	1,000	200	1,000	1,200
	Exhaust Fans:							
	7,000-9,000 cfm	EA	3	200	1,500	600	4,500	5,100
	1,000-3,000 cfm	EA	4	200	1,000	800	4,000	4,800

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEMS 1/2

CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Equipment, Continued:							
	Acoustical Sound Traps on Air Moving Equipment	EA	7	1,000	10,000	$ 7,000	$70,000	$77,000
	Fan-coil Units	EA	5	45	200	225	1,100	1,325
	Galvanized Ductwork	#	7,400	.93	.33	6,882	2,442	9,324
	Misc. Accessories incl. registers, dampers, louvers, etc.	LS				2,000	8,000	10,000
	Subtotal HVAC Systems					18,000	103,042	121,749
	PIPING SYSTEMS:							
	Pipe:							
	2" & under	FT	2,000	2.25	1.30	4,500	2,600	7,100
	50% Fittings	FT	1,000	2.25	1.30	2,250	1,300	3,550
	3"	FT	460	4.10	3.20	1,886	1,472	3,358
	50% Fittings	FT	230	4.10	3.20	943	736	1,679
	4"	FT	620	5.15	4.50	3,193	2,790	5,983
	50% Fittings	FT	310	5.15	4.50	1,597	1,395	2,992
	5"	FT	900	7.75	9.05	6,975	8,145	15,120
	50% Fittings	FT	450	7.75	9.05	3,488	4,073	7,561
	6"	FT	330	9.15	11.05	3,020	3,647	6,667
	50% Fittings	FT	165	9.15	11.05	1,510	1,823	3,333
	8"	FT	1,140	11.40	15.95	12,996	18,183	31,179
	50% Fittings	FT	570	11.40	15.95	6,498	9,092	15,590
	10"	FT	900	13.55	25.75	12,195	23,175	35,370
	50% Fittings	FT	450	13.55	25.75	6,098	11,588	17,686
	12"	FT	20	15.00	35.00	300	700	1,000
	50% Fittings	FT	10	15.00	35.00	150	350	500
	14"	FT	220	15.00	50.00	3,300	11,000	14,300
	50% Fittings	FT	110	15.00	50.00	1,650	5,500	7,150
	Insulation:							
	2" & under	FT	3,000	.50	1.50	1,500	4,500	6,000
	3"	FT	690	.58	1.72	400	1,187	1,587
	4"	FT	930	.90	2.70	837	2,511	3,348
	5"	FT	1,350	1.10	3.30	1,485	4,455	5,940
	6"	FT	495	1.30	3.90	644	1,931	2,575
	8"	FT	1,710	1.40	6.65	2,394	11,372	13,766
	10"	FT	1,350	1.55	8.80	2,093	11,880	13,973
	12"	FT	30	1.70	9.75	51	293	344
	14"	FT	330	2.00	10.50	660	3,465	4,125

COST ESTIMATE
FOR

SUMMIT PLAZA DEVELOPMENT — SYSTEM 1/2
JERSEY CITY, N. J. — CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Equipment, Contd.:							
	Valves:							
	12" (all types)	EA	2	240	2085	480	4,170	4,650
	10"	EA	50	188	1485	9,400	74,250	83,650
	8"	EA	40	165	863	6,600	34,520	41,120
	6"	EA	40	135	667	5,400	26,680	32,080
	5"	EA	50	120	525	6,000	26,250	32,250
	4"	EA	50	90	330	4,500	16,500	21,000
	3"	EA	50	60	240	3,000	12,000	15,000
	2-1/2"	EA	20	52	203	1,040	4,060	5,100
	2" & under	EA	200	18	100	3,600	20,000	23,600
	Misc. Piping Items:							
	Flex. Connectors	EA	80	25	125	2,000	10,000	12,000
	Misc. Items					20,000	60,000	80,000
	Sub-Total, Piping Systems					142,633	439,593	582,226
	Sub-Total					261,460	1,359,785	1,621,245
	5% Sales Tax						67,989	67,989
	18% Labor Insurance					47,063		47,063
	Sub-Total							1,736,297
	9% Subcontractor Overhead							156,267
	Sub-Total							1,892,564
	10% Sub-Contractor Profit							189,256
	Sub-Total							2,081,820
	2% Gen. Contractor Mark up							41,636
	Sub-Total							2,123,456
	10% Area Factor							212,346
	TOTAL, MECHANICAL, CENTRAL EQUIPMENT BUILDING							$ 2,335,802

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COS
	Generator Switchgear W/5 600A C/Bs, 2000A bus, Spare Compt. & 3 Inst. Cubicles, 480V	EA	1	--	--	2,500	19,500	$ 22,000
	480V Switchboard 3 - 1200A CB 2 - 800A CB 10 - 400A CB Blank Section - 15" W.	EA	1	--	--	3,000	27,000	30,000
	2000A Bus Duct&Fittings	LS	1	--	--	800	4,040	4,840
	MCC-1 8 Sections Wide 17 - NEMA 1 Starters 12 - NEMA 2 " 3 - NEMA 0 "	EA	1	--	--	775	14,500	15,275
	MCC-2 4 Sections Wide 10 - NEMA 1 7 - NEMA 2 1 - NEMA 3 1 - 60A FUS/SW	EA	1	--	--	400	8,600	9,000
	MCC-3 - 6 Sections 3 - NEMA 1 3 - NEMA 2 2 - NEMA 3 3 - NEMA 4	EA	1	--	--	580	7,735	8,315
	Panelboard - LP-1 225A, 208/120V Dec. 52 - 1P, 20A 4 - 2P, 20A	EA	1	--	--	525	380	905
	Panelboard - LP-2 100A, 308/120V, SP. Bus, 24 Poles & 30A Contractor.	EA	1			210	180	390
	Transformers							
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	30 KVA, 480-208/120	EA	1	--	--	98	685	783

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING,
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	3 PDT 400A, 480V	EA	1			60	400	$ 460
	Disconnect Switches:							
	200A/NF 600V	EA	1			55	100	155
	60/NF 600V, WP	EA	15	24	68	360	1,020	1,380
	30/NF 600V, WP	EA	15	15	57	225	855	1,080
	Lighting	LS	1			1,800	3,500	5,300
	Recps, Switches, J.B. Motor Conns, etc.	LS	1			3,200	1,060	4,260
	Cable & Conduit	LS	1			1,630	5,300	6,930
	Controls	LS	1			10,000	8,000	18,000
	Misc. Elect. Work Testing, Adjustments, Etc.	LS	1			8,000	1,200	9,200
	SUBTOTAL					34,382	105,190	139,572
	Insurance - 18%					6,189		6,189
	Sales Tax - 5%						5,260	5,260
	SUBTOTAL							151,021
	Subcontractor O/H 9%							13,592
	SUBTOTAL							164,613
	Subcontractor Profit-10%							16,461
	SUBTOTAL							181,074
	Gen.Contractor OH&P 2%							3,621
	SUBTOTAL							184,695
	Area Factor - 10%							18,469
	TOTAL, ELECT., C.E.B.							$203,164

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SITE DISTRIBUTION SYSTEM, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Underground Pipe:							
	8" pipe	FT	1,600	11.40	15.95	18,240	25,520	$ 43,760
	6" pipe	FT	3,100	9.15	11.05	28,365	34,255	62,620
	4" pipe	FT	600	5.15	4.05	3,090	2,700	5,790
	3" pipe	FT	700	4.10	3.20	2,870	2,240	5,110
	Insulation -8"	FT	1,600	1.40	6.65	2,240	10,640	12,880
	6"	FT	3,100	1.30	3.90	4,030	12,090	16,120
	4"	FT	600	.90	2.70	540	1,620	2,160
	3"	FT	700	.58	1.72	406	1,204	1,610
	Fittings: 8"	EA	10	.13	.60	130	600	930
	6"	EA	100	.11	.28	1,100	2,800	3,900
	4"	EA	15	7.05	.10	106	150	256
	3"	EA	15	5.35	6.75	80	101	181
	Valves: 8"	EA	2	165	863	330	1,726	2,056
	6"	EA	26	135	667	3,510	17,342	20,582
	4"	EA	4	90	330	360	1,320	1,680
	3"	EA	6	60	240	360	1,440	1,800
	Manholes, Precast	EA	4	500	1500	2,000	6,000	8,000
	Excavation & Back-filling	LS	---	---	---	5,000	---	15,000
	Sub-total					82,757	121,748	204,505
	5% Sales Tax						6,087	6,087
	18% Labor Insurance					14,896		14,896
	Sub-total							225,488
	9% Sub-contractor Overhead							20,294
	Sub-total							245,782
	10% Subcontractor Profit							24,578
	Sub-total							270,360
	2% Gen. Contractor Mark Up							5,407
	Sub-total							275,767
	10% ARea Factor							27,577
	TOTAL, MECHANICAL, SITE DISTRIBUTION SYSTEM							$303,344

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SITE DISTRIBUTION, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Manholes	EA	8	15	--	120	--	$ 12,000
	Duct Banks - Conc. Encased, 4" PVC							
	12 way	LF	1,000	32	--	320	--	32,000
	10 way	LF	200	27	--	54	--	5,400
	8 way	LF	550	22	--	121	--	12,100
	6 way	LF	500	17	--	85	--	8,500
	Cable - XLP - Use-600V	LF	17,000	.75	2.18	12,750	51,060	49,810
	Splices	EA	21	3	--	63	--	6,300
	SUBTOTAL					53,300	77,610	130,910
	Insurance - 18%					9,594		9,594
	Sales Tax - 5%						3,880	3,880
	SUBTOTAL							144,384
	Subcontractor O/H - 9%							12,995
	SUBTOTAL							157,379
	Subcontractor Prof. 10%							15,738
	SUBTOTAL							173,117
	Gen.Contr OH&P 2%							3,462
	SUBTOTAL							176,579
	Area Factor - 10%							17,658
	TOTAL, ELECTRICAL, SITE DISTRIBUTION							$194,237

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEMS 1/2

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Fan Coil Units	EA	353	45	220	$15,750	$77,000	$92,750
	Air Handling Units	EA	3	230	1,000	690	3,000	3,690
	Unit Heaters	EA	2	22	238	44	476	520
	Circulating Pumps	EA	7	180	500	1,260	3,500	4,760
	Fin Tube Radiators	FT	204	11	17	2,244	3,468	5,712
	Exhaust Fans	EA	2	215	1,200	430	2,400	2,830
	Domestic HW Converter	EA	2	100	500	200	1,000	1,280
	Piping - 1/2"	FT	1,500	1.50	.35	2,250	525	2,775
	50% Fittings	FT	750	1.50	.35	1,125	263	1,088
	Piping - 3/4"	FT	2,200	1.60	.45	3,520	990	4,510
	50% Fittings	FT	1,100	1.60	.45	1,760	495	2,255
	Piping - 1"	FT	3,500	1.85	.65	6,475	2,275	8,750
	50% Fittings	FT	1,750	1.85	.65	3,238	1,138	4,376
	Piping - 1-1/4"	FT	1,200	2.00	.90	2,400	1,080	3,480
	50% Fittings	FT	600	2.00	.90	1,200	540	1,740
	Piping - 1-1/2"	FT	1,600	2.20	1.05	3,520	1,680	5,200
	50% Fittings	FT	800	2.20	1.05	1,760	840	2,600
	Piping - 2"	FT	1,800	2.75	1.45	4,950	2,610	7,560
	50% Fittings	FT	900	2.75	1.45	2,475	1,305	3,780
	Piping - 2-1/2"	FT	400	3.50	2.30	1,400	920	2,320
	50% Fittings	FT	200	3.50	2.30	700	460	1,160
	Piping - 3"	FT	360	4.10	3.20	1,476	1,152	2,628
	50% Fittings	FT	180	4.10	3.20	738	576	1,314
	Piping - 4"	FT	720	5.15	4.50	3,708	3,240	6,948
	50% Fittings	FT	360	5.15	4.50	1,854	1,620	3,474
	Piping - 5"	FT	90	7.75	9.05	698	815	1,513
	50% Fittings	FT	45	7.75	9.05	349	407	756
	Piping - 6"	FT	40	11.05	9.15	442	366	808
	50% Fittings	FT	20	11.05	9.15	221	183	404
	Insulation - 1/2"	FT	2,250	.41	1.24	923	2,790	3,713
	- 3/4"	FT	3,300	.41	1.24	1,353	4,092	5,445
	- 1"	FT	5,250	.45	1.35	2,363	7,088	9,451
	- 1-1/4"	FT	1,800	.49	1,46	882	2,628	3,510
	- 1-1/2"	FT	2,400	.53	1.57	1,272	3,768	5,040
	- 2"	FT	2,700	.58	1.72	1,566	4,644	6,210
	- 2-1/2"	FT	600	.61	1.84	366	1,104	1,470
	- 3"	FT	540	.68	2.02	367	1,091	1,458
	- 4"	FT	1,080	.90	2.70	972	2,916	3,888
	- 5"	FT	135	1.10	3.30	149	446	595
	- 6"	FT	60	1.30	3.90	78	234	312
	Valves - 2" & under	EA	100	5	20	500	2,000	2,500
	- 2-1/2"	EA	10	20	80	200	800	1,000
	- 3"	EA	5	40	160	200	800	1,000
	- 4"	EA	45	60	220	2,700	9,900	12,600
	- Thermo Mixing	EA	4	16	559	64	2,236	2,300

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEMS 1/2

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	(Continued)							
	Ductwork	#	6,500	.93	.33	$ 6,045	$ 2,145	$ 8,190
	Grilles	EA	30	4.30	9.85	129	296	425
	Diffusers	EA	25	7	40	175	1,000	1,175
	Misc. Equip. & Materials	LS	—	—	—	10,000	20,000	30,000
	Subtotal					97,181	184,302	281,483
	5% Sales Tax						9,215	9,215
	18% Labor Insurance					17,493		17,493
	Subtotal							308,191
	9% Subcontractor O.H.							27,737
	Subtotal							335,928
	10% Subcontractor Profit							33,593
	Subtotal							369,521
	2% Gen.Contractor Markup							7,390
	Subtotal							376,911
	10% Area Factor							37,691
	TOTAL, MECHANICAL, CAMCI							$414,602

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard - GE Inc. or CT Sect. Main Sw. - 800A 200A Fused QMR 400A Fused QMR	EA	1			425	3,480	$ 3,905
	Transformers							
	750 KVA, 480-208/120	EA	1			392	6,173	6,565
	45 KVA, 480-208/120	EA	1			130	845	975
	30 KVA, 480-208/120	EA	1.			98	685	783
	208V Dist. Board, QMR 9-400/250 AF Sws. 5-200/200AF Sws. 4-100/100 AF Sws.	EA	1			850	6,360	7,210
	Disc. Switches							
	400/350 AF 600V	EA	1			98	284	382
	400/400 AF 600V	EA	1			98	290	388
	200/150 AF 600V	EA	1			55	110	165
	100/70 AF 600V	EA	1			36	80	116
	200/NF 600V	EA	1			55	105	160
	100/100 AF 600V		1			36	80	116
	60/40 AF 600V		1			22	40	62
	Bolt. Press. Sw.-2000A 1500AF	EA	1			335	3,575	3,910
	Comb.Disc.-Starters-#1	EA	25	76	168	1,900	4,200	6,100
	Panelboards:							
	225A, 480V, 48P	EA	1			370	261	631
	225A, 208V, 36P	EA	4	295	207	1,180	828	2,008
	100A, 208V, 36P	EA	1			275	200	475
	Apart. Dist. Centers 240V, 100A, 1Ø,3W,10P	EA	153	82	43	12,546	7,344	19,890
	Lighting Fixt.,Switches Recept., Wiring, etc. for Apartments	LS	1	200	400	107,100	61,200	168,300
	Cable & Conduit-Fdrs.	LS	1			14,560	47,670	62,230
	T.V. Ant. System	LS	1			5,350	2,300	7,650

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Intercomm. System	LS	1			7,400	10,600	$ 18,000
	F. A. System	LS	1			2,000	3,500	5,500
	SUBTOTAL					155,311	162,210	317,521
	Insurance - 18%					27,956		27,956
	Sales Tax - 15%						8,110	8,110
	SUBTOTAL							353,587
	Subcontractor O.H.-9%							31,823
	SUBTOTAL							385,410
	Subcontractor Prof.-10%							38,541
	SUBTOTAL							423,951
	Gen. Contr. OH&P - 2%							8,479
	SUBTOTAL							432,430
	Area Factor - 10%							43,243
	TOTAL, ELECT.,CAMCI							$475,673

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Fan Coil Units	EA	43	50	400	2,150	17,200	$ 19,350
	Air Handling Unit	EA	1	680	7,000	680	7,000	7,680
	Circulating Pumps	EA	4	180	560	720	2,240	2,960
	Fin Tube Radiation	FT	85	11	17	935	1,445	2,380
	Domestic HW Converter	EA	1	50	300	50	300	350
	Expansion Tanks	EA	4	21	170	84	680	764
	Piping - 3/4"	FT	500	1.60	.45	800	225	1,025
	50% Fittings	FT	250	1.60	.45	400	113	513
	Piping - 1"	FT	320	1.85	.65	592	208	800
	50% Fittings	FT	160	1.85	.65	296	104	400
	Piping - 1-1/4"	FT	1250	2.00	.90	2,500	1,125	3,625
	50% Fittings	FT	625	2.00	.90	1,250	563	1,813
	Piping - 1-1/2"	FT	940	2.20	1.05	2,068	987	3,055
	50% Fittings	FT	470	2.20	1.05	1,034	494	1,528
	Piping - 2"	FT	970	2.75	1.45	2,668	1,407	4,075
	50% Fittings	FT	485	2.75	1.45	1,334	703	2,037
	Piping - 2½"	FT	1580	3.50	2.30	5,530	3,634	9,164
	50% Fittings	FT	790	3.50	2.30	2,765	1,817	4,582
	Piping - 3"	FT	880	4.10	3.20	3,608	2,816	6,424
	50% Fittings	FT	440	4.10	3.20	1,804	1,408	3,212
	Piping - 4"	FT	1500	5.15	4.50	7,725	6,750	14,475
	50% Fittings	FT	750	5.15	4.50	3,863	3,375	7,238
	Piping - 6"	FT	44	11.05	9.15	486	402	888
	50% Fittings	FT	22	11.05	9.15	243	201	444
	Insulation - 3/4"	FT	750	.41	1.24	308	930	1,238
	- 1"	FT	480	.45	1.35	216	648	864
	- 1-1/4"	FT	1875	.49	1.46	919	2,737	3,656
	- 1-1/2"	FT	1410	.53	1.57	747	2,214	2,961
	-2"	FT	1255	.58	1.72	728	2,159	2,887
	-2-1/2"	FT	2370	.61	1.84	1,446	4,361	5,807
	- 3"	FT	1320	.68	2.02	898	2,666	3,564
	-4"	FT	2250	.90	2.70	2,025	6,075	8,100
	- 6"	FT	66	1.30	3.90	86	257	343
	Valves - 6"	EA	8	90	445	720	3,560	4,280
	-4"	EA	21	60	220	1,260	4,620	5,880
	- 2"	EA	56	9	52	504	2,912	3,416
	- Under 2"	EA	45	9	20	225	900	1,125
	Ductwork	#	13100	.93	.33	12,183	4,323	16,506
	Grilles	EA	8	4.30	9.85	34	79	113
	Diffusers	EA	17	7	.40	119	680	799
	Misc. Equip & Mat'ls	LS	--	--	--	5,000	10,000	15,000

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEMS 1/2

COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	(Continued)							
	SUBTOTAL					$71,003	$104,318	$175,321
	5% Sales Tax						5,216	5,216
	18% Labor Insurance					12,780		12,780
	SUBTOTAL							193,317
	9% Subcontractor O.H.							17,399
	SUBTOTAL							210,716
	10% Subcontractor Profit							21,072
	SUBTOTAL							231,788
	2% Gen.Contractor Markup							4,635
	SUBTOTAL							236,423
	10% Area Factor							23,642
	TOTAL, MECHANICAL, COMMERCIAL BUILDING							$260,065

