

Data Centre Cooling Systems Budget Cost Comparison

Project: Excool Zero Engineering Review

Client: EXCOOL

RIBA Stage: - 2

Basis: Cundall Report

Date: 27th May 2021

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Rev.	Date	Originator	Checked	Description
0	01/04/2021	DK	AR/CMcM	Draft Issue for review by Excool
1	20/05/2021	DK	AR/CMcM	Draft Issue for review by Excool
2	27/05/2021	DK	AR/CMcM	Final Issue for Excool

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Grand Summary

Item	Description of Works	Excool Direct - £	% of cost	Excool Zero - £	% of cost	Fan Walls and Chillers - £	% of cost	Fan Walls, Hybrid Coolers and Chillers - Colocation Scenario - £	% of cost	Fan Walls, Hybrid Coolers Hyperscale Scenario - £	% of cost	EQS Pricing Notes
Civil, Structural & Architectural Works												
1	Substructure	£3,608,880	5%	£3,608,880	5%	£3,725,480	5%	£3,725,480	5%	£3,725,480	5%	Non-Excool options have an additional level to external gantry, attracting uplift in foundations. Footprint of building is less for Excool option due to external gantry in lieu of internal space. External gantry for non-Excool options has additional level. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Considerably more mesh to gantry on non-Excool options. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Assumed same requirement for all options. Additional perimeters to Excool options due to cladding to envelope as well as screening to gantry adjacent to main building. Additional doors to gantry for Excool option. Supply air plenum for Excool options is contained via lined internal face of external wall and internal white walling, whereas on the other options whitewall is complete perimeter of air plenum. Assumed same requirement for all options. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Assumed same requirement for all options. Additional external foundations/slabs required for process water plantrooms to fan wall options.
2	Frame	£5,013,667	8%	£5,013,667	8%	£6,334,761	8%	£6,334,761	8%	£6,334,761	8%	
3	Upper Floors	£2,108,780	3%	£2,108,780	3%	£3,253,445	4%	£3,253,445	4%	£3,253,445	4%	
4	Roof	£736,500	1%	£736,500	1%	£874,140	1%	£874,140	1%	£874,140	1%	
5	Stairs	£185,000	0%	£185,000	0%	£185,000	0%	£185,000	0%	£185,000	0%	
6	External Walls	£2,521,005	4%	£2,521,005	4%	£2,362,010	3%	£2,362,010	3%	£2,362,010	3%	
7	Windows and External Doors	£80,000	0%	£80,000	0%	£73,000	0%	£73,000	0%	£73,000	0%	
8	Internal Walls and Partitions	£1,859,300	3%	£1,859,300	3%	£2,314,320	3%	£2,314,320	3%	£2,314,320	3%	
9	Internal Doors	£112,000	0%	£112,000	0%	£112,000	0%	£112,000	0%	£112,000	0%	
10	Internal Finishes	£2,174,398	3%	£2,174,398	3%	£2,586,728	3%	£2,586,728	3%	£2,586,728	3%	
11	Fittings, Furnishings and Equipment	£15,000	0%	£15,000	0%	£15,000	0%	£15,000	0%	£15,000	0%	
12	External Works (assume extent of external area is twice that of footprint to DC building)	£2,080,788	3%	£2,080,788	3%	£2,080,788	3%	£2,180,788	3%	£2,180,788	3%	
Total for Civil, Structural & Architectural Works		£20,495,318	31%	£20,495,318	31%	£23,916,672	30%	£24,016,672	30%	£24,016,672	30%	
Mechanical Installations												
13	GC Attendances on Client Supplied Main Plant	£488,000	1%	£528,000	1%	£545,000	1%	£687,000	1%	£550,000	1%	Included in packaged pump rooms in plant costs
14	Hot and Cold Water Installations	£150,000	0%	£150,000	0%	£150,000	0%	£150,000	0%	£150,000	0%	
15	Disposal Installations	£250,000	0%	£250,000	0%	£400,000	0%	£400,000	0%	£250,000	0%	
16	CHW system (including valves, fittings, flushing etc.) including insulation and OX installation	£320,000	0%	£320,000	0%	£5,688,000	7%	£5,688,000	7%	£5,688,000	7%	
17	Trace Heating	£215,000	0%	£215,000	0%	£268,400	0%	£268,400	0%	£268,400	0%	
18	Pumps & Ancillary equipment (incl. packaged pump rooms, heat exchangers and the like)	£0	0%	£0	0%	£0	0%	£0	0%	£0	0%	
19	Ventilation Installations (fresh air system incl. AHU/FCU, smoke extraction system, ductworks and the like) including insulation	£1,100,000	2%	£1,100,000	2%	£250,000	0%	£250,000	0%	£250,000	0%	
20	Leak detection	£200,000	0%	£200,000	0%	£500,000	1%	£500,000	1%	£200,000	0%	
21	Process Water System (incl. water treatment system, water storage tanks and the like)	£500,000	1%	£500,000	1%	£500,000	1%	£500,000	1%	£500,000	1%	
22	Gaseous + Fire suppression Installations	£1,720,000	3%	£1,720,000	3%	£2,147,200	3%	£2,147,200	3%	£2,147,200	3%	
23	Level 1 to 5 Testing & Commissioning including Heat Load Testing	£300,000	0%	£300,000	0%	£450,000	1%	£450,000	1%	£450,000	1%	
24	Builder's Works, Fire Stopping & General Attendances	£786,450	1%	£792,450	1%	£1,634,790	2%	£1,656,090	2%	£1,568,040	2%	
Total for Mechanical Installations		£6,029,450	9%	£6,075,450	9%	£12,533,390	16%	£12,696,690	16%	£12,021,640	15%	
Electrical Installations												
25	GC Attendances on Client Supplied Main Plant	£1,336,000	2%	£1,336,000	2%	£1,336,000	2%	£1,336,000	2%	£1,336,000	2%	Not Considered
26	MV cabling and Containment	£1,300,000	2%	£1,300,000	2%	£1,300,000	2%	£1,300,000	2%	£1,300,000	2%	
27	LV cabling and Containment to LV Input & UPS Output boards, UPS Installations, Essential & Non-Essential Mechanical Installations	£4,000,000	6%	£4,000,000	6%	£4,000,000	5%	£4,000,000	5%	£4,000,000	5%	
28	LV cabling and Containment from UPS and Mechanical Output boards to Mechanical plant and equipment, Control Panels, DBs and the like	£1,100,000	2%	£1,100,000	2%	£1,500,000	2%	£1,700,000	2%	£1,640,000	2%	
29	LV cabling and Containment from UPS Output boards to PDUs	£1,344,000	2%	£1,344,000	2%	£1,344,000	2%	£1,344,000	2%	£1,344,000	2%	
30	LV cabling and Containment from PDUs (Whips)	£0	0%	£0	0%	£0	0%	£0	0%	£0	0%	
31	Containment (incl. ladder, tray, basket and the like) for LV, ELV, Fibre networks, Fire detection & Alarm, BMS, EMS, Security and the like	£645,000	1%	£645,000	1%	£778,200	1%	£778,200	1%	£778,200	1%	
32	Bulk fuel storage and distribution, Controls, Flues and Exhaust to generators	£1,200,000	2%	£1,200,000	2%	£1,200,000	1%	£1,200,000	1%	£1,200,000	2%	
33	GC Supplied Switchgear and Distribution Boards (lighting boards and the like that is to be provided by the GC)	£1,603,200	2%	£2,042,200	3%	£2,068,960	3%	£2,077,960	3%	£1,634,960	2%	
34	Lighting and emergency lighting including Lighting Controls	£628,150	1%	£628,150	1%	£646,380	1%	£646,380	1%	£646,380	1%	
35	Small power Installations	£90,812	0%	£90,812	0%	£150,160	0%	£150,160	0%	£150,160	0%	
36	Earthing and bonding	£114,576	0%	£114,576	0%	£130,256	0%	£130,256	0%	£130,256	0%	
37	Lightning protection	£36,096	0%	£36,096	0%	£43,936	0%	£43,936	0%	£43,936	0%	
38	Fire detection (smoke/fire/heat alarm, VESDA and the like)	£382,376	1%	£382,376	1%	£469,984	1%	£469,984	1%	£469,984	1%	
39	Controls, Head Ends (BMS, EMS, PMS, SCADA and the like) and Wiring of Control Systems	£2,765,000	4%	£2,765,000	4%	£2,765,000	3%	£2,765,000	3%	£2,765,000	3%	
40	CCTV	£90,240	0%	£90,240	0%	£87,872	0%	£109,840	0%	£109,840	0%	
41	Access Controls	£144,384	0%	£144,384	0%	£175,744	0%	£175,744	0%	£175,744	0%	
42	Intruder Detection & Alarm	£18,048	0%	£18,048	0%	£21,968	0%	£21,968	0%	£21,968	0%	
43	IT/Data/Comms	£956,544	1%	£956,544	1%	£1,164,304	1%	£1,164,304	1%	£1,164,304	1%	
44	Level 1 to 5 Testing & Commissioning including Load Bank Testing	£126,336	0%	£126,336	0%	£175,744	0%	£197,712	0%	£175,744	0%	
45	Fuel for Testing & Commissioning	£25,000	0%	£25,000	0%	£25,000	0%	£25,000	0%	£25,000	0%	
46	Builder's Works, Fire Stopping & General Attendances	£216,576	0%	£216,576	0%	£263,616	0%	£263,616	0%	£263,616	0%	
Total for Electrical Installations		£18,122,338	27%	£18,561,338	28%	£19,647,124	24%	£19,900,060	25%	£19,375,092	24%	
Offices, Meeting Rooms, Build Rooms, MMR's, Reception, etc.												
47	Construction and fit-out of FOH & BOH support / Admin areas including Offices, Meeting Rooms, Build Rooms, MMR's, Reception, Security control rooms, operations rooms, etc. Includes MEPH installations, security and standard AV equipment. (assumed area of 3,000m²)	£7,500,000	11%	£7,500,000	11%	£7,500,000	9%	£7,500,000	9%	£7,500,000	9%	
Total for Construction and fit-out of FOH & BOH support / Admin areas		£7,500,000	11%	£7,500,000	11%	£7,500,000	9%	£7,500,000	9%	£7,500,000	9%	
Total for the Works		£52,147,106	79%	£52,632,106	79%	£63,597,186	79%	£64,113,422	79%	£62,913,404	79%	
48	GC Preliminaries	£7,822,066	12%	£7,894,816	12%	£9,539,578	12%	£9,617,013	12%	£9,437,011	12%	
49	GC OH&P	£5,996,917	9%	£6,052,692	9%	£7,313,676	9%	£7,373,044	9%	£7,235,041	9%	
Total for GC Preliminaries and OH&P		£13,818,983	21%	£13,947,508	21%	£16,853,254	21%	£16,990,057	21%	£16,672,052	21%	
Total for GC Works		£65,966,089	100%	£66,579,614	100%	£80,450,440	100%	£81,103,479	100%	£79,585,456	100%	
Main Plant (Supply Only)												
50	Electrical	£25,779,200	75%	£31,311,200	81%	£31,311,200	68%	£28,491,200	65%	£26,019,200	68%	
51	Primary Cooling	£8,800,000	25%	£6,864,000	18%	£14,113,350	31%	£14,566,600	33%	£11,761,600	31%	
52	Air Handling	£0	0%	£600,000	2%	£600,000	1%	£600,000	1%	£600,000	2%	
Main Plant Supply		£34,579,200	100%	£38,775,200	100%	£46,024,550	100%	£43,657,800	100%	£38,380,800	100%	
Totals for Scenario Cost Models Based on 20MW Data Centre		£100,545,000		£105,355,000		£126,475,000		£124,761,000		£117,966,000		Excludes VAT
		£5,030,000 /MW		£5,270,000 /MW		£6,320,000 /MW		£6,240,000 /MW		£5,900,000 /MW		

