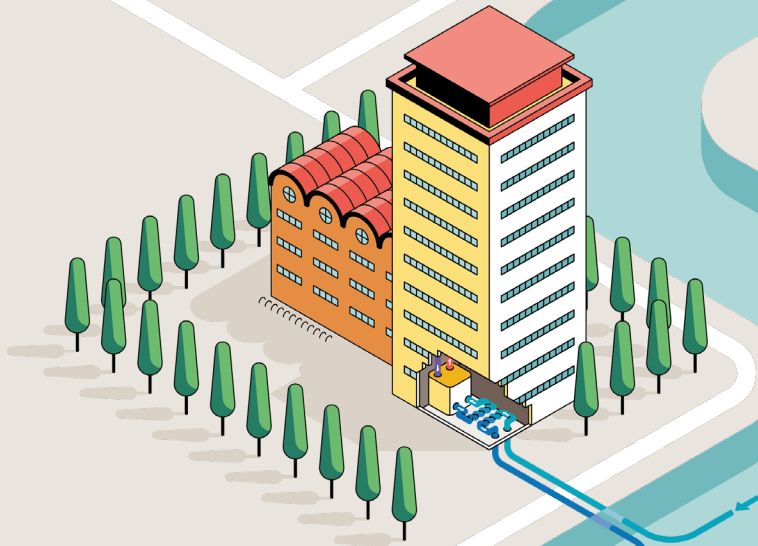


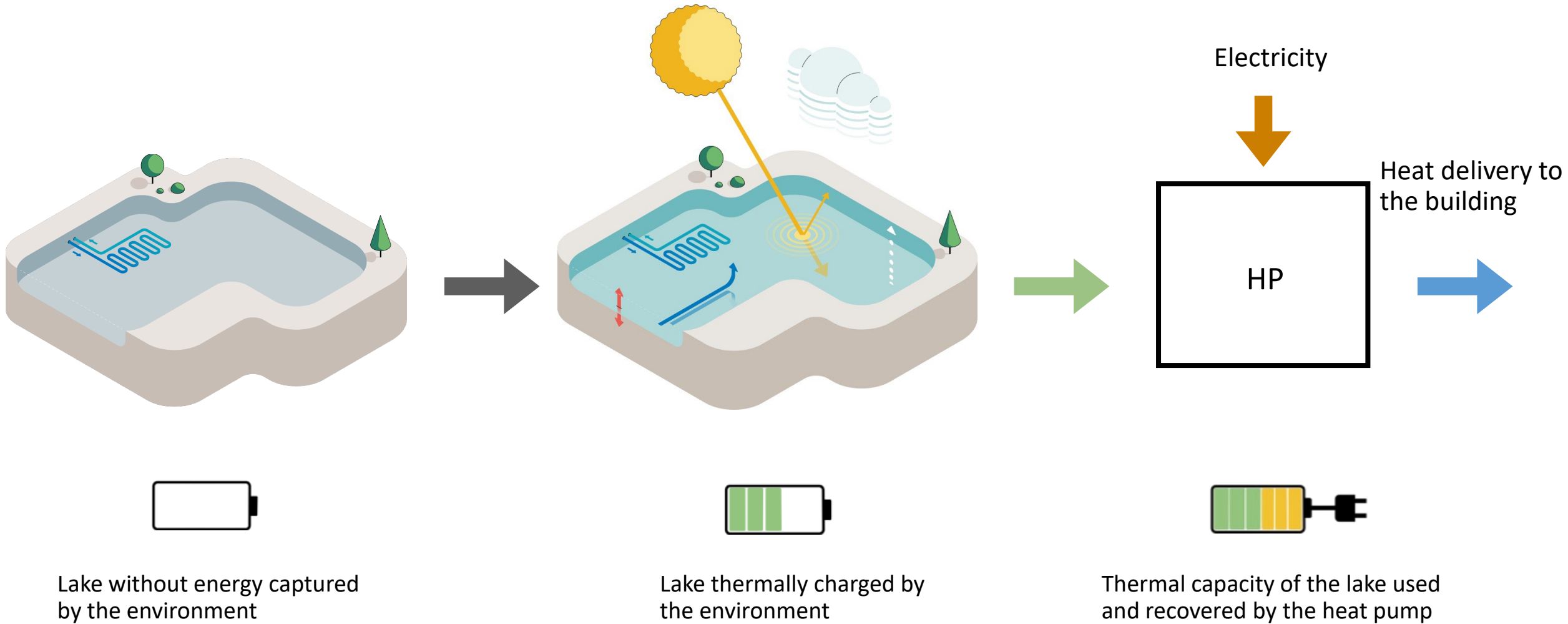
Closed & Open Aquathermal Systems



EXTRAQT

Jan Denayer – 28/11/2023

Surface water as a thermal battery ...



... connected to proven technologies

