



HEAT4COOL



HOCHSCHULE
LUZERN

Implementation Results @Demo 4 Budapest Pal Kiss managing director (Thermowatt)



Heat4COOL project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 723925



- Intro: Demo site 4 – Budapest – district heating&cooling
- Technology included: Thermowatt sewage heat recovery
- System configuration at Demo site
- H4C Project innovations to be implemented
- H4C installation design, stages of realisation
- Positive impacts and replication

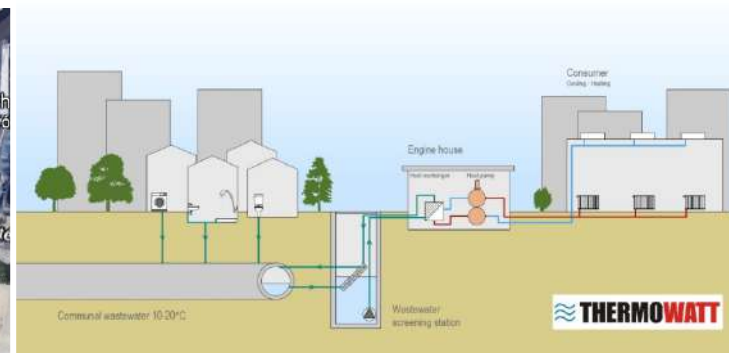
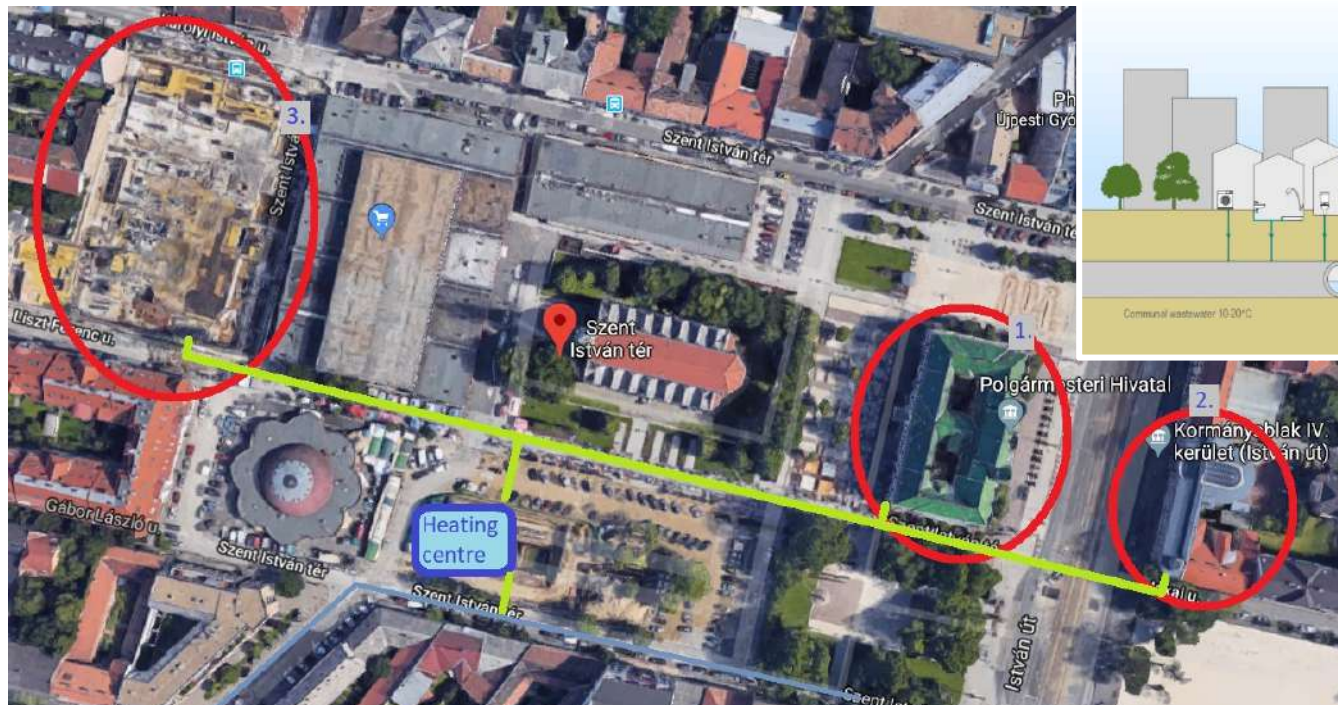




