

Activity ID	Description	Duration	WEEK																							
			-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Chilled Water Plant Room																										
TP01-01	Chilled water P/room (CWP) Av. for commencement	0		◆																						
TP01-02	CWP H/L Drainage pipework	2w			■	■																				
TP01-03	CWP H/L Basement extract ductwork	2w			■	■																				
TP01-04	CWP H/L Toilet extract ductwork	2w				■	■																			
TP01-05	CWP H/L Car park extract ductwork	2w					■	■																		
TP01-06	CWP H/L Sprinkler pipework	2w					■	■																		
TP01-07	H/L Chilled & condenser pipework bracketry	6w							■	■	■	■	■	■												
TP01-08	H/L Condenser water header pipework	2w								■	■															
TP01-09	H/L Chilled water header pipework	2w									■	■														
TP01-10	H/L Condenser water pipework	3w									■	■	■													
TP01-11	CWP construct & paint chiller plinths	1w										■														
TP01-12	H/L Chilled water pipework	3w										■	■	■												
TP01-13	Deliver & position chillers	1w											■													
TP01-14	CWP Construct & paint pump plinths	1w											■													
TP01-15	Del & position chilled & condenser water pumps	1w												■												
TP01-16	Condenser water connections to pumps & chillers	4w												■	■	■	■									
TP01-17	Chilled water connections to pumps & chillers	4w													■	■	■	■								
TP01-18	Deliver & position chiller control panels	1w														■										
TP01-19	CWP Complete blockwork walls	1w															■									
TP01-20	H/L Chilled water plant room pipework complete	0																			◆					
TP01-21	CWP Basement supply ductwork	2w																			■	■				
TP01-22	L/L Water dosing & vent pipework	3w																			■	■	■			
TP01-23	CWP Basement extract fans & attenuators	1w																				■				
TP01-24	CWP H/L toilet extract fans & attenuators	1w																					■			

Activity ID	Description	Duration	WEEK														
			16	17	18	19	20	21	22	23	24	25	26	27	28		
TP01-25	CWP L/L Basement extract ductwork	2w			█	█	█										
TP01-26	Basement condenser water pipework complete	0			◆												
TP01-27	CWP H/L Car park extract fans & attenuators	1w			█	█											
TP01-28	Basement chilled water pipework complete	0				◆											
TP01-29	CWP Del & Pos. car park Ext. fans control panels	1w					█	█									
TP01-30	CWP L/L Sprinkler pipework	1w						█	█								
TP01-31	CWP Del & position LV electrical control panels	1w						█	█								
TP01-32	CWP Electrical bracketry & LV containment	3w						█	█	█							
TP01-33	CWP Car park Ext fans control wiring & Terms	1w							█	█							
TP01-34	Riser condenser water pipework complete	0							◆								
TP01-35	Electrical busbars to chiller control panels	3w							█	█	█						
TP01-36	CWP Car park extract BMS interface connection	1w								█	█						
TP01-37	CWP Car park Ext fire alarm interface connection	1w								█	█						
TP01-38	Riser chilled water pipework complete	0									◆						
TP01-39	Chilled water plant room pumps & control wiring	3w								█	█	█					
TP01-40	CWP Domestic water supply available	0										◆					
TP01-41	CWP Car park extract control interfaces Comp	0											◆				
TP01-42	CWP Car park extract LV cable terminations	1w									█	█					
TP01-43	Install flushing loops and spades	2w										█	█				
TP01-44	Chilled & condenser water plant LV cable Terms	1w											█	█			
TP01-45	Chilled & Cond plant BMS interface connections	1w												█	█		
TP01-46	Chiller plant control interfaces Comp	0													◆		
TP01-47	Fill & test basement condenser water pipework	2w														█	█
TP01-48	CWP Plant room power available for commissioning	0															◆