1 Heat exchange in the water

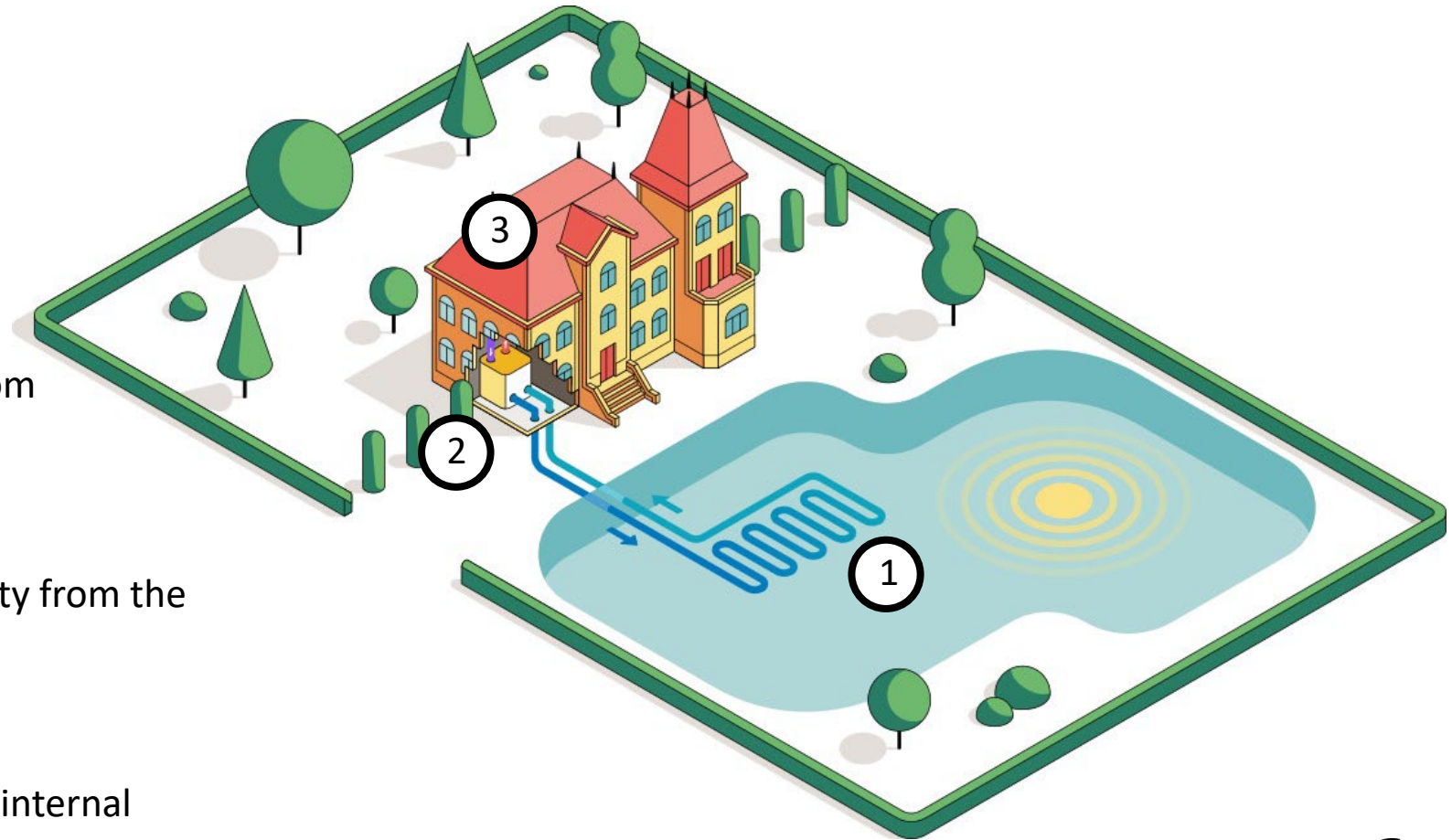
A plate heat exchanger extracts heat from the lake

2 Heat pump

Combines heat from water and electricity from the grid to supply hot water to the building.