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. COMMERCIAL BUILDING, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard 800A MCB & Inc. Sect.	EA	1	--	--	235	1,760	$ 1,995
	Transformers:							
	500 KVA, 480-480/277	EA	1	--	--	350	4,424	4,774
	30 KVA, 480-208/120	EA	3	98	685	294	2,055	2,349
	15 KVA, 480-208/120	EA	1	--	--	76	300	376
	7.5 KVA, 480-208/120	EA	1	--	--	65	180	245
	480V Distr.Board, 800A 2 - 400A QMQB Sw. 1 - 200A " 2 - 60A "	EA	1	--	--	270	4,600	4,870
	Disc. Switches 200/65A, 600V	EA	1	--	--	55	110	165
	Panelboards:							
	400A, 480V, w/1-200A & 1-150A, 4-30A	EA	1	--	--	150	460	610
	225A, 480V, MCB, 30P		1	--	--	260	390	650
	225A, 480V, MLO, 34P		3	278	200	834	600	1,434
	100A, 208V, MCB, 20P		1	--	--	164	175	339
	100A, 208V, 20P		2	164	135	328	270	598
	Lighting	LS	1	--	--	5,170	2,508	7,478
	Receptacles, Switches J. Boxes, F.C., Etc.	EA	100	15	10	1,500	1,000	2,500
	Cable & Conduit	LS	1	--	--	5,400	17,690	23,090
	Motor Starters	EA	4	150	48	600	192	792
	Fire Alarm System	LS	1	--	--	500	2,100	2,600
	SUBTOTAL					16,251	36,614	54,865
	Insurance - 18%					2,925		2,925
	Sales Tax - 5%						1,830	1,830
	SUBTOTAL							59,620
	Subcontractor O.H. -9%							5,366
	SUBTOTAL							64,986
	Subcontractor Prof.-10%							6,499
	SUBTOTAL							71,485
	Gen.Contr. OH&P - 2%							1,430
	SUBTOTAL							72,915
	Area Factor - 10%							7,292
	TOTAL							$80,207

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Fan Coil Units	EA	419	45	220	18,855	48,400	$ 67,255
	Air Handling Units	EA	1	250	2,500	250	2,500	2,750
	Circulating Pumps	EA	3	190	800	570	2,400	2,970
	Domestic HW Converters	EA	2	50	500	100	1,000	1,100
	Piping - 3/4"	FT	200	1.60	.45	320	90	410
	50% Fittings	FT	100	1.60	.45	160	45	205
	Piping - 1"	FT	4,500	1.85	.65	8,325	2,925	11,250
	50% Fittings	FT	2,250	1.85	.65	4,163	1,463	5,626
	Piping - 1-1/4"	FT	10,100	2.00	.90	20,200	9,090	29,290
	50% Fittings	FT	5,050	2.00	.90	10,100	4,545	14,645
	Piping - 1-1/2"	FT	1,300	2.20	1.05	2,860	1,365	4,225
	50% Fittings	FT	650	2.20	1.05	1,430	683	2,113
	Piping - 2"	FT	200	2.75	1.45	550	290	840
	50% Fittings	FT	100	2.75	1.45	275	145	420
	Piping - 2-1/2"	FT	400	3.50	2.30	1,400	920	2,320
	50% Fittings	FT	200	3.50	2.30	700	460	1,160
	Piping - 3"	FT	750	4.10	3.20	3,075	2,400	5,475
	50% Fittings	FT	375	4.10	3.20	1,538	1,200	2,738
	Piping - 4"	FT	500	5.15	4.50	2,575	2,250	4,825
	50% Fittings	FT	250	5.15	4.50	1,288	1,125	2,413
	Piping - 5"	FT	120	9.05	7.75	1,086	930	2,016
	50% Fittings	FT	60	9.05	7.75	543	465	1,008
	Piping - 6"	FT	75	11.05	9.15	829	686	1,515
	50% Fittings	FT	38	11.05	9.15	414	343	757
	Valves - 2" & under	EA	100	5	20	500	2,000	2,500
	- 3"	EA	12	40	160	480	6,400	6,880
	- 4"	EA	10	60	220	600	2,200	2,800
	- 6"	EA	12	90	445	1,080	5,340	6,420
	- Thermo.Mixing	EA	2	16	559	32	1,118	1,150
	Insulation - 3/4"	FT	300	.41	1.24	123	372	495
	- 1"	FT	6,750	.45	1.35	6,750	9,113	15,863
	- 1-1/4"	FT	15,150	.49	1.46	7,424	22,119	29,543
	- 1-1/2"	FT	1,950	.53	1.57	1,034	3,062	4,096
	- 2"	FT	300	.58	1.72	174	516	690
	- 2-1/2"	FT	600	.61	1.84	366	1,104	1,470
	- 3"	FT	1,125	.68	2.02	765	2,273	3,038
	- 4"	FT	750	.90	2.70	675	2,025	2,700
	- 5"	FT	180	1.10	3.30	198	594	792
	- 6"	FT	113	1.30	3.90	147	441	588
	Duct Work	#	2,000	.93	.63	1,860	1,260	3,120
	Grilles	EA	17	4.30	9.85	73	167	240
	Misc. Equip. & Mat'ls	LS	--	--	--	10,000	20,000	30,000
	SUBTOTAL					113,887	165,824	279,711

Continued

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	(Continued)							
	SUBTOTAL					113,887	165,824	279,211
	5% Sales Tax						8,291	8,291
	18% Labor Insurance					20,500		20,500
	SUBTOTAL							308,502
	9% Subcontractor O.H.							27,765
	SUBTOTAL							336,267
	10% Subcontr. Profit							33,627
	SUBTOTAL							369,894
	2% Gen.Contr. Mark-up							7,398
	SUBTOTAL							377,292
	10% Area Factor							37,729
	TOTAL, MECHANICAL, DESCON-CONCORDIA							$ 415,021

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard Inc. CT Sect. w/ 400A CB & 225KVA 480-208/120V Trans.	EA	1	--	--	220	5,830	6,050
	208V Dist. Bd.-2Sect. w/12-200/150 AF QMR 4-100/80 AF QMR	EA	1	--	--	395	5,000	5,395
	480V Switchboard-EM. Inc. Sect. w/ 200A MCB 1-200A CB 2-100A BB	EA	1	--	--	220	2,450	2,670
	480V Switchboard Inc. Sect. w/ 1-800A CB 2-100A CB 500 KVA Transf. 480-208/120V 208V Dist. Bd. Sect. W/12-200/150AF QMR 4-100/80AF QMR	EA	1	--	--	965	12,120	13,085
	480V Em.Switchbd. 1200A-20" Inc. Sect. for CT-Pts 800A QMR Main 2-400A C.B.S.	EA	1	--	--	395	3,525	3,920
	Transformers							
	30KVA, 480-208/120	EA	1	--	--	98	684	782
	Panelboards - 208V							
	225A, 36P	EA	2	2.95	2.07	590	414	1,004
	100A, 24P	EA	1			196	152	348
	100A, 18P	EA	3	1.47	1.28	441	384	825
	Disc. Switches							
	100/80 AF 600V	EA	1	--	--	36	80	116
	60/40 AF 600V	EA	1	--	--	22	41	63
	200/NF 240V	EA	1	--	--	55	105	160
	100/100A 240V	EA	1	--	--	36	80	116
	60/40A 240V	EA	5	.22	.41	110	205	315

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Apart. Dist. Centers 240V, 1Ø, 3W, 100A, 10P	EA	140	.82	.48	11,480	6,720	$ 18,200
	Lighting Fixt., Switches Recepts, Wiring, Etc. for Apartments	EA	140	--	--	98,000	46,000	154,000
	Cable & Conduit	LS	1	--	--	15,300	50,200	65,500
	T.V. Ant. System	LS	1	--	--	4,900	2,100	7,000
	I.C. System	LS	1	--	--	6,780	9,740	16,520
	F.A. System	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					142,059	159,010	301,069
	Insurance - 18%					25,570		25,570
	Sales Tax - 5%						7,950	7,950
	SUBTOTAL							334,589
	Subcontractor O.H.-9%							30,113
	SUBTOTAL							364,702
	Subcontractor Prof.-10%							36,470
	SUBTOTAL							401,172
	Gen. Contr. OH&P - 2%							8,023
	SUBTOTAL							409,195
	Area Factor - 10%							40,920
	TOTAL							$450,115

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Fan Coil Units	EA	29	40	340	1,160	9,860	$ 11,020
	Roof-top Exhaust Fans	EA	7	30	200	210	1,400	1,610
	Dom. HW Circ. Pump	EA	1	35	93	35	93	128
	Htg.&Clg. Circ. Pump	EA	3	70	270	210	810	1,020
	Dom. HW Heater	EA	1	35	200	35	200	235
	Fin Tube Radiation	FT	15	11	17	165	255	420
	Expansion Tanks	EA	2	20	130	40	260	300
	Piping - 3/4"	FT	450	1.60	.45	720	200	920
	50% Fittings - 3/4"	FT	225	1.60	.45	360	100	460
	Piping - 1"	FT	490	1.85	.65	910	320	1,230
	50% Fittings - 1"	FT	245	1.85	.65	455	160	615
	Piping - 1-1/4"	FT	760	2.00	.90	1,520	680	2,200
	50% Fittings - 1-1/4"	FT	380	2.00	.90	760	340	1,100
	Piping - 1-1/2"	FT	405	2.20	1.05	891	425	1,316
	50% Fittings - 1-1/2"	FT	203	2.20	1.05	446	213	659
	Piping - 2"	FT	370	2.75	1.45	1,020	540	1,560
	50% Fittings - 2"	FT	185	2.75	1.45	510	270	780
	Piping - 2-1/2"	FT	360	3.50	2.30	1,260	830	2,090
	50% Fittings	FT	180	3.50	2.30	630	415	1,045
	Piping - 3"	FT	80	4.10	3.20	328	256	584
	50% Fittings	FT	40	4.10	3.20	164	128	292
	Piping - 4"	FT	125	5.15	4.50	644	563	1,207
	50% Fittings	FT	63	5.15	4.50	322	281	603
	Ductwork	#	900	1.04	.33	936	297	1,233
	Grilles	EA	20	4.50	12	90	240	330
	Valves - 4"	EA	7	60	220	420	1,540	1,960
	- 3"	EA	11	40	160	440	1,760	2,200
	- 2"	EA	12	9	52	108	624	732
	Insulation - 3/4" Pipe & Fittings	FT	675	.41	1.24	277	833	1,110
	Insulation - 1" Pipe & Fittings	FT	935	.45	1.35	421	1,259	1,680
	Insulation - 1-1/4" Pipe & Fittings	FT	1,140	.49	1.46	559	1,661	2,220
	Insulation - 1-1/2" Pipe & Fittings	FT	608	.53	1.57	322	955	1,277
	Insulation - 2" Pipe & Fittings	FT	555	.58	1.72	322	953	1,275
	Insulation - 2-1/2" Pipe & Fittings	FT	540	.61	1.84	329	991	1,320
	Insulation - 3" Pipe & Fittings	FT	120	.68	2.02	82	242	324
	Insulation - 4" Pipe & Fittings	FT	188	.90	2.70	169	508	677

Continued

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Continued							
	Misc. Equip. & Mat'ls	LS	--	--	--	2,000	3,000	5,000
	SUBTOTAL					19,270	33,462	52,732
	5% Sales Tax						1,673	1,673
	18% Labor Insurance					3,469		3,469
	SUBTOTAL							57,874
	9% Subcontractor O.H.							5,209
	SUBTOTAL							63,083
	10% Subcontr. Profit							6,308
	SUBTOTAL							69,391
	2% Gen.Contr. Mark-up							1,388
	SUBTOTAL							70,779
	10% Area Factor							7,078
	TOTAL, MECHANICAL, SCHOOL BUILDING							$ 77,857

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL - ELECT.

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Disc. Switches							
	200/NF 600V	EA	1			55	105	160
	100/NF 600V	EA	1			35	75	110
	Remote Control Sw. 150A, 3P	EA	1			75	650	725
	Transformers							
	50KVA, 480-480/277	EA	1			130	900	1,030
	75KVA, 480-208/120	EA	1			164	1,135	1,299
	15KVA, 480-208/120	EA	1			75	300	375
	Panelboards							
	480/277, 225A, 10-3P. 30A	EA	1			262	190	452
	480/277, 100A, 10P	EA	2	82	95	164	190	354
	208/120,400A, 8-3P	EA	1			360	307	667
	208/120, 225A, 36P	EA	1			295	207	502
	208/120, 100A, 18P	EA	2	148	128	296	256	552
	Lighting	LS	1			4,000	13,690	17,690
	Recepts, Switches, J.B., F.C., Fans, etc.	EA	175	15	10	2,625	1,750	4,375
	Cable & Conduit	LS	1			1,965	6,433	8,398
	F.A. System	LS	1			1,000	4,000	5,000
	T.V. Ant. System					800	400	1,200
	P.A. & Sound System	LS	1			1,200	3,000	4,200
	SUBTOTAL					13,501	33,588	47,089
	Insurance - 18%					2,430		2,430
	Sales Tax - 5%						1,679	1,679
	SUBTOTAL							51,198
	Subcontractor O.H.-9%							4,608
	SUBTOTAL							55,806
	Subcontractor Prof.-10%							5,580
	SUBTOTAL							61,386
	Gen. Contractor OH&P-2%							1,228
	SUBTOTAL							63,614
	Area Factor - 10%							6,361
	TOTAL, ELECTRICAL, SCHOOL							$69,975

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Fan Coil Units	EA	566	45	220	25,470	124,520	$ 149,990
	Air Handling Unit	EA	1	230	2,500	230	2,500	2,730
	Circulating Pumps	EA	8	185	750	1,480	6,000	7,480
	Domestic HW Converter	EA	2	55	680	110	1,360	1,470
	Piping - 3/4"	FT	3,000	1.60	.45	4,800	1,350	6,150
	50% Fittings	FT	1,500	1.60	.45	2,400	675	3,075
	Piping - 1"	FT	1,000	1.85	.65	1,850	650	2,500
	50% Fittings	FT	500	1.85	.65	925	325	1,250
	Piping - 1-1/4"	FT	2,900	2.00	.90	5,800	2,610	8,410
	50% Fittings	FT	1,450	2.00	.90	2,900	1,305	4,205
	Piping - 1-1/2"	FT	2,000	2.20	1.05	4,400	2,100	6,500
	50% Fittings	FT	1,000	2.20	1.05	2,200	1,050	3,250
	Piping - 2"	FT	800	2.75	1.45	2,200	1,160	3,360
	50% Fittings	FT	400	2.75	1.45	1,100	580	1,680
	Piping - 2-1/2"	FT	500	3.50	2.30	1,750	1,150	2,900
	50% Fittings	FT	250	3.50	2.30	875	575	1,450
	Piping - 3"	FT	400	4.10	3.20	1,640	1,280	2,920
	50% Fittings	FT	200	4.10	3.20	820	640	1,460
	Piping - 4"	FT	1,000	5.15	4.50	5,150	4,500	9,650
	50% Fittings	FT	500	5.15	4.50	2,575	2,250	4,825
	Piping - 5"	FT	100	7.75	9.05	775	905	1,680
	50% Fittings	FT	50	7.75	9.05	388	453	841
	Piping - 6"	FT	80	11.05	9.15	884	732	1,616
	50% Fittings	FT	40	11.05	9.15	442	366	808
	Valves - 2" & under		100	5	20	500	2,000	2,500
	- 2-1/2"		30	20	80	600	2,400	3,000
	- 3"		10	40	160	400	1,600	2,000
	- 4"		50	60	220	3,000	11,000	14,000
	- Mixing		4	16	559	64	2,236	2,300
	Insulation - 3/4"	FT	4,500	.41	1.24	1,845	5,580	7,425
	- 1"	FT	1,500	.45	1.35	675	2,025	2,700
	- 1-1/4"	FT	4,350	.49	1.46	2,132	6,351	8,483
	- 1-1/2"	FT	3,000	.53	1.57	2,809	4,710	7,519
	- 2"	FT	1,200	.58	1.72	696	2,064	2,760
	- 2-1/2"	FT	750	.61	1.84	458	1,380	1,838
	- 3"	FT	600	.68	2.02	408	1,212	1,620
	- 4"	FT	1,500	.90	2.70	1,350	4,050	5,400
	- 5"	FT	150	1.10	3.30	165	495	660
	- 6"	FT	120	1.30	3.90	156	468	624
	Ductwork	#	7,500	.93	.33	6,975	2,475	9,450
	Grilles		50	4.30	9.85	215	492	707
	Misc. Equip. & Mat'ls	LS	--	--	--	20,000	10,000	30,000
	SUBTOTAL					113,612	219,574	333,186

Continued

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Continued							
	SUBTOTAL (Forwarded)					113,612	219,574	333,186
	5% Sales Tax						10,979	10,979
	18% Labor Insurance					20,450		20,450
	SUBTOTAL							364,615
	9% Subcontractor O.H.							32,815
	SUBTOTAL							397,430
	10% Subcontr. Profit							39,743
	SUBTOTAL							437,173
	2% Gen.Contr. Mark-up							8,743
	SUBTOTAL							445,916
	10% Area Factor							44,592
	TOTAL, MECHANICAL, SHELLEY A							$ 490,508

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard Inc. Sect. CT's-PTs 1200A MCB #5350 400A CB 2-200A CB	EA	1	--	--	450	5,900	$ 6,350
	Transformers							
	1000 KVA-480-208/120	EA	1	--	--	480	7,669	8,149
	30 KVA-480-208/120	EA	1	--	--	98	684	782
	20 KVA-480-208/120	EA	1	--	--	80	425	505
	208V Dist. Board 3000A, 30, 4W w/2-1200A CB - 800A CB 400A CB	EA	1	--	--	250	5,940	6,190
	Disc. Switches							
	200/150 AF, 600V	EA	2	55	110	110	220	330
	100/60 AF	EA	3	36	80	108	240	348
	60/50 AF	EA	1	--	--	22	40	62
	30/30 AF	EA	3	13	39	39	99	138
	Comb. C.B. & Starters	EA	12	55	163	660	1,956	2,616
	Panelboards - 208V							
	1200A	EA	2	265	766	530	1,532	2,062
	800A	EA	1	--	--	265	664	929
	100A	EA	4	165	135	660	540	1,200
	Dist. Center - Aparts. 10, 3W, 10 ckts.	EA	152	82	48	12,464	7,296	19,760
	Pullboxes							
	2' x 2' x 15'	EA	1	--	--	140	1,500	1,640
	6" sq. x 10'	EA	1	--	--	20	51	51
	2' x 4' x 6"	EA	1	--	--	35	150	185
	Ltg. Fixtures, Switches Recepts, Wiring for Apartments	LS	1	--	--	106,400	60,800	167,200
	Cable & Conduit, Fdrs.	LS	1	--	--	19,800	64,825	84,625
	T.V. Ant. System	LS	1	--	--	5,320	2,280	7,600
	I.C. System	LS	1	--	--	7,350	10,560	17,910
	F.A. System	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					157,281	176,301	334,082

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	SUBTOTAL (Forwarded)					157,281	176,801	$334,082
	Insurance - 18%					28,310		28,310
	Sales Tax - 5%						8,840	8,840
	SUBTOTAL							371,232
	Subcontractor O/H-9%							33,410
	SUBTOTAL							404,642
	Subcontractor Prof.-10%							40,464
	SUBTOTAL							445,106
	Gen.Cont. O.H.&B. - 2%							8,902
	SUBTOTAL							$454,000
	Area Factor - 10%							45,400
	TOTAL, SHELLEY A, ELECT.							$499,400

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Fan Coil Units	EA	180	45	220	8,100	39,600	$ 47,700
	Air Handling Unit	EA	1	230	1,550	230	1,550	1,780
	Circulating Pumps	EA	5	100	500	500	2,500	3,000
	Domestic HW Converter	EA	2	45	500	90	1,000	1,090
	Exhaust Fan	EA	1	45	280	45	280	325
	Fin Tube Radiation	FT	20	11	17	220	340	560
	Piping - 3/4"	FT	800	1.60	.45	1,280	360	1,640
	50% Fittings	FT	400	1.60	.45	640	180	820
	Piping - 1-1/2"	FT	1,800	2.00	.90	3,600	1,620	5,220
	50% Fittings	FT	900	2.00	.90	1,800	810	2,610
	Piping - 1-1/2"	FT	180	2.20	1.05	396	189	585
	50% Fittings	FT	90	2.20	1.05	198	95	293
	Piping - 2"	FT	200	2.75	1.45	550	290	840
	50% Fittings	FT	100	2.75	1.45	275	145	420
	Piping - 2-1/2"	FT	240	3.50	2.30	840	552	1,392
	50% Fittings	FT	120	3.50	2.30	420	276	696
	Piping - 3"	FT	300	4.10	3.20	1,230	960	2,190
	50% Fittings	FT	150	4.10	3.20	615	480	1,095
	Piping - 4"	FT	40	5.15	4.50	206	180	386
	50% Fittings	FT	20	5.15	4.50	103	90	193
	Valves - 2" & under	EA	40	5	20	200	800	1,000
	- 3"	EA	10	40	160	400	1,600	2,000
	- 4"	EA	5	60	220	300	1,100	1,400
	Mixing	EA	4	16	559	64	2,236	2,300
	Insulation - 3/4"	FT	1,200	.41	1.24	492	1,488	1,980
	- 1-1/4"	FT	2,700	.49	1.46	1,323	3,942	5,265
	- 1-1/2"	FT	270	.53	1.57	143	425	568
	- 2"	FT	300	.58	1.72	174	516	690
	- 2-1/2"	FT	360	.61	1.84	220	662	882
	- 3"	FT	450	.68	2.02	306	909	1,215
	- 4"	FT	60	.90	2.70	54	162	216
	Ductwork	#	1,300	.93	.33	1,209	429	1,638
	Grilles		15	4.30	9.85	65	148	213
	Misc. Equip. & Mat'ls	LS	--	--	--	5,000	3,000	8,000
	SUBTOTAL					31,288	68,914	100,202
	5% Sales Tax						3,446	3,446
	18% Labor Insurance					5,632		5,632
	SUBTOTAL							109,280
	9% Subcontractor O.H.							9,835
	SUBTOTAL							119,115
	10% Subcontr. Profit							11,912
	SUBTOTAL							131,027
	2% Gen. Contr. Mark-up							2,621
	SUBTOTAL							133,648
	10% Area Factor							13,365
	TOTAL, MECHANICAL, SHELLEY B							$ 147,013

