

**CASE STUDY:**  
**Kingston Heights**

**CAPITAL PROJECTS**

INTRODUCING A MORE  
**RENEWABLE RELATIONSHIP  
BETWEEN THE CITY  
AND THE RIVER**

**LIVING ENVIRONMENTAL SYSTEMS**

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**SPECIFICATION ENGINEER**



# Who We are:



- Living Environmental Systems Division
- We provide solutions for Air Conditioning, Heating Ventilation and Controls
- Market leader across a number of heat pump markets
- 8 UK Offices
- 1 UK Manufacturing Site
- Renewable Solutions Provider
- Green Gateway – The way we do business

# Kingston Heights

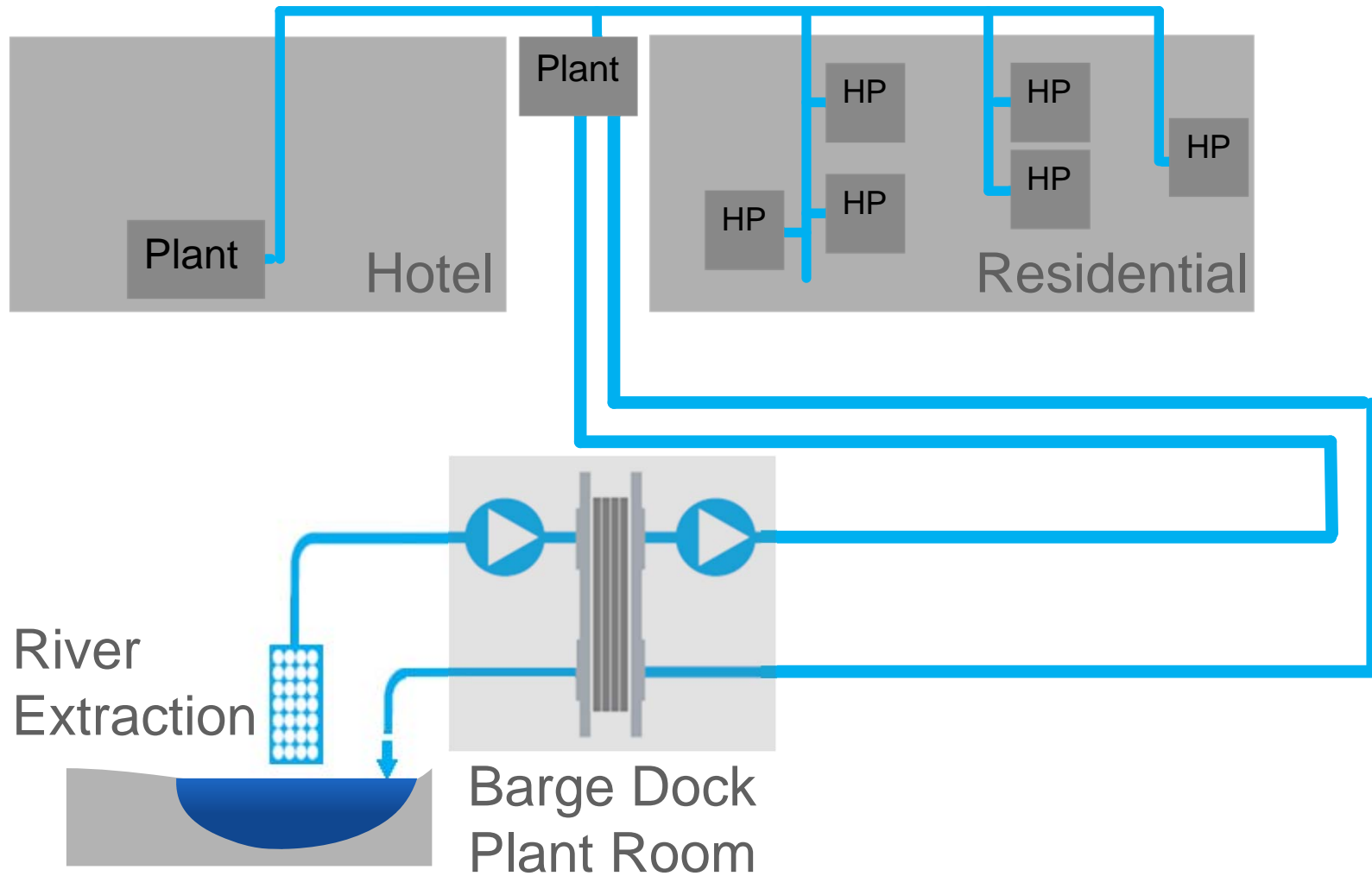
Kingston Heights is a £70 million mixed use development situated a few hundred meters from the river Thames

