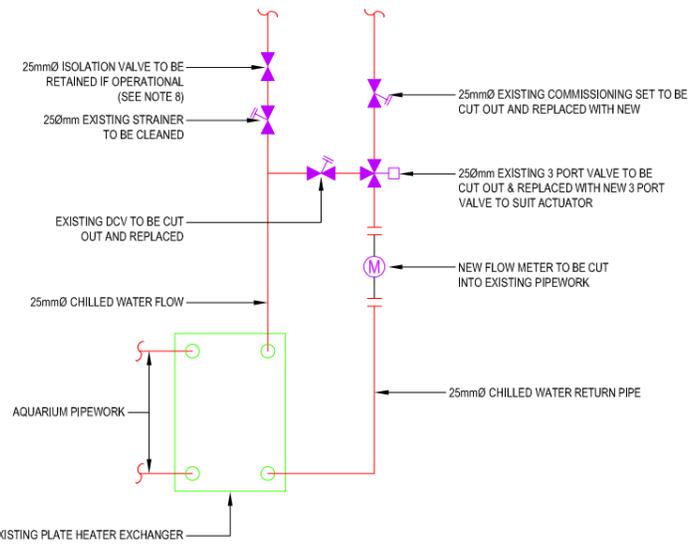


THIS DRAWING IS INDICATIVE AND REPRESENTS ONLY THE DESIGN INTENT, THE CONTRACTOR MUST PRODUCE FULLY CO-ORDINATED WORKING / INSTALLATION DRAWINGS AS REFERRED TO IN THE CONTRACT DOCUMENTATION

