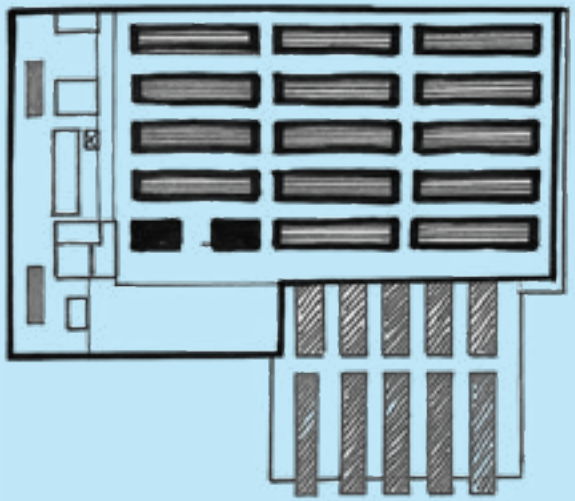
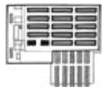


ZRH-13 DATA CENTRE

BIM MEP Coordinator

Project Type - Large Scale.

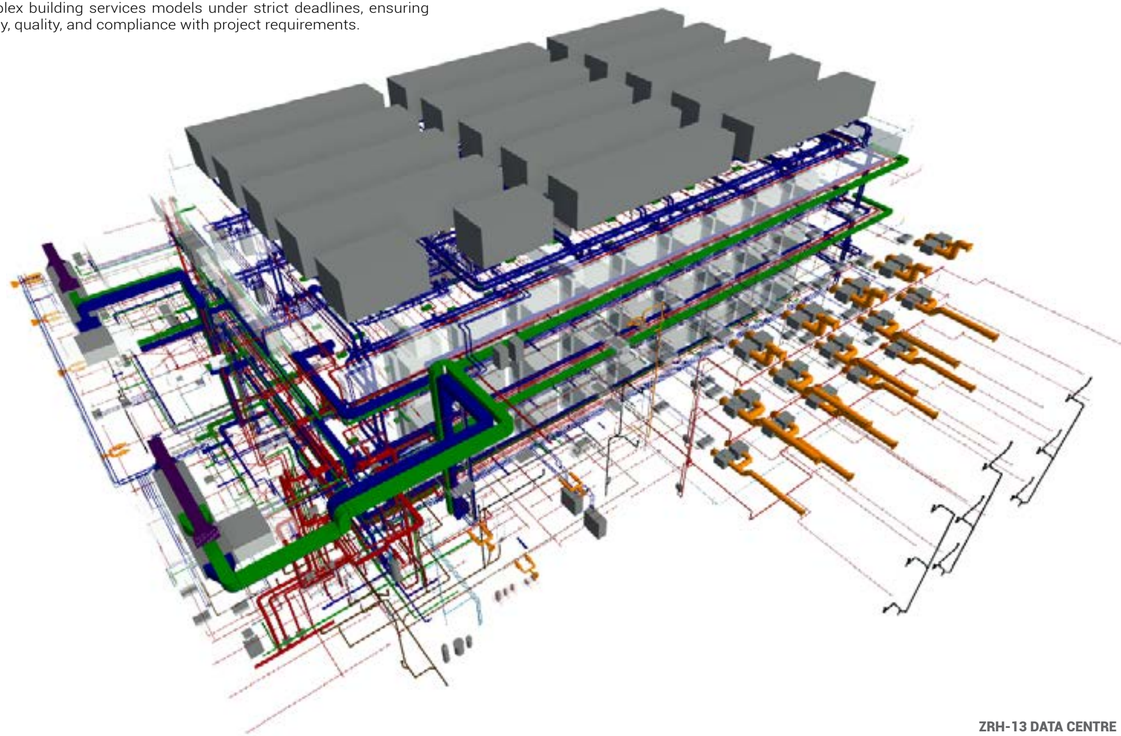
Location - Zurich, Switzerland.



