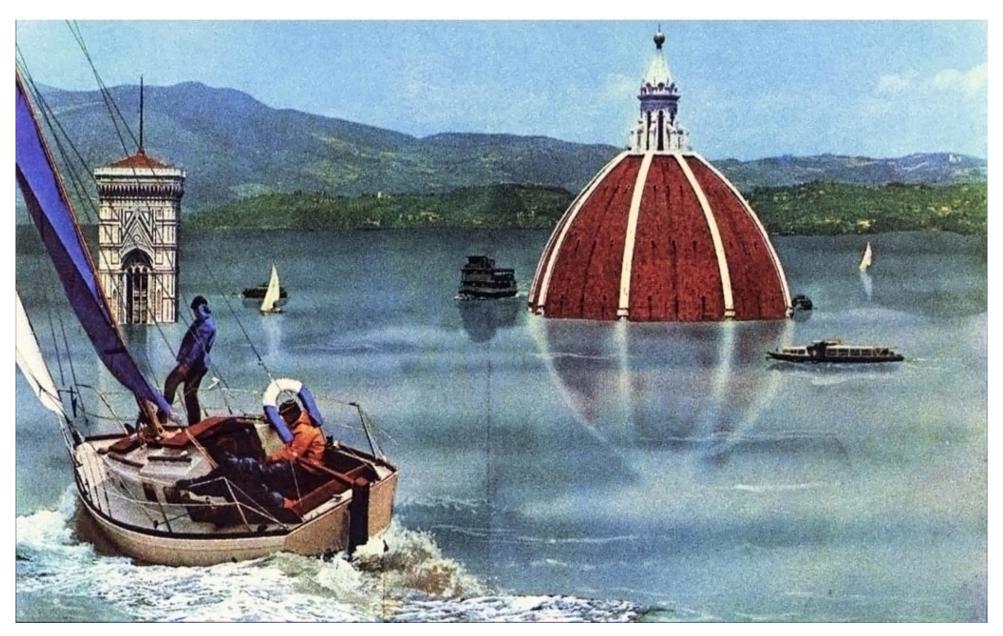
Transitioning Energy (and) Landscapes

Exploring infrastructural, architectural + landscape symbiosis

Michaela Mallia

Transitional Territories | North Sea: Landscapes of Coexistence
Delft University of Technology

July 2019



Salvataggi di Centri Storici Italiani (Italia vostra)

Superstudio

Research

I Territory

the energy transition

II Region

existing condition | scenarios | problem statement

Design

III Infrastructure

existing condition | proposal | impressions

IV Site

existing condition | proposal | impressions

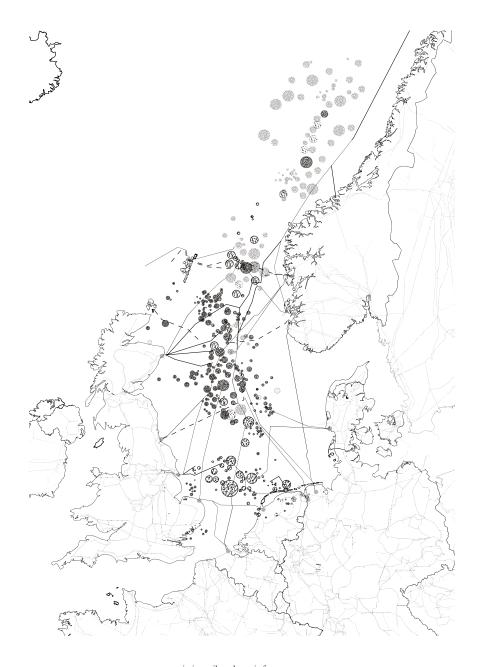
V Distillery

existing condition | proposal | impressions

Reflection

I Territory

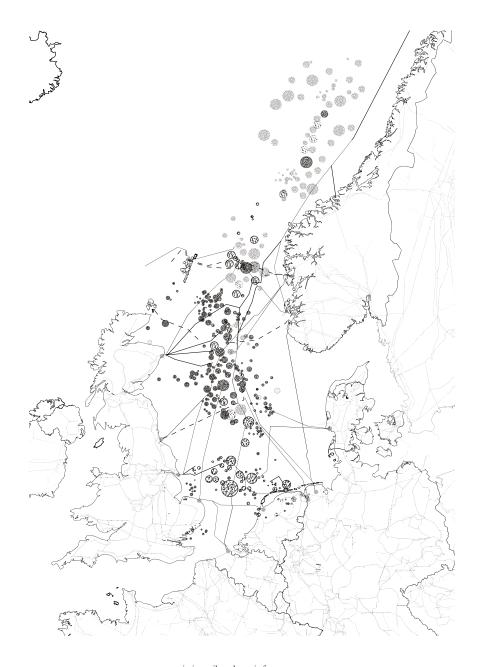
The North Sea



existing oil and gas infrastructure



existing and planned offshore wind farms



existing oil and gas infrastructure

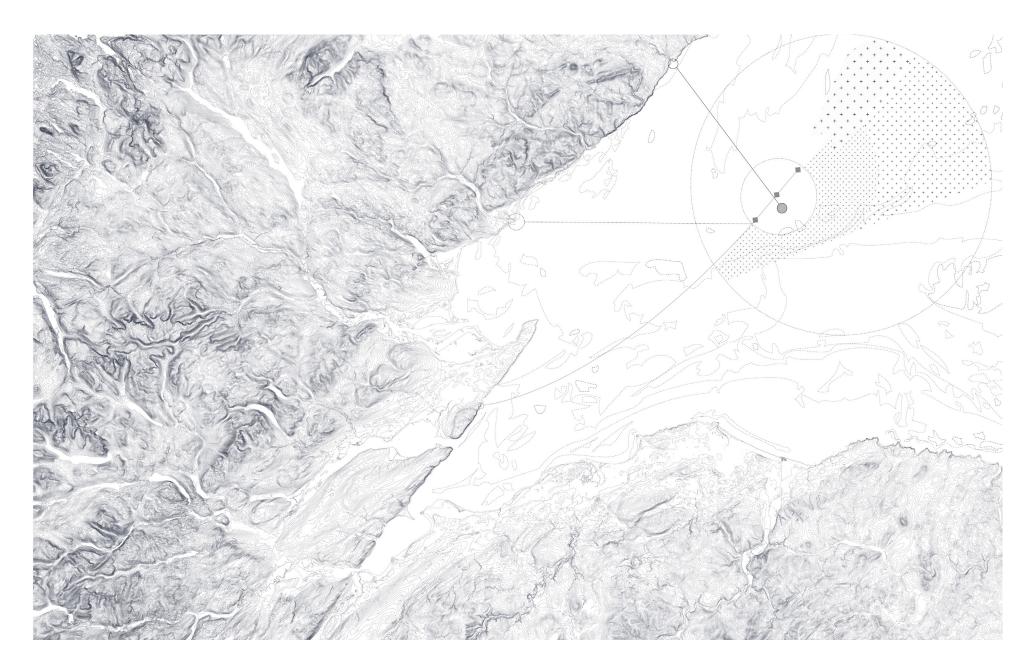


existing and planned offshore wind farms

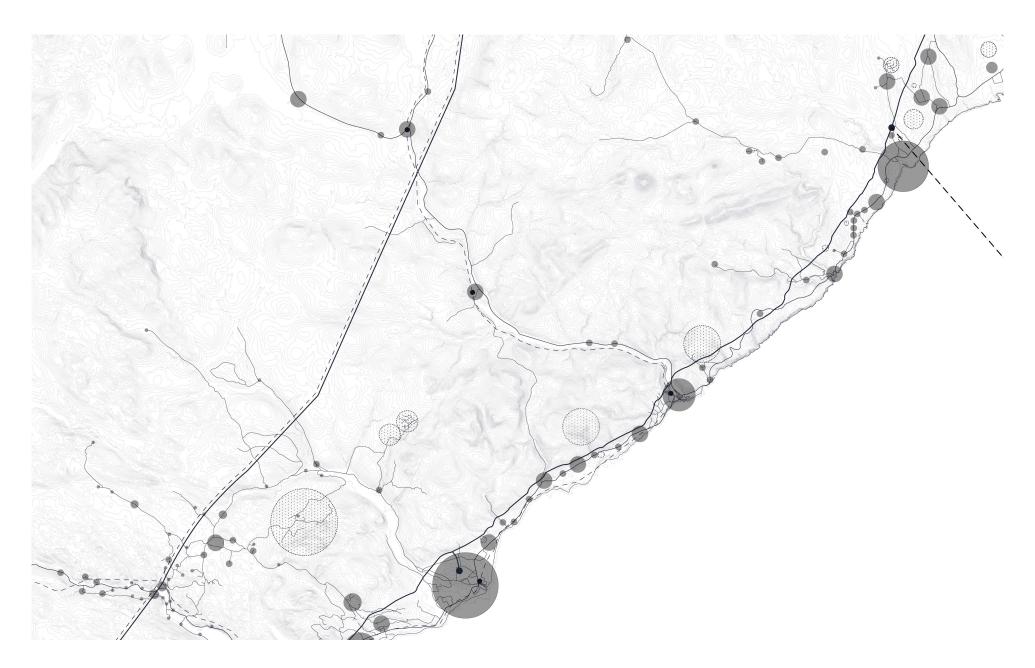
II Region

Northeast Highlands, Scotland



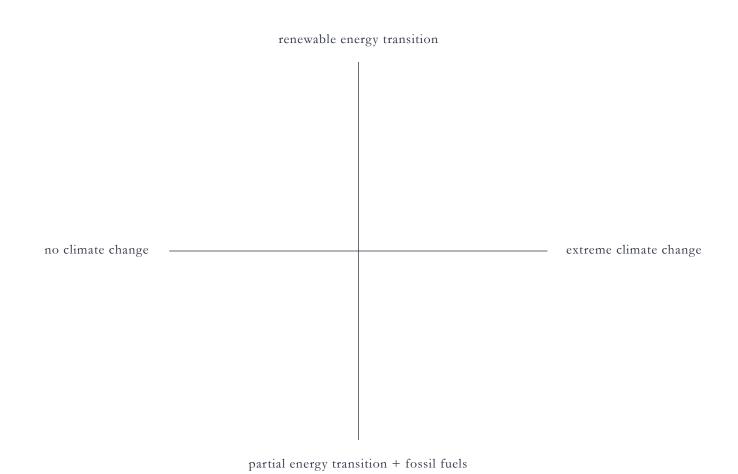


Moray Firth wind farm landing points

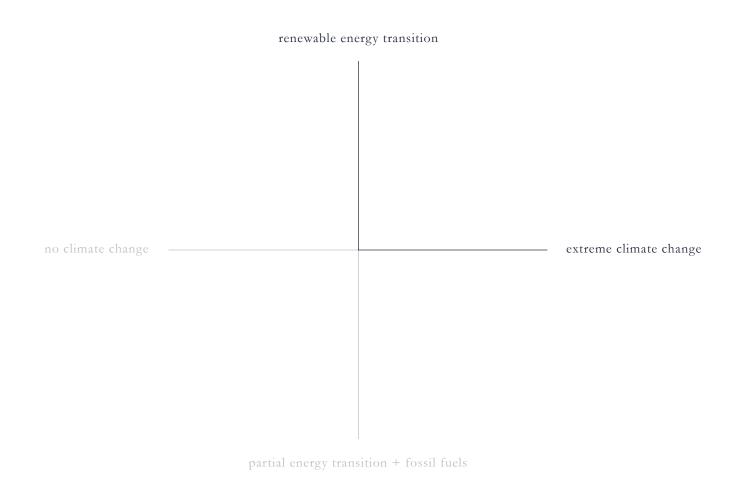


Sutherland's energy infrastructure

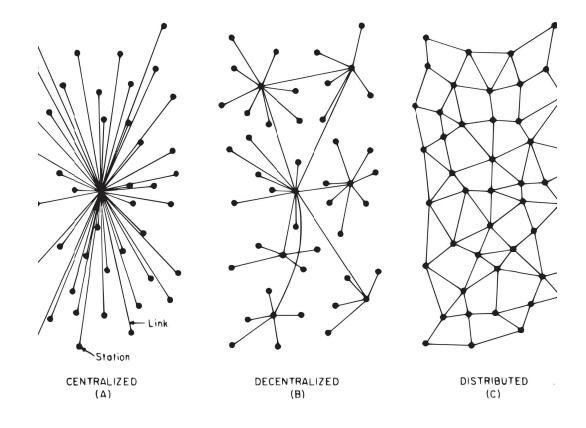




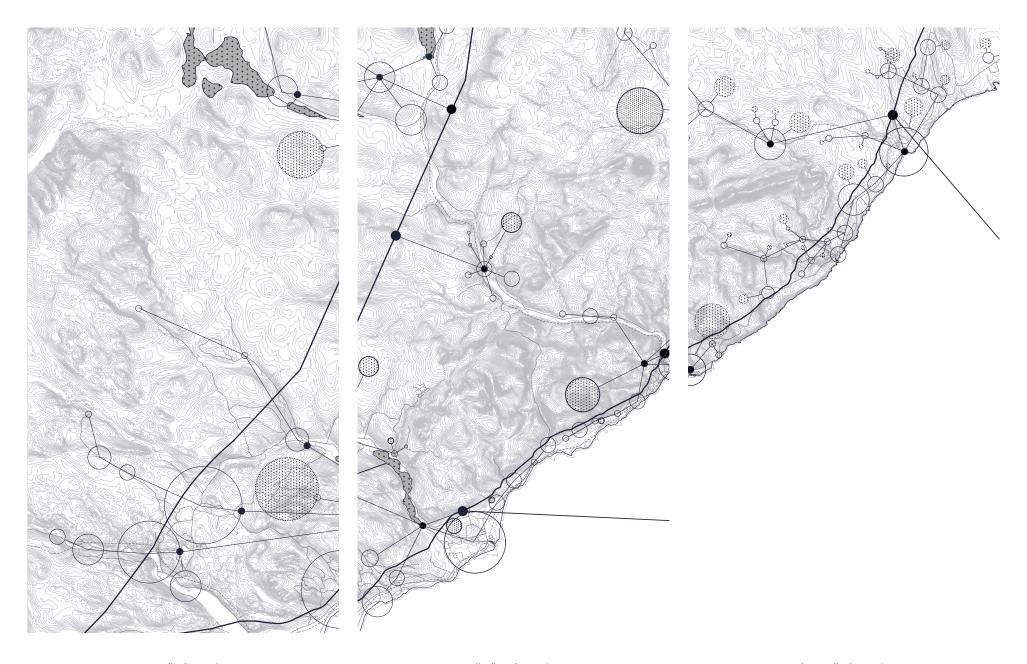
II Region
existing condition | scenarios | problem statement