Grand Summary

Item	Description of Works	Excool Direct - \$	% of cost	Excool Zero - \$	% of cost	Fan Walls and Chillers - \$	% of cost	Fan Walls, Hybrid Coolers and Chillers - Colocation Scenario - \$	% of cost	Fan Walls, Hybrid Coolers Hyperscale Scenario - \$	% of cost	EQS Pricing Notes
Civil, Structural & Architectural Works												
1	Substructure	\$5,052,432	5%	\$5,052,432	5%	\$5,215,672	4%	\$5,215,672	4%	\$5,215,672	4%	Non-Excool options have an additional level to external gantry, attracting uplift in foundations. Footprint of building is less for Excool option due to external gantry in lieu of internal space. External gantry for non-Excool options has additional level. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Considerably more mesh to gantry on non-Excool options. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Assumed same requirement for all options. Additional perimeters to Excool options due to cladding to envelope as well as screening to gantry adjacent to main building. Additional doors to gantry for Excool option. Supply air plenum for Excool options is contained via lined internal face of external wall and internal white walling, whereas on the other options whitewall is complete perimeter of air plenum. Assumed same requirement for all options. Footprint of building is less for Excool option due to external gantry in lieu of internal space. Assumed same requirement for all options. Additional external foundations/slabs required for process water plantrooms to fan wall options.
2	Frame	\$7,019,134	7%	\$7,019,134	7%	\$8,868,665	7%	\$8,868,665	7%	\$8,868,665	7%	
3	Upper Floors	\$2,952,292	3%	\$2,952,292	3%	\$4,554,823	4%	\$4,554,823	4%	\$4,554,823	4%	
4	Roof	\$1,031,100	1%	\$1,031,100	1%	\$1,223,796	1%	\$1,223,796	1%	\$1,223,796	1%	
5	Stairs	\$259,000	0%	\$259,000	0%	\$259,000	0%	\$259,000	0%	\$259,000	0%	
6	External Walls	\$3,529,407	4%	\$3,529,407	4%	\$3,306,814	3%	\$3,306,814	3%	\$3,306,814	3%	
7	Windows and External Doors	\$112,000	0%	\$112,000	0%	\$102,200	0%	\$102,200	0%	\$102,200	0%	
8	Internal Walls and Partitions	\$2,603,020	3%	\$1,859,300	2%	\$3,240,048	3%	\$3,240,048	3%	\$3,240,048	3%	
9	Internal Doors	\$156,800	0%	\$112,000	0%	\$156,800	0%	\$156,800	0%	\$156,800	0%	
10	Internal Finishes	\$3,044,157	3%	\$3,044,157	3%	\$3,621,419	3%	\$3,621,419	3%	\$3,621,419	3%	
11	Fittings, Furnishings and Equipment	\$21,000	0%	\$21,000	0%	\$21,000	0%	\$21,000	0%	\$21,000	0%	
12	External Works (assume extent of external area is twice that of footprint to DC building)	\$2,913,103	3%	\$2,913,103	3%	\$2,913,103	2%	\$3,053,103	2%	\$3,053,103	3%	
Total for Civil, Structural & Architectural Works		\$28,693,445	30%	\$27,904,925	28%	\$33,483,341	27%	\$33,623,341	27%	\$33,623,341	28%	
Mechanical Installations												
13	GC Attendances on Client Supplied Main Plant	\$683,200	1%	\$739,200	1%	\$763,000	1%	\$961,800	1%	\$770,000	1%	Included in packaged pump rooms in plant costs
14	Hot and Cold Water Installations	\$210,000	0%	\$210,000	0%	\$210,000	0%	\$210,000	0%	\$210,000	0%	
15	Disposal Installations	\$350,000	0%	\$350,000	0%	\$560,000	0%	\$560,000	0%	\$350,000	0%	
16	CHW system (including valves, fittings, flushing etc.) including insulation and OX installation	\$448,000	0%	\$448,000	0%	\$7,963,200	6%	\$7,963,200	6%	\$7,963,200	7%	
17	Trace Heating	\$301,000	0%	\$301,000	0%	\$375,760	0%	\$375,760	0%	\$375,760	0%	
18	Pumps & Ancillary equipment (incl. packaged pump rooms, heat exchangers and the like)	\$0	0%	\$0	0%	\$0	0%	\$0	0%	\$0	0%	
19	Ventilation Installations (fresh air system incl. AHU/FCU, smoke extraction system, ductworks and the like) including insulation	\$1,540,000	2%	\$1,540,000	2%	\$350,000	0%	\$350,000	0%	\$350,000	0%	
20	Leak detection	\$280,000	0%	\$280,000	0%	\$700,000	1%	\$700,000	1%	\$280,000	0%	
21	Process Water System (incl. water treatment system, water storage tanks and the like)	\$700,000	1%	\$700,000	1%	\$700,000	1%	\$700,000	1%	\$700,000	1%	
22	Gaseous + Fire suppression Installations	\$2,408,000	2%	\$2,408,000	2%	\$3,006,080	2%	\$3,006,080	2%	\$3,006,080	2%	
23	Level 1 to 5 Testing & Commissioning including Heat Load Testing	\$420,000	0%	\$420,000	0%	\$630,000	1%	\$630,000	1%	\$630,000	1%	
24	Builder's Works, Fire Stopping & General Attendances	\$1,101,030	1%	\$1,109,430	1%	\$2,288,706	2%	\$2,318,526	2%	\$2,195,256	2%	
Total for Mechanical Installations		\$8,441,230	9%	\$8,505,630	8%	\$17,546,746	14%	\$17,775,366	14%	\$16,830,296	14%	
Electrical Installations												
25	GC Attendances on Client Supplied Main Plant	\$1,870,400	2%	\$1,870,400	2%	\$1,870,400	2%	\$1,870,400	2%	\$1,870,400	2%	Not Considered
26	MV cabling and Containment	\$1,820,000	2%	\$1,820,000	2%	\$1,820,000	1%	\$1,820,000	1%	\$1,820,000	1%	
27	LV cabling and Containment to LV Input & UPS Output boards, UPS Installations, Essential & Non-Essential Mechanical Installations	\$5,600,000	6%	\$5,600,000	6%	\$5,600,000	5%	\$5,600,000	5%	\$5,600,000	5%	
28	LV cabling and Containment from UPS and Mechanical Output boards to Mechanical plant and equipment, Control Panels, DBs and the like	\$1,540,000	2%	\$1,540,000	2%	\$2,100,000	2%	\$2,380,000	2%	\$2,296,000	2%	
29	LV cabling and Containment from UPS Output boards to PDUs	\$1,881,600	2%	\$1,881,600	2%	\$1,881,600	2%	\$1,881,600	2%	\$1,881,600	2%	
30	LV cabling and Containment from PDUs (Whips)	\$0	0%	\$0	0%	\$0	0%	\$0	0%	\$0	0%	
31	Containment (incl. ladder, tray, basket and the like) for LV, ELV, Fibre networks, Fire detection & Alarm, BMS, EMS, Security and the like	\$903,000	1%	\$903,000	1%	\$1,089,480	1%	\$1,089,480	1%	\$1,089,480	1%	
32	Bulk fuel storage and distribution, Controls, Flues and Exhaust to generators	\$1,680,000	2%	\$1,680,000	2%	\$1,680,000	1%	\$1,680,000	1%	\$1,680,000	1%	
33	GC Supplied Switchgear and Distribution Boards (lighting boards and the like that is to be provided by the GC)	\$2,244,480	2%	\$2,859,080	3%	\$2,896,544	2%	\$2,909,144	2%	\$2,288,944	2%	
34	Lighting and emergency lighting including Lighting Controls	\$879,410	1%	\$879,410	1%	\$904,932	1%	\$904,932	1%	\$904,932	1%	
35	Small power installations	\$127,137	0%	\$127,137	0%	\$210,224	0%	\$210,224	0%	\$210,224	0%	
36	Earthing and bonding	\$160,406	0%	\$160,406	0%	\$182,358	0%	\$182,358	0%	\$182,358	0%	
37	Lightning protection	\$50,534	0%	\$50,534	0%	\$61,510	0%	\$61,510	0%	\$61,510	0%	
38	Fire detection (smoke/fire/heat alarm, VESDA and the like)	\$535,326	1%	\$535,326	1%	\$657,978	1%	\$657,978	1%	\$657,978	1%	
39	Controls, Head Ends (BMS, EMS, PMS, SCADA and the like) and Wiring of Control Systems	\$3,871,000	4%	\$3,871,000	4%	\$3,871,000	3%	\$3,871,000	3%	\$3,871,000	3%	
40	CCTV	\$126,336	0%	\$126,336	0%	\$123,021	0%	\$153,776	0%	\$153,776	0%	
41	Access Controls	\$202,138	0%	\$202,138	0%	\$246,042	0%	\$246,042	0%	\$246,042	0%	
42	Intruder Detection & Alarm	\$25,267	0%	\$25,267	0%	\$30,755	0%	\$30,755	0%	\$30,755	0%	
43	IT/Data/Comms	\$1,339,162	1%	\$1,339,162	1%	\$1,630,026	1%	\$1,630,026	1%	\$1,630,026	1%	
44	Level 1 to 5 Testing & Commissioning including Load Bank Testing	\$176,870	0%	\$176,870	0%	\$246,042	0%	\$276,797	0%	\$246,042	0%	
45	Fuel for Testing & Commissioning	\$35,000	0%	\$35,000	0%	\$35,000	0%	\$35,000	0%	\$35,000	0%	
46	Builder's Works, Fire Stopping & General Attendances	\$303,206	0%	\$303,206	0%	\$369,062	0%	\$369,062	0%	\$369,062	0%	
Total for Electrical Installations		\$25,371,273	26%	\$25,985,873	26%	\$27,505,974	22%	\$27,860,084	23%	\$27,125,129	22%	
Offices, Meeting Rooms, Build Rooms, MMR's, Reception, etc.												
47	Construction and fit-out of FOH & BOH support / Admin areas including Offices, Meeting Rooms, Build Rooms, MMR's, Reception, Security control rooms, operations rooms, etc. Includes MEPH installations, security and standard AV equipment. (assumed area of 3,000m ²)	\$7,500,000	8%	\$10,500,000	10%	\$10,500,000	9%	\$10,500,000	8%	\$10,500,000	9%	
Total for Construction and fit-out of FOH & BOH support / Admin areas		\$7,500,000	8%	\$10,500,000	10%	\$10,500,000	9%	\$10,500,000	8%	\$10,500,000	9%	
Total for the Works		\$70,005,948	72%	\$72,896,428	72%	\$89,036,060	72%	\$89,758,791	72%	\$88,078,765	72%	
48	GC Preliminaries	\$14,701,249	15%	\$15,308,250	15%	\$18,697,573	15%	\$18,849,346	15%	\$18,496,541	15%	
49	GC OH&P	\$11,859,008	12%	\$12,348,655	12%	\$15,082,709	12%	\$15,205,139	12%	\$14,920,543	12%	
Total for GC Preliminaries and OH&P		\$26,560,257	28%	\$27,656,905	28%	\$33,780,281	28%	\$34,054,485	28%	\$33,417,084	28%	
Total for GC Works		\$96,566,205	100%	\$100,553,333	100%	\$122,816,341	100%	\$123,813,276	100%	\$121,495,849	100%	
Main Plant (Supply Only)												
50	Electrical	\$36,090,880	75%	\$43,835,680	81%	\$43,835,680	68%	\$39,887,680	65%	\$36,426,880	68%	
51	Primary Cooling	\$12,320,000	25%	\$9,609,600	18%	\$19,758,690	31%	\$20,393,240	33%	\$16,466,240	31%	
52	Air Handling	\$0	0%	\$840,000	2%	\$840,000	1%	\$840,000	1%	\$840,000	2%	
Main Plant Supply		\$48,410,880	100%	\$54,285,280	100%	\$64,434,370	100%	\$61,120,920	100%	\$53,733,120	100%	
Totals for Scenario Cost Models Based on 20MW Data Centre		\$144,977,000		\$154,839,000		\$187,251,000		\$184,934,000		\$175,229,000		Excludes VAT
		\$7,250,000 /MW		\$7,740,000 /MW		\$9,360,000 /MW		\$9,250,000 /MW		\$8,760,000 /MW		

Notes, Assumptions, Inclusions and Exclusions

Note

This Data Centre Cooling Systems Budget Cost Comparison by Evaluation Consultants Ltd is based on the report produced by Cundall ref: Excool Zero Engineering Review Data Centre Cooling Product Comparison, dated October 2020

- 1.0 Costs correct as at Q2 2021. Construction inflation is excluded. Rates and prices based on London or London region location.
- 2.0 Costs assumed an unphased buildout of the DC. All Costs are based on 'Day 1' only installation.
- 3.0 The costs are based upon the assumption that a General Main Contractor will be procured on a single stage traditional (with CDP work elements) basis to undertake the works and will sub-contract the various packages of works.
- 4.0 For each option, the costs are assumed to be for the same site location and conditions and on a non-constrained, easily accessible site.
- 5.0 Elemental totals on summary represent warehouse, gantry adjacent to main warehouse (options 1-3) and external stand alone plant gantry.
- 6.0 Civils, structural and architectural works are based on the footprint of both the gantry and warehouse only. Site preparation works only apply to this footprint.
- 7.0 Assumed reduce level excavations with pad foundation solution to both warehouse and gantry.
- 8.0 Assumed 300mm slab to main building and 600mm slab to external gantry.
- 9.0 Steel frame to warehouse based on 150kg/m² on building footprint.
- 10.0 Steel frame to gantry based on 80kg/m² (GIA); kg/m² reflective of the following: additional weight due to LV housing, framing and concrete floors to LV areas; Framing for screening including upper level.
- 11.0 Steel frame to gantry adjacent to warehouse (options 1, 2 and 3) based on 50kg/m² to area of ground and upper floors.
- 12.0 We have allowed for the frame to be 60min FR.
- 13.0 An allowance is included for goal post supports from external gantry to main building.
- 14.0 Composite metal decking allowed to upper floor of warehouse.
- 15.0 Floor grating / mesh decking allowed to upper floors to gantries, with composite decking to LV rooms.
- 16.0 Roof Allowance includes for aluminium standing seam, inclusive of access ladders and mansafe system.
- 17.0 Allowance included for 3nr stair cores to warehouse and 2nr escape stairs.
- 18.0 Allowance included for 2nr stair cores to external gantry.
- 19.0 External walls includes for rainscreen cladding panels, louvres and secondary supports.
- 20.0 Allowance for blockwork at ground level for increased security resilience.
- 21.0 External plant acoustic reduction and attenuation controls not included for mechanical plant as this is site specific.
- 22.0 Screening allowed to external gantries (non-louved).
- 23.0 We have assumed 4nr entry points to external gantry.
- 24.0 Composite steel & insulation sandwich wall panels allowed for formation of circulation space, formation of data halls as well as lining to internal face of external walls.
- 25.0 Provisional quantity of blockwork walls allowed to stair / lift cores.
- 26.0 Epoxy floor finish has been included to circulation space.
- 27.0 Ceiling finish has been allowed for to the fan wall corridors for options 4 and 5.
- 28.0 External slabs / plinths have been included for water processing plant to option 5 only (hybrid cooling).
- 29.0 We have included an allowance for statutory signage to basebuild
- 30.0 A provisional allowance has been included for service trenching from gantry to main building across all options.
- 31.0 We have assumed an overall plot size of twice that of building footprint.
- 32.0 LV plant including small power, lighting, fire detection & alarm and fire suppression assumed to be included within the containerised modular plantroom installations.
- 33.0 Main plant procured directly by client and 'free-issued' to the GC.

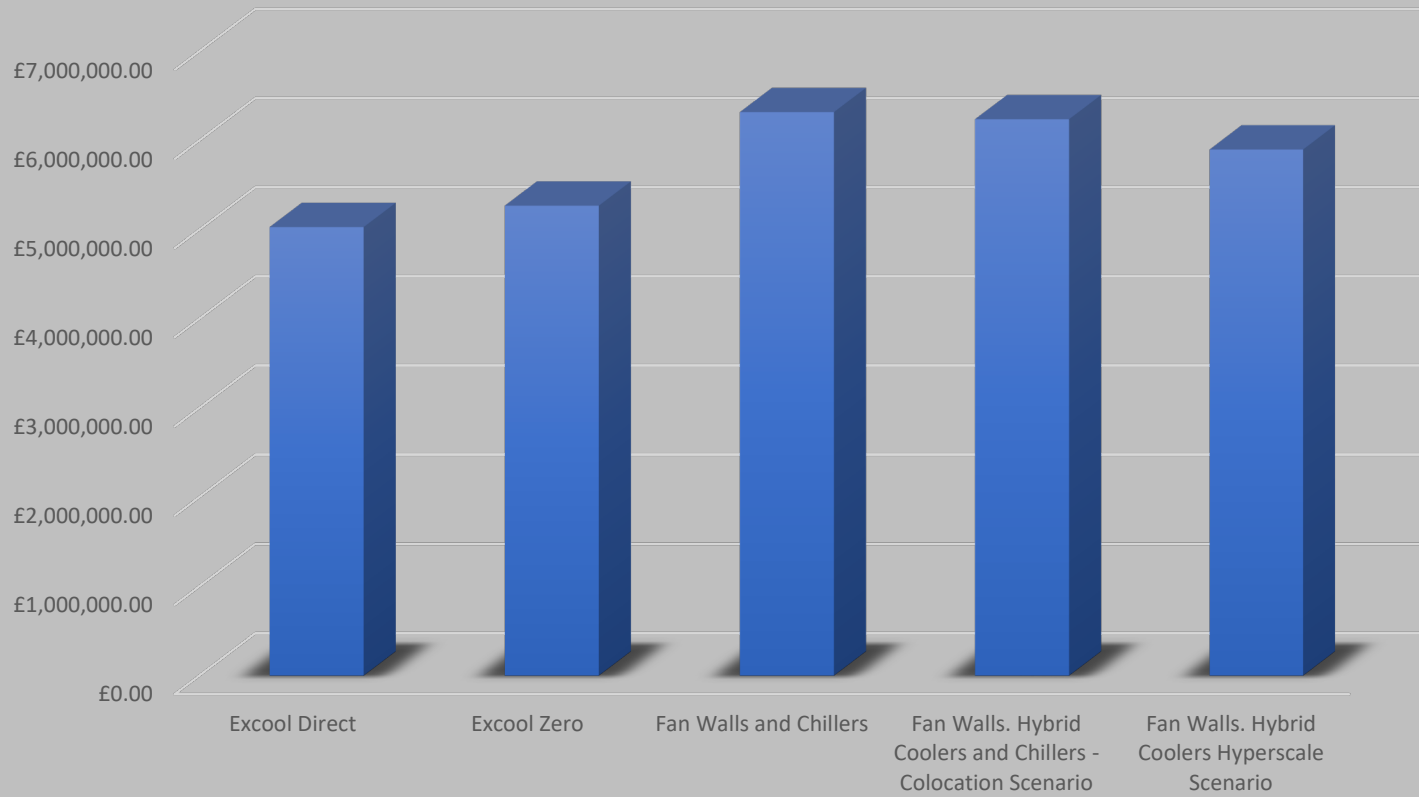
Exclusions

- 34.00 The effect of major currency exchange fluctuations, significant changes in market pricing and / or BREXIT impacts are excluded.
- 35.00 Where plant, equipment and installations are noted as 'Excluded' or 'Not Considered' this is because they have been deemed to be irrelevant for the purposes of this cost model.
- 36.00 Off site mains services infrastructure connections to the Data Centre including HV, Fibre, Water & Drainage are excluded.
- 37.00 Freight and Passenger lifts are excluded from this cost model.
- 38.00 Final fill of diesel fuel to generators upon handover as assumed by Client.

