

Transitioning Energy and Landscapes

Exploring infrastructural, architectural + landscape symbiosis

Project Booklet Part 2

Michaela Mallia

Transitional Territories Studio 2018-2019

North Sea: Landscapes of Coexistence

8th July 2019

Under the supervision of

dr. ir. Nicola Marzot

ir. Sjaap Holst

dr. ir. Taneha K. Bacchin

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Clynelish consists of:

1. Brora distillery
2. Clynelish distillery
3. Clynelish farm
4. A collection of houses.

After 30 years of closure, Brora distillery is reopening in 2020 due to its cult status in the whiskey industry. Due to its significance, and even though the cistern has been sized to serve the whole area, the following proposal has primarily focused on water and electricity delivery to this distillery.

To re-iterate from the previous booklet, the area has already been experiencing water shortages in the summer, with Clyne Burn drying up in the summer months. Based on extrapolated information, the distilleries use the following amount of water:

Brora Distillery

9,360,000L./year without cooling
37,520,000L./year with cooling

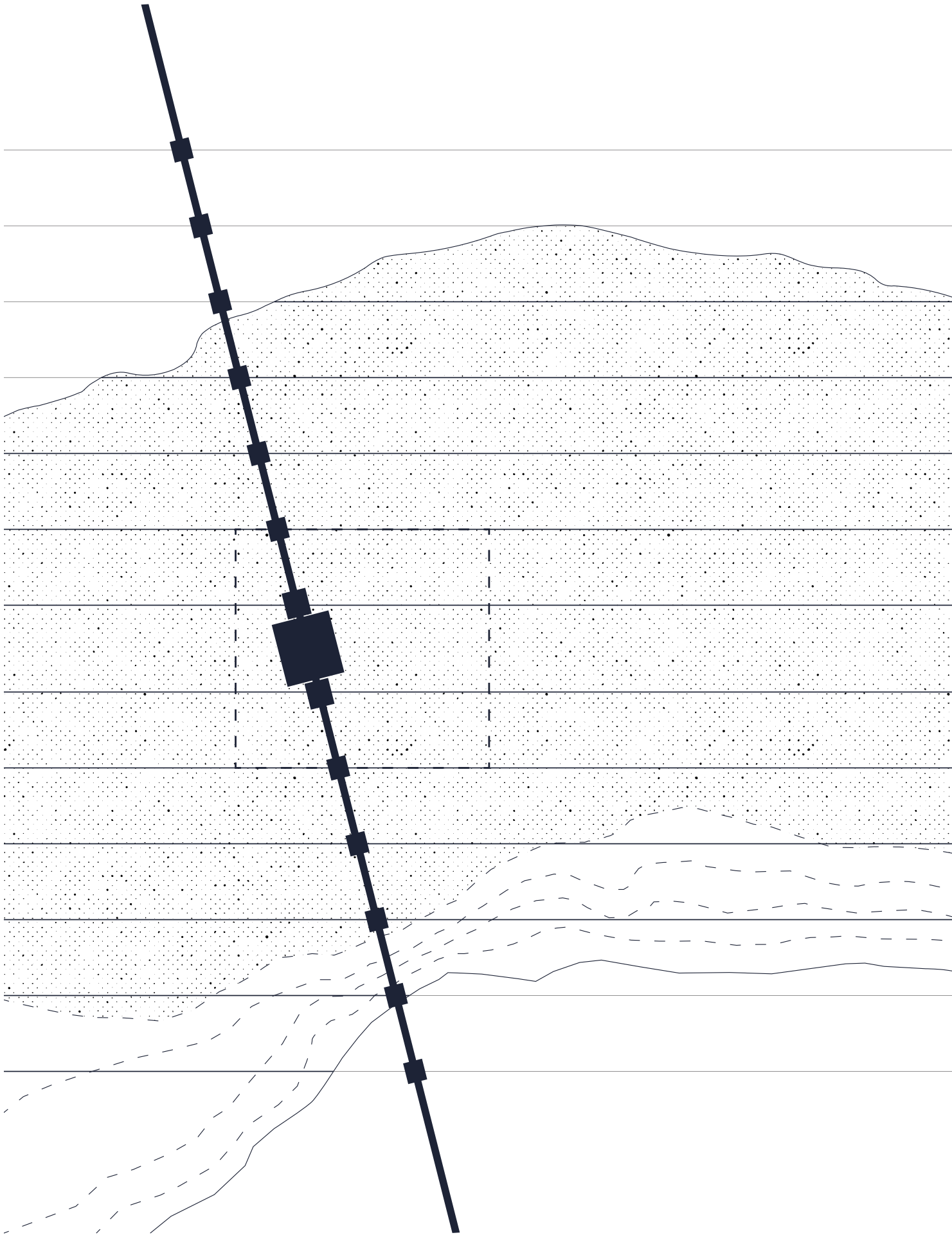
Clynelish Distillery

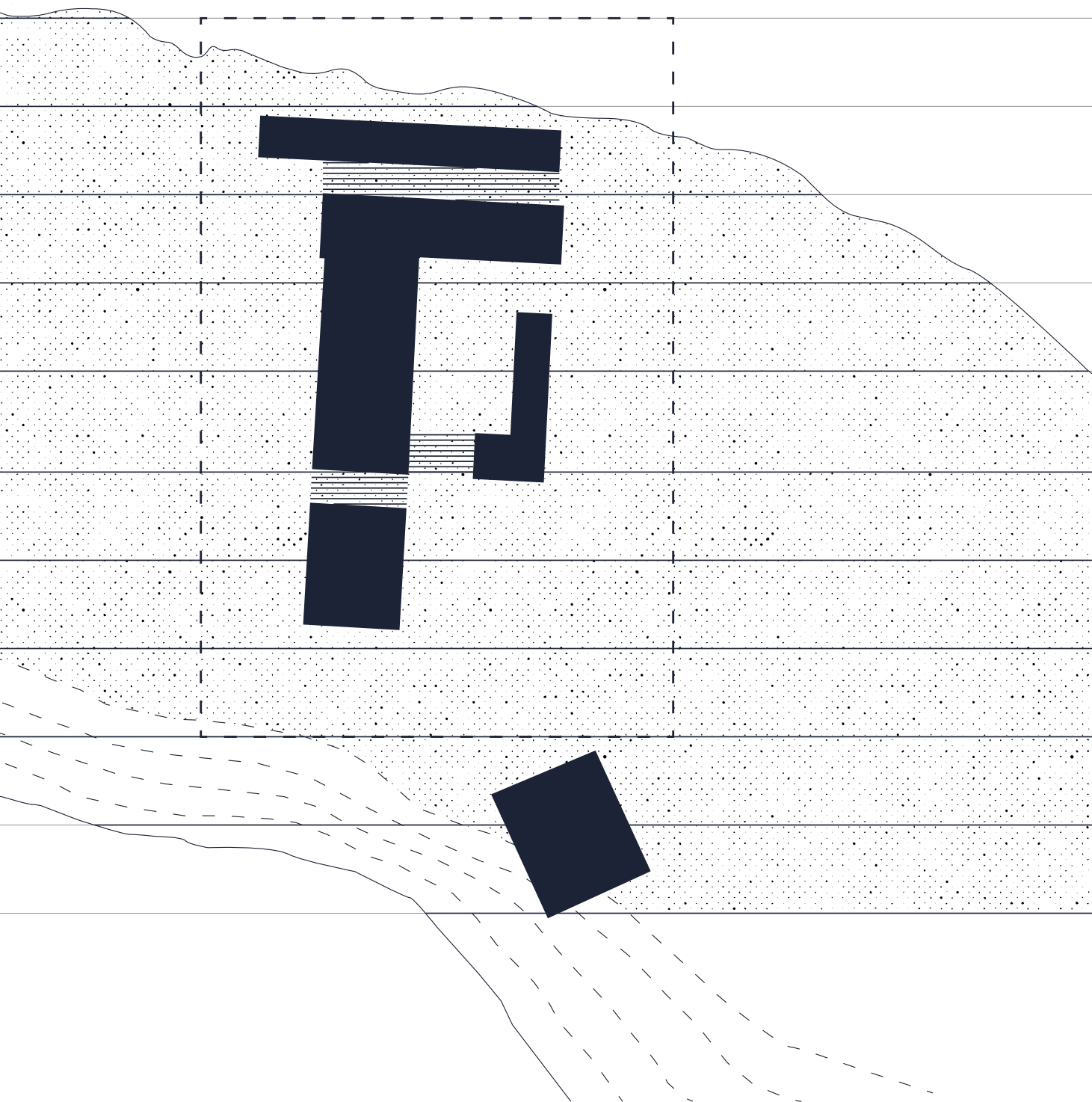
56,160,000L./year without cooling
225,120,000L./year with cooling

Existing Clynelish site plan

1:2000







The Architectural Proposition

The site scale proposal concentrates on electricity and water delivery to Brora Distillery. The point of departure in the delivery field are type-adjusted aqueduct columns: two water spouts columns and an inhabited sub-station column. The latter feeds low voltage electricity to the distillery via a channel under the main site axis. The water spouts feed water into a shallow pool that tops a subterranean water cistern. When water is needed, sluice gates release water into an expansive, gridded reed purification field (which is rainwater). Once cleaned, water is channelled into two new copper-clad water vats, which have been grafted onto two ends of the distillery.