II Region
existing condition | scenarios | problem statement

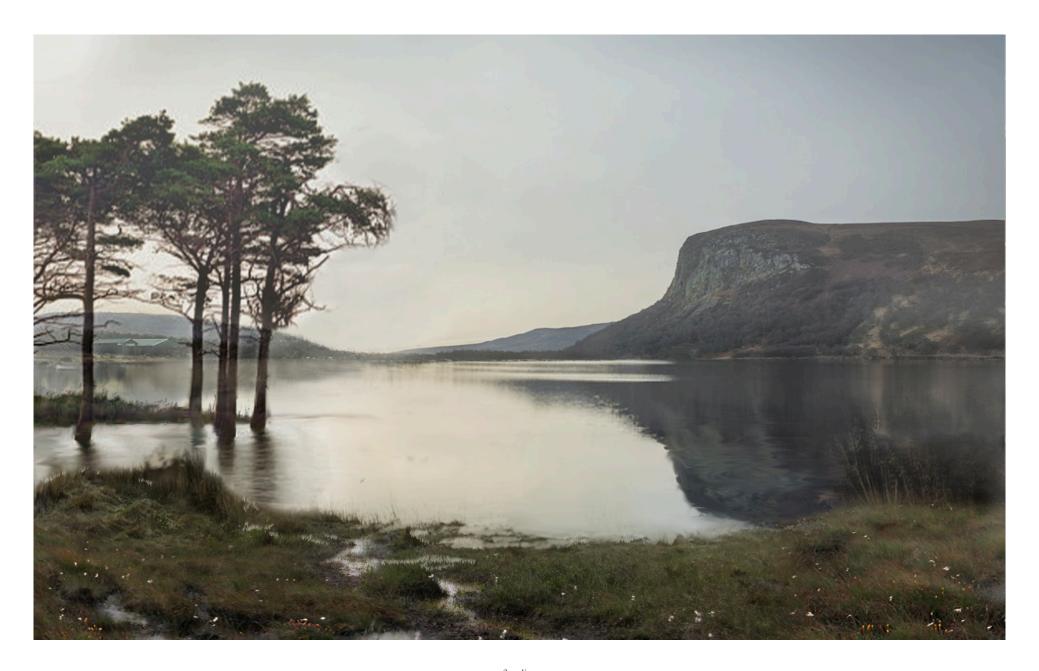


Central Place Theory
Walter Christaller



centralised scenario distributed scenario decentralised scenario





flooding



drought





quantity John Robert Cozens, 1783-1788

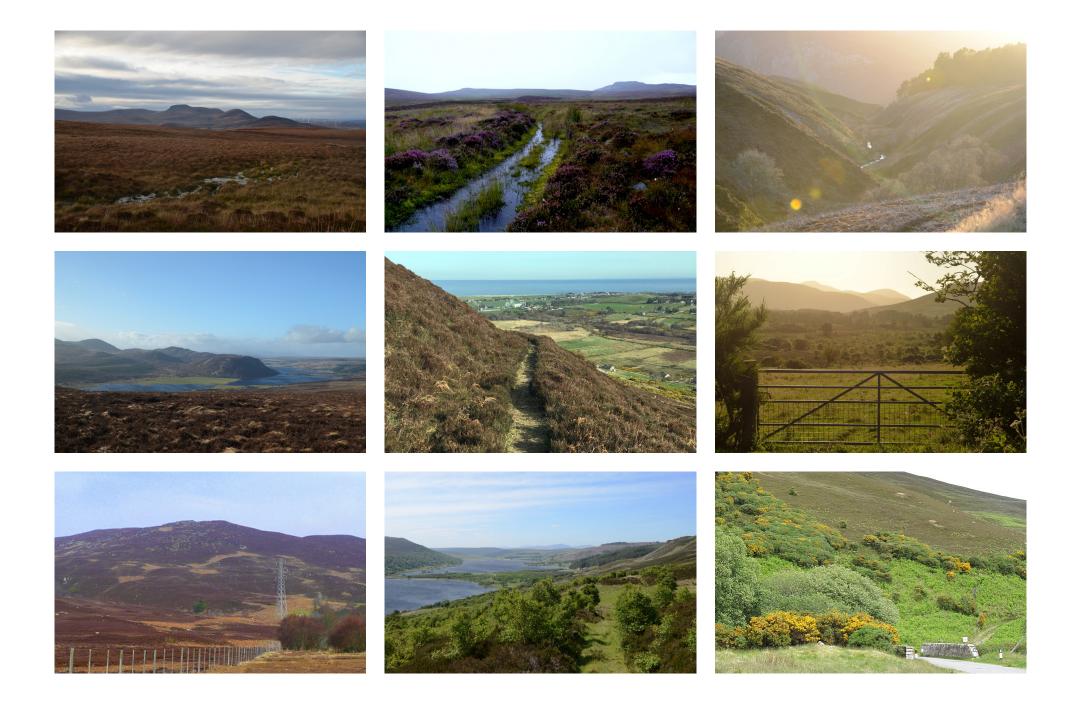


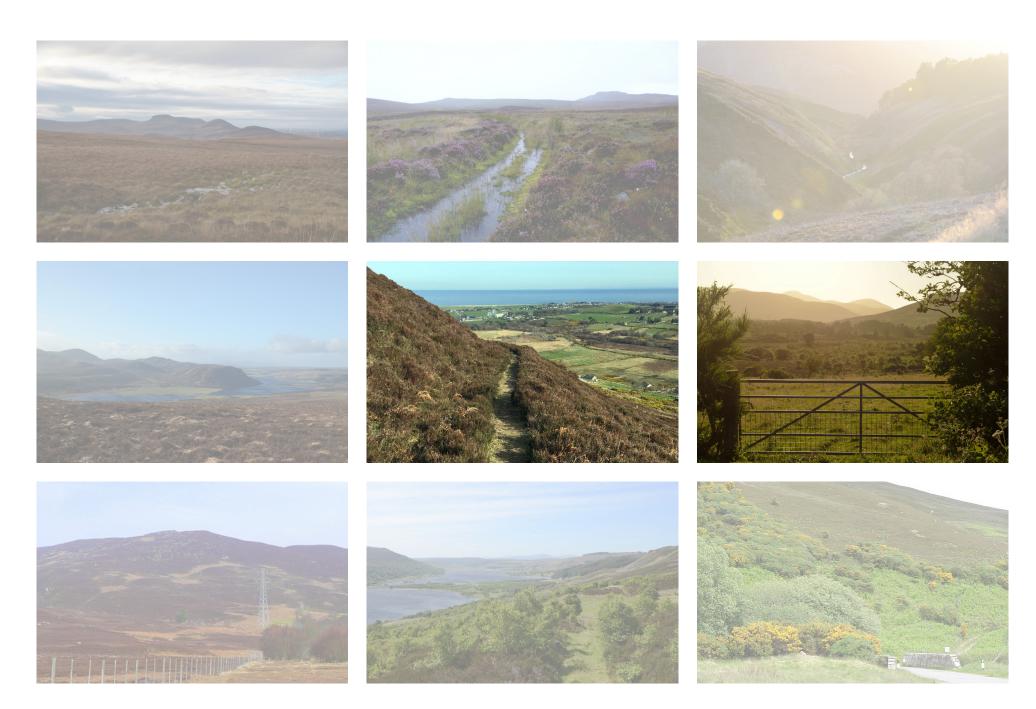
disjuncture J.M.W. Turner, 1796

III Infrastructure | generation, storage, transmission

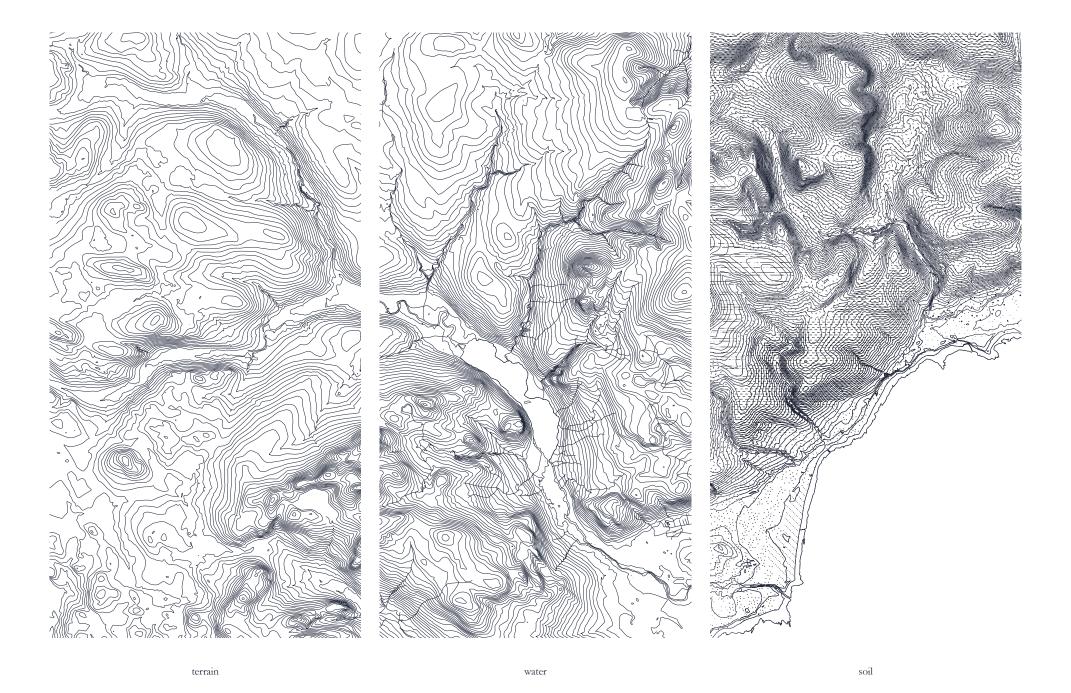
Brora, Sutherland



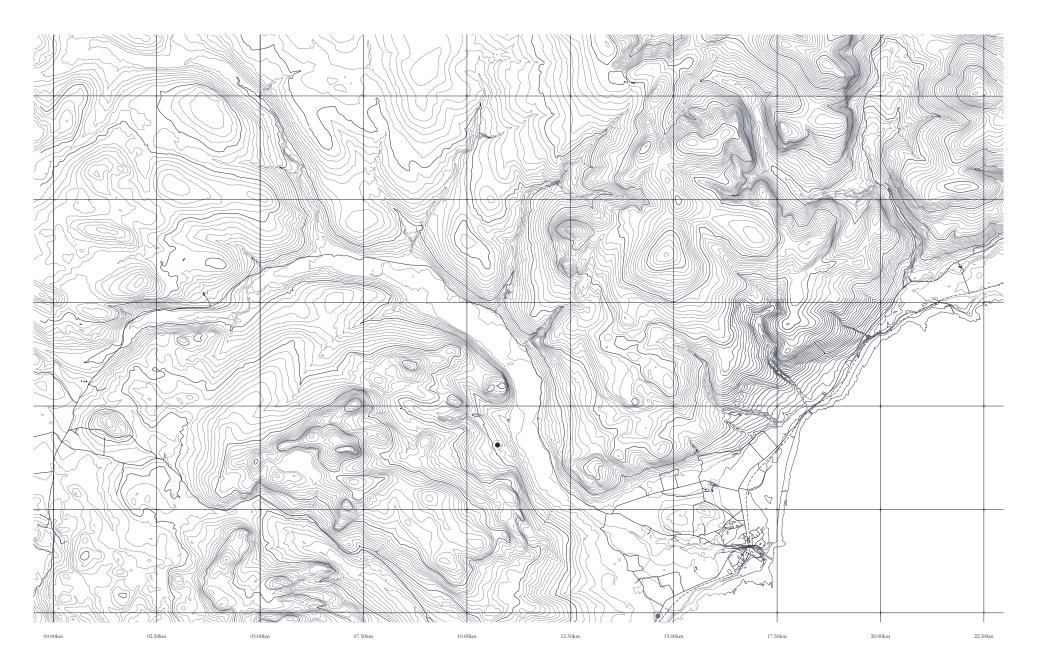




IV Site
existing condition | proposal | impressions







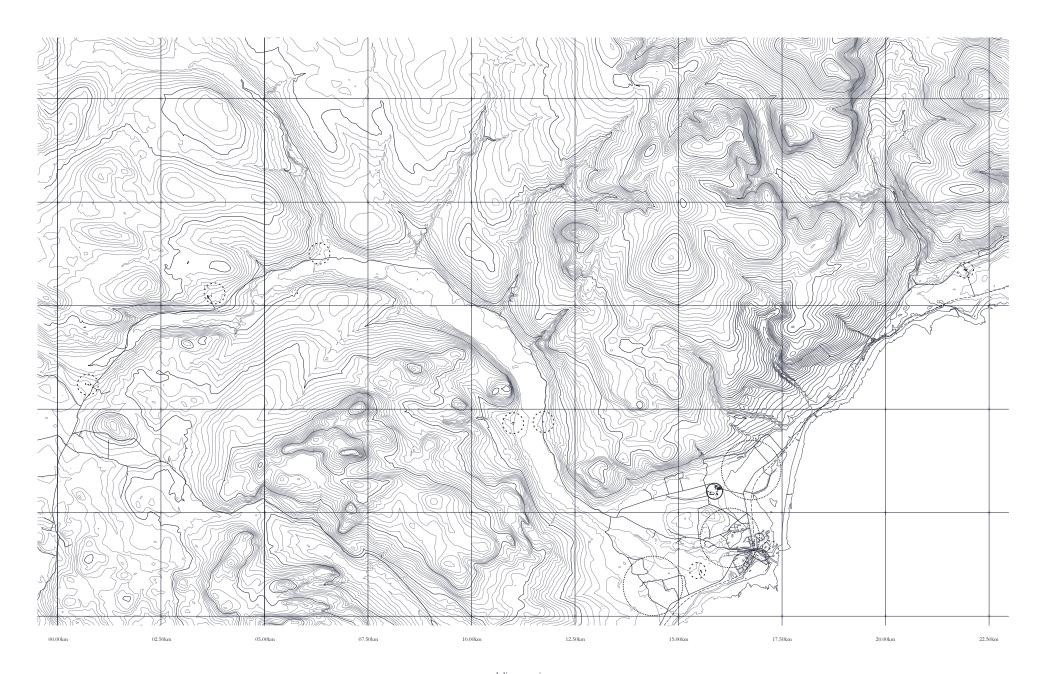
culture



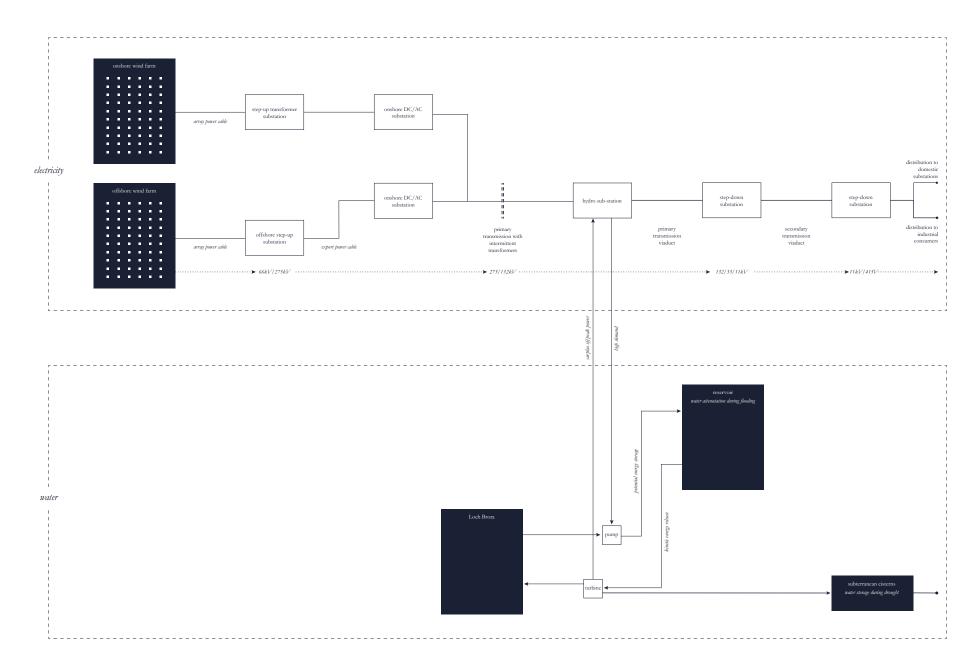