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard Inc.Sect., C.T. & Main Sw.Sect., 800A B.P. Sw.-Pringle w/500A Fuses	EA	1	--	--	400	2,050	$ 2,450
	Transformers:							
	500 KVA-430-208	EA	1	--	--	350	4,425	4,774
	112 KVA	EA	1	--	--	175	1,510	1,685
	208V Dist.Bd.-600,30,4W 1-600A Fuse Sw.Cut-Ham. 1-400A; 10-100A	EA	1	--	--	250	3,401	3,651
	Disc. Switches							
	400/300 AF 240V	EA	1	--	--	98	284	382
	200/150 AF 600V	EA	1	--	--	55	110	165
	Panelboards: 208V							
	600A, Fus-Sw.	EA	1	--	--	175	600	775
	400A, " "	EA	1	--	--	125	500	625
	100A, 30P	EA	9	245	178	2,205	1,602	3,807
	Apart. Dist. Centers 240V, 1Ø, 3W, 10 ckts	EA	40	82	48	3,280	1,920	5,200
	Lighting Fixt.,Switches Recepts, Wiring for Apartments	LS	1	--	--	18,000	16,000	44,000
	Cable & Conduit-Fdrs.	LS	1	--	--	6,040	19,770	25,810
	T.V. Ant. System	LS	1	--	--	1,400	600	2,000
	I.C. System	LS	1	--	--	1,980	2,940	4,920
	F.A. System	LS	1	--	--	520	910	1,430
	SUBTOTAL					45,053	56,621	101,674
	Insurance - 18%					8,110		8,110
	Sales Tax - 5%						2,831	2,831
	SUBTOTAL							112,615
	Subcontractor O.H.-9%							10,135
	SUBTOTAL							122,750
	Subcontractor Prof.-10%							12,275
	SUBTOTAL							135,025
	Gen.Contr. OH&P - 2%							2,700
	SUBTOTAL							137,725
	Area Factor - 10%							13,773
	TOTAL - SHELLEY B ELECT.							$151,498

COST ESTIMATE
FOR

SYSTEM 1/2

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

ENERGY SYSTEM FLOOR SPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Central Equipment Bldg.	Ft^2	6,015	--	100	--	--	$ 601,500
	Camci:							
	Mechanical	Ft^2	1,050	--	26	--	--	27,300
	Electrical	Ft^2	300	--	26	--	--	7,800
	Commercial Building:							
	Mechanical	Ft^2	125	--	32	--	--	4,000
	Electrical	Ft^2	125	--	32	--	--	4,000
	Descon-Concordia:							
	Mechanical	Ft^2	600	--	38	--	--	22,800
	Electrical	Ft^2	660	--	38	--	--	25,080
	School:							
	Mechanical	Ft^2	120	--	31	--	--	3,720
	Electrical	Ft^2	190	--	31	--	--	5,890
	Shelley A:							
	Mechanical	Ft^2	860	--	33	--	--	28,380
	Electrical	Ft^2	250	--	33	--	--	8,250
	Shelley B:							
	Mechanical	Ft^2	600	--	33	--	--	19,800
	Electrical	Ft^2	130	--	33	--	--	4,290
	TOTAL							$762,810

SYSTEM 3
TOTAL ENERGY SYSTEM - HIGH EFFICIENCY GENERATOR
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 3

SYSTEM 3 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Building	$2,952,006	$ 203,164*	$3,155,170
Site Distribution System	303,344*	194,237*	497,581
Camci	414,602*	475,673*	890,275
Commercial Building	260,065*	80,207*	340,272
Descon-Concordia	415,021*	450,115*	865,136
School	77,857*	69,975*	147,832
Shelley A	490,508*	499,400*	989,908
Shelley B	147,013*	151,498*	298,511
Building Floorspace	---	---	762,810*
TOTAL	$5,060,416	$2,124,269	$7,947,495

Unit Cost = $7,947,495 ÷ 573,780 Ft^2 = $13,85/$Ft^2$

*Cost identical to System 1

COST ESTIMATE
FOR

TOTAL ENERGY - HIGH
EFFICIENCY GENERATOR

SYSTEM 3

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COS
	EQUIPMENT:							
	Diesel Generators-500KW	EA	5	12,000	160,000	60,000	800,000	6860,000
	Heat Recovery Silencers	EA	5	500	7,600	2,500	38,000	40,500
	Exhaust Mufflers	EA	5	100	700	500	3,500	4,000
	Exhaust Ductwork, S.S.	#	4,000	1.60	1.10	6,400	4,400	10,800
	Diesel Exh.Fan, 36,000 cfm	EA	1	400	2,500	400	2,500	2,900
	Fuel Oil Tanks:							
	25,000 Gallon	EA	3	5,000	10,000	15,000	30,000	45,000
	4,000 Gallon	EA	2	500	2,000	1,000	4,000	5,000
	1,000 Gallon	EA	3	100	500	300	1,500	1,800
	550 Gallon	EA	1	80	300	80	300	380
	Boiler - 400 HP	EA	2	2,000	40,000	4,000	80,000	84,000
	Absorp. Chiller - 550Tn	EA	2	2,000	55,000	4,000	110,000	114,000
	Cooling Tower -1,600Tn	EA	2	2,000	23,000	4,000	46,000	50,000
	Dry Cooler - 580 Ton	EA	1	1,000	8,000	1,000	8,000	9,000
	Pumps:							
	Primary Hot Water	EA	3	200	2,400	600	7,200	7,800
	Absorber Hot Water	EA	3	200	2,400	600	7,200	7,800
	Secondary Hot Water	EA	4	200	2,400	800	9,600	10,400
	Chilled Water	EA	2	300	3,900	600	7,800	8,400
	Condenser Water	EA	3	300	3,900	900	11,700	12,600
	Raw Water	EA	3	250	2,900	750	8,700	9,450
	Misc. Hot Water	EA	2	100	200	200	400	600
	Misc. Pumps	EA	8	100	500	800	4,000	4,800
	Heat Exchangers:							
	750 GPM	EA	2	1,000	10,000	2,000	20,000	22,000
	100-300 GPM	EA	4	500	3,000	2,000	12,000	14,000
	Air Compressors:							
	54 cfm	EA	2	500	10,000	1,000	20,000	21,000
	6 cfm	EA	1	300	1,000	300	1,000	1,300
	Expansion Tanks	EA	4	50	1,000	200	4,000	4,200
	Miscellaneous Tanks:							
	380 Gallon	EA	1	40	200	40	200	240
	20 Gallon	EA	6	25	25	150	150	300
	Sub-Total, Equipment					110,120	1,242,150	1,352,270
	HVAC Systems:							
	See System 1					18,707	103,042	121,749
	Piping Systems:							
	See System 1					142,633	439,593	582,226
	SUBTOTAL					271,460	1,784,785	2,056,245

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 3

CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Sub-Total from Sheet F-34					271,460	1,784,785	2,056,245
	5% Sales Tax						89,239	89,239
	18% Labor Insurance					48,863		48,863
	Sub-Total							2,194,347
	9% Subcontractor Overhead							197,491
	Sub-Total							2,391,838
	10% Sub-Contractor Profit							239,184
	Sub-Total							2,631,022
	2% Gen. Contractor Mark up							52,620
	Sub-Total							2,683,642
	10% Area Factor							268,364
	TOTAL, MECHANICAL, CENTRAL EQUIPMENT BUILDING							$2,952,006

SYSTEM 4
TOTAL ENERGY SYSTEM - ABSORPTION & DIESEL CHILLERS
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 4

SYSTEM 4 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Building	$2,318,991	$ 206,889	$2,525,880
Site Distribution System	303,344*	194,237*	497,581
Camci	414,602*	475,673*	890,275
Commercial Building	260,065*	80,207*	340,272
Descon-Concordia	415,021*	450,115*	865,136
School	77,857*	69,975*	147,832
Shelley A	490,508*	499,400*	989,908
Shelley B	147,013*	151,498*	298,511
Building Floorspace	---	---	762,810*
TOTAL	$4,427,401	$2,127,994	$7,318,205

Unit Cost = $7,318,205 ÷ 573,780 Ft^2 = $12.75/$Ft^2$

*Cost identical to System 1

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 4

CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	EQUIPMENT:							
	Diesel Generators-500KW	EA	5	10,000	75,000	50,000	375,000	$425,000
	Heat Recovery Silencers	EA	5	500	7,600	2,500	38,000	40,500
	Exhaust Mufflers	EA	5	100	700	500	3,500	4,000
	Exhaust Ductwork, S.S.	#	4,000	1.60	1.10	6,400	4,400	10,800
	Diesel Exh.Fan, 36,000 cfm	EA	1	400	2,500	400	2,500	2,900
	Fuel Oil Tanks:							
	25,000 Gallon	EA	3	5,000	10,000	15,000	30,000	45,000
	4,000 Gallon	EA	2	500	2,000	1,000	4,000	5,000
	1,000 Gallon	EA	3	100	500	300	1,500	1,800
	550 Gallon	EA	1	80	300	80	300	380
	Boiler - 400 HP	EA	2	2,000	40,000	4,000	80,000	84,000
	Absorp. Chiller - 550 Tn	EA	1	2,000	55,000	2,000	55,000	57,000
	Centrif. Chiller - 550 Tn	EA	1	2,000	55,000	2,000	55,000	57,000
	Cooling Tower - 1,600 Tn	EA	1	2,000	23,000	2,000	23,000	25,000
	Cooling Tower - 660 Tn	EA	1	2,000	12,000	2,000	12,000	14,000
	Dry Cooler - 580 Tn	EA	1	1,000	8,000	1,000	8,000	9,000
	Pumps:							
	Primary Hot Water	EA	3	200	2,400	600	7,200	7,800
	Absorber Hot Water	EA	3	200	2,400	600	7,200	7,800
	Secondary Hot Water	EA	4	200	2,400	800	9,600	10,400
	Chilled Water	EA	2	300	3,000	600	7,800	8,400
	Condenser Water	EA	3	300	3,600	900	10,800	11,700
	Raw Water	EA	3	250	2,900	750	8,700	9,450
	Misc. Hot Water	EA	2	100	200	200	400	600
	Misc. Pumps	EA	8	100	500	800	4,000	4,800
	Heat Exchangers:							
	750 GPM	EA	2	1,000	10,000	2,000	20,000	22,000
	100-300 GPM	EA	4	500	3,000	2,000	12,000	14,000
	Air Compressors:							
	54 cfm	EA	2	500	10,000	1,000	20,000	21,000
	6 cfm	EA	1	300	1,000	300	1,000	1,300
	Expansion Tanks	EA	4	50	1,000	200	4,000	4,200
	Miscellaneous Tanks:							
	380 Gallon	EA	1	40	200	40	200	240
	20 Gallon	EA	6	25	25	150	150	300
	Sub-Total, Equipment					100,120	805,250	905,370
	HVAC Systems:							
	See System 1					18,707	103,042	121,749
	Piping Systems:							
	See System 1					142,633	439,593	582,226
	SUBTOTAL					261,460	1,347,885	1,609,345

Continued

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 4

CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Continued							
	Sub-Total					261,460	1,347,885	1,609,345
	5% Sales Tax						67,394	67,394
	18% Labor Insurance					47,063		47,063
	Sub-Total							1,723,802
	9% Subcontractor Overhead							155,142
	Sub-Total							1,878,944
	10% Sub-Contractor Profit							187,894
	Sub-Total							2,066,838
	2% Gen. Contractor Mark up							41,336
	Sub-Total							2,108,174
	10% Area Factor							210,817
	TOTAL, MECHANICAL, CENTRAL EQUIPMENT BUILDING							2,318,991

COST ESTIMATE
FOR

SYSTEM 4

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING,
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Generator Switchgear W/5 600A C/Bs, 2000A bus, Spare Compt. & 3 Inst. Cubicles, 480V	EA	1	--	--	2,500	19,500	$ 22,000
	480V Switchboard 3 - 1200A CB 3 - 800A CB 10 - 400A CB Blank Section - 15" W.	EA	1	--	--	3,200	29,000	32,200
	2000A Bus Duct&Fittings	LS	1	--	--	800	4,040	4,840
	MCC-1 8 Sections Wide 17 - NEMA 1 Starters 12 - NEMA 2 " 3 - NEMA 0 "	EA	1	--	--	775	14,500	15,275
	MCC-2 4 Sections Wide 10 - NEMA 1 7 - NEMA 2 1 - NEMA 3 1 - 60A FUS/SW	EA	1	--	--	400	8,600	9,000
	MCC-3 - 6 Sections 3 - NEMA 1 3 - NEMA 2 2 - NEMA 3 3 - NEMA 4	EA	1	--	--	580	7,735	8,315
	Panelboard - LP-1 225A, 208/120V Dec. 52 - 1P, 20A 4 - 2P, 20A	EA	1	--	--	525	380	905
	Panelboard - LP-2 100A, 308/120V, SP. Bus, 24 Poles & 30A Contractor.	EA	1			210	180	390
	Transformers							
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	30 KVA, 480-208/120	EA	1	--	--	98	685	783

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 4

CENTRAL EQUIPMENT BLDG.
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	3 PDT 400A, 480V	EA	1			60	400	$ 460
	Disconnect Switches:							
	200A/NF 600V	EA	1			55	100	155
	60/NF 600V, WP	EA	15	24	68	360	1,020	1,380
	30/NV 600V, WP	EA	15	15	57	225	855	1,080
	Lighting	LS	1			1,800	3,500	5,300
	Recps, Switches, J.B. Motor Conns, etc.	LS	1			3,200	1,060	4,260
	Cable & Conduit	LS	1			1,730	5,600	7,330
	Controls	LS	1			10,000	8,000	18,000
	Misc. Elect. Work, Testing, Adjustments, etc.	LS	1			8,000	1,200	9,200
	SUBTOTAL					34,682	107,490	142,172
	Insurance - 18%					6,243		6,243
	Sales Tax - 5%						5,374	5,374
	SUBTOTAL							153,789
	Subcontractor O/H 9%							13,841
	SUBTOTAL							167,630
	Subcontractor Profit-10%							16,763
	SUBTOTAL							184,393
	Gen.Contr. OH&P - 2%							3,688
	SUBTOTAL							188,081
	Area Factor - 10%							18,808
	TOTAL, ELECTRICAL, C.E.B.							$206,889

SYSTEM 5

CENTRAL PLANT/ELECTRIC CHILLER/OIL-FIRED BOILER
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 5

SYSTEM 5 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Bldg.	$1,028,420	$ 280,442	$1,308,862
Site Distribution System	303,344*	194,237*	497,581
Camci	414,602*	475,673*	890,275
Commercial Building	260,065*	80,207*	340,272
Descon-Concordia	415,021*	446,306	861,327
School	77,857*	69,975*	147,832
Shelley A	490,508*	499,400*	989,908
Shelley B	147,013*	151,498*	298,511
Building Floorspace	---	---	501,310
TOTAL	$3,136,830	$2,197,738	$5,835,878

Unit Cost = $5,835,878 ÷ 573,780 Ft^2 = $10.17/$Ft^2$

*Cost identical to System 1.

COST ESTIMATE
FOR

SYSTEM 5

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	EQUIPMENT:							
	Elec. Centrif. Chillers:							
	550 Ton	EA	2	2,000	55,000	4,000	110,000	$114,000
	Boiler 210 HP	EA	2	1,000	21,000	2,000	42,000	44,000
	Cooling Tower - 660 Ton	EA	2	2,000	12,000	4,000	24,000	28,000
	Pumps:							
	Chilled water	EA	2	300	3,900	600	7,800	8,400
	Condenser water	EA	3	300	3,000	900	9,000	9,900
	Hot water	EA	4	200	2,400	800	9,600	10,400
	Fuel Oil Tanks:							
	25,000 gallon	EA	3	5,000	10,000	15,000	30,000	45,000
	Day tank	EA	1	40	200	40	200	240
	Miscellaneous Equipment	LS		-	-	5,000	25,000	30,000
	Sub-Total, Equipment					32,340	257,600	289,940
	HVAC Systems:							
	Air Handling Unit - 25,000 cfm	EA	1	800	8,000	800	8,000	8,800
	Miscellaneous HVAC equipment based on 50% of the system 1 estimate	LS				8,850	45,500	54,350
	Sub-Total, HVAC Systems					9,650	53,500	63,150
	Piping Systems:							
	Based on 50% of the System 1 estimate	LS				71,320	219,800	291,120
	Miscellaneous:							
	Allowance for miscellaneous items	LS				11,500	56,900	68,400
	Sub-Total					124,810	587,800	712,610
	5% Sales Tax						29,390	29,390
	18% Labor Insurance					22,466		22,466
	Sub-Total							764,466
	9% Subcontractor Profit							68,802
	Sub-Total							833,268
	10% Subcontractor Profit							83,327
	Sub-Total							916,595
	2% Gen Contractor Mark-up							18,332
	Sub-Total							934,927
	10% Area Factor							93,493
	Total Mechanical, Central Equipment Building							$1,028,420

COST ESTIMATE
FOR

SYSTEM 5

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING,
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard	EA	1	--	--	6,000	38,000	$ 44,000
	380V Emergency Sw.bd.	EA	1	--	--	1,020	6,490	7,510
	Emergency Generator - 625 KW	EA	1	--	--	900	78,000	78,900
	MCC-1	EA	1	--	--	775	14,500	15,275
	MCC-2	EA	1	--	--	400	8,600	9,000
	MCC-3	EA	1	--	--	580	7,735	8,315
	Panelboards:							
	LP-1	EA	1	--	--	525	380	905
	LP-2	EA	1	--	--	210	180	390
	Transformers:							
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	30 KVA, 480-208/120	EA	1	--	--	98	685	783
	DT Switch, 400A, 480V	EA	1	--	--	60	400	460
	Disc. Switches	LS	1	--	--	640	1,975	2,615
	Lighting	LS	1	--	--	1,800	3,500	5,300
	Recepts.,Switches, etc.	LS	1	--	--	3,200	1,060	4,260
	Cable & Conduit	LS	1	--	--	1,630	5,300	6,930
	Controls	LS	1	--	--	3,000	2,000	5,000
	Misc.Elect.-Testing,etc	LS	1	--	--	4,000	500	4,500
	SUBTOTAL					25,002	170,440	195,442
	Insurance - 18%					4,500		4,500
	Sales Tax - 5%						8,522	8,522
	SUBTOTAL							208,464
	Subcontractor O/H - 9%							18,762
	SUBTOTAL							227,226
	Subcontractor Prof.-10%							22,722
	SUBTOTAL							249,948
	Gen.Contr. OH&P - 2%							4,999
	SUBTOTAL							254,947
	Area Factor - 10%							25,495
	TOTAL, C.E.B., ELECT.							$280,442

COST ESTIMATE
FOR

SYSTEM 5

SUMMIT PLAZA DEVELOPMENT SITE DISTRIBUTION SYSTEM AND
JERSEY CITY, N. J. SITE BUILDINGS, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	SITE DISTRIBUTION SYSTEM:							
	Equal to System 1 Estimate							303,344
	SITE BUILDINGS:							
	Equal to System 1 Estimates due to same design:							
	CAMCI							414,602
	Commercial							260,065
	DESCON-CONCORDIA							415,021
	School							77,857
	Shelley A							490,508
	Shelley B							147,013

COST ESTIMATE
FOR

SYSTEM 5

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SITE DISTRIBUTION SYSTEM &
SITE BUILDINGS, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	SITE DISTRIBUTION SYSTEM (Equals System 1)							$194,237
	SITE BUILDINGS:							
	CAMCI (Equals Sys. 1)							475,673
	COMMERCIAL (Equals System 1)							80,207
	DESCON-CONCORDIA (Less Emergency Bd.)							446,306
	SCHOOL (Equals Sys. 1)							69,975
	SHELLEY A (" " ")							499,400
	SHELLEY B (" " ")							151,498

COST ESTIMATE
FOR

SYSTEM 5

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	CENTRAL EQUIPMENT BUILDING;	FT^2	3,400		100			$340,000
	CAMCI							
	Mechanical	FT^2	1,050		26			27,300
	Electrical	FT^2	300		26			7,800
	Commercial							
	Mechanical	FT^2	125		32			4,000
	Electrical	FT^2	125		32			4,000
	DESCON-CONCORDIA							
	Mechanical	FT^2	600		38			22,800
	Electrical	FT^2	660		38			25,080
	School							
	Mechanical	FT^2	120		31			3,720
	Electrical	FT^2	190		31			5,890
	Shelley A							
	Mechanical	FT^2	860		33			28,380
	Electrical	FT^2	250		33			8,250
	Shelley B							
	Mechanical	FT^2	600		33			19,800
	Electrical	FT^2	130		33			4,290
	Total							$501,310

SYSTEM 6
CENTRAL PLANT/ABSORPTION CHILLER/OIL BOILER

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 6

SYSTEM 6 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Bldg.	$1,063,309	$ 270,933	$1,334,242
Site Distribution System	303,344*	194,237*	497,581
Camci	414,602*	475,673*	890,275
Commercial Building	260,065*	80,207*	340,272
Descon-Concordia	415,021*	446,306**	861,327
School	77,857*	69,975*	147,832
Shelley A	490,508*	499,400*	989,908
Shelley B	147,013	151,498*	298,511
Building Floorspace	---	---	501,310
TOTAL	$3,171,719	$2,188,229	$5,861,258

Unit Cost = $5,861,258 ÷ 573,780 Ft^2 = $10.22/$Ft^2$

*Cost identical to System 1.