The building scale proposal focuses on a new typological arrangement for Brora distillery, which focuses on water and heat recovery, maximising energy efficiency within the whiskey making process, while still maintaining functionality. The stored water will, firstly, be used in the distillation condensation process and, once heated up, used in the mashing and aging stages of the whiskey production.

This project's programme illustrates an example of a how the electrical infrastructure can be multi-functional by: responding to site-specific geographical conditions; and, in turn, is able to support a threatened existing local industry or practice. The project's cultural value is supported by the electrical infrastructure itself.

The Architectural Design

The site consists of a clear hierarchy of the electro-aqueduct and the consumer, that is Brora distillery, as energy archipelagos in the delivery field. There is a clear natural boundary that clashes with the superimposed grid, created by Clyne burn and the existing contours.

A delivery grid comes off the electro-aqueduct connecting a subterranean cistern, that can store 3 months' worth of water, to the two copper water vats that have been grafted onto the existing distillery. The water vats have been sized to that they can store a week's worth of water. The choice to use copper stems from the desire to make the storage vessel more ornate and site responsive at the building scale; the gesture of copper harks to the distillery equipment inside.

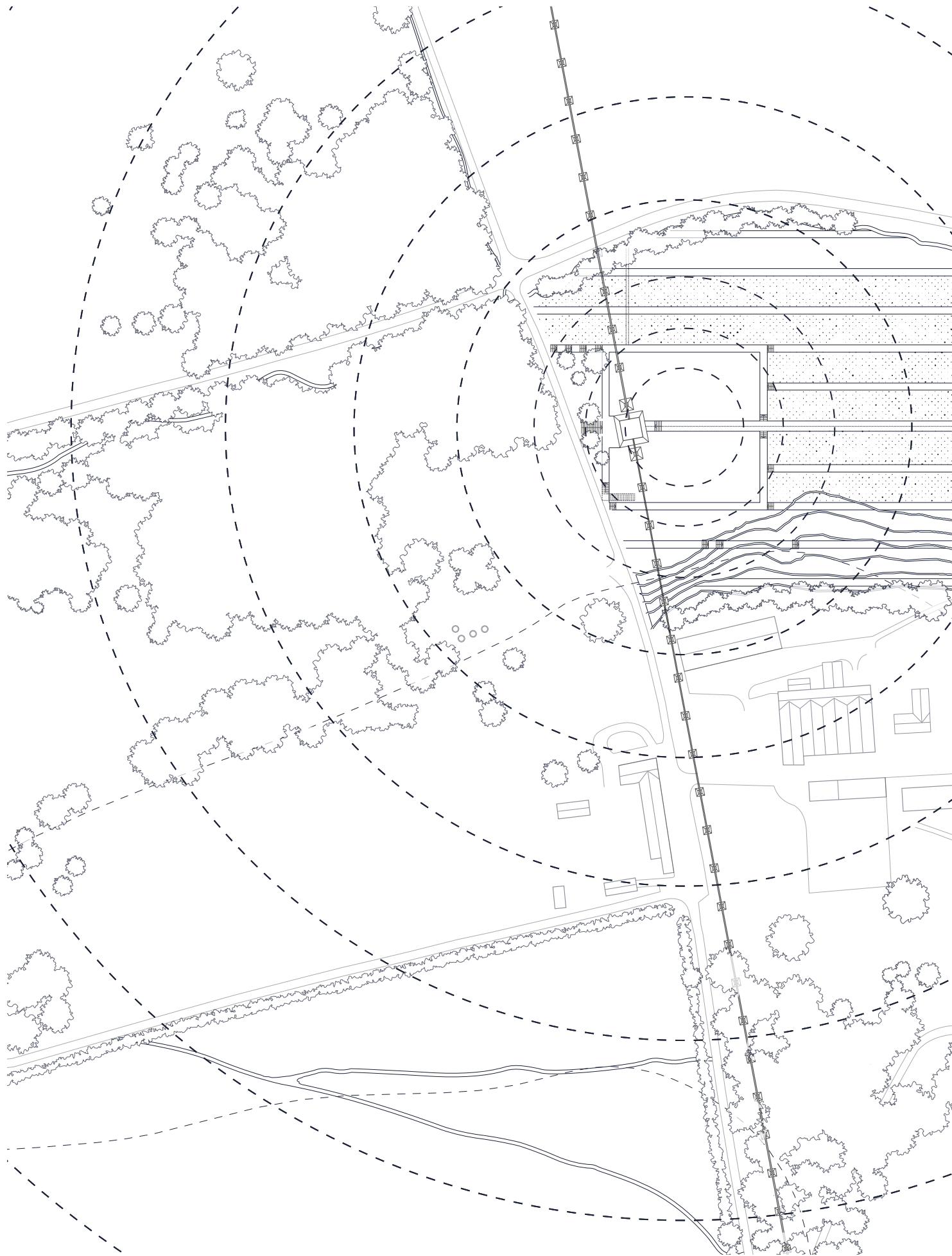
The water vats sit within courtyards, again a gesture to the water coming from the landscape. Thus, landscaping is always present in the new ground zero (wild or not), acting as the connective tissue at two scales: the reed field at the site scale; and also the 'sub-grided' courtyard interventions at the distillery scale.

Proposed Clynelish site plan
1:2000



As previously mentioned, one can speculate that future village growth will occur around a primary resource such as electricity and water. As such, the delivery field is also a public garden, which is open to the public. As such, densification will occur around a green node. The sub-station will, for security reasons, not be open to the public.