Comprising of:

- 56 affordable homes
- 81 luxury apartments
- 145 room Hilton Doubletree Hotel
- 100% heat pump heating and cooling.
- Savings of over 500 tonnes of carbon emissions

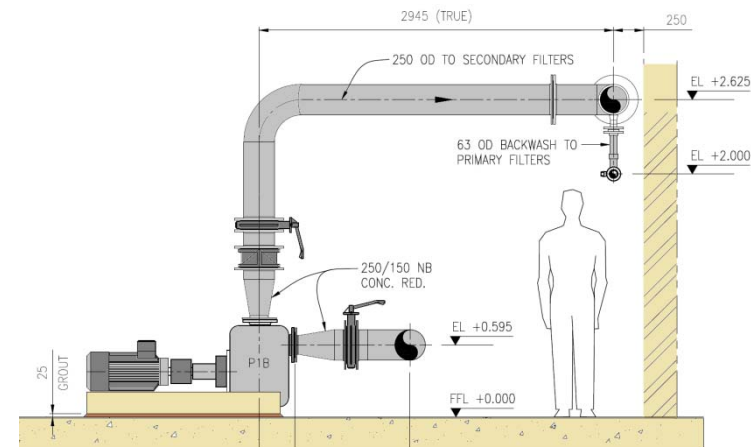


# System overview



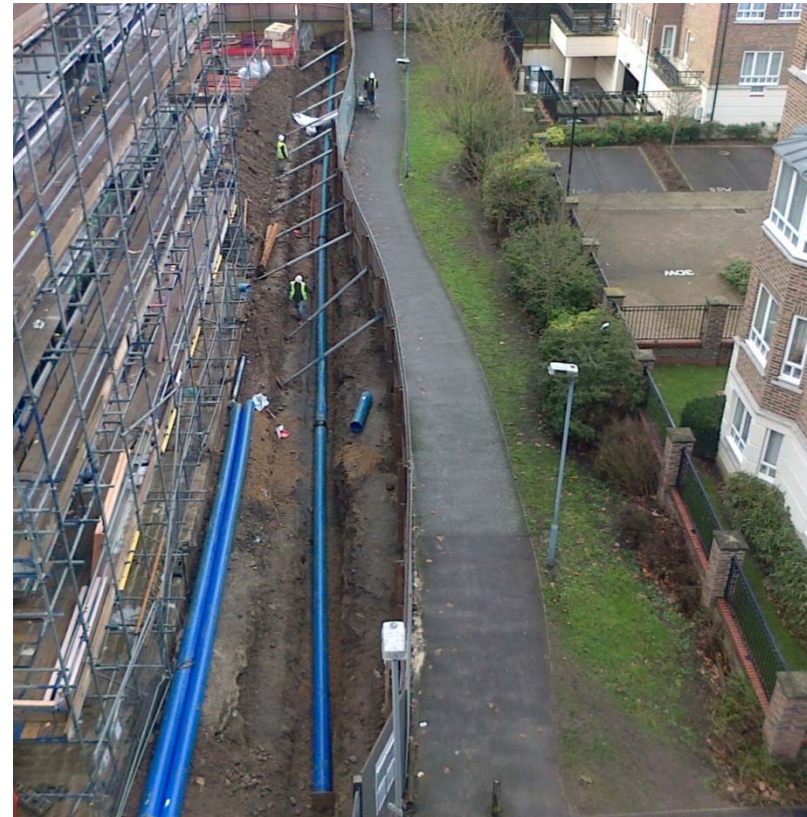
# Barge Dock Plant Room

- Specialist contractor B+V
- River extraction Pumps
- Filter Arrangement
- Primary Plate heat exchanger
- Closed Loop Pumps
- Fully integrated BMS