**Cost identical to System 1 less emergency switchboard.

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 6

CENTRAL EQUIPMENT BUILDING
MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	EQUIPMENT:							
	Absorption Chillers 550 Ton	EA	2	2,000	55,000	$ 4,000	$110,000	$ 114,000
	Boiler 210 HP	EA	2	1,000	21,000	2,000	42,000	44,000
	Cooling Tower - 1600 Ton	EA	2	2,000	23,000	4,000	46,000	50,000
	Pumps:							
	Chilled water	EA	2	300	3,900	600	7,800	8,400
	Condenser water	EA	3	300	3,900	900	11,700	12,600
	Hot water	EA	4	200	2,400	800	9,600	10,400
	Fuel Oil Tanks:							
	25,000 gallon	EA	3	5,000	10,000	15,000	30,000	45,000
	Day tank	EA	1	40	200	40	200	240
	Miscellaneous Equipment	LS		—	—	5,000	25,000	30,000
	Subtotal, Equipment					32,340	282,300	314,640
	HVAC Systems:							
	Air Handling Unit - 25,000 cfm	EA	1	800	8,000	800	8,000	8,800
	Misc. HVAC equipment based on 50% of Systems 1/2 estimate	LS				8,850	45,500	54,350
	Subtotal, HVAC Systems					9,650	53,500	63,150
	Piping Systems:							
	Based on 50% of the Systems 1/2 estimate	LS				71,320	219,800	291,120
	Miscellaneous:							
	Allowance for Misc. Items	LS				11,500	56,900	68,400
	Subtotal					124,810	612,500	737,310
	5% Sales Tax						30,625	30,625
	18% Labor Insurance					22,466		22,466
	Subtotal							790,401
	9% Subcontractor O.H.							71,136
	Subtotal							861,537
	10% Subcontractor Profit							86,156
	Subtotal							947,691
	2% Gen.Contractor Markup							18,954
	Subtotal							966,645
	10% Area Factor							96,664
	TOTAL MECHANICAL, CENTRAL EQUIPMENT BUILDING							$1,063,309

COST ESTIMATE
FOR

SYSTEM 6

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard	EA	1	--	--	4,950	32,450	$ 37,400
	480V Emerg.Switchboard	EA	1	--	--	1,020	6,490	7,510
	Emerg. Generator-625KW	EA	1	--	--	900	78,000	78,900
	MCC-1	EA	1	--	--	775	14,500	15,275
	MCC-2	EA	1	--	--	400	8,600	9,000
	MCC-3	EA	1	--	--	580	7,735	8,315
	Panelboards:							
	LP-1	EA	1	--	--	525	380	905
	LP-2	EA	1	--	--	210	180	390
	Transformers:							
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	30 KVA, 480-208/120	EA	1	--	--	98	685	783
	DT Switch, 400A, 480V	EA	1	--	--	60	400	460
	Disc. Switches	LS	1	--	--	640	1,975	2,615
	Lighting	LS	1	--	--	1,800	3,500	5,300
	Recps., Switches, etc.	LS	1	--	--	3,200	1,060	4,260
	Cable & Conduit	LS	1	--	--	1,630	5,300	6,930
	Controls	LS	1	--	--	3,000	2,000	5,000
	Misc.Elect.,Testing,etc.	LS	1	--	--	4,000	500	4,500
	SUBTOTAL					23,952	164,890	188,842
	Insurance - 18%					4,311		4,311
	Sales Tax - 5%						8,244	8,244
	SUBTOTAL							201,397
	Subcontractor O.H.-9%							18,125
	SUBTOTAL							219,522
	Subcontractor Prft.-10%							21,952
	SUBTOTAL							241,474
	Gen.Contr. OH&P - 2%							4,829
	SUBTOTAL							246,303
	Area Factor - 10%							24,630
	TOTAL, C.E.B., ELECT.							270,933

COST ESTIMATE
FOR

SYSTEM 6

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COS
	CENTRAL EQUIPMENT BUILDING;	FT^2	3,400		100			$340,000
	CAMCI							
	Mechanical	FT^2	1,050		26			27,300
	Electrical	FT^2	300		26			7,800
	Commercial							
	Mechanical	FT^2	125		32			4,000
	Electrical	FT^2	125		32			4,000
	DESCON-CONCORDIA							
	Mechanical	FT^2	600		38			22,800
	Electrical	FT^2	660		38			25,080
	School							
	Mechanical	FT^2	120		31			3,720
	Electrical	FT^2	190		31			5,890
	Shelley A							
	Mechanical	FT^2	860		33			28,380
	Electrical	FT^2	250		33			8,250
	Shelley B							
	Mechanical	FT^2	600		33			19,800
	Electrical	FT^2	130		33			4,290
	Total							$501,310

SYSTEM 7
CENTRAL PLANT/DIESEL & ABSORPTION CHILLERS/OIL-FIRED BOILERS
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 7

SYSTEM 7 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Central Equipment Building	$1,673,353	$ 270,933	$1,944,286
Site Distribution System	303,344	194,237	497,581
Camci	414,602	475,673	890,275
Commercial Building	260,065	80,207	340,272
Descon-Concordia	415,021	446,306	861,327
School	77,857	69,975	147,832
Shelley A	490,508	499,400	989,908
Shelley B	147,013	151,498	298,511
Building Floorspace	---	---	651,310
TOTAL	$3,781,763	$2,188,229	$6,621,302

Unit Cost = $6,621,302 ÷ 573,780 Ft^2 = $11.54/$Ft^2$

COST ESTIMATE
FOR

SYSTEM 7

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	EQUIPMENT:							
	Open Drive Centrifugal Chillers-400 Ton	EA	2	2,000	25,000	4,000	50,000	$ 54,000
	Absorp. Chiller-150 Ton	EA	2	2,000	15,000	4,000	30,000	34,000
	Diesel Engines-415 HP	EA	2	2,000	45,000	4,000	90,000	94,000
	Speed Increasing Gears	EA	2	1,000	15,000	2,000	30,000	32,000
	Heat Recovery Silencers	EA	2	500	7,000	1,000	14,000	15,000
	Exhaust Mufflers	EA	2	100	700	200	1,400	1,600
	Fuel Oil Tanks:							
	25,000 Gallons	EA	3	5,000	10,000	15,000	30,000	45,000
	Day Tanks	EA	3	40	200	120	600	720
	Lube Oil Tanks	EA	2	100	500	200	1,000	1,200
	Boiler - 210 HP	EA	2	1,000	21,000	2,000	42,000	44,000
	Cooler Towers-905 Ton	EA	2	2,000	16,000	4,000	32,000	36,000
	Dry Coolers-300 Ton	EA	1	800	5,000	800	5,000	5,800
	Pumps:							
	Primary Hot Water	EA	3	250	3,000	750	9,000	9,750
	Secondary Hot Water	EA	4	200	2,400	800	9,600	10,400
	Chilled Water	EA	2	300	3,900	600	7,800	8,400
	Condenser Water	EA	3	300	3,500	900	10,500	11,400
	Primary Heat Exchanger	EA	2	500	3,000	1,000	6,000	7,000
	Miscellaneous Equip	LS		--	--	5,000	25,000	30,000
	SUB-TOTAL, EQUIPMENT					46,370	393,900	440,270
	HVAC SYSTEMS:							
	Air Handling Unit 35,000 cfm	EA	1	900	11,000	900	11,000	11,900
	Misc. HVAC Equipment based on 85% of the system 1 estimate	LS		--	--	15,900	87,500	103,400
	SUB-TOTAL, HVAC SYSTEMS					16,800	98,500	115,300
	PIPING SYSTEMS:							
	Based on 85% of the System 1 estimate	LS				121,240	373,650	494,890
	MISCELLANEOUS							
	Allowance for Misc Items	LS				18,640	90,400	109,040
	SUB-TOTAL					203,050	956,450	1,159,500
	5% Sales Tax						47,823	47,823
	18% Labor Insurance					36,549		36,549
	SUB-TOTAL							1,243,872
	9% Subcontractor Overhead							111,948
	SUB-TOTAL							1,355,820

Continued

COST ESTIMATE
FOR

SYSTEM 7 (cont'd)

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CENTRAL EQUIPMENT BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Continued							
	10% Subcontractor Profit							135,582
	SUB-TOTAL							1,491,402
	2% Gen Contractor Mark-up							29,828
	SUB-TOTAL							1,521,230
	10% Area Factor							152,123
	TOTAL, MECHANICAL, CENTRAL EQUIPMENT BUILDING						$	1,673,353

COST ESTIMATE
FOR

SYSTEM 7

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CENTRAL EQUIPMENT BUILDING
ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard	EA	1	--	--	4,950	32,450	$ 37,400
	480V Emerg.Switchboard	EA	1	--	--	1,020	6,490	7,510
	Emerg. Generator-625KW	EA	1	--	--	900	78,000	78,900
	MCC-1	EA	1	--	--	775	14,500	15,275
	MCC-2	EA	1	--	--	400	8,600	9,000
	MCC-3	EA	1	--	--	580	7,735	8,315
	Panelboards:							
	LP-1	EA	1	--	--	525	380	905
	LP-2	EA	1	--	--	210	180	390
	Transformers:							
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	30 KVA, 480-208/120	EA	1	--	--	98	685	783
	DT Switch, 400A, 480V	EA	1	--	--	60	400	460
	Disc. Switches	LS	1	--	--	640	1,975	2,615
	Lighting	LS	1	--	--	1,800	3,500	5,300
	Recps., Switches, etc.	LS	1	--	--	3,200	1,060	4,260
	Cable & Conduit	LS	1	--	--	1,630	5,300	6,930
	Controls	LS	1	--	--	3,000	2,000	5,000
	Misc.Elect.,Testing,etc.	LS	1	--	--	4,000	500	4,500
	SUBTOTAL					23,952	164,890	188,842
	Insurance - 18%					4,311		4,311
	Sales Tax - 5%						8,244	8,244
	SUBTOTAL							201,397
	Subcontractor O.H.-9%							18,125
	SUBTOTAL							219,522
	Subcontractor Prft.-10%							21,952
	SUBTOTAL							241,474
	Gen.Contr. OH&P - 2%							4,829
	SUBTOTAL							246,303
	Area Factor - 10%							24,630
	TOTAL, C.E.B., ELECT.							270,933

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 7

SITE DISTRIBUTION SYSTEM &
SITE BUILDINGS, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	SITE DISTRIBUTION SYSTEM:							
	Equal to System 1 Estimate							$303,344
	SITE BUILDINGS:							
	Equal to System 1 Estimates:							
	Camci							414,602
	Commercial							260,065
	Descon-Concordia							415,021
	School							77,857
	Shelley A							490,508
	Shelley B							147,013

COST ESTIMATE
FOR

SYSTEM 7

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SITE DISTRIBUTION SYSTEM &
SITE BUILDING, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	SITE DISTRIBUTION SYSTEM (= System 1)							$194,237
	SITE BUILDINGS							
	Camci (= System 1)							475,673
	Commercial (= Sys. 1)							80,207
	Descon-Concordia (less Emerg. Board)							446,306
	School (= System 1)							69,975
	Shelley A (= System 1)							499,400
	Shelley B (= System 1)							151,498

COST ESTIMATE
FOR

SYSTEM 7

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Central Equipment Building:	Ft^2	4,900		100			$ 490,000
	Camci:							
	Mechanical	Ft^2	1,050		26			27,300
	Electrical	Ft^2	300		26			7,800
	Commercial:							
	Mechanical	Ft^2	125		32			4,000
	Electrical	Ft^2	125		32			4,000
	Descon-Concordia							
	Mechanical	Ft^2	600		38			22,800
	Electrical	Ft^2	660		38			25,080
	School							
	Mechanical	Ft^2	120		31			3,720
	Electrical	Ft^2	190		31			5,890
	Shelley A							
	Mechanical	Ft^2	860		33			28,380
	Electrical	Ft^2	250		33			8,250
	Shelley B							
	Mechanical	Ft^2	600		33			19,800
	Electrical	Ft^2	130		33			4,290
	TOTAL							$ 651,310

SYSTEM 8
INDIVIDUAL PLANT/ELECTRIC CHILLER/OIL BOILER
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 8

SYSTEM 8 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Site Distribution	---	$ 194,237*	$ 194,237
Camci	$ 606,842	513,024	1,119,866
Commercial	339,806	95,038	434,844
Descon-Concordia	616,305	484,511	1,100,816
School	128,040	78,875	206,915
Shelley A	712,563	534,701	1,247,264
Shelley B	247,909	174,879	422,788
Building Floorspace	---	---	300,260
TOTAL	$2,651,465	$2,075,265	$5,026,990

Unit Cost = $5,026,990 ÷ 573,780 Ft^2 = $8.76/$Ft^2$

*See System 1 Cost Estimate.

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif Chiller - 225 Tons	EA	1	2,000	25,000	2,000	25,000	$27,000
	Cooling Tower - 270 Tons	EA	1	2,000	6,000	2,000	6,000	8,000
	Boiler - 100 HP	EA	1	2,000	10,000	2,000	10,000	12,000
	Oil Storage Tank	EA	1	1,000	4,000	1,000	4,000	5,000
	Heat Exchanger	EA	1	500	4,000	500	4,000	4,500
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS				13,000	40,000	53,000
	Mech. Room HVAC	LS				1,500	2,000	3,500
	Miscellaneous Equip.	LS				2,500	10,000	12,500
	SUB-TOTAL					25,000	108,000	133,000
	5% Sales Tax						5,400	5,400
	18% Labor Insurance					4,500		4,500
	SUB-TOTAL							142,900
	9% Subcontractor Overhead							12,861
	SUB-TOTAL							155,761
	10% Subcontractor Profit							15,576
	SUB-TOTAL							171,337
	2% Gen Contractor Mark-up							3,427
	SUB-TOTAL							174,764
	10% Area Factor							17,476
	SUB-TOTAL							192,240
	System 1 Common Cost (same interior design)							414,602
	TOTAL, MECHANICAL, CAMCI							$ 606,842

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	450	4,300	$ 4,750
	Transformers(= Sys. 1)	LS	1	--	--	620	7,703	8,323
	208V Distr. Board	EA	1	--	--	880	6,700	7,580
	Emergency Generator - 175kw, 480V, 3Ø, 3W, W/Batt. controls, C/B & ATS	EA	1	--	--	500	29,250	29,750
	Disc. Switches (= System 1)	LS	1	--	--	400	989	1,389
	Bolt Press. Sw.-2000A (= System 1)	EA	1	--	--	335	3,575	3,910
	Starters	LS	1	--	--	2,000	4,550	6,550
	Apart. Distr. Centers	LS	1	--	--	12,546	7,344	19,890
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	107,100	61,200	168,300
	Cable & Conduit-Fdrs.	LS	1	--	--	14,700	47,800	62,500
	T.V. Ant. System (= System 1)	LS	1	--	--	5,350	2,300	7,650
	I.C. System (= Sys. 1)	LS	1	--	--	7,400	10,600	18,000
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,500	5,500
	SUBTOTAL					154,281	189,811	344,092
	Insurance - 18%					27,770		27,770
	Sales Tax - 5%						9,490	9,490
	SUBTOTAL							381,352
	Subcontractor O.H. - 9%							34,322
	SUBTOTAL							415,674
	Subcontractor Prof.-10%							41,567
	SUBTOTAL							457,241
	Gen.Contr.Profit - 2%							9,145
	SUBTOTAL							466,386
	Area Factor - 10%							46,638
	TOTAL, CAMCI, ELECT.							$513,024

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif. Chiller 136 Tons	EA	1	1,000	14,000	1,000	14,000	$15,000
	Cooling Tower 163 Tons	EA	1	1,500	5,000	1,500	5,000	6,500
	Boiler - 400 KW	EA	1	500	6,000	500	6,000	6,500
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tanks	EA	2	50	800	100	1,600	1,700
	Mech. Room Piping	LS				3,000	10,000	13,000
	Mech. Room HVAC	LS				1,000	1,000	2,000
	Miscellaneous Equip	LS				1,000	4,300	5,300
	SUB-TOTAL					8,500	46,900	55,400
	5% Sales Tax						2,345	2,345
	18% Labor Insurance					1,530		1,530
	SUB-TOTAL							59,275
	9% Subcontractor Overhead							5,335
	SUB-TOTAL							64,610
	10% Subcontractor Profit							6,461
	SUB-TOTAL							71,071
	2% Gen Contractor Mark-up							1,421
	SUB-TOTAL							72,492
	10% Area Factor							7,249
	SUB-TOTAL							79,741
	SYSTEM 1 Common Cost (same interior design)							260,065
	TOTAL, MECHANICAL, COMMERCIAL BUILDING							$339,806

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard - 1000A MCB	EA	1	--	--	300	2,100	$ 2,400
	Transformers:							
	750 KVA, 480-480/277	EA	1	--	--	400	6,175	6,575
	30 KVA, 480-208/120	EA	3	98	685	294	2,055	2,349
	15 KVA, 480-208/120	EA	1	--	--	76	300	376
	7.5 KVA, 480-208/120	EA	1	--	--	65	180	245
	480V Distr.Bd., 1000A	EA	1	--	--	500	5,980	6,480
	Emergency Generator - 30 KW W/Batt., C/B, Controls & A.T.S.	EA	1	--	--	350	4,950	5,300
	Disc. Switches	LS	1	--	--	225	585	810
	Starters	LS	1	--	--	240	700	940
	Panelboards (= Sys. 1)	LS	1	--	--	1,736	1,895	3,631
	Lighting (= System 1)	LS	1	--	--	5,170	2,308	7,478
	Recpts., Switches, F.C. etc. (= System 1)	LS	1	--	--	1,500	1,000	2,500
	Cable & Conduit	LS	1	--	--	5,600	17,900	23,500
	F.A. System (= Sys. 1)	LS	1	--	--	500	2,100	2,600
	SUBTOTAL					16,956	48,228	65,184
	Insurance - 18%					3,052		3,052
	Sales Tax - 5%						2,411	2,411
	SUBTOTAL							70,647
	Subcontr. O.H. - 9%							6,358
	SUBTOTAL							77,005
	Subcontr. Profit - 10%							7,700
	SUBTOTAL							84,705
	Gen.Contr.Profit - 2%							1,694
	SUBTOTAL							86,399
	Area Factor - 10%							8,639
	TOTAL, COMMERCIAL,ELECT							$95,038

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif. Chiller - 238 Tons	EA	1	2,000	25,000	2,000	25,000	$ 27,000
	Cooling Tower - 286 Tons	EA	1	2,000	6,000	2,000	6,000	8,000
	Boiler - 110 HP	EA	1	2,000	15,000	2,000	15,000	17,000
	Oil Storage Tank	EA	1	1,000	5,000	1,000	5,000	6,000
	Heat Exchanger	EA	1	500	4,000	500	4,000	4,500
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS		--	--	13,000	40,000	53,000
	Mech. Room HVAC	LS		--	--	1,500	2,000	3,500
	Miscellaneous Equip.	LS		--	--	2,500	10,400	12,900
	SUB-TOTAL					25,000	114,400	139,400
	5% Sales Tax						5,720	5,720
	18% Labor Insurance					4,500		4,500
	SUB-TOTAL							149,620
	9% Subcontractor Overhead							13,466
	SUB-TOTAL							163,086
	10% Subcontractor Profit							16,309
	SUB-TOTAL							179,397
	2% Gen Contractor Mark-up							3,588
	SUB-TOTAL							182,985
	10% Area Factor							18,299
	SUB-TOTAL							201,284
	SYSTEM 1 Common Cost (same interior design)							415,021
	TOTAL, MECHANICAL, DESCON-CONCORDIA							$ 616,305