Demo 4 – Budapest, Hungary



- Technology: DHC complemented by HP and thermal energy recovery from municipal wastewater
- District system circuit: 3 buildings ($\sim 12\,500\text{ m}^2$) to be connected to one new common supply network

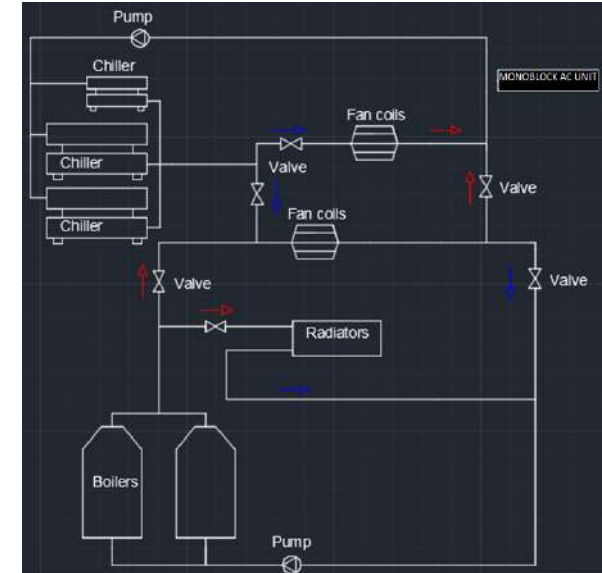




3 Buildings & system to retrofit



- MO, GW (2600m²+1900m²)
 - public buildings – municipality administration (offices, meeting rooms)
 - separate thermal energy supply systems
 - system to redeem:
natural gas boilers, electric chillers
- NMH (8000m²)
 - market hall, conference centre, theatre and functional offices
 - new construction: operating since end of 2018