Template Programme TP01 - Chilled Water Plant Room

Activity ID	Description	Predecessors / Comments
TP01-01	Chilled water P/room (CWP) Av. for commencement	Identification of the commencement date. Walls built, access available, area dry and free of debris etc.
TP01-02	CWP H/L Drainage pipework	High level drainage pipework from gullies cast into the slab above. And transient pipework using the CWP as a thoroughfare. Not associated with the installation of the chiller plant, but needs to be included as part of the co-ordinated plant room installation. Needs to be installed before the mechanical pipework because it is one of the highest services and has to be installed at specific invert levels to create a fall. Plus it would not be accessible to install following the installation of mechanical pipework.
TP01-03	CWP H/L Basement extract ductwork	Extract ductwork common to all basement plant rooms. Installed at high level and also has branches from it to provide extraction at a lower level.
TP01-04	CWP H/L Toilet extract ductwork	High level transient service. Not associated with the installation of the chiller plant, but needs to be included as part of the co-ordinated plant room installation.
TP01-05	CWP H/L Car park extract ductwork	High level transient service. Not associated with the installation of the chiller plant, but needs to be included as part of the co-ordinated plant room installation.
TP01-06	CWP H/L Sprinkler pipework	General pipework and sprinkler heads installed within most plant rooms (but not electrical switch rooms). Installed at high level and also has branches from it to provide protection at a lower level.
TP01-07	H/L Chilled & condenser pipework bracketry	Always commences before the pipework and will continue in accordance with the pipework installations.
TP01-08	H/L Condenser water header pipework	Largest diameter welded condenser water pipework, installed horizontally above the chiller and pump positions. Generally it is prefabbed off site.
TP01-09	H/L Chilled water header pipework	Largest diameter welded chilled water pipework, installed horizontally above the chiller and pump positions. Generally it is prefabbed off site.
TP01-10	H/L Condenser water pipework	Horizontal welded pipework that connects to and generally follows the installation of the header pipework.
TP01-11	CWP construct & paint chiller plinths	Withheld (sometimes) to provide easier access for the installation of earlier high level activities.
TP01-12	H/L Chilled water pipework	Horizontal welded pipework that connects to and generally follows the installation of the header pipework.
TP01-13	Deliver & position chillers	Long lead-in to delivery item. Depending upon delivery dates and logistics it is a good idea to install any services located above the chillers prior to their delivery - especially the header pipework. Chillers normally arrive protected, if not they should be encapsulated following their positioning on the plinths.
TP01-14	CWP Construct & paint pump plinths	Withheld to provide easier access for earlier activities.
TP01-15	Del & position chilled & condenser water pumps	Same comments as activity TP01-13 apply.
TP01-16	Condenser water connections to pumps & chillers	Vertical welded pipework linking the headers and high level pipework to the pumps and chillers.
TP01-17	Chilled water connections to pumps & chillers	Vertical welded pipework linking the headers and high level pipework to the pumps and chillers.

Template Programme TP01 - Chilled Water Plant Room

Activity ID	Description	Predecessors / Comments
TP01-18	Deliver & position chiller control panels	Electrical control panels associated with the operation of the chillers. Manufactured by the chiller supplier. Delivery held back to avoid damage during pipework installation.
TP01-19	CWP Complete blockwork walls	Needs to be completed as soon as possible following deliveries - the longer this is left the more difficult it will be to accomplish.
TP01-20	H/L Chilled water plant room pipework complete	Milestone identification of progress in the chilled water plant room. Releases the high level zone to following trades.
TP01-21	CWP Basement supply ductwork	Supply air ductwork common to all basement plant rooms.
TP01-22	L/L Water dosing & vent pipework	Small bore threaded pipework associated with the chiller plant, follows the main pipework installation.
TP01-23	CWP Basement extract fans & attenuators	High level plant - could be installed earlier depending on plant room co-ordination & fan manufacturing period. Long delivery period due to fire-rated protection of fans.
TP01-24	CWP H/L toilet extract fans & attenuators	High level plant - could be installed earlier depending on plant room co-ordination & fan manufacturing period. Long delivery period due to fire-rated protection of fans.
TP01-25	CWP L/L Basement extract ductwork	Basement extract ductwork supplied from activity TP01-03 to a lower level.
TP01-26	Basement condenser water pipework complete	Progress identification milestone for the condenser water pipework.
TP01-27	CWP H/L Car park extract fans & attenuators	High level plant - could be installed earlier depending on plant room co-ordination & fan manufacturing period. Long delivery period due to fire-rated protection of fans.
TP01-28	Basement chilled water pipework complete	Progress identification milestone for the chilled water pipework.
TP01-29	CWP Del & Pos. car park Ext. fans control panels	Electrical control panels associated with the operation of the fans. Manufactured by the fan supplier. Delivery held back to avoid damage during pipework installation.
TP01-30	CWP L/L Sprinkler pipework	Pipework and sprinkler heads supplied from activity TP01-06 to provide protection beneath mechanical pipework and ventilation ductwork.
TP01-31	CWP Del & position LV electrical control panels	Main LV electrical control panels associated with the distribution of electrical supplies to the mechanical and ventilation contractor's plant control panels i.e. pumps and fans. Manufactured by one of the electrical contractor's subcontractors. Delivery held back to avoid damage during pipework installation.
TP01-32	CWP Electrical bracketry & LV containment	Installed by the electrical contractor. Containment for the LV cables (installed from a LV switch room) that supply the main control panels. And from the main control panels to supply the control panels provided and installed by the mechanical and ventilation contractors. Generally the electrical installation will be the lowest service and is therefore dependant on the pipework completion.
TP01-33	CWP Car park Ext fans control wiring & Terms	Containment and wiring installed, terminated and tested by the ventilation contractor. Requires the prior delivery and installation of the fans and associated control panels.
TP01-34	Riser condenser water pipework complete	Progress identification milestone for the condenser water pipework.