ZRH-13 DATA CENTRE

PROJECT OVERVIEW

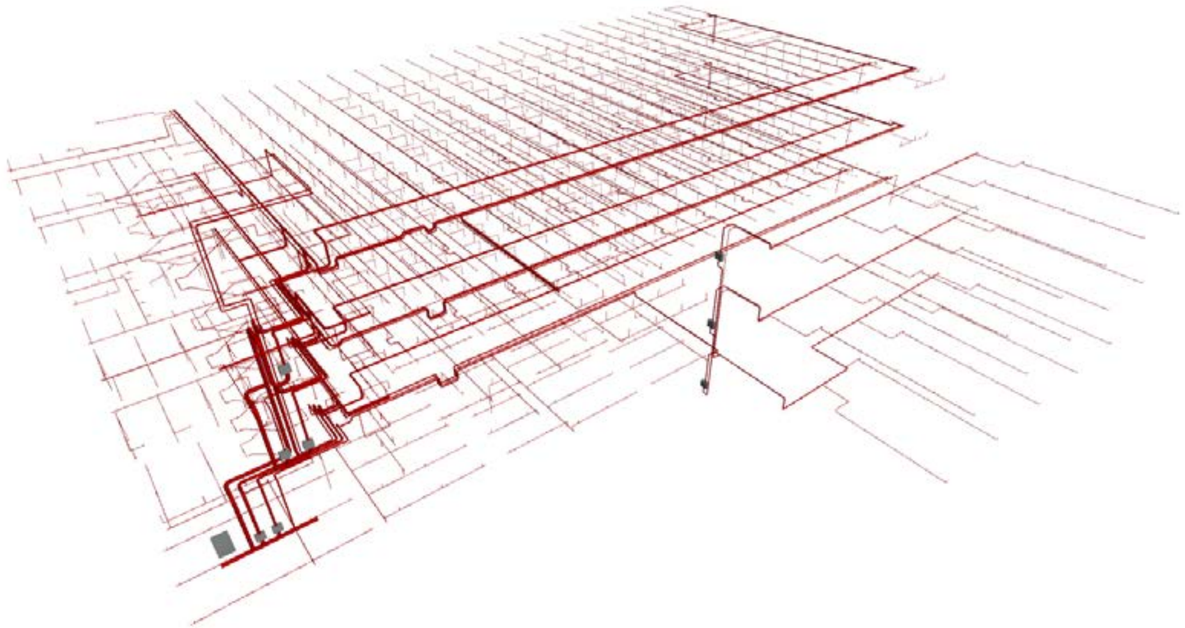
This project involved the development of a Data Center facility for Vantage Data Centers. As part of a four-person MEP modelling and documentation team, I contributed to the coordination and delivery of complex building services models under strict deadlines, ensuring accuracy, quality, and compliance with project requirements.

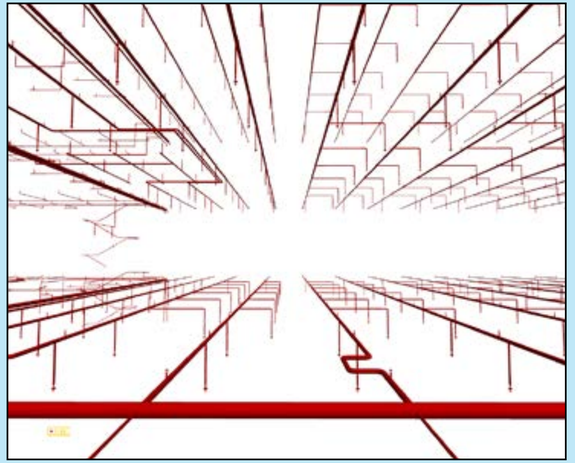


FIRE PROTECTION

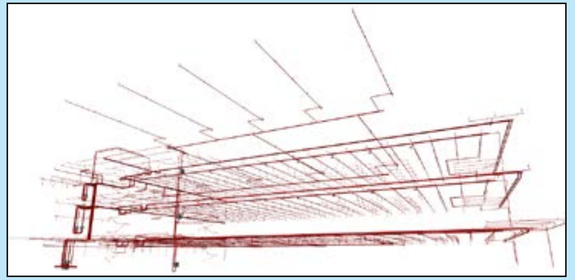
WET AND DRY SYSTEMS

The project involved the modelling of wet and dry fire protection systems in accordance with engineering schematics and P&ID drawings. All fire distribution networks were fully coordinated and modelled, including pipework layouts, system routing, and connection requirements.