1. Mayor's Office



2. Government Window



3. New Market Hall

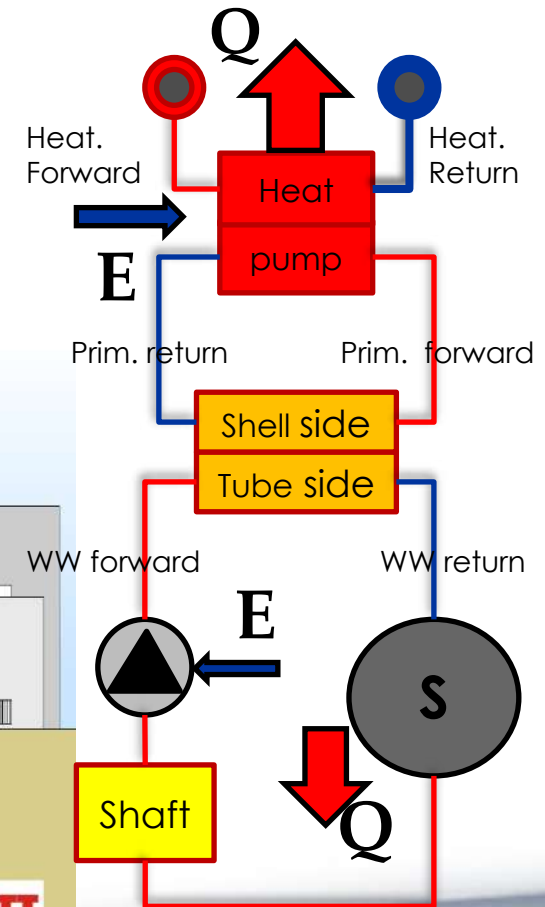
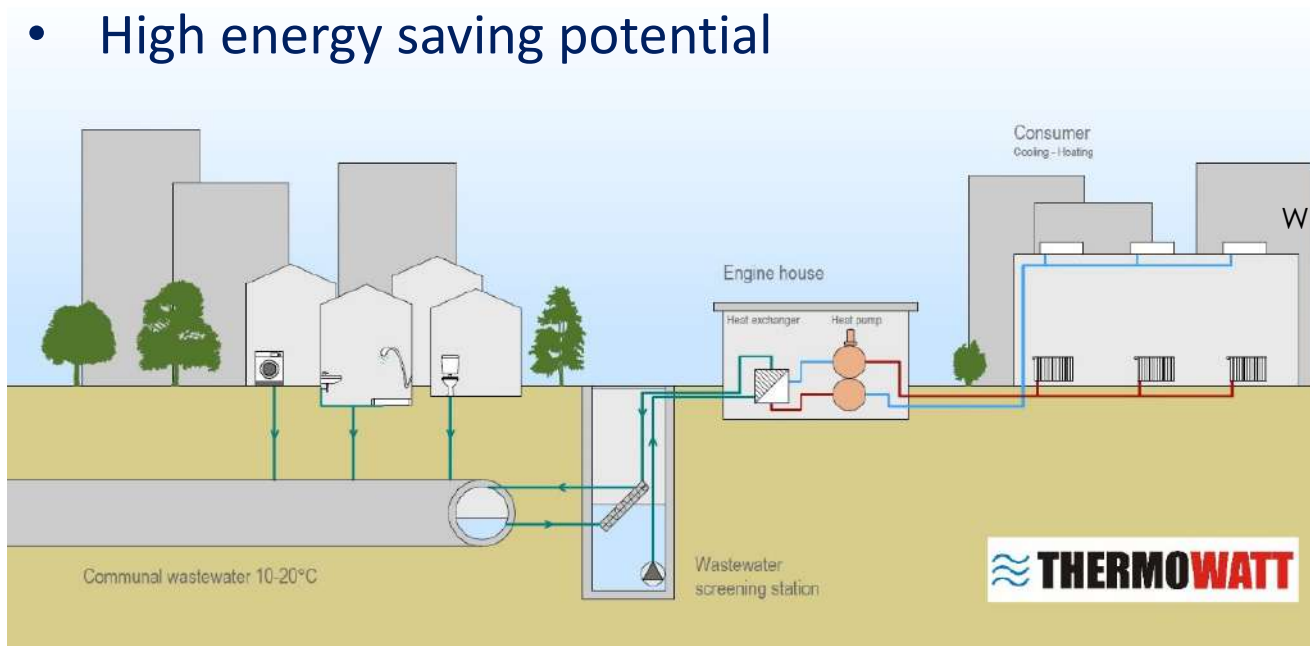




Technology: sewage heat recovery



- Renewable energy source: sewage heat = ideal resource for HP
- Large supply structure → District compatibility
- Heating and cooling energy with same system
- Compact size, underground placement option
- Simple remote O&M
- High energy saving potential

