

THESIS TITLE
REPURPOSING OF INDUSTRIAL
ESTATES:
AN EXPLORATION OF THE
POSITIVE IMPACT THIS CAN
HAVE ON BIODIVERSITY AND
WELLBEING

PROJECT PROPOSAL
TOLKA YOUTH WELLBEING
CENTER
AND URBAN FARM

ALIA MCGURRIN

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ACKNOWLEDGEMENTS

Johanna Cleary and Calbhac O'Carroll, thank you for being amazing motivators and generously supporting me throughout my final year. Your enthusiasm has been incredibly inspiring and you have truly helped me rediscover my passion for architecture over the past few months. I always enjoyed our studio desk crits and chats which were consistently thought-provoking, pushing me to new heights and enabling me to create a project that I am genuinely excited by. It encapsulates everything I have learned and come to adore about architecture during my degree, and I am now looking forward to infusing this passion into my career as a graduate architect.

Sima Rouholamin, your positive and contagious energy in the studio kept me going each day. You pushed me to think big and *radically* of course for my final year project and my fast approaching architecture career.

Kevin Donovan, a big thank you for your insightful conversations which helped me shape my thesis idea and set a direction for the year ahead back in semester 1.

Class of 2023, we've had so many laughs, bocos pizzas, pints and fun over the past few years. I feel incredibly lucky to be finishing my degree with such a kind and talented group of people.

Family, thank you for giving up the dining room table, keeping me fuelled with buckets of coffee and biscuits, and putting up with my most likely not-so-exciting architecture monologues this year.

ABSTRACT - THESIS BOOK OVERVIEW

Thesis Writing

Repurposing of industrial estates: an exploration of the positive impact this can have on biodiversity and wellbeing

Through my thesis research and writing I investigated the best practice for the repurposing of industrial sites and set out the four key objectives of: Reuse, Renaturing, Porosity and Openendedness. Reuse targets sustainable recycling of existing materials and repurposing of structures on site, lowering carbon emissions and retaining industrial heritage. Renaturing aims to transform the site and landscape into a place for nature to flourish once again and people to enjoy the natural mental health benefits which come with this. Porosity relates to improving circulation, connection and accessibility. Openendedness focuses on capacity for future growth and reaching beyond the site.

Site

Dublin Industrial Estate, Broombridge

I located a site within Dublin industrial estate where I could exemplify the output of implementing the four key objectives for transforming an industrial site, which I set out in my thesis. The site helped me to show the benefit outputs feasible for wellbeing and biodiversity.

Thesis Design Proposal

Tolka Youth Wellbeing Center and Urban Farm

Through research into the needs of the area I found there was desperate demand for youth mental health support facilities. Tolka youth wellbeing center and urban farm is a place for youths to go for wellbeing support. The programme is designed for the client; Jamie's Farm who provide support for disadvantaged youth's growth and wellbeing through a programme built around farming and therapy. My proposal reuses the steel frame of an existing warehouse. I have subtracted from the structure to allow for courtyards filled with trees and relandscaped grass and permeable paving areas within the existing building's footprint. The once roofed warehouse is now primarily open to the elements with the indoor spaces linked by meandering pathways through the courtyards, terraced tree top walkways and threshold stepping stone ponds. The brief is comprised of a series of different zones which are closely linked yet separated by the threshold ponds, these incl: reception, living, activity, therapy and farming.

THESIS INTRODUCTION

Thesis title

Reintegrating young industrial landscapes:

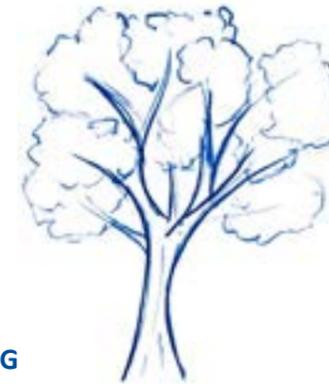
An exploration of the positive impact that the repurposing of industrial sites can have on biodiversity and mental health

Introduction

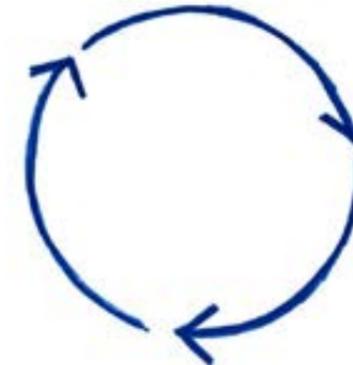
Young industrial landscapes provide an excellent opportunity for future natural and urban growth. If developed correctly, these spaces can help to mitigate the ongoing climate and biodiversity crises and have a positive impact on the mental health of the many people that live and pass through these areas on a daily basis. I feel a strong sense of responsibility to not only generate awareness surrounding this opportunity for positive change, but also to define a clear framework that would enable this change to take place. Through the repurposing, reuse, and reintegration of young industrial landscapes into the urban fabric, we can extend our cities within existing brownfield/ developed sites without the destruction of new greenfield sites. While older industrial areas typically reside closer to city centers, “YILs dating from the 1930s – 1970s are usually located on the outskirts of larger towns” (Heesche, Braae, Jørgensen, 2022, p. 2). Within these prime locations there is also a great opportunity for enhancement of the landscape. I would like to explore this opportunity on two scales; site- larger scale of landscape, and building- smaller scale of fabric.

Through my thesis I would like to investigate the potential to transform these industrial sites and buildings from generally suffocating and harsh spaces with limited biodiversity to enriching green areas that can have a positive impact on climate and mental health.

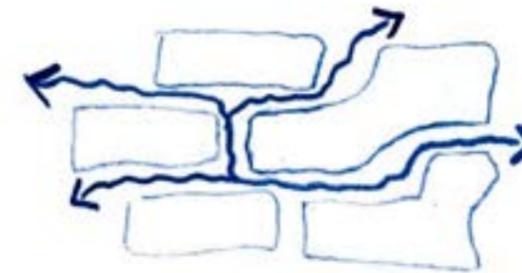
In this essay I will analyze the strengths and weaknesses of a number of projects which have repurposed industrial/ brownfield sites and reintegrated them into useful urban landscapes. I will use the following four themes to guide my analysis of the precedents: re-naturing, reuse, porosity, and open-endedness. I learned about these four themes through the landscape-based transformation research carried out by Heesche, Braae, and Jørgensen. The study they conducted focuses on the extractive industry. Often, the case studies they describe are post-industrial sites where steel or coal was extracted, leading to very harsh landscapes. I will be contrasting their study with sites in Ireland which focus more on commercial activity in industrial estates. The conditions in Irish young industrial landscapes are much softer and less polluted in comparison to those seen in the larger scale industrial landscapes in places like Denmark or Germany.



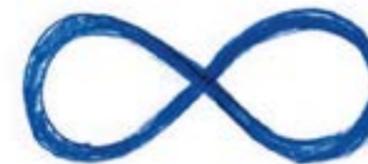
RE-NATURING



REUSE



POROSITY



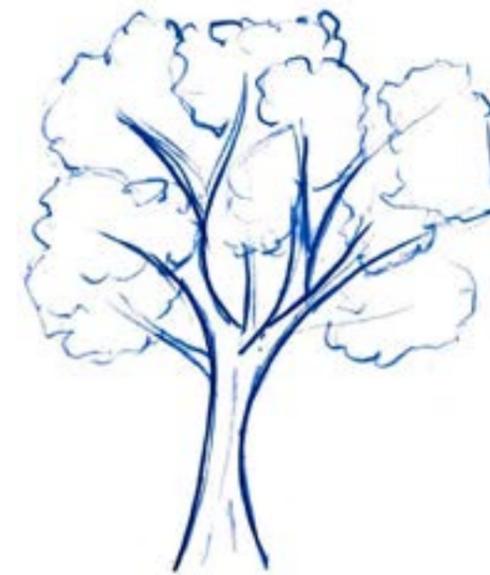
OPEN-ENDEDNESS

OBJECTIVE 1. RE-NATURING

Re-naturing involves reintegrating natural landscapes into brownfield sites. It has a large overlap with greening, although re-naturing has a greater emphasis on natural processes, instead of cultivation. Within the last decade there has been an “increasing interest in urban nature with more ecological approaches to urban planning, as well as a development in the understanding of cities as habitats and ecosystems and not spaces in dichotomy to nature” (Spirn, 2014). In accordance with this view “nature should be reintroduced into cities because of human delight” (Beatley and Newman, 2013).

Re-naturing is one of the four guidance strategies for reintegrating young industrial landscapes/ brownfield sites back into our urban and natural landscape. Re-naturing entails the creation of new habitats and conditions which enable natural processes to once again occur. Examples of this include; the restoration of waterways, ground conditions, and reconnection of fragmented green spaces. This reconnecting of damaged nature is a crucial step in helping to mitigate the climate and biodiversity crisis.

Through the analysis of three innovative precedents, I will show the potential role re-naturing can play as a guidance strategy in repairing, repurposing and transforming young industrial landscapes and brownfield sites. As an architect I am interested in the technological and cultural aspects of re-naturing. Braae writes broadly about the cultural values of renaturing, I have learned a lot about the technological side of renaturing through my reading of constructing landscape by Zimmerman.



RE-NATURING PRECEDENT

(I) SANDY ROAD, METROPOLITAN WORKSHOP PROPOSAL

The design proposal for Galway's new urban quarter at Sandy Road by Metropolitan workshop exemplifies the re-naturing strategy through its connecting of fragmented green spaces with new plantings. The former industrial site is on the edge of Galway city, surrounded by housing to the south and by traffic infrastructure to the north.

McKenna from Metropolitan Workshop approaches the site with consideration for both people and the natural environment. McKenna shows the potential for connecting the Terryland Forest Park to the Lough Atalia Special Area of Conservation. The proposal is about "living in a park, not beside one" (Ireland, n.d.). In comparison with other precedents, the green corridors within the design are underdeveloped. There is also a lack of consideration for water and soil restoration as well as little thought on surface treatment, compared to the work we see in Alter Flugplatz Kalbach and Emscher Park, likely due to the project being in its early stages.

McKenna writes about how the place will offer a "diverse garden neighborhood for all ages and incomes" (Ireland, n.d.). This masterplan for the mixed-use 21st century neighborhood embodies the Galwegian culture as it is denser, greener, and set in a park right at the heart of the city: "A neighborhood to live well by accident" (Ireland, n.d.). This scheme has a strong focus on providing "direct physical and visual access to abundant green spaces" (Ireland, n.d.).

The garden city movement was proposed almost 100 years ago. The model shares some of the characteristics of McKenna's proposal such as an attempt to balance shared green spaces with residential and industry. This 20th century urban planning movement encouraged satellite communities surrounding the city centers and separated with greenbelts. "These Garden Cities would contain proportionate areas of residences, industry, and agriculture" (Anon, 2022). In 1898 Ebenezer Howard proposed the concept as "a way to capture the primary benefits of the countryside and the city while avoiding the disadvantages presented by both" (Anon, 2022). Successful Garden City models can be seen in big cities such as Berlin, Paris and London. Over time, realizations have been made that show the ambition to keep and preserve a green belt of countryside around city centers is not practical when aiming for the density required today. McKenna's approach of combining and connecting green spaces within and around residential areas aims to allow for density whilst still preserving and encouraging connection to nature.

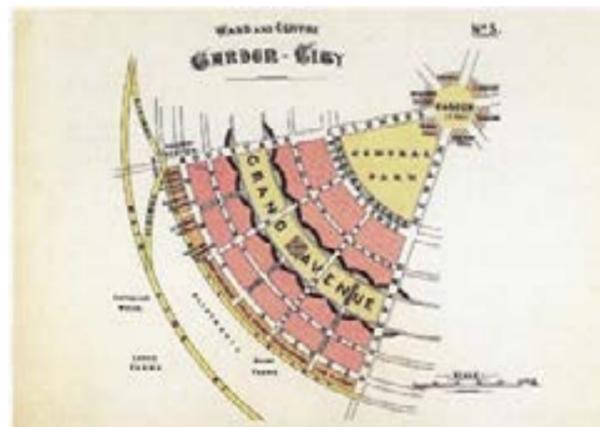


MetWork Galway city masterplan
(McKenna, 2020)

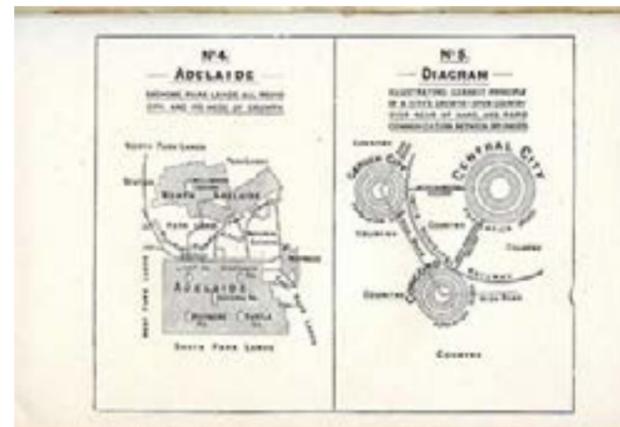


Active open spaces with mixed use
(McKenna, 2020)

McKenna's use of re-naturing enables the restoration of ecology in the area which has been previously damaged by human activities, and uses this "human intervention to help heal and re-enchant the human perception of nature" (Heesche, Braae, Jørgensen, 2022, p. 11). The consideration for human connection to and perception of nature is seen more strongly than in Alter Flugplatz Kalbach and Emscher Park. McKenna's design approach to the shared hard surfaces and roads sets his proposal apart from traditional landscape and surface treatment in Ireland which is unfortunately too often governed by the DMURS manual for urban streets. One of the aims of the manual is "to ensure compact, connected neighborhoods based on street patterns and forms of development that will make walking and cycling, especially for local trips, more attractive" (Design Manual for Urban Roads and Streets, 2019). Usually engineers simply adopt from this and use it as the basis for road and path design. I am interested in how we can make "road" and "path" surfaces which people enjoy rather than surfaces which are simply capable of supporting a car or being shared by a car and a person.



Ebenezer Howard, Garden Cities of To-morrow
(Howard, 1898)



Ebenezer Howard, Garden Cities of To-morrow
(Howard, 1922)

RE-NATURING PRECEDENT

(II) ALTER FLUGPLATZ KALBACH

Alter Flugplatz Kalbach located in Frankfurt am Main also exemplifies re-naturing. Previously used as a US military air base, the site was transformed between 1951-1952 into an outdoor recreational park. Work was carried out by the landscape architect GLT Michael Triebswetter Landschaftsarchitekt.

Like the Sandy Road site, the air base site is surrounded by previously disconnected natural amenities such as grasslands and fields that line the runways which are now connected through green corridors. The former long runway at the center of the site is surrounded by the river Nidda. An open floodplain has been integrated at the south of the runway allowing for re-naturing, circularity natural processes to again occur. "A path now runs from the runway to the river" (Heesche, Braae, Jørgensen, 2022). Similar to Metropolitan's proposal, human connection to the natural amenities of the site is encouraged.



*fragmented runway rewilding allowing natural growth
(Cop, S, n.d)*

Unlike Metropolitan Workshop's proposal, there is careful consideration for the treatment and remediation of the ground surface and soil throughout this project. This technical approach allows for the creation of a cultural space that integrates humans and nature. For example, there is a greening strategy used for treating the existing pavement in the site to make it more adaptable for nature to reinhabit. The runway material was broken down into a variety of sizes, ranging from small gravel to ten meter square clods, and was used to create sub areas with different habitat conditions. The terrain in the site varies from a hard barren habitat to a dense forest habitat. "The former airfield shows different ecological potentials (a succession and monitoring area, a ruderal meadow area, a concrete slab fields area, a concrete break-off area)" (Heesche, Braae, Jørgensen, 2022). The site exemplifies many of the ecological values of renaturing and is used as an educational facility for the public.



*partial runway left for walking path
(Cop, S,n.d)*



*fragmented runway / water collection
(Cop, S,n.d)*

RE-NATURING PRECEDENT

(III) IBA EMSCHER PARK

IBA Emscher Park also demonstrates re-naturing as a strategy for reintegrating a brownfield industrial site into the natural landscape whilst making it useful to people. The project involves the transformation of a 150 year old industrial brownfield site into a green landscape park. The main aim of the project was to regenerate the landscape. Due to this being the key objective, there is a lack of consideration for the built environment and human connection to the landscape with many existing structures left dormant across the site.