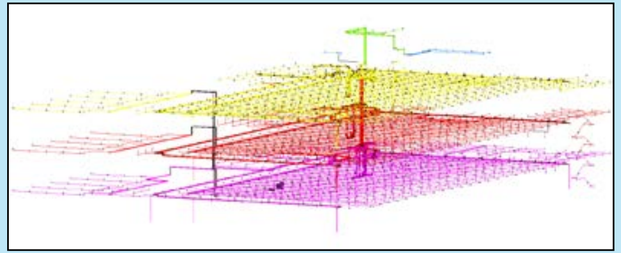




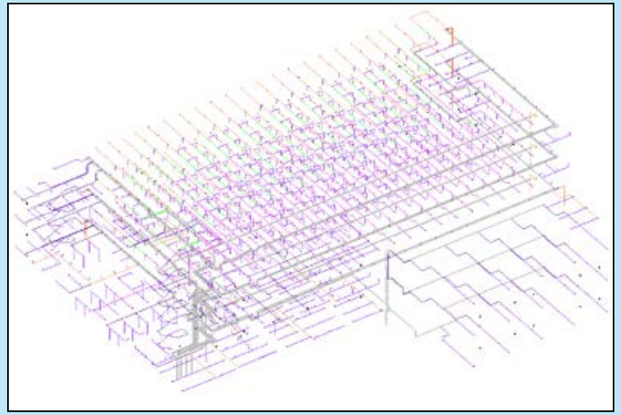
SPRINKLERS, TUBES, AND FITTINGS



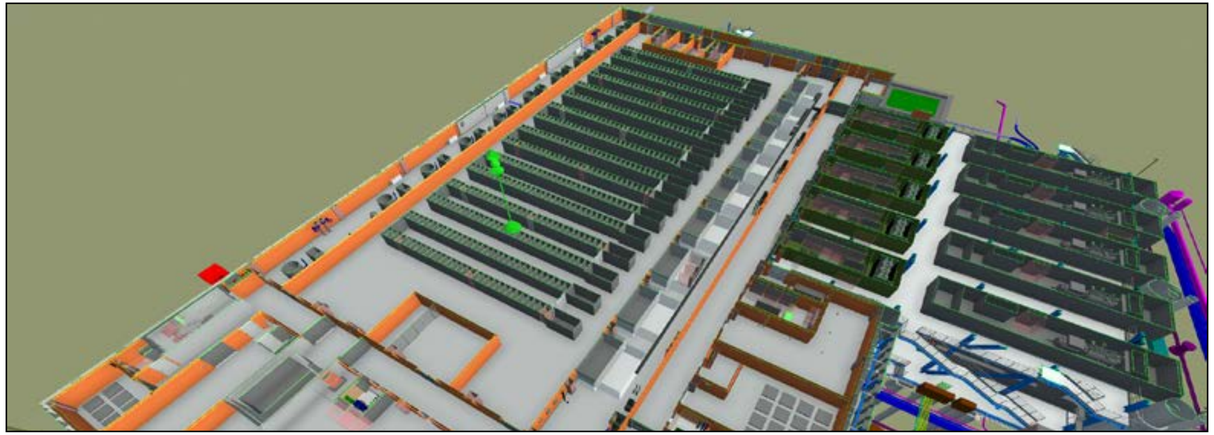
SPRINKLERS, TUBES, AND FITTINGS



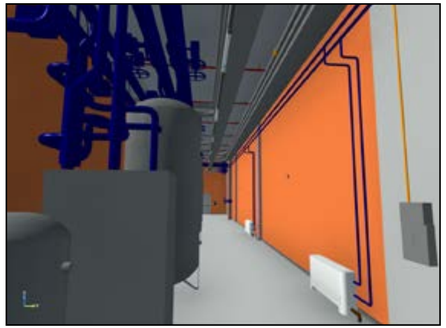
FLOOR LEVEL ALLOCATION



PIPE SIZE VARIATION

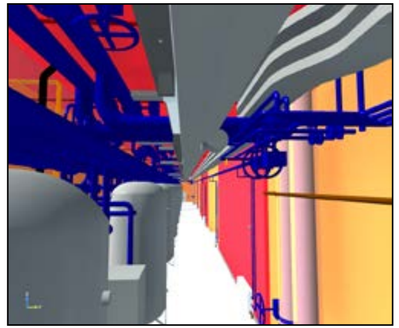