Proposed Clynelish green node
1:2000

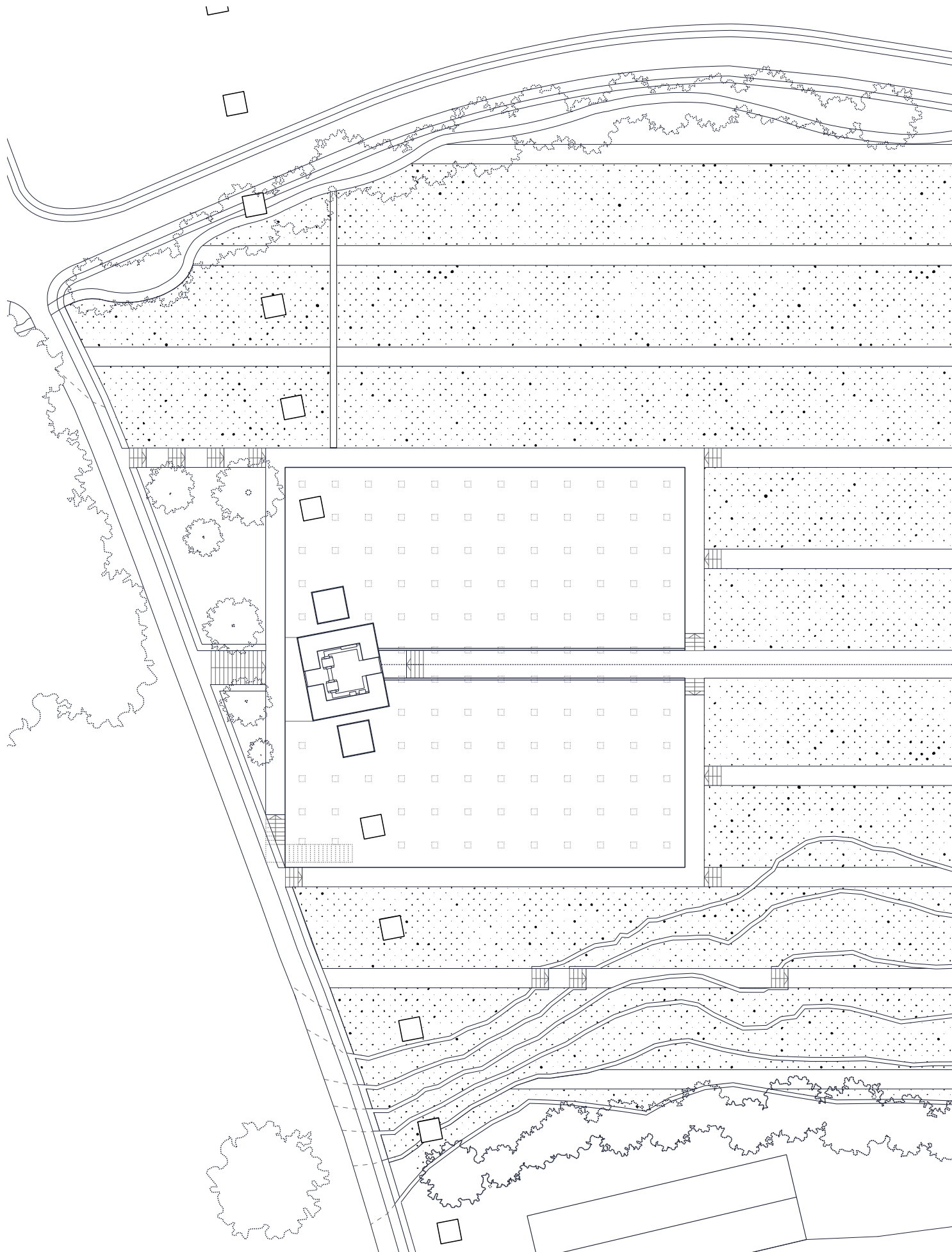


The delivery field's programme consists of:

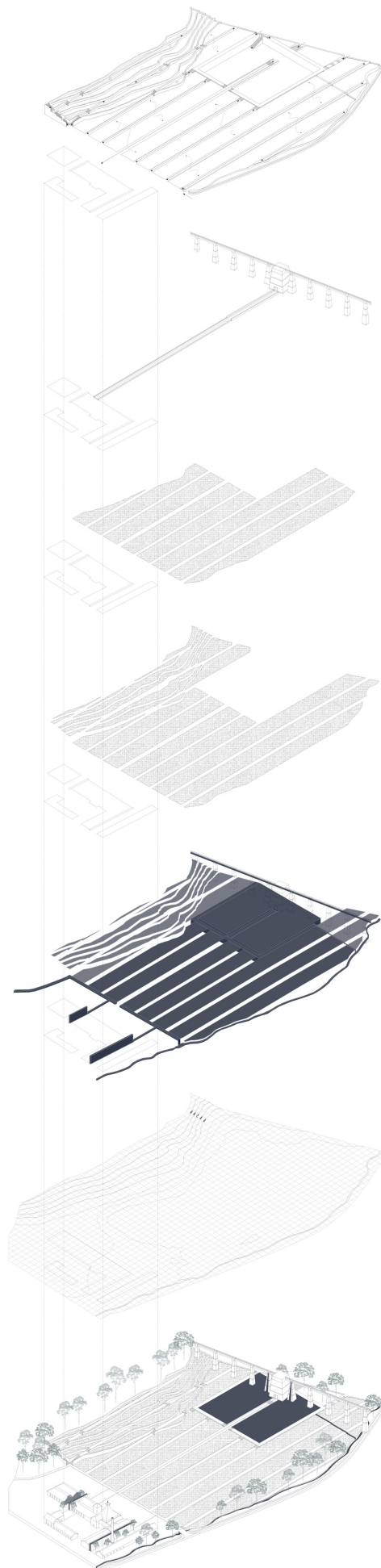
1. the aqueduct cutting through the site
2. the underground water cistern
3. horizontal flow reed bed purification system
4. underground water and electricity channels
5. the grafted water vats
6. the new distillery footprint and retrofit.