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard - Bldg. A-1(= Sys. 1)	EA	1	--	--	220	5,830	$ 6,050
	208V Switchboard-Bldg. A-1 (= System 1)	EA	1	--	--	395	5,000	5,395
	480V Normal Switchboard w/500 KVA trans. & 208V Dist.Bd.(Bldg. A-3)	EA	1	--	--	1,105	14,196	15,301
	480V Emergency Switchboard (= System 1)	EA	1	--	--	220	2,450	2,670
	Emergency Gen.-150 KW w/Batt.,control,C.B. & A.T.S.	EA	1	--	--	475	24,750	25,225
	Transformers (= Sys. 1)	EA	1	--	--	98	684	782
	Panelboards (= Sys. 1)	LS	1	--	--	1,227	950	2,177
	Disc. Switches	LS	1	--	--	400	730	1,130
	Apart. Distr. Centers	LS	1	--	--	11,480	6,720	18,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	98,000	56,000	154,000
	Cable & Conduit	LS	1	--	--	15,500	50,400	65,900
	T.V. Ant. Sys.(= Sys.1)	LS	1	--	--	4,900	2,100	7,000
	I.C. Sys. (= System 1)	LS	1	--	--	6,780	9,740	16,520
	F.A. Sys. (= System 1)	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					142,620	182,730	325,350
	Insurance - 18%					25,671		25,671
	Sales Tax - 5%						9,136	9,136
	SUBTOTAL							360,157
	Subcontractor O.H.-9%							32,414
	SUBTOTAL							392,571
	Subcontr. Profit - 10%							39,257
	SUBTOTAL							431,828
	Gen.Contr.Profit - 2%							8,637
	SUBTOTAL							440,465
	Area Factor - 10%							44,046
	TOTAL, DESCON, ELECT.							$484,511

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Recip. Chiller - 85 Ton	EA	1	2,000	18,400	2,000	18,400	$ 20,400
	Boiler - 170 KW	EA	1	400	4,000	400	4,000	4,400
	Expansion Tanks	EA	2	50	500	100	1,000	1,100
	Mech. Room Piping	LS		--	--	1,000	5,000	6,000
	Miscellaneous Equip.	LS		--	--	350	2,800	3,150
	SUB-TOTAL					3,850	31,200	35,050
	5% Sales Tax						1,560	1,560
	18% Labor Insurance					693		693
	SUB-TOTAL							37,303
	9% Subcontractor Overhead							3,357
	SUB-TOTAL							40,660
	10% Subcontractor Profit							4,066
	SUB-TOTAL							44,726
	2% Gen Contractor Mark-up							895
	SUB-TOTAL							45,621
	10% Area Factor							4,562
	SUB-TOTAL							50,183
	SYSTEM 1 Common Cost (same interior design)							77,857
	TOTAL, MECHANICAL, SCHOOL BUILDING							$128,040

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Disc. Switches:							
	400A, 600V	EA	1	--	--	100	285	$ 385
	100A, 600V	EA	1	--	--	35	75	110
	Remote Cont. Sw.-400A	EA	1	--	--	150	1,700	1,850
	Transformers:							
	225 KVA, 480-480/277	EA	1	--	--	200	2,330	2,530
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	15 KVA, 480-208/120	EA	1	--	--	75	300	375
	Panelboards:							
	480/277, 400A	EA	1	--	--	400	1,160	1,560
	480/277, 100A	EA	2	--	--	164	190	354
	208/120, 400A	EA	1	--	--	360	307	667
	208/120, 225A	EA	1	--	--	295	207	502
	208/120, 100A	EA	2	--	--	296	256	552
	Emergency Generator - 15KW w/batt.,C/B, controls & A.T.S.	EA	1	--	--	305	2,475	2,780
	Lighting (= System 1)	LS	1	--	--	4,000	13,690	17,690
	Recps.,Switches, F.C., etc. (= System 1)	LS	1	--	--	2,625	1,750	4,375
	Cable & Conduit	LS	1	--	--	2,050	6,600	8,650
	F.A. Sys. (= System 1)	LS	1	--	--	1,000	4,000	5,000
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	800	400	1,200
	P.A. & Sound System (= System 1)	LS	1	--	--	1.200	3,000	4,200
	SUBTOTAL					14,219	39,860	54,079
	Insurance - 18%					2,559		2,559
	Sales Tax - 5%						1,993	1,993
	SUBTOTAL							58,631
	Subcontractor O.H.-9%							5,277
	SUBTOTAL							63,908
	Subcontractor Proft.10%							6,391
	SUBTOTAL							70,299
	Gen.Contr.Proft.-2%							1,406
	SUBTOTAL							71,705
	Area Factor - 10%							7,170
	TOTAL, SCHOOL, ELECT.							$78,875

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. SHELLEY A, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif. Chiller - 350 Tons	EA	1	2,000	35,000	2,000	35,000	$ 37,000
	Cooling Tower - 420 Tons	EA	1	2,000	8,000	2,000	8,000	10,000
	Boiler - 130 HP	EA	1	2,000	15,000	2,000	15,000	17,000
	Oil Storage Tank	EA	1	1,000	5,000	1,000	5,000	6,000
	Heat Exchanger	EA	1	600	5,000	600	5,000	5,600
	Condenser Pumps	EA	2	250	2,700	500	5,400	5,900
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS		--	--	13,000	40,000	53,000
	Mech. Room HVAC	LS		--	--	1,500	2,000	3,500
	Miscellaneous Equip	LS		--	--	2,270	11,740	14,010
	SUB-TOTAL					24,970	129,140	154,110
	5% Sales Tax						6,457	6,457
	18% Labor Insurance					4,495		4,495
	SUB-TOTAL							165,062
	9% Subcontractor Overhead							14,856
	SUB-TOTAL							179,918
	10% Subcontractor Profit							17,992
	SUB-TOTAL							197,910
	2% General Contractor Mark-up							3,958
	SUB-TOTAL							201,868
	10% Area Factor							20,187
	SUB-TOTAL							222,055
	SYSTEM 1 Common Cost (same interior design)							490,508
	TOTAL, MECHANICAL, SHELLEY A							$ 712,563

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	500	6,950	$ 7,450
	Transformers (= Sys. 1)	LS	1	--	--	658	8,778	9,436
	208V Dist. Bd.	EA	1	--	--	300	6,350	6,650
	Emergency Gen.-125KW 120KW,480V,3Ø,3W,with C/B Controls & A.T.Sw.	EA	1	--	--	560	21,000	21,560
	Disconnect Switches	LS	1	--	--	334	709	1,043
	Motor Starters	LS	1	--	--	960	2,830	3,790
	Panelboards - 208V (= System 1)	LS	1	--	--	1,455	2,736	4,191
	Apart. Distr. Center (= System 1)	EA	152	82	48	12,464	7,296	19,760
	Pullboxes (= System 1)	LS	1	--	--	195	1,681	1,876
	Apart. Wiring, Fixts., etc. (= System 1)	LS	1	--	--	106,400	60,800	167,200
	Cable & Conduit - FDRS	LS	1	--	--	20,000	65,000	85,000
	T.V. Ant. System (= System 1)	LS	1	--	--	5,320	2,280	7,600
	I.C. System (= Sys. 1)	LS	1	--	--	7,350	10,560	17,910
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					158,496	200,420	358,916
	Insurance - 18%					28,529		28,529
	Sales Tax - 5%						10,021	10,021
	SUBTOTAL							397,466
	Subcontractor O.H.-9%							35,772
	SUBTOTAL							433,238
	Subcontractor Prof.-10%							43,323
	SUBTOTAL							476,561
	Gen.Contr. OH&P - 2%							9,531
	SUBTOTAL							486,092
	Area Factor - 10%							48,609
	TOTAL							$534,701

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. SHELLEY B, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Recip. Chiller - 96 Ton	EA	1	2,000	14,000	2,000	14,000	$ 16,000
	Cooling Tower - 120 Ton	EA	1	1,000	3,000	1,000	3,000	4,000
	Boiler - 40 HP	EA	1	1,500	5,000	1,500	5,000	6,500
	Oil Storage Tank	EA	1	700	3,000	700	3,000	3,700
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Mech. Room Piping	LS		--	--	6,000	20,000	26,000
	Mech. Room HVAC	LS		--	--	800	1,000	1,800
	Miscellaneous Equipment	LS		--	--	1,240	5,100	6,340
	SUB-TOTAL					13,640	56,100	69,740
	5% Sales Tax						2,805	2,805
	18% Labor Insurance					2,455		2,455
	SUB-TOTAL							75,000
	9% Subcontractor Overhead							6,750
	SUB-TOTAL							81,750
	10% Subcontractor Profit							8,175
	SUB-TOTAL							89,925
	2% Gen Contractor Mark-up							1,799
	SUB-TOTAL							91,724
	10% Area Factor							9,172
	SUB-TOTAL							100,896
	SYSTEM 1 Common Cost (same interior design)							147,013
	TOTAL, MECHANICAL, SHELLEY B							$247,909

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard (= System 1)	EA	1	--	--	400	2,050	$ 2,450
	Transformer, 500 KVA, 480-208/120	EA	1	--	--	350	4,424	4,774
	208V Dist. Bd.	EA	1	--	--	300	4,508	4,808
	Emergency Generator, 100KW, 208/120V, 3Ø, 4W w/C/B,controls & A.T.S.	EA	1	--	--	500	16,500	17,000
	Disc. Switches	LS	1	--	--	98	284	382
	Panelboards - 208V (= System 1)	LS	1	--	--	2,505	2,702	5,207
	Apartment Dist.Centers (= System 1)	EA	40	82	48	3,280	1,920	5,200
	Apartment Wiring Fixtures, etc.	LS	1	--	--	28,000	16,000	44,000
	Cable & Conduit-Fdrs.	LS	1	--	--	6,100	19,900	26,000
	T.V. Ant.Sys.(=Sys.1)	LS	1	--	--	1,400	600	2,000
	I.C.System (= Sys. 1)	LS	1	--	--	1,980	2,940	4,920
	F.A.System (= Sys. 1)	LS	1	--	--	520	910	1,430
	SUBTOTAL					45,433	72,738	118,171
	Insurance - 18%					8,178		8,178
	Sales Tax - 5%						3,637	3,637
	SUBTOTAL							129,986
	Subcontractor O.H.-9%							11,699
	SUBTOTAL							141,695
	Subcontractor Prft.10%							14,169
	SUBTOTAL							155,864
	Gen.Contr. OH&P - 2%							3,117
	SUBTOTAL							158,981
	Area Factor - 10%							15,898
	TOTAL, SHELLEY B,ELECT.							$174,879

COST ESTIMATE
FOR

SYSTEM 8

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Camci:							
	Mechanical	FT^2	1,820		26			$47,320
	Electrical	FT^2	300		26			7,800
	Commercial Bldg.							
	Mechanical	FT^2	400		32			12,800
	Electrical	FT^2	125		32			4,000
	Descon-Concordia							
	Mechanical	FT^2	1,600		38			60,800
	Electrical	FT^2	660		38			25,080
	School							
	Mechanical	FT^2	190		31			5,890
	Electrical	FT^2	190		31			5,890
	Shelley A							
	Mechanical	FT^2	2,580		33			85,140
	Electrical	FT^2	250		33			8,250
	Shelley B							
	Mechanical	FT^2	1,000		33			33,000
	Electrical	FT^2	130		33			4,290
	TOTAL							$300,260

SYSTEM 9
INDIVIDUAL PLANT/ELECTRIC CHILLER/ELECTRIC BOILER
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 9

SYSTEM 9 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Site Distribution	---	$ 194,237*	$ 194,237
Camci	$ 580,128	527,272	1,107,400
Commercial Building	339,806	95,038	434,844
Descon-Concordia	582,726	495,647	1,078,373
School	128,040	78,875	206,915
Shelley A	678,988	545,340	1,224,328
Shelley B	237,511	179,309	416,820
Building Floorspace	---	---	300,260
TOTAL	$2,547,199	$2,115,718	$4,963,177

Unit Cost = $4,963,177 ÷ 573,780 Ft^2 = $8.65/$Ft^2$

*See System 1 Cost Estimate

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif.Chiller-225 Tons	EA	1	2,000	25,000	2,000	25,000	$ 27,000
	Cooling Tower-270 Tons	EA	1	2,000	6,000	2,000	6,000	8,000
	Elec.Boiler,Htg.-720KW	EA	1	1,500	8,300	1,500	8,300	9,800
	Elec.Boiler, Domestic HW-190KW	EA	1	500	3,000	500	3,000	3,500
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS		--	--	10,000	35,000	45,000
	Mech. Room HVAC	LS		--	--	1,500	2,000	3,500
	Misc. Equipment	LS		--	--	1,800	8,630	10,430
	SUBTOTAL					19,800	94,930	114,730
	5% Sales Tax						4,747	4,747
	18% Labor Insurance					3,564		3,564
	SUBTOTAL							123,041
	9% Subcontractor O.H.							11,074
	SUBTOTAL							134,115
	10% Subcontractor Profit							13,412
	SUBTOTAL							147,527
	2% Gen.Contr. Markup							2,951
	SUBTOTAL							150,478
	10% Area Factor							15,048
	SUBTOTAL							165,526
	System 1 Common Cost	(Same interior design)						414,602
	TOTAL, MECHANICAL, CAMCI							$580,128

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	500	6,800	$ 7,300
	Transformers (= Sys. 1)	LS	1	--	--	620	7,703	8,323
	208V Distr. Board	EA	1	--	--	930	7,500	8,430
	Emerg.Gen. (= Sys. 8)	EA	1	--	--	500	29,250	29,750
	Disc. Switches	LS	1	--	--	820	2,089	2,909
	B.P. Switch - 2000A (= System 1)	EA	1	--	--	335	3,575	3,910
	Starters (= System 8)	LS	1	--	--	2,000	4,550	6,550
	Panelboards (= Sys. 1)	LS	1	--	--	1,825	1,289	3,114
	Apart. Dist. Centers (= System 1)	LS	1	--	--	12,546	7,344	19,890
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	107,100	61,200	168,300
	Cable & Conduit Fdrs.	LS	1	--	--	15,200	49,000	64,200
	T.V. Ant. System - (= System 1)	LS	1	--	--	5,350	2,300	7,650
	I.C. System (= Sys. 1)	LS	1	--	--	7,400	10,600	18,000
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,500	5,500
	SUBTOTAL					157,126	196,700	353,826
	Insurance - 18%					28,282		28,282
	Sales Tax - 5%						9,835	9,835
	SUBTOTAL							391,943
	Subcontr. OH - 9%							35,275
	SUBTOTAL							427,218
	Subcontr. Profit - 10%							42,722
	SUBTOTAL							469,940
	Gen.Contr. OH&P - 2%							9,399
	SUBTOTAL							479,339
	Area Factor - 10%							47,933
	TOTAL, CAMCI, ELECTRICAL							$527,272

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL BUILDING. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	The estimated cost of System 9 is equal to System 8 due to 100% design carryover.							$339,806

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Same as System 8							$86,399
	Area Factor - 10%							8,639
	TOTAL, COMMERCIAL, ELECT.							$95,038

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif.Chiller-238 Ton	EA	1	2,000	25,000	2,000	25,000	$ 27,000
	Cooling Tower-286 Ton	EA	1	2,000	6,000	2,000	6,000	8,000
	Elec.Boiler,Htg.-880KW	EA	1	2,000	9,000	2,000	9,000	11,000
	Elec.Boiler, Domestic HW 170KW	EA	1	500	3,000	500	3,000	3,500
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS		--	--	10,000	35,000	45,000
	Mech. Room HVAC	LS		--	--	1,500	2,000	3,500
	Misc. Equipment	LS		--	--	1,900	8,800	10,700
	SUBTOTAL					20,400	95,800	116,200
	5% Sales Tax						4,790	4,790
	18% Labor Insurance					3,672		3,672
	SUBTOTAL							124,662
	9% Subcontractor O.H.							11,220
	SUBTOTAL							135,882
	10% Subcontractor Profit							13,588
	SUBTOTAL							149,470
	2% Gen.Contractor Markup							2,989
	SUBTOTAL							152,459
	10% Area Factor							15,246
	SUBTOTAL							167,705
	System 1 Common Cost (Same interior design)							415,021
	TOTAL, MECHANICAL, DESCON-CONCORDIA							$582,726

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchbd.(Bldg. A-1) (= System 1)	EA	1	--	--	220	5,830	$ 6,050
	208V Switchbd. (Bldg. A-1) (= System 1)	EA	1	--	--	395	5,000	5,395
	480V Normal Swbd. with 500 KVA Trans. & 208V Dist.Bd.(Bldg. A-3)	EA	1	--	--	1,250	18,200	19,450
	480V Emerg.Swbd(=Sys.1)	EA	1	--	--	220	2,450	2,670
	Emerg.Gen.(= System 8)	EA	1	--	--	475	24,750	25,225
	Transformers (= Sys.1)	EA	1	--	--	98	684	782
	Panelborads (= Sys. 1)	LS	1	--	--	1,227	950	2,177
	Disc. Switches	LS	1	--	--	800	1,830	2,630
	Apart. Dist. Center	LS	1	--	--	11,480	6,720	18,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	98,000	56,000	154,000
	Cable & Conduit	LS	1	--	--	16,000	52,000	68,000
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	4,900	2,100	7,000
	I.C. Sys. (= Sys. 1)	LS	1	--	--	6,780	9,740	16,520
	F.A. Sys. (= Sys. 1)	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					143,665	189,434	333,099
	Insurance - 18%					25,860		25,860
	Sales Tax - 5%						9,471	9,471
	SUBTOTAL							368,436
	Subcontractor OH - 9%							33,159
	SUBTOTAL							401,595
	Subcontr.Profit - 10%							40,159
	SUBTOTAL							441,754
	Gen.Contr. OH&P - 2%							8,835
	SUBTOTAL							450,589
	Area Factor - 10%							45,058
	TOTAL, DESCON, ELECT.							$495,647

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	The estimated cost of System 9 is equal to System 8 due to 100% design carryover.							$128,040

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Same as System 8							$71,705
	Area Factor - 10%							7,170
	TOTAL, SCHOOL, ELECT.							$78,875

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Centrif.Chiller-350 Tons	EA	1	2,000	35,000	2,000	35,000	$ 37,000
	Cooling Tower - 420 Tons	EA	1	2,000	8,000	2,000	8,000	10,000
	Elec.Boiler, Htg., 1,030KW	EA	1	2,000	10,000	2,000	10,000	12,000
	Elec. Boiler, Domestic, HW-190KW	EA	1	500	3,000	500	3,000	3,500
	Condenser Pumps	EA	2	250	2,700	500	5,400	5,900
	Expansion Tanks	EA	2	50	1,000	100	2,000	2,100
	Mech. Room Piping	LS		--	--	10,000	35,000	45,000
	Mech. Room HVAC	LS		--	--	1,500	2,000	3,500
	Misc. Equipment	LS		--	--	1,860	10,040	11,900
	SUBTOTAL					20,460	110,440	130,900
	5% Sales Tax						5,522	5,522
	18% Labor Insurance					3,683		3,683
	SUBTOTAL							140,105
	9% Subcontractor O.H.							12,609
	SUBTOTAL							152,714
	10% Subcontr. Profit							15,271
	SUBTOTAL							167,985
	2% Gen. Contractor Mark-up							3,360
	SUBTOTAL							171,345
	10% Area Factor							17,135
	SUBTOTAL							188,480
	System 1 Common Cost (Same interior design)							490,508
	TOTAL, MECHANICAL, SHELLEY A							$678,988

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	700	10,250	$ 10,950
	Transformers(= Sys. 1)	LS	1	--	--	658	8,778	9,436
	208V Dist. Board	EA	1	--	--	300	6,350	6,650
	Emerg.Gen. (= System 3)	EA	1	--	--	560	21,000	21,560
	Disc. Switches	LS	1	--	--	800	1,680	2,480
	Motor Starters	LS	1	--	--	960	2,830	3,790
	208V Panel Bds.(=Sys.1)	LS	1	--	--	1,455	2,736	4,191
	Apart.Distr.Cen. (= System 1)	LS	1	--	--	12,464	7,296	19,760
	Pullboxes (= System 1)	LS	1	--	--	195	1,681	1,876
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	106,400	60,800	167,200
	Cable & Cond. - Fdrs.	LS	1	--	--	20,500	66,000	86,000
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	5,320	2,280	7,600
	I.C. Sys. (= Sys. 1)	LS	1	--	--	7,350	10,560	17,910
	F.A. Sys. (= Sys. 1)	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					159,662	205,691	365,353
	Insurance - 18%					29,739		29,739
	Sales Tax - 5%						10,284	10,284
	SUBTOTAL							405,376
	Subcontr. OH - 9%							36,483
	SUBTOTAL							441,859
	Subcontr. Profit - 10%							44,185
	SUBTOTAL							486,044
	Gen.Contr. OH&P - 2%							9,720
	SUBTOTAL							495,764
	10% Area Factor							49,576
	TOTAL, SHELLEY A, ELECT.							$545,340