3 Internal heating system

Hot water is supplied to the building by internal distribution systems.

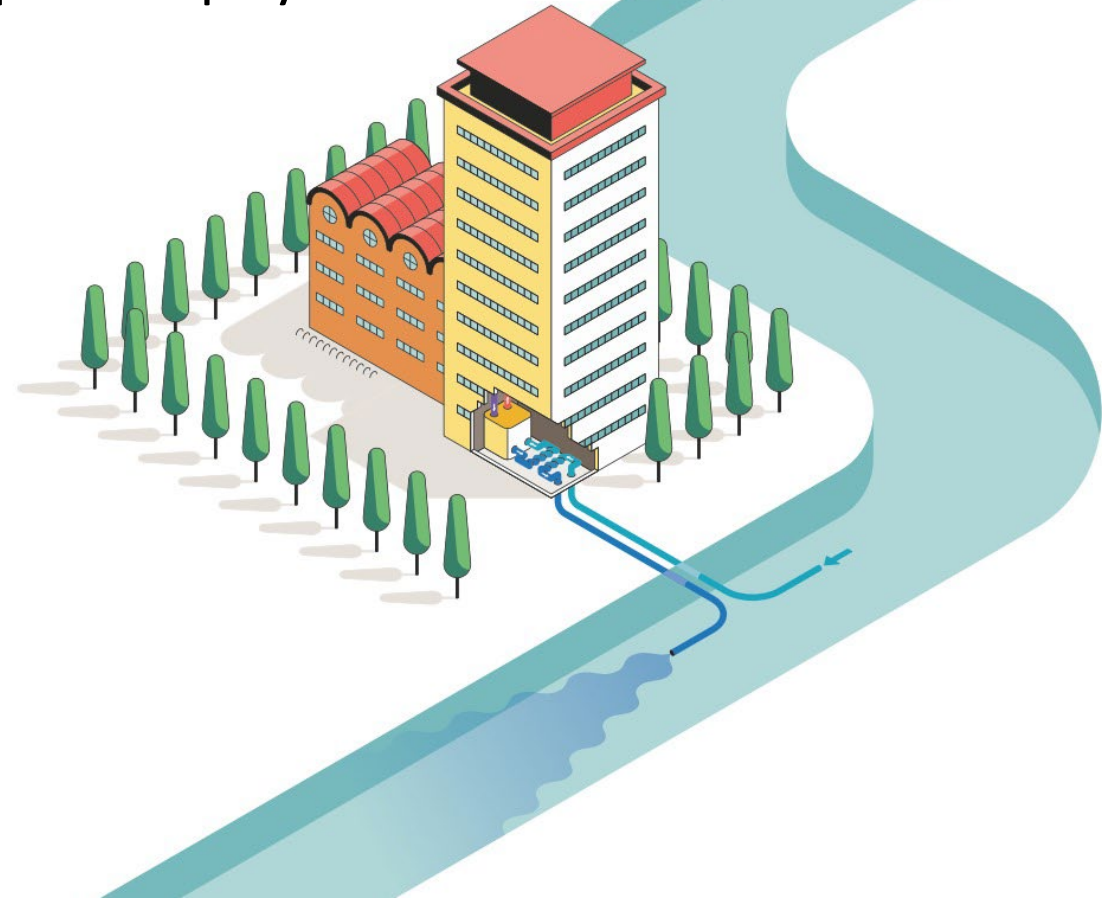


Different types of aquathermal systems

Closed Loop System



Open Loop systems



Different types of aquathermal systems

Closed Loop Systems



Heat exchanger in the water

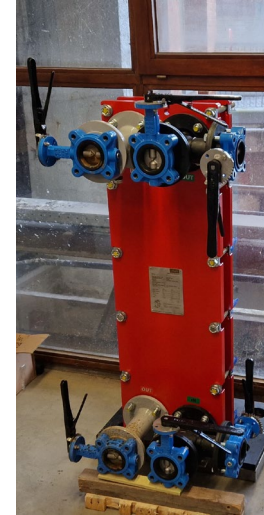
Open Loop Systems



Rough filter



Fine filter



Ti plate heat exchanger

Heat pump

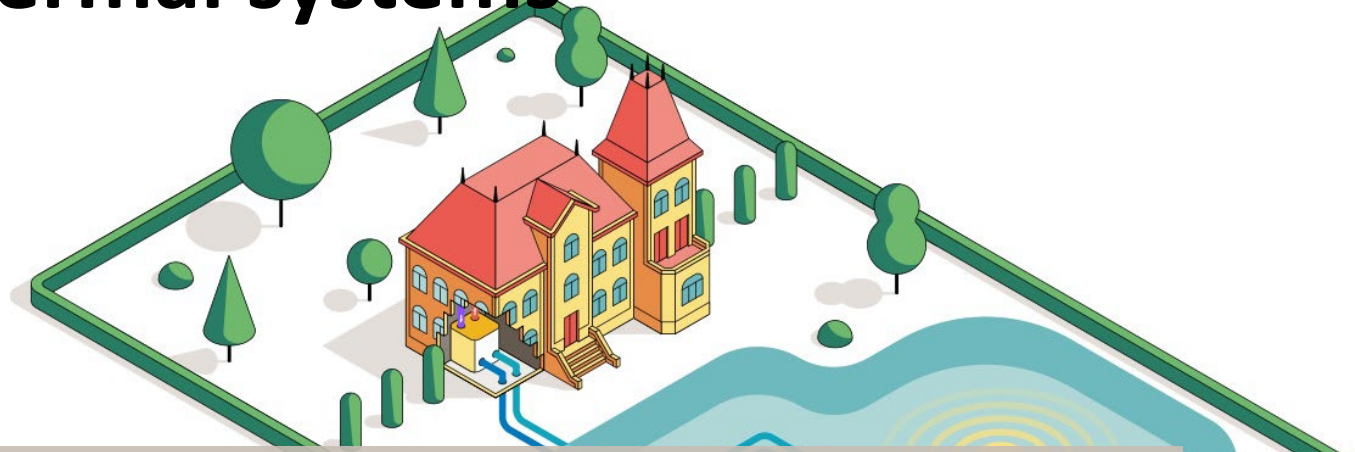


Heat pump

Connected with

Different types of aquathermal systems

Closed loop



Components

- Plate heat exchanger
- Piping
- Heat pump
- Storage tank
- Hot water boiler
- ...
- Monitoring system



Heat exchange in the waterbody, typically used in stagnant water



High thermal efficiency with COP's ranging up to 5 for maximal CO₂-reduction



Negligible thermal impact on waterbody when dimensioned in accordance with waterbody's capacity & dynamics



Low investment cost compared to geothermal drilling



Little to no maintenance due to closed, filterless system - no risk of freezing



No visibility, but an obstruction in waterbody

Different types of aquathermal systems

Open loop



Components

- Pump
- Filtering
- Plate heat exchanger
- Piping
- Heat pump
- Storage tank
- Hot water boiler
- ...
- Monitoring system



Heat exchange on land, typically used on flowing and/or navigatable water



High thermal efficiency with COP's ranging up to 5 for maximal CO₂-reduction



Negligible thermal impact on waterbody when dimensioned in accordance with waterbody's capacity & dynamics