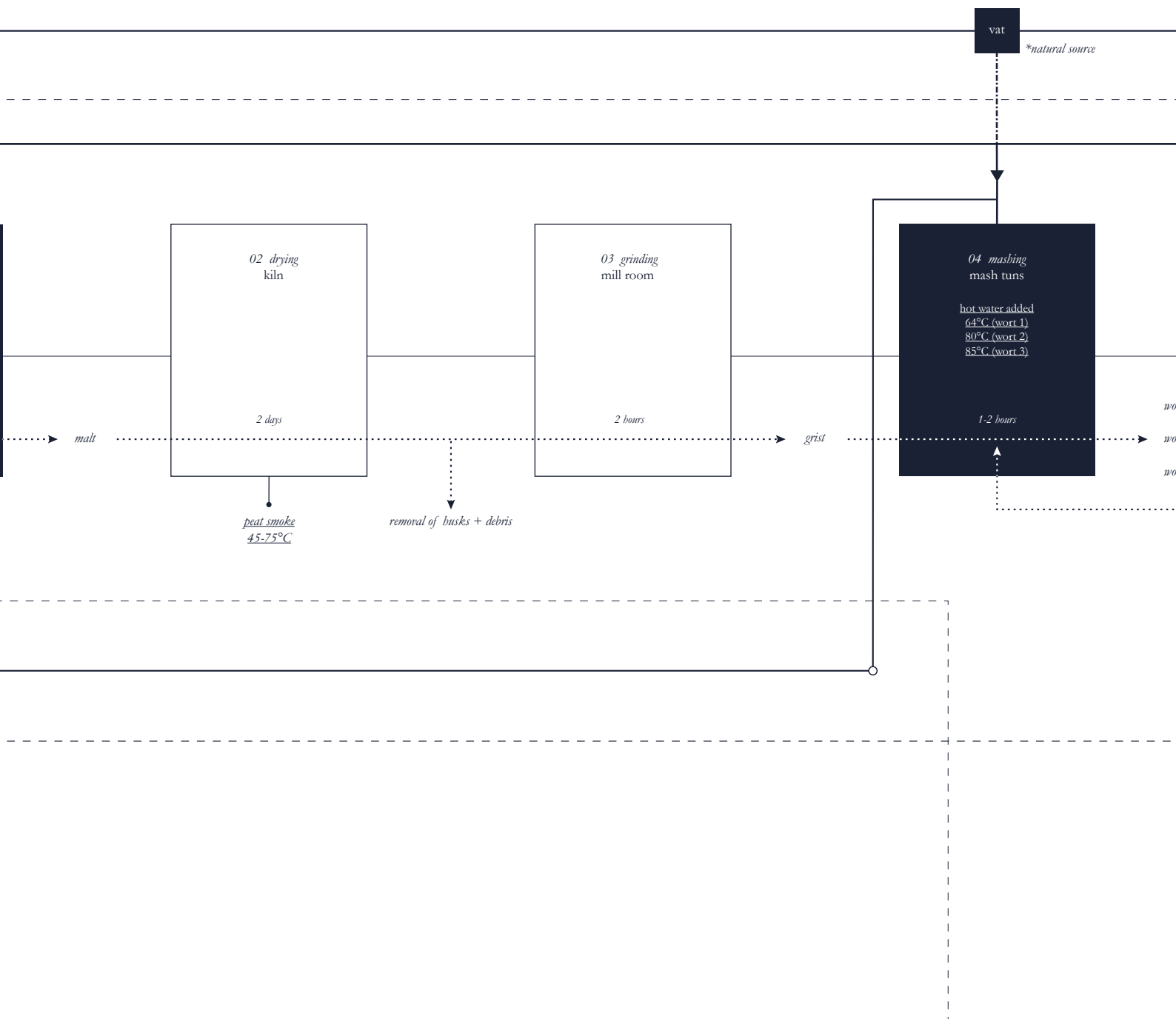
Proposed plan

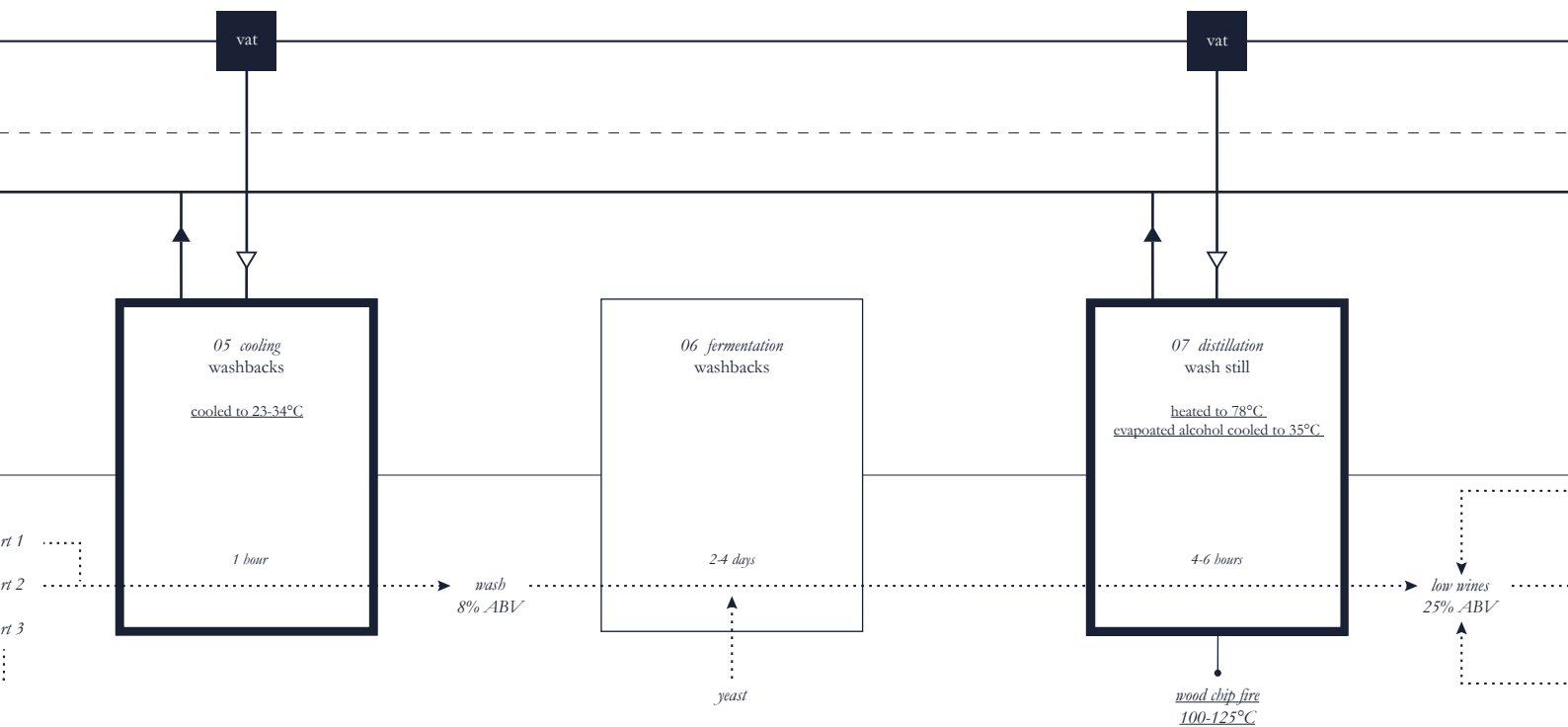
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Delivery field mechanism





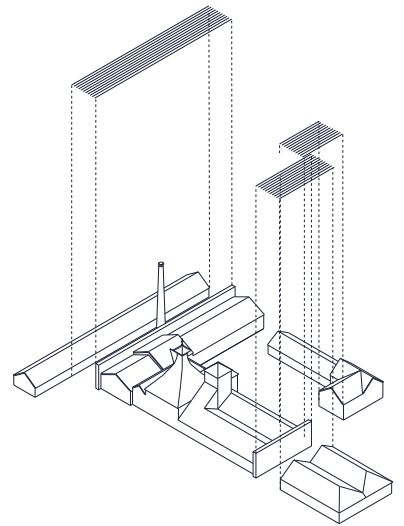
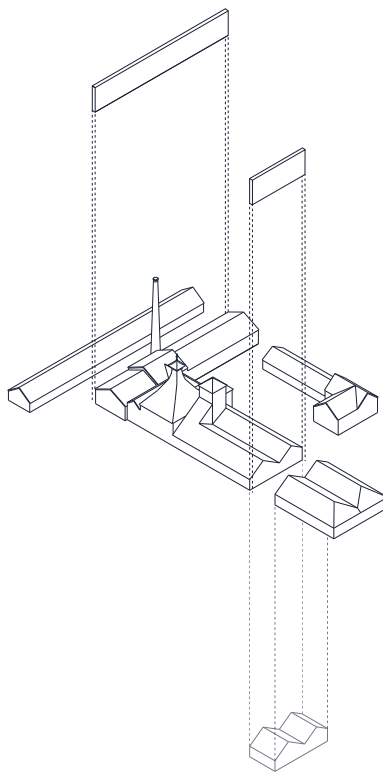
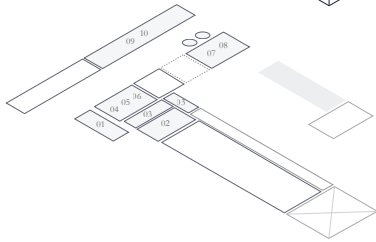
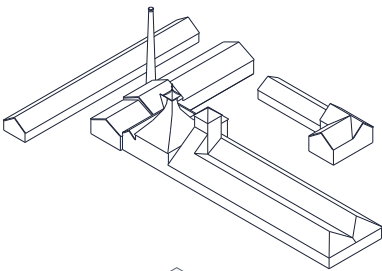
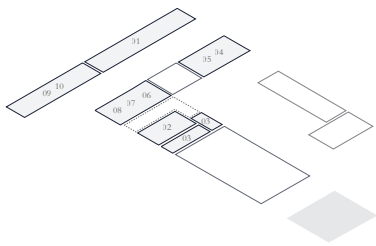


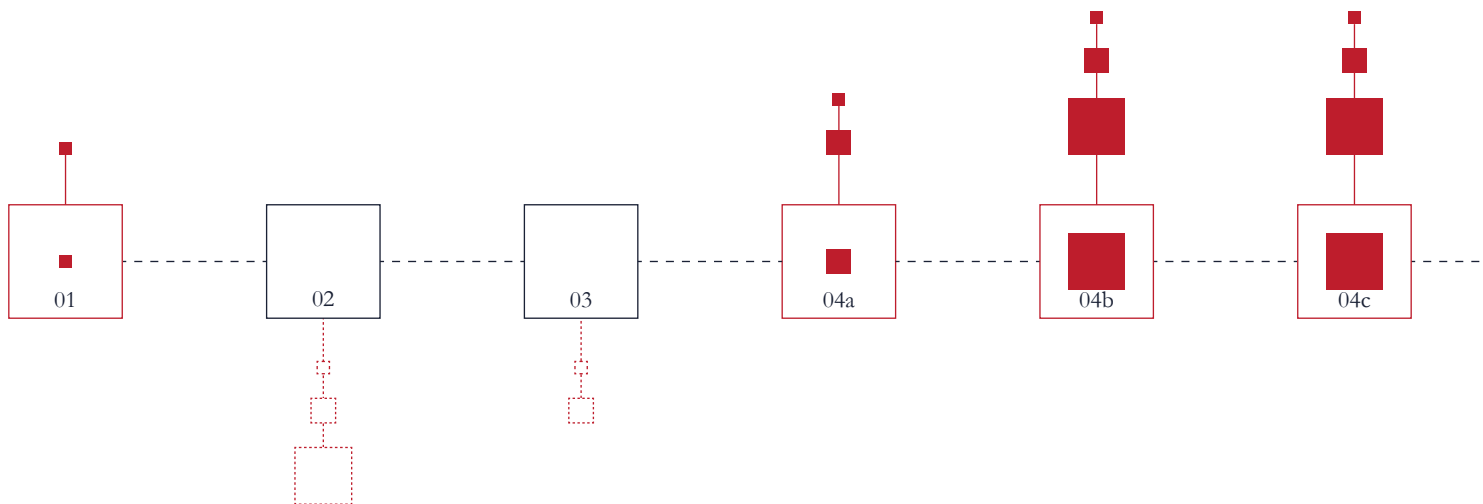
The distillery is intervened with in three stages. Firstly, there is the typological rearrangement to be reorientated around heat recovery, rather than linear process (this is expressed in the diagram on the previous page).

Secondly, a portion of currently unused space in the building was subtracted from the volume. The water vats have then been grafted onto these walls, creating a large copper backdrop in the areas that directly use water: firstly, in the whiskey making rooms; and secondly, the plant room.

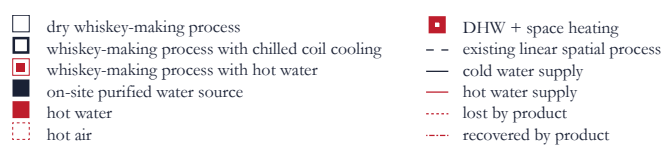
Lastly, the creation of symmetrical courtyards adjacent to the water vats stems from the desire to symbolically gesture that the water always hails from the areas landscape.