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Recip.Chiller - 96 Ton	EA	1	2,000	14,000	2,000	14,000	$ 16,000
	Cooling Tower -120 Ton	EA	1	1,000	3,000	1,000	3,000	4,000
	Elec.Boiler,Htg.-300KW	EA	1	1,000	4,200	1,000	4,200	5,200
	Elec.Boiler, Domestic, HW - 50KW	EA	1	300	1,500	300	1,500	1,800
	Condenser Pumps	EA	2	200	2,500	400	5,000	5,400
	Expansion Tank	EA	1	50	1,000	50	1,000	1,050
	Mech. Room Piping	LS		--	--	5,000	17,000	22,000
	Mech. Room HVAC	LS		--	--	600	800	1,400
	Misc. Equipment	LS		--	--	1,055	4,750	5,805
	SUBTOTAL					11,405	51,250	62,655
	5% Sales Tax						2,563	2,563
	18% Labor Insurance					2,053		2,053
	SUBTOTAL							67,271
	9% Subcontractor O.H.							6,054
	SUBTOTAL							73,325
	10% Subcontr. Profit							7,333
	SUBTOTAL							80,658
	2% Gen.Contr. Markup							1,613
	SUBTOTAL							82,271
	10% Area Factor							8,227
	SUBTOTAL							90,498
	System 1 Common Cost (Same interior design)							147,013
	TOTAL, MECHANICAL, SHELLEY B							$ 237,511

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard (= System 1)	EA	1	--	--	400	2,050	$ 2,450
	Transformer (= Sys. 3)	EA	1	--	--	350	4,424	4,774
	208V Dist. Board	EA	1	--	--	350	4,635	4,985
	Emergency Generator (= System 3)	EA	1	--	--	500	16,500	17,000
	Disc. Switches	LS	1	--	--	365	1,285	1,650
	Panelboards (= Sys. 1)	LS	1	--	--	2,505	2,702	5,207
	Apart. Dist. Centers (= System 1)	LS	1	--	--	3,280	1,920	5,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	28,000	16,000	44,000
	Cable & Conduit Fdrs.	LS	1	--	--	6,600	21,000	27,600
	T.V.Ant.Sys.(= Sys. 1)	LS	1	--	--	1,400	600	2,000
	I.C. System (= Sys. 1)	LS	1	--	--	1,980	2,940	4,920
	F.A. System (= Sys. 1)	LS	1	--	--	520	910	1,430
	SUBTOTAL					46,250	74,966	121,216
	Insurance - 18%					8,325		8,325
	Sales Tax - 5%						3,748	3,748
	SUBTOTAL							133,289
	Subcontractor OH - 9%							19,996
	SUBTOTAL							145,285
	Subcontractor Prof.-10%							14,528
	SUBTOTAL							159,813
	Gen.Contr. OH&P - 2%							3,196
	SUBTOTAL							163,009
	Area Factor - 10%							16,300
	TOTAL, SHELLEY B, ELECT.							$179,309

COST ESTIMATE
FOR

SYSTEM 9

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

ENERGY SYSTEM FLOOR SPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Camci:							
	Mechanical	Ft^2	1,820	--	26	--	--	$ 47,320
	Electrical	Ft^2	300	--	26	--	--	7,800
	Commercial Building:							
	Mechanical	Ft^2	400	--	32	--	--	12,800
	Electrical	Ft^2	125	--	32	--	--	4,000
	Descon-Condordia:							
	Mechanical	Ft^2	1,600	--	38	--	--	60,800
	Electrical	Ft^2	660	--	38	--	--	25,080
	School:							
	Mechanical	Ft^2	190	--	31	--	--	5,890
	Electrical	Ft^2	190	--	31	--	--	5,890
	Shelley A:							
	Mechanical	Ft^2	2,580	--	33	--	--	85,140
	Electrical	Ft^2	250	--	33	--	--	8,250
	Shelley B:							
	Mechanical	Ft^2	1,000	--	33	--	--	33,000
	Electrical	Ft^2	130	--	33	--	--	4,290
	TOTAL							$300,260

SYSTEM 10
INDIVIDUAL INCREMENTAL HEATING AND COOLING
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 10

SYSTEM 10 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Site Distribution	---	$ 194,237*	$ 194,237
Camci	$ 349,441	591,234	940,675
Commercial Building	119,934	104,734	224,668
Descon-Concordia	358,756	614,062	972,818
School	45,067	85,789	130,856
Shelley A	501,123	678,898	1,180,021
Shelley B	161,282	229,902	391,184
Building Floor Space	---	---	85,080
TOTAL	$1,535,603	$2,498,856	$4,119,539

Unit Cost = $S,119,539 ÷ 573,780 Ft^2 = $7.18/$Ft^2$

*See System 1 Cost Estimate.

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	368	50	425	18,400	156,400	$ 174,800
	Domestic HW Heaters	EA	153	50	100	7,650	15,300	22,900
	Roof-top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Ductwork	#	6,500	.93	.33	6,045	2,145	8,190
	Misc. HVAC Items	LS		--	--	304	1,296	1,600
	Unit Heaters	EA	2	22	238	44	476	520
	Exhaust Fans	EA	2	215	1,200	430	2,400	2,830
	Misc. Equipment	LS				3,400	19,000	22,400
	SUBTOTAL					36,773	206,107	242,830
	5% Sales Tax						10,305	10,305
	18% Labor Insurance					6,619		6,619
	SUBTOTAL							259,754
	9% Subcontractor O.H.							23,378
	SUBTOTAL							283,132
	10% Subcontr. Profit							28,313
	SUBTOTAL							311,445
	2% Gen.Contr. Mark-up							6,229
	SUBTOTAL							317,674
	10% Area Factor							31,767
	TOTAL, MECHANICAL, CAMCI							$349,441

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	650	8,150	$ 8,800
	Transformers (= Sys. 1)	LS	1	--	--	620	7,703	8,323
	208V Distr. Board	EA	1	--	--	880	6,700	7,580
	Emerg.Generator-175 KW 480V, 3Ø, 3W, with Batt.Controls, C/B & A.T.S.	EA	1	--	--	500	29,250	29,750
	Disc.Switches(= Sys.1)	LS	1	--	--	400	989	1,389
	Bolt. Press Sw.-2000A (= System 1)	EA	1	--	--	335	3,575	3,910
	Starters	LS	1	--	--	2,000	4,550	6,550
	Panelboards (= Sys. 1)	LS	1	--	--	10,177	19,337	29,514
	Apart. Distr. Centers (= System 1)	LS	1	--	--	12,546	7,344	19,890
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	107,100	61,200	168,300
	Cable & Conduit Fdrs.	LS	1	--	--	18,900	63,600	82,500
	T.V. Ant. System, (= System 1)	LS	1	--	--	5,350	2,300	7,650
	I.C. System (= Sys. 1)	LS	1	--	--	7,400	10,600	18,000
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,500	5,500
	SUBTOTAL					168,858	228,798	397,656
	Insurance - 18%					30,394		30,394
	Sales Tax - 5%						11,439	11,439
	SUBTOTAL							439,489
	Subcontractor O.H.- 9%							39,554
	SUBTOTAL							479,043
	Subcontr. Profit - 10%							47,904
	SUBTOTAL							526,947
	Gen. Contr. OH&P - 2%							10,539
	SUBTOTAL							537,486
	Area Factor - 10%							53,748
	TOTAL, CAMCI, ELECT.							$591,234

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	87	50	425	4,350	36,975	$ 41,325
	Domestic HW Heaters	EA	1	50	250	50	250	300
	Roof-top AC Unit	EA	1	600	15,000	600	15,000	15,600
	Ductwork	#	13,100	.93	.33	12,183	4,323	16,506
	Misc. HVAC Items	LS				200	800	1,000
	Misc. Equipment	LS		--	--	1,800	6,000	7,800
	SUBTOTAL					19,183	63,348	82,531
	5% Sales Tax						3,167	3,167
	18% Labor Insurance					3,453		3,453
	SUBTOTAL							89,151
	9% Subcontractor O.H.							8,024
	SUBTOTAL							97,175
	10% Subcontr. Profit							9,718
	SUBTOTAL							106,893
	2% Gen.Contr. Mark-up							2,138
	SUBTOTAL							109,031
	10% Area Factor							10,903
	TOTAL, MECHANICAL, COMMERCIAL BUILDING							$119,934

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Swbd.-1000A, MC8	EA	1	--	--	400	2,640	$ 3,040
	Transformers:							
	750 KVA, 480-480/277	EA	1	--	--	400	6,175	6,575
	30 KVA, 480-208/120	EA	3	98	685	294	2,055	2,349
	15 KVA, 480-208/120	EA	1	--	--	76	300	376
	7.5 KVA, 480-208/120	EA	1	--	--	65	180	245
	480V Distr. Bd., 100A	EA	1	--	--	500	5,980	6,480
	Emerg. Gen. - 30KW with Batt., C/B, controls & A.T.S.	EA	1	--	--	350	4,950	5,300
	Disc. Switches	LS	1	--	--	225	585	810
	Starters	LS	1	--	--	240	700	940
	Panelboards	LS	1	--	--	2,664	3,446	6,110
	Lighting (= System 1)	LS	1	--	--	5,170	2,308	7,478
	Recps., switches, F.C., etc. (= System 1)	LS	1	--	--	1,500	1,000	2,500
	Cable & Conduit	LS	1	--	--	6,140	20,560	26,700
	F.A. System (= Sys. 1)	LS	1	--	--	500	2,100	2,600
	SUBTOTAL					18,524	52,979	71,503
	Insurance - 18%					3,334		3,334
	Sales Tax - 5%						2,649	2,649
	SUBTOTAL							77,486
	Subcontractor O.H.-9%							6,974
	SUBTOTAL							84,860
	Subcontr. Profit - 10%							8,486
	SUBTOTAL							93,346
	Gen.Contr. OH&P - 2%							1,867
	SUBTOTAL							95,213
	Area Factor - 10%							9,521
	TOTAL, COMMERCIAL, ELECTRICAL							$104,734

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	404	50	425	20,200	171,700	$ 191,900
	Domestic HW Heaters	EA	140	50	100	7,000	14,000	21,000
	Roof-top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Ductwork	#	2,000	.93	.63	1,860	1,260	3,120
	Misc. HVAC Items	LS				300	1,000	1,300
	Misc. Equipment	LS				3,000	20,000	23,000
	SUBTOTAL					32,860	217,050	249,910
	5% Sales Tax						10,853	10,853
	18% Labor Insurance					5,915		5,915
	SUBTOTAL							266,678
	9% Subcontractor O.H.							24,001
	SUBTOTAL							290,679
	10% Subcontr. Profit							29,068
	SUBTOTAL							319,747
	2% Gen.Contr. Mark-up							6,395
	SUBTOTAL							326,142
	10% Area Factor							32,614
	TOTAL, MECHANICAL, DESCON-CONCORDIA							$358,756

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchbd.(Bldg. A-1) (= System 1)	EA	1	--	--	220	5,830	$ 6,050
	208V Switchbd. (Bldg. A-1) (= System 1)	EA	1	--	--	395	5,000	5,395
	480V Normal SwBd. with 500 KVA Trans. &208V Dist.Bd. (Bldg. A-3)	EA	1	--	--	1,625	24,800	26,425
	480V Emerg. Swbd. (= System 1)	EA	1	--	--	220	2,450	2,670
	Emerg. Gen. 150 KW with Batt., Control, C/B & A.T.S.	EA	1	--	--	475	24,750	25,225
	Transformers (= Sys. 1)	EA	1	--	--	98	684	782
	Panelboards (= Sys. 1)	LS	1	--	--	6,969	13,358	20,327
	Disc. Switches	LS	1	--	--	400	730	1,130
	Apart. Distr. Centers (= System 1)	LS	1	--	--	11,480	6,720	18,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	98,000	56,000	154,000
	Cable & Conduit	LS	1	--	--	28,960	96,940	125,900
	T.V. Ant. System (= System 1)	LS	1	--	--	4,900	2,100	7,000
	I.C. System (= Sys. 1)	LS	1	--	--	6,780	9,740	16,520
	F.A. Sys. (= System 1)	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					162,342	252,282	414,624
	Insurance 18%					29,221		29,221
	Sales Tax 5%						12,614	12,614
	SUBTOTAL							456,459
	Subcontractor O.H.-9%							41,081
	SUBTOTAL							497,540
	Subcontr. Profit - 10%							49,754
	SUBTOTAL							547,294
	Gen.Contr. OH&P - 2%							10,945
	SUBTOTAL							558,239
	Area Factor - 10%							55,823
	TOTAL, DESCON, ELECT.							$614,062

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	70	50	425	3,500	21,250	$ 24,750
	Domestic HW Heater	EA	1	50	250	50	250	300
	Roof-top Exhaust Fans	EA	7	30	200	210	1,400	1,610
	Ductwork	#	900	1.04	.33	936	297	1,233
	Misc. HVAC Items	LS				150	300	450
	Misc. Equipment	LS				500	2,400	2,900
	SUBTOTAL					5,346	25,897	31,243
	5% Sales Tax						1,295	1,295
	18% Labor Insurance					962		962
	SUBTOTAL							33,500
	9% Subcontractor O.H.							3,015
	SUBTOTAL							36,515
	10% Subcontr. Profit							3,652
	SUBTOTAL							40,167
	2% Gen.Contr. Mark-up							803
	SUBTOTAL							40,970
	10% Area Factor							4,097
	TOTAL, MECHANICAL, SCHOOL BUILDING							$45,067

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Disc.Switches, 400A, 600V	EA	1	--	--	100	285	$ 385
	100A, 600V	EA	1	--	--	35	75	110
	Remote Cont. Sw.-400A	EA	1	--	--	150	1,700	1,850
	Transformers:							
	225 KVA, 480-480/277	EA	1	--	--	200	2,330	2,530
	75 KVA, 480-208/120	EA	1	--	--	164	1,135	1,299
	15 KVA, 480-208/120	EA	1	--	--	75	300	375
	Panelboards:							
	480/277, 600A	EA	1	--	--	460	1,580	2,040
	480/277, 100A	EA	2	--	--	164	190	354
	208/120, 400A	EA	1	--	--	360	307	667
	208/120, 225A	EA	1	--	--	295	207	502
	208/120, 100A	EA	2	--	--	296	256	552
	480/272, 100A	EA	3	--	--	696	1,164	1,860
	Emerg. Gen.-15KW with Batt., C/B, Controls & A.T.S.	EA	1	--	--	305	2,475	2,780
	Lighting (= System 1)	LS	1	--	--	4,000	13,690	17,690
	Recepts., Switches,F.C. etc. (= System 1)	LS	1	--	--	2,625	1,750	4,375
	Cable & Conduit	LS	1	--	--	2,540	8,510	11,050
	F.A. Sys. (= System 1)	LS	1	--	--	1,000	4,000	5,000
	T.V. Ant. Sys.(= Sys.1)	LS	1	--	--	800	400	1,200
	P.A. & Sound System, (= System 1)	LS	1	--	--	1,200	3,000	4,200
	SUBTOTAL					15,465	43,354	58,819
	Insurance - 18%					2,784		2,784
	Sales Tax - 5%						2,168	2,168
	SUBTOTAL							63,771
	Subcontractor O.H.-9%							5,739
	SUBTOTAL							69,510
	Subcontr.Profit - 10%							6,951
	SUBTOTAL							76,461
	Gen.Contr. OH&P - 2%							1,529
	SUBTOTAL							77,990
	Area Factor - 10%							7,799
	TOTAL, SCHOOL, ELECT.							$85,789

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	576	50	425	28,800	244,800	$ 273,600
	Domestic HW Heaters	EA	152	50	100	7,600	15,200	22,800
	Roof-top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Ductwork	#	7,500	.93	.33	6,975	2,475	9,450
	Misc. HVAC Items	LS		--	--	300	500	800
	Misc. Equipment	LS		--	--	4,500	28,000	32,500
	SUBTOTAL					48,675	300,065	348,740
	5% Sales Tax						15,003	15,003
	18% Labor Insurance					8,762		8,762
	SUBTOTAL							372,505
	9% Subcontractor O.H.							33,525
	SUBTOTAL							406,030
	10% Subcontr. Profit							40,603
	SUBTOTAL							446,633
	2% Gen.Contr. Mark-up							8,933
	SUBTOTAL							455,566
	10% Area Factor							45,557
	TOTAL, MECHANICAL, SHELLEY A							$501,123

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	1,050	22,900	$ 23,950
	Transformers (= Sys.1)	LS	1	--	--	658	8,778	9,436
	208V Dist. Bd.	EA	1	--	--	300	6,350	6,650
	Emerg.Gen. - 125 KW, 480V, 3Ø, 3W, w/C/B, controls & A.T. Sw.	EA	1	--	--	560	21,000	21,560
	Disconnect switches	LS	1	--	--	334	709	1,043
	Motor Starters	LS	1	--	--	960	2,830	3,790
	Panelboards - 480V	EA	36	--	--	11,520	27,380	38,900
	Panelboards - 208V (= System 1)	LS	1	--	--	1,455	2,736	4,191
	Apart. Distr. Gens., (= System 1)	EA	152	82	48	12,464	7,296	19,760
	Pull Boxes (= Sys. 1)	LS	1	--	--	195	1,681	1,876
	Apart. Wiring, Fixts., etc. (= System 1)	LS	1	--	--	106,400	60,800	167,200
	Cable & Conduit Fdrs.	LS	1	--	--	29,600	99,400	129,000
	T.V. Ant. System, (= System 1)	LS	1	--	--	5,320	2,280	7,600
	I.C. System (= Sys. 1)	LS	1	--	--	7,350	10,560	17,910
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					180,166	278,130	458,316
	Insurance - 18%					32,430		32,430
	Sales Tax - 5%						13,907	13,907
	SUBTOTAL							504,653
	Subcontractor O.H.-9%							45,419
	SUBTOTAL							550,072
	Subcontractor Prft.10%							55,007
	SUBTOTAL							605,079
	Gen.Contr. OH&P - 2%							12,101
	SUBTOTAL							617,180
	Area Factor - 10%							61,718
	TOTAL, SHELLEY A, ELECTRICAL							$678,898

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Incremental AC Units	EA	180	50	425	9,000	76,500	$ 85,500
	Domestic HW Heaters	EA	36	50	100	1,800	3,600	5,400
	Roof-top AC Unit	EA	1	400	8,600	400	8,600	9,000
	Ductwork	#	1,300	.93	.33	1,209	429	1,638
	Exhaust Fan	EA	1	45	280	45	280	325
	Misc. HVAC Items	LS		--	--	100	200	300
	Misc. Equipment	LS		--	--	1,300	9,000	10,300
	SUBTOTAL					13,854	98,609	112,463
	5% Sales Tax						4,930	4,930
	18% Labor Insurance					2,494		2,494
	SUBTOTAL							119,887
	9% Subcontractor O.H.							10,790
	SUBTOTAL							130,677
	10% Subcontr. Profit							13,068
	SUBTOTAL							143,745
	2% Gen.Contr. Mark-up							2,875
	SUBTOTAL							146,620
	10% Area Factor							14,662
	TOTAL, MECHANICAL, SHELLEY B							$161,282

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard, (= System 1)	EA	1	--	--	400	2,125	$ 2,525
	Transformer, 750 KVA, 480-208/120	EA	1	--	--	400	6,674	7,074
	208V Distr. Bd.	EA	1	--	--	500	16,500	17,000
	Emerg.Gen. 100 KW, 208/120V, 3Ø, 4W with C/B, controls & A.T.S	EA	1	--	--	630	20,625	21,255
	Disc. Switches	LS	1	--	--	98	284	372
	Panelboards - 208V, (= System 1)	LS	1	--	--	4,953	8,489	13,442
	Apart. Dist. Centers, (= System 1)	EA	40	82	48	3,280	1,920	5,200
	Apart.Wiring, Fixts., etc.	LS	1	--	--	28,000	16,000	44,000
	Cable & Conduit Fdrs.	LS	1	--	--	8,570	28,680	37,250
	T.V. Ant. System, (= System 1)	LS	1	--	--	1,400	600	2,000
	I.C. System (= Sys. 1)	LS	1	--	--	1,980	2,940	4,920
	F.A. System (= Sys. 1)	LS	1	--	--	520	910	1,430
	SUBTOTAL					50,731	105,747	156,478
	Insurance - 18%					9,132		9,132
	Sales Tax - 5%						5,287	5,287
	SUBTOTAL							170,897
	Subcontractor O.H.-9%							15,380
	SUBTOTAL							186,277
	Subcontr. Profit - 10%							18,627
	SUBTOTAL							204,904
	Gen.Contr. OH&P - 2%							4,098
	SUBTOTAL							209,002
	Area Factor - 10%							20,900
	TOTAL, SHELLEY B, ELECTRICAL							$229,902

COST ESTIMATE
FOR

SYSTEM 10

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Camci:							
	Mechanical	Ft^2	350		26			$ 9,100
	Electrical	Ft^2	300		26			7,800
	Commercial Building:							
	Mechanical		50		32			1,600
	Electrical		125		32			4,000
	Descon-Concordia:							
	Mechanical		200		38			7,600
	Electrical		660		38			25,080
	School:							
	Mechanical		40		31			1,240
	Electrical		190		31			5,890
	Shelley A:							
	Mechanical		290		33			9,570
	Electrical		250		33			8,250
	Shelley B:							
	Mechanical		200		33			660
	Electrical		130		33			4,290
	TOTAL							$ 85,080

SYSTEM 11
INDIVIDUAL HEAT PUMP HEATING & COOLING
COST ESTIMATE

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 11

SYSTEM 11 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Site Distribution	$ ---	$ 194,237*	$ 194,237
Camci	361,613	623,859	985,472
Commercial Building	138,757	99,832	238,589
Descon-Concordia	463,384	604,082	1,067,466
School	60,745	81,763	142,508
Shelley A	498,893	643,327	1,142,220
Shelley B	145,870	195,066	340,936
Building Floorspace	---	---	85,080
TOTAL	$1,669,262	$2,442,166	$4,196,508

Unit Cost = $4,196,508 ÷ 573,780 Ft^2 = $7.31/$Ft^2$

*See System 1 Cost Estimate.