Higher investment cost due to material selection and filtering



Intensive filtering required, critical temperatures when approaching 0°C



Little visibility & limited obstruction in waterbody

Castle de Merode -Westerlo

Cases



Heat exchanger



Piping



Heat pump

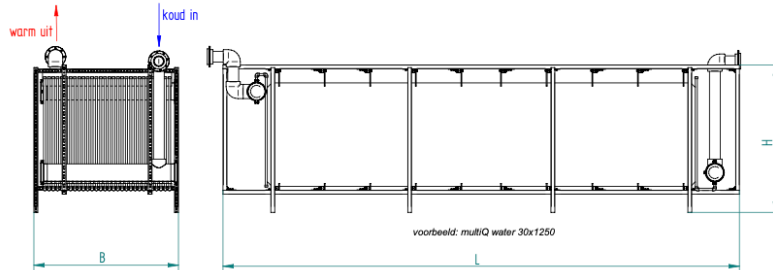
➔ **Data** : Water volume: **5000 m³**, Heat pump power: **50 kW**, Temperature drop: **0,4°C**, CO₂-reduction : **25 ton/year**, SPF: **3,3**

Castle de Merode -Westerlo

Cases

multiQ water 1250 - aquathermie module							
type	artikel nummer	vermogen	absorptie oppervlakte	afmetingen	aansluitingen	aanbevolen debiet	gewicht leeg/vol
multiQ water 30x1250	E306999995	WP = 100 kW bron = 80 kW	180 m ²	L 6,0m x H 1,75m x B 1,70 m	flens: 2 x dia125mm	WP: 24 m ³ /h; 400 l/min	1125 kg / 635 L
multiQ water 38x1250	E306999996	WP = 125 kW bron = 100 kW	228 m ²	L 6,0m x H 1,75m x B 2,20 m	flens: 2 x dia125mm	WP: 30 m ³ /h; 500 l/min	1760 kg / 775 L

Verdere versies op aanvraag. Technische wijzigingen en wijzigingen in het assortiment voorbehouden. Geen aansprakelijkheid voor (druk)fouten.



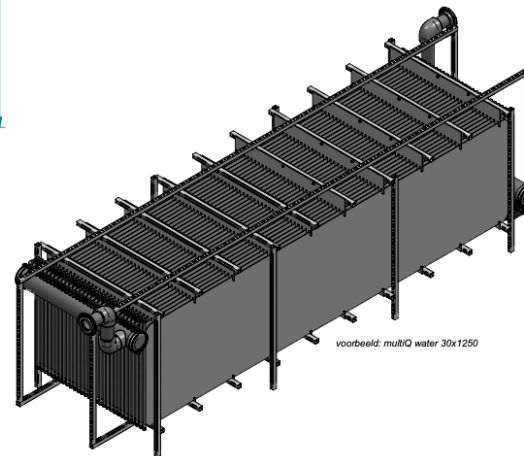
datablad

multiQ water 1250 - aquathermie module

Het multiQ water aquathermie systeem bestaat uit onbedekte en volledig doorstroomde warmtewisselaars, een roestvrijstalen frame (V2A) en leidingen en wordt compleet gemonteerd geleverd.

Ideale toepassingsgebieden zijn:

- Actieve energiebron van brine / water-warmtepompen, zowel voor verwarming als voor koeling
- Koellichaam voor het koelen van objecten onder de juiste temperatuuromstandigheden
- Warmterugwinning uit afvalwater, grijs water en procesmedia



Eigenschappen en kenmerken:

- Kan in cascade worden geplaatst
- Kan worden gebruikt in (gering) stromend water of andere vloeistoffen.
- Weinig vatbaar voor vervuiling
- Makkelijk te onderhouden
- Goede materiaalbestendigheid door toepassing van Polypropyleen en roestvrij staal



www.multiQ.energy
blad: E-50-0138-22

Status: 12.12.2022

Properties

- Can be placed in cascade
- Can be used in (low) flowing water or stagnant water
- Little sensitive to contamination
- Easy to maintain
- Good material resistance due to use of PP and stainless steel

De volgende punten zijn essentieel bij het voorbereiden en installeren:

- multiQ plannings- en bedieningsinstructies
- aanbevolen werkdruk 1,5 bar; maximum werkdruk 2,5 bar
- Temperatuurbereik -20 ° C tot + 55 ° C
- De warmtewisselaar moet volledig in het water zijn ondergedompeld, vastgezet en met flexibele leidingen worden aangesloten.
- Bescherming van de warmtewisselaar tegen drijvend vuil of andere externe schade
- Alle installatiewerkzaamheden dienen vakkundig en zorgvuldig te worden uitgevoerd.