# Closed Loop

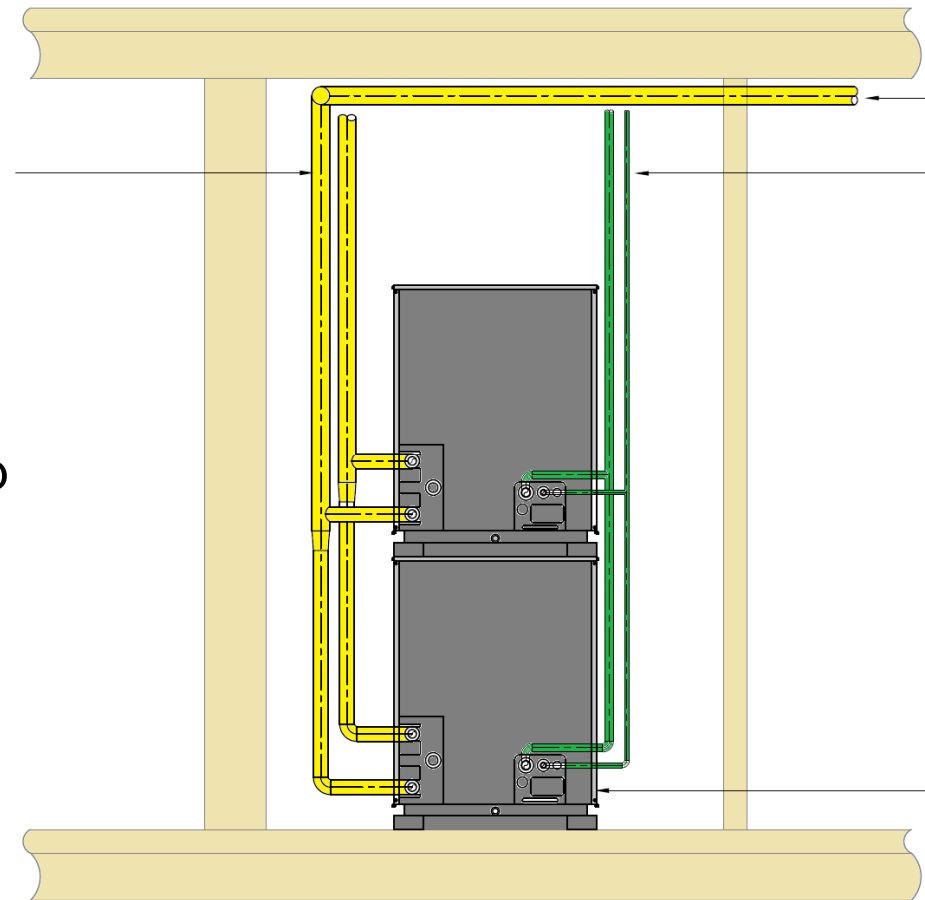
- The closed loop moves energy from the Barge dock to a number of plant rooms within the development
- The massive volume of the closed loop acts as a thermal store
- The closed loop contains a mixture of water and antifreeze
- Energy is moved between 4 and 25° C, depending on the temperature of the river.



# Heat Pump Plant Rooms

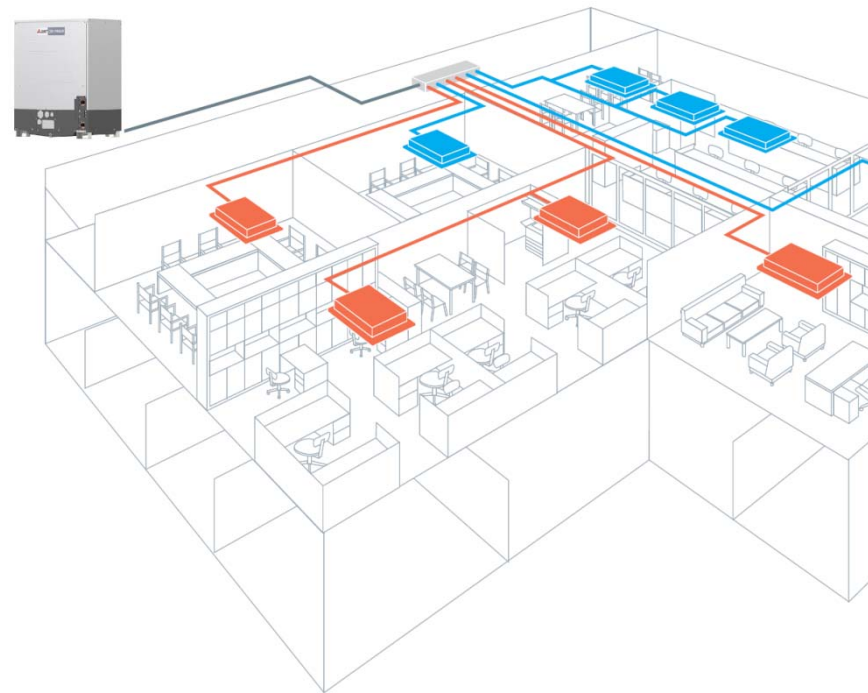
## Kingston Residential

- 17 plant rooms
- 39 heat pumps
- Each heat pump delivers refrigerant to 3-5 flats for heating and hot water
- Each flat contains a heat pump boiler.
- Each heat pump boiler is connected to a hot water cylinder and an underfloor heating system