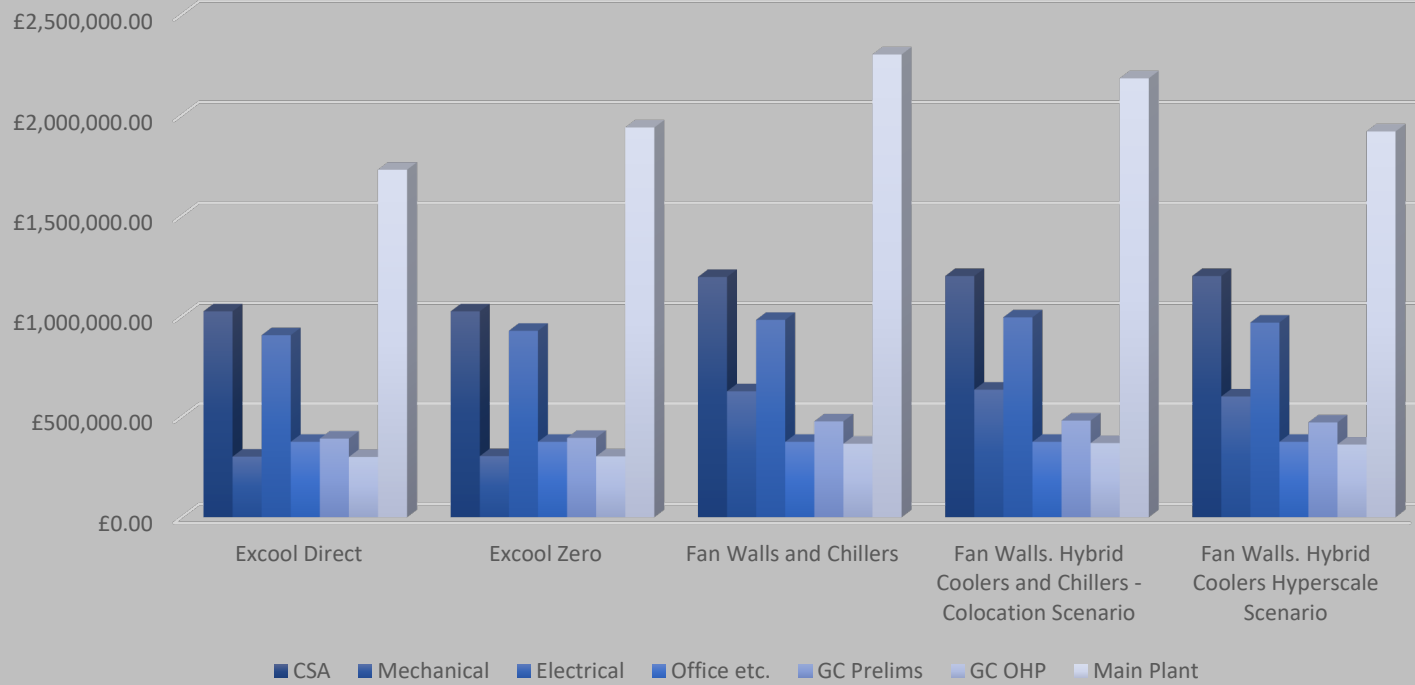
Notes, Assumptions, Inclusions and Exclusions

- | | |
|-------|---|
| 39.00 | Facilitating works; any costs associated with site clearance, contaminated material treatment, demolition works, specialist groundworks, soil stabilisation and remediations are not considered for the building of the DC and associated gantry. |
| 40.00 | Bulk excavations / cut and fill, breaking out existing materials, ground improvements, remediation of soft spots. |
| 41.00 | Removal of non hazardous / hazardous contaminated soil |
| 42.00 | Office areas / administration / support facilities are excluded. |
| 43.00 | The following data hall fit-out items are excluded - IT racks, hot or cold aisle containment, data cabling, servers etc. |
| 44.00 | Security tube lock doors to data halls as deemed part of fit-out. |
| 45.00 | The following site wide / externals works do not form part of the overall costs; below ground services runs / ducts for incoming utilities, attenuation drainage systems and rainwater harvesting systems. |
| 46.00 | PV Cell installation. |
| 47.00 | Any off-site highway works are excluded. |
| 48.00 | Finance charges. |
| 49.00 | Professional Fees, Legal Fees and Insurances. |
| 50.00 | Stamp Duty |
| 51.00 | Party Wall awards, payments or charges. |
| 52.00 | VAT. |

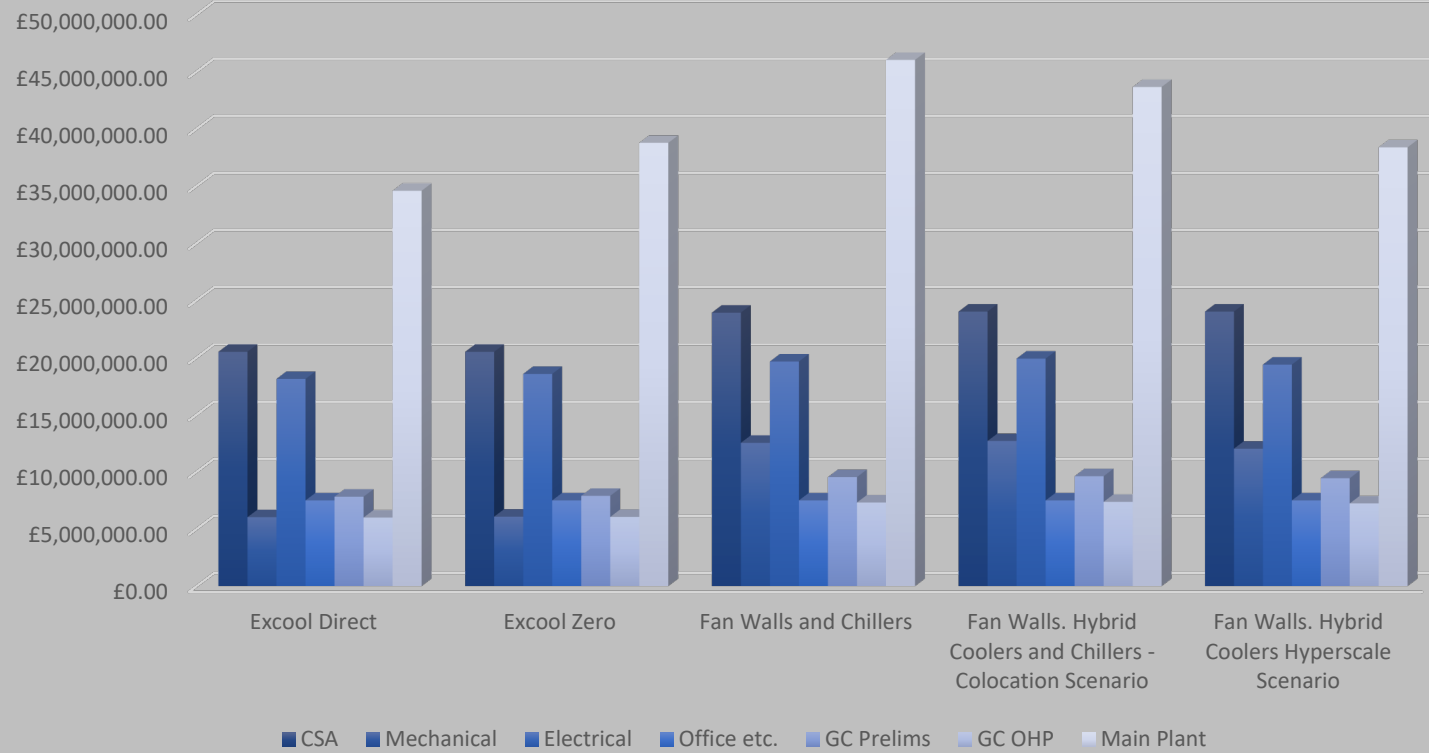
Total Cost/MW (based on a 20MW DC)



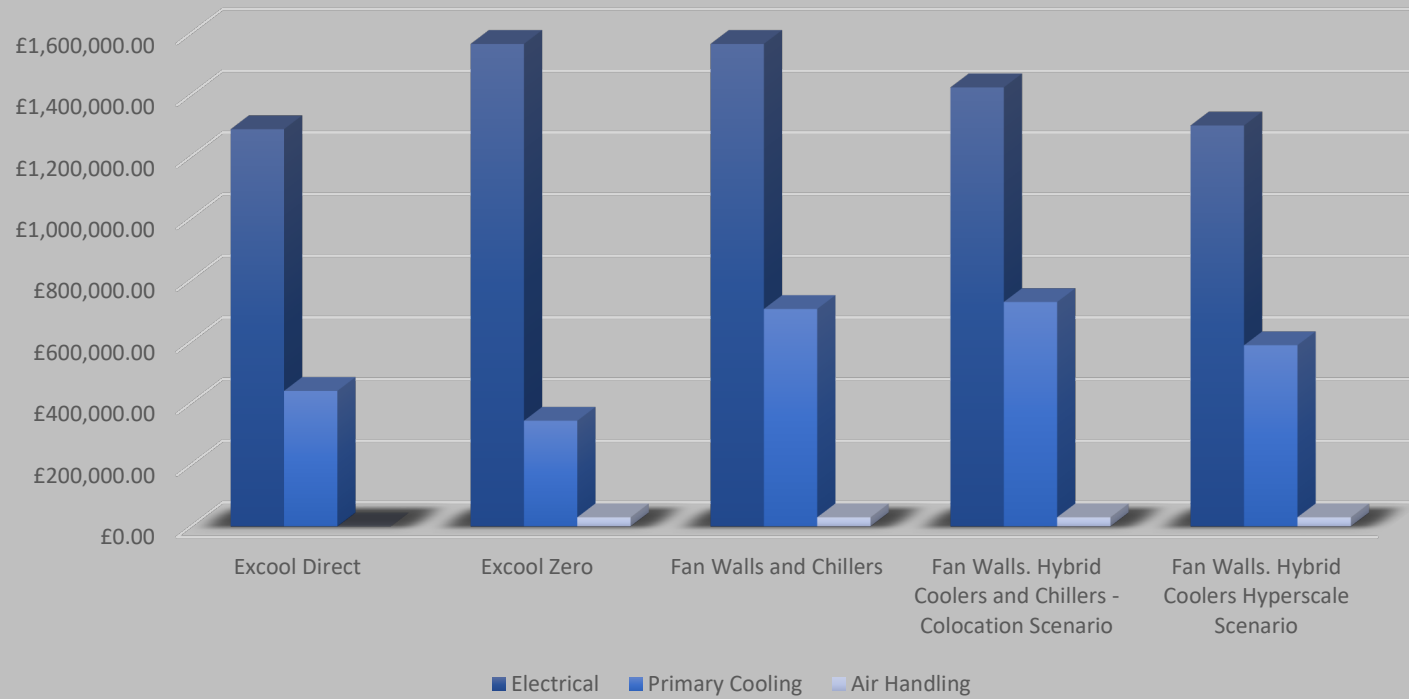
Element Costs/MW (based on a 20MW DC)



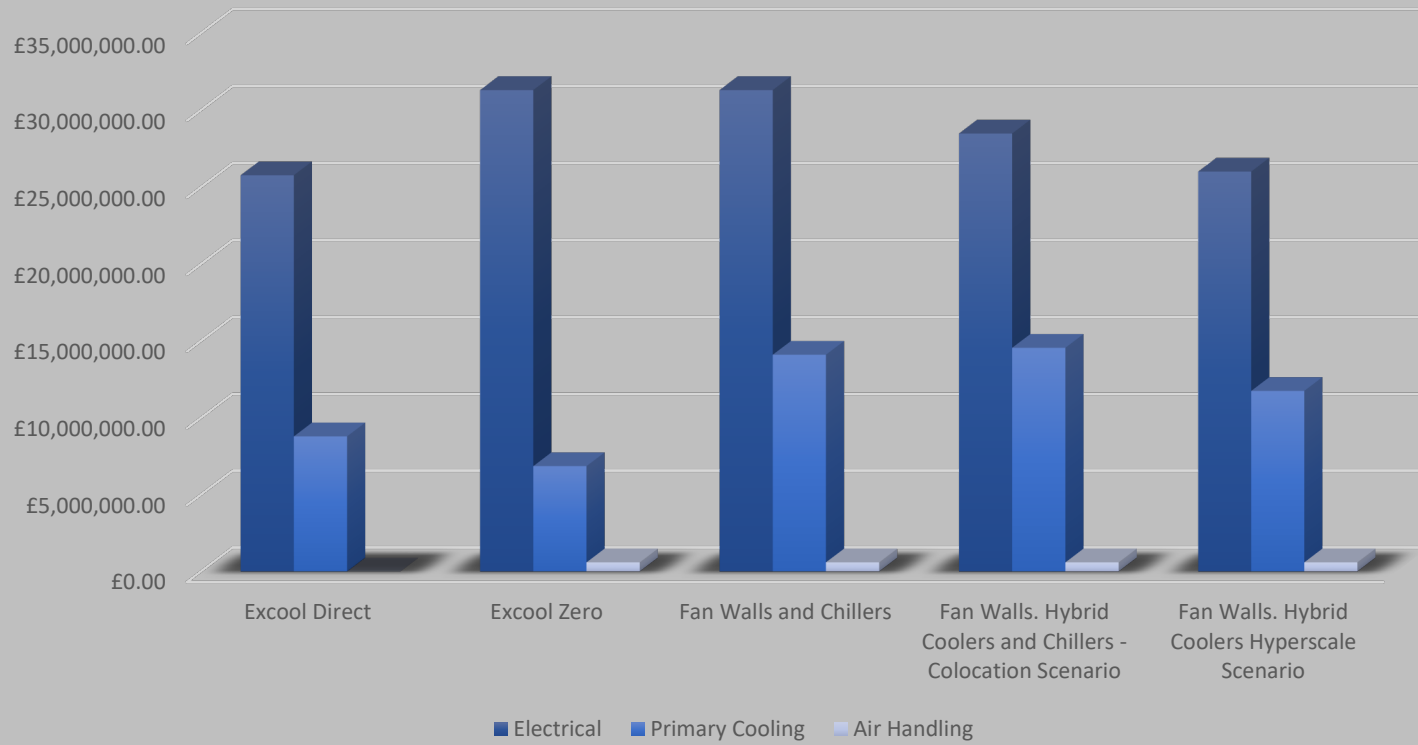
Total Element Costs (for a 20MW DC)