Similar to the other two precedents, Emscher park is made up of a series of diverse spaces including, "forests, agricultural land, brownfields, railways, embankments and other greenish wastelands" (Heesche, Braae, Jørgensen, 2022). Like in the other two precedent studies, previously fragmented green structures are now reconnected by new green areas which run along and through Emscher valley, forming rich green corridors that enhance the biodiversity in the site.



*plan for the transformation of part of the site
Latz + partner, (n.d.)*

Another aspect of the renaturing which is not seen in the other two precedents is the remediation carried out on water in the site. The Emscher River ecology was restored through the creation of new sewers, wastewater treatment plants, and underground wastewater treatment plants. All open water courses were re-natured and this in turn has led to an increase in habitats and biodiversity in the site.

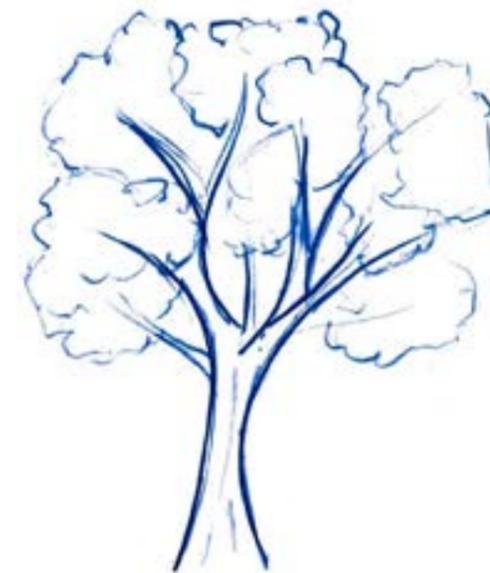


*Emscher river and industrial buildings which remaining in the site
Latz + partner, (n.d.)*

RE-NATURING - SYNOPSIS

Through the analysis of these three precedents I have demonstrated how re-naturing can be used as a strategy when reintegrating brownfield/ industrial sites back into the natural and urban landscape. As I have shown, re-naturing is done in many ways including: 1. Greening/ connecting fragmented green spaces by green corridors, planting native meadows which encourage biodiversity, breaking surfaces to allow for natural processes to occur and habitats to develop, 2. Restoring waterways such as canals and rivers and improving water management on site, 3. Repairing soil onsite.

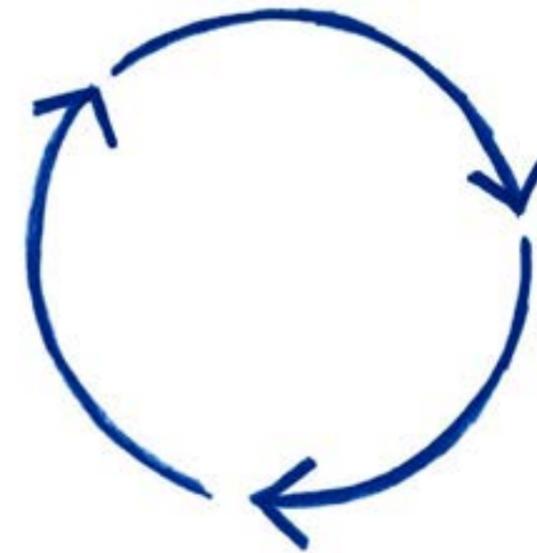
The Metropolitan Workshop proposal incorporates re-naturing through plantings and green corridors. It also exemplifies direct human connection to nature through close integration of nature with the built environment. The Alter Flugplatz Kalbach landscape remediation project epitomizes re-naturing through greenway corridor connections, surface and soil restoration to enable natural processes and growth. IBA Emscher Park uses re-naturing to reconnect fragmented green spaces through green corridors along and through the valley and demonstrates how careful remediation measures for waterways can impact levels of biodiversity.



OBJECTIVE 2. REUSE

Reuse traditionally involved the reuse of singular architectural elements such as chimney stacks, railway lines or entrance gates. More recently reuse is seen to have a broader scope and can now be seen to recognize “our everyday environments, local histories, and identities, as well as our limited resources in terms of materials and space”. (Heesche, Braae, Jørgensen, 2022) What is already there, available and suitable must be used before we produce anything else. “It is imperative that we demolish as little as possible and make use of – what we call in a circular economy – the ‘material bank’ that a building holds” (AT Editor, 2020). The reuse and transformation of brownfield sites is directly aligned with sustainability and biodiversity goals. In his book *Landscape Architecture*, Hutton writes about awareness of material cycles, stating: “producing a new landscape inadvertently means consuming or transforming landscapes elsewhere” (Hutton, 2013).

Through an analysis of three case studies, I will show how reuse functions as the second of the guidance strategies. Reuse can be seen at varying scales ranging from overall structures to singular building elements and materials to soil layers.



REUSE PRECEDENT

(I) THE LX FACTORY

The LX Factory exemplifies reuse as a strategy for reintegrating an industrial site back into the useful urban fabric. It is located in Alcantara, an industrial, working class neighborhood in the heart of Lisbon. It functioned as a cloth manufacturing factory from 1846 until a sharp decline in the industry caused the factory to be abandoned in the 1990s. Mainside purchased the site and transformed it into “an island of artistic creativity”(Xie, 2015). The renovation of the industrial site was minimal, with many of the original structures and old factory doors remaining intact. The open spaces were flexible and attracted over 80 enterprises, mainly small businesses, including; “fashion, advertising, communications, multimedia, art, design, architecture, music, photography, dance schools and several cafes” (Xie, 2015). Mainside aimed to reintegrate the site into its surrounding neighborhoods and to bring back “a sense of local pride in both the industrial heritage and contemporary usages”(Xie, 2015) of the LX Factory.

The buildings have retained/ reused their appearance for the aesthetic value instead of for functionality. An example of this can be seen in the neat display of heavy machinery inside the factory hallways and in the division of the second floor space into various room sizes for art studios. “There is virtually no relationship between the original function of the factory and the end products of restoration for the purpose of tourism and economic growth” (Xie, 2015). The LX Factory is a prime example of how an abandoned industrial site can shift from being labelled as a ‘brownfield’ or ‘junk space’ to “defining a distinct territorial identity by inserting new cultural symbols that resonate with local sense of heritage”(Xie, 2015).

While traveling last summer I spent some time in The LX Factory and was amazed by how carefully each building was treated and clearly appreciated. The industrial character echoed through each room, in the fire escape stairs we climbed to the rooftop bar, the industrial doors we pulled open to enter the café and the wide open spaces we meandered through in the art studios and craft shops. The architectural heritage which was saved made it a fun and intriguing place to explore.



Cobblestone main street



*Reused factory door
(McGurrin, A. 2022)*

REUSE PRECEDENT

(II) IBA EMSCHER PARK

IBA Emscher Park also demonstrates how reuse is an imperative strategy for reintegrating industrial sites back into the useful urban fabric. It addresses “the conversion and reuse of an entire industrial region to serve new, mainly recreational purposes” (Heesche, Braae, Jørgensen, 2022, p.14). The Emcher river was cleaned and transformed from an open sewer to a recreational space. The original railway tracks running through the site were reused as a “regional path network for cyclists and hikers” (Heesche, Braae, Jørgensen, 2022, p.14). Examples like this can also be seen in the greenways around Ireland.



*regeneration of sewer into healthy river
(Durchleuchter, J. 2021)*

Many of the industrial buildings were repurposed into contemporary green workplaces. Reuse was carried out on-site at a variety of scales. Building structures were reused as climbing frames and theme gardens. We see material reuse in the use of cast-iron plates from a former furnace plant being used as pavement.



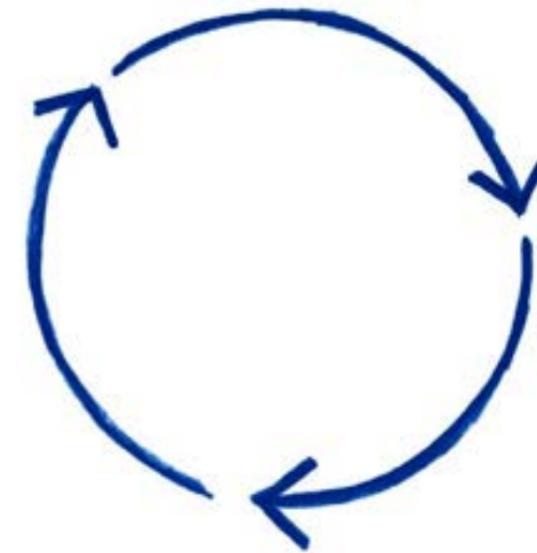
*cast iron plates reused as pavement
Latz + partner, (n.d.)*



*building structure reused for climbing/ recreation
Duimdog (2014)*

The two precedents show how reuse can be a powerful strategy for reintegrating industrial sites back into the useful urban fabric. In the study carried out by Heesche, Braae and Jørgensen they listed a number of the ways we can categorize different types of reuse. These include: “1. Reuse of overall structure; 2. Reuse of overall structures such as border/ edge zone, infrastructure, road system, grid, plot structure, green structure, building structure, zones/ subareas; 3. Reuse of open spaces and spatial sequences; 4. Reuse of specific structures such as buildings, foundations, terrain elements, plantings, roads, pavements, tracks, etc; 5. Reuse of materials on site: building materials, pavements, soil, stone, and concrete” (Heesche, Braae, Jørgensen, 2022, p.15).

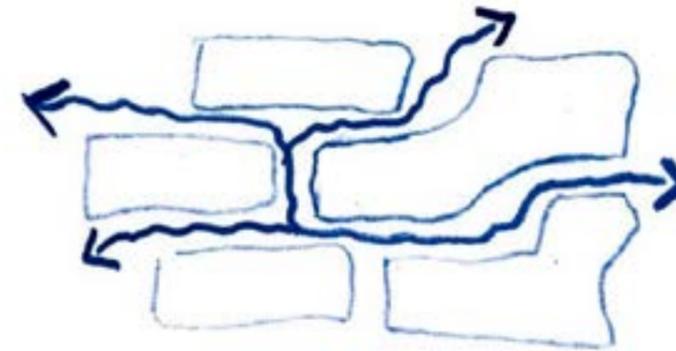
The LX Factory exemplifies how reuse can enrich a project. Reuse is used as a strategy at a variety of levels from the repurposed overall structures of the warehouses to the reused cladding materials and individual building elements like factory doors. LX Factory is described as “a testimony to the possibility of using creativity to produce spaces suited to activities with low levels of investment by taking advantage of the industrial environment” (Graverau, 2012). Emscher park also successfully utilizes reuse as a strategy for regeneration of an industrial site. Again this is seen on a variety of scales from the overall factory building structures to the individual building elements repurposed as climbing frames and railway tracks as walkways.



OBJECTIVE 3. POROSITY

The third strategy for reintegration of industrial and brownfield sites back into the useful urban fabric is Porosity. This involves removing barriers, opening a site up to its surroundings, and creating a flow of movement through the area. It also enables the transformation of monofunctional industrial areas into multifunctional places with greater social interaction. In a 1925 essay on place, Theoreticians Benjamin and Lacis used the term 'porosity' to describe urban spaces in terms of their ability to absorb "people, memories, and energy" (Wolfrum, S. 2018). In more recent years, urbanists Bernardo Secchi and Paolo Vigano have used the term when "addressing permeability and creating connections and links to open areas that had been closed off" (Vigano, PP. 2009).

I will show how porosity has been successfully utilized and implemented as a strategy for reintegration in two industrial site precedents. For porosity to work, resources must become shared and landscapes should be seen as common ground.



POROSITY PRECEDENT

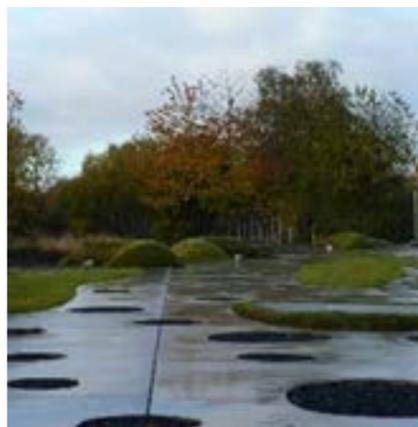
(I) LOUVRE LENS MUSEUM

Like the other precedents, the Louvre Lens Museum Park in France has utilized the four strategies. In particular the project demonstrates the strength of porosity. The park is located on top of a “horizontal slag heap from the former coal mine” (Heesche, Braae, Jørgensen, 2022, p.16). The long site follows the line of the old railway track running east to west with forest plantings located at both ends of the site and shelterbelt plantings along the rail lines edge. Horizontal and vertical porosity is addressed through a series of design moves in the project. Due to the different levels in the site and planting growth which naturally colonized, the former slag heap became a closed off area. Connections have been re-established between the site, town, park and museum through main promenades. Ten entrances lead the public through the edge zone and into the park. The museum square block sits centered in the park with two projecting wings.



site plan showing connections to surroundings from four main plazas
Landezine. (n.d.)

Concrete paths wind through the park and around existing. Literal porosity is also addressed throughout the site. Round holes, cracks and patches are punctured into the concrete pavement and filled with “porous material left from the mining industry or plants which enable filtration and storage of water” (Heesche, Braae, Jørgensen, 2022, p.16). While I question whether this method of landscape treatment is the most ecological option for landscape regeneration, I do value the retention of the original paths like we have also seen in the runways of Alter Flugplatz Kalbach. I believe further deconstruction of these solid concrete surfaces would allow for better filtration and recovery of the landscape.



holes punched into path
landezine. (n.d)



landscaping/ water collection
landezine. (n.d)

POROSITY PRECEDENT

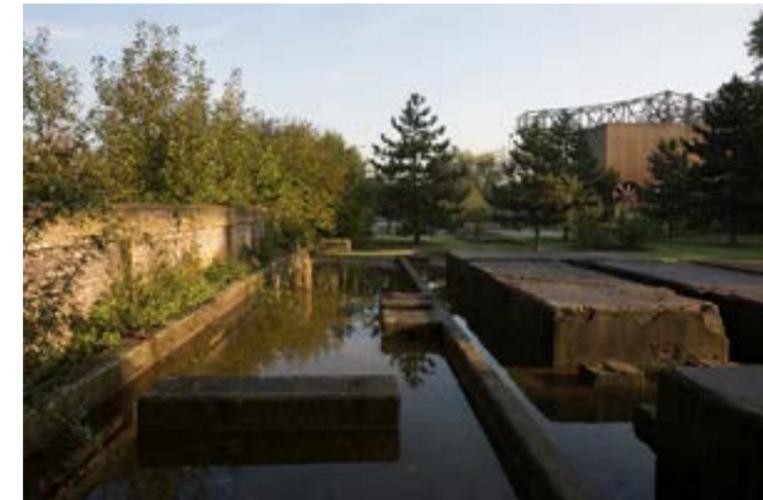
(II) EMSCHER PARK

Emscher park also exemplifies porosity on a number of levels. The strategy is seen in the reconnected green structures which, prior to the project, were badly fragmented. These green spaces now function as vibrant ecosystems with far greater opportunity for biodiversity growth than before. The regeneration of the river and revival of the pedestrian and cycling paths also epitomizes the possibilities porosity offers.



Natural regrowth on site
Latz + partner, (n.d.)

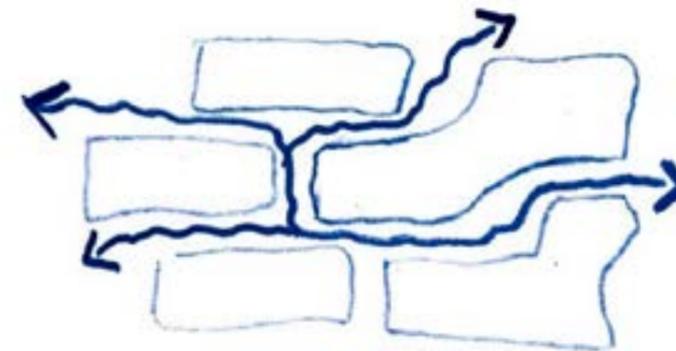
Through these improvements, like the Louvre Lens Museum, the landscape has become far more accessible to the public. Furthermore, these cleaned waterways and improved connections of green spaces bring great benefits to the ecology on site.



Collected water left for new habitats
Latz + partner, (n.d.)