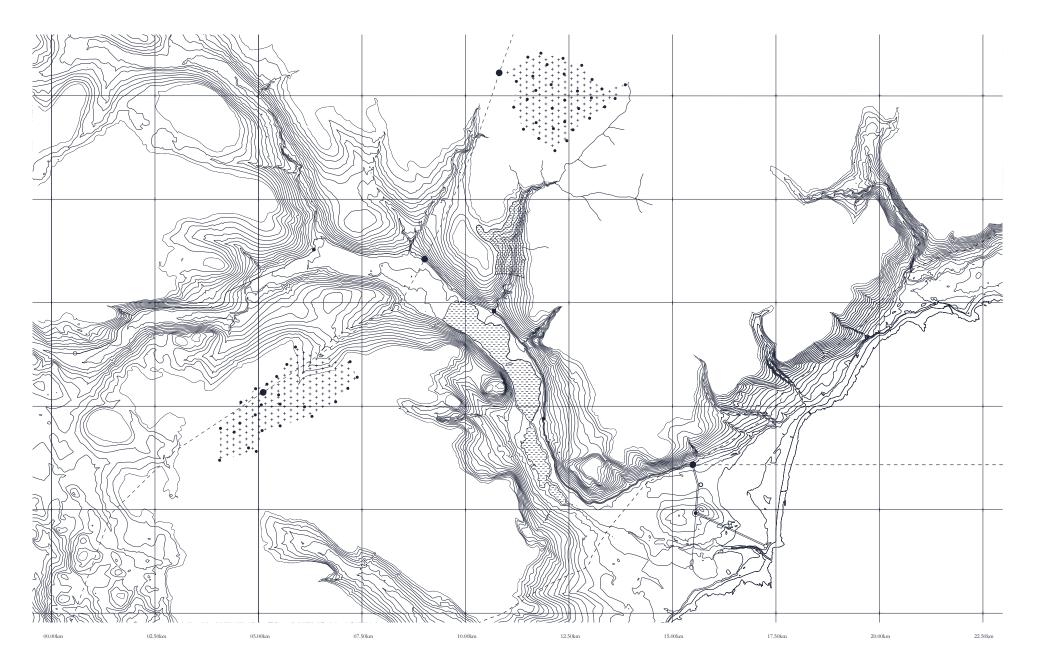
vernacular precedent
Scottish brochs



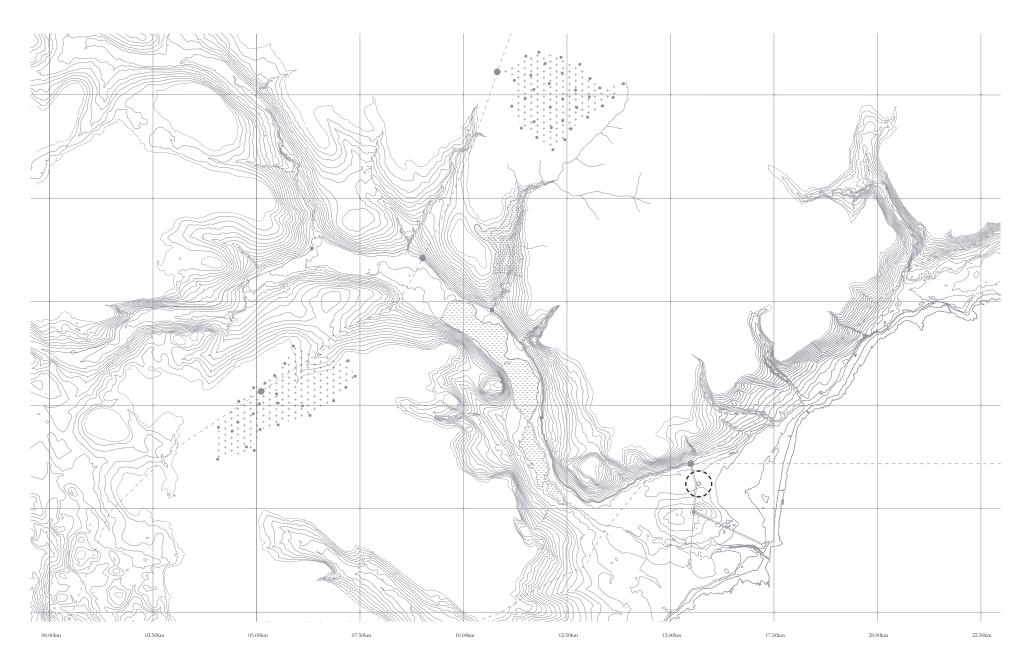
delivery points



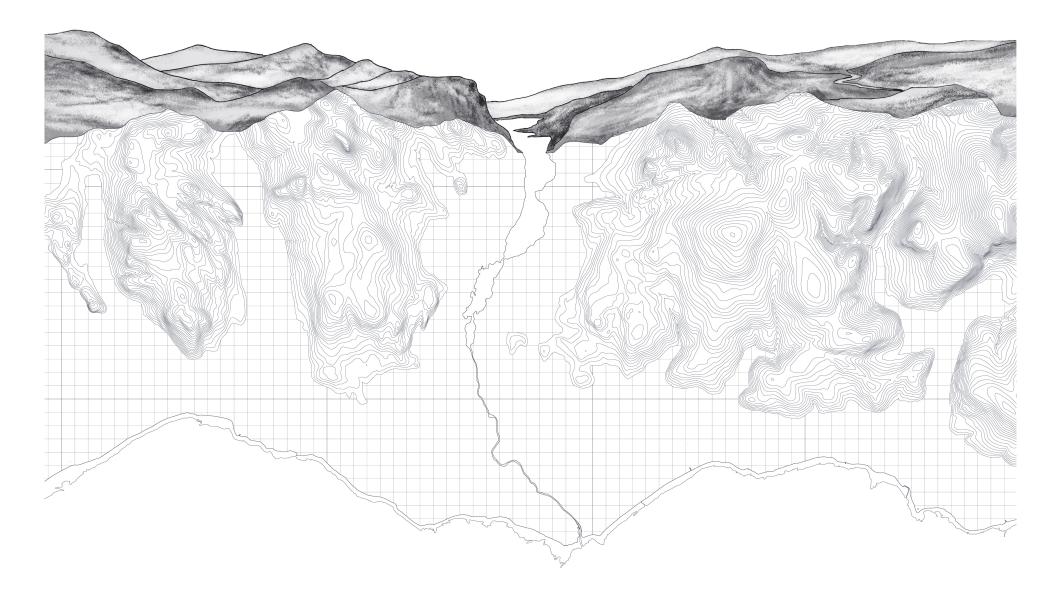
system schematic



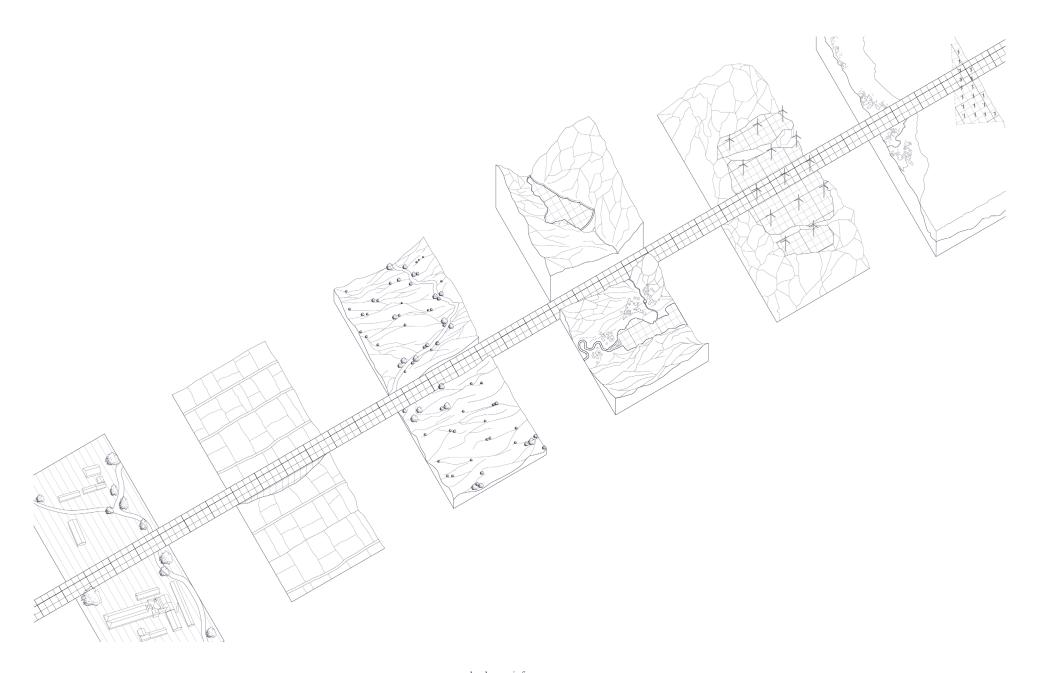
delivery points



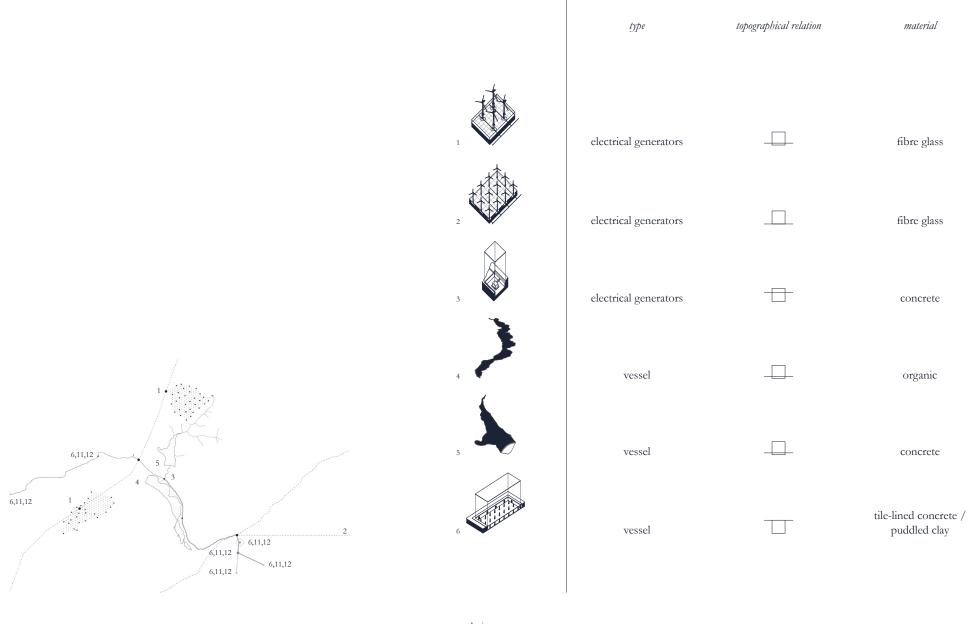
site choice



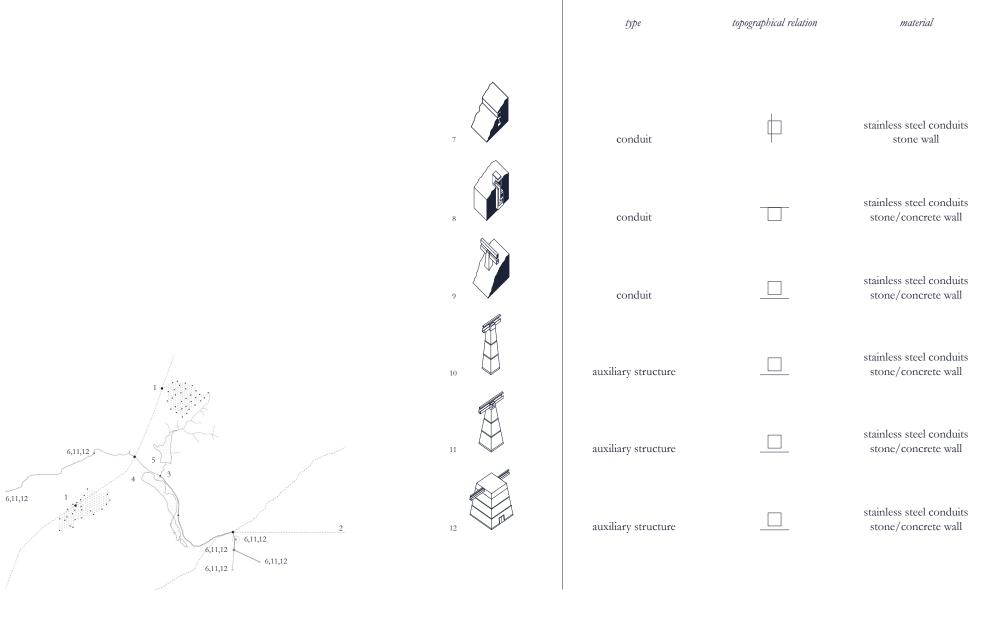
ground zero



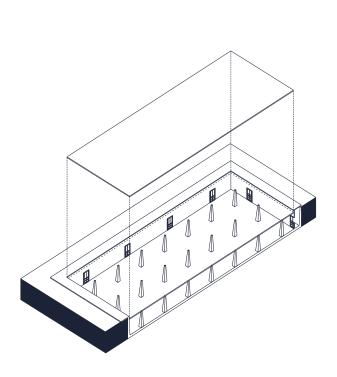
landscape infrastructure

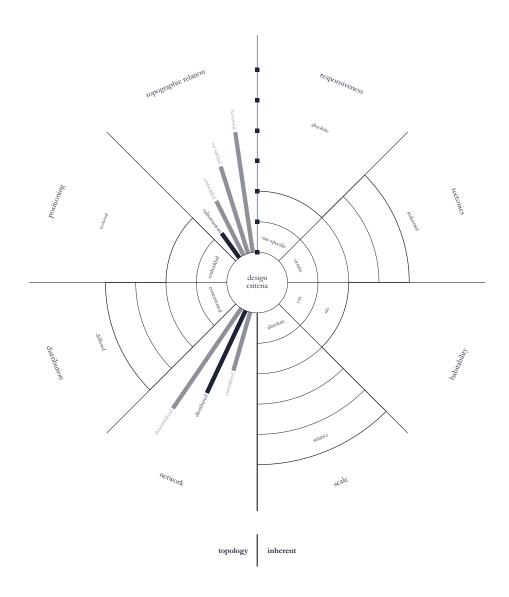


design syntax

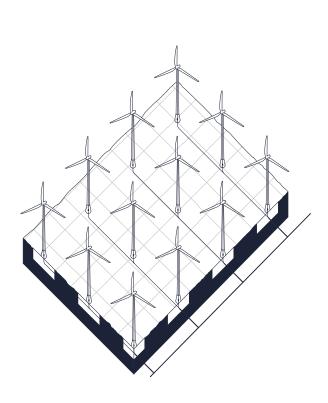


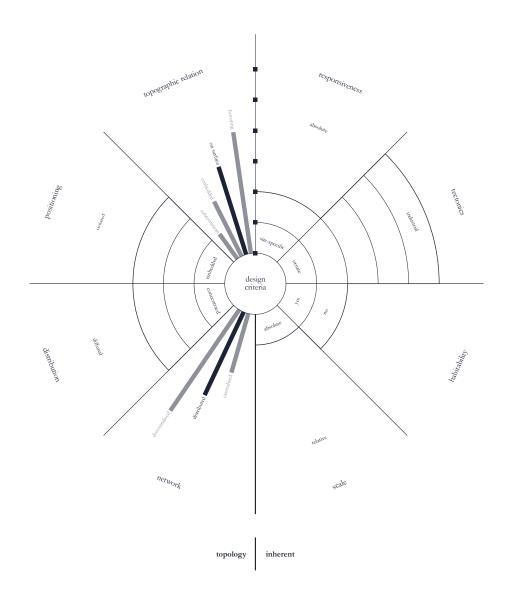
design syntax



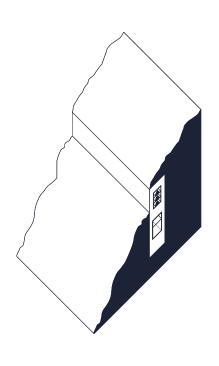


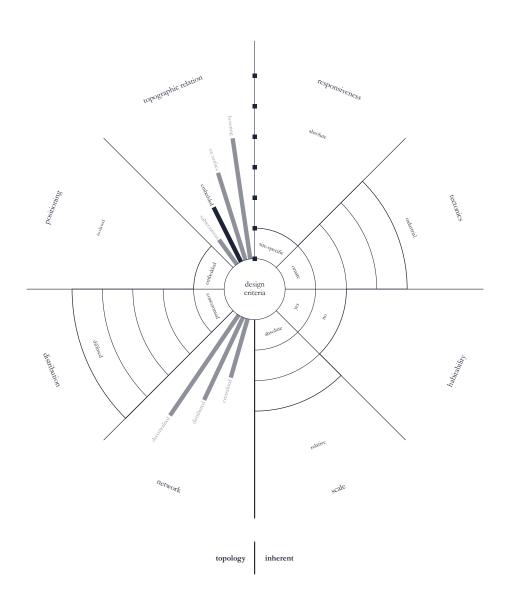
localised cistern vessel | water storage