Castle de Merode -Westerlo

Cases



Dijlemolens - Leuven

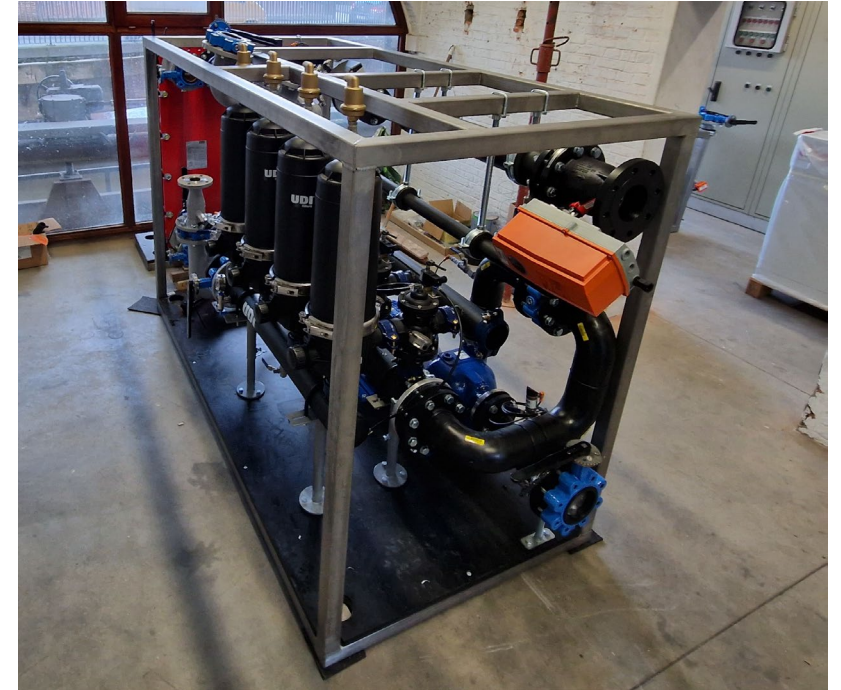
Cases



Rough filter



Ti heat exchanger



Fine filtration with disc filters

➔ **Data** : Water flow: $> 1 \text{ m}^3/\text{s}$, Heat pump power: **90 kW**, Temperature drop: **0,016°C**, combined system with gas installation