Through my analysis of these two projects I have shown just some of the opportunities porosity enables when utilized in regeneration and reintegration projects involving industrial landscapes. It is evident there are many benefits that the use of porosity can have for people and wildlife. Through their study of landscape regeneration projects Heesche, Braae and Jørgensen wrote about the various scales and levels of porosity including: “1. social and ecological connections; 2. interpenetrations of physical edges and administrative borders; 3. circulation for pedestrians and cyclists; 4. open for new uses; 5. support common areas and facilities; 6. support places to stay” (Heesche, Braae, Jørgensen, 2022, p.16).

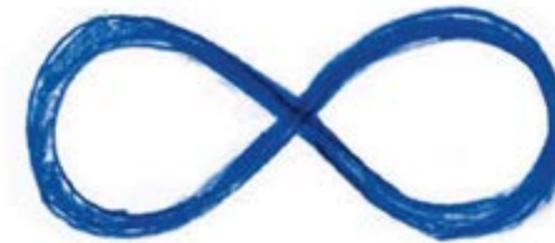
The work undertaken at Louvre Lens Museum Park and Emscher Park exemplify the strategy of porosity. Both projects involve reconnecting fragmented green spaces which improves ecologies and biodiversity levels in the area, improving pathways and cycleways through the site to enable democratic accessibility across the entire site, and opening up of site boundaries to create a stronger connection and relationship between the site and its surroundings/ neighborhood.



OBJECTIVE 4. OPEN-ENDEDNESS

This fourth strategy involves “flexibility, multiplicity and temporality” (Heesche, Braae, Jørgensen, 2022, p.17). For a project to have a long lifespan it must never be ‘fixed’ to a singular function which cannot develop and change with the passing of time. Landscape projects in particular must consider the ongoing complex processes of nature. The open-endedness strategy recognizes the world is cyclical and that humans, non-humans, and nature are interconnected.

I will now discuss how open-endedness has been used as a strategy to reintegrate two industrial sites back into useful places for people to interact and enjoy, and for nature and biodiversity to grow and flourish.



OPEN-ENDEDNESS PRECEDENT

(I) THE LX FACTORY

The LX Factory has proved its ability to grow with the times since its transformation from a cloth manufacturing factory into an island of creativity. The site is located in an area where the cost of land was originally very low. The company has transformed the derelict industrial building and streets into a vibrant area of flexible work spaces and studios. The company originally rented spaces at a very affordable rate of 6-12 euros per square meter.

As well as renting space to businesses and being a center for arts, creativity, and tourism, the LX Factory now holds an open day event hosting “live music, film, food, art fairs, exhibitions and live djs”(Xie, 2015). This innovation shows how flexibility and open-endedness can allow for continuous growth. When costs increased some small businesses which once formed the heart of the LX factory were pushed out. However, with the open plan and multifunctionality of the spaces, new businesses were able to easily move in and there has been no threat to the success of this project since its opening. LX Factory is now listed as one of the “must see” destinations in Lisbon (Zarrilli & Brito, 2013).



*Industrial building – book/ record shop
(McGurrin, A. 2022)*

OPEN-ENDEDNESS PRECEDENT

(II) THE LOUVRE LENS MUSEUM

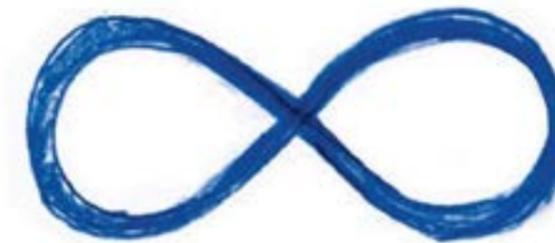
This project also utilizes open-endedness. It is seen throughout the site on a comparatively minor scale. Simple opportunity for growth is seen in various elements across the terrain that are left exposed to weathering, which allows for natural growth of vegetation. The park is designed to evolve over time. Through use of the open-endedness strategy, the project reveals “the processes and dynamics of nature through erosion, weathering, and natural succession” (Heesche, Braae, Jørgensen, 2022, p.18).



*landscaping - new surfaces allowing room for future growth
Landezine. (n.d)*

Through my analysis of these two case studies and also learnings from the landscape study carried out by Heesche, Braae and Jørgensen, I have learned that open-endedness can be observed in a number of ways: “1. Long-term cultivation; 2. Programmed open ended strategy; 3. Adaptable strategy; 4. Overall vision implemented through subprojects” (Heesche, Braae, Jørgensen, 2022, p.18).

The open-endedness strategy is seen in the LX Factory. While the businesses renting the spaces may change, the ethos and types of businesses remain similar. Furthermore, we see adaptability in the flexible open plan spaces which are multifunctional. Emscher Park also makes use of the strategy in similar ways. We observe long term cultivation in the man-made holes in the pavement. Adaptability is also seen in the exposure of terrain elements and walls which will weather and adapt overtime to function in new ways.



FINAL THOUGHTS

In this research paper I have described the importance of reintegrating young industrial landscapes back into the useful urban fabric. I have outlined the four themes/ guidance strategies of re-naturing, reuse, porosity and open-endedness, which are imperative for reintegrating these sites, to achieve sustainability goals and to mitigate the climate and biodiversity crisis. I have described in detail how each of the strategies have been utilized through my analysis of innovative precedents for each.

The knowledge and interest I have developed in industrial landscape reintegration in semester 1 has inspired me and will now be the driver for my thesis design proposal in semester 2. I am interested in exemplifying how we can best utilize the four guidance strategies for reintegrating the industrial landscape found at Dublin Industrial estate. Using the knowledge I have gained through my thesis and the four objectives, I would like to design a building which closely connects it's users to nature whilst simultaneously improving the user's wellbeing and enriching biodiversity.

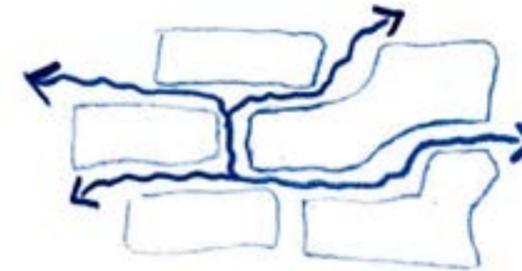
RE-NATURING



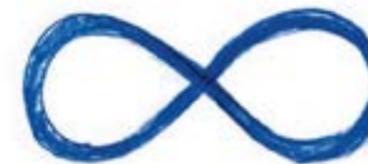
REUSE



POROSITY



OPEN-ENDEDNESS

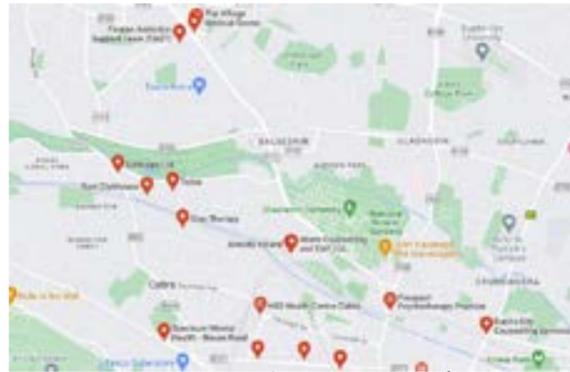


DESIGN PROCESS PART 1.

Reflection 1. (Locus research/ Choosing a Site)

Initial research into the needs of the area

Following the completion of my thesis development research paper I began to research the needs of the area and how I would cater for these needs through my thesis work. I started by looking at the mental health care facilities in the area.



Mental Health care facilities in Cabra/ Finglas area (google maps)

Existing mental health care facilities in Cabra/ Finglas area

1. Cabra for youth
2. Saol clubhouse
3. Spectrum mental health
4. Clan therapy
5. Sankapla
6. Tolco
7. Anxiety Ireland
8. Abate Counselling

I noted the above facilities in cabra and Finglas which offer:

- online and in person youth counselling, family counselling, individual/ relationship counselling
- hypnotherapy
- cognitive behavioural therapy
- drug and alcohol addiction centers
- active groups for youth (cabra for youth)
- active community groups for adults (saol clubhouse)

Through further research it was apparent there was still a lack of sufficient mental health support facilities, in particular youth wellbeing facilities. I noticed any existing facilities in the area were located in places with little to no connection to the outdoors and nature. These facilities showed very poor consideration for the simple and undeniable health benefits immersing in nature can have for mental health.

I decided I would like to provide spaces for people to ground, heal and rehabilitate within the natural environment. I believe the power of nature cannot be overlooked when dealing with people's minds and emotional states. I know myself whenever I need time to think or breath I look to the outdoors, I take a walk in the woods or go for a swim in the sea, I always feel re-energised and reconnected with myself after I spend time immersed in nature. I believe this immersion in nature is integral for mental health facilities and therefore I let this determine the next steps of my thesis/ design project.

Site

Location: Dublin industrial estate broombridge

Area: 20 770m²

Perimeter: 600m

I proceeded to locate an industrial site in the area to repurpose. I wanted to find a site where I could demonstrate the positive impact repurposing through the implementation of my 4 key thesis objectives of reuse, renaturing, openness and porosity can have on biodiversity and wellbeing.

At this point I looked back at what I had explored through my thesis up to this point and how it led me to mental health care/ my site.

The choice of a wellbeing facility and site choice derived from my four key thesis objectives for repurposing industrial sites:

- 1. Reuse:** The existing 3 bay warehouse building is a structure which I feel could be transformed into a captivating mix of indoor, semi indoor, greenhouse and outdoor therapeutic spaces and gardens. It sits just 20 metres from the royal canal. I am interested in how we can reuse the fabric of our city before building new and look forward to the challenge of transforming a warehouse structure into a place of sanctuary and peace where nature is allowed in.



- 2. Renaturing:** I have chosen a site located in the center of Dublin Industrial Estate where there is a severe lack of nature/ biodiversity. The site also sits along the royal canal – I would like to use this site to exemplify how even such a harsh polluted landscape can be regenerated to allow for natural growth, new habitats and direct connection to nature.



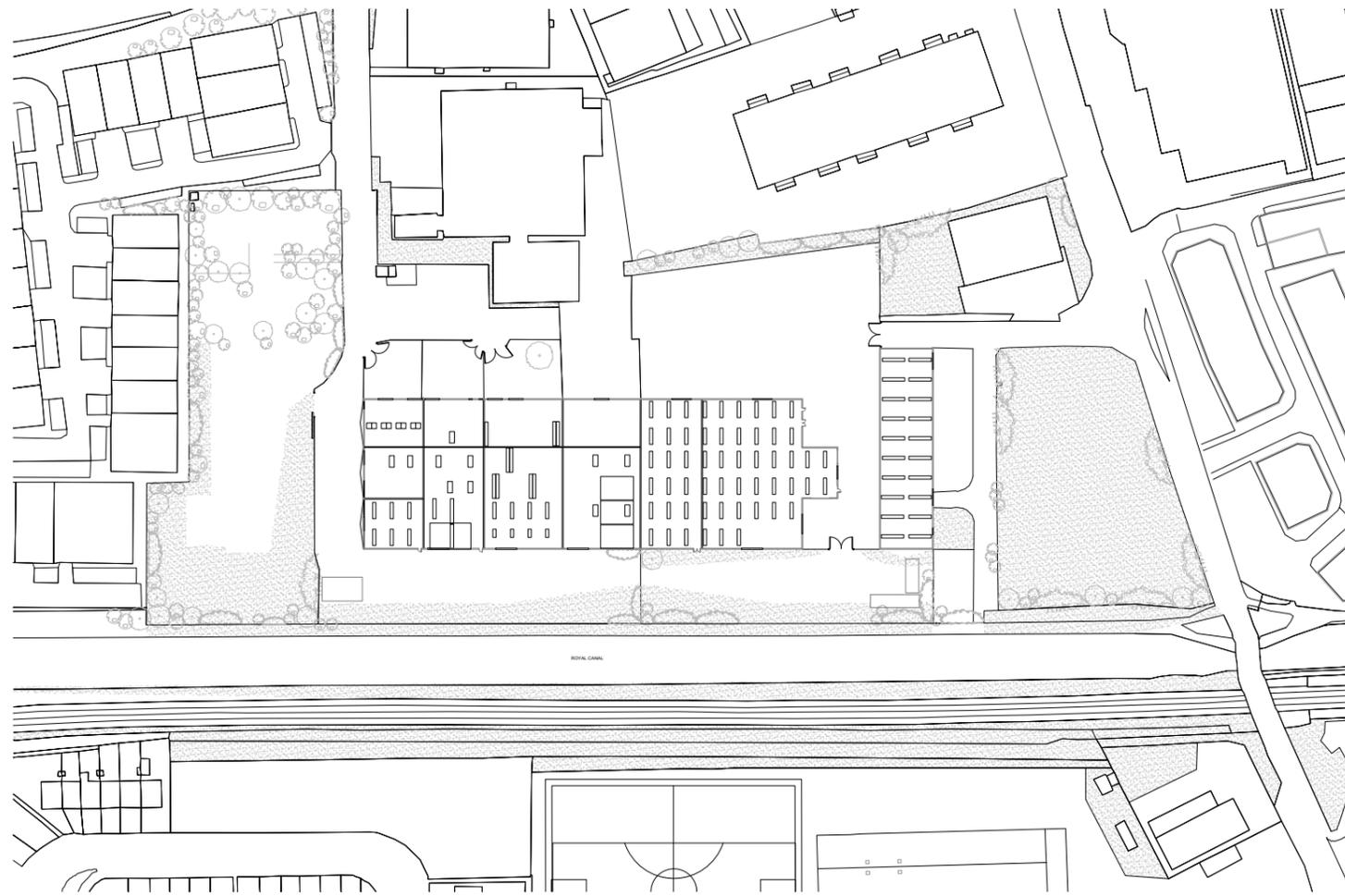
- 3. Porosity:** The site is located close to transport links such as broombridge luas stop. With its current variety of industrial uses the 3 bay structure/ site is poorly circulated with no public access. I see an opportunity here to exemplify how we can allow for porosity through the site creating connections through the site from the Broombridge luas stop and Royal canal to Tolka valley park and circulating into the future developed industrial/ residential zones.



- 4. Openendedness:** The research I carried out through my thesis suggested that to regenerate an industrial landscape and to then futureproof it, we must enable future growth, flexibility and change. The building I will design will be adaptable to allow for a change in programme or expansion in the future.