DATA MODULE ROOM, CDU, ELECTRICAL HOUSES, AND GENERATOR UNITS



CDU FANCOIL UNITS

TYPICAL CORRIDOR

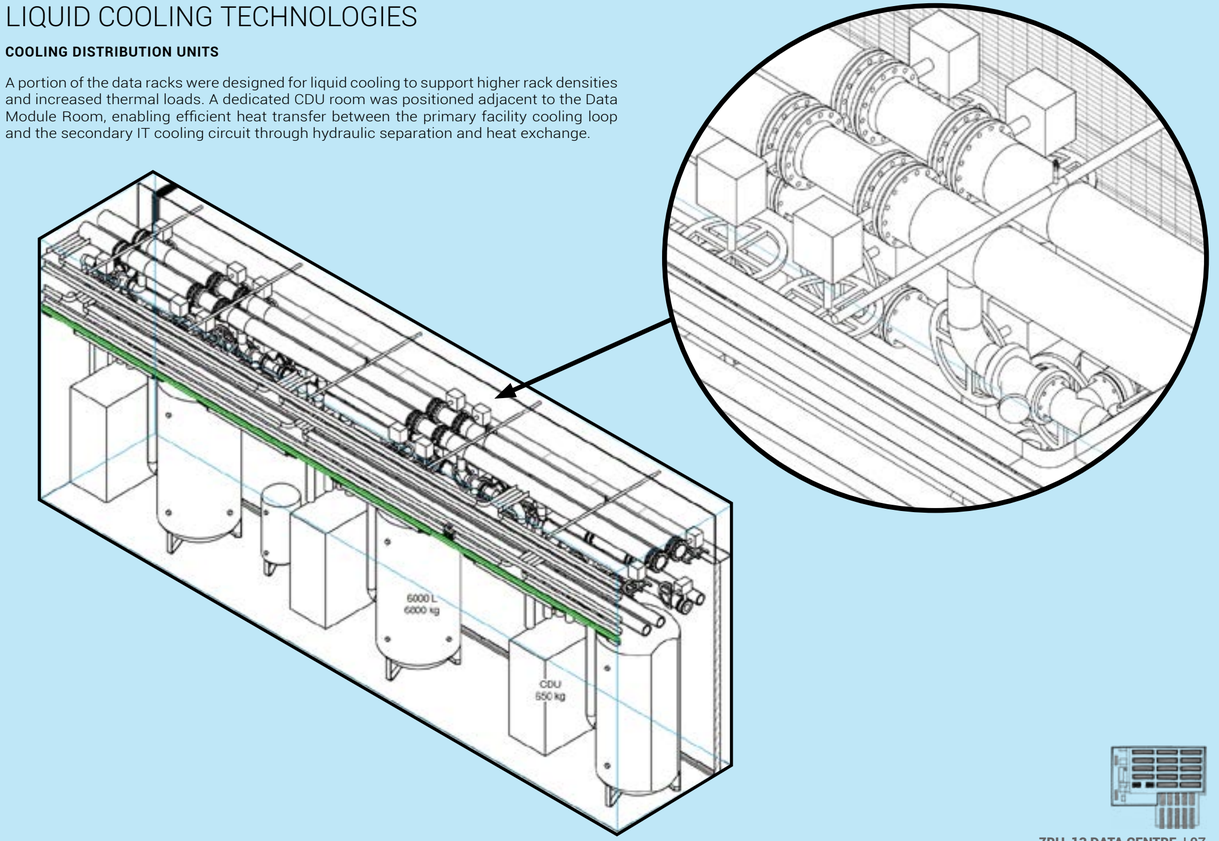


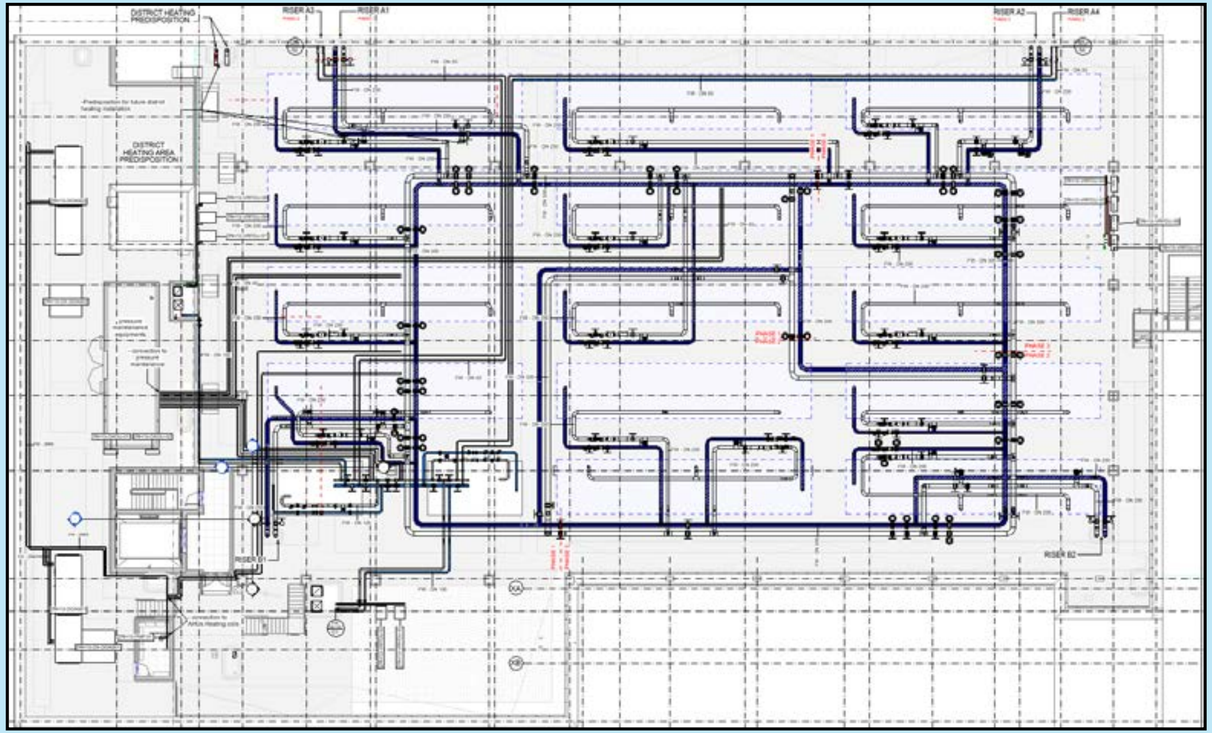
CDU PASSAGE WAY

LIQUID COOLING TECHNOLOGIES

COOLING DISTRIBUTION UNITS

A portion of the data racks were designed for liquid cooling to support higher rack densities and increased thermal loads. A dedicated CDU room was positioned adjacent to the Data Module Room, enabling efficient heat transfer between the primary facility cooling loop and the secondary IT cooling circuit through hydraulic separation and heat exchange.