Dijlemolens - Leuven

Cases

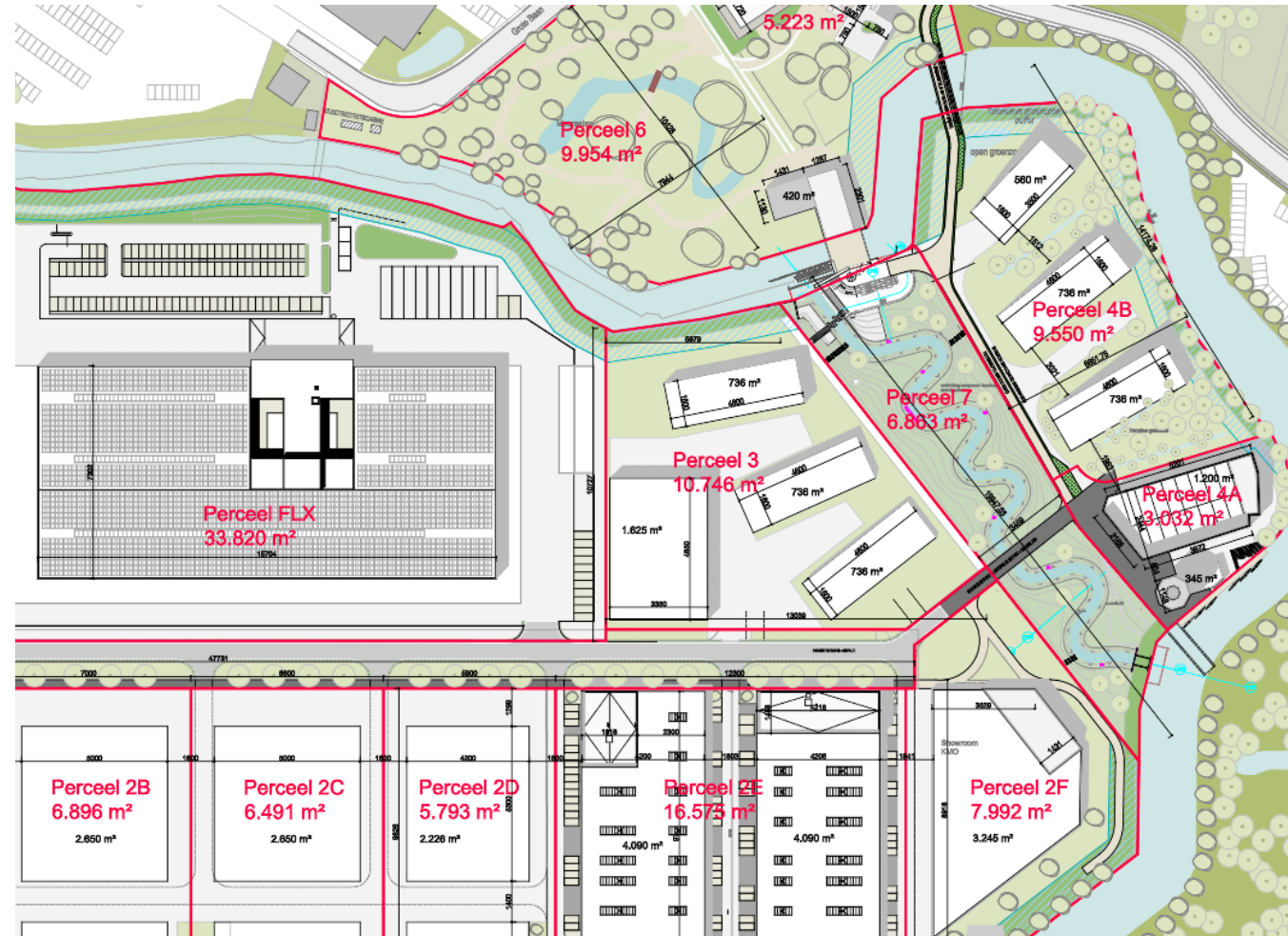


Properties

- Small footprint
- Fine filter capacity
- Automatic back flush rinsing
- Minimal rinse water loss
- Continuous service