NOTES

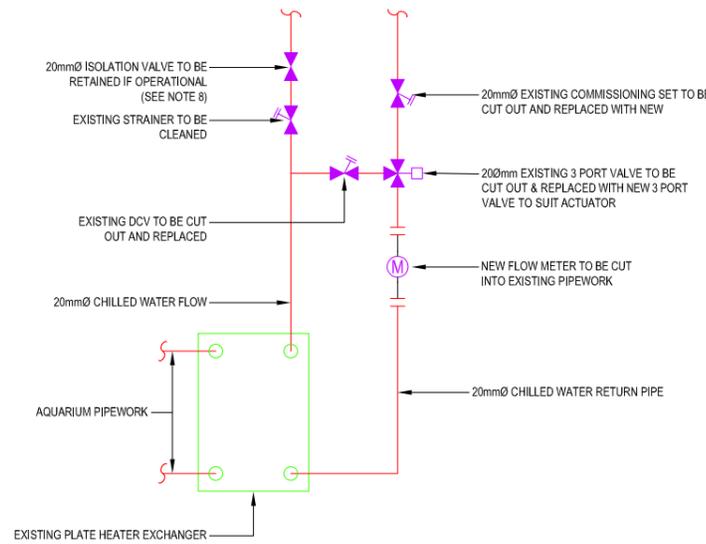
- THE CONTRACTOR SHALL VISIT SITE BEFORE TENDER RETURN TO ENSURE ALL SITE ISSUES (SUCH AS ACCESS) THAT MAY HAVE AN IMPACT ON THE TENDER PRICE ARE IDENTIFIED AND INCLUDED FOR IN THE TENDER RETURN. ITEMS THAT HAVE BEEN IDENTIFIED ON SITE AND COST HAS BEEN INCLUDED SHOULD BE IDENTIFIED SEPARATELY IN THE TENDER RETURN.
- THE DRAWINGS ARE SCHEMATIC AND INDICATIVE AND THE CONTRACTOR SHALL SURVEY EACH PLATE AND VERIFY PIPE SIZES AND POSITIONS OF VALVES.
- THE PLATE HEAT EXCHANGERS ARE TO BE ISOLATED FOR THE MINIMUM TIME TO CARRY OUT THE INSTALLATION AND ALLOW SUFFICIENT TIME FOR THE GLUED JOINTS TO CURE. THE CONTRACTOR SHALL PROVIDE A PROGRAMME FOR EACH PHE SHUTDOWN AND AGREE THE PROGRAMME WITH THE CLIENT BEFORE WORKS COMMENCE.
- THE EXISTING CHILLED WATER PIPEWORK APPEARS TO BE A TYPE OF ABS, THE EXACT PIPE TYPE SHALL BE IDENTIFIED ON SITE AND THE METHODS, TECHNIQUES, SOLVENT AND GLUES USED ON THE PIPEWORK SHALL BE ENTIRELY SUITABLE FOR THE PIPE TYPE.
- NEW PIPEWORK AND FITTINGS WHERE REQUIRED TO ALTER THE EXISTING PIPEWORK SHALL BE OF THE SAME TYPE AS THE EXISTING.
- ACCESS TO VALVES, PIPEWORK ETC. SHALL BE EXAMINED ON SITE BEFORE INSTALLATION. ANY ACCESS ISSUES SHALL BE IDENTIFIED AND SOLUTIONS AGREED. LOCATIONS AND POSITIONS OF NEW VALVES ETC. SHALL BE CHECKED AND AGREED ON SITE BEFORE INSTALLATION.
- THE NOTED VALVES SHALL BE CUT OUT AND NEW SPIGOTS GLUED IN TO ACCEPT THE NEW VALVES/METERS.
- ALL ISOLATIONS TO BE CHECKED BEFORE THE WORKS BEGIN TO ENSURE THE PIPEWORK CAN BE ISOLATED EFFECTIVELY. WHERE ISOLATION/COMMISSIONING SET IS NOT AVAILABLE OR PASSING THE PIPEWORK SHALL BE FROZEN USING A PROPRIETY LOW TEMPERATURE SYSTEM SUCH HUNTINGTON FUSION TECHNIQUES QWIK-FREEZER DESIGNED TO FREEZE WATER WITH 25% GLYCOL. NOTE THAT THE REEF, JELLYFISH AND POND PLATE HEAT EXCHANGERS PROBABLY HAVE ISSUES WITH ISOLATION.
- ALLOWANCE SHALL BE MADE WHERE ISOLATION VALVES ARE NOT INSTALLED OR EXISTING ISOLATION VALVES ARE PASSING FOR NEW ISOLATION VALVES TO BE INSTALLED TO PROVIDE SUITABLE ISOLATION.
- THE INSULATION FROM THE ISOLATION POINT TO THE PHES SHALL BE STRIPPED BACK AND REMOVED AND REPLACED WITH NEW INSULATION AND VAPOUR BARRIER TO ENTIRELY SUITABLE FOR A CHILLED WATER APPLICATION. IT IS PREFERABLE THE INSULATION TYPE DOES NOT ABSORB WATER. THE INSULATION AND VAPOUR BARRIER SHALL BE LONG LIVED, IMPERFORATE AND FULLY SEALED TO PREVENT MOISTURE WETTING THE INSULATION AND CORRODING FITTINGS ETC. THE INSULATION SHALL BE FINISHED WITH WHITE VENTURECLAD INSTALLED TO THE MANUFACTURER'S RECOMMENDATIONS. REMOVED/DISCARDED INSULATION AND VAPOUR BARRIER SHALL BE DISPOSED OF IN AN APPROVED WAY.
- ALL VALVES AND METERS CONTROLLING THE PHES SHALL BE PROVIDED WITH AN INSULATED REMOVABLE INSULATION BAG WITH THE SAME INSULATION VALUE AS THE PIPE INSULATION. THE BAGS SHALL BE DESIGNED FOR AT LEAST 15 YEAR LIFE AND SHALL BE DESIGNED TO PREVENT MOISTURE FORMING ON THE VALVE/METER BODIES.
- THE NEW FLOW METERS SHALL BE CAPABLE OF MEASURING THE INSTANTANEOUS FLOW AND LOGGING TOTAL FLOW OVER A PERIOD. THE METER SHALL BE SUITABLE FOR CHILLED WATER AND THE DISPLAY SHALL BE CAPABLE OF DISPLAYING FLOW IN L/S OR L/M AND CUMULATIVE FLOW IN LITRES. THE METERS SHALL BE BATTERY POWERED WITH A BATTERY LIFE EXPECTANCY OF 3-5 YEARS. THE METERS SHALL BE PIUSI K24 DIGITAL TURBINE METER, QALCOSONIC FLOW 4 ULTRASONIC METER OR EQUAL AND APPROVED. THE METER SHALL BE INSTALLED ENTIRELY TO THE MANUFACTURER'S RECOMMENDATIONS.