# Hotel Plant Rooms

- The hotel requires both space heating and space cooling
- There is also a large hot water requirement
- The hotel uses VRF fan coils connected to the closed loop Via Mitsubishi city multi air conditioners
- Monobloc WSHP's from Mitsubishi hot water calorifiers
- The hotel is due to launch in Aug 2016



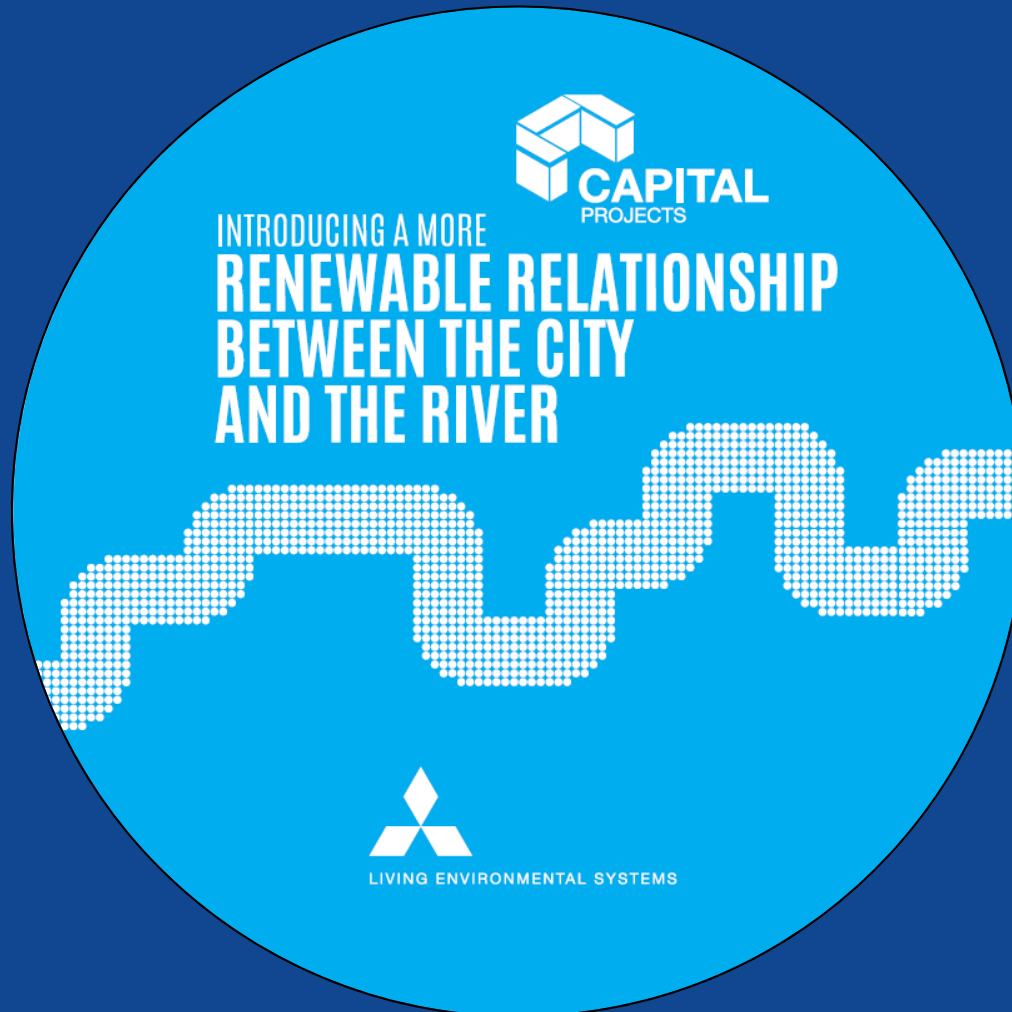


# Heat Recovery

- Heating, Cooling and Hot water generation from a single energy source
- Single closed loop serving all HVAC plant
- High levels of heat recovery
  - Reduce overall consumption
  - Reduce Carbon emissions
- Renewable Heat Incentive



# Thank you for listening



## Questions?