DRAWINGS OF EXISTING SITE AND WAREHOUSE



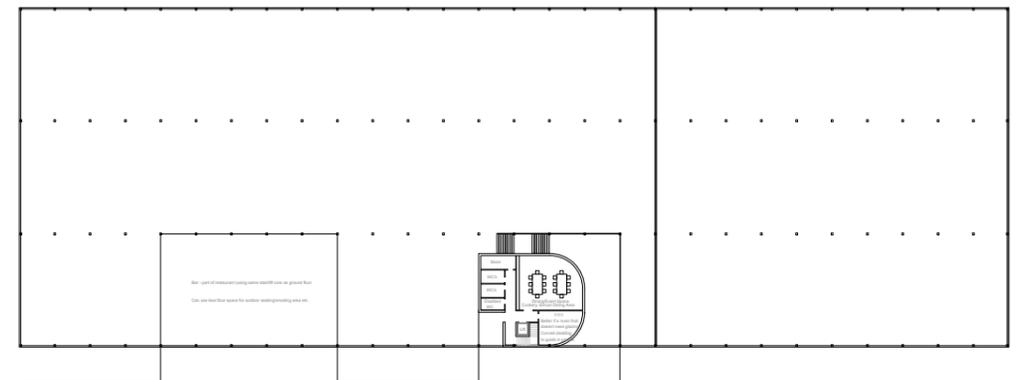
existing site plan

Site amenities

- very good connection to transport facilities with neighbouring broombridge luas stop
- alongside canal for connection to nature and water sports eg; kayaking
- close to Tolka valley park for 5 and 10km walks
- harsh landscape suitable for renaturing
- existing structure on site
- some existing trees and vegetation on site
- area with planned future growth and change of use
- many neighbouring schools
- south facing for natural light

these site amenities enabled me to design a brief and building driven by my 4 key thesis objectives:

1. **Reuse** 
2. **Renaturing** 
3. **Porosity** 
4. **Openendedness** 

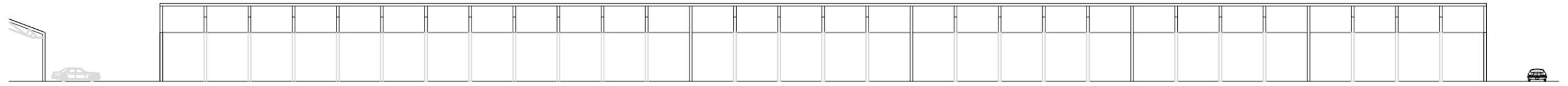


existing column grid plan

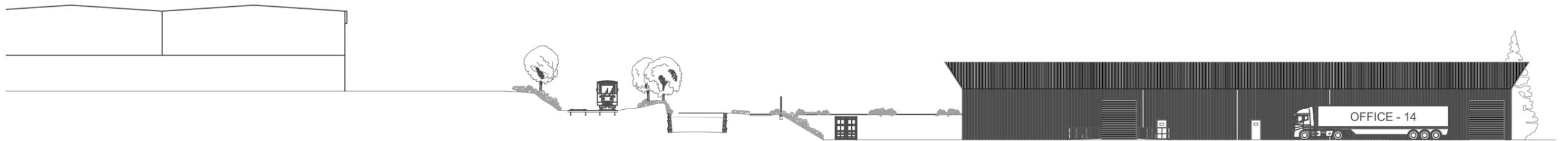


existing floor plan

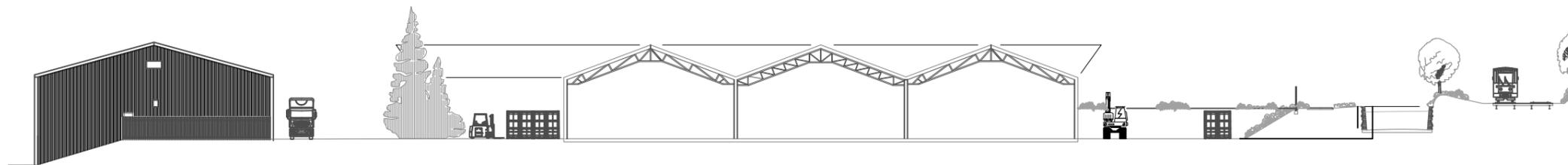
DRAWINGS OF EXISTING SITE AND WAREHOUSE



existing south elevation



existing west elevation



existing section
*nb incorrect truss drawn



existing east elevation

SITE PHOTOGRAPHS



Engaged Writing - submission to Dublin city strategic committee

Chapter 5: Quality housing and sustainable neighbourhoods

Introduction

The policy area relating to sustainable neighbourhoods in chapter 5. strongly relates to key aspects of my thesis, which I am currently carrying out as part of my bachelor of architecture degree in Technological University Dublin.

Thesis Objectives relating to policy chapter 5./ sustainable communities

Through my thesis I am exploring the benefits of reintegrating industrial sites back into the useful urban and natural landscape, through the use of the four guidance strategies: 1. Reuse, 2. Renaturing, 3. Porosity, 4. Open-endedness. To articulate and illustrate how this can be done I am now in the process of designing for the reintegration of an industrial site located in Dublin industrial estate, just west from Broombridge. I am proposing for the site to be used as a much needed youth wellbeing center/ urban farm. It will be a place for disadvantaged young people or youths struggling with self-esteem and mental wellbeing to come for help and refuge. The site will be renatured through the removal of hard landscaping and planting of trees and grasses for the new urban farm. The existing 3 bay warehouse on site will be reused for this new barn house for well being and farming. Porosity will be seen through the opening up of the site to views and routes. Open-endedness will be evident in the flexible design which will allow for future growth and extension of the building.



Drawing of proposed youth wellbeing urban farm on Broombridge site, showing my thesis objectives in blue

This proposed wellbeing/ urban farm center for young people has many of the sought after objectives which are seen throughout the policies aims in chapter 5. relating to sustainable communities. The policy outlines some of the urban amenities which enable the preservation and growth of sustainable neighbourhoods, including “public spaces and parks, social and community infrastructure, as well as enhanced permeability, accessibility and connectivity”. (consult.dublincity, 2022)

Observation: A more detailed approach to the development of youth wellbeing centers within this policy is needed to form sustainable communities.

In recent years there have been a number of large residential developments and growth of communities in the surrounding areas of Ashtown-Pelletstown, with additional assumption Dublin industrial estate may to be rezoned and developed for housing. Due to this growth I believe it is now imperative that there is more consideration for the creation of facilities for children’s wellbeing in this area, within the current policy. There are very few facilities in the surrounding neighbourhoods of this Broombridge site including the new developments in Ashtown-Pelletstown and existing in Finglas and Cabra.

The policy speaks about ensuring “the timely provision of such social infrastructure”, (consult.dublincity, 2022) However through my research across the territory of Finglas, Tolka Valley and Cabra I have so far observed it is already too late for some children whom had nowhere to go, no one to speak to and have now tuned to a disrupted life of drugs, addiction and violence. If such facility was in place within these communities many of these young lives could have been cared for, supported and saved. The area like many others around Dublin is in desperate need of such an amenity in order to meet the outlined sustainable neighbourhood aims within the policy.

Section QHSN18 of the policy refers to the ‘Youth Friendly City’. The aim to promote a built environment in the inner city which supports the physical and emotional well-being of young people is highlighted however I observe this is again vague and should be described further within this policy in order to achieve the construction of youth well-being support centers.

Section QHSN50 of the policy outlines the councils aims to support the provision of appropriate healthcare amenities- including mental health and wellbeing facilities, as well as encourage the integration of these healthcare facilities in accessible locations within new and existing communities. Although these aims are outlined, I believe to achieve such outcomes the policy must describe in further detail how and where these youth mental health care facilities should be built and located in order to ensure the policies goal of sustainable healthy communities is met efficiently.

Conclusion

It is evident Dublin city is lacking in youth mental health care facilities. Organisations such as Pieta house have called for “government support to expand services and help fund lifesaving work”. (HOPE PIETA HOUSE, 2023) within their strategic plans for the coming years. I observe although Dublin City Development Plan and in particular policy chapter 5. recognise that youth wellbeing facilities are necessary to create sustainable neighbourhoods, it does not discuss how such facilities will be realised/ provided and where and therefore may lead to further delays in providing such facilities to our communities.

DESIGN PROCESS PART 2.



Reflection 2. (Initial site masterplanning and site analysis)

Initial sketch design moves

After choosing my site I began overlaying aerial photographs, showing my thesis objectives in the overlays.

1. For **Reuse** I looked at the size/ scale of the existing 3 bay warehouse on site, gaging the area which I could now use for my well being facility.



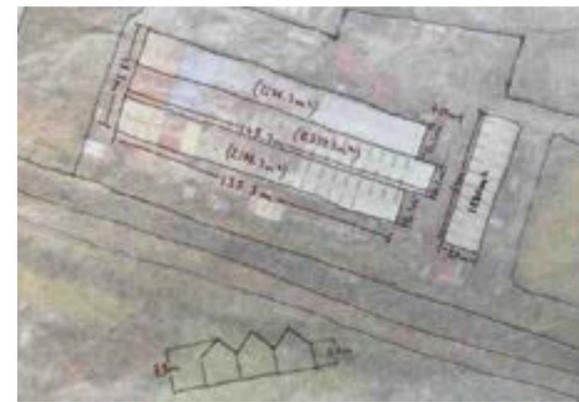
2. For **Renaturing** I took note of the existing nature on the site and the green belt I could support along the Royal canal to the south of the site. I also considered the neighbouring brownfield and greenfield sites to the east and west which could be used for renaturing too.



3. For **Porosity** I looked at the existing entrance and exit points for the site. I then went about finding additional access routes in, out, around and across the site.



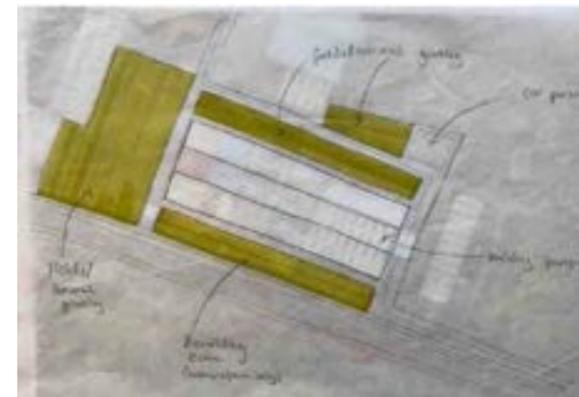
4. For **Openendedness** I looked at the feasibility of future extension beyond the site. I noted the surrounding sites could be taken into the scheme when there was demand for growth.



Existing warehouse scale evaluation/ Reuse



Site axonometric start



Green zones/ Renaturing



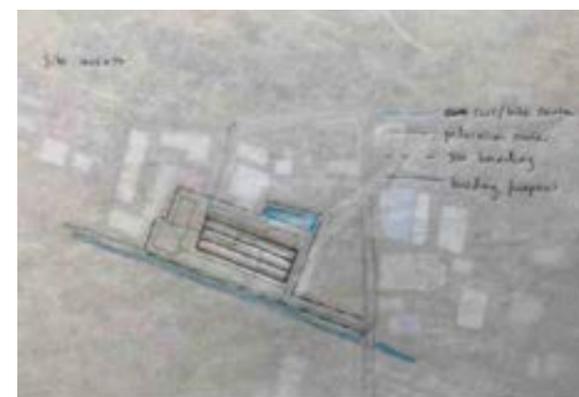
Thesis objectives drawn onto site axo



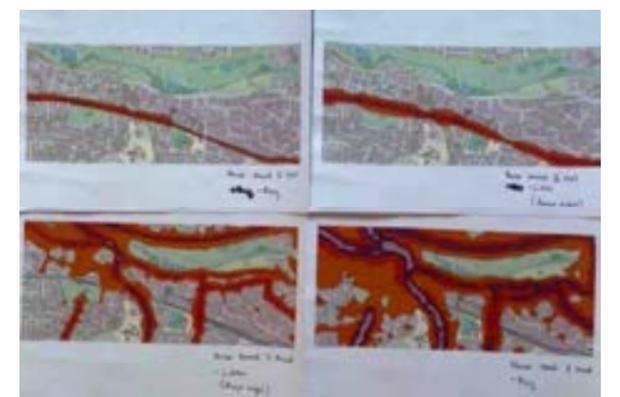
Green amenities on site/ Renaturing



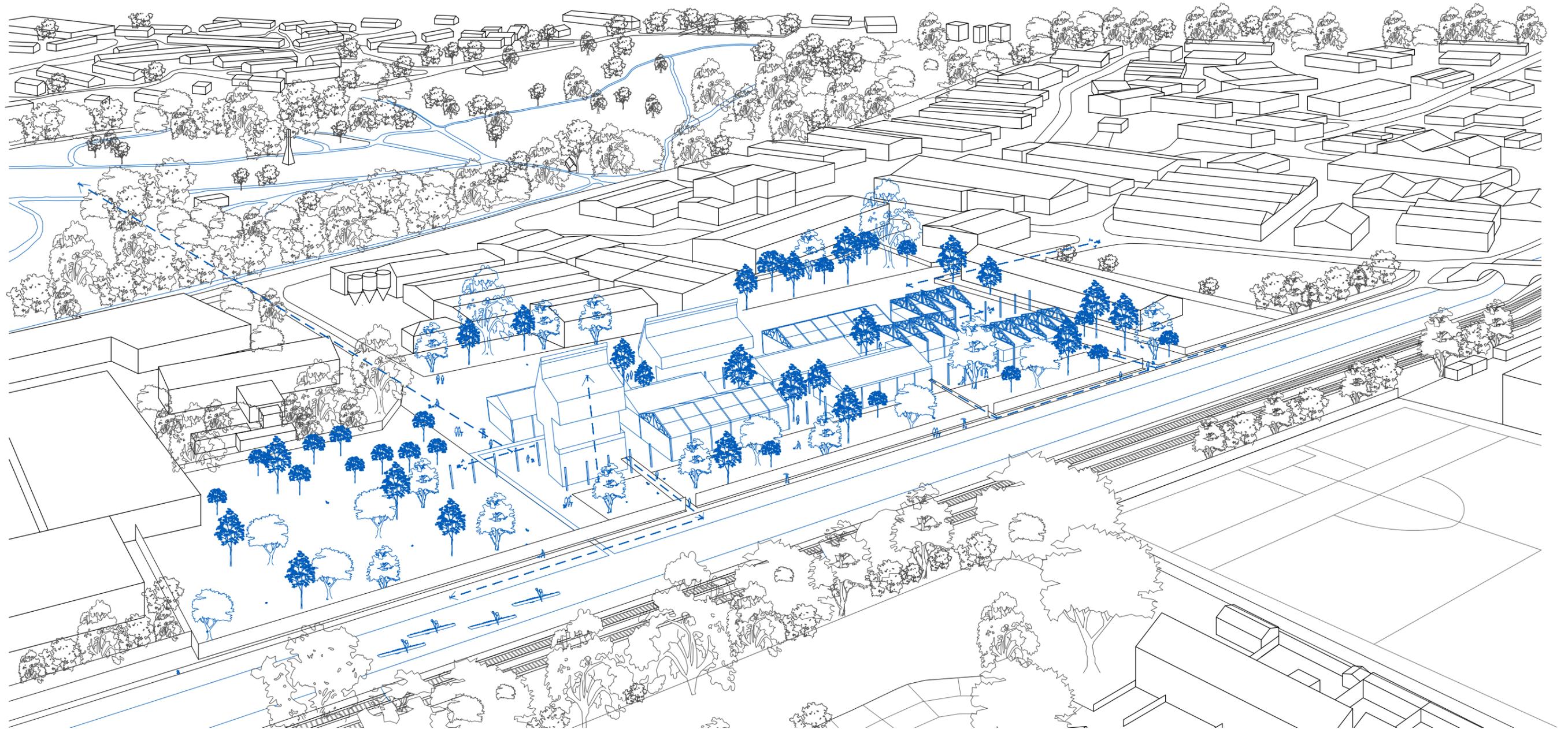
Site analysis booklet



Site access/ Porosity



Evaluation of noise surrounding site



THESIS OBJECTIVES:

1. REUSE

- Reuse of existing warehouse and site in dublin industrial estate
- Reuse of materials. eg: frame and roof truss



2. RENATURING

- Natural vegetation growth in encouraged rewilded area
- Planting of native trees and flora in gardens and courtyards
- Improved connection to canal



3. POROSITY

- Flowing/ meandering circulation through building and courtyards give a sense of a porous building in the landscape yet enclosed and secure to meet client needs for youth wellbeing center
- 4 different ways in and out- japanese rule
 - (1) in from broombridge road
 - (2) over bridge to towpath
 - (3) up boat house tower
 - (4) across to park

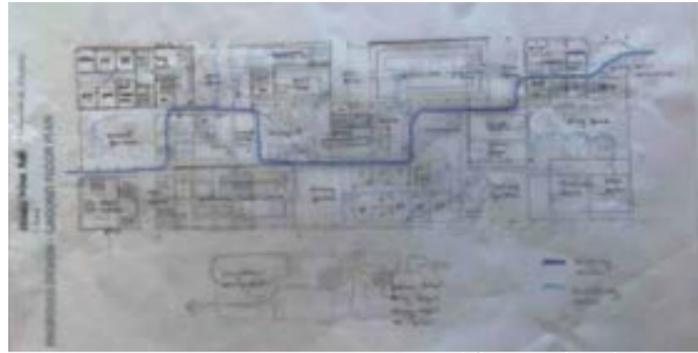


4. OPENENDEDNESS

- Connection out into tolka valley park for 5 and 10 km walks
- Connection to canal for kayaking
- Possibility for future extension/ growth of structure horizontally or vertically
- Views from lookout point at top of boat house tower out across landscape beyond the boundaries of the site give a sense of freedom and possibility



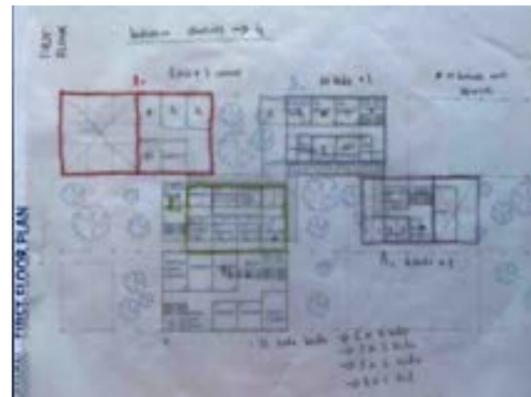
DESIGN PROCESS PART 3.