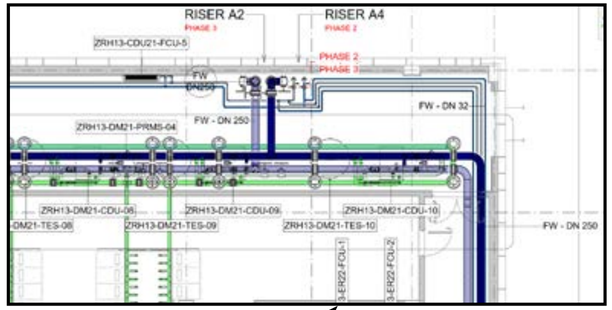


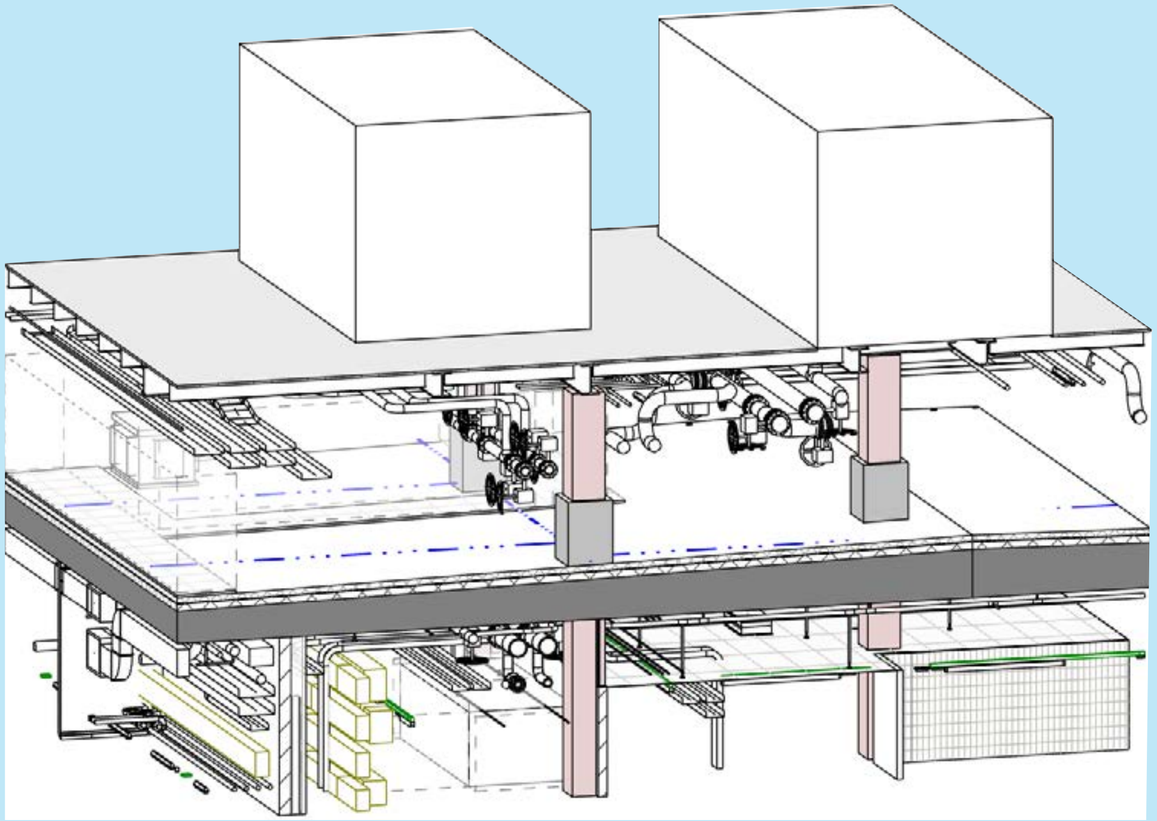
RETURN AND SUPPLY NETWORKS FOR ROOF BASED CHILLERS AND COOLING TOWERS

CHILLED WATER LOOPS

PRIMARY TO SECONDARY NETWORKS

The facility cooling network distributed chilled water from the primary loop to multiple cooling systems throughout the building, including the CDUs, CRAC units, and other mechanical equipment. Within each CDU, a plate heat exchanger transferred heat from the secondary IT cooling circuit to the primary facility loop while maintaining complete hydraulic separation between the two systems. This arrangement enabled the liquid-cooled IT equipment to operate on an independent secondary circuit while efficiently rejecting heat to the central cooling infrastructure.