REEF PLATE HEAT EXCHANGER



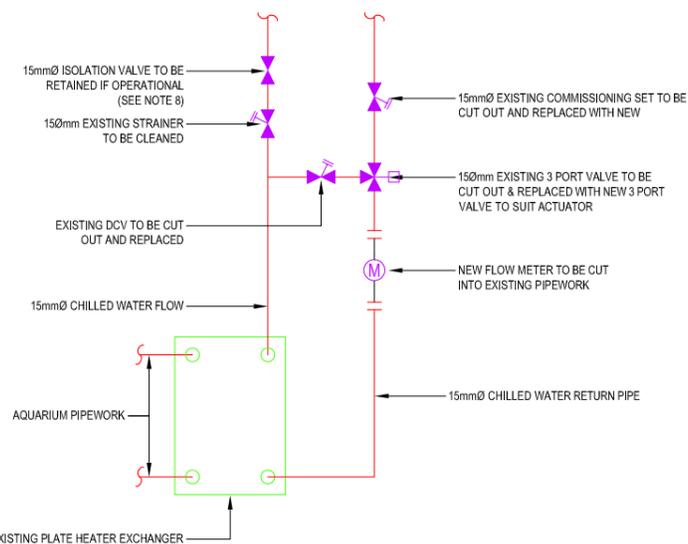
NOTE:  
REEF PHE IS LOCATED IN PLANTROOM

COASTAL PLATE HEAT EXCHANGER



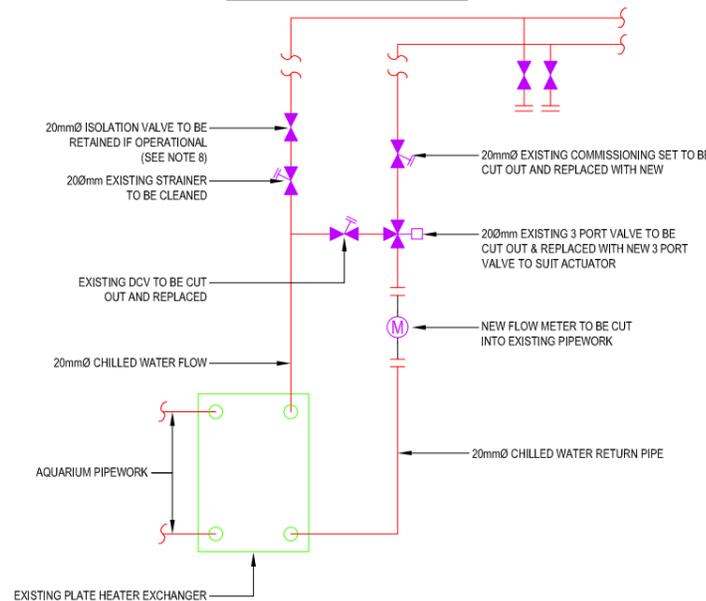
NOTE:  
COASTAL PHE IS LOCATED IN PLANTROOM

JELLYFISH/SEASHORE PLATE HEAT EXCHANGER



NOTE:  
JELLY FISH PHE IS LOCATED IN PLANTROOM

POND PLATE HEAT EXCHANGER



- NOTE:
- POND PHE IS LOCATED IN POND PLANTROOM TO REAR OF POND TANKS
  - EXISTING CHILLED WATER PIPES SERVING PHE (LOCATED IN ADJACENT CORRIDOR) CIRCA 50mm F&R. CONNECTION TO BE MADE TO MAIN PIPES TO PROVIDE 40mm F&R TO ALLOW FUTURE RELOCATION OF REEF PHE. LOCAL TO REEF (FUTURE WORKS BY OTHERS)

T01	TENDER ISSUE	TD	NCM	CM	17.07.18
REV	DESCRIPTION	BY	CHK	APP	DATE

Project Status: **TENDER**

**HARLEY HADDOW CONSULTING ENGINEERS**  
 Vox Studios  
 1-45 Durham Street, Vauxhall  
 London, SE11 5JH  
 T: +44 (0) 203 735 5060  
 Email - london@harleyhaddow.com  
 www.harleyhaddow.com  
 Association of Consulting Engineers Member Firm  
 Edinburgh | Glasgow | London



Project: 302807  
**HORNIMAN MUSEUM & GARDEN**  
**AQUARIUM CHILLED WATER**

Drawing Title:  
**PLATE HEAT EXCHANGER WORKS**

Scale @ A3 N.T.S.	Date JULY 18	Engineer NCM
Drawing No. 2807-HAH-00-XX-DR-M-50-0101	Revision T01	