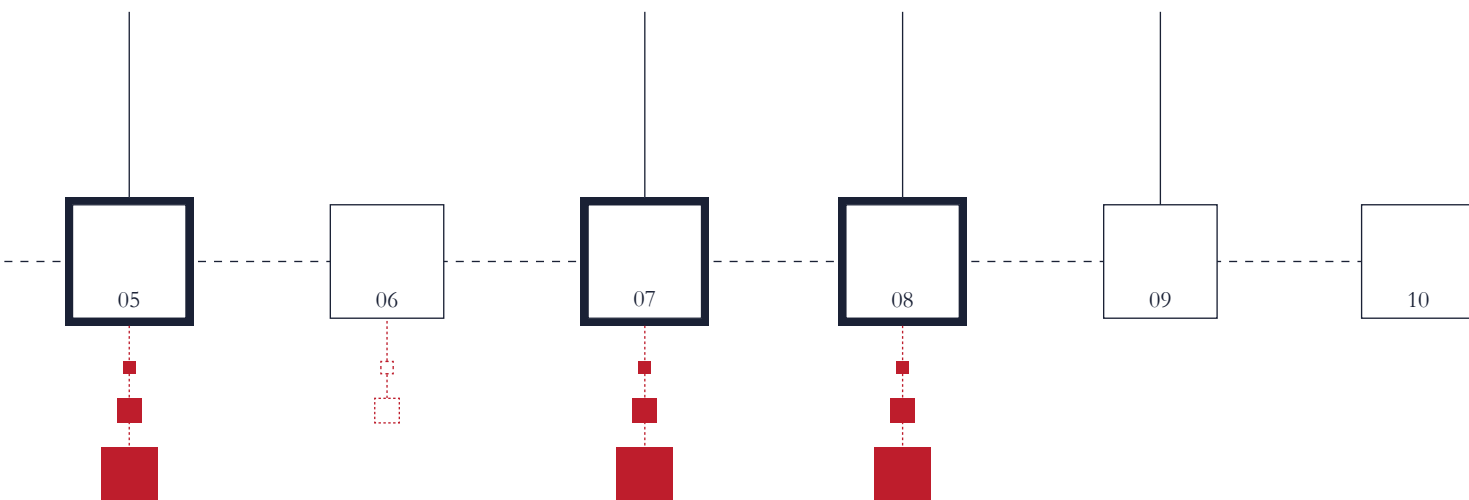
Proposed distillery intervention

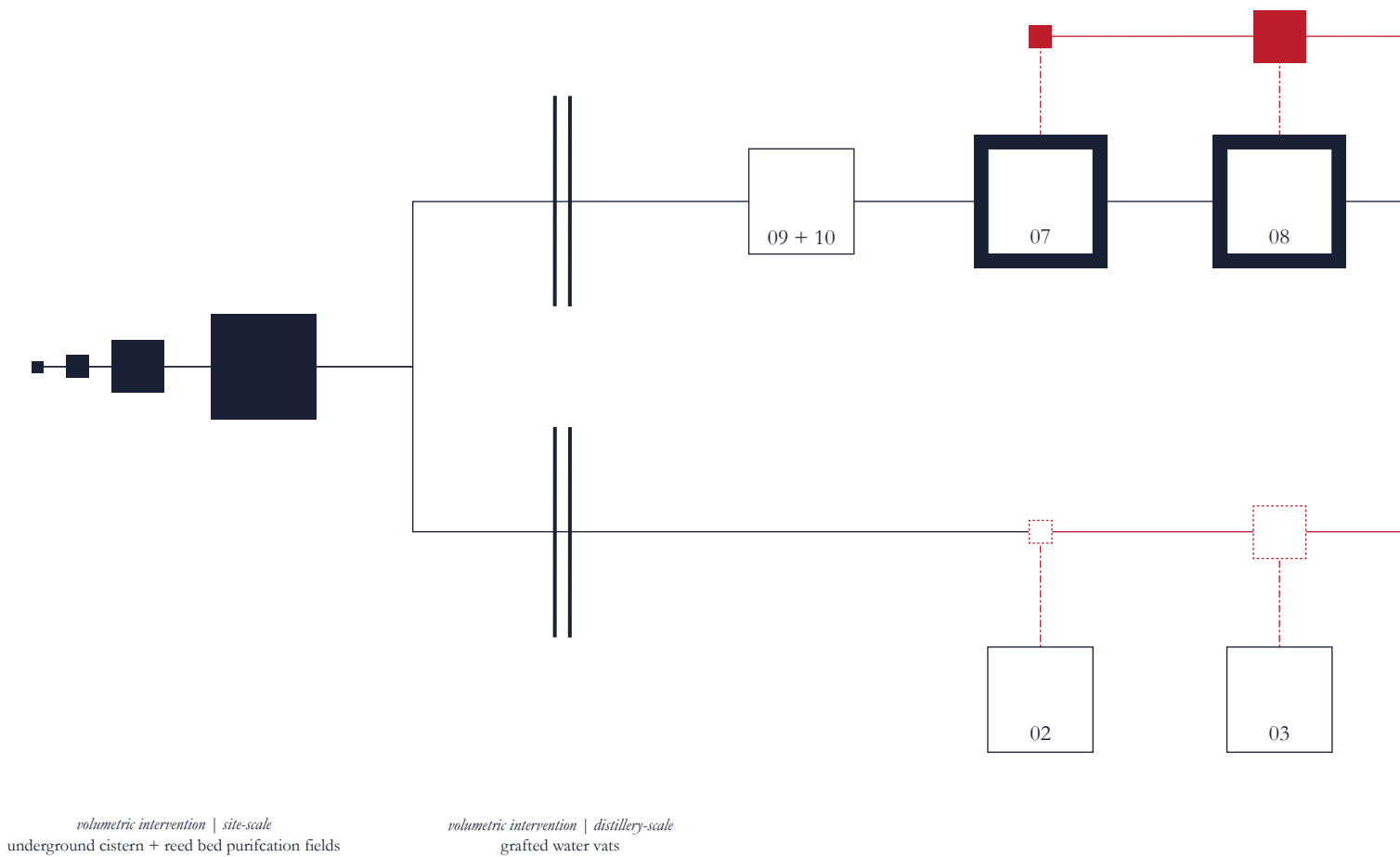




Existing linear typology

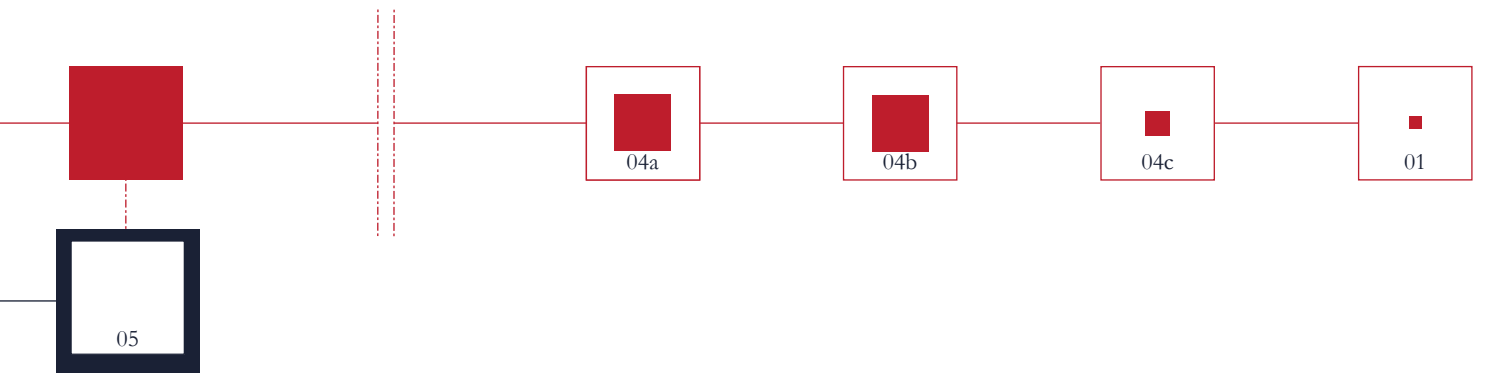






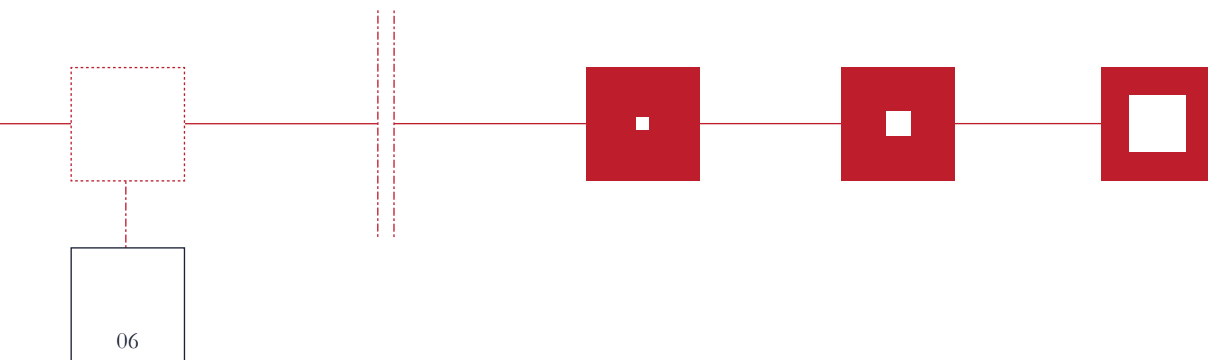
Proposed typological subversion

- | | |
|--|---------------------------------|
| dry whiskey-making process | DHW + space heating |
| whiskey-making process with chilled coil cooling | existing linear spatial process |
| whiskey-making process with hot water | cold water supply |
| on-site purified water source | hot water supply |
| hot water | lost by product |
| hot air | recovered by product |