Ground floor working layout eg



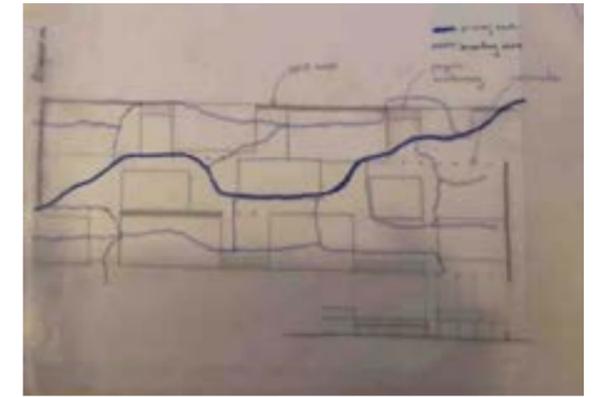
First floor bedroom working layout eg



First floor bedroom clusters design



design process booklet - building footprint/ indoor vs outdoor space



circulation - primary/ secondary routes through site



design process booklet - courtyards, circulation



zones

Reflection 3. (bedroom clusters, courtyards, client, brief, circulation, zones, thresholds)

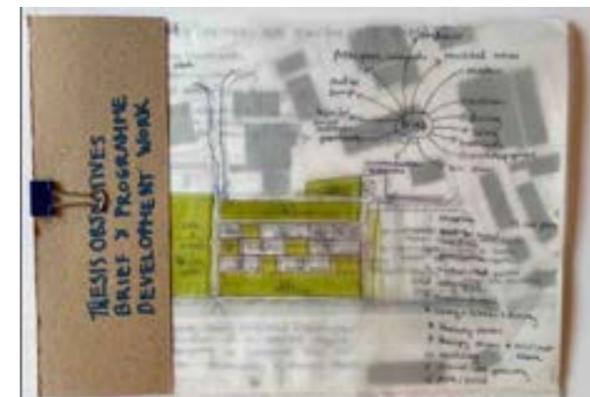
At this point of my design process I was primarily designing in plan. I worked up a design for the reuse of the existing warehouse steel structure (columns and roof truss). The design involved subtracting from the existing structure to allow for the courtyards to sit within the original buildings footprint. I was also working on allocating the uses/ spaces I set out in my brief, across the footprint of my courtyard building design. I decided to locate all the bedrooms on the first floor, away from the ground. I separated the bedrooms into four clusters all connected by an outdoor terraced walkway high up in the trees.

I decided to develop a scheme for youth wellbeing as from my research I felt the well being facilities in the area were most lacking for young people. I decided to take on Jamies's Farm as my client. They provide support for disadvantaged youths growth and mental health through a unique residential programme built around four core elements of farming, family, therapy and legacy.

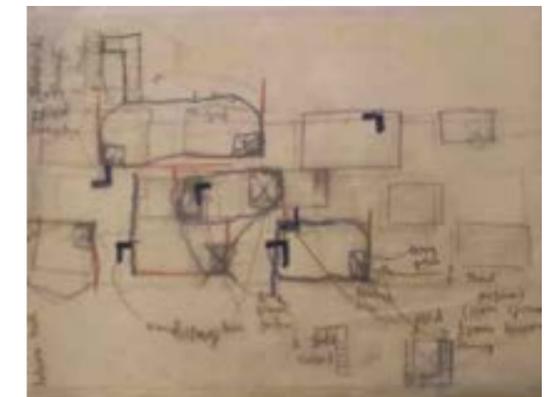
As seen in the overlay sketches adjacent I also looked into the circulation, zones and thresholds in the scheme. I did a number of overlays analysing and adjusting my layout. I decided to use water to create the thresholds between the various zones I had created.

These zones include:

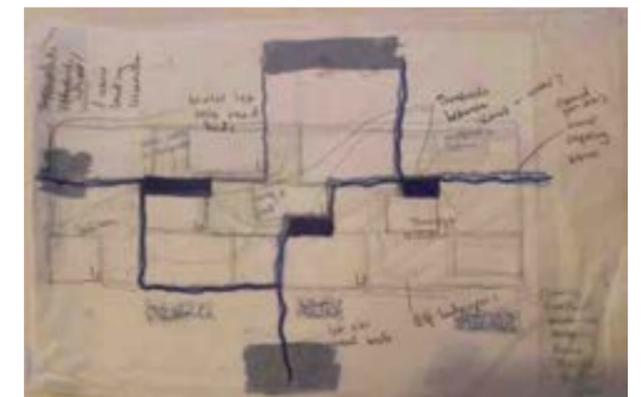
1. Reception
2. Therapy and activity
3. Living and growing
4. Farm and workshops
5. Boathouse



developing a brief/ client



locating thresholds / using a stair to signify threshold



using water courses and ponds to signify thresholds

CLIENT - JAMIE'S FARM

Jamie's farm

Their approach to providing support for disadvantaged youths growth and well being is done through a unique residential programme built around four core elements of farming, family, therapy and legacy

Faming

- Young people practically involved in all elements of running the farm
- Gives them practical, purposeful work to do with tangible outcomes
- Opportunities to succeed and to be recognised for it which builds self-esteem and confidence

Family

- Everyone lives and works as an extended family, working on the farm, sharing meals around the table and supporting each other when things are tough
- Gives meaningful relationships to young people, both with adults and peers, and models how supportive partnerships can work

Therapy

- Therapeutic support throughout stay in a flexible and responsive manner
- One to one and group sessions

Legacy

- continued support through legacy programme, giving support from afar and visiting them in school to help them bring what they've learnt on the farm into their daily lives



- Jamie's farm is currently run in 5 locations including Bath, Hereford, Monmouth, Lewes (rural) and Waterloo (urban)
- There is a drive to create more urban Jamie's farm models and with my project I would like to create a brief/ design framework for one
- Waterloo is a nice example of the opportunity urban faming can provide to young people, however it is on a small site and does not have many of the spaces such as accommodation, art rooms, therapy rooms etc which make Jamie's farm so successful. I see an opportunity here to fill this gap

My project Aims:

- To design an urban farm for youth well being and growth, a place where kids do come to live on the farm for a 5 day programme
- To exemplify my four thesis objectives of reuse, renaturing, open-endedness and porosity.

1. Reuse of the warehouse on site



2. Renaturing of the site will be a key objective for the wellbeing farm, with a strong focus on the benefits being in nature can have to children's mental health



3. Porosity will be seen in the permeability of spaces and surfaces



4. Open-endedness will be seen in the possibility for extension/ flexibility of the structure as well as clever design which makes the children feel free and at peace in the spaces, never locked in or trapped, with stretching views out across Dublin city and Tolka valley park to the dublin mountains



BRIEF AND SCHEDULE OF SPACES

Ground floor

- main entrance
- permeable paving
- grass patch
- timber fins
- water
- shallow threshold pond with stepping stones
- courtyard

Shared facilities

- bathrooms
- changing rooms
- storage
- break out space

Admin area

- Reception

- front desk
- waiting room
- office
- staff bathroom
- staff storage

Therapy and activities area

- Therapy

- therapy room
- therapist office/ storage

- Music and dance

- music room
- dance studio

- Relaxation corner

- yoga studio
- meditation space

- Courtyards

- sensory garden
- playground

Living and growing area

- green/ glass houses

- vegetable greenhouse
- botanical glasshouse

- Cooking and eating

- kitchen
- dining

- Living

- living room space
- reading nook
- quiet room

Farm work and craft area

- Craft

- woodwork workshop
- art studio

- Farm barn

- hay barn
- boot room
- feed room
- animal stalls

Boat area

- Boat house

- boat storage
- outdoor kitchen/ barbeque space

First floor

Accommodation area

- clusters a-d

- one-bed room
- two-bed room
- three-bed room
- staff ensuite double bedroom
- shared bathroom
- break out space
- outdoor terrace walkway

- Therapy

- therapy room
- therapist office/ storage

- Boat house

- changing rooms
- showers

- Terrace a-c

- sheltered outdoor space

DESIGN PROCESS PART 4.

Reflection 4. (precedent studies, design progress - circulation, porosity, new roofs)

At this point in my design process I did in depth research into precedents. I looked at wellbeing/ mental health care buildings which had a strong connection between indoor and outdoor spaces. With my 4 thesis objectives of reuse, renaturing, porosity and open-endedness in mind, I searched for precedents where reuse, connection to nature, treatment of natural light and circulation were at the core of the design.

Some of the most helpful and influential precedents I studied included:

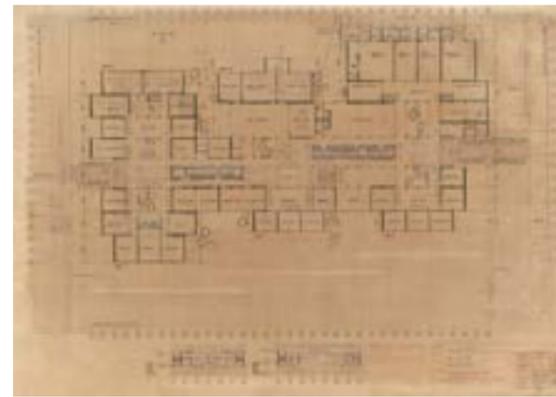
1. Birr Community School, Ireland
2. The long House, Australia
3. House in Kanazawa, Japan
4. Maggie's Center Harehills, UK
5. Waterloo City Farm, UK
6. The National Trust Headquarters, UK
7. Maggie's Center Lankarshire, UK

Birr Community School Precedent analysis study - Courtyards and Circulation/ Porosity

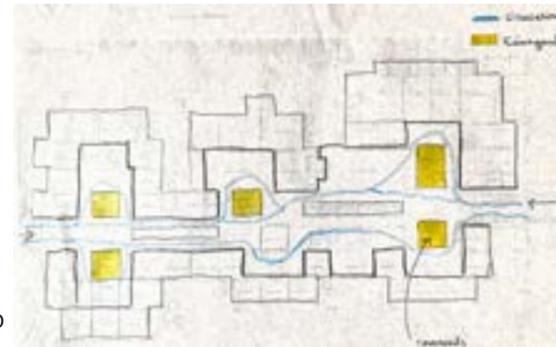
I noted the similar scale of Birr Community School to my project and did an analysis of the school's courtyards and circulation. In the adjacent study I compared an overlay I did of Birr's ground floor plan to an overlay of my design's ground floor plan, highlighting the circulation routes and courtyards. I learned a lot from this study and it enabled me to improve my circulation/ porosity as well as my balance of indoor outdoor spaces.

House in Kanazawa Precedent analysis study - Roof Design

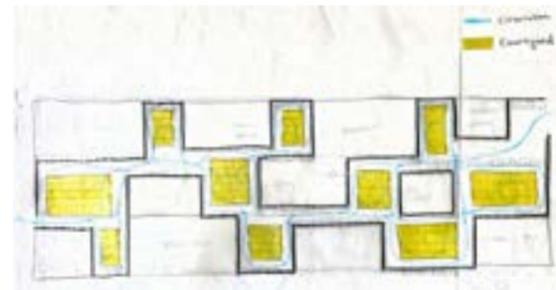
I decided to tower up in two points of my scheme, for the boat house tower and the accommodation block. In these two blocks I wanted to step away from the retained existing steel structure which is seen throughout the design and use timber construction. I chose CLT and looked to the adjacent precedent, House in Kanazawa when designing my new roof for these towers. The sketches show how I utilised the precedent section design to funnel light into a bright upper floor space in the new towers.



Birr Community school ground floor plan



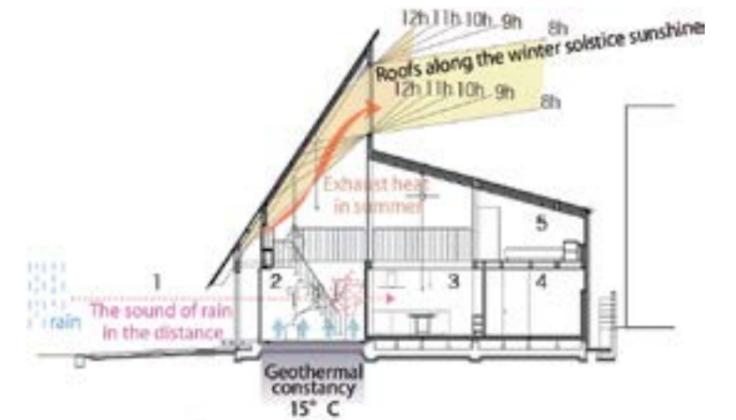
Birr Community school ground floor plan - courtyards and circulation analysis overlay



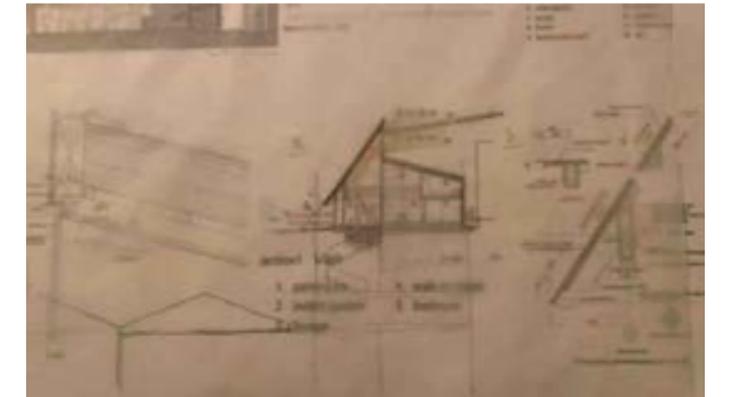
My design - courtyards and circulation analysis overlay for comparison to Birr Community School



precedent analysis sketches booklet



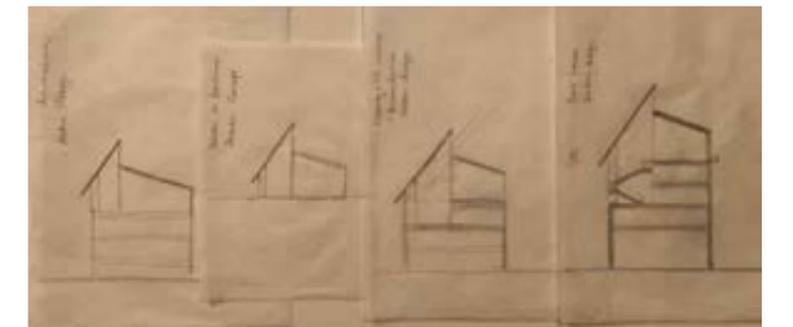
House in Kanazawa section which inspired my roof design



Roof design process overlay

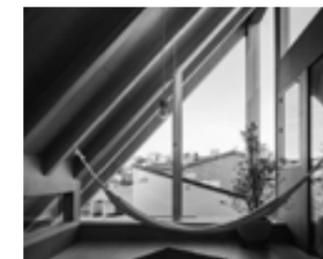
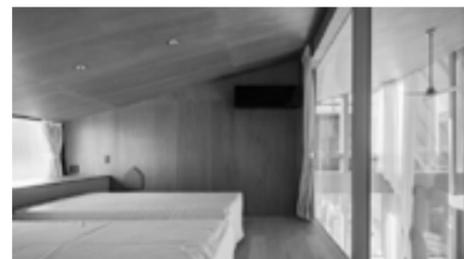
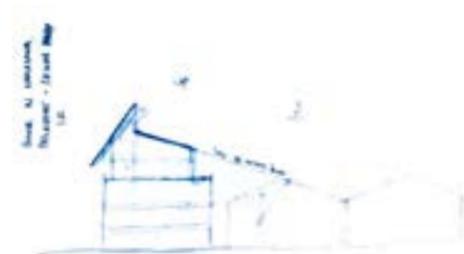