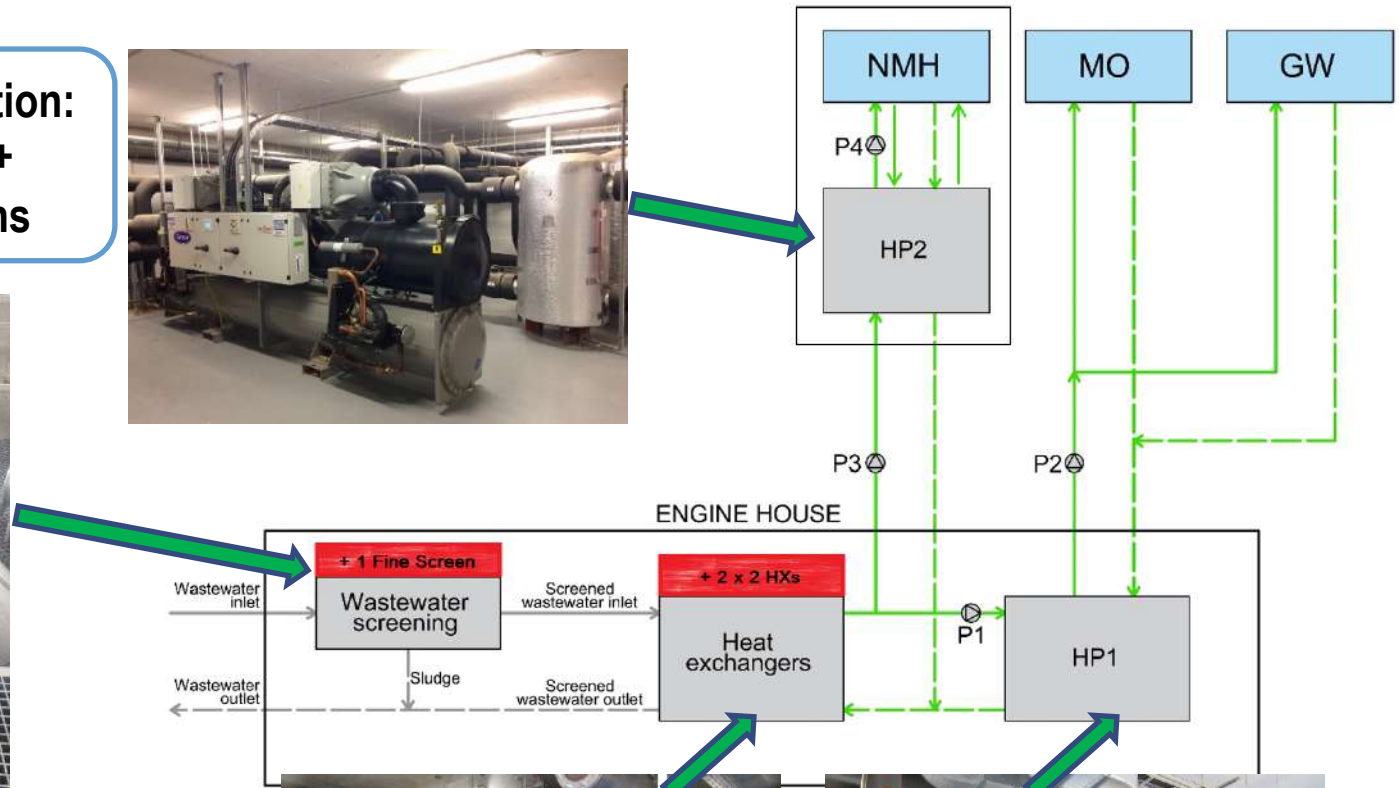




Demo 4 – Budapest: Configuration



Unique configuration:
Base system +
H4C Innovations



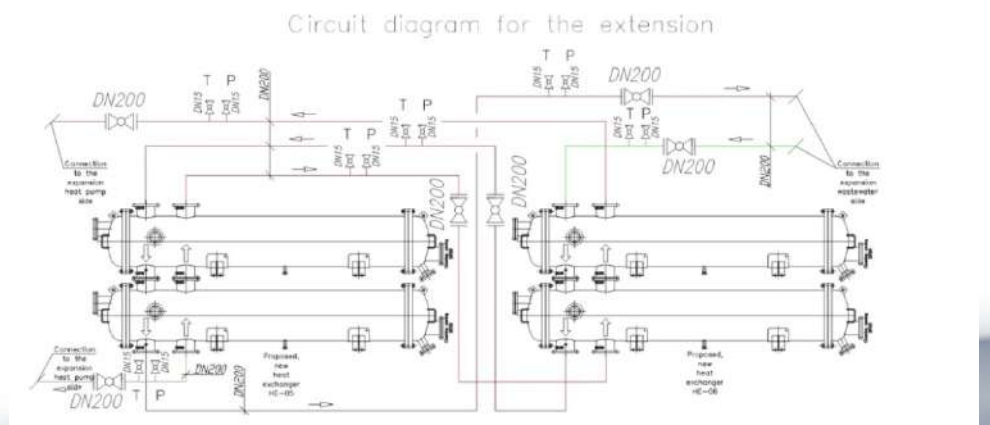
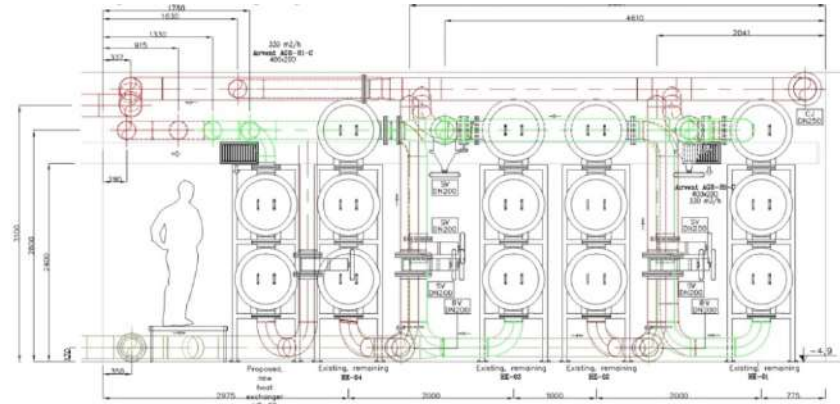
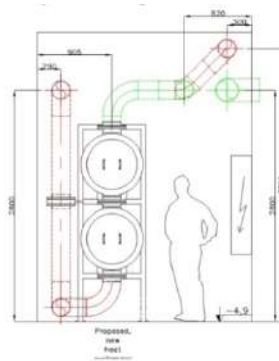