whiskey process cold water zone

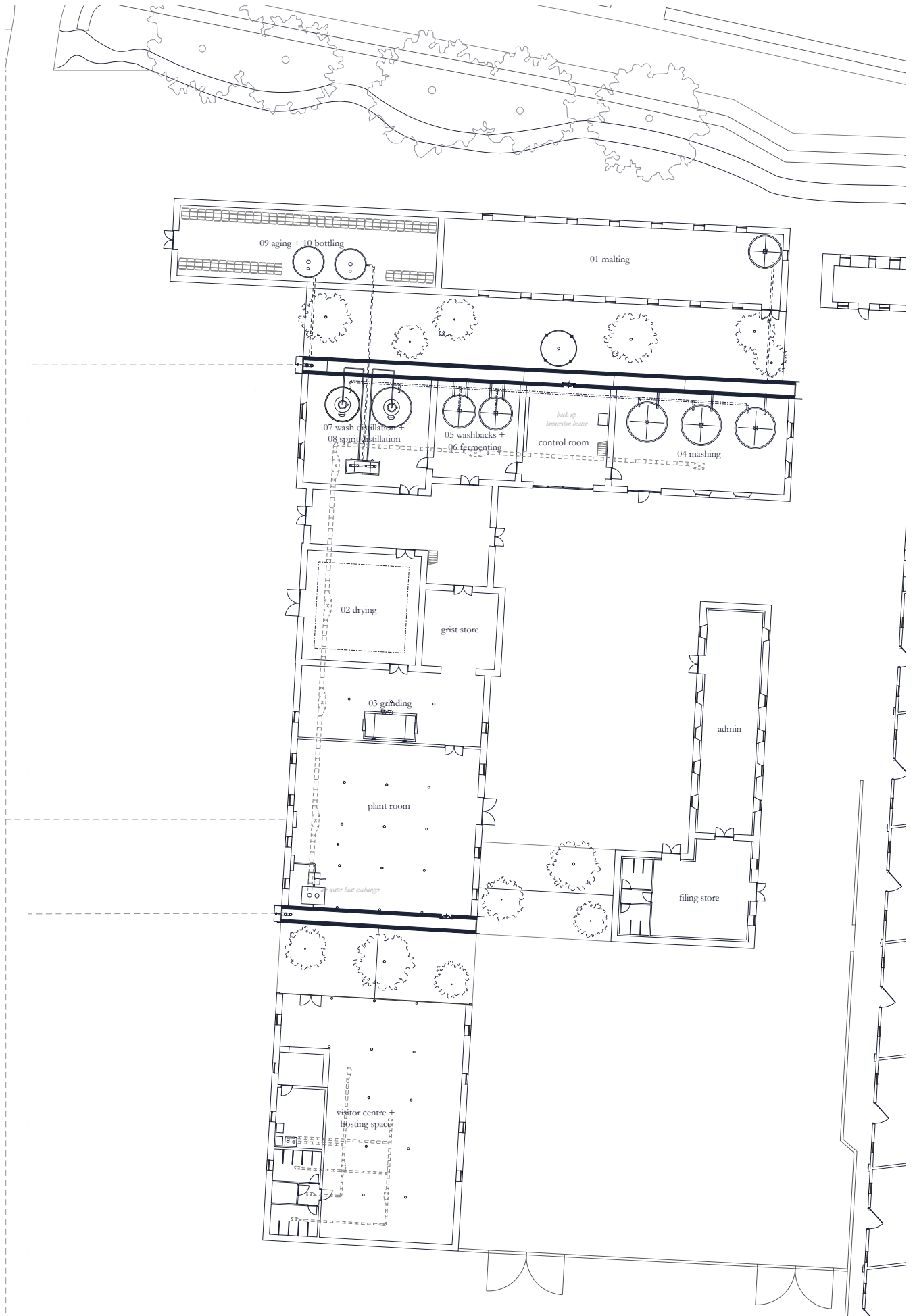
whiskey process hot water zone



whiskey process dry zone





building DHW needs

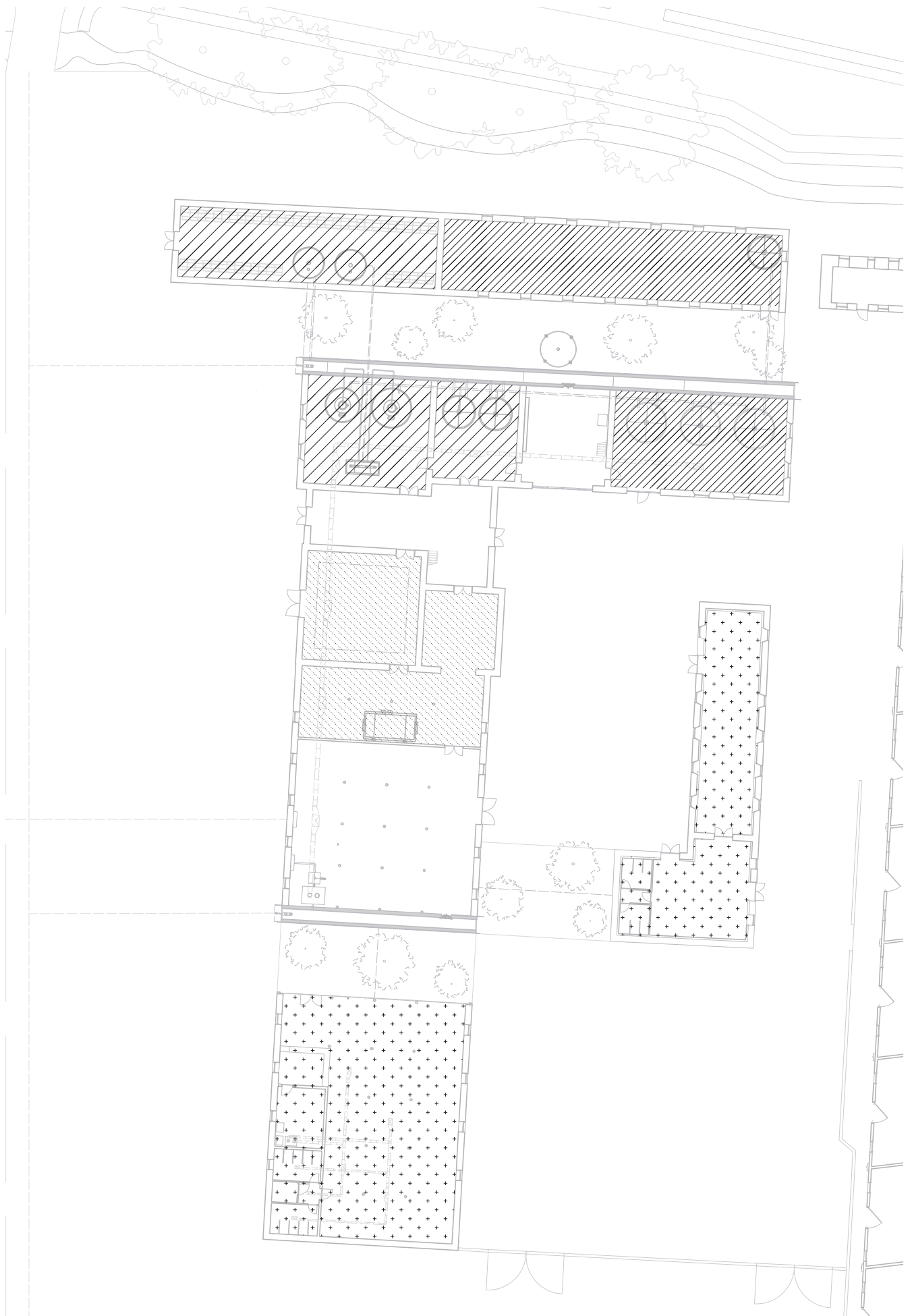
Proposed distillery programme