Roof design process overlay - taking line of existing roof truss on one side



Roof design process overlays

HOUSE IN KANAZAWA

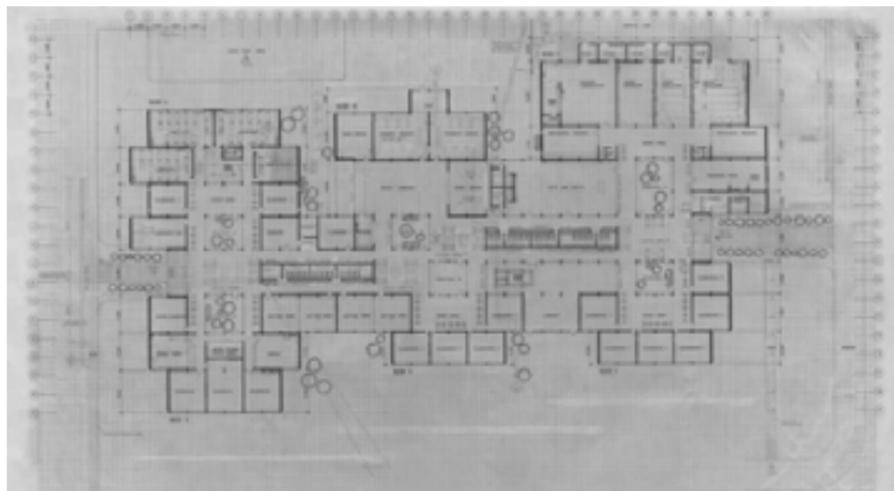
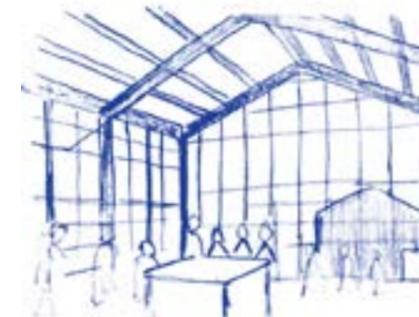
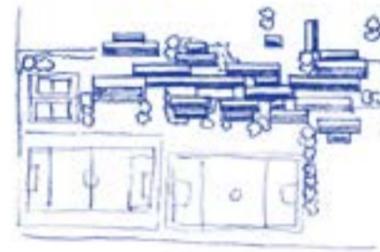
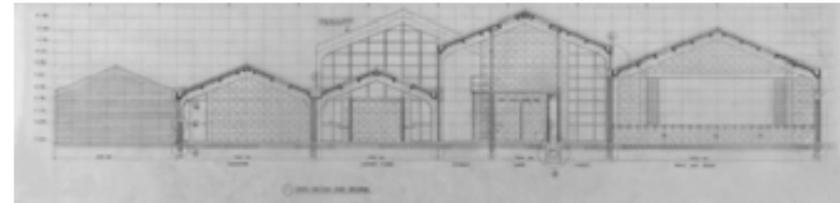


Architect: Shoto nakanishi architects

Location: Kanazawa, Japan **Year:** 2019 **Area:** 193 m2

Description: The home is located in a region of high rainfall in Japan. The design makes the most of the natural environment, where people live in close connection with light, wind and natural environmental sounds all whilst staying inside the home. The plan is reimagined as an indoor garden. This space is lit up by the large roof which captures sunlight filtering light into the space even on dark winter days. This direct light can be adjusted for each season, allowing for a cool temperature in the summer and warmth in the winter.

BIRR COMMUNITY SCHOOL



Architect: Peter and Mary Doyle architects

Location: Offaly, Ireland **Year:** 1980 **Area:** 7000 m²

Description: The school is constructed using precast concrete portal frames usually confined to factories and sheds. The street is the communal heart of the project and is punctured by six courtyard spaces, giving light and views to the deep plan of social and teaching areas. Classrooms occupy the perimeter of the building and all benefit from natural light and views. The school was planned as 'a town within a town' with 'streets', 'piazzas' and 'alleyways', which could be added to as required.

THE LONG HOUSE



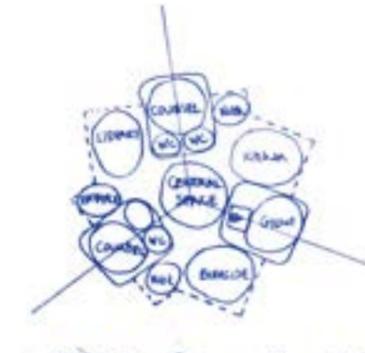
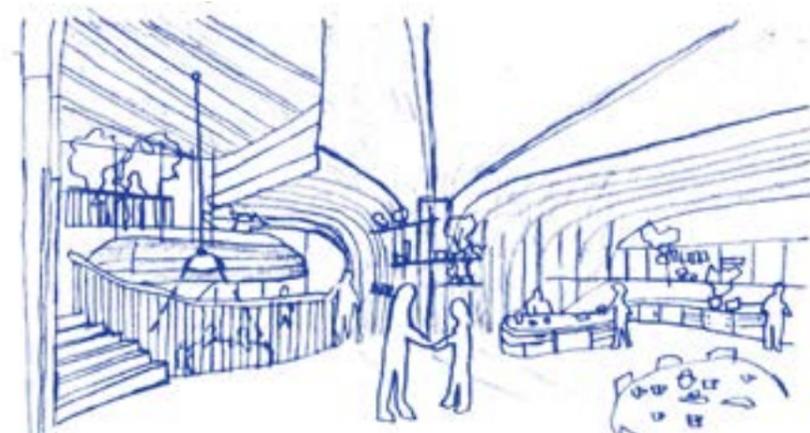
Architect: Partners hill

Location: daylesford, australia **Year:** 2019 **Area:** 1050m²

Description: The building houses a boutique farm, garden kitchen, cooking school, reception venue and home all under the 110 meter long shed like structure. By internalising all agriculture and hospitality activities under one roof a purpose-aligned container for living, learning and entertaining as well as nurturing animals and fresh produce is provided.



MAGGIES CENTER HAREHILLS



Architect: Heatherwick studio

Location: Harehills, UK **Year:** 2020 **Area:** 462m²

Description: Maggie's center is a charity which provides support for people with cancer. The building is designed as a group of three large scale planters, which surround the 'heart' of the center- the kitchen- as well as more social spaces for group activities including a library and exercise room. 'Healthy' materials and energy saving techniques are used throughout the project. Prefabricated spruce timber forms the structure. Porous materials such as lime plaster help maintain the internal humidity of the naturally ventilated building. The building is filled with plants and carries a dense rooftop garden.

WATERLOO CITY FARM

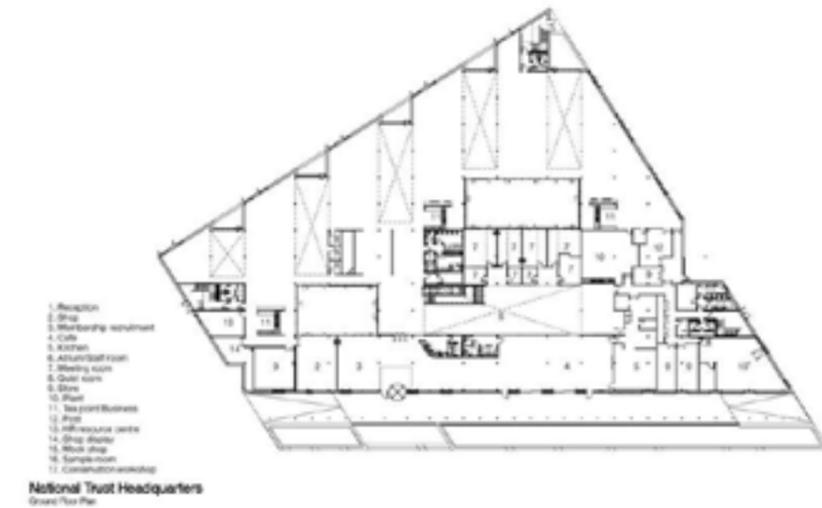
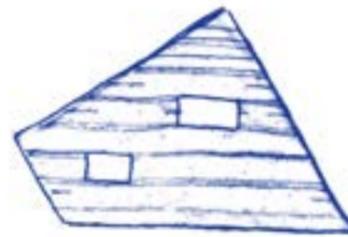


Architect: feilden fowles

Location: London, UK **Year:** 2017 **Area:** 1050m²

Description: This urban community farm is run by two charities; Jamie's farm and Oasis community hub. The farm aims to provide a learning resource for local schools and the wider community, offering children in danger of exclusion from their schools a refuge. The project incorporates a series of timber framed animal pens to house pig's, sheep and chickens, a composting toilet, planting areas and two polytunnels. The second phase involved the construction of a larger timber frame barn in which sits a small classroom.

HEELIS, THE NATIONAL TRUST HEADQUARTERS

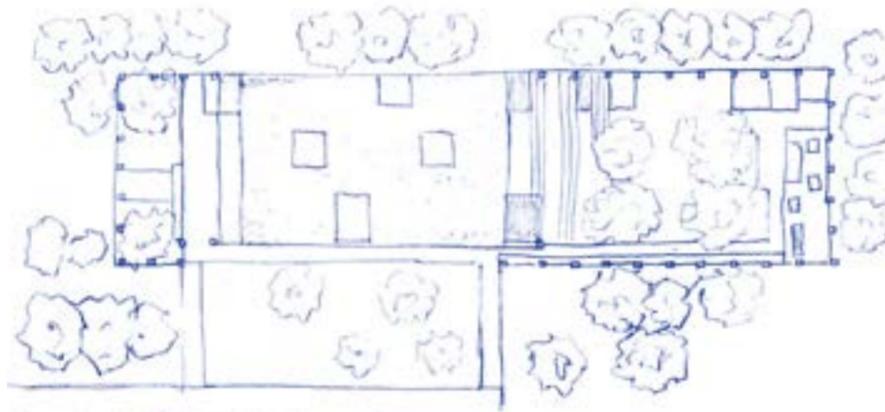
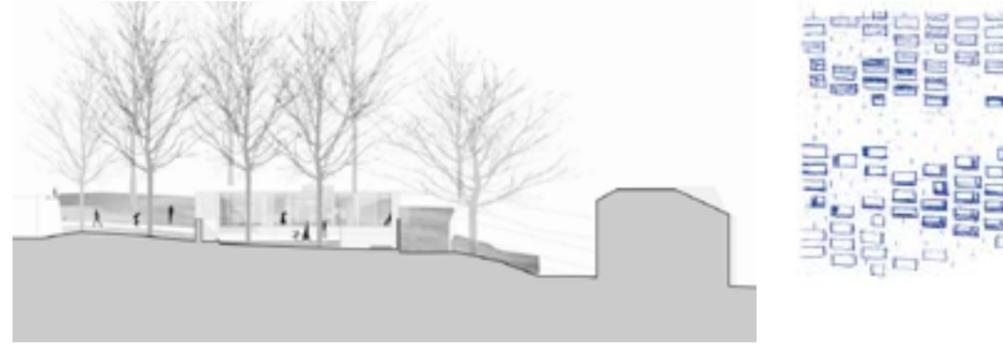


Architect: Feilden Clegg Bradley studios

Location: Swindon, UK **Date:** 2005 **Area:** 7107 m²

Description: The building's deep plan form is a contemporary interpretation of the historic workshop buildings where natural light and ventilation were the only options in terms of environmental control. The building has achieved BREEAM rating and generates less than 20kg of CO₂/m² each year. The sawtooth form provides an even distribution of light and ventilation. A series of atria allow volumes of light into the breakout spaces throughout the day.

MAGGIES CENTER LANKARSHIRE



Architect: Reiach and Hall Architects

Location: Lanarkshire, UK **Date:** 2014 **Area:** 300 m²

Description: The center creates a boundary from its surrounding hospital, embracing two mature lime trees with a finely articulated brick wall, bringing a sense of continuity and enclosure. The design is planned around a tale of enclosed gardens. Early garden enclosures were simply woven fences, the brick walls of this center embody this idea. The wall is designed to offer a degree of separation from the hospital but through its pierced nature, its human scale and the haptic quality of its materiality this break is subtle and in places even marginal.

DESIGN PROCESS PART 5.

Reflection 5. (Tower design, Site plan)

Tower Design

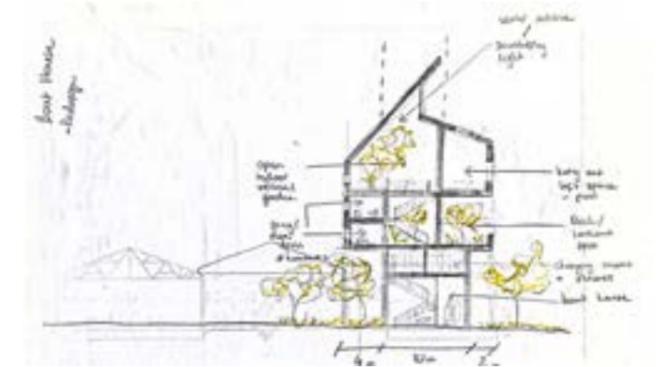
I focused on completing the tower design at this point, settling on the design shown in the two adjacent 'final tower design' sketches. I ensured my 4 objectives were clearly brought out in this new part of the project.

I achieved:

- Reuse** through the repurposed cladding used on the exterior of the towers, 
- Renaturing** in the greenery and plants brought into the indoor gardens and open balconies, 
- Porosity** in the open, light filled central circulation running up the core of the two towers, 
- Open-endedness** through the vast views and sense of freedom captured by the views from the tops of the towers out across the Royal canal, Dublin city and beyond Tolka valley park to the Dublin mountains. 



Accommodation tower redesign sketch



Boat house tower redesign sketch



Accommodation tower final redesign sketch



Boat house tower final redesign sketch

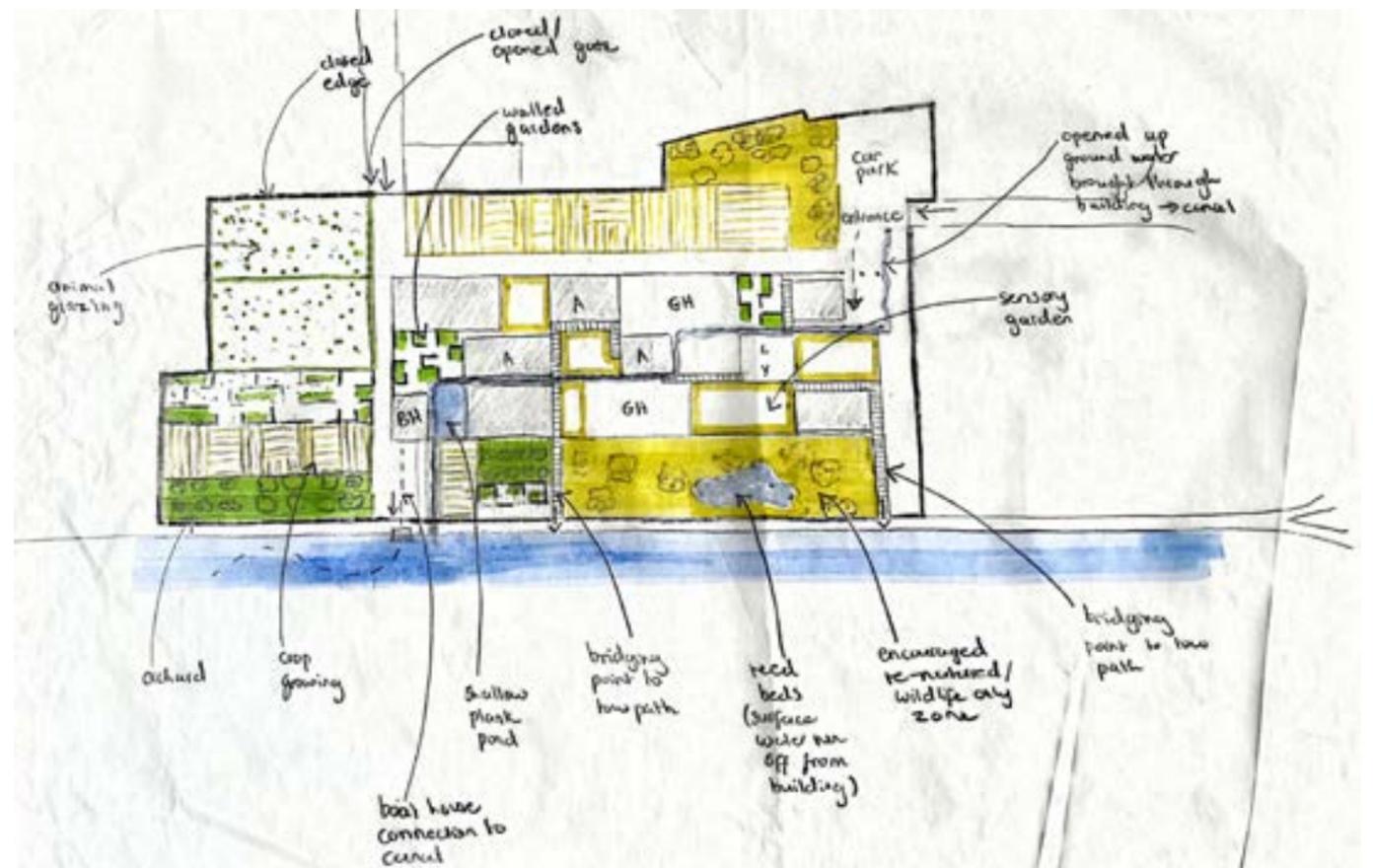
Site Plan

For my site plan I looked back to Jamie's farm/ the brief I had set out for myself. The site plan sketch design adjacent takes in the neighbouring brownfield site to the west.