Main Plant Costs/MW (based on a 20MW DC)



Total Main Plant Costs (for a 20MW DC)



Cost Model
Civils, Structural and Architectural Works



Item	Description	EXCOOL DIRECT					EXCOOL ZERO (DX)					CHILLER AND FAN WALL					HYBRID COOLER & CHILLER AND FAN WALL - COLOCATION					HYBRID COOLER & CHILLER AND FAN WALL - HYPERSCALE				
		QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL
0	Facilitating works					£ -					£ -					£ -					£ -					£ -
	<u>Excl</u>																									
1	Substructure					£ 3,608,880					£ 3,608,880					£ 3,725,480					£ 3,725,480					£ 3,725,480
	<u>Main building</u>																									
1.01	Allowance for foundations to building; assume pad / strip foundations	4300	m²	£ 140	£ 602,000		4300	m²	£ 140	£ 602,000		5188	m²	£ 140	£ 726,320		5188	m²	£ 140	£ 726,320		5188	m²	£ 140	£ 726,320	
1.02	Allowance for ground floor slab; 300mm thick	4300	m²	£ 185	£ 795,500		4300	m²	£ 185	£ 795,500		5188	m²	£ 185	£ 959,780		5188	m²	£ 185	£ 959,780		5188	m²	£ 185	£ 959,780	
1.03	Allowance for lift pits (2nr Data Building)	2	nr	£ 10,000	£ 20,000		2	nr	£ 10,000	£ 20,000		2	nr	£ 10,000	£ 20,000		2	nr	£ 10,000	£ 20,000		2	nr	£ 10,000	£ 20,000	
1.04	Allowance for platform lift / dock leveller pit	1	nr	£ 2,500	£ 2,500		1	nr	£ 2,500	£ 2,500		1	nr	£ 2,500	£ 2,500		1	nr	£ 2,500	£ 2,500		1	nr	£ 2,500	£ 2,500	
	<u>Gantry adjacent to main DC building</u>																									
1.05	Allowance for foundations to building (Excool Option Only); pad / strip solution	860	m²	£ 140	£ 120,400		860	m²	£ 140	£ 120,400					N/A					N/A					N/A	
1.06	Allowance for ground floor slab; 300mm thick	860	m²	£ 185	£ 159,100		860	m²	£ 185	£ 159,100					N/A					N/A					N/A	
1.07	Concrete bund to plant area adjacent to DC building	170	m	£ 250	£ 42,500		170	m	£ 250	£ 42,500					N/A					N/A					N/A	
	<u>External Gantry</u>																									
1.08	Allowance for foundations to external gantry; pad/strip foundations	3864	m²	£ 140	£ 540,960		3864	m²	£ 140	£ 540,960		3864	m²	£ 140	£ 540,960		3864	m²	£ 140	£ 540,960		3864	m²	£ 140	£ 540,960	
1.09	Allowance for ground floor slab; 600mm thick	3864	m²	£ 280	£ 1,081,920		3864	m²	£ 280	£ 1,081,920		3864	m²	£ 280	£ 1,081,920		3864	m²	£ 280	£ 1,081,920		3864	m²	£ 280	£ 1,081,920	
1.10	Extra-over to foundations for two-storey external gantry (non-Excool options)				N/A					N/A		1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000	
1.11	Allowance for concrete plinths to generators	1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000		1	item	£ 150,000	£ 150,000	
1.12	Concrete bund to external plant area	376	m	£ 250	£ 94,000		376	m	£ 250	£ 94,000		376	m	£ 250	£ 94,000		376	m	£ 250	£ 94,000		376	m	£ 250	£ 94,000	
2	Frame					£ 5,013,667					£ 5,013,667					£ 6,334,761					£ 6,334,761					£ 6,334,761
	<u>Main building</u>																									
2.01	Steel frame @ 150 kg/m2 (footprint of building) incl columns - Assume 8.0m x 16.0m grid	645	t	3,000	1,935,000		645	t	3,000	1,935,000		778	t	3,000	2,334,600		778	t	3,000	2,334,600		778	t	3,000	2,334,600	
2.02	Allowance for fixings and connections 10%	65	t	3,000	193,500		65	t	3,000	193,500		78	t	3,000	233,460		78	t	3,000	233,460		78	t	3,000	233,460	
2.03	Fire protection to frame (60min) - on site application.	710	t	650	461,175		710	t	650	461,175		856	t	650	556,413		856	t	650	556,413		856	t	650	556,413	
2.04	Steel framing to data hall to support lids at 1st and 2nd floor , assume 15kg/m2, including fixings and connections	106	t	3,000	Excl		106	t	3,000	Excl		106	t	3,000	Excl		106	t	3,000	Excl		106	t	3,000	Excl	
2.05	Allowance for fixings and connections 10%	11	t	3,000	Excl		11	t	3,000	Excl		11	t	3,000	Excl		11	t	3,000	Excl		11	t	3,000	Excl	
2.06	Fire protection to frame (60min) - on site application.	117	t	650	Excl		117	t	650	Excl		117	t	650	Excl		117	t	650	Excl		117	t	650	Excl	
	<u>Gantry adjacent to main DC building</u>																									
2.07	Allowance for steel frame to Plant Area , assume 50kg/m2 to nr of levels +1nr level to accommodate acoustic screening	86	t	3,000	258,000		86	t	3,000	258,000					N/A					N/A					N/A	
2.08	Allowance for fixings and connections 10%	9	t	3,000	25,800		9	t	3,000	25,800					N/A					N/A					N/A	
	<u>External Gantry</u>																									
2.09	Allowance for steel frame to plant area , assume 80kg/m2 to GIA inclusive of columns to support screening.	618	t	3,000	1,854,720		618	t	3,000	1,854,720		927	t	3,000	2,782,080		927	t	3,000	2,782,080		927	t	3,000	2,782,080	
2.10	Allowance for fixings and connections 10%	62	t	3,000	185,472		62	t	3,000	185,472		93	t	3,000	278,208		93	t	3,000	278,208		93	t	3,000	278,208	
2.11	Allowance for Goal Post Supports for main services distribution; gantry to building	1	item	100,000	100,000		1	item	100,000	100,000		1	item	150,000	150,000		1	item	150,000	150,000		1	item	150,000	150,000	
3	Upper Floors					£ 2,108,780					£ 2,108,780					£ 3,253,445					£ 3,253,445					£ 3,253,445
	<u>Main building</u>																									
3.01	Metal decking	4300	m2	£ 60	258,000		4300	m2	£ 60	258,000		5188	m2	£ 60	311,280		5188	m2	£ 60	311,280		5188	m2	£ 60	311,280	
3.02	200 mm Thick concrete slab incl pumping	860	m3	£ 200	172,000		860	m3	£ 200	172,000		1038	m3	£ 200	207,520		1038	m3	£ 200	207,520		1038	m3	£ 200	207,520	
3.03	Powerfloat finish to slabs & sealer	4300	m2	£ 12	51,600		4300	m2	£ 12	51,600		5188	m2	£ 12	62,256		5188	m2	£ 12	62,256		5188	m2	£ 12	62,256	
3.04	Reinforcement - say 115kg/m3	99	t	£ 1,200	118,680		99	t	£ 1,200	118,680		119	t	£ 1,200	143,189		119	t	£ 1,200	143,189		119	t	£ 1,200	143,189	
3.05	Allowance for joints; sundries; formwork	4300	m2	£ 45	193,500		4300	m2	£ 45	193,500		5188	m2	£ 45	233,460		5188	m2	£ 45	233,460		5188	m2	£ 45	233,460	
3.06	Allow for shear studs	4300	m2	£ 5	21,500		4300	m2	£ 5	21,500		5188	m2	£ 5	25,940		5188	m2	£ 5	25,940		5188	m2	£ 5	25,940	
	<u>Gantry adjacent to main DC building</u>																									
3.07	Floor grating to one level	860	m²	325	279,500		860	m²	325	279,500					N/A					N/A					N/A	
	<u>External Gantry</u>																									
3.08	Floor grating to upper level decks	2,304	m²	325	748,800		2,304	m²	325	748,800		6,168	m²	325	2,004,600		6,168	m²	325	2,004,600		6,168	m²	325	2,004,600	
3.09	Concrete Decking to LV Rooms (footprint)	1,560	m²	170	265,200		1,560	m²	170	265,200		1,560	m²	170	265,200		1,560	m²	170	265,200		1,560	m²	170	265,200	

Cost Model
Civils, Structural and Architectural Works

Item	Description	EXCOOL DIRECT					EXCOOL ZERO (DX)					CHILLER AND FAN WALL					HYBRID COOLER & CHILLER AND FAN WALL - COLOCATION					HYBRID COOLER & CHILLER AND FAN WALL - HYPERSCALE									
		QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL					
4	Roof					£ 736,500					£ 736,500					£ 874,140						£ 874,140						£ 874,140			
4.01	Aluminium standing seam roof	4300	m2	£ 140	602,000		4300	m2	£ 140	602,000		5188	m2	£ 140	726,320		5188	m2	£ 140	726,320		5188	m2	£ 140	726,320		5188	m2	£ 140	726,320	
4.02	Allowance for rainwater disposal	4300	m2	£ 15	64,500		4300	m2	£ 15	64,500		5188	m2	£ 15	77,820		5188	m2	£ 15	77,820		5188	m2	£ 15	77,820		5188	m2	£ 15	77,820	
4.03	Allowance for Access ladders	4	m2	£ 5,000	20,000		4	m2	£ 5,000	20,000		4	m2	£ 5,000	20,000		4	m2	£ 5,000	20,000		4	m2	£ 5,000	20,000		4	m2	£ 5,000	20,000	
4.04	Allowance for Mansafe systems	1	m2	£ 50,000	50,000		1	m2	£ 50,000	50,000		1	m2	£ 50,000	50,000		1	m2	£ 50,000	50,000		1	m2	£ 50,000	50,000		1	m2	£ 50,000	50,000	
5	Stairs					£ 185,000					£ 185,000					£ 185,000						£ 185,000						£ 185,000			
	<u>Main building</u>																														
5.01	Stairs to building; steel sealed in concrete	3	nr	£ 25,000	75,000		3	nr	£ 25,000	75,000		3	nr	£ 25,000	75,000		3	nr	£ 25,000	75,000		3	nr	£ 25,000	75,000		3	nr	£ 25,000	75,000	
5.02	Escape stairs from data halls	2	nr	£ 10,000	20,000		2	nr	£ 10,000	20,000		2	nr	£ 10,000	20,000		2	nr	£ 10,000	20,000		2	nr	£ 10,000	20,000		2	nr	£ 10,000	20,000	
	<u>Gantry adjacent to main DC building</u>																														
5.03	Allowance for Steel Steps to top of Gantry	2	nr	20,000	40,000		2	nr	20,000	40,000				N/A					N/A					N/A				N/A			
	<u>External Gantry</u>																														
5.04	Stairs to external gantry - 1nr level	2	nr	£ 25,000	50,000		2	nr	£ 25,000	50,000				N/A					N/A					N/A				N/A			
5.05	Stairs to external gantry - 2nr level		nr		N/A			nr		N/A		2	nr	£ 45,000	90,000		2	nr	£ 45,000	90,000		2	nr	£ 45,000	90,000		2	nr	£ 45,000	90,000	
6	External Walls					£ 2,521,005					£ 2,521,005					£ 2,362,010						£ 2,362,010						£ 2,362,010			
	<u>Main building</u>																														
6.01	Rainscreen cladding panels (incl DPM's; insulation; bracketry)	5436	m²	£ 130	£ 706,680		5436	m²	£ 130	£ 706,680		5590	m²	£ 130	726,700		5590	m²	£ 130	£ 726,700		5590	m²	£ 130	£ 726,700		5590	m²	£ 130	£ 726,700	
6.02	Secondary support to cladding system.	5436	m²	£ 50	£ 271,800		5436	m²	£ 50	£ 271,800		5590	m²	£ 50	279,500		5590	m²	£ 50	£ 279,500		5590	m²	£ 50	£ 279,500		5590	m²	£ 50	£ 279,500	
6.03	Parapet Capping and guttering detailing inc RWDP	375	m	£ 85	£ 31,875		375	m	£ 85	£ 31,875		386	m	£ 85	32,810		386	m	£ 85	£ 32,810		386	m	£ 85	£ 32,810		386	m	£ 85	£ 32,810	
6.04	Extra over to allow for increased security resilience (Ground Floor Only)	2625	m²	£ 100	£ 262,500		2625	m²	£ 100	£ 262,500		2702	m²	£ 100	270,200		2702	m²	£ 100	£ 270,200		2702	m²	£ 100	£ 270,200		2702	m²	£ 100	£ 270,200	
6.05	Extra over allowance for louvres including flashing and framing to Excool Options	320	m²	£ 150	48,000		320	m²	£ 150	48,000				N/A					N/A					N/A				N/A			
	<u>Gantry adjacent to main DC building</u>																														
6.06	Allowance for screening to plant area incl. secondary supports; 12m high	2,346	m²	175	410,550		2,346	m²	175	410,550				N/A					N/A					N/A				N/A			
	<u>External Gantry</u>																														
6.07	Allowance for screening around plant area incl. secondary supports. 12m high (Excool options) and 16m high (Non-Excool options).	4,512	m²	175	789,600		4,512	m²	175	789,600		6,016	m²	175	1,052,800		6,016	m²	175	1,052,800		6,016	m²	175	1,052,800		6,016	m²	175	1,052,800	
7	Windows and External Doors					£ 80,000					£ 80,000					£ 73,000						£ 73,000						£ 73,000			
	<u>Main building</u>																														
7.01	Single Leaf double glazed pass door and panels	1	nr	£ 15,000	15,000		1	nr	£ 15,000	15,000		1	nr	£ 15,000	15,000		1	nr	£ 15,000	15,000		1	nr	£ 15,000	15,000		1	nr	£ 15,000	15,000	
7.02	External doors single Steel Security doors	4	nr	£ 3,500	14,000		4	nr	£ 3,500	14,000		4	nr	£ 3,500	14,000		4	nr	£ 3,500	14,000		4	nr	£ 3,500	14,000		4	nr	£ 3,500	14,000	
7.03	External Leaf & Half Steel Security doors	2	nr	£ 5,000	10,000		2	nr	£ 5,000	10,000		2	nr	£ 5,000	10,000		2	nr	£ 5,000	10,000		2	nr	£ 5,000	10,000		2	nr	£ 5,000	10,000	
7.04	Electronic roller shutter door	1	nr	£ 20,000	20,000		1	nr	£ 20,000	20,000		1	nr	£ 20,000	20,000		1	nr	£ 20,000	20,000		1	nr	£ 20,000	20,000		1	nr	£ 20,000	20,000	
	<u>Gantry adjacent to main DC building</u>																														
7.05	Allowance for steel doors	2	nr	3,500	7,000		2	nr	3,500	7,000				N/A					N/A					N/A				N/A			
	<u>External Gantry</u>																														
7.06	Allowance for steel pedestrian doors	4	nr	3,500	14,000		4	nr	3,500	14,000		4	nr	3,500	14,000		4	nr	3,500	14,000		4	nr	3,500	14,000		4	nr	3,500	14,000	
8	Internal Walls and Partitions					£ 1,859,300					£ 1,859,300					£ 2,314,320						£ 2,314,320						£ 2,314,320			
	<u>Main building</u>																														
	<u>White walling: clad both sides with ployester powder coated panels.</u>																														
8.01	Data Halls and support Areas; inclusive of openings for louvres	5,600	m²	190	£ 1,064,000		5,600	m²	190	£ 1,064,000		7,840	m²	190	1,489,600		7,840	m²	190	£ 1,489,600		7,840	m²	190	£ 1,489,600		7,840	m²	190	£ 1,489,600	
	<u>Linings to perimeter walls</u>																														
8.02	To internal face of cladding:	5,250	m²	80	£ 420,000		5,250	m²	80	£ 420,000		5,404	m²	80	432,320		5,404	m²	80	£ 432,320		5,404	m²	80	£ 432,320		5,404	m²	80	£ 432,320	
	<u>Specialist louvred wall to air plenum, inc steel support, mesh screen</u>																														
8.03	Extra-over allowance to white walling	1,200	m²	200	£ 240,000		1,200	m²	200	£ 240,000		1,200	m²	200	240,000		1,200	m²	200	£ 240,000		1,200	m²	200	£ 240,000		1,200	m²	200	£ 240,000	
	<u>Core Walls; Blockwork (provisional quantities)</u>																														
8.04	Central Staircores	400	m²	85	34,000		400	m²	85	34,000		400	m²	85	34,000		400	m²	85	34,000		400	m²	85	34,000		400	m²	85	34,000	
8.05	Lift Shafts	280	m²	85	23,800		280	m²	85	23,800		280	m²	85	23,800		280	m²	85	23,800		280	m²	85	23,800		280	m²	85	23,800	
	<u>Deflection Heads:</u>																														
8.05	To internal walls, allowance for enhancements to standard detail	1,550	m	50	£ 77,500		1,550	m	50	£ 77,500		1,892	m	50	94,600		1,892	m	50	£ 94,600		1,892	m	50	£ 94,600		1,892	m	50	£ 94,600	