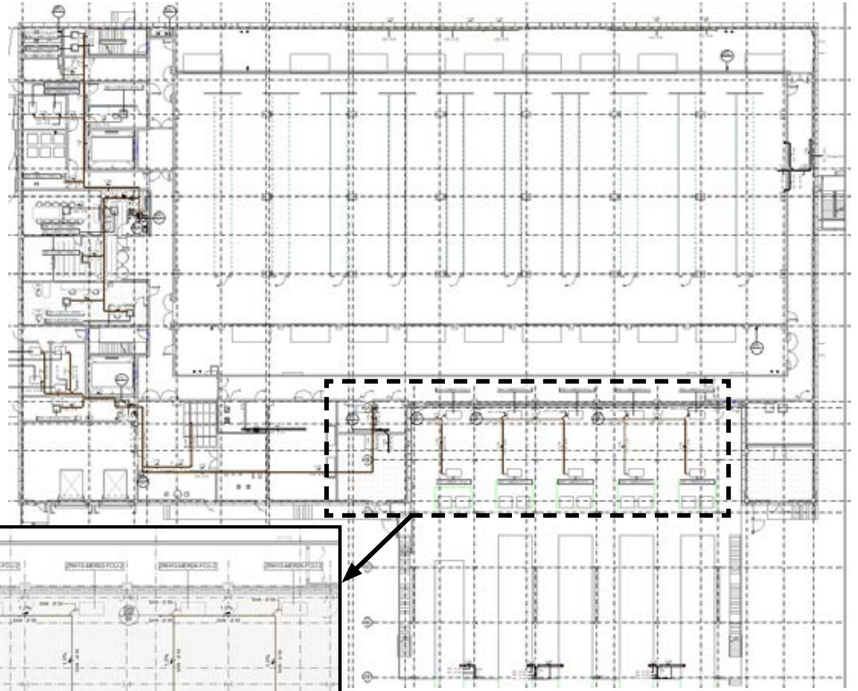


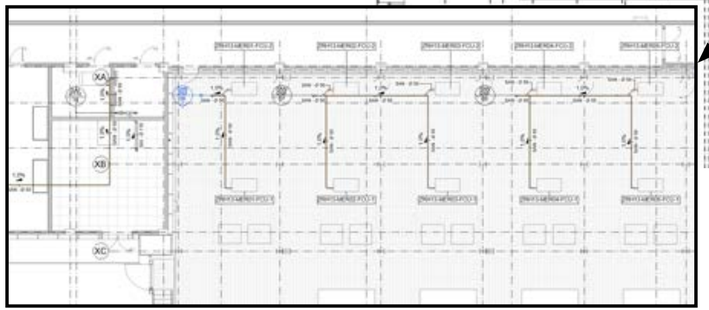


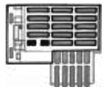
DRAINAGE NETWORKS

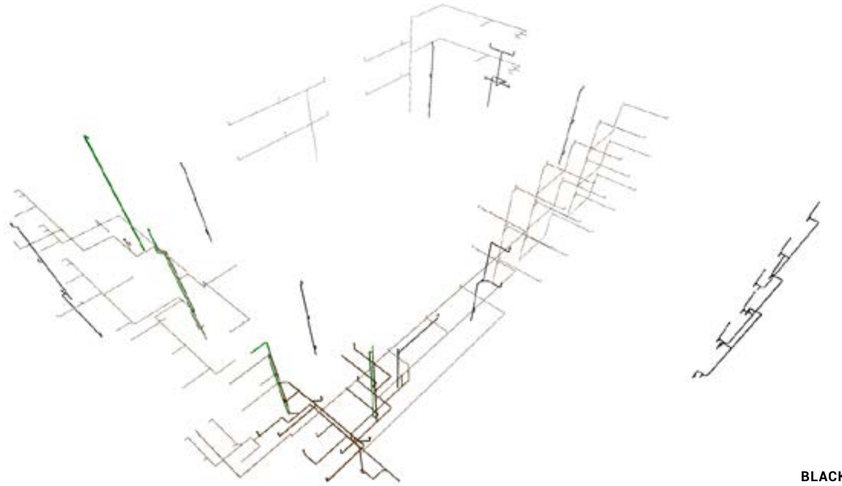
SEWAGE, RAIN, AND INDUSTRIAL

The project included the modelling and coordination of multiple plumbing systems, including sanitary drainage, rainwater, industrial waste, and general waste pipe networks. Dedicated ventilation pipework was also developed to support the drainage systems, ensuring correct pressure management and effective operation of the waste networks. All pipe routes, connections, and system interfaces were coordinated within the BIM model in accordance with engineering requirements.