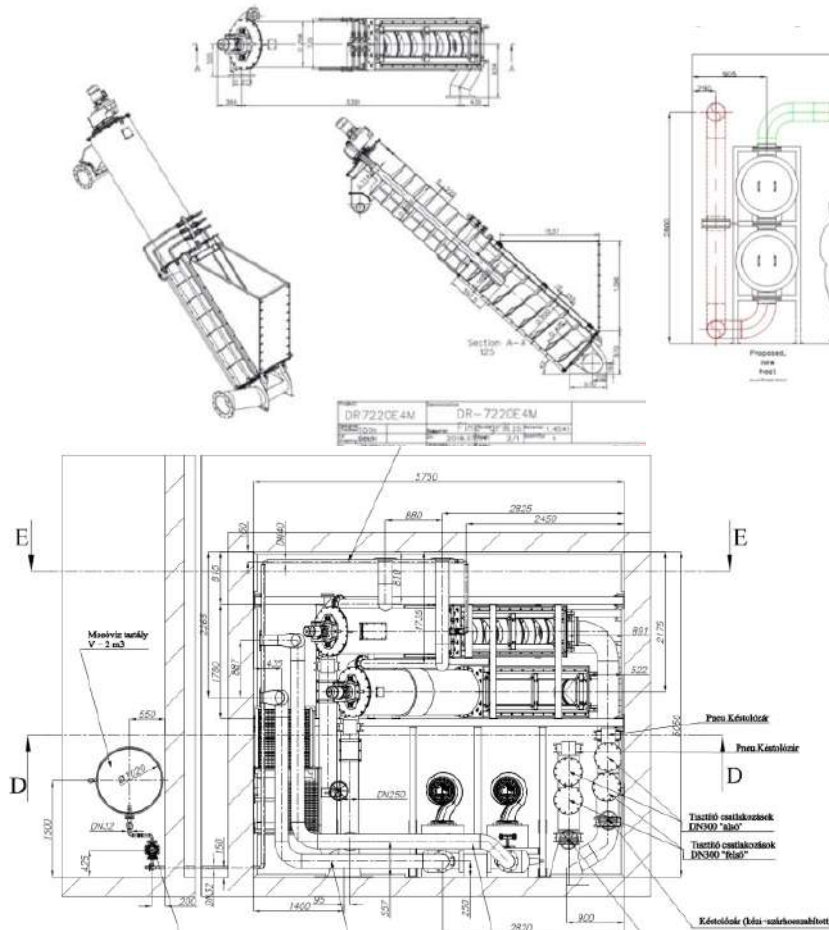
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Heat4Cool Project Innovations



- Innovative heat exchanger units (2xA2, 2xB2 – up to 750kW)
- New fine screen with built-in washer (250m³/h) developed