Cost Model
Civils, Structural and Architectural Works

CONSTRUCTION		EXCOOL DIRECT				EXCOOL ZERO (DX)				CHILLER AND FAN WALL				HYBRID COOLER & CHILLER AND FAN WALL - COLOCATION				HYBRID COOLER & CHILLER AND FAN WALL - HYPERSCALE																
Item	Description	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL	QTY	UNIT	RATE	TOTAL	GROUP TOTAL								
9	Internal Doors					£ 112,000					£ 112,000					£ 112,000					£ 112,000					£ 112,000								
	<u>Security air lock doors to data halls & lobby</u>																																	
9.01	Data Halls	4		£ 40,000	Excl		4		£ 40,000	Excl		4	nr	£ 40,000	Excl		4	nr	£ 40,000	Excl		4	nr	£ 40,000	Excl									
	<u>Secure Doors</u>																																	
9.02	Means of Escape from Data Halls	12		£ 5,000	60,000		12		£ 5,000	60,000		12	nr	£ 5,000	60,000		12	nr	£ 5,000	60,000		12	nr	£ 5,000	60,000									
	<u>Metal faced doors:</u>																																	
9.03	Double to Plant Rooms	8		£ 3,000	24,000		8		£ 3,000	24,000		8	nr	£ 3,000	24,000		8	nr	£ 3,000	24,000		8	nr	£ 3,000	24,000									
	<u>Timber Doors</u>																																	
9.04	Internal doors (single) say	14		£ 2,000	28,000		14		£ 2,000	28,000		14	nr	£ 2,000	28,000		14	nr	£ 2,000	28,000		14	nr	£ 2,000	28,000									
10	Internal Finishes					£ 2,174,398					£ 2,174,398					£ 2,586,728					£ 2,586,728					£ 2,586,728								
	<u>Wall Finishes</u>																																	
10.01	Allowance for decorations to Core Walls; (approximate quantities)	800	m2	£ 15	12,000		800	m2	£ 15	12,000		800	m2	£ 15	12,000		800	m2	£ 15	12,000		800	m2	£ 15	12,000									
	<u>Floor Finishes</u>																																	
10.02	Sealing to floor	7064		£ 7	49,448		7064		£ 7	49,448		7064	m2	£ 7	49,448		7064	m2	£ 7	49,448		7064	m2	£ 7	49,448									
10.03	Epoxy paint	1394		£ 55	76,670		1394		£ 55	76,670		1448	m2	£ 55	79,640		1448	m2	£ 55	79,640		1448	m2	£ 55	79,640									
	<u>Raised Access Floors</u>																																	
10.04	Raised floor to data hall and plant area areas; extra heavy duty floor; with anti-static vinyl	7064	m2	£ 150	1,059,600		7064	m2	£ 150	1,059,600		8728	m2	£ 150	1,309,200		8728	m2	£ 150	1,309,200		8728	m2	£ 150	1,309,200									
	<u>Ceiling Finishes</u>																																	
10.05	Intumescent Paint finish to under side of concrete decking	4300	m²	£ 30	129,000		4300	m²	£ 30	129,000		5188	m²	£ 30	155,640		5188	m²	£ 30	155,640		5188	m²	£ 30	155,640									
10.06	Structural ceiling (600 x 600) incl metal ceiling tiles to Data Halls.	7064	m²	£ 120	847,680		7064	m²	£ 120	847,680		7064	m²	£ 120	847,680		7064	m²	£ 120	847,680		7064	m²	£ 120	847,680									
10.07	Ceiling finish to fan wall corridor				N/A					N/A		1664	m²	£ 80	133,120		1664	m²	£ 80	133,120		1664	m²	£ 80	133,120									
11	Fittings, Furnishings and Equipment					£ 15,000					£ 15,000					£ 15,000					£ 15,000					£ 15,000								
11.01	Allowance for statutory signage to basebuild	1	item	£ 15,000	15,000		1	item	£ 15,000	15,000		1	item	£ 15,000	15,000		1	item	£ 15,000	15,000		1	item	£ 15,000	15,000									
12	External Works (assume extent of external area is twice that of footprint to DC building.)					£ 2,080,788					£ 2,080,788					£ 2,080,788					£ 2,180,788					£ 2,180,788								
	<u>Site preparation works</u>																																	
12.01	Excavation to reduce levels incl off site disposal	3610	m3	£ 30	£ 108,288		3610	m3	£ 30	£ 108,288		3610	m²	£ 30	£ 108,288		3610	m²	£ 30	£ 108,288		3610	m²	£ 30	£ 108,288									
	<u>Process Water Plantrooms</u>																																	
12.02	Allowance for foundations & slab to water plantrooms (2nr)				N/A					N/A		2	nr	50,000	£ 100,000		2	nr	50,000	£ 100,000		2	nr	50,000	£ 100,000									
	<u>Service Trenching</u>																																	
12.03	Provisional quantity for service trenching between external gantry and main building	200	m	£ 250	£ 50,000		200	m	£ 250	£ 50,000		200	m	£ 250	£ 50,000		200	m	£ 250	£ 50,000		200	m	£ 250	£ 50,000									
	<u>Hard/Soft Landscaping</u>																																	
12.04	Allowance for access roads, all other hardstandings, soft landscaping, bollards, poles and bases, external signage and traffic management	8600	m²	£ 90	£ 774,000		8600	m²	£ 90	£ 774,000		8600	m²	£ 90	£ 774,000		8600	m²	£ 90	£ 774,000		8600	m²	£ 90	£ 774,000									
	<u>Fencing / Security</u>																																	
12.05	Gates, security barriers and fencing	8600	m²	£ 50	£ 430,000		8600	m²	£ 50	£ 430,000		8600	m²	£ 50	£ 430,000		8600	m²	£ 50	£ 430,000		8600	m²	£ 50	£ 430,000									
12.06	Allowance for guardhouse, including anti-tailgating doors and comms ducts to building (assume 100m2)	100	m²	£ 5,250	£ 525,000		100	m²	£ 5,250	£ 525,000		100	m²	£ 5,250	£ 525,000		100	m²	£ 5,250	£ 525,000		100	m²	£ 5,250	£ 525,000									
	<u>External Drainage (site-wide)</u>																																	
12.07	Allowance for external foul / surface drainage across the entire site area. (Excludes specialist drainage solutions e.g. balancing ponds, retention tanks etc.)	12900	m²	£ 15	£ 193,500		12900	m²	£ 15	£ 193,500		12900	m²	£ 15	£ 193,500		12900	m²	£ 15	£ 193,500		12900	m²	£ 15	£ 193,500									
Total for Civils, Structural & Architectural Works																																		
					£ 20,495,318							£ 20,495,318							£ 23,916,672							£ 24,016,672							£ 24,016,672	

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
13	GC Attendances on Client Supplied Main Plant The following costs are related only to the Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST of the below plant and equipment.					£ 488,000	£ 528,000	£ 545,000	£ 687,000	£ 550,000
	Excool Direct IAC units - Direct air cooling units, 250 kW sensible cooling to serve as main cooling plant for data hall, gantry adjacent to data hall. N+2 per hall	88	nr	£ 5,000	£ 440,000					
	DX CRAC units to LV plant rooms	32	nr	£ 1,500	£ 48,000					
	Excool Zero IAC units - Indirect air cooling units, 250 kW sensible cooling to serve as main cooling plant for data hall, gantry adjacent to data hall. N+2 per hall	88	nr	£ 5,000	£ 440,000					
	DX CRAC units to LV plant rooms	32	nr	£ 1,500	£ 48,000					
	Pressurisation AHU's - supply only AHU to provide humidification and pressurisation to data hall spaces - external multi level gantry adjacent to main data center building, n+1 units per 2 halls 2.6 m3/s supply air each. electric pre-heat coil g4/f7 filters 2no supply fans wetted media humidifier	4	nr	£ 10,000	£ 40,000					
	Fan Walls and Chillers IAC units - Indirect air cooling units, 357 kW sensible cooling to serve as main cooling plant for data hall, services corridor adjacent to data hall. N + 2 per hall. Package Controls, Delivery to curbside, Site Acceptance Testing & Commissioning , FAT Testing at Container Manufacturer, including attendance, Production of Test Script, IST & attendance for Level 4 commissioning, Client Training, O&M Manuals, Critical Spares, Control/ electrical site reconnection, Set of spare filters for all units	64	nr	£ 5,000	£ 320,000					
	Air Cooled Chillers - heat rejection plant for data centre. water circuit is 21 / 31°c with assumed 20% glycol. Located on third level of external gantry compound. 7 chillers per 2 data halls n+1 per 2 halls 1660 kw per chiller	13	nr	£ 10,000	£ 130,000					
	Packaged Pump Room consisting of Cooling Pumps (CHW), Heat Rejection Pumps (CWP)	2	nr	£ 3,500	£ 7,000					

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	DX CRAC units to LV plant rooms	32	nr	£ 1,500	£ 48,000					
	Pressurisation AHU's - supply only AHU to provide humidification and pressurisation to data hall spaces - external multi level gantry adjacent to main data center building, n+1 units per 2 halls 2.6 m3/s supply air each. electric pre-heat coil g4/f7 filters 2no supply fans wetted media humidifier	4	nr	£ 10,000	£ 40,000					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario Installation of Fan Wall Units, Package Controls, Delivery to curbside, Site Acceptance Testing & Commissioning , FAT Testing at Container Manufacturer, including attendance, Production of Test Script, IST & attendance for Level 4 commissioning, Client Training, O&M Manuals, Critical Spares, Control/ electrical site reconnection, Set of spare filters for all units	64	nr	£ 5,000	£ 320,000					
	Air Cooled Chillers - Trim chiller used 1% of year that hybrid cooler cannot achieve 100% cooling duty. Located on third level of external gantry compound. 7 chillers per 2 data halls n+1 per 2 halls 550 kw per chiller	13	nr	£ 10,000	£ 130,000					
	Hybrid Coolers - Primary plant for heat rejection from data hall. Located on third level of external gantry compound. 7 units per 2 data halls n+1 per 2 halls 1660 kw per unit	13	nr	£ 10,000	£ 130,000					
	Packaged Pump Room consisting of Cooling Pumps (CHW), Heat Rejection Pumps (CWP)	2	nr	£ 3,500	£ 7,000					
	DX CRAC units to LV plant rooms	32	nr	£ 1,500	£ 48,000					
	Packaged Process water plant room consisting of RO water treatment & filtration and pumpsets	2	nr	£ 3,500	£ 7,000					
	External process water storage tank	1	nr	£ 5,000	£ 5,000					
	Pressurisation AHU's - supply only AHU to provide humidification and pressurisation to data hall spaces - external multi level gantry adjacent to main data center building, n+1 units per 2 halls 2.6 m3/s supply air each. electric pre-heat coil g4/f7 filters 2no supply fans wetted media humidifier	4	nr	£ 10,000	£ 40,000					

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
16	CHW system (including valves, fittings, flushing etc.) including insulation and DX installation					£ 320,000	£ 320,000	£ 5,688,000	£ 5,688,000	£ 5,688,000
	<u>Excool Direct</u> Not applicable									
	<u>Excool Zero</u> Not applicable									
	<u>Fan Walls and Chillers</u> Primary and Secondary chilled water header pipework distribution including valves, insulation, bracketry and labelling	1	item	£ 3,220,800	£ 3,220,800					
	Secondary flow and return chilled water pipework distribution unit including valves, insulation, bracketry and labelling; arranged in a resilient ring main. Final branches to the CRAC units shall be routed at high level through the CRAC corridor	1	item	£ 2,147,200	£ 2,147,200					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u> Primary and Secondary chilled water header pipework distribution including valves, insulation, bracketry and labelling	1	item	£ 3,220,800	£ 3,220,800					
	Secondary flow and return chilled water pipework distribution unit including valves, insulation, bracketry and labelling; arranged in a resilient ring main. Final branches to the CRAC units shall be routed at high level through the CRAC corridor	1	item	£ 2,147,200	£ 2,147,200					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u> Primary and Secondary chilled water header pipework distribution including valves, insulation, bracketry and labelling	1	item	£ 3,220,800	£ 3,220,800					
	Secondary flow and return chilled water pipework distribution unit including valves, insulation, bracketry and labelling; arranged in a resilient ring main. Final branches to the CRAC units shall be routed at high level through the CRAC corridor	1	item	£ 2,147,200	£ 2,147,200					
	DX installation	1	item	£ 320,000.00	£ 320,000					
17	Trace Heating					£ 215,000	£ 215,000	£ 268,400	£ 268,400	£ 268,400
	Excool Direct	8,600	m ²	£ 25	£ 215,000					
	Excool Zero	8,600	m ²	£ 25	£ 215,000					
	Fan Walls and Chillers	10,736	m ²	£ 25	£ 268,400					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	10,736	m ²	£ 25	£ 268,400					
	Fan Walls. Hybrid Coolers - Hyperscale Scenario	10,736	m ²	£ 25	£ 268,400					