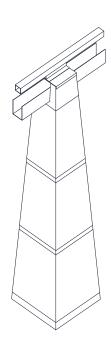


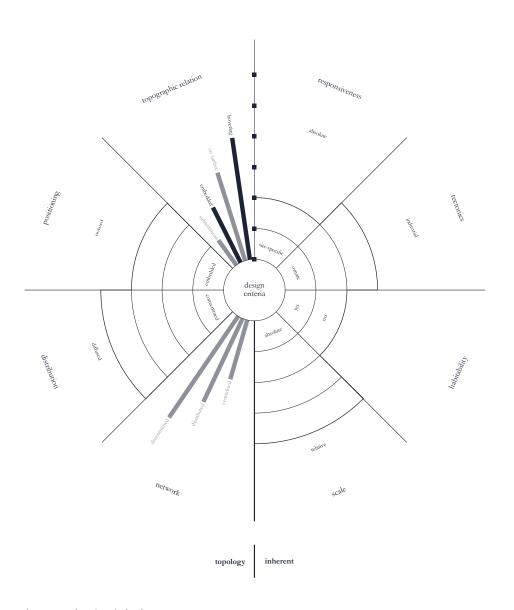
onshore wind farm electrical generator



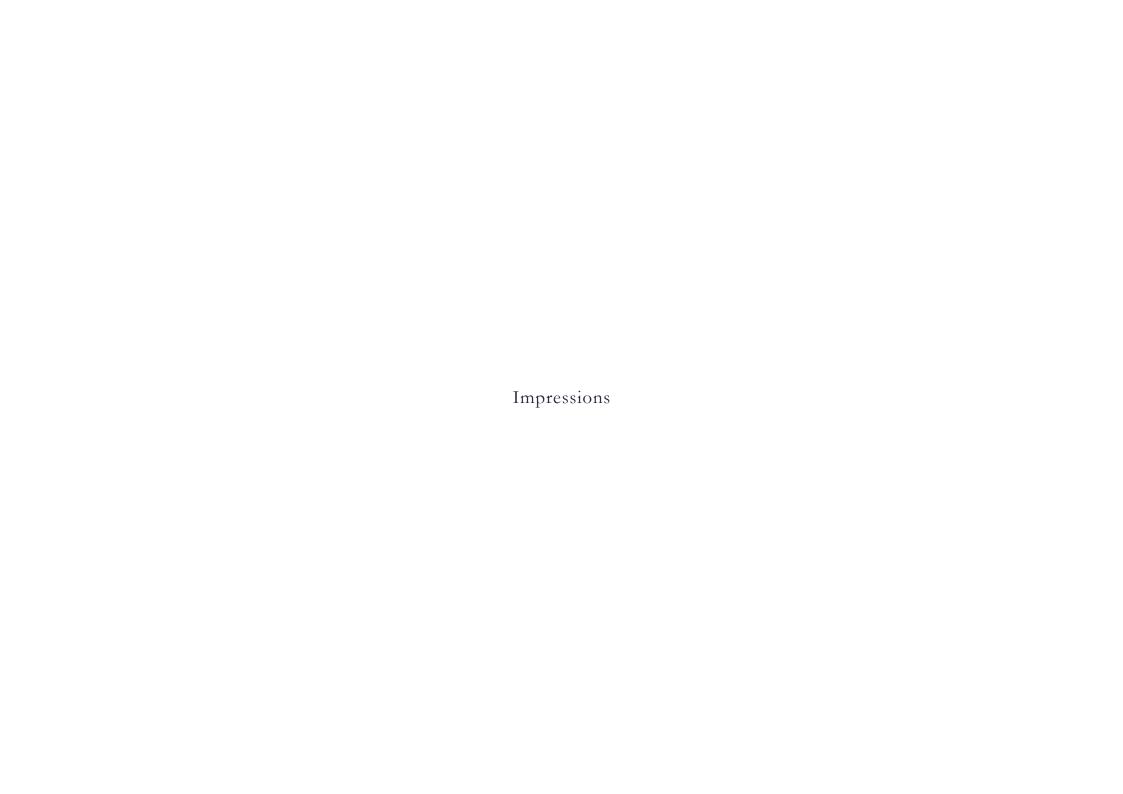


electro-aqueduct | embedded conduit



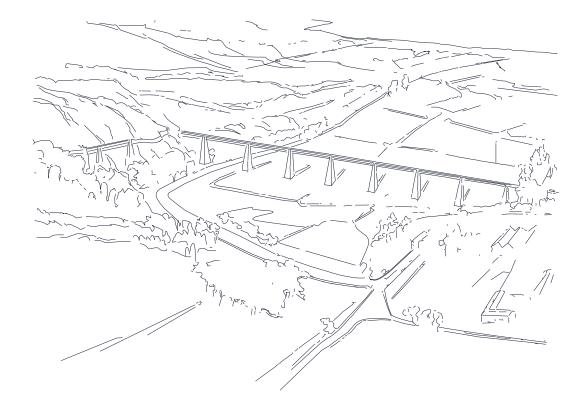


electro-aqueduct | typical column
auxiliary structure

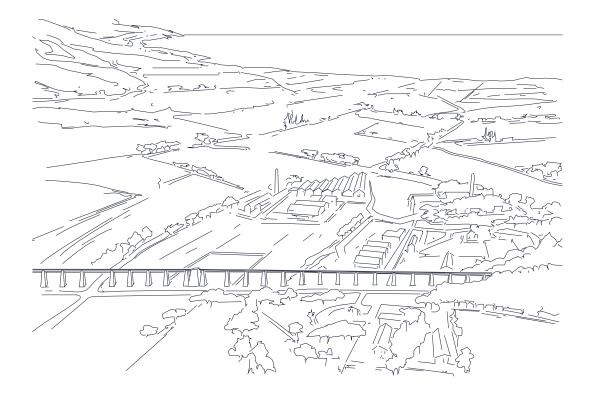




reservoir + Loch Brora



Brora hills to Brora basin

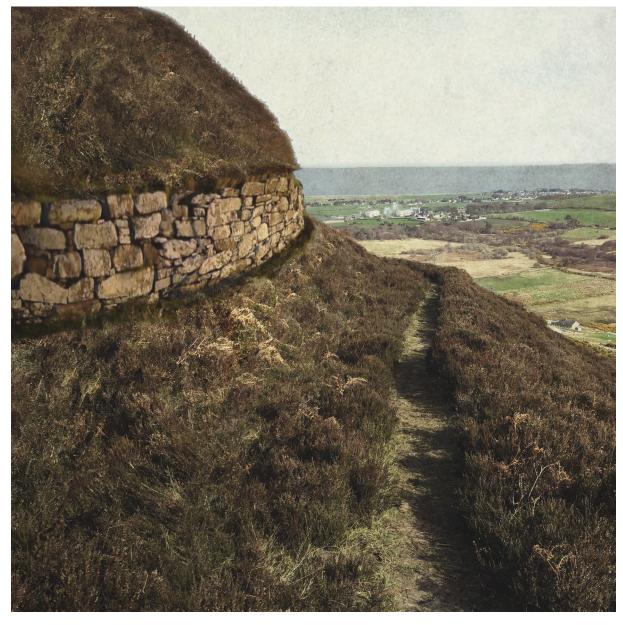


passing over Clynelish



Allt an t-seana bhalie | facing east

View of dammed reservoir



Coffin walk | facing south

View of embedded wall using local stone



Electro-aqueduct | facing west View taken from East Clyne Road

IV Site | Delivery

Clynelish, Brora











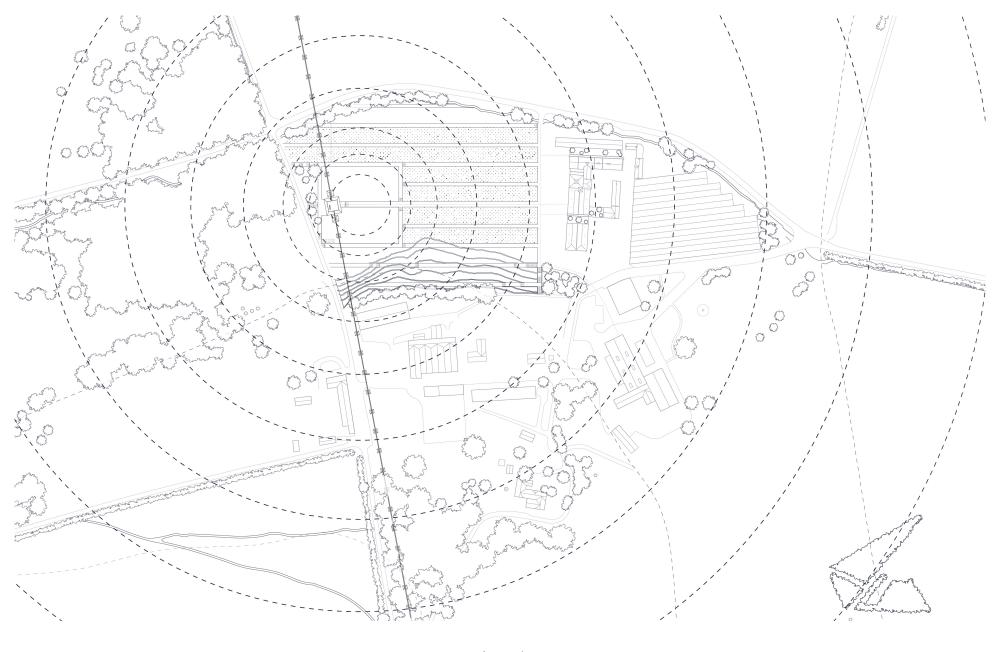
existing site plan



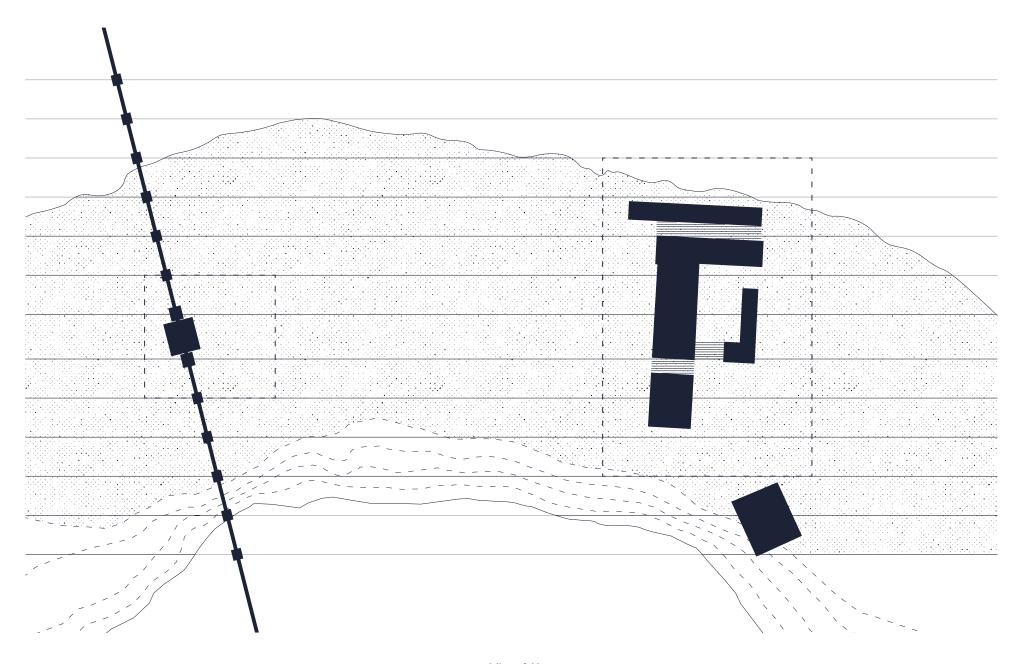




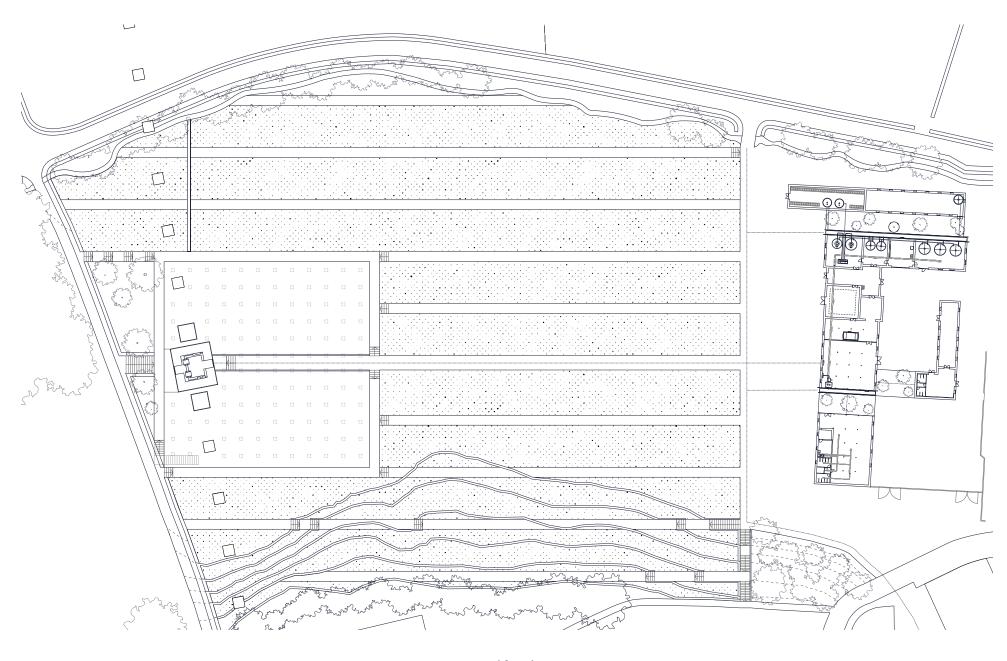
proposed site plan



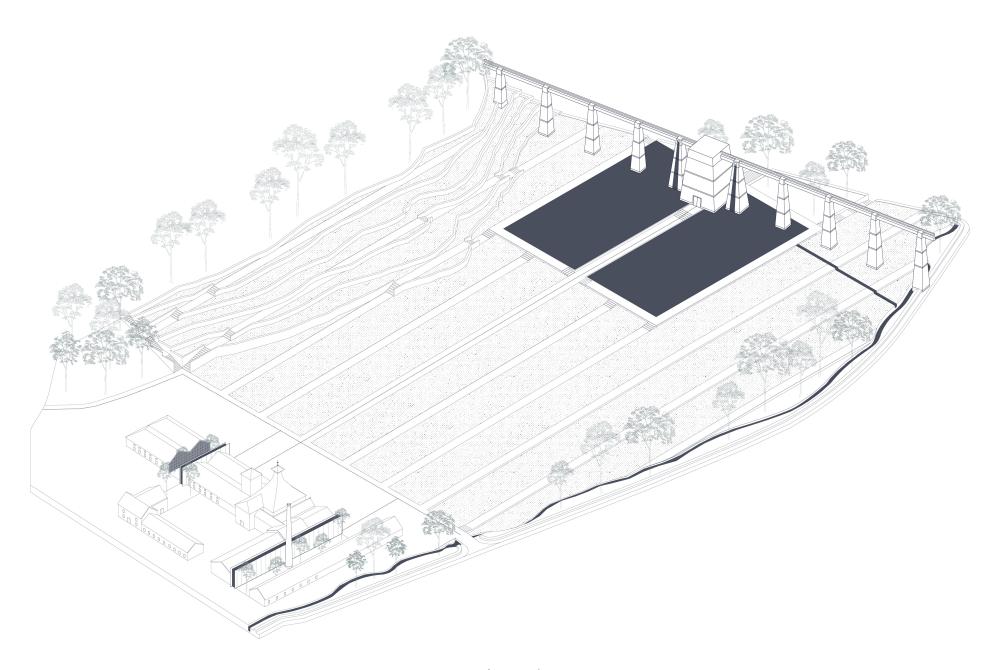
node expansion



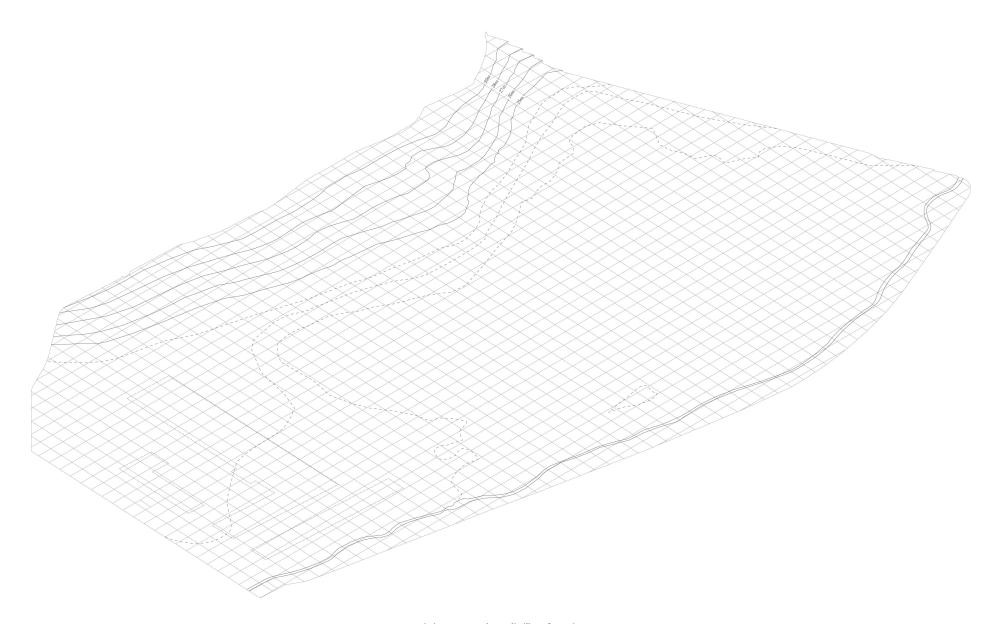
delivery field



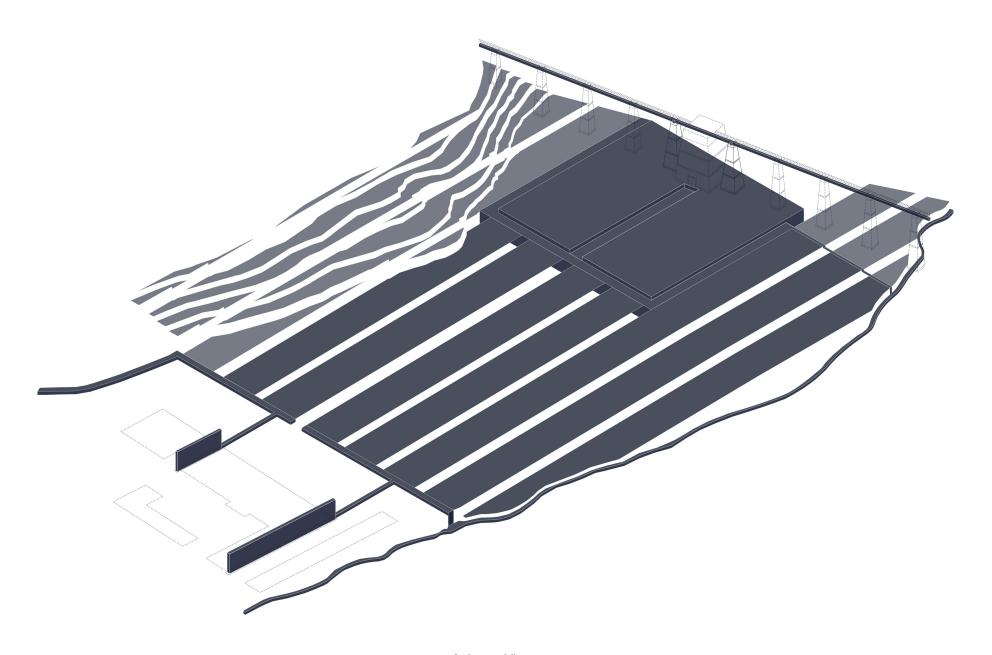
ground floor plan



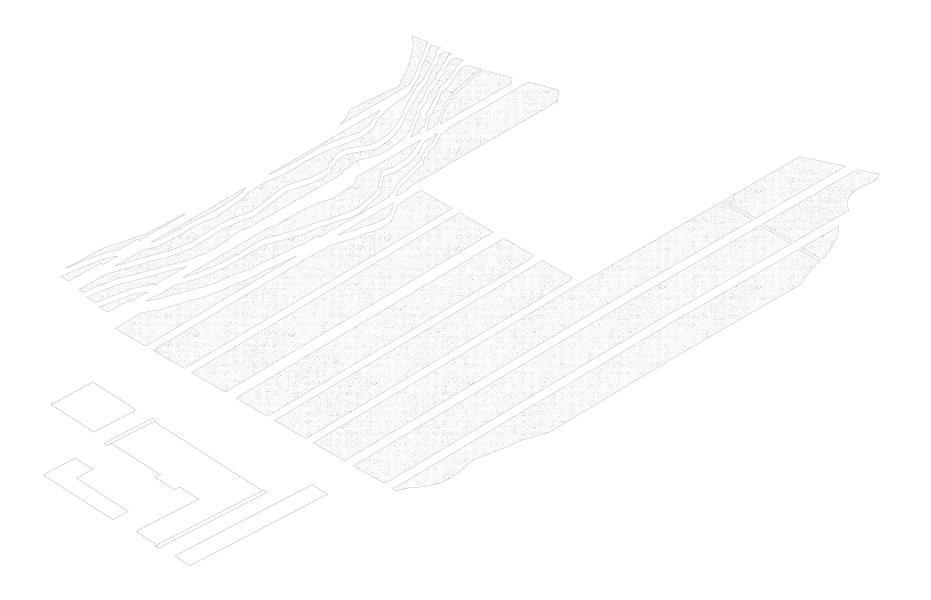
proposed axonometric



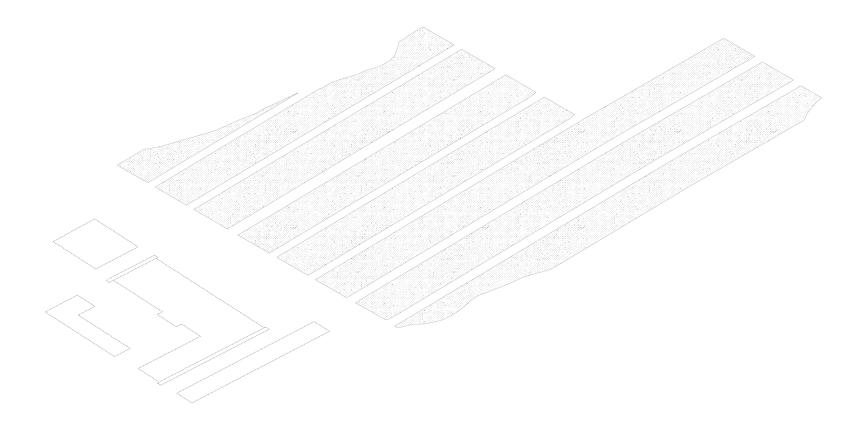
existing topography + distillery footprint



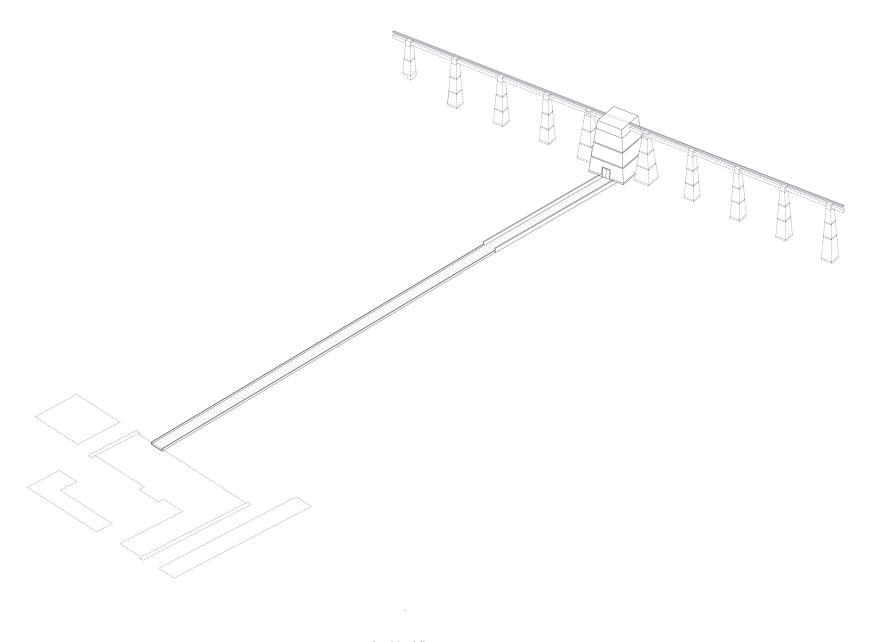
fresh water delivery



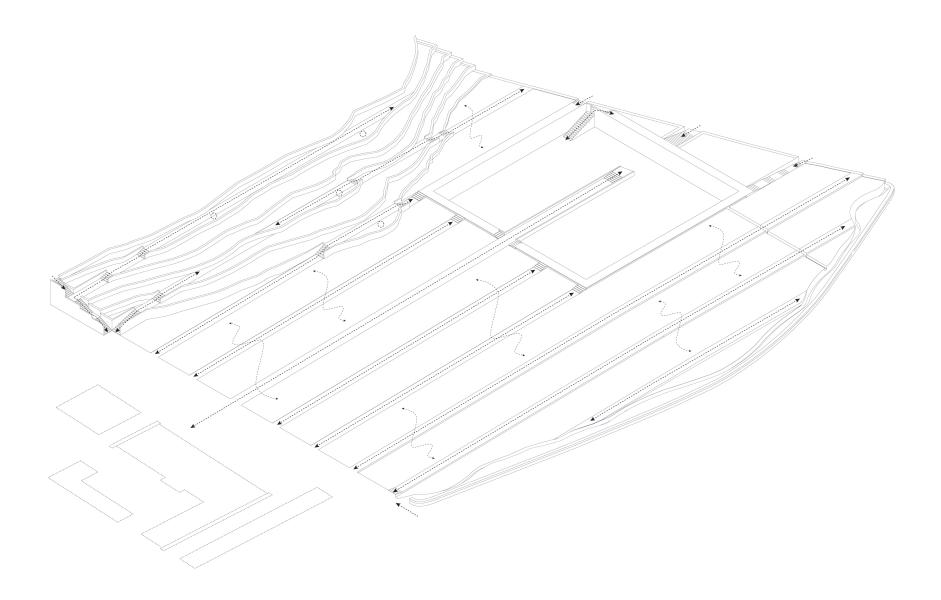
water purification horiztonal flow reed beds | rainwater + cistern fed