The plan incorporates a variety of different landscapes for various uses including:

- Animal grazing fields for goats and sheep
- Crop fields
- Orchard
- Walled gardens
- Encouraged renaturing/ rewilding zone for strictly animals
- Wetlands/ reed beds
- Planted park

NB ALL EXISTING/ REUSED MATERIALS AND STRUCTURE DRAWN AND ANNOTATED IN BLUE THROUGHOUT PROPOSAL DRAWINGS



Site plan concept sketch

SITE PLAN



- Site plan key**
- 1. main site entrance
 - 2. building and courtyards
 - 3. crop fields
 - 4. animal grazing
 - 5. orchard
 - 6. walled gardens
 - 7. encouraged renaturing/
restricted area
 - 8. reed beds
 - 9. bridge to tow path
 - 10. water
 - 11. growth of structure for
farm sheds

SITE SECTIONS

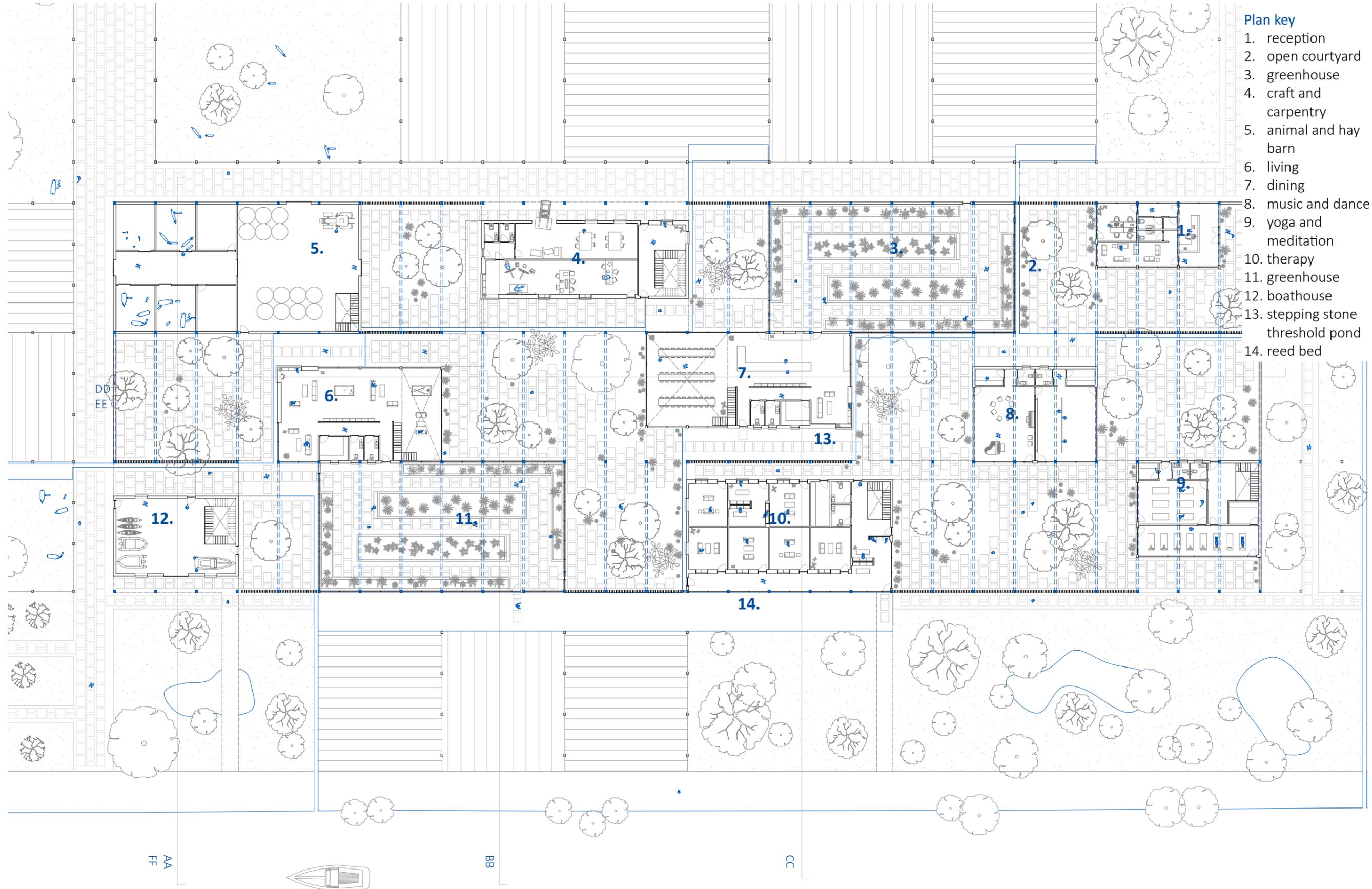


EE



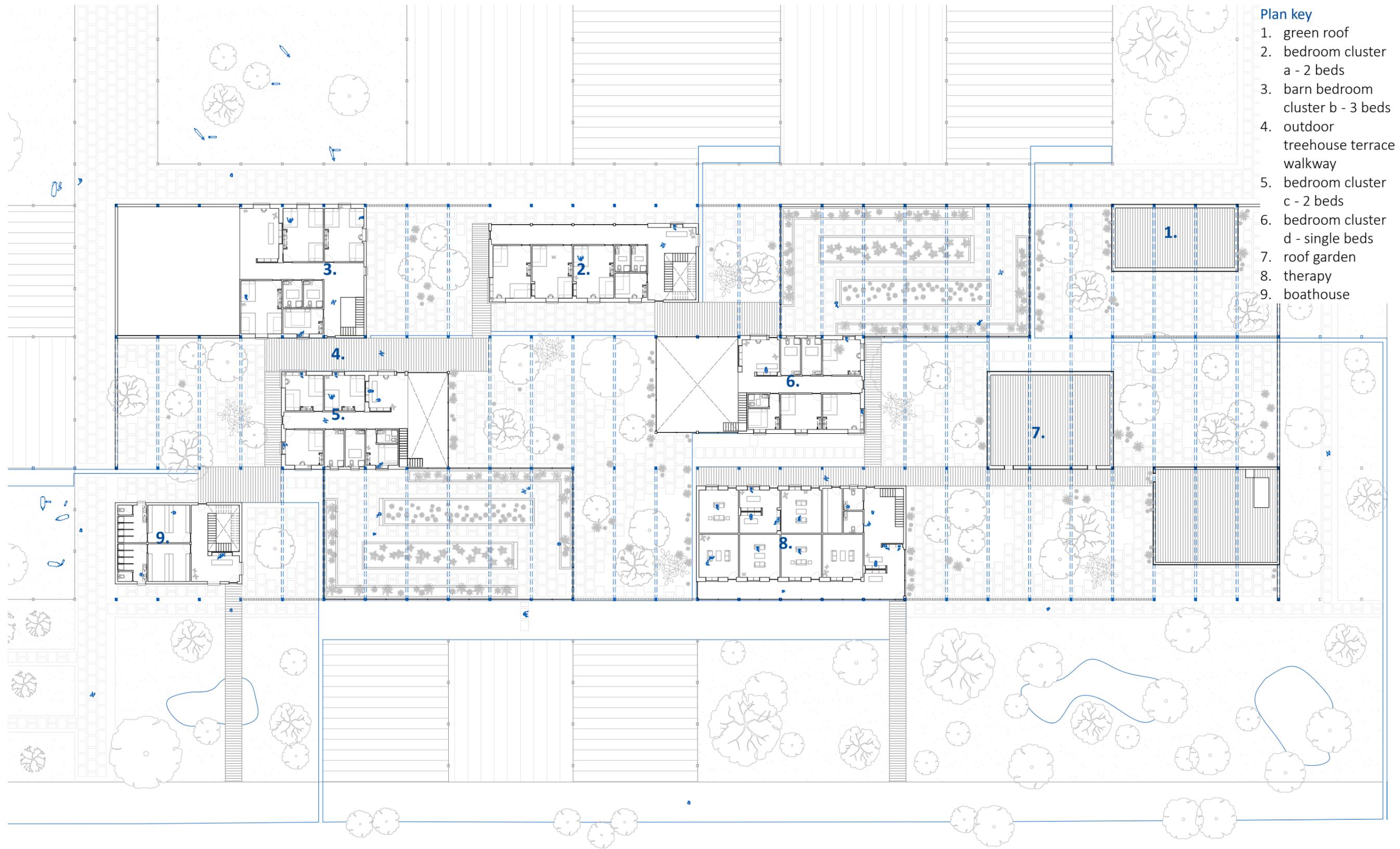
FF

GROUND FLOOR PLAN

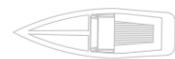


- Plan key**
- 1. reception
 - 2. open courtyard
 - 3. greenhouse
 - 4. craft and carpentry
 - 5. animal and hay barn
 - 6. living
 - 7. dining
 - 8. music and dance
 - 9. yoga and meditation
 - 10. therapy
 - 11. greenhouse
 - 12. bathhouse
 - 13. stepping stone threshold pond
 - 14. reed bed

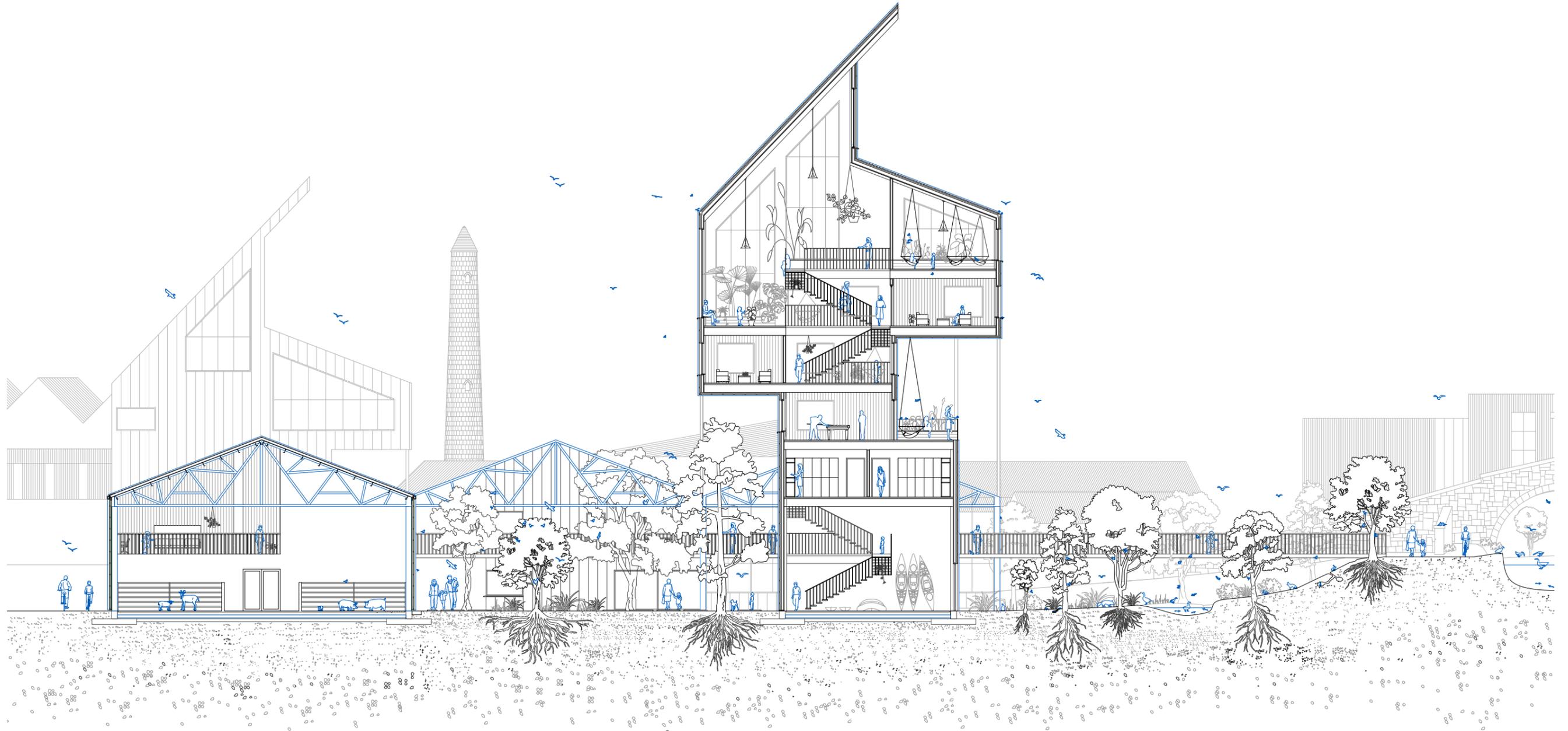
FIRST FLOOR PLAN



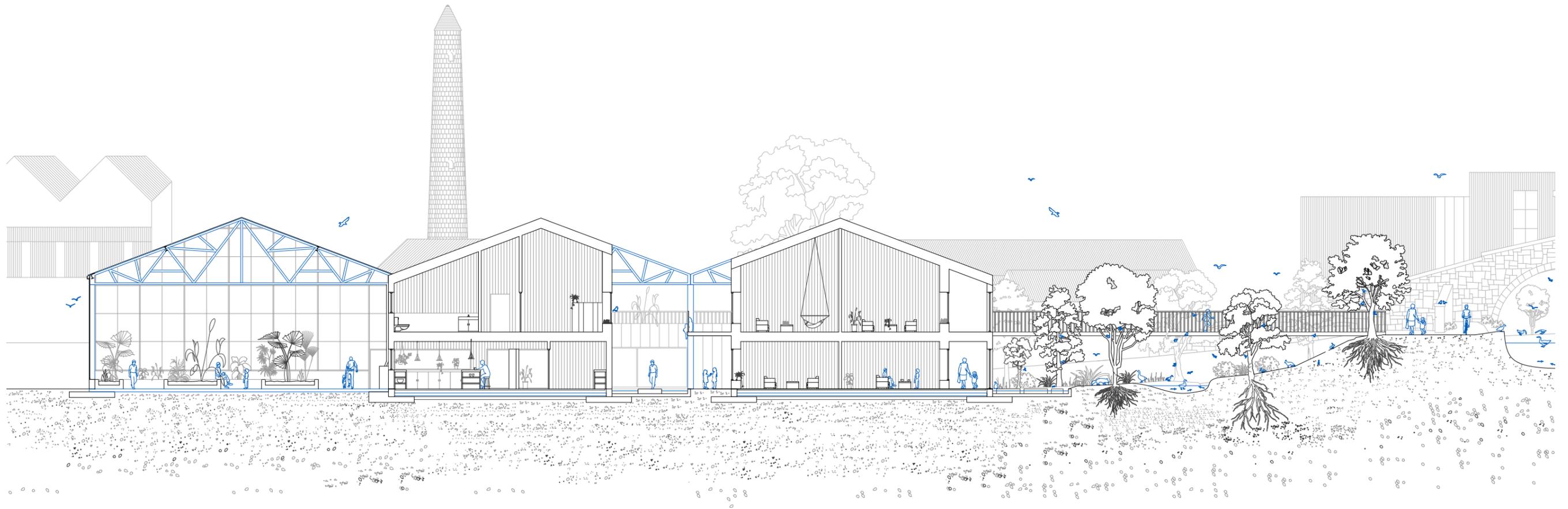
- Plan key**
- 1. green roof
 - 2. bedroom cluster a - 2 beds
 - 3. barn bedroom cluster b - 3 beds
 - 4. outdoor treehouse terrace walkway
 - 5. bedroom cluster c - 2 beds
 - 6. bedroom cluster d - single beds
 - 7. roof garden
 - 8. therapy
 - 9. boathouse