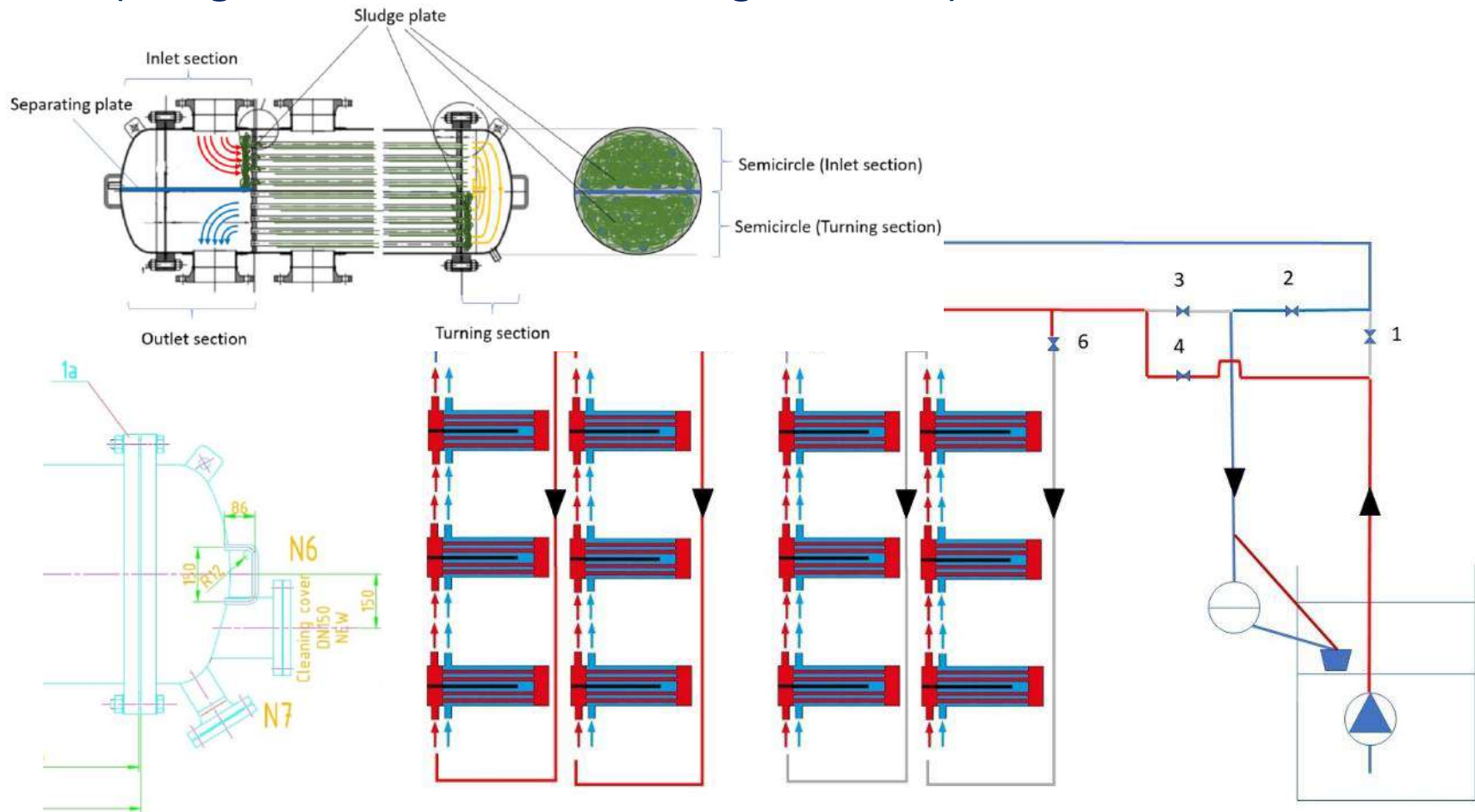
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Heat4Cool Project Innovations



- Optimising HX maintenance for efficiency gain and system security (design elements, new cleaning methods)





Demo Site Implementation - 2



- Heat Exchanger room before



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Demo Site Implementation - 3



- New HXs installation





Demo Site Implementation - 3



- Innovative 2x2 HXs installed





Demo Site Implementation - 3



- Screening room before





Demo Site Implementation - 3



- New Fine Screen installation



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Demo Site Implementation - 3