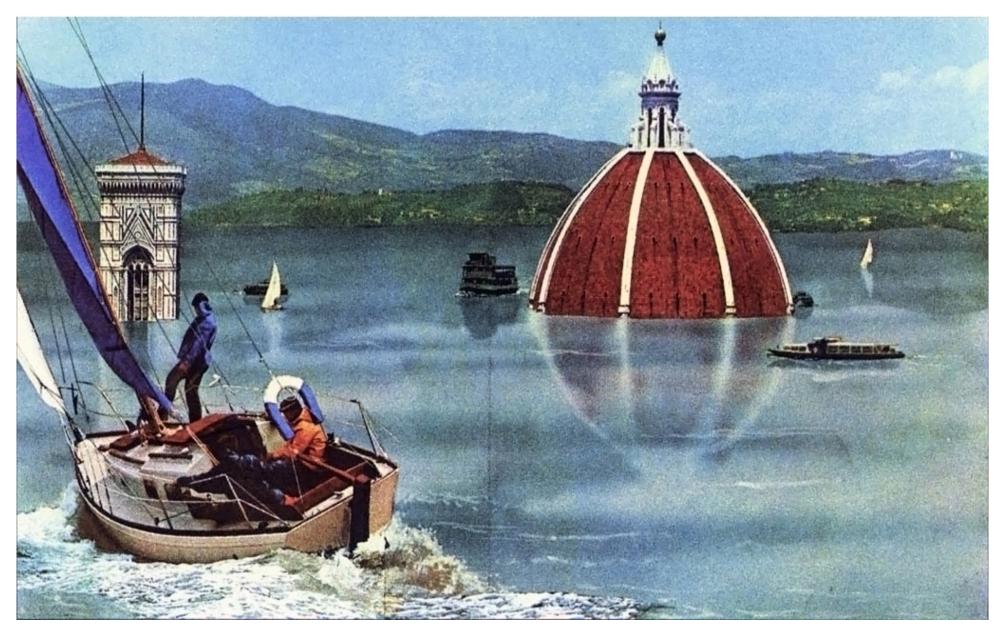
water purification horiztonal flow reed beds | cistern fed (drought)



electricity delivery

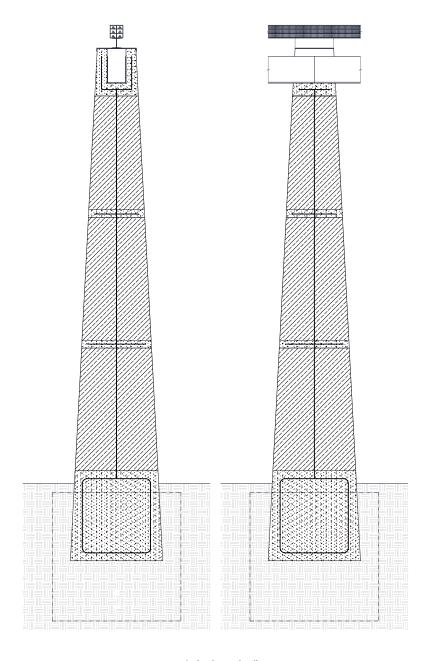


movement flows

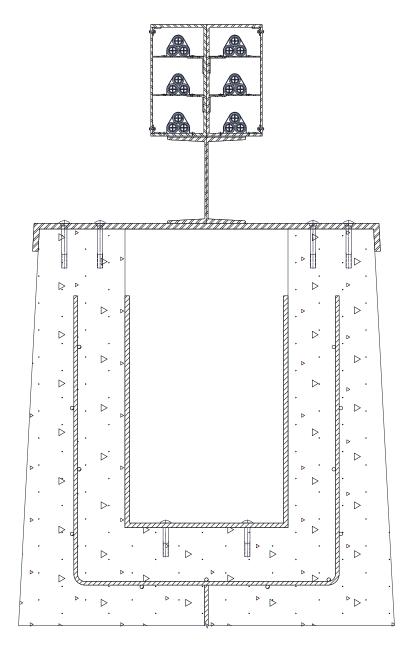


Salvataggi di Centri Storici Italiani (Italia vostra)

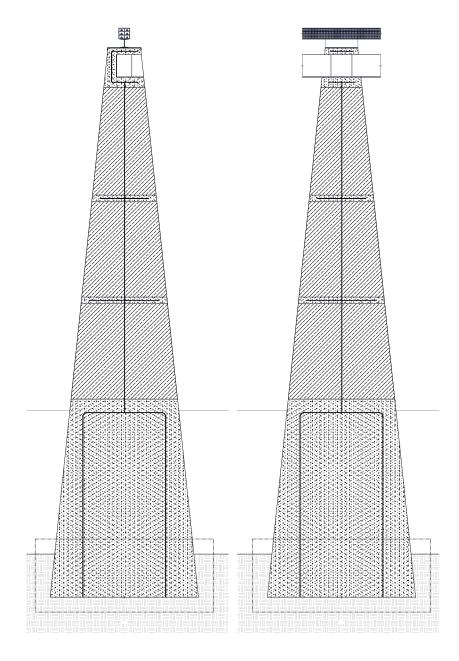
Superstudio



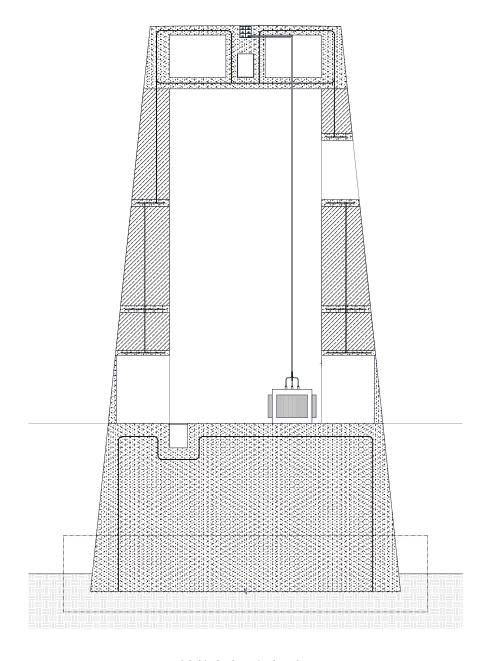
typical column detail



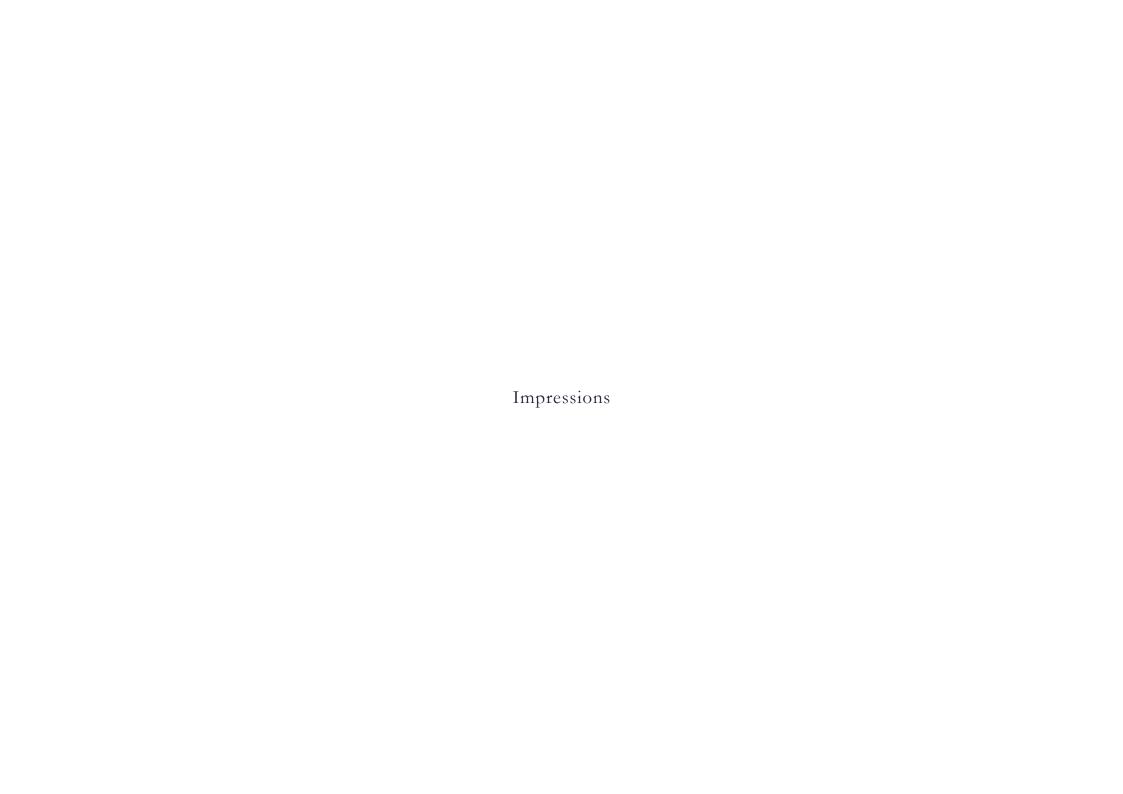
typical column head detail

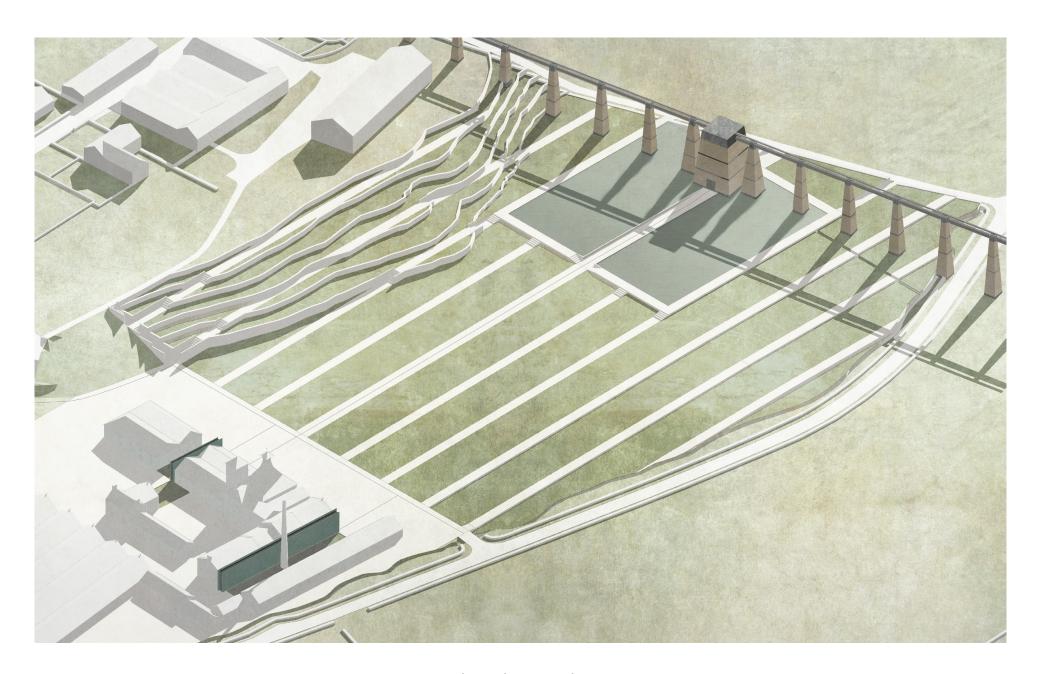


water delivery column



inhabited column | sub-station





intervention axonometric



aqueduct | cistern
main path over cistern pond and embedded electrical channel, looking west towards sub-station entrance



cistern | reed beds
cistern edge over control chamber, looking north towards Brora hills



reed beds | embedded delivery channel
main path between reed beds, looking east towards Brora distillery

V Distillery | Consumption

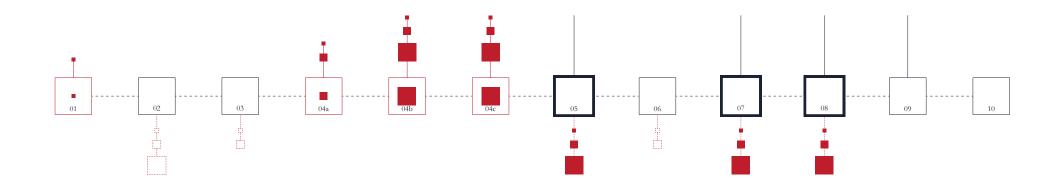
Brora Distillery











dry whiskey-making process
whiskey-making process with chilled coil cooling
whiskey-making process with hot water

on-site purified water source

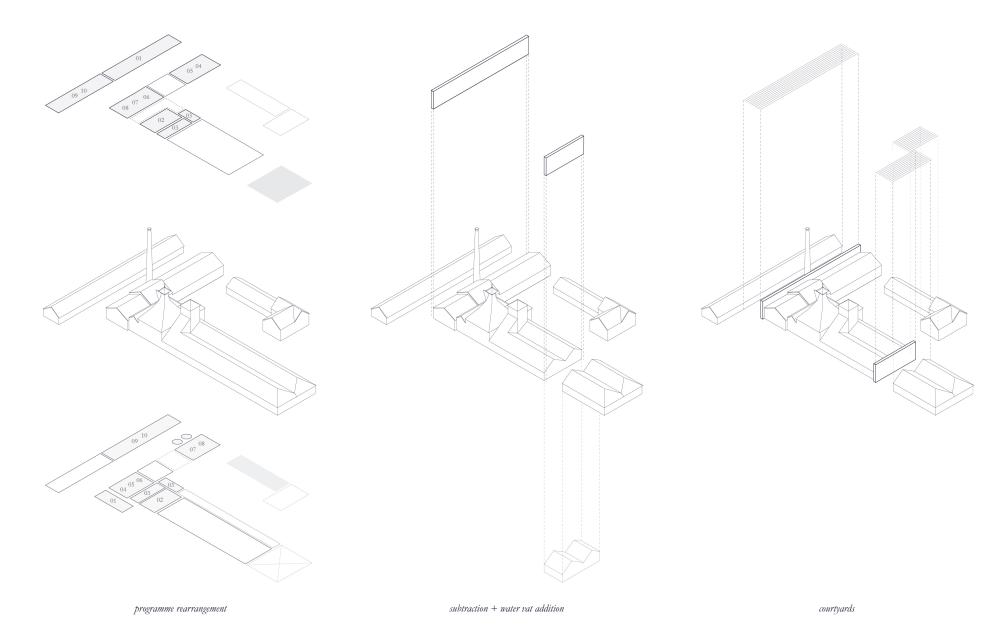
hot air DHW + space heating

- - existing linear spatial process
- cold water supply
- hot water supply

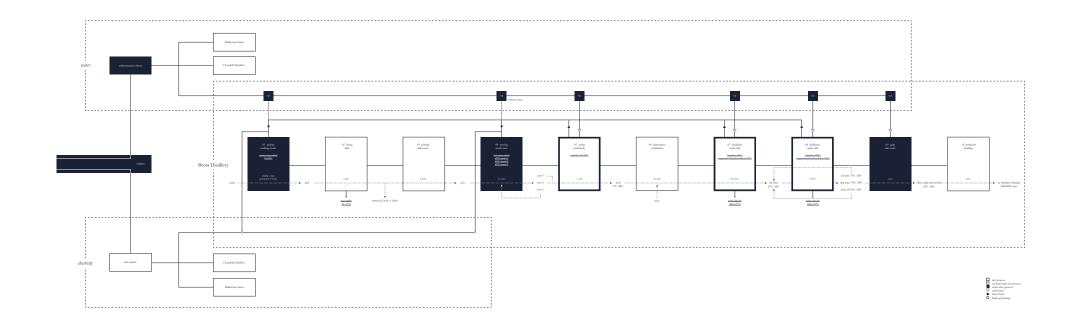
--- lost by product
--- recovered by product