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
18	Pumps & Ancillary equipment (incl. packaged pump rooms, heat exchangers and the like)									
	Excool Direct									
	Excool Zero									
	Fan Walls and Chillers									
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
19	Ventilation Installations (fresh air system incl. AHU/FCU, smoke extraction system, ductworks and the like) including insulation					£ 1,100,000	£ 1,100,000	£ 250,000	£ 250,000	£ 250,000
	Excool Direct									
	Exhaust Louvre Solid Face (Builderswork scope item)	excluded	-							
	Supply Plenum (Builderswork scope item)	excluded	-							
	Return Air Duct (4m duct, bend)	88	nr	£ 5,000.00	£ 440,000					
	Exhaust Duct (4m duct)	88	nr	£ 5,000.00	£ 440,000					
	Hoist & Landing Area for Direct Air Component Plant Replacement	1	nr	£ 220,000.00	£ 220,000					
	Excool Zero									
	Exhaust Louvre Solid Face (Builderswork scope item)	excluded	-							
	Supply Plenum (Builderswork scope item)	excluded	-							
	Return Air Duct (4m duct, bend)	88	nr	£ 5,000.00	£ 440,000					
	Exhaust Duct (4m duct)	88	nr	£ 5,000.00	£ 440,000					
	Hoist & Landing Area for Direct Air Component Plant Replacement	1	nr	£ 220,000.00	£ 220,000					
	Fan Walls and Chillers									
	Exhaust Louvre Solid Face (Builderswork scope item)	excluded	-							
	Supply Plenum (Builderswork scope item)	excluded	-							
	Associated Ductwork for this system	1	item	£ 250,000.00	£ 250,000					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Exhaust Louvre Solid Face (Builderswork scope item)	excluded	-							
	Supply Plenum (Builderswork scope item)	excluded	-							
	Associated Ductwork for this system	1	item	£ 250,000.00	£ 250,000					
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
	Exhaust Louvre Solid Face (Builderswork scope item)	excluded	-							
	Supply Plenum (Builderswork scope item)	excluded	-							
	Associated Ductwork for this system	1	item	£ 250,000.00	£ 250,000					

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
20	Leak detection					£ 200,000	£ 200,000	£ 500,000	£ 500,000	£ 200,000
	Excool Direct									
	Excool Zero									
	Fan Walls and Chillers									
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
21	Process Water Systems (incl. water treatment system, water storage tanks and the like)					£ 500,000	£ 500,000	£ 500,000	£ 500,000	£ 500,000
	Excool Direct									
	Excool Zero									
	Fan Walls and Chillers									
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
22	Gaseous + Fire suppression Installations					£ 1,720,000	£ 1,720,000	£ 2,147,200	£ 2,147,200	£ 2,147,200
	Excool Direct	8,600	m ²	£ 75	£ 645,000					
	Excool Zero	8,600	m ²	£ 75	£ 645,000					
	Fan Walls and Chillers	10,736	m ²	£ 75	£ 805,200					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	10,736	m ²	£ 75	£ 805,200					
	Fan Walls. Hybrid Coolers - Hyperscale Scenario	10,736	m ²	£ 75	£ 805,200					
	<u>Gaseous suppression system to Data Hall</u>									
	Excool Direct	8,600	m ²	£ 125	£ 1,075,000					
	Excool Zero	8,600	m ²	£ 125	£ 1,075,000					
	Fan Walls and Chillers	10,736	m ²	£ 125	£ 1,342,000					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	10,736	m ²	£ 125	£ 1,342,000					
	Fan Walls. Hybrid Coolers - Hyperscale Scenario	10,736	m ²	£ 125	£ 1,342,000					

Cost Model for Excool Comparisons

Mechanical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
23	Level 1 to 5 Testing & Commissioning including Heat Load Testing					£ 300,000	£ 300,000	£ 450,000	£ 450,000	£ 450,000
	<u>Excool Direct</u> Testing, Commissioning, heatload testing including temporary HAC									
	<u>Excool Zero</u> Testing, Commissioning, heatload testing including temporary HAC									
	<u>Fan Walls and Chillers</u> Testing, Commissioning, heatload testing including temporary HAC									
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u> Testing, Commissioning, heatload testing including temporary HAC									
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u> Testing, Commissioning, heatload testing including temporary HAC									
24	Builder's Works, Fire Stopping & General Attendances					£ 786,450	£ 792,450	£ 1,634,790	£ 1,656,090	£ 1,568,040
	Excool Direct									
	Excool Zero									
	Fan Walls and Chillers									
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
	Total for Mechanical Works				£ 34,451,197	£ 6,029,450	£ 6,075,450	£ 12,533,390	£ 12,696,690	£ 12,021,640