- New Screen in shaft



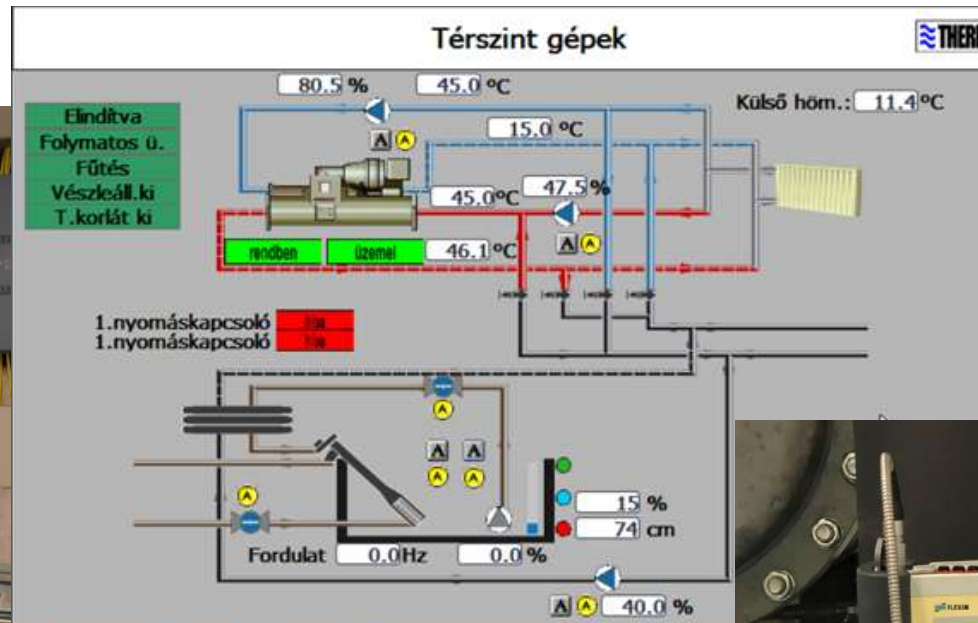
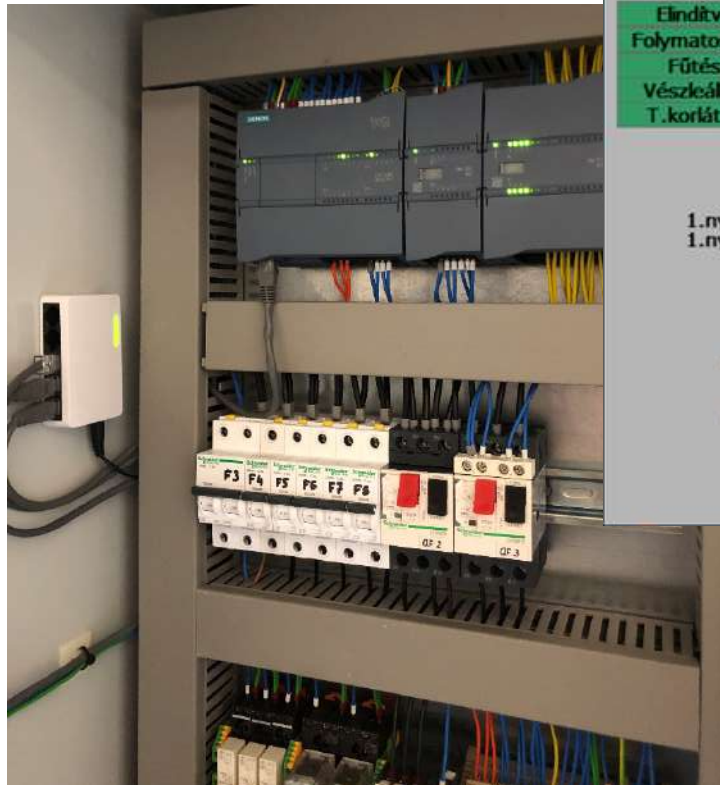
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SCADA, Monitoring Data collection



- Monitoring data collection for H4C: 10/2019 – 03/2021 *
→ Remote Monitoring to be maintained as part of the long term O&M services





Thank you.

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