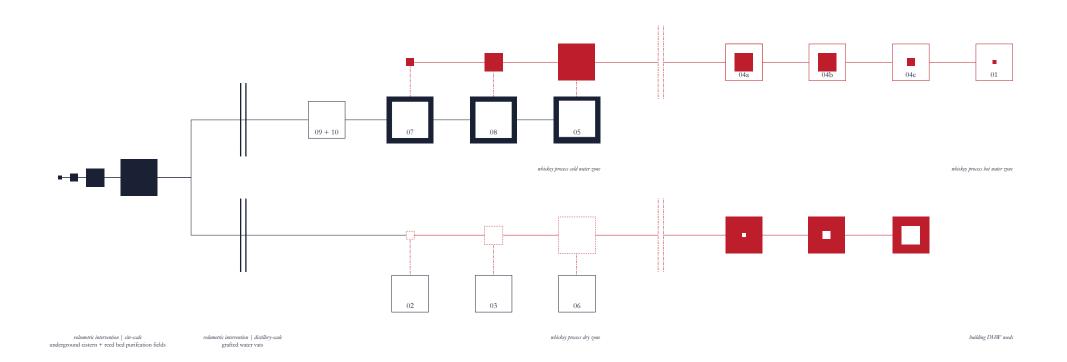
existing linear typology





intervention strategy





dry whiskey-making process

whiskey-making process with chilled coil cooling whiskey-making process with hot water

on-site purified water source hot water

hot air

■ DHW + space heating

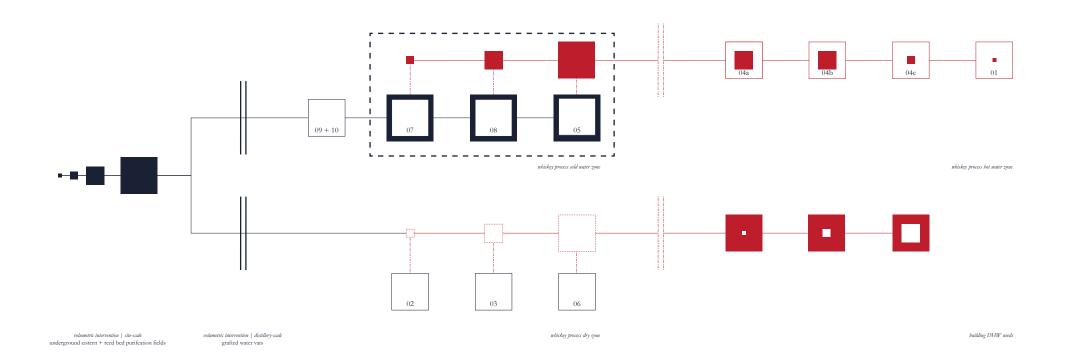
- - existing linear spatial process

cold water supply
hot water supply

---- lost by product

recovered by product

proposed typological subversion



dry whiskey-making process

whiskey-making process with chilled coil cooling whiskey-making process with hot water