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
25	GC Attendances on Client Supplied Main Plant					£ 1,336,000	£ 1,336,000	£ 1,336,000	£ 1,336,000	£ 1,336,000
	<u>Excool Direct</u>									
	Generators - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST (excluding fuel for testing and load bank hire)	16	nr	£ 45,000	£ 720,000					
	TX - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 1,750	£ 28,000					
	Main LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	UPS LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	IT UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 3,500	£ 56,000					
	Mech UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)				Not Required					
	LV Safety Signage to each plantroom	16	nr	£ 750	£ 12,000					
	Containerised modular plantroom - Offload & Positioning, Site Assembly/Installation	16	nr	£ 20,000	£ 320,000					
	PDUs - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST	64	nr	£ 2,000	£ 128,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
Excool Zero										
	Generators - Offload & Positioning, Site Assembly/Installation Works, SATs, Commissioning & IST (excluding fuel for testing and load bank hire)	16	nr	£ 45,000	£ 720,000					
	TX - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 1,750	£ 28,000					
	Main LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	UPS LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	IT UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 3,500	£ 56,000					
	Mech UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)				Not Required					
	LV Safety Signage to each plantroom	16	nr	£ 750	£ 12,000					
	Containerised modular plantroom - Offload & Positioning, Site Assembly/Installation	16	nr	£ 20,000	£ 320,000					
	PDUs - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST	64	nr	£ 2,000	£ 128,000					
Fan Walls and Chillers										
	Generators - Offload & Positioning, Site Assembly/Installation Works, SATs, Commissioning & IST (excluding fuel for testing and load bank hire)	16	nr	£ 45,000	£ 720,000					
	TX - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 1,750	£ 28,000					
	Main LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	UPS LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	IT UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 3,500	£ 56,000					
	Mech UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)				Not Required					
	LV Safety Signage to each plantroom	16	nr	£ 750	£ 12,000					
	Containerised modular plantroom - Offload & Positioning, Site Assembly/Installation	16	nr	£ 20,000	£ 320,000					
	PDUs - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST	64	nr	£ 2,000	£ 128,000					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Generators - Offload & Positioning, Site Assembly/Installation Works, SATs, Commissioning & IST (excluding fuel for testing and load bank hire)	16	nr	£ 45,000	£ 720,000					
	TX - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 1,750	£ 28,000					
	Main LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	UPS LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	IT UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 3,500	£ 56,000					
	Mech UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)				Not Required					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	LV Safety Signage to each plantroom	16	nr	£ 750	£ 12,000					
	Containerised modular plantroom - Offload & Positioning, Site Assembly/Installation	16	nr	£ 20,000	£ 320,000					
	PDU's - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST	64	nr	£ 2,000	£ 128,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	Generators - Offload & Positioning, Site Assembly/Installation Works, SATs, Commissioning & IST (excluding fuel for testing and load bank hire)	16	nr	£ 45,000	£ 720,000					
	TX - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 1,750	£ 28,000					
	Main LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	UPS LV switchgear - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 2,250	£ 36,000					
	IT UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)	16	nr	£ 3,500	£ 56,000					
	Mech UPS & Batteries - Site Assembly/Installation Works, SATs, Commissioning & IST (Offload & Positioning included within Containerised modular plantroom cost)				Not Required					
	LV Safety Signage to each plantroom	16	nr	£ 750	£ 12,000					
	Containerised modular plantroom - Offload & Positioning, Site Assembly/Installation	16	nr	£ 20,000	£ 320,000					
	PDU's - Offload & Positioning , Site Assembly/Installation Works, SATs, Commissioning & IST	64	nr	£ 2,000	£ 128,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
26	MV cabling and Containment					£ 1,300,000	£ 1,300,000	£ 1,300,000	£ 1,300,000	£ 1,300,000
	MV cabling (from MV 1 & 2)									
	<u>Excool Direct</u>									
	MV Mains cabling & containment allowance including Intertrip / signalling / control cabling	20	MW	£ 65,000	£ 1,300,000					
	<u>Excool Zero</u>									
	MV Mains cabling & containment allowance including Intertrip / signalling / control cabling	20	MW	£ 65,000	£ 1,300,000					
	<u>Fan Walls and Chillers</u>									
	MV Mains cabling & containment allowance including Intertrip / signalling / control cabling	20	MW	£ 65,000	£ 1,300,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	MV Mains cabling & containment allowance including Intertrip / signalling / control cabling	20	MW	£ 65,000	£ 1,300,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	MV Mains cabling & containment allowance including Intertrip / signalling / control cabling	20	MW	£ 65,000	£ 1,300,000					
27	LV cabling and Containment to LV Input & UPS Output boards, UPS Installations, Essential & Non-Essential Mechanical Installations					£ 4,000,000	£ 4,000,000	£ 4,000,000	£ 4,000,000	£ 4,000,000
	<u>Excool Direct</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 200,000	£ 4,000,000					
	<u>Excool Zero</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 200,000	£ 4,000,000					
	<u>Fan Walls and Chillers</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 200,000	£ 4,000,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 200,000	£ 4,000,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 200,000	£ 4,000,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
28	LV cabling and Containment from UPS and Mechanical Output boards to Mechanical plant and equipment, Control Panels, DBs and the like					£ 1,100,000	£ 1,100,000	£ 1,500,000	£ 1,700,000	£ 1,640,000
	<u>Excool Direct</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 55,000	£ 1,100,000					
	<u>Excool Zero</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 55,000	£ 1,100,000					
	<u>Fan Walls and Chillers</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 75,000	£ 1,500,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 85,000	£ 1,700,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	LV Mains & Sub-mains busbar, cabling & containment	20	MW	£ 82,000	£ 1,640,000					
29	LV cabling and Containment from UPS Output boards to PDUs					£ 1,344,000	£ 1,344,000	£ 1,344,000	£ 1,344,000	£ 1,344,000
	<u>Excool Direct</u>									
	Sub-mains cabling, containment & terminations to PDUs	64	nr	£ 21,000	£ 1,344,000					
	<u>Excool Zero</u>									
	Sub-mains cabling, containment & terminations to PDUs	64	nr	£ 21,000	£ 1,344,000					
	<u>Fan Walls and Chillers</u>									
	Sub-mains cabling, containment & terminations to PDUs	64	nr	£ 21,000	£ 1,344,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Sub-mains cabling, containment & terminations to PDUs	64	nr	£ 21,000	£ 1,344,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	Sub-mains cabling, containment & terminations to PDUs	64	nr	£ 21,000	£ 1,344,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
30	LV cabling and Containment from PDUs (Whips)									
	Not Considered - Customer specific requirement									
31	Containment (incl. ladder, tray, basket and the like) for LV, ELV, Fibre networks, Fire detection & Alarm, BMS, EMS, Security and the like					£ 645,000	£ 645,000	£ 778,200	£ 778,200	£ 778,200
	<u>Excool Direct</u>									
	Mains & Submains containment included in Mains & Sub-Mains Cabling costs				Included elsewhere					
	Containment serving Small power and lighting to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums	8600	m ²	£ 75	£ 645,000					
	Containment serving BMS, ELV & Data points to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	Containment serving fibre networks to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	<u>Excool Zero</u>									
	Mains & Submains containment included in Mains & Sub-Mains Cabling costs				Included elsewhere					
	Containment serving Small power and lighting to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums	8600	m ²	£ 75	£ 645,000					
	Containment serving BMS, ELV & Data points to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	Containment serving fibre networks to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	<u>Fan Walls and Chillers</u>									
	Mains & Submains containment included in Mains & Sub-Mains Cabling costs				Included elsewhere					
	Containment serving Small power and lighting to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums	10376	m ²	£ 75	£ 778,200					
	Containment serving BMS, ELV & Data points to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	Containment serving fibre networks to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Mains & Submains containment included in Mains & Sub-Mains Cabling costs				Included elsewhere					
	Containment serving Small power and lighting to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums	10376	m ²	£ 75	£ 778,200					
	Containment serving BMS, ELV & Data points to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	Containment serving fibre networks to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	Mains & Submains containment included in Mains & Sub-Mains Cabling costs				Included elsewhere					
	Containment serving Small power and lighting to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums	10376	m ²	£ 75	£ 778,200					
	Containment serving BMS, ELV & Data points to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					
	Containment serving fibre networks to Data Halls & Access Corridors, supply air plenums and cooling plant corridors/zones adjacent to plenums				Included above					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
32	Bulk fuel storage and distribution, Controls, Flues and Exhaust to generators					£ 1,200,000	£ 1,200,000	£ 1,200,000	£ 1,200,000	£ 1,200,000
	<u>Excool Direct</u>									
	Exhaust and Flue System				Included					
	Bulk fuel storage and distribution				Included					
	Generator controls and local power supplies	16	nr	£ 75,000	£ 1,200,000					
	<u>Excool Zero</u>									
	Exhaust and Flue System				Included					
	Bulk fuel storage and distribution				Included					
	Generator controls and local power supplies	16	nr	£ 75,000	£ 1,200,000					
	<u>Fan Walls and Chillers</u>									
	Exhaust and Flue System				Included					
	Bulk fuel storage and distribution				Included					
	Generator controls and local power supplies	16	nr	£ 75,000	£ 1,200,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Exhaust and Flue System				Included					
	Bulk fuel storage and distribution				Included					
	Generator controls and local power supplies	16	nr	£ 75,000	£ 1,200,000					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	Exhaust and Flue System				Included					
	Bulk fuel storage and distribution				Included					
	Generator controls and local power supplies	16	nr	£ 75,000	£ 1,200,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
33	GC Supplied Switchgear and Distribution Boards (lighting boards and the like that is to be provided by the GC)					£ 1,603,200	£ 2,042,200	£ 2,068,960	£ 2,077,960	£ 1,634,960
	<u>Excool Direct</u>									
	<u>ATS to Essential mechanical plant</u>									
	ATS switchboard - say 3000A	16	nr	£ 81,000	£ 1,296,000					
	<u>CRAC unit panel boards in Electrical Plantrooms</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	16	nr	£ 3,500	£ 56,000					
	<u>Excool unit Panel Board</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	16	nr	£ 5,500	£ 88,000					
	<u>Excool unit Isolation</u>									
	TPN IP66 Isolator (Excool Units) & Final connection	88	nr	£ 260	£ 22,880					
	<u>DX CRAC unit Isolation</u>									
	TPN IP66 Isolator (Plantroom CRACs) & Final connection	32	nr	£ 260	£ 8,320					
	<u>General Lighting & Power boards</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	24	nr	£ 5,500	£ 132,000					
	<u>Excool Zero</u>									
	<u>ATS to Essential mechanical plant</u>									
	ATS switchboard - say 4000A	16	nr	£ 108,000	£ 1,728,000					
	<u>CRAC unit panel boards in Electrical Plantrooms</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	16	nr	£ 3,500	£ 56,000					
	<u>Excool unit Panel Board</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	16	nr	£ 5,500	£ 88,000					
	<u>Excool unit Isolation</u>									
	TPN IP66 Isolator (Excool Units) & Final connection	88	nr	£ 260	£ 22,880					
	<u>DX CRAC unit Isolation</u>									
	TPN IP66 Isolator (Plantroom CRACs) & Final connection	32	nr	£ 260	£ 8,320					
	<u>AHU Panel Board (on Gantry)</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	2	nr	£ 3,500	£ 7,000					
	<u>General Lighting & Power boards</u>									
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	24	nr	£ 5,500	£ 132,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>AHU Panel Board (on Gantry)</u>	2	nr	£ 5,500	£ 11,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Cooling Block Panel Board (Hybrid Coolers & Chillers)</u>	2	nr	£ 3,500	£ 7,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Process Water Plant Room Panel Board</u>	4	nr	£ 5,500	£ 22,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>General Lighting & Power boards</u>	2	nr	£ 4,500	£ 9,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Fan Walls. Hybrid Coolers - Colocation Scenario</u> <u>ATS to Essential mechanical plant</u>	24	nr	£ 5,500	£ 132,000					
	ATS switchboard - say 3000A <u>CRAC unit panel boards in Electrical Plantrooms</u>	16	nr	£ 81,000	£ 1,296,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Fan Wall CRAC Units Panel Board</u>	16	nr	£ 3,500	£ 56,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>DX CRAC unit Isolation</u>	16	nr	£ 5,500	£ 88,000					
	TPN IP66 Isolator (Plantroom CRACs) & Final connection <u>Fan Wall unit Isolation</u>	32	nr	£ 260	£ 8,320					
	TPN IP66 Isolator (Fan Wall units) & Final connection <u>AHU Panel Board (on Gantry)</u>	64	nr	£ 260	£ 16,640					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Cooling Block Panel Board (Hybrid Coolers)</u>	2	nr	£ 3,500	£ 7,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>Process Water Plant Room Panel Board</u>	4	nr	£ 5,500	£ 22,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit <u>General Lighting & Power boards</u>	2	nr	£ 4,500	£ 9,000					
	TPN DB Incomer, Circuit Chart, DB Surge Protection Unit	24	nr	£ 5,500	£ 132,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
34	Lighting and emergency lighting including Lighting Controls					£ 628,150	£ 628,150	£ 646,380	£ 646,380	£ 646,380
	<u>Excool Direct</u>									
	Lighting installation to Main Plant Gantry	7728	m2	£ 5	£ 38,640					
	Lighting installation to Cooling Plant Zone incl Plenum	2020	m2	£ 12	£ 24,240					
	Data Halls & Access Corridors	8158	m2	£ 65	£ 530,270					
	Containerised & packaged plant rooms				Included elsewhere					
	External building and amenity lighting	1	item	£ 35,000	£ 35,000					
	<u>Excool Zero</u>									
	Lighting installation to Main Plant Gantry	7728	m2	£ 5	£ 38,640					
	Lighting installation to Cooling Plant Zone incl Plenum	2020	m2	£ 12	£ 24,240					
	Data Halls & Access Corridors	8158	m2	£ 65	£ 530,270					
	Containerised & packaged plant rooms				Included elsewhere					
	External building and amenity lighting	1	item	£ 35,000	£ 35,000					
	<u>Fan Walls and Chillers</u>									
	Lighting installation to Main Plant Gantry	11592	m2	£ 5	£ 57,960					
	Lighting installation to Cooling Plant Zone incl Plenum	1964	m2	£ 10	£ 19,640					
	Data Halls & Access Corridors	8212	m2	£ 65	£ 533,780					
	Containerised & packaged plant rooms				Included elsewhere					
	External building and amenity lighting	1	item	£ 35,000	£ 35,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Lighting installation to Main Plant Gantry	11592	m2	£ 5	£ 57,960					
	Lighting installation to Cooling Plant Zone incl Plenum	1964	m2	£ 10	£ 19,640					
	Data Halls & Access Corridors	8212	m2	£ 65	£ 533,780					
	Containerised & packaged plant rooms				Included elsewhere					
	External building and amenity lighting	1	item	£ 35,000	£ 35,000					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	Lighting installation to Main Plant Gantry	11592	m2	£ 5	£ 57,960					
	Lighting installation to Cooling Plant Zone incl Plenum	1964	m2	£ 10	£ 19,640					
	Data Halls & Access Corridors	8212	m2	£ 65	£ 533,780					
	Containerised & packaged plant rooms				Included elsewhere					
	External building and amenity lighting	1	item	£ 35,000	£ 35,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
35	Small power Installations					£ 90,812	£ 90,812	£ 150,160	£ 150,160	£ 150,160
	<u>Excool Direct</u>									
	Small power to Main Plant Gantry including Containerised & packaged plant rooms	7728	m2	£ 3	£ 23,184					
	Small power to Cooling Plant Zone incl Plenum	2020	m2	£ 6	£ 12,120					
	Small power for Leak Detection installations	2020	m2	£ 2	£ 4,040					
	Small power for Trace Heating installations	2020	m2	£ 2	£ 4,040					
	Small power for BMS Controls installations	2020	m2	£ 2	£ 4,040					
	Small Power to Data Halls & Access Corridors	8158	m2	£ 2	£ 16,316					
	Small Power to data & Security installations	18048	m2	£ 1.50	£ 27,072					
	<u>Excool Zero</u>									
	Small power to Main Plant Gantry including Containerised & packaged plant rooms	7728	m2	£ 3	£ 23,184					
	Small power to Cooling Plant Zone incl Plenum	2020	m2	£ 6	£ 12,120					
	Small power for Leak Detection installations	2020	m2	£ 2	£ 4,040					
	Small power for Trace Heating installations	2020	m2	£ 2	£ 4,040					
	Small power for BMS Controls installations	2020	m2	£ 2	£ 4,040					
	Small Power to Data Halls & Access Corridors	8158	m2	£ 2	£ 16,316					
	Small Power to data & Security installations	18048	m2	£ 1.50	£ 27,072					
	<u>Fan Walls and Chillers</u>									
	Small power to Main Plant Gantry including Containerised & packaged plant rooms	11592	m2	£ 3	£ 34,776					
	Small power to Cooling Plant Zone incl Plenum	1964	m2	£ 6	£ 11,784					
	Small power for Leak Detection installations	13556	m2	£ 1	£ 13,556					
	Small power for Trace Heating installations	13556	m2	£ 1	£ 13,556					
	Small power for BMS Controls installations	13556	m2	£ 2	£ 27,112					
	Small Power to Data Halls & Access Corridors	8212	m2	£ 2	£ 16,424					
	Small Power to data & Security installations	21968	m2	£ 1.50	£ 32,952					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	Small power to Main Plant Gantry including Containerised & packaged plant rooms	11592	m2	£ 3	£ 34,776					
	Small power to Cooling Plant Zone incl Plenum	1964	m2	£ 6	£ 11,784					
	Small power for Leak Detection installations	13556	m2	£ 1	£ 13,556					
	Small power for Trace Heating installations	13556	m2	£ 1	£ 13,556					
	Small power for BMS Controls installations	13556	m2	£ 2	£ 27,112					
	Small Power to Data Halls & Access Corridors	8212	m2	£ 2	£ 16,424					
	Small Power to data & Security installations	21968	m2	£ 1.50	£ 32,952					
	Fan Walls. Hybrid Coolers - Colocation Scenario									
	Small power to Main Plant Gantry including Containerised & packaged plant rooms	11592	m2	£ 3	£ 34,776					
	Small power to Cooling Plant Zone incl Plenum	1964	m2	£ 6	£ 11,784					
	Small power for Leak Detection installations	13556	m2	£ 1	£ 13,556					
	Small power for Trace Heating installations	13556	m2	£ 1	£ 13,556					
	Small power for BMS Controls installations	13556	m2	£ 2	£ 27,112					
	Small Power to Data Halls & Access Corridors	8212	m2	£ 2	£ 16,424					
	Small Power to data & Security installations	21968	m2	£ 1.50	£ 32,952					
36	Earthing and bonding					£ 114,576	£ 114,576	£ 130,256	£ 130,256	£ 130,256
	Excool Direct									
	General earthing & bonding	18048	m2	£ 4	£ 72,192					
	Earth Bars and Earthing grids to Data Halls	7064	m2	£ 6	£ 42,384					
	Excool Zero									
	General earthing & bonding	18048	m2	£ 4	£ 72,192					
	Earth Bars and Earthing grids to Data Halls	7064	m2	£ 6	£ 42,384					
	Fan Walls and Chillers									
	General earthing & bonding	21968	m2	£ 4	£ 87,872					
	Earth Bars and Earthing grids to Data Halls	7064	m2	£ 6	£ 42,384					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario									
	General earthing & bonding	21968	m2	£ 4	£ 87,872					
	Earth Bars and Earthing grids to Data Halls	7064	m2	£ 6	£ 42,384					
	Fan Walls. Hybrid Coolers - Hyperscale Scenario									
	General earthing & bonding	21968	m2	£ 4	£ 87,872					
	Earth Bars and Earthing grids to Data Halls	7064	m2	£ 6	£ 42,384					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
37	Lightning protection					£ 36,096	£ 36,096	£ 43,936	£ 43,936	£ 43,936
	<u>Excool Direct</u>									
	Lightning protection genrally to building and gantry as required	18048	m2	£ 2	£ 36,096					
	<u>Excool Zero</u>									
	Lightning protection genrally to building and gantry as required	18048	m2	£ 2	£ 36,096					
	<u>Fan Walls and Chillers</u>									
	Lightning protection genrally to building and gantry as required	21968	m2	£ 2	£ 43,936					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Lightning protection genrally to building and gantry as required	21968	m2	£ 2	£ 43,936					
	<u>Fan Walls. Hybrid Coolers - Hyperscale Scenario</u>									
	Lightning protection genrally to building and gantry as required	21968	m2	£ 2	£ 43,936					
38	Fire detection (smoke/fire/heat alarm, VESDA and the like)					£ 382,376	£ 382,376	£ 469,984	£ 469,984	£ 469,984
	<u>Excool Direct</u>									
	Fire Detection & Alarm Systems - Plenum	300	m2	£ 35	£ 10,500					
	VESDA - to return air extract; Data Halls	44	nr	£ 1,900	£ 83,600					
	VESDA - to return air extract; Plant Rooms	32	nr	£ 1,900	£ 60,800					
	Data Halls & Access Corridors	8158	m2	£ 22	£ 179,476					
	Containerised & packaged plant rooms	16	nr	£ 1,500	£ 24,000					
	Containerised Generator sets	16	nr	£ 1,500	£ 24,000					
	<u>Excool Zero</u>									
	Fire Detection & Alarm Systems - Plenum	300	m2	£ 35	£ 10,500					
	VESDA - to return air extract; Data Halls	44	nr	£ 1,900	£ 83,600					
	VESDA - to return air extract; Plant Rooms	32	nr	£ 1,900	£ 60,800					
	Data Halls & Access Corridors	8158	m2	£ 22	£ 179,476					
	Containerised & packaged plant rooms	16	nr	£ 1,500	£ 24,000					
	Containerised Generator sets	16	nr	£ 1,500	£ 24,000					
	<u>Fan Walls and Chillers</u>									
	Fire Detection & Alarm Systems - Internal Plant zone and Plenum	1964	m2	£ 30	£ 58,920					
	VESDA - to return air extract; Data Halls	64	nr	£ 1,900	£ 121,600					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	VESDA - to return air extract; Plant Rooms	32	nr	£ 1,900	£ 60,800					
	Data Halls & Access Corridors	8212	m2	£ 22	£ 180,664					
	Containerised & packaged plant rooms	16	nr	£ 1,500	£ 24,000					
	Containerised Generator sets	16	nr	£ 1,500	£ 24,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Fire Detection & Alarm Systems - Internal Plant zone and Plenum	1964	m2	£ 30	£ 58,920					
	VESDA - to return air extract; Data Halls	64	nr	£ 1,900	£ 121,600					
	VESDA - to return air extract; Plant Rooms	32	nr	£ 1,900	£ 60,800					
	Data Halls & Access Corridors	8212	m2	£ 22	£ 180,664					
	Containerised & packaged plant rooms	16	nr	£ 1,500	£ 24,000					
	Containerised Generator sets	16	nr	£ 1,500	£ 24,000					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	Fire Detection & Alarm Systems - Internal Plant zone and Plenum	1964	m2	£ 30	£ 58,920					
	VESDA - to return air extract; Data Halls	64	nr	£ 1,900	£ 121,600					
	VESDA - to return air extract; Plant Rooms	32	nr	£ 1,900	£ 60,800					
	Data Halls & Access Corridors	8212	m2	£ 22	£ 180,664					
	Containerised & packaged plant rooms	16	nr	£ 1,500	£ 24,000					
	Containerised Generator sets	16	nr	£ 1,500	£ 24,000					
39	Controls, Head Ends (BMS, EMS, PMS, SCADA and the like) and Wiring of Control Systems					£ 2,765,000	£ 2,765,000	£ 2,765,000	£ 2,765,000	£ 2,765,000
	<u>Excool Direct</u>									
	BMS Head End / User Interface, BMS controllers, Integration of controllers, Field equipment, local wiring & containment, Engineering & Commissioning	1	item	£ 2,400,000	£ 2,400,000					
	PMS and SCADA	1	item	£ 365,000	£ 365,000					
	<u>Excool Zero</u>									
	BMS Head End / User Interface, BMS controllers, Integration of controllers, Field equipment, local wiring & containment, Engineering & Commissioning	1	item	£ 2,400,000	£ 2,400,000					
	PMS and SCADA	1	item	£ 365,000	£ 365,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	<u>Fan Walls and Chillers</u>									
	BMS Head End / User Interface, BMS controllers, Integration of controllers, Field equipment, local wiring & containment, Engineering & Commissioning	1	item	£ 2,400,000	£ 2,400,000					
	PMS and SCADA	1	item	£ 365,000	£ 365,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	BMS Head End / User Interface, BMS controllers, Integration of controllers, Field equipment, local wiring & containment, Engineering & Commissioning	1	item	£ 2,400,000	£ 2,400,000					
	PMS and SCADA	1	item	£ 365,000	£ 365,000					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	BMS Head End / User Interface, BMS controllers, Integration of controllers, Field equipment, local wiring & containment, Engineering & Commissioning	1	item	£ 2,400,000	£ 2,400,000					
	PMS and SCADA	1	item	£ 365,000	£ 365,000					
40	CCTV					£ 90,240	£ 90,240	£ 87,872	£ 109,840	£ 109,840
	<u>Excool Direct</u>									
	Security Head End / User Interface, internal and external cameras, local wiring & containment, Engineering & Commissioning	18048	m2	£ 5	£ 90,240					
	<u>Excool Zero</u>									
	Security Head End / User Interface, internal and external cameras, local wiring & containment, Engineering & Commissioning	18048	m2	£ 5	£ 90,240					
	<u>Fan Walls and Chillers</u>									
	Security Head End / User Interface, internal and external cameras, local wiring & containment, Engineering & Commissioning	21968	m2	£ 4	£ 87,872					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Security Head End / User Interface, internal and external cameras, local wiring & containment, Engineering & Commissioning	21968	m2	£ 5	£ 109,840					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	Security Head End / User Interface, internal and external cameras, local wiring & containment, Engineering & Commissioning	21968	m2	£ 5	£ 109,840					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
41	Access Controls					£ 144,384	£ 144,384	£ 175,744	£ 175,744	£ 175,744
	<u>Excool Direct</u> Security Head End / User Interface, controllers, integration of controllers, internal and external keypads and card readers, local wiring & containment, Engineering & Commissioning	18048	m2	£ 8	£ 144,384					
	<u>Excool Zero</u> Security Head End / User Interface, controllers, integration of controllers, internal and external keypads and card readers, local wiring & containment, Engineering & Commissioning	18048	m2	£ 8	£ 144,384					
	<u>Fan Walls and Chillers</u> Security Head End / User Interface, controllers, integration of controllers, internal and external keypads and card readers, local wiring & containment, Engineering & Commissioning	21968	m2	£ 8	£ 175,744					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u> Security Head End / User Interface, controllers, integration of controllers, internal and external keypads and card readers, local wiring & containment, Engineering & Commissioning	21968	m2	£ 8	£ 175,744					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u> Security Head End / User Interface, controllers, integration of controllers, internal and external keypads and card readers, local wiring & containment, Engineering & Commissioning	21968	m2	£ 8	£ 175,744					
42	Intruder Detection & Alarm					£ 18,048	£ 18,048	£ 21,968	£ 21,968	£ 21,968
	<u>Excool Direct</u> Security Head End / User Interface, controllers, integration of controllers, internal and external door sensors, local wiring & containment, Engineering & Commissioning	18048	m2	£ 1	£ 18,048					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
	Excool Zero Security Head End / User Interface, controllers, integration of controllers, internal and external door sensors, local wiring & containment, Engineering & Commissioning	18048	m2	£ 1	£ 18,048					
	Fan Walls and Chillers Security Head End / User Interface, controllers, integration of controllers, internal and external door sensors, local wiring & containment, Engineering & Commissioning	21968	m2	£ 1	£ 21,968					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario Security Head End / User Interface, controllers, integration of controllers, internal and external door sensors, local wiring & containment, Engineering & Commissioning	21968	m2	£ 1	£ 21,968					
	Fan Walls. Hybrid Coolers - Colocation Scenario Security Head End / User Interface, controllers, integration of controllers, internal and external door sensors, local wiring & containment, Engineering & Commissioning	21968	m2	£ 1	£ 21,968					
43	IT/Data/Comms					£ 956,544	£ 956,544	£ 1,164,304	£ 1,164,304	£ 1,164,304
	Excool Direct IT, data and Comms installations (excluding incoming fibre connectivity to MMRs and Customer racks, Servers and connectivity)	18048	m2	£ 53	£ 956,544					
	Excool Zero IT, data and Comms installations (excluding incoming fibre connectivity to MMRs and Customer racks, Servers and connectivity)	18048	m2	£ 53	£ 956,544					
	Fan Walls and Chillers IT, data and Comms installations (excluding incoming fibre connectivity to MMRs and Customer racks, Servers and connectivity)	21968	m2	£ 53	£ 1,164,304					
	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario IT, data and Comms installations (excluding incoming fibre connectivity to MMRs and Customer racks, Servers and connectivity)	21968	m2	£ 53	£ 1,164,304					
	Fan Walls. Hybrid Coolers - Colocation Scenario IT, data and Comms installations (excluding incoming fibre connectivity to MMRs and Customer racks, Servers and connectivity)	21968	m2	£ 53	£ 1,164,304					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
44	Level 1 to 5 Testing & Commissioning including Load Bank Testing					£ 126,336	£ 126,336	£ 175,744	£ 197,712	£ 175,744
	<u>Excool Direct</u>									
	Testing and Commissioning including loadbank testing	18048	m2	£ 7	£ 126,336					
	<u>Excool Zero</u>									
	Testing and Commissioning including loadbank testing	18048	m2	£ 7	£ 126,336					
	<u>Fan Walls and Chillers</u>									
	Testing and Commissioning including loadbank testing	21968	m2	£ 8	£ 175,744					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Testing and Commissioning including loadbank testing	21968	m2	£ 9	£ 197,712					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	Testing and Commissioning including loadbank testing	21968	m2	£ 8	£ 175,744					
45	Fuel for Testing & Commissioning					£ 25,000	£ 25,000	£ 25,000	£ 25,000	£ 25,000
	<u>Excool Direct</u>									
	Diesel fuel allowance for testing and commissioning and IST activities	1	item	£ 25,000	£ 25,000					
	<u>Excool Zero</u>									
	Diesel fuel allowance for testing and commissioning and IST activities	1	item	£ 25,000	£ 25,000					
	<u>Fan Walls and Chillers</u>									
	Diesel fuel allowance for testing and commissioning and IST activities	1	item	£ 25,000	£ 25,000					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u>									
	Diesel fuel allowance for testing and commissioning and IST activities	1	item	£ 25,000	£ 25,000					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u>									
	Diesel fuel allowance for testing and commissioning and IST activities	1	item	£ 25,000	£ 25,000					