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Heat Pump Units	EA	153	150	800	22,950	122,400	$ 145,350
	Supply Registers	EA	368	5.25	10	1,932	3,680	5,612
	Return Grilles	EA	306	4.70	14	1,438	4,284	5,722
	New Ductwork	#	19,247	.93	.33	17,900	6,352	24,252
	Ductwork Carry-over	#	6,500	.93	.33	6,045	2,145	8,190
	Misc. HVAC items	LS		--	--	304	1,296	1,600
	Unit Heaters	EA	2	22	238	44	476	520
	Exhaust Fans	EA	2	215	1,200	430	2,400	2,830
	Domestic HW Heaters	EA	153	50	100	7,650	15,300	22,950
	Rooftop AC Unit	EA	1	500	9,090	500	9,090	9,590
	Miscellaneous Equip	LS		--	--	4,500	17,000	21,500
	SUB-TOTAL					63,693	184,423	248,116
	5% Sales Tax						9,221	9,221
	18% Labor Insurance					11,465		11,465
	SUB-TOTAL							268,802
	9% Subcontractor Overhead							24,192
	SUB-TOTAL							292,994
	10% Subcontractor Profit							29,299
	SUB-TOTAL							322,293
	2% Gen Contractor Mark-up							6,446
	SUB-TOTAL							328,739
	10% Area Factor							32,874
	TOTAL, MECHANICAL, CAMCI							$ 361,613

COST ESTIMATE
FOR

SYSTEM 1:

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	450	4,300	$ 4,750
	Transformers (= Sys. 1)	LS	1	--	--	620	7,703	8,323
	208V Distr. Board	EA	1	--	--	1,280	14,220	15,500
	Emerg.Generator-175KW, 480V, 3Ø, 3W, with Batt. Controls, C/B & A.T.S.	EA	1	--	--	500	29,250	29,750
	Disc. Switches(= Sys.1)	LS	1	--	--	400	989	1,389
	Bolt Press Sw. - 2000A (= System 1)	EA	1	--	--	335	3,575	3,910
	Starters	LS	1	--	--	2,000	4,550	6,550
	Panelboards	LS	1	--	--	11,153	16,873	28,026
	Apart. Distr. Centers (= System 1)	LS	1	--	--	12,546	7,344	19,890
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	107,100	61,200	168,300
	Cable & Conduit Fdrs.	LS	1	--	--	23,500	79,000	102,500
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	5,350	2,300	7,650
	I.C. System (= Sys. 1)	LS	1	--	--	7,400	10,600	18,000
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,500	5,500
	SUBTOTAL					174,634	245,404	420,038
	Insurance - 18%					31,434		31,434
	Sales Tax - 5%						12,270	12,270
	SUBTOTAL							463,742
	Subcontractor O.H.-9%							41,736
	SUBTOTAL							505,478
	Subcontr. Profit - 10%							50,547
	SUBTOTAL							556,025
	Gen.Contr. OH&P - 2%							11,120
	SUBTOTAL							567,145
	Area Factor - 10%							56,714
	TOTAL, CAMCI, ELECTRICAL							$623,859

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 11

COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Heat Pump Units	EA	14	$ 250	$2,000	$ 3,500	$28,000	$ 31,500
	Heat Pump Units	EA	10	150	1,200	1,500	12,000	13,500
	Supply Registers	EA	90	5.25	12	473	1,080	1,553
	Return Grilles	EA	50	4.70	15	235	750	985
	New Ductwork	#	4,887	.93	.33	4,545	1,613	6,158
	Ductwork Carry Over	#	13,100	.93	.33	12,183	4,323	16,506
	Misc. HVAC Items			--	--	200	800	1,000
	Domestic HW Heaters	EA	1	50	250	50	250	300
	Roof Top AC Unit	EA	1	600	15,000	600	15,000	15,600
	Miscellaneous Equip.	LS		--	--	2,000	6,000	8,000
	SUBTOTAL					25,286	69,816	95,102
	5% Sales Tax						3,491	3,491
	18% Labor Insurance					4,551		4,551
	SUBTOTAL							103,144
	9% Subcontractor O.H.							9,283
	SUBTOTAL							112,427
	10% Subcontr. Profit							11,243
	SUBTOTAL							123,670
	2% Gen. Contr. Markup							2,473
	SUBTOTAL							126,143
	10% Area Factor							12,614
	TOTAL, MECHANICAL, COMMERCIAL BUILDING							$138,757

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Swbd. - 1000A MCS	EA	1	--	--	300	2,100	$ 2,400
	Transformers:							
	750 KVA, 480-480/277	EA	1	--	--	400	6,175	6,575
	30 KVA, 480-208/120	EA	3	98	685	294	2,055	2,349
	15 KVA, 480-208/120	EA	1	--	--	76	300	376
	7.5 KVA, 480-208/120	EA	1	--	--	65	180	245
	480V Distr.Bd., 1000A	EA	1	--	--	550	6,780	7,330
	Emerg.Gen.-30 KW, with Batt, C/B, controls & A.T.S.	EA	1	--	--	350	4,950	5,300
	Disc. Switches	LS	1	--	--	225	585	810
	Starters	LS	1	--	--	240	700	940
	Panelboards	LS	1	--	--	2,456	2,615	5,071
	Lighting (= System 1)	LS	1	--	--	5,170	2,308	7,478
	Recps., Switches, F.C., etc. (= System 1)	LS	1	--	--	1,500	1,000	2,500
	Cable & Conduit	LS	1	--	--	5,650	18,850	24,500
	F.A. System (= Sys. 1)	LS	1	--	--	500	2,100	2,600
	SUBTOTAL					17,776	50,698	68,474
	Insurance - 18%					3,200		3,200
	Sales Tax - 5%						2,535	2,535
	SUBTOTAL							74,209
	Subcontractor O.H.-9%							6,679
	SUBTOTAL							80,888
	Subcontr. Profit - 10%							8,089
	SUBTOTAL							88,977
	Gen.Contr. OH&P - 2%							1,780
	SUBTOTAL							90,757
	Area Factor - 10%							9,075
	TOTAL, COMMERCIAL, ELECTRICAL							$99,832

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 11

DESCON-CONCORDIA,
MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Heat Pump Units	EA	141	200	1,200	28,200	169,200	$ 197,400
	Supply Registers	EA	366	5.25	10	1,922	3,660	5,582
	Return Grilles	EA	282	4.70	14	1,325	3,948	5,273
	New Ductwork	#	41,853	.93	.33	28,923	13,811	52,734
	Ductwork Carry-over	#	2,000	.93	.33	1,860	660	2,520
	Misc. HVAC Items	LS		—	—	300	1,000	1,300
	Domestic HW Heaters	EA	140	50	100	7,000	14,000	21,000
	Roof Top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Miscellaneous Equip.	LS		--	—	6,000	16,000	22,000
	SUBTOTAL					86,030	231,369	317,399
	5% Sales Tax						11,568	11,568
	18% Labor Insurance					15,485		15,485
	SUBTOTAL							344,452
	9% Subcontractor O.H.							31,001
	SUBTOTAL							375,453
	10% Subcontr. Profit							34,545
	SUBTOTAL							412,998
	2% Gen.Contr. Markup							8,260
	SUBTOTAL							421,258
	10% Area Factor							42,126
	TOTAL, MECHANICAL, DESCON-CONCORDIA							$463,384

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard - Bldg. A-1 (= Sys. 1)	EA	1	--	--	220	5,830	$ 6,050
	208V Switchboard (Bldg. A-1) (= System 1)	EA	1	--	--	395	5,000	5,395
	480V Normal Trans.&208V Dist.Bd. (Bldg. A-3)	EA	1	--	--	1,404	18,996	20,400
	480V Emerg. Switchbd. (= System 1)	EA	1	--	--	220	2,450	2,670
	Emerg. Gen. - 150 KW with Batt.,Control, C/B & A.T.S.	EA	1	--	--	475	24,750	25,225
	Transformsers(= Sys. 1)	EA	1	--	--	98	684	782
	Panelboards	LS	1	--	--	8,179	10,993	19,172
	Disc. Switches	LS	1	--	--	400	730	1,130
	Apart. Distr. Centers (= System 1)	LS	1	--	--	11,480	6,720	18,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	98,000	56,000	154,000
	Cable & Conduit	LS	1	--	--	28,900	97,000	125,900
	T.V. Ant. System (= System 1)	LS	1	--	--	4,900	2,100	7,000
	I.C. System (= Sys. 1)	LS	1	--	--	6,780	9,740	16,520
	F.A. System (= Sys. 1)	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					163,271	244,173	407,444
	Insurance - 18%					29,388		29,388
	Sales Tax - 5%						12,208	12,208
	SUBTOTAL							449,040
	Subcontractor O.H.-9%							40,413
	SUBTOTAL							489,453
	Subcontr. Profit - 10%							48,945
	SUBTOTAL							538,398
	Gen.Contr. OH&P - 2%							10,768
	SUBTOTAL							549,166
	Area Factor - 10%							54,916
	TOTAL, DESCON, ELECT.							$604,082

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 11

SCHOOL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Heat Pump Units	EA	12	250	2,000	3,000	24,000	$27,000
	Supply Registers	EA	50	5.25	12	263	600	863
	Return Grilles	EA	20	4.70	15	94	300	394
	New Ductwork	#	5,450	.93	.33	5,059	1,799	6,858
	Ductwork Carry Over	#	900	.93	.33	837	297	1,134
	Misc. HVAC Items	LS		—	—	150	300	450
	Domestic HW Heater	EA	1	50	250	50	250	300
	Roof Top Exhaust Fans	EA	7	30	200	210	1,400	1,610
	Miscellaneous Equip.	LS		--	--	800	2,300	3,100
	SUBTOTAL					10,463	31,246	41,709
	5% Sales Tax						1,562	1,562
	18% Labor Insurance					1,883		1,883
	SUBTOTAL							45,154
	9% Subcontr. Overhead							4,064
	SUBTOTAL							49,218
	10% Subcontr. Profit							4,922
	SUBTOTAL							54,140
	2% Gen. Contr. Markup							1,083
	SUBTOTAL							55,223
	10% Area Factor							5,522
	TOTAL, MECHANICAL, SCHOOL BUILDING							$60,745

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Disc. Switches	LS	1	--	--	135	360	$ 495
	Remote Control Sw.-400A	EA	1	--	--	150	1,700	1,850
	Transformers	LS	1	--	--	439	3,765	4,204
	Panelboards	LS	1	--	--	1,711	2,663	4,374
	Emerg. Gen. - 15 kw, with Batt., C/B, Controls & A.T.S.	EA	1	--	--	305	2,475	2,780
	Lighting (= System 1)	LS	1	--	--	4,000	13,690	17,690
	Recps., Switches, F.C., etc. (= System 1)	LS	1	--	--	2,625	1,750	4,375
	Cable & Conduit	LS	1	--	--	2,300	7,600	9,900
	F.A. System (= Sys. 1)	LS	1	--	--	1,000	4,000	5,000
	T.V.Ant.Sys.(= Sys. 1)	LS	1	--	--	800	400	1,200
	P.A. & Sound System (= System 1)	LS	1	--	--	1.200	3.000	4.200
	SUBTOTAL					14,665	41,403	56,068
	Insurance - 18%					2,640		2,640
	Sales Tax - 5%						2,070	2.070
	SUBTOTAL							60,778
	Subcontractor O.H.-9%							5,470
	SUBTOTAL							66,248
	Subcontr. Profit - 10%							6.625
	SUBTOTAL							72,873
	Gen.Contr. OH&P - 2%							1,457
	SUBTOTAL							74,330
	Area Factor - 10%							7.433
	TOTAL, SCHOOL, ELECT.							$81,763

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 11

SHELLEY A, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Heat Pump Units	EA	152	150	1,200	22,800	180,000	$202,800
	Supply Registers	EA	592	5.25	10	3,108	5,920	9,028
	Return Grilles	EA	304	4.70	14	1,429	4,256	5,685
	New Ductwork	#	45,000	.93	.33	41,850	14,850	56,700
	Ductwork Carry-over	#	7,500	.93	.33	6,975	2,475	9,450
	Misc. HVAC Items	LS		--	--	300	500	800
	Domestic HW Heaters	EA	152	50	100	7,600	15,200	22,800
	Roof Top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Miscellaneous Equip.	LS		--	--	7,000	18,000	25,000
	SUBTOTAL					91,562	250,291	341,853
	5% Sales Tax						12,504	12,504
	18% Labor Insurance					16,481		16,481
	SUBTOTAL							370,848
	9% Subcontr. Overhead							33,376
	SUBTOTAL							404,224
	10% Subcontr. Profit							40,422
	SUBTOTAL							444,646
	2% Gen.Contr. Markup							8,893
	SUBTOTAL							453,539
	10% Area Factor							45,354
	TOTAL, MECHANICAL, SHELLEY A							$498,893

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	500	6,950	$ 7,450
	Transformers(= Sys. 1)	LS	1	--	--	658	8,778	9,436
	208V Dist. Bd.	EA	1	--	--	750	9,500	10,250
	Emerg. Gen. - 125 KW, 430V, 3Ø, 3W, with C/B, controls & A.T.W	EA	1	--	--	560	21,000	21,560
	Disconnect Switches	LS	1	--	--	334	709	1,043
	Motor Starters	LS	1	--	--	960	2,830	3,790
	Panelboards - 208V	LS	1	--	--	11,157	19,890	31,047
	Apart. Distribution Centers (= System 1)	EA	152	82	48	12,464	7,296	19,760
	Pullboxes (= System 1)	LS	1	--	--	195	1,681	1,876
	Apart. Wiring, Fixts., Etc.	LS	1	--	--	106,400	60,800	167,200
	Cable & Conduit-Fdrs.	LS	1	--	--	29,600	99,400	129,000
	T.V. Ant. Sys.(=Sys. 1)	LS	1	--	--	5,320	2,280	7,600
	I.C. Sys. (= System 1)	LS	1	--	--	7,350	10,500	17,910
	F.A. Sys. (= System 1)	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					178,248	255,124	433,372
	Insurance - 18%					32,084		32,084
	Sales Tax - 5%						12,756	12,756
	SUBTOTAL							478,212
	Subcontractor O.H.-9%							43,039
	SUBTOTAL							521,251
	Subcontr. Profit - 10%							52,125
	SUBTOTAL							573,376
	Gen.Contr. OH&P - 2%							11,467
	SUBTOTAL							584,843
	Area Factor - 10%							58,484
	TOTAL, SHELLEY A, ELECTRICAL							$643,327

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 11

SHELLEY B, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Heat Pump Units	EA	40	150	1,200	6,000	48,000	$ 54,000
	Supply Registers	EA	180	5.25	10	945	1,800	2,745
	Return Grilles	EA	80	4.20	14	376	1,120	1,496
	New Ductwork	#	14,158	.93	.33	13,167	4,672	17,839
	Ductwork Carry-over	#	1,300	.93	.33	1,209	429	1,638
	Exhaust Fan	EA	1	45	280	45	280	325
	Misc. HVAC Items	LS		--	--	100	200	300
	Domestic HW Heaters	EA	36	50	100	1,800	3,600	5,400
	Roof Top AC Unit	EA	1	400	8,600	400	8,600	9,000
	Miscellaneous Equip.	LS		--	--	2,000	5,300	7,300
	SUBTOTAL					26,042	74,001	100,043
	5% Sales Tax						3,700	3,700
	18% Labor Insurance					4,688		4,688
	SUBTOTAL							108,431
	9% Subcontractor O.H.							9,759
	SUBTOTAL							118,190
	10% Subcontr. Profit							11,819
	SUBTOTAL							130,009
	2% Gen. Contr. Markup							2,600
	SUBTOTAL							132,609
	10% Area Factor							13,261
	TOTAL, MECHANICAL, SHELLEY B							$145,870

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard (= System 1)	EA	1	--	--	400	2,050	$ 2,450
	Transformer, 500 KVA, 480-208/120	EA	1	--	--	350	4,424	4,774
	208V Dist. Bd.	EA	1	--	--	450	7,298	7,748
	Emerg. Gen. - 100 KW, 208/120V, 3Ø, 4W with C/B, controls & A.T.S.	EA	1	--	--	500	16,500	17,000
	Disc. Switches	LS	1	--	--	98	284	382
	Panelboards - 208V (= System 1)	LS	1	--	--	3,647	5,063	8,710
	Apart. Dist. Centers (= System 1)	EA	40	82	48	3,280	1,920	5,200
	Apart. Wiring, Fixts., etc.	LS	1	--	--	28,000	16,000	44,000
	Cable & Conduit - Fdrs.	LS	1	--	--	7,700	25,800	33,500
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	1,400	600	2,000
	I.C. System (= Sys. 1)	LS	1	--	--	1,980	2,940	4,920
	F.A. System (= Sys. 1)	LS	1	--	--	520	910	1,430
	SUBTOTAL					48,325	83,789	132,114
	Insurance - 18%					8,698		8,698
	Sales Tax - 5%						4,189	4,189
	SUBTOTAL							145,001
	Subcontractor O.H.-9%							13,050
	SUBTOTAL							158,051
	Subcontractor Prft. 10%							15,805
	SUBTOTAL							173,856
	Gen.Contr. OH&P - 2%							3,477
	SUBTOTAL							177,333
	Area Factor - 10%							17,733
	TOTAL, SHELLEY B, ELECTRICAL							$195,066

COST ESTIMATE
FOR

SYSTEM 11

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Camci							
	Mechanical	FT^2	350		26			$ 9,100
	Electrical	FT^2	300		26			7,800
	Commercial Building							
	Mechanical		50		32			1,600
	Electrical		125		32			4,000
	Descon-Concordia							
	Mechanical		200		38			7,600
	Electrical		660		38			25,080
	School							
	Mechanical		40		31			1,240
	Electrical		190		31			5,890
	Shelley A							
	Mechanical		290		33			9,570
	Electrical		250		33			8,250
	Shelley B							
	Mechanical		200		33			660
	Electrical		130		33			4,290
	TOTAL							$85,080

SYSTEM 12
SELF-CONTAINED AIR CONDITIONING UNITS
ELECTRIC HEATING

COST ESTIMATE
FOR
SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SYSTEM 12

SYSTEM 12 SUMMARY

ITEM	MECHANICAL COST	ELECTRICAL COST	TOTAL COST
Site Distribution	$ ---	$ 194,237*	$ 194,237
Camci	318,389	623,859	942,248
Commercial Building	128,588	99,832	228,420
Descon-Concordia	392,442	604,082	996,524
School	55,660	81,763	137,423
Shelley A	437,872	643,327	1,081,199
Shelley B	128,920	195,066	323,986
Building Floorspace	---	---	85,080
TOTAL	$1,461,871	$2,442,166	$3,989,117