on-site purified water source hot water

hot air

■ DHW + space heating

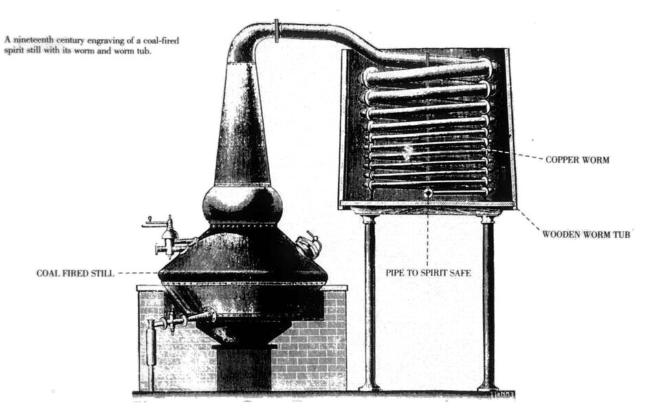
- - existing linear spatial process

cold water supply
hot water supply

---- lost by product

recovered by product

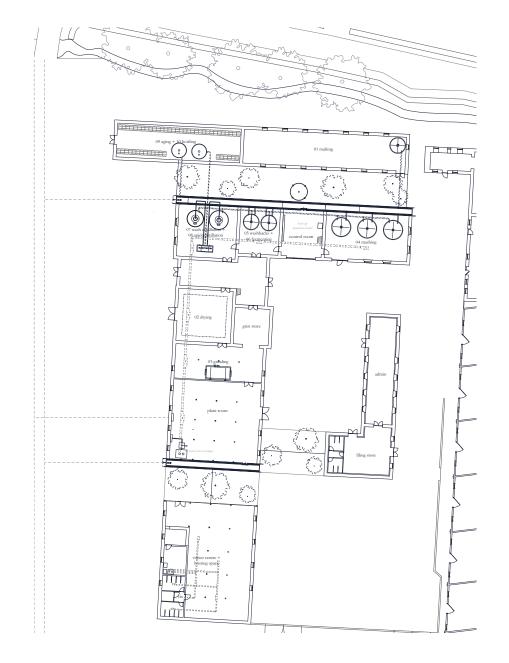
proposed typological subversion

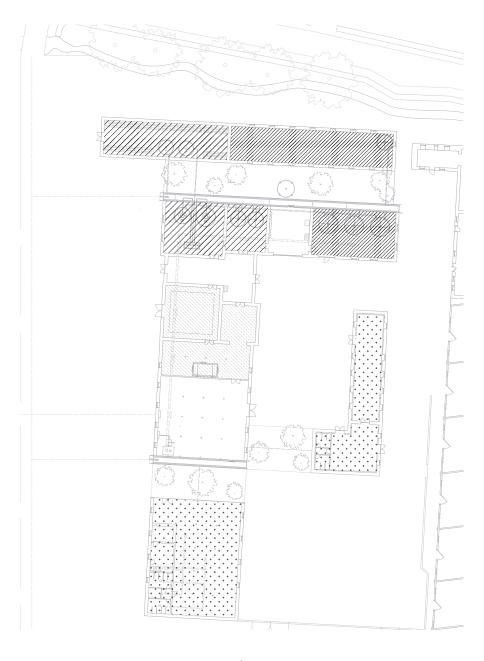




typical still condenser | worm tub

proposed programme



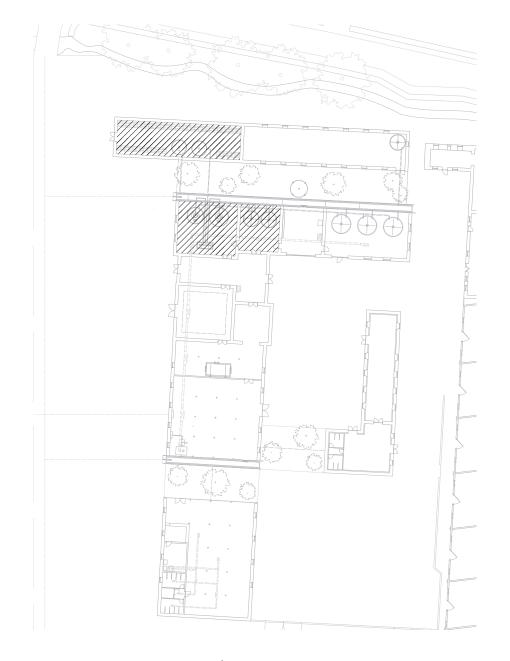


/ cold water zone

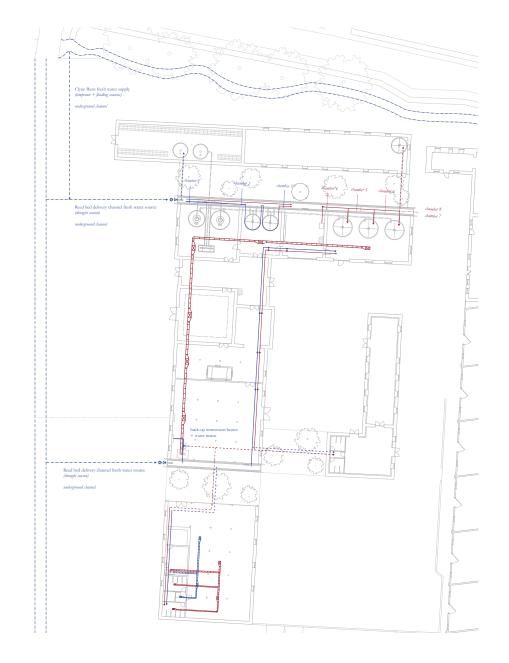
//. hot water zone

exhaust air zone
acclimatised zone

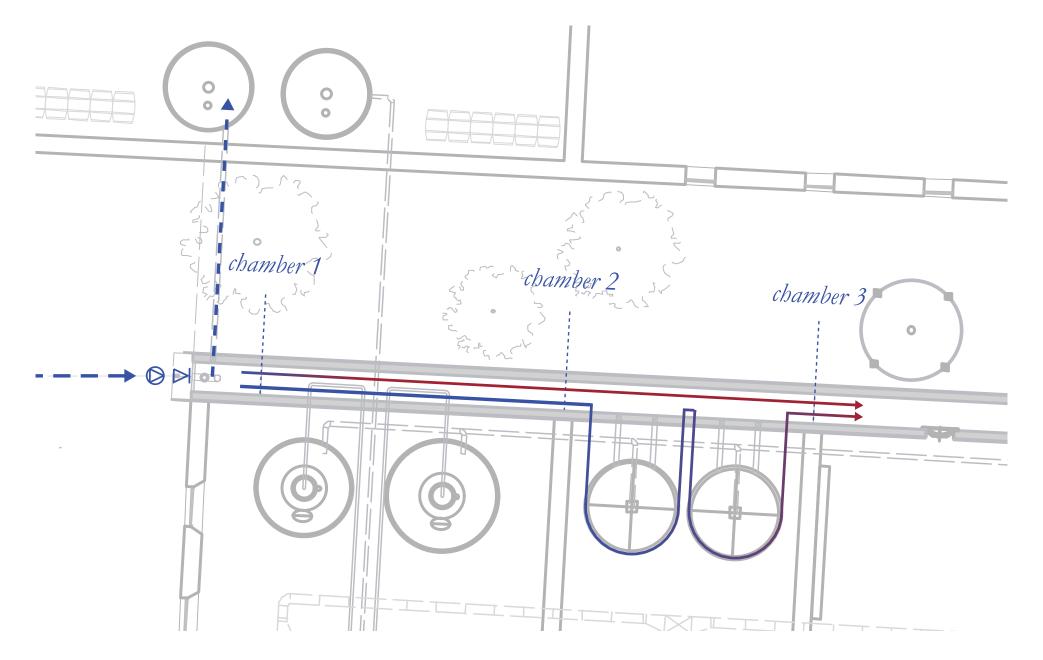
zoning



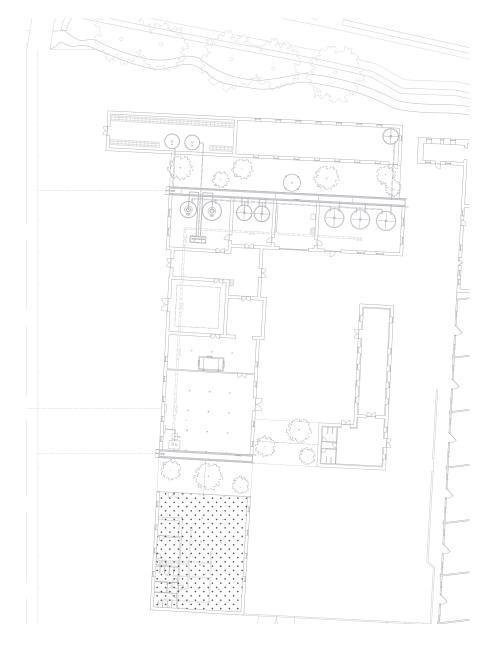
hot water zone



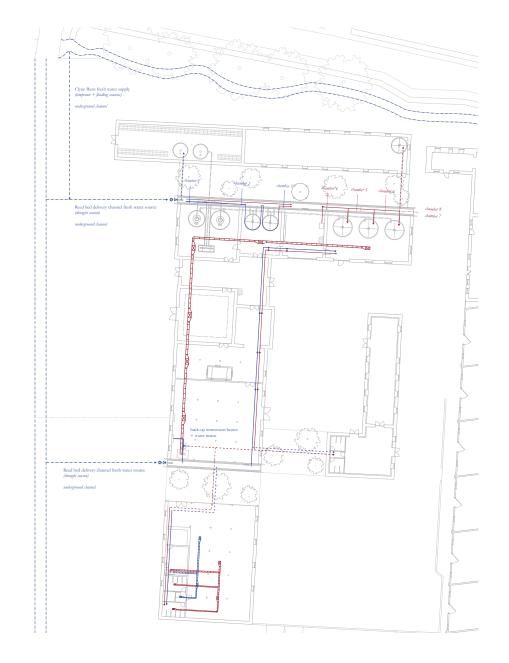
proposed heat recovery system



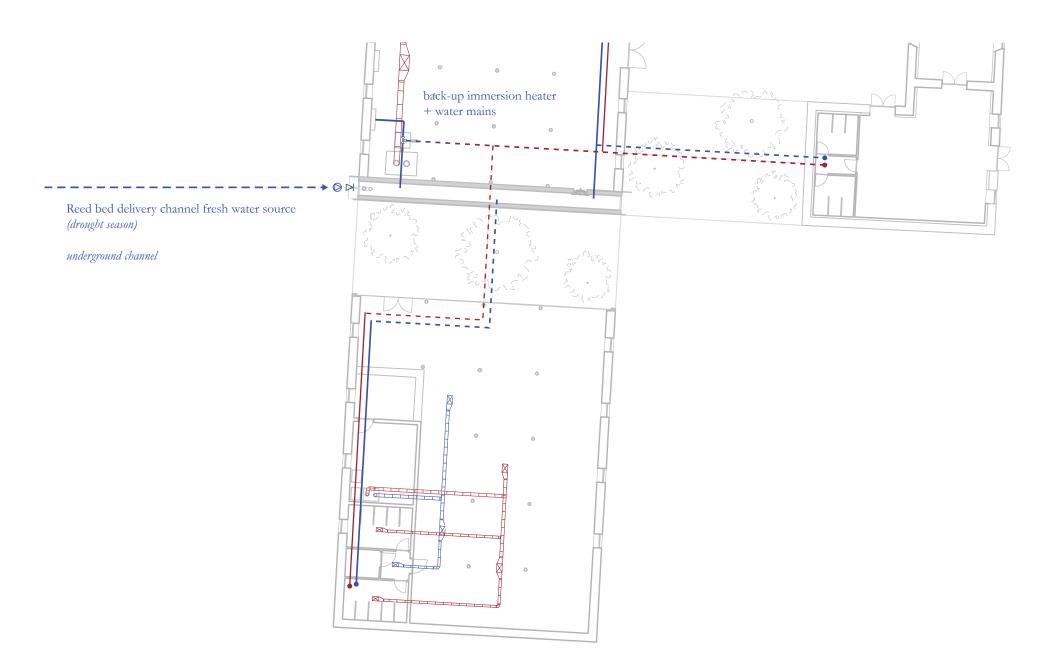
hot water zone heat recovery



acclimatised zone



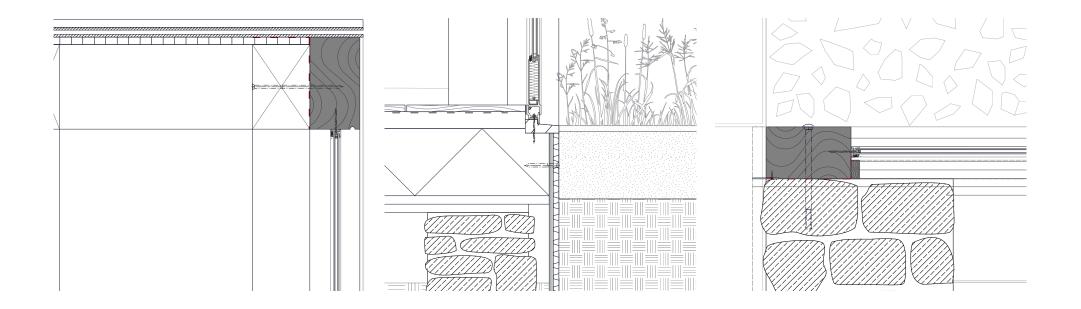
proposed heat recovery system

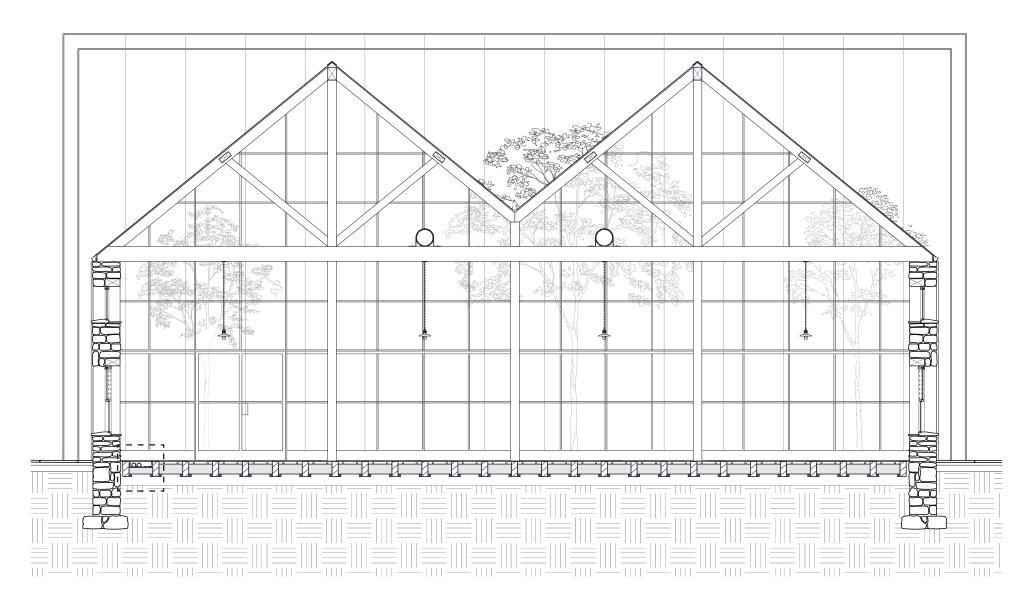