Catala - Drogenbos

Cases



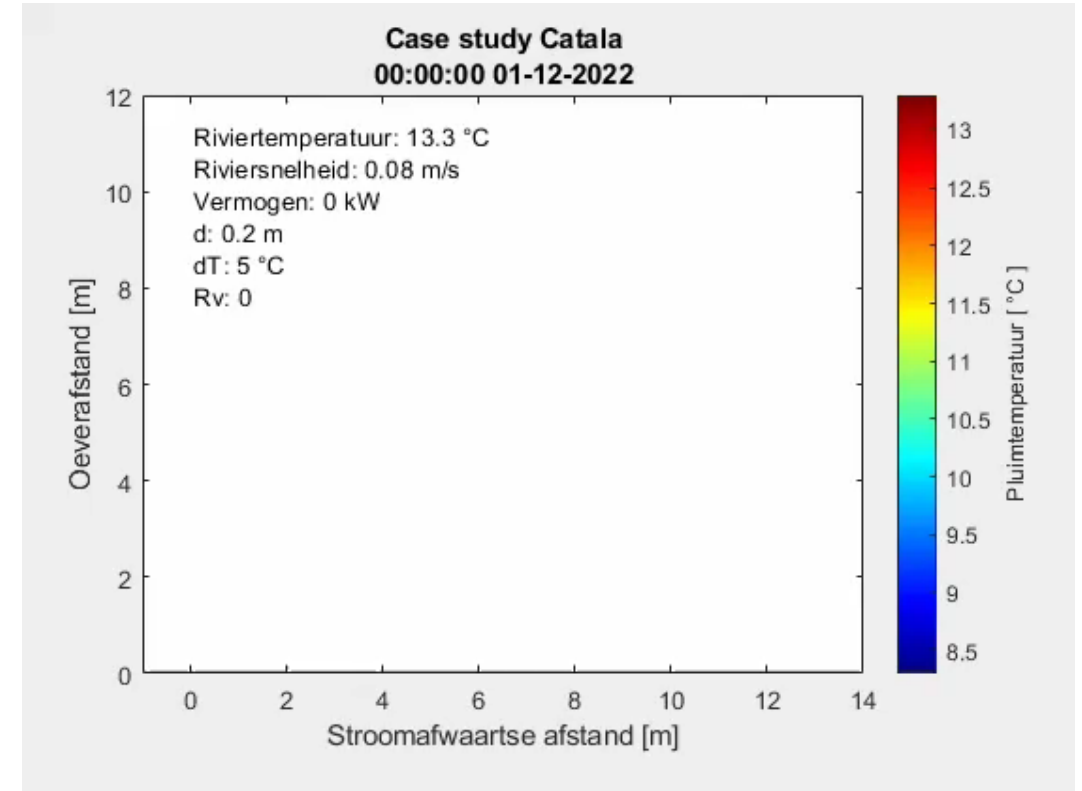
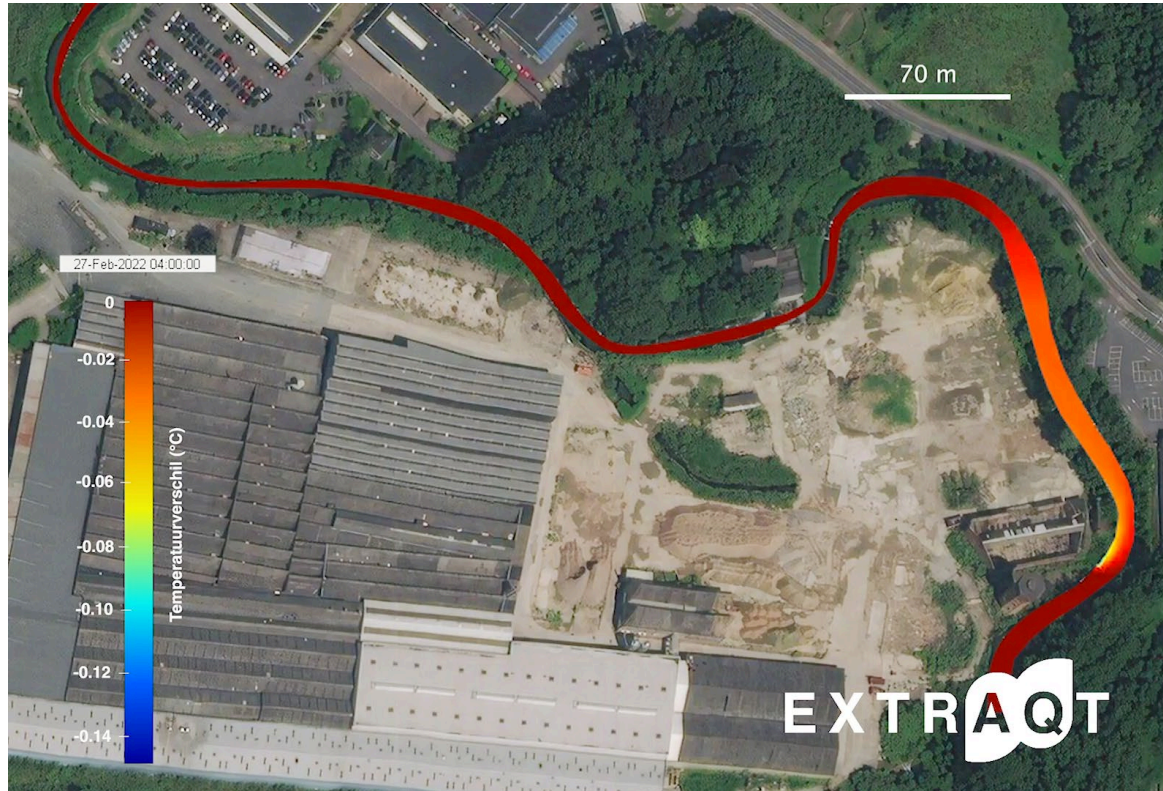
Catala - Drogenbos

Cases



Catala - Drogenbos

Cases



www.extraqt.be