Unit Cost = $3,989,117 ÷ 573,780 Ft^2 = $6.95/$Ft^2$

*See System 1 Cost Estimate

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

CAMCI, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Air Conditioning Units	EA	153	150	600	22,950	91,800	$114,750
	Supply Registers	EA	368	5.25	10	1,932	3,680	5,612
	Return Grilles	EA	306	4.70	14	1,438	4,284	5,722
	New Ductwork	#	19,247	.93	.33	17,900	6,352	24,252
	Ductwork Carry-over	#	6,500	.93	.33	6,045	2,145	8,190
	Misc. HVAC Items	LS		—	—	304	1,296	1,600
	Unit Heaters	EA	2	22	238	44	476	520
	Exhaust Fans	EA	2	215	1,200	430	2,400	2,830
	Domestic HW Heaters	EA	153	50	100	7,650	15,300	22,950
	Rooftop AC Unit	EA	1	500	9,090	500	9,090	9,590
	Misc. Equip.	LS		—	—	4,500	17,000	21,500
	SUBTOTAL					63,693	153,823	217,516
	5% Sales Tax						7,691	7,691
	18% Labor Insurance					11,465		11,465
	SUBTOTAL							236,672
	9% Subcontractor O.H.							21,300
	SUBTOTAL							257,972
	10% Subcontractor Profit							25,797
	SUBTOTAL							283,769
	2% Gen.Contractor Markup							5,675
	SUBTOTAL							289,445
	10% Area Factor							28,944
	TOTAL, MECHANICAL, CAMCI							$318,389

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

CAMCI. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	450	4,300	$ 4,750
	Transformers (= Sys. 1)	LS	1	--	--	620	7,703	8,323
	208V Distr. Board	EA	1	--	--	1,280	14,220	15,500
	Emerg.Generator-175KW, 480V, 3Ø, 3W, with Batt. Controls, C/B & A.T.S.	EA	1	--	--	500	29,250	29,750
	Disc. Switches(= Sys.1)	LS	1	--	--	400	989	1,389
	Bolt Press Sw. - 2000A (= System 1)	EA	1	--	--	335	3,575	3,910
	Starters	LS	1	--	--	2,000	4,550	6,550
	Panelboards	LS	1	--	--	11,153	16,873	28,026
	Apart. Distr. Centers (= System 1)	LS	1	--	--	12,546	7,344	19,890
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	107,100	61,200	168,300
	Cable & Conduit Fdrs.	LS	1	--	--	23,500	79,000	102,500
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	5,350	2,300	7,650
	I.C. System (= Sys. 1)	LS	1	--	--	7,400	10,600	18,000
	F.A. System (= Sys. 1)	LS	1	--	--	2,000	3,500	5,500
	SUBTOTAL					174,634	245,404	420,038
	Insurance - 18%					31,434		31,434
	Sales Tax - 5%						12,270	12,270
	SUBTOTAL							463,742
	Subcontractor O.H.-9%							41,736
	SUBTOTAL							505,478
	Subcontr. Profit - 10%							50,547
	SUBTOTAL							556,025
	Gen.Contr. OH&P - 2%							11,120
	SUBTOTAL							567,145
	Area Factor - 10%							56,714
	TOTAL, CAMCI, ELECTRICAL							$623,859

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

COMMERCIAL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Self-Cont. A/C Units	EA	14	250	1,700	$ 3,500	$23,800	$ 27,300
	Self-Cont. A/C Units	EA	10	150	900	1,500	9,000	10,500
	Supply Registers	EA	90	5.25	12	473	1,080	1,553
	Return Grilles	EA	50	4.70	15	235	750	985
	New Ductwork	#	4,887	.93	.33	4,545	1,613	6,158
	Ductwork Carry Over	#	13,100	.93	.33	12,183	4,323	16,506
	Misc. HVAC Items			—	—	200	800	1,000
	Domestic HW Heaters	EA	1	50	250	50	250	300
	Roof Top A/C Unit	EA	1	600	15,000	600	15,000	15,600
	Miscellaneous Equip.	LS		—	—	2,000	6,000	8,000
	SUBTOTAL					25,286	62,616	87,902
	5% Sales Tax						3,131	3,131
	18% Labor Insurance					4,551		4,551
	SUBTOTAL							95,584
	9% Subcontractor O.H.							8,603
	SUBTOTAL							104,187
	10% Subcontr. Profit							10,419
	SUBTOTAL							114,606
	2% Gen. Contr. Markup							2,292
	SUBTOTAL							116,898
	10% Area Factor							11,690
	TOTAL, MECHANICAL, COMMERCIAL BUILDING							$128,588

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

COMMERCIAL, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Swbd. - 1000A MC8	EA	1	--	--	300	2,100	$ 2,400
	Transformers:							
	750 KVA, 480-480/277	EA	1	--	--	400	6,175	6,575
	30 KVA, 480-208/120	EA	3	98	685	294	2,055	2,349
	15 KVA, 480-208/120	EA	1	--	--	76	300	376
	7.5 KVA, 480-208/120	EA	1	--	--	65	180	245
	480V Distr.Bd., 1000A	EA	1	--	--	550	6,780	7,330
	Emerg.Gen.-30 KW, with Batt, C/B, controls & A.T.S.	EA	1	--	--	350	4,950	5,300
	Disc. Switches	LS	1	--	--	225	585	810
	Starters	LS	1	--	--	240	700	940
	Panelboards	LS	1	--	--	2,456	2,615	5,071
	Lighting (= System 1)	LS	1	--	--	5,170	2,308	7,478
	Recps., Switches, F.C., etc. (= System 1)	LS	1	--	--	1,500	1,000	2,500
	Cable & Conduit	LS	1	--	--	5,650	18,850	24,500
	F.A. System (= Sys. 1)	LS	1	--	--	500	2,100	2,600
	SUBTOTAL					17,776	50,698	68,474
	Insurance - 18%					3,200		3,200
	Sales Tax - 5%						2,535	2,535
	SUBTOTAL							74,209
	Subcontractor O.H.-9%							6,679
	SUBTOTAL							80,888
	Subcontr. Profit - 10%							8,089
	SUBTOTAL							88,977
	Gen.Contr. OH&P - 2%							1,780
	SUBTOTAL							90,757
	Area Factor - 10%							9,075
	TOTAL, COMMERCIAL, ELECTRICAL							$99,832

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

DESCON-CONCORDIA, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Self-cont. A/C Units	EA	141	150	900	21,150	$126,900	$148,050
	Supply Registers	EA	336	5.25	10	1,922	3,660	5,582
	Return Grilles	EA	282	4.70	14	1,325	3,948	5,273
	New Ductwork	#	41,853	.93	.33	38,923	13,811	52,734
	Ductwork Carry Over	#	2,000	.93	.33	1,860	660	2,520
	Misc. HVAC Items	LS		—	—	300	1,000	1,300
	Domestic HW Heaters	EA	140	50	100	7,000	14,000	21,000
	Roof Top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Miscellaneous Equip.	LS		—	—	6,000	16,000	22,000
	SUBTOTAL					78,980	189,069	268,049
	5% Sales Tax						9,453	9,453
	18% Labor Insurance					14,216		14,216
	SUBTOTAL							291,718
	9% Subcontractor O.H.							26,255
	SUBTOTAL							317,973
	10% Subcontr. Profit							31,797
	SUBTOTAL							349,770
	2% Gen.Contractor Markup							6,995
	SUBTOTAL							356,765
	10% Area Factor							35,677
	TOTAL							$392,442

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. DESCON-CONCORDIA, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard - Bldg. A-1 (= Sys. 1)	EA	1	--	--	220	5,830	$ 6,050
	208V Switchboard (Bldg. A-1) (= System 1)	EA	1	--	--	395	5,000	5,395
	480V Normal Trans.&208V Dist.Bd. (Bldg. A-3)	EA	1	--	--	1,404	18,996	20,400
	480V Emerg. Switchbd. (= System 1)	EA	1	--	--	220	2,450	2,670
	Emerg. Gen. - 150 KW with Batt.,Control, C/B & A.T.S.	EA	1	--	--	475	24,750	25,225
	Transformsers(= Sys. 1)	EA	1	--	--	98	684	782
	Panelboards	LS	1	--	--	8,179	10,993	19,172
	Disc. Switches	LS	1	--	--	400	730	1,130
	Apart. Distr. Centers (= System 1)	LS	1	--	--	11,480	6,720	18,200
	Apart. Wiring, Fixt., etc. (= System 1)	LS	1	--	--	98,000	56,000	154,000
	Cable & Conduit	LS	1	--	--	28,900	97,000	125,900
	T.V. Ant. System (= System 1)	LS	1	--	--	4,900	2,100	7,000
	I.C. System (= Sys. 1)	LS	1	--	--	6,780	9,740	16,520
	F.A. System (= Sys. 1)	LS	1	--	--	1,820	3,180	5,000
	SUBTOTAL					163,271	244,173	407,444
	Insurance - 18%					29,388		29,388
	Sales Tax - 5%						12,208	12,208
	SUBTOTAL							449,040
	Subcontractor O.H.-9%							40,413
	SUBTOTAL							489,453
	Subcontr. Profit - 10%							48,945
	SUBTOTAL							538,398
	Gen.Contr. OH&P - 2%							10,768
	SUBTOTAL							549,166
	Area Factor - 10%							54,916
	TOTAL, DESCON, ELECT.							$604,082

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

SCHOOL BUILDING, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Self-cont. A/C Units	EA	12	250	1,700	$ 3,000	$20,400	$23,400
	Supply Registers	EA	50	5.25	12	263	600	863
	Return Grilles	EA	20	4.70	15	94	300	394
	New Ductwork	#	5,450	.93	.33	5,059	1,799	6,858
	Ductwork Carry Over	#	900	.93	.33	837	297	1,134
	Misc. HVAC Items	LS		--	--	150	300	450
	Domestic HW Heater	EA	1	50	250	50	250	300
	Roof Top Exhaust Fans	EA	7	30	200	210	1,400	1,610
	Miscellaneous Equip.	LS		--	--	800	2,300	3,100
	SUBTOTAL					10,463	27,646	38,109
	5% Sales Tax						1,382	1,382
	18% Labor Insurance					1,883		1,883
	SUBTOTAL							41,374
	9% Subcontractor O.H.							3,724
	SUBTOTAL							45,098
	10% Subcontr. Profit							4,510
	SUBTOTAL							49,608
	2% Gen.Contractor Markup							992
	SUBTOTAL							50,600
	10% Area Factor							5,060
	TOTAL, MECHANICAL, SCHOOL BUILDING							$55,660

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SCHOOL. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Disc. Switches	LS	1	--	--	135	360	$ 495
	Remote Control Sw.-400A	EA	1	--	--	150	1,700	1,850
	Transformers	LS	1	--	--	439	3,765	4,204
	Panelboards	LS	1	--	--	1,711	2,663	4,374
	Emerg. Gen. - 15 kw, with Batt., C/B, Controls & A.T.S.	EA	1	--	--	305	2,475	2,780
	Lighting (= System 1)	LS	1	--	--	4,000	13,690	17,690
	Recps., Switches, F.C., etc. (= System 1)	LS	1	--	--	2,625	1,750	4,375
	Cable & Conduit	LS	1	--	--	2,300	7,600	9,900
	F.A. System (= Sys. 1)	LS	1	--	--	1,000	4,000	5,000
	T.V.Ant.Sys.(= Sys. 1)	LS	1	--	--	800	400	1,200
	P.A. & Sound System (= System 1)	LS	1	--	--	1,200	3,000	4,200
	SUBTOTAL					14,665	41,403	56,068
	Insurance - 18%					2,640		2,640
	Sales Tax - 5%						2,070	2,070
	SUBTOTAL							60,778
	Subcontractor O.H.-9%							5,470
	SUBTOTAL							66,248
	Subcontr. Profit - 10%							6,625
	SUBTOTAL							72,873
	Gen.Contr. OH&P - 2%							1,457
	SUBTOTAL							74,330
	Area Factor - 10%							7,433
	TOTAL, SCHOOL, ELECT.							$81,763

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

SHELLEY A, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Self-contained A/C Units	EA	152	150	900	$22,800	$136,800	$159,600
	Supply Registers	EA	592	5.25	10	3,108	5,920	9,028
	Return Grilles	EA	304	4.70	14	1,429	4,256	5,685
	New Ductwork	#	45,000	.93	.33	41,850	14,850	56,700
	Ductwork Carry Over	#	7,500	.93	.33	6,975	2,475	9,450
	Misc. HVAC Items	LS		--	--	300	500	800
	Domestic HW Heaters	EA	152	50	100	7,600	15,200	22,800
	Roof Top AC Unit	EA	1	500	9,090	500	9,090	9,590
	Miscellaneous Equip.	LS		--	--	7,000	18,000	25,000
	SUBTOTAL					91,562	207,091	298,653
	5% Sales Tax						10,354	10,354
	18% Labor Insurance					16,481		16,481
	SUBTOTAL							325,488
	9% Subcontractor O.H.							29,294
	SUBTOTAL							354,782
	10% Subcontr. Profit							35,478
	SUBTOTAL							390,260
	2% Gen.Contractor Markup							7,805
	SUBTOTAL							398,065
	10% Area Factor							39,807
	TOTAL, MECHANICAL, SHELLEY A							$437,872

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY A, ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Switchboard	EA	1	--	--	500	6,950	$ 7,450
	Transformers(= Sys. 1)	LS	1	--	--	658	8,778	9,436
	208V Dist. Bd.	EA	1	--	--	750	9,500	10,250
	Emerg. Gen. - 125 KW, 430V, 3Ø, 3W, with C/B, controls & A.T.W	EA	1	--	--	560	21,000	21,560
	Disconnect Switches	LS	1	--	--	334	709	1,043
	Motor Starters	LS	1	--	--	960	2,830	3,790
	Panelboards - 208V	LS	1	--	--	11,157	19,890	31,047
	Apart. Distribution Centers (= System 1)	EA	152	82	48	12,464	7,296	19,760
	Pullboxes (= System 1)	LS	1	--	--	195	1,681	1,876
	Apart. Wiring, Fixts., Etc.	LS	1	--	--	106,400	60,800	167,200
	Cable & Conduit-Fdrs.	LS	1	--	--	29,600	99,400	129,000
	T.V. Ant. Sys.(=Sys. 1)	LS	1	--	--	5,320	2,280	7,600
	I.C. Sys. (= System 1)	LS	1	--	--	7,350	10,500	17,910
	F.A. Sys. (= System 1)	LS	1	--	--	2,000	3,450	5,450
	SUBTOTAL					178,248	255,124	433,372
	Insurance - 18%					32,084		32,084
	Sales Tax - 5%						12,756	12,756
	SUBTOTAL							478,212
	Subcontractor O.H.-9%							43,039
	SUBTOTAL							521,251
	Subcontr. Profit - 10%							52,125
	SUBTOTAL							573,376
	Gen.Contr. OH&P - 2%							11,467
	SUBTOTAL							584,843
	Area Factor - 10%							58,484
	TOTAL, SHELLEY A, ELECTRICAL							$643,327

COST ESTIMATE

FOR

SUMMIT PLAZA DEVELOPMENT

JERSEY CITY, N. J.

SYSTEM 12

SHELLEY B, MECHANICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST LABOR	UNIT COST MTL.	COST LABOR	COST MATERIAL	TOTAL COST
	Self-contained A/C Units	EA	40	150	900	$ 6,000	$36,000	$ 42,000
	Supply Registers	EA	180	5.25	10	945	1,800	2,745
	Return Grilles	EA	80	4.20	14	376	1,120	1,496
	New Ductwork	#	14,158	.93	.33	13,167	4,672	17,839
	Ductwork Carry Over	#	1,300	.93	.33	1,209	429	1,638
	Exhaust Fan	EA	1	45	280	45	280	325
	Misc. HVAC Items	LS		—	—	100	200	300
	Domestic HW Heaters	EA	36	50	100	1,800	3,600	5,400
	Roof Top AC Unit	EA	1	400	8,600	400	8,600	9,000
	Miscellaneous Equip.	LS		—	—	2,000	5,300	7,300
	SUBTOTAL					26,042	62,001	88,043
	5% Sales Tax						3,100	3,100
	18% Labor Insurance					4,688		4,688
	SUBTOTAL							95,831
	9% Subcontractor O.H.							8,625
	SUBTOTAL							104,456
	10% Subcontractor Profit							10,446
	SUBTOTAL							114,902
	2% Gen.Contractor Markup							2,298
	SUBTOTAL							117,200
	10% Area Factor							11,720
	TOTAL, MECHANICAL, SHELLEY B							$128,920

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J.

SHELLEY B. ELECTRICAL

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	480V Main Switchboard (= System 1)	EA	1	--	--	400	2,050	$ 2,450
	Transformer, 500 KVA, 480-208/120	EA	1	--	--	350	4,424	4,774
	208V Dist. Bd.	EA	1	--	--	450	7,298	7,748
	Emerg. Gen. - 100 KW, 208/120V, 3Ø, 4W with C/B,controls & A.T.S.	EA	1	--	--	500	16,500	17,000
	Disc. Switches	LS	1	--	--	98	284	382
	Panelboards - 208V (= System 1)	LS	1	--	--	3,647	5,063	8,710
	Apart. Dist. Centers (= System 1)	EA	40	82	48	3,280	1,920	5,200
	Apart. Wiring, Fixts., etc.	LS	1	--	--	28,000	16,000	44,000
	Cable & Conduit - Fdrs.	LS	1	--	--	7,700	25,800	33,500
	T.V. Ant.Sys.(= Sys. 1)	LS	1	--	--	1,400	600	2,000
	I.C. System (= Sys. 1)	LS	1	--	--	1,980	2,940	4,920
	F.A. System (= Sys. 1)	LS	1	--	--	520	910	1,430
	SUBTOTAL					48,325	83,789	132,114
	Insurance - 18%					8,698		8,698
	Sales Tax - 5%						4,189	4,189
	SUBTOTAL							145,001
	Subcontractor O.H.-9%							13,050
	SUBTOTAL							158,051
	Subcontractor Prft. 10%							15,805
	SUBTOTAL							173,856
	Gen.Contr. OH&P - 2%							3,477
	SUBTOTAL							177,333
	Area Factor - 10%							17,733
	TOTAL, SHELLEY B, ELECTRICAL							$195,066

COST ESTIMATE
FOR

SYSTEM 12

SUMMIT PLAZA DEVELOPMENT
JERSEY CITY, N. J. ENERGY SYSTEM FLOORSPACE

ITEM	DESCRIPTION	UNIT	QUANTITY	Unit Cost Labor	Unit Cost Mtl.	Cost Labor	Cost Mtl.	TOTAL COST
	Camci							
	Mechanical	FT^2	350		26			$ 9,100
	Electrical	FT^2	300		26			7,800
	Commercial Building							
	Mechanical		50		32			1,600
	Electrical		125		32			4,000
	Descon-Concordia							
	Mechanical		200		38			7,600
	Electrical		660		38			25,080
	School							
	Mechanical		40		31			1,240
	Electrical		190		31			5,890
	Shelley A							
	Mechanical		290		33			9,570
	Electrical		250		33			8,250
	Shelley B							
	Mechanical		200		33			660
	Electrical		130		33			4,290
	TOTAL							$85,080

NBS-114A (REV. 3-78)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET	1. PUBLICATION OR REPORT NO. GCR-165	2. Gov't. Accession No.	3. Recipient's Accession No.

4. TITLE AND SUBTITLE
Detailed Initial Cost Data for Alternative Energy Systems for the Summit Plaza Complex, Jersey City, N.J.

5. Publication Date
May, 1979

6. Performing Organization Code

7. AUTHOR(S)
H.O. Nottingham and Associates, Inc.

8. Performing Organ. Report No.

9. PERFORMING ORGANIZATION NAME AND ADDRESS
NATIONAL BUREAU OF STANDARDS
DEPARTMENT OF COMMERCE
WASHINGTON, DC 20234

10. Project/Task/Work Unit No.

11. Contract/Grant No.
5-35870

12. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS *(Street, City, State, ZIP)*
U.S. Department of Housing and Urban Development
Divsion of Energy, Building Technology and Standards
Office of Policy Development and Research
Washington, D.C. 20410

13. Type of Report & Period Covered
Final

14. Sponsoring Agency Code

15. SUPPLEMENTARY NOTES

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

This report presents detailed estimates of the construction cost of 12 alternative energy systems which could supply heating, cooling and electrical services to the Summit Plaza Complex. Construction costs are developed for each system in the report by a quantity take-off for all major and minor equipment for each energy system including the individual electrical and mechanical components of the energy conversion equipment, site distribution, equipment, building terminal equipment etc.

The detailed data in the report is summarized in a related report in which the energy performance and costs for the energy system were developed: Design, Cost and Operating data for Alternative Energy Systems for the Summit Plaza Complex, Jersey City, N.J.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*
HVAC systems, costs, economic analysis. Total Energy system, cogeneration

18. AVAILABILITY ☒ Unlimited

☐ For Official Distribution. Do Not Release to NTIS

☐ Order From Sup. of Doc., U.S. Government Printing Office, Washington, DC 20402, SD Stock No. SN003-003-

☒ Order From National Technical Information Service (NTIS), Springfield, VA. 22161

19. SECURITY CLASS (THIS REPORT)	21. NO. OF PRINTED PAGES
UNCLASSIFIED	140
20. SECURITY CLASS (THIS PAGE)	**22. Price**
UNCLASSIFIED	$7.25

USCOMM-DC

FILE COPY