proposed heat recovery system

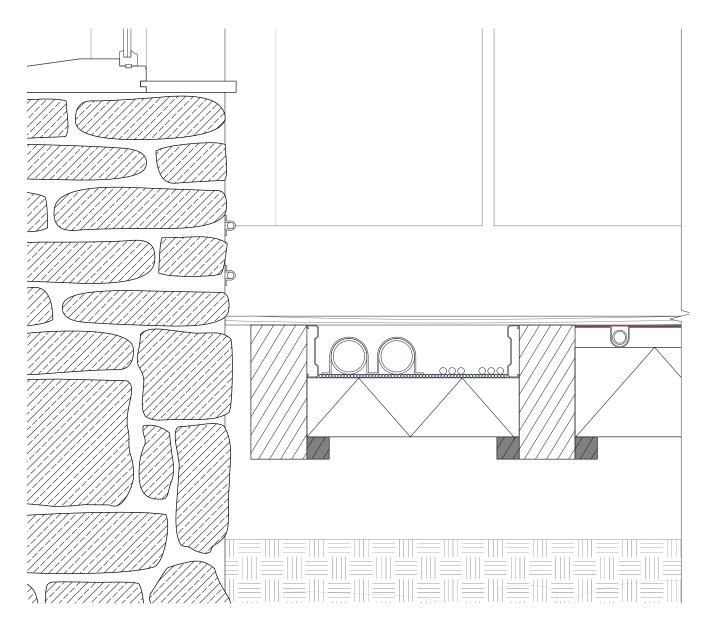


visitor centre | courtyard | plant room section

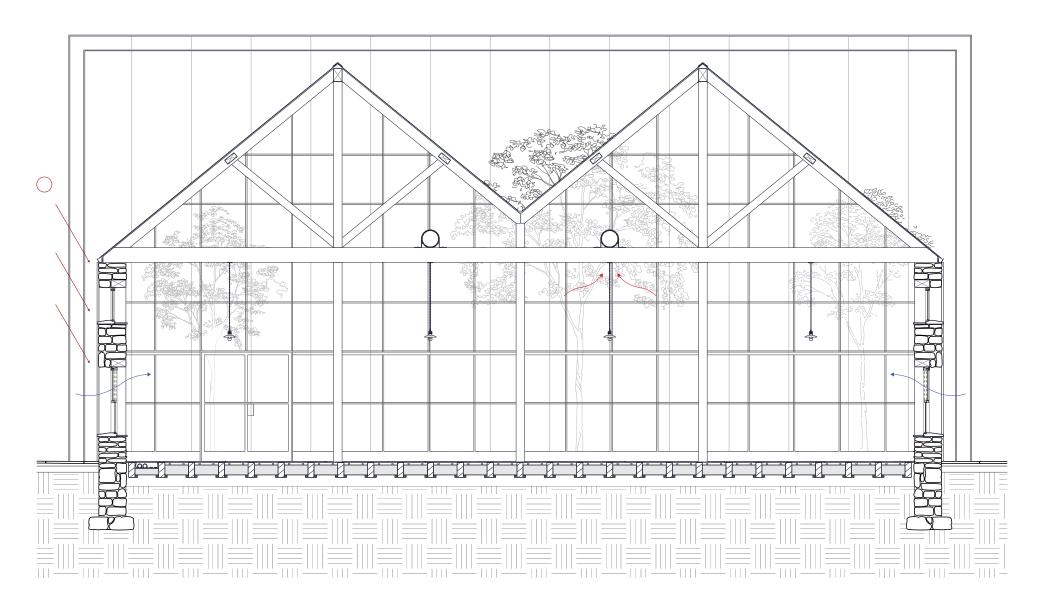




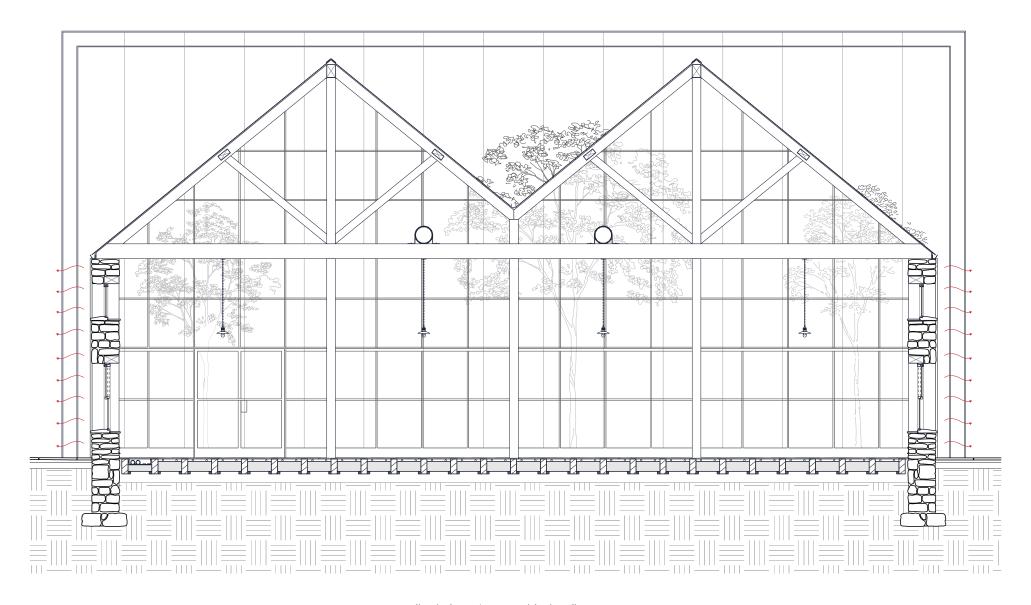
visitor centre section



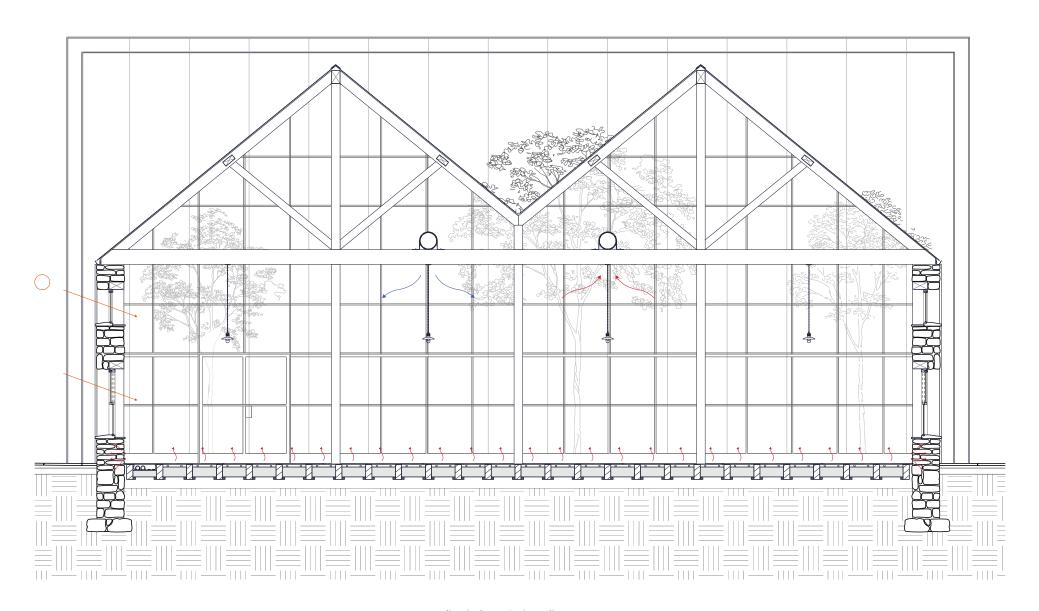
distillery visitor centre | masonry west facade | wall/floor detail



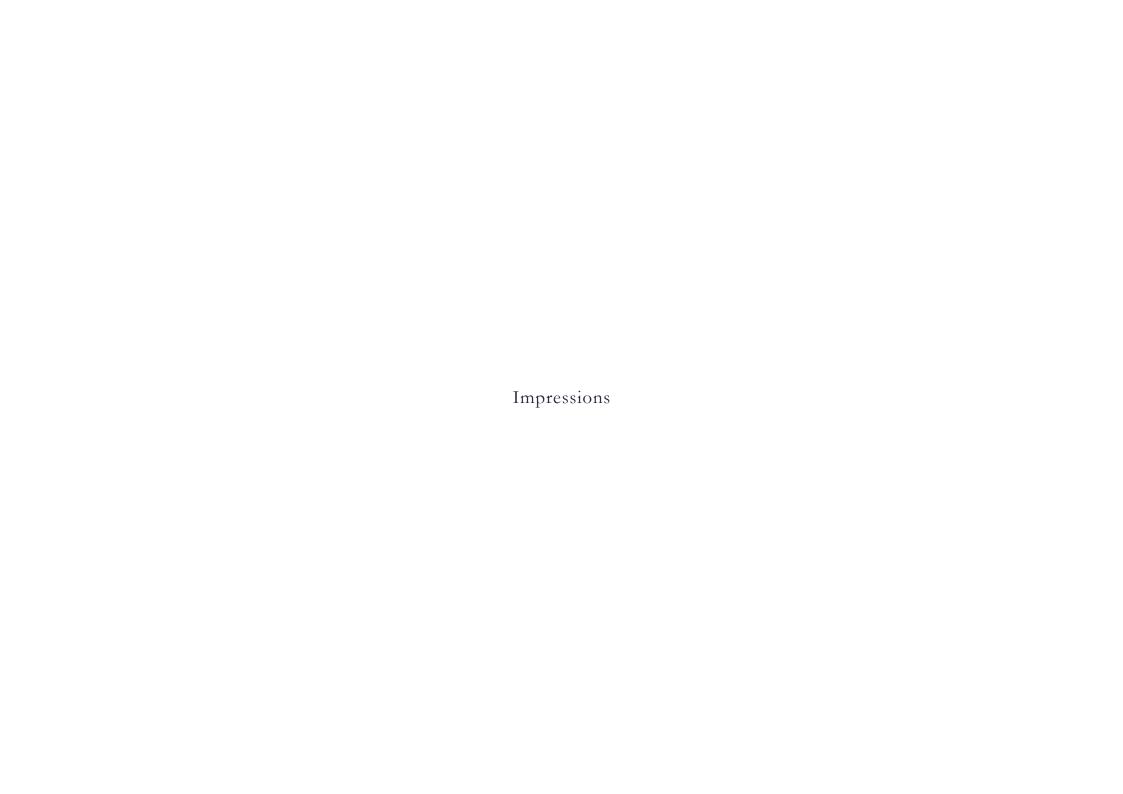
acclimatised zone | summer day-time climate strategy



acclimatised zone | summer night-time climate strategy

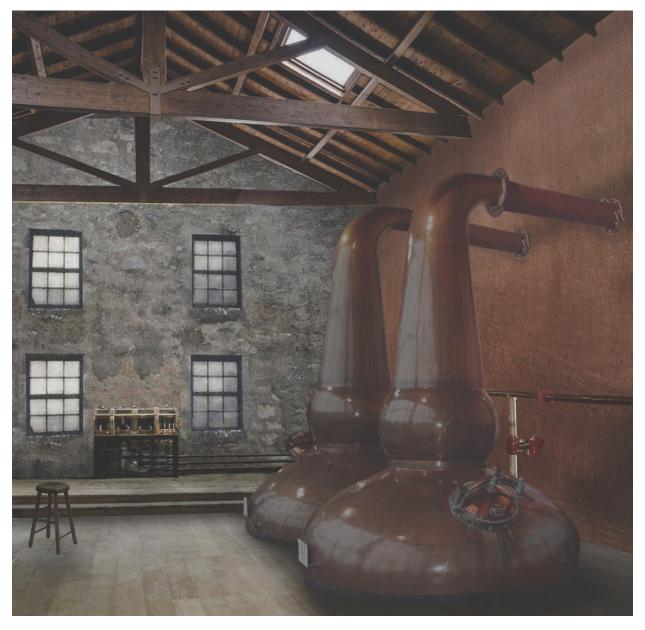


acclimatised zone | winter climate strategy

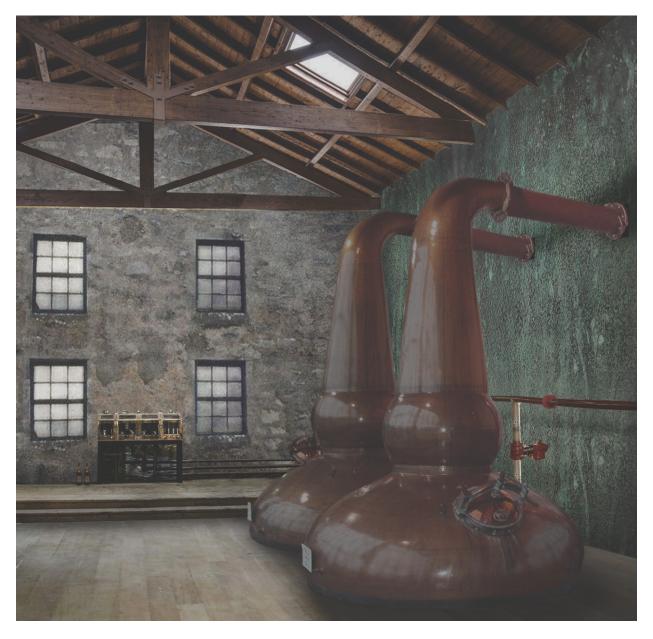




embedded delivery channel | water vat view into northern courtyard, with copper-clad water vat grafted onto existing distillery



water vat | still room
interior view with new unoxidised copper water vat



water vat | still room interior view with aged oxidised copper water vat



