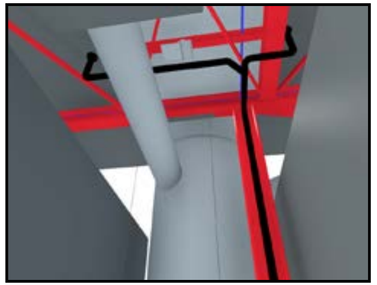




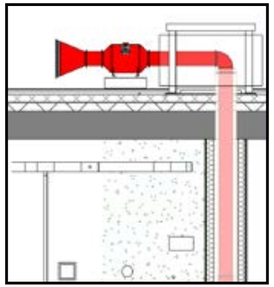




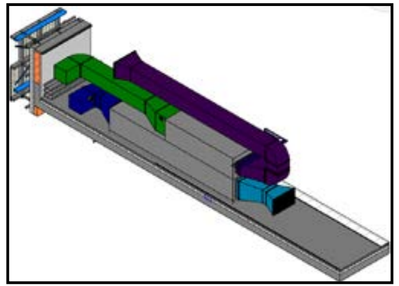
BLACK WATER SEWAGE NETWORK



COOLING TOWERS, HEAT PUMP, RADIATORS



COOLING TOWERS

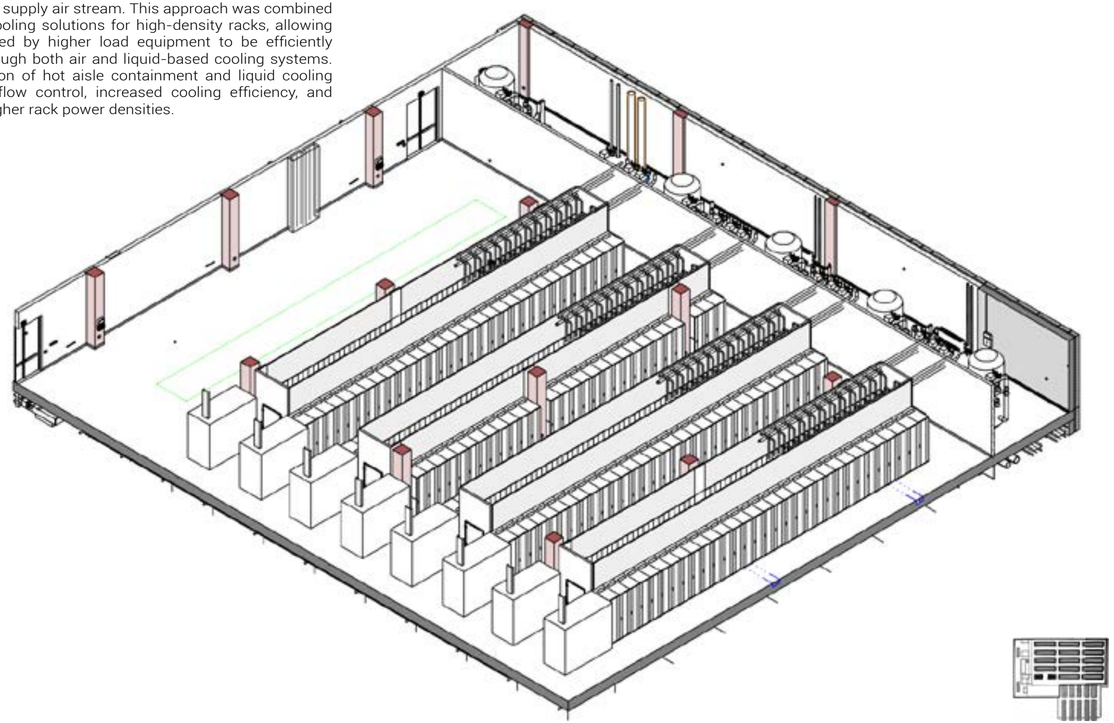


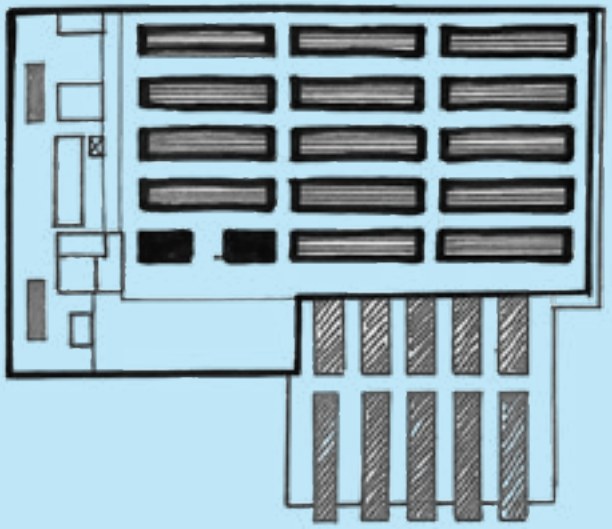
COOLING TOWERS, HEAT PUMP, RADIATORS

DATA MODULE ROOM CONFIGURATION

HOT AISLE CONTAINMENT

Hot aisle containment was implemented within the data halls to improve thermal management by separating hot exhaust air from the cold supply air stream. This approach was combined with liquid cooling solutions for high-density racks, allowing heat generated by higher load equipment to be efficiently removed through both air and liquid-based cooling systems. The integration of hot aisle containment and liquid cooling improved airflow control, increased cooling efficiency, and supported higher rack power densities.





ZRH-13 DATA CENTRE