Cost Model for Excool Comparisons

Electrical Installations

Item	Description	Quantity	Unit	Rate	Total	Excool Direct	Excool Zero	Fan Walls and Chillers	Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario	Fan Walls. Hybrid Coolers Hyperscale Scenario
46	Builder's Works, Fire Stopping & General Attendances					£ 216,576	£ 216,576	£ 263,616	£ 263,616	£ 263,616
	<u>Excool Direct</u> Builder's Works, Fire Stopping & General Attendances required for MEPH installations	18048	m2	£ 12	£ 216,576					
	<u>Excool Zero</u> Builder's Works, Fire Stopping & General Attendances required for MEPH installations	18048	m2	£ 12	£ 216,576					
	<u>Fan Walls and Chillers</u> Builder's Works, Fire Stopping & General Attendances required for MEPH installations	21968	m2	£ 12	£ 263,616					
	<u>Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario</u> Builder's Works, Fire Stopping & General Attendances required for MEPH installations	21968	m2	£ 12	£ 263,616					
	<u>Fan Walls. Hybrid Coolers - Colocation Scenario</u> Builder's Works, Fire Stopping & General Attendances required for MEPH installations	21968	m2	£ 12	£ 263,616					
	Total for Electrical Works					£ 18,122,338	£ 18,561,338	£ 19,647,124	£ 19,900,060	£ 19,375,092

Capacity/ Duty	Major Equipment Description	Cost per unit	Excool Direct Air		Excool Zero		Fan Walls and Chillers		Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario		Fan Walls. Hybrid Coolers - Hyperscale Scenario		EQS COST NOTES
			Qty.	Total Cost	Qty.	Total Cost	Qty.	Total Cost	Qty.	Total Cost	Qty.	Total Cost	
ELECTRICAL													
2500 kVA	MV-LV transformer 22kv to 0.4kv transformer - 2500kVA	£75,000	16	£1,200,000	-		-		-		-		Within containerised modular plantroom installation. Midel Transformers c/w MU metering unit and RMU
3000 kVA	MV-LV transformer 22kv to 0.4kv transformer - 3000kVA	£90,000	-		16	£1,440,000	16	£1,440,000	16	£1,440,000	16	£1,440,000	Within containerised modular plantroom installation. Midel Transformers c/w MU metering unit and RMU
11 kV	Ring Main Unit	Incl with TX	16		16		16		16				Within containerised modular plantroom installation
4000 A	Main LV switchgear feeding critical loads (via UPS) and non critical loads (non critical mech + ancillaries) - 4000A	£128,000	16	£2,048,000	-		-		-		16	£2,048,000	Within containerised modular plantroom installation
5000 A	Main LV switchgear feeding critical loads (via UPS) and non critical loads (non critical mech + ancillaries)	£155,000	-		16	£2,480,000	16	£2,480,000	16	£2,480,000	-		Within containerised modular plantroom installation
3000 A	UPS LV Output switchgear feeding critical loads only	£105,000	16	£1,680,000	16	£1,680,000	16	£1,680,000	16	£1,680,000	16	£1,680,000	Within containerised modular plantroom installation
1660 kVA	IT UPS & Batteries	£323,700	16	£5,179,200	16	£5,179,200	16	£5,179,200	16	£5,179,200	16	£5,179,200	Within containerised modular plantroom installation. Excludes battery monitoring.
N/A	Mechanical UPS & Batteries	N/A											Not required
	Containerised modular plantroom installation housing above listed plant plus CRAC units	£250,000	16	£4,000,000	16	£4,000,000	16	£4,000,000	16	£4,000,000	16	£4,000,000	Includes delivery to site, final connections for lighting, small power, fire detection & alarm, fire protection
2500 kVA	Standby generator serving the main LV switchgear - 2000kW - integral fuel belly tank rated at 24 hours of diesel storage & NER	£637,500	16	£10,200,000	-		-		-		16	£10,200,000	Includes delivery to site, final connections for lighting, small power, fire detection & alarm, fire protection
3000 kVA	Standby generator serving the main LV switchgear - 2500kW - integral fuel belly tank rated at 24 hours of diesel storage & NER	£765,000	-						16	£12,240,000	-		Includes delivery to site, final connections for lighting, small power, fire detection & alarm, fire protection
3750 kVA	Standby generator serving the main LV switchgear - 3000kW - integral fuel belly tank rated at 24 hours of diesel storage & NER	£941,250	-		16	£15,060,000	16	£15,060,000	-		-		Includes delivery to site, final connections for lighting, small power, fire detection & alarm, fire protection
11 kV	High Voltage Switchgear	N/A											Not considered and Excluded
630 A	PDUx24way	£23,000	64	1,472,000	64	£1,472,000	64	£1,472,000	64	£1,472,000	64	£1,472,000	Excludes lift n shift, crantage and works and attendances for FATS, SATS & IST by GC
Total for Electrical Plant Costs				£25,779,200		£31,311,200		£31,311,200		£28,491,200		£26,019,200	
PRIMARY COOLING													
250 kW	IAC units - Direct air cooling units, 250 kW sensible cooling to serve as main cooling plant for data hall, gantry adjacent to data hall. N+2 per hall	£88,000	88	7,744,000			-		-		-		Excludes lift n shift, crantage and works and attendances for FATS, SATS & IST by GC
250 kW	IAC units - Indirect air cooling units, 250 kW sensible cooling to serve as main cooling plant for data hall, gantry adjacent to data hall. N+2 per hall	£66,000			88	£5,808,000	-		-		-		Excludes lift n shift, crantage and works and attendances for FATS, SATS & IST by GC

Capacity/ Duty	Major Equipment Description	Cost per unit	Excool Direct Air		Excool Zero		Fan Walls and Chillers		Fan Walls. Hybrid Coolers and Chillers - Colocation Scenario		Fan Walls. Hybrid Coolers - Hyperscale Scenario		EQS COST NOTES
357 kW	IAC units - Indirect air cooling units, 357 kW sensible cooling to serve as main cooling plant for data hall, services corridor adjacent to data hall. N + 2 per hall, Package Controls, Delivery to curbside, Site Acceptance Testing & Commissioning , FAT Testing at Container Manufacturer, including attendance, Production of Test Script, IST & attendance for Level 4 commissioning, Client Training, O&M Manuals, Critical Spares, Control/ electrical site reconnection, Set of spare filters for all units	£92,400			-		64	£5,913,600	64	£5,913,600	64	£5,913,600	Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
1660 kW	Air Cooled Chillers - heat rejection plant for data centre. water circuit is 21 / 31°C with assumed 20% glycol. Located on third level of external gantry compound. 7 chillers per 2 data halls n+1 per 2 halls 1660 kw per chiller	£498,750			-		13	£6,483,750					Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
550 Kw	Air Cooled Chillers - Trim chiller used 1% of year that hybrid cooler cannot achieve 100% cooling duty. Located on third level of external gantry compound. 7 chillers per 2 data halls n+1 per 2 halls 550 kw per chiller	£165,000			-				13	£2,145,000	-		Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
1660 kW	Hybrid Coolers - Primary plant for heat rejection from data hall. Located on third level of external gantry compound. 7 units per 2 data halls n+1 per 2 halls 1660 kw per unit. Attenuation at (45dB(A) at 10m)	£350,000			-				13	£4,550,000	13	£4,550,000	Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
-	Packaged Pump Room consisting of Cooling Pumps (CHW), Heat Rejection Pumps (CWP)	£330,000					2	£660,000	2	£660,000			Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
50 kW	DX CRAC units to LV plant rooms	£33,000	32	£1,056,000	32	£1,056,000	32	£1,056,000	32	£1,056,000	32	£1,056,000	Within containerised modular plantroom installation. Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
-	Packaged Process water plant room consisting of RO water treatment & filtration and pumpsets	£93,500							2	£187,000	2	£187,000	Excludes lift n shift, craneage and works and attendances for FATs, SATS & IST by GC
-	External process water storage tank	£55,000							1	£55,000	1	£55,000	Excludes lift n shift, craneage and works and attendances
Total for Primary Cooling Plant Costs				£8,800,000		£6,864,000		£14,113,350		£14,566,600		£11,761,600	
AIR HANDLING													
2.6 m³/s each	Pressurisation AHU's - supply only AHU to provide humidification and pressurisation to data hall spaces - external multi level gantry adjacent to main data center building, n+1 units per 2 halls 2.6 m3/s supply air each. electric pre-heat coil g4/f7 filters 2no supply fans wetted media humidifier	£150,000	-		4	£600,000	4	£600,000	4	£600,000	4	£600,000	
Total for Air Handling Plant Costs				£0		£600,000		£600,000		£600,000		£600,000	
				£34,579,200		£38,775,200		£46,024,550		£43,657,800		£38,380,800	