1:500



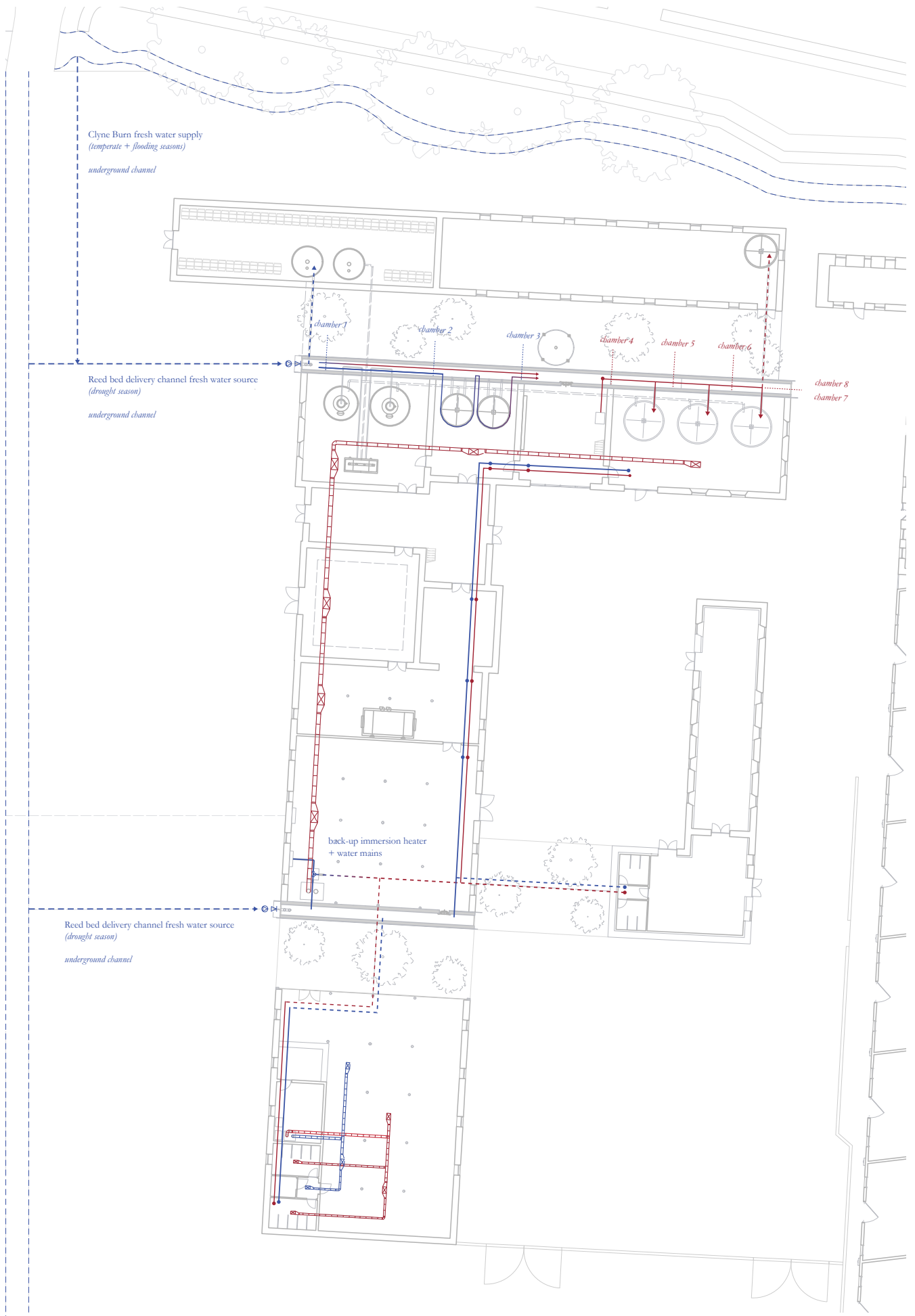
Proposed climate zoning

1:500

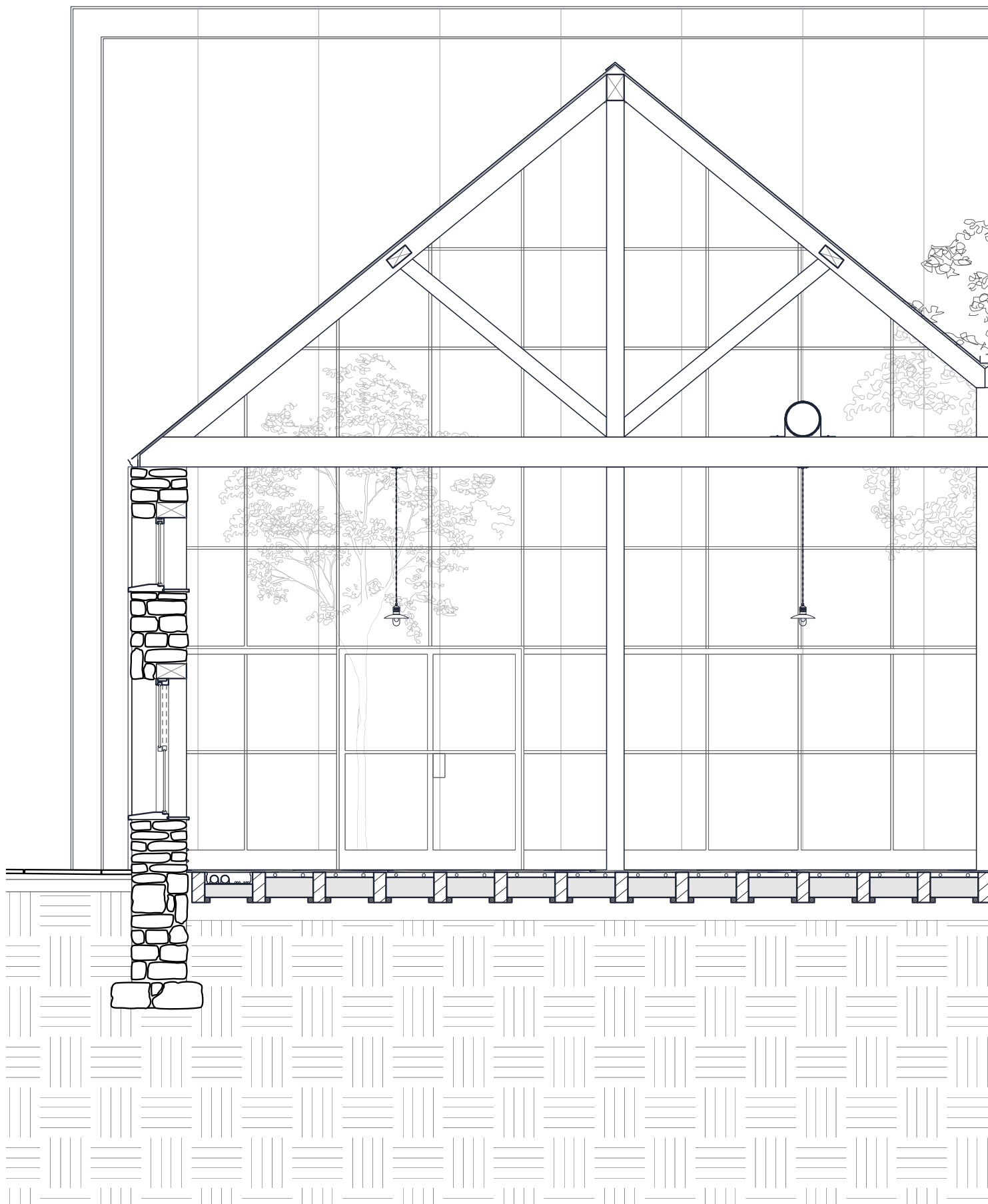
-  cold water zone
-  hot water zone
-  exhaust air zone
-  acclimatised zone