Template Programme TP01 - Chilled Water Plant Room

Activity ID	Description	Predecessors / Comments
TP01-35	Electrical busbars to chiller control panels	Installed directly from a LV switch room by the electrical contractor. Utilised for plant items that require a large electrical supply. Prone to damage by other trades if the installation is attempted earlier
TP01-36	CWP Car park extract BMS interface connections	(The 1st fix element of this work would be installed as a general on-floor activity, not requiring specific co-ordination with other trades other than the identification of control panel locations). Requires the prior delivery and installation of plant control panels and wiring.
TP01-37	CWP Car park Ext fire alarm interface connection	(The 1st fix element of this work would be installed as a general on-floor activity, not requiring specific co-ordination with other trades other than the identification of control panel locations). Requires the prior delivery and installation of plant control panels and wiring.
TP01-38	Riser chilled water pipework complete	Progress identification milestone for the chilled water pipework.
TP01-39	Chilled water plant room pumps & control wiring	Containment and wiring installed, terminated and tested by the mechanical contractor. Requires the prior delivery and installation of the pumps and associated control panels.
TP01-40	CWP Domestic water supply available	Preferable but not essential for filling the chilled and condenser pipework "systems".
TP01-41	CWP Car park extract control interfaces Comp	Signifies that plant, control and BMS wiring and associated control panels are all terminated and available for testing / commissioning.
TP01-42	CWP Car park extract LV cable terminations	Carried out by the electrical contractor. Refers to termination of the LV cables into the control panels provided and installed by other contractors. The actual LV cable installation will form part of a separate LV electrical switch room template programme. This LV cable termination activity will be a successor to that cable installation.
TP01-43	Install flushing loops and spades	Necessary for commissioning protection of plant items - dependant on pipework completion.
TP01-44	Chilled & condenser water plant LV cable Terms	Carried out by the electrical contractor. Refers to termination of the LV cables into the control panels provided and installed by other contractors. The actual LV cable installation will form part of a separate LV electrical switch room template programme. This LV cable termination activity will be a successor to that cable installation.
TP01-45	Chilled & Cond plant BMS interface connections	(The 1st fix element of this work would be installed as a general on-floor activity, not requiring specific co-ordination with other trades other than the identification of control panel locations). Requires the prior delivery and installation of plant control panels and wiring. It is important that all of the pipework control valve and sensor locations are identified to the mechanical contractor before the pipework is complete. This will enable all necessary connection points to be burned into the pipework during the normal course of the pipework installation, and will not cause disruption.
TP01-46	Chiller plant control interfaces complete	Signifies that the chiller plant, control and BMS wiring and associated control panels are all terminated and available for testing / commissioning.
TP01-47	Fill & test basement condenser water pipework	Requires the completion of all necessary basement condenser water pipework.
TP01-48	CWP Plant room power available for commissioning	Earliest LV electrical power availability date for basement commissioning. Actual sequence of power-on dates would be determined by the commissioning programme i.e. every item of plant would not be energised simultaneously on the date that the LV supply became available.

Template Programme TP01 - Chilled Water Plant Room

Activity ID	Description	Predecessors / Comments
TP01-49	Fill & test basement chilled water pipework	Requires the completion of all necessary basement chilled water pipework.
TP01-50	Basement chilled & condenser pipework insulation	Follows the successful completion of basement chilled and condenser pipework testing.
TP01-51	L17 & 18 condenser water pipework complete	Progress identification milestone for the level 17 and 18 condenser water pipework.
TP01-52	Fill & test riser / L17&18 condenser water P'work	Requires the completion of all necessary condenser water pipework.
TP01-53	Condenser water system static flush & drain	Follows completion of the condenser water pipework testing.
TP01-54	Riser / L17&18 chilled & Cond pipework insulation	Follows the completion of chilled and condenser water pipework testing.
TP01-55	L17&18 chilled water pipework complete	Progress identification milestone for the chilled water pipework.
TP01-56	Condenser water system dynamic flush & drain	Follows condenser water pipework static flush and drain
TP01-57	Fill & test riser / L7&18 chilled water pipework	Requires the completion of all necessary chilled water pipework.
TP01-58	L17&18 chilled & Cond pipework trace heating	Follows the completion of chilled and condenser water pipework testing.
TP01-59	Condenser water system chemical clean & flush	Follows condenser water pipework dynamic flush and drain.
TP01-60	Chilled water system static flush & drain	Follows completion of the chilled water pipework testing.
TP01-61	Chilled water system dynamic flush & drain	Follows chilled water pipework static flush and drain.
TP01-62	Chilled water system chemical clean & flush	Follows chilled water pipework dynamic flush and drain.
TP01-63	Remove flushing loops and spades	These are removed following the flushing completion.
TP01-64	Chilled & Cond pipework control valves & gauges	These are fitted to the pipework following the flushing completion.
TP01-65	Commission pressurisation unit	Follows flushing and prior to balancing.
TP01-66	Balance condenser water	Requires all condenser water plant and controls functioning / chillers & cooling towers commissioned.
TP01-67	Balance chilled water	Requires all chilled water plant (AHU's / fan coil units) commissioned and controls functioning.
TP01-68	Chilled water available	Requires completion of the chilled water and cooling systems.

General Notes:

- 1 To be read in conjunction with the Basement Levels B2 and B3 Plant Room Layouts
- 2 The chilled and condenser water "systems" have been included in their entirety.
- 3 The car park extract "system" has also been included in its entirety as its fans and control panels are located in this plant room.
- 4 For better clarity the basement extract and toilet extract "systems" have not been fully included.