Proposed distillery climate scheme
1:500

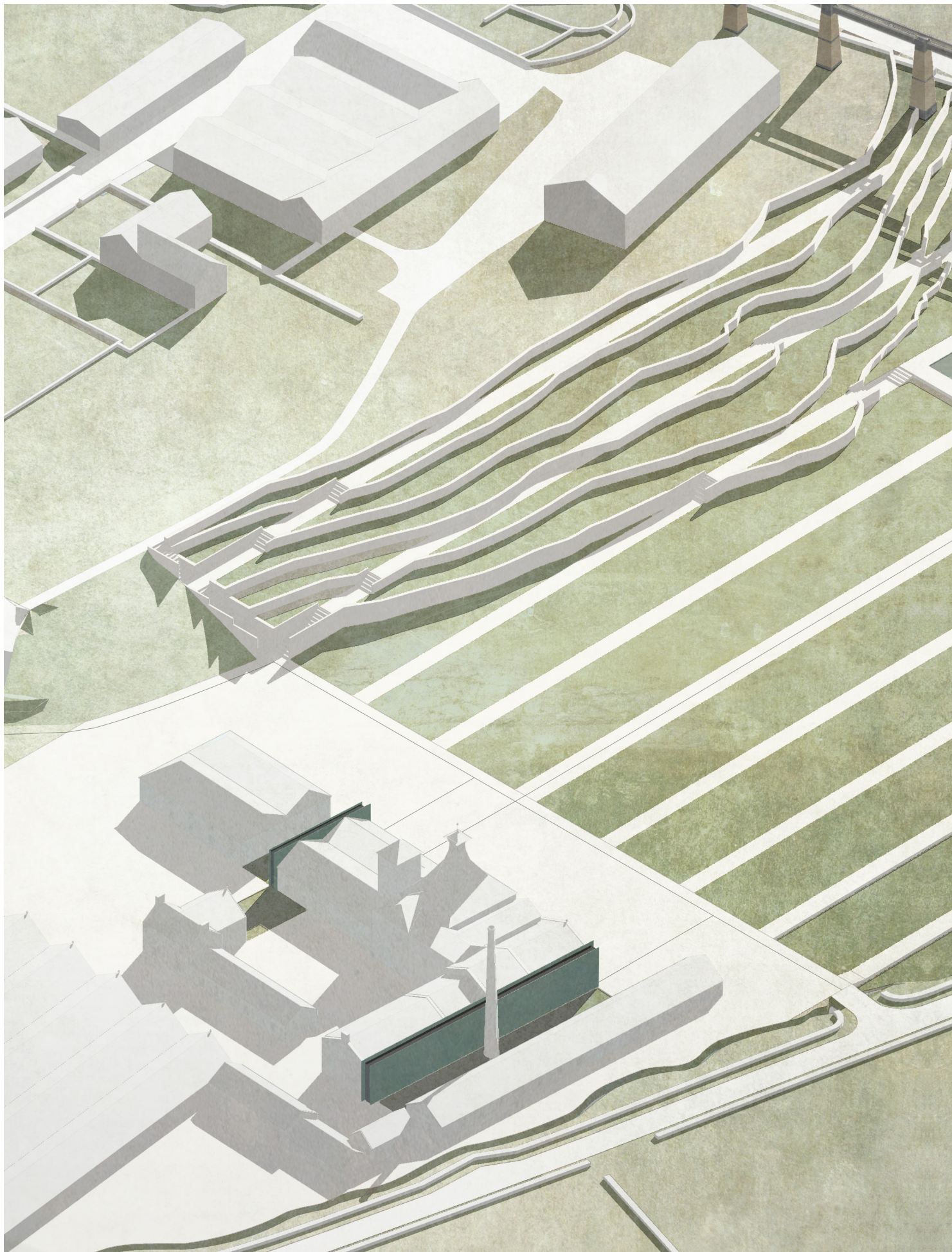


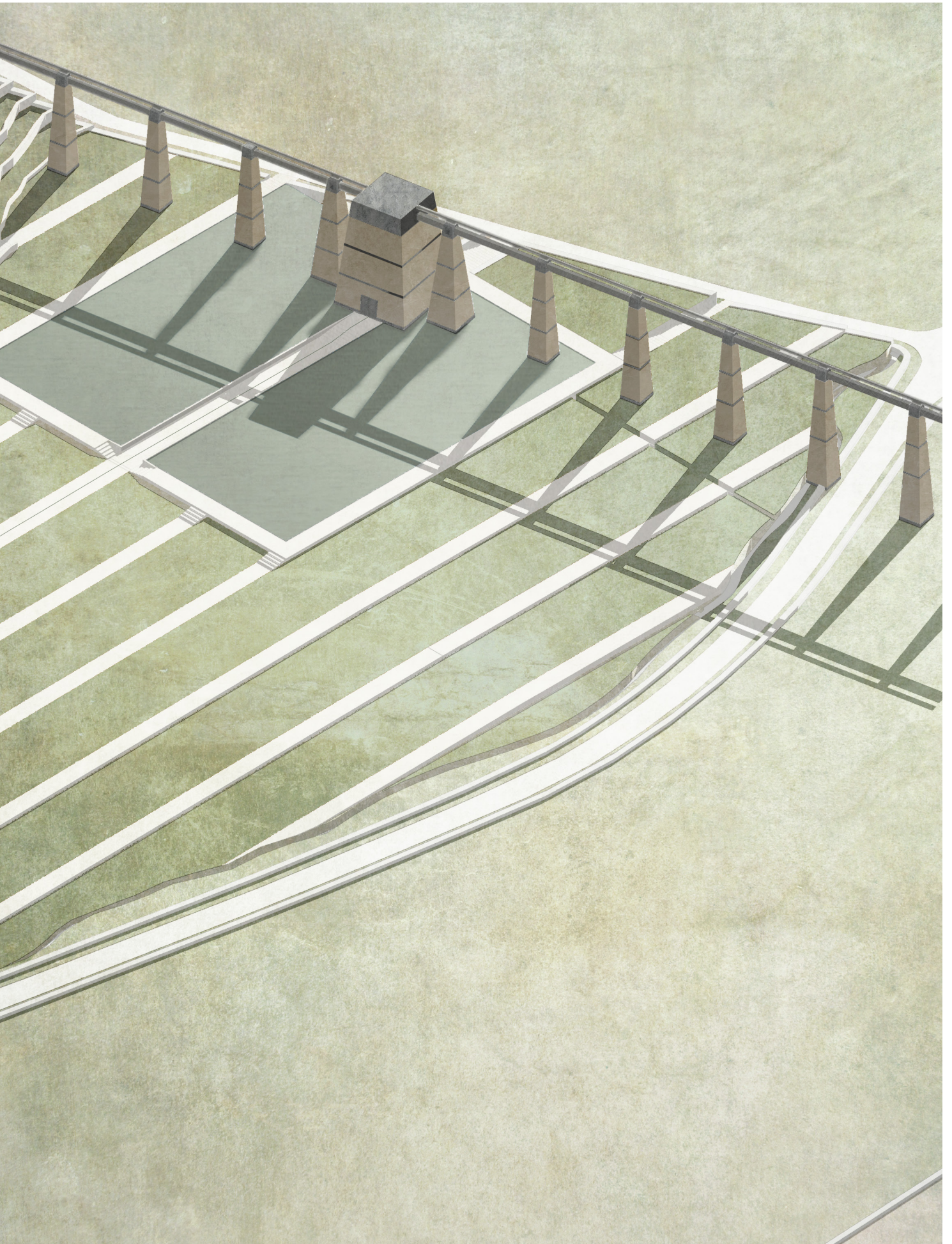
Visitor centre section
1:50



Courtyard section
1:50







The collages follow the water movement throughout the site. They have been taken at threshold points in the water's delivery, starting from the electro-aqueduct and ending in the distillery's still room.

Collage impressions





Aqueduct to Cistern Transition

Main path over cistern pond and embedded electrical channel, looking towards sub-station entrance



Cistern to Reed Beds Transition

Cistern edge over control chamber, looking north towards Brora hills



Reed Beds to Embedded Delivery Channels Transition
Main path between reed beds, looking towards the distillery



Embedded Delivery Channel to North Water Vat Transition
View into northern courtyard, with copper-clad water vat grafting onto existing distillery



Water Vat to Stills Room Transition | New
Interior view of still room, with new unoxidised copper water vat



Water Vat to Stills Room Transition | Aged
Interior view of still room, with aged oxidised copper water vat