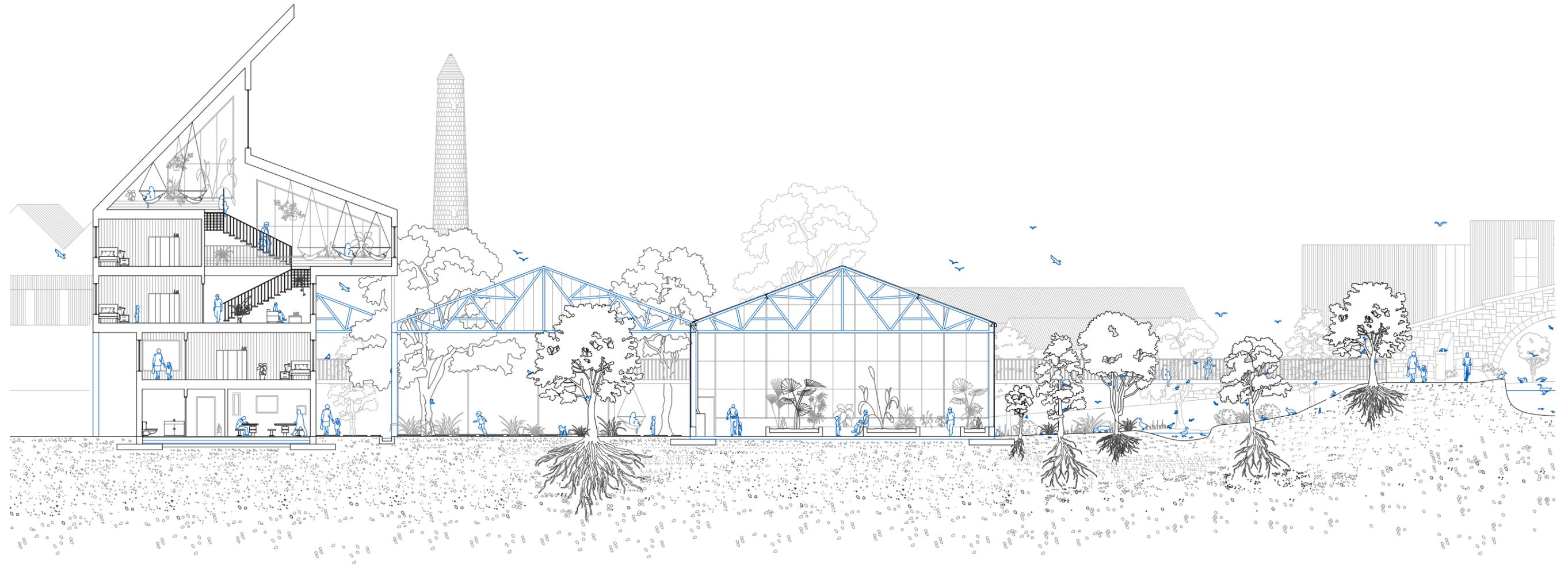
SECTION AA



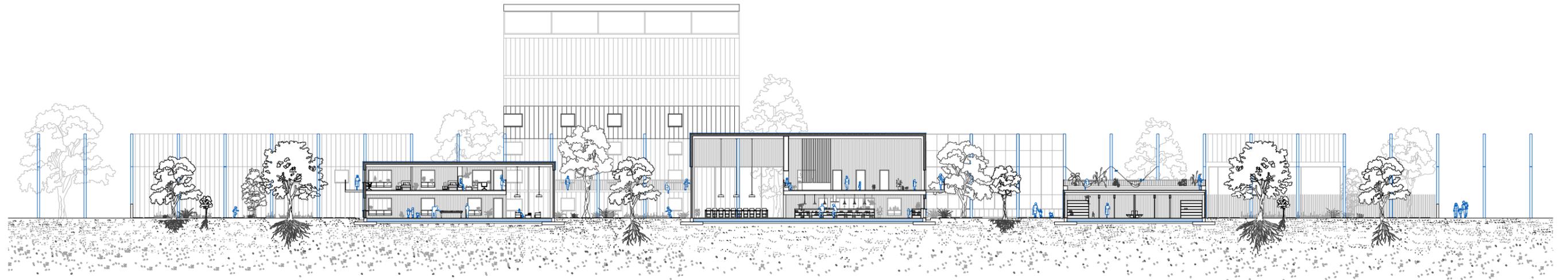
SECTION CC



SECTION BB



SECTION DD



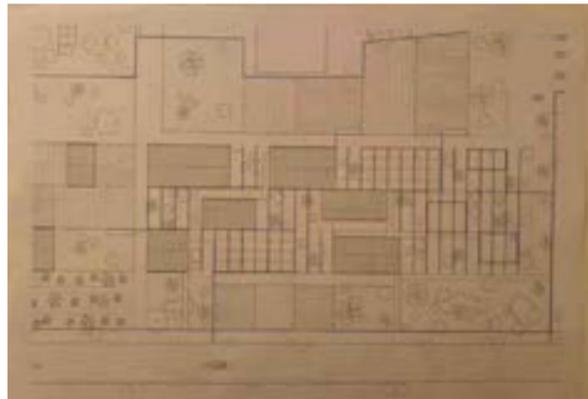
DESIGN PROCESS PART 6.

Reflection 6. (Project design concept/ Environmental strategy overlays)

Plan

In the adjacent plan overlays I have shown my overall project design concept/ environmental strategy through a series of overlays including:

1. Nature strategy - planting/ courtyards ***Renaturing**
2. Material strategy - reuse of existing steel structure/ column and roof truss's ***Reuse**
3. Thermal strategy - 3 levels of thermal enclosure seen in the scheme
4. Electricity strategy - combination of heat pumps and pv panels
5. Water strategy - water courses and stepping stone threshold ponds identify zones ***Porosity**



Final site plan

Section

In the section overlays I have shown some of the the design concept/ environmental strategy again

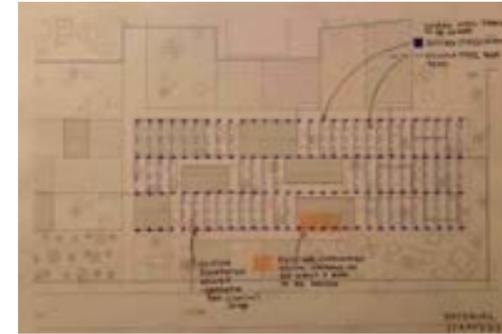
1. Nature strategy
2. Thermal/ Electricity
3. Water strategy



Final section



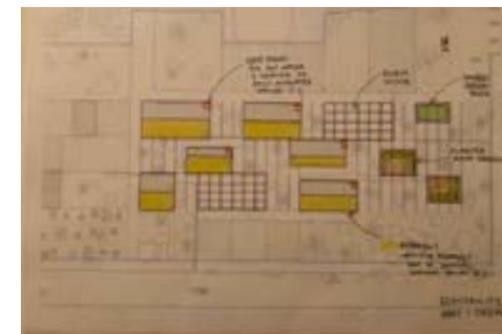
plan overlay - nature strategy



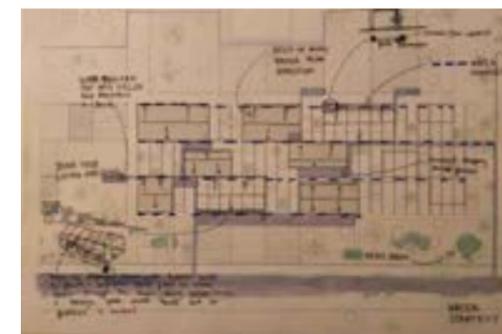
plan overlay - material strategy



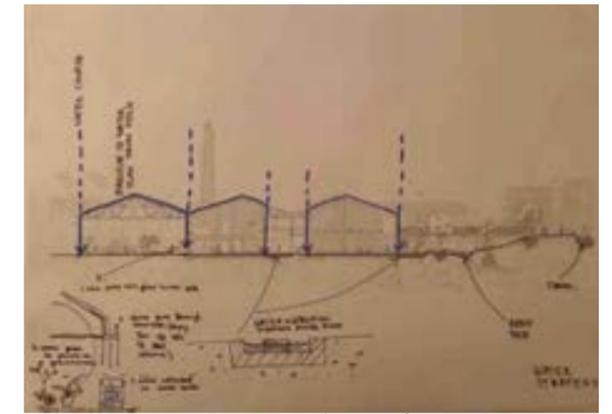
plan overlay - thermal strategy



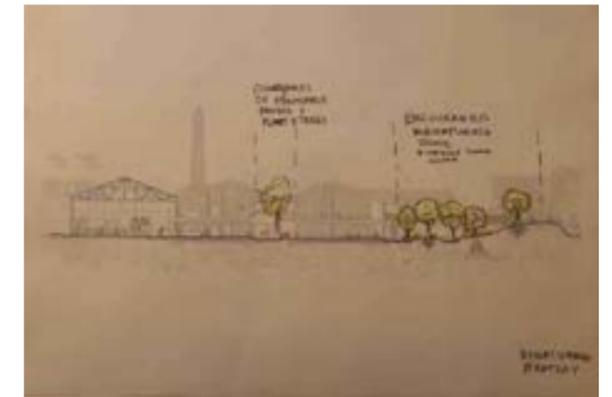
plan overlay - electricity strategy



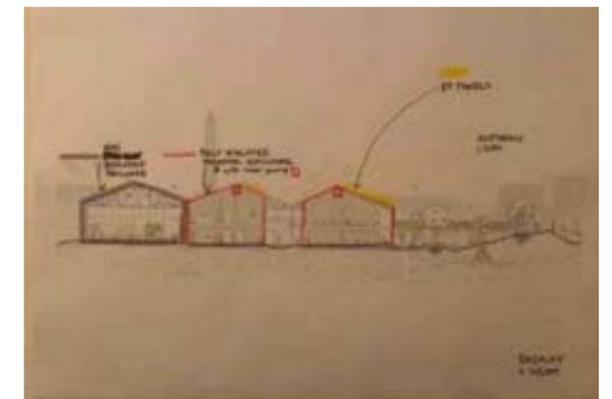
plan overlay - water strategy



section overlay - water strategy



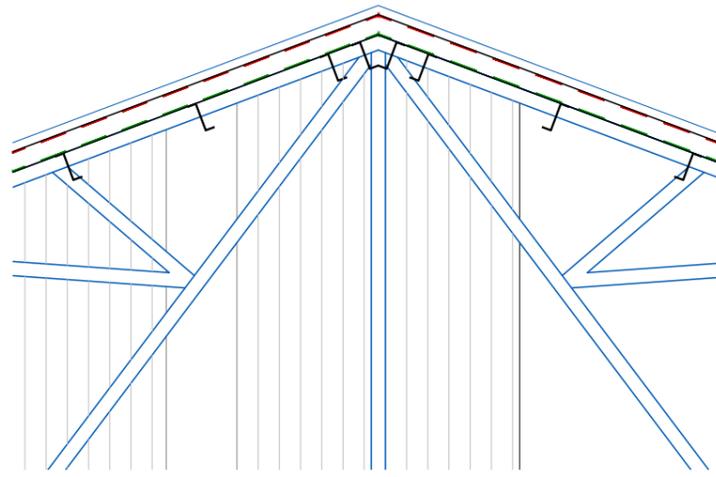
section overlay - nature strategy



section overlay - thermal strategy

REUSE OF COLUMN AND TRUSS DETAILS - BARN HOUSE BLOCK

***NB ALL EXISTING/ REUSED MATERIALS
AND STRUCTURE DRAWN AND
ANNOTATED IN BLUE THROUGHOUT
PROPOSAL DRAWINGS***



Roof section 1:10

1. existing steel truss
2. steel support beams hanging between the truss's to support roof panel
3. kingspan insulated roof panel spanning between the trusses 125mm
4. airtight membrane
5. plywood 12.5mm
6. polyiso insulation 150mm
7. plywood 12.5mm
8. vapour barrier
9. timber batten 44x44mm
10. reused corrugated metal cladding 5mm

Gutter 1:10

1. powder coated aluminium gutter

Wall 1:10

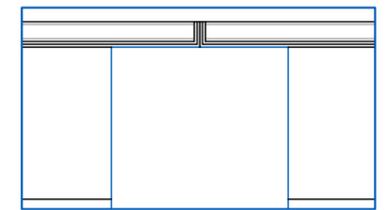
1. existing steel column 2300mmx250mm
2. plywood 12.5mm
3. airtight membrane
4. polyiso insulation 150mm
5. plywood 12.5mm
6. vapour barrier
7. timber batten 44x44mm
8. reused corrugated metal cladding 5mm

Floor/ foundation 1:10

1. liquid floor screed 60mm with underfloor heating
2. polyiso insulation 150mm
3. concrete slab 150mm
4. dpm radon barrier
5. sand blinding 50mm
6. hardcore 150mm
7. earth
8. cast pond base
9. existing rising block wall
10. foundation underpin pad 1200x1200mm, 300mm h
11. cast drain

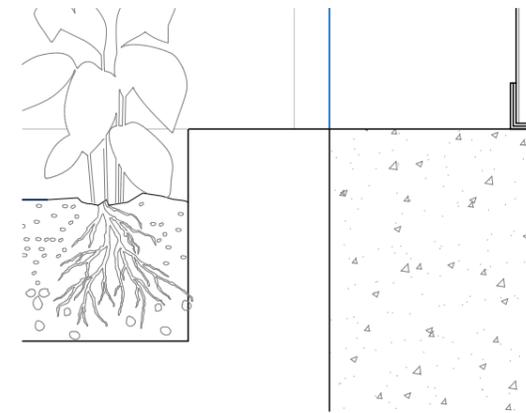
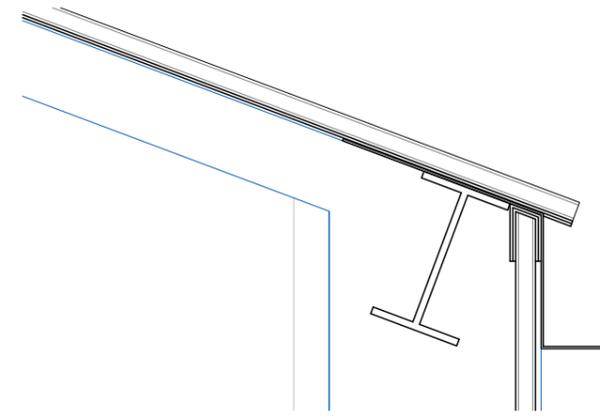
REUSE OF COLUMN AND TRUSS DETAILS - GLASS HOUSE

Insulated glazing frame section 1:10



Roof section 1:10

1. existing steel truss
2. rubber gasket 4mm
3. insulated panel frame 125mm (aluminium 3mm, polyiso insulation 125mm, aluminium 3mm)
4. double glazing 28mm
5. drip edge
6. powder coated aluminium gutter

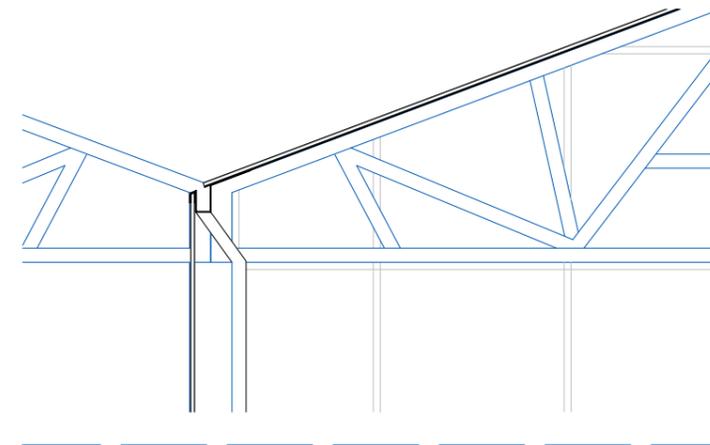


Drainage/ gutter section 1:20

1. powder coated aluminium gutter
2. down pipe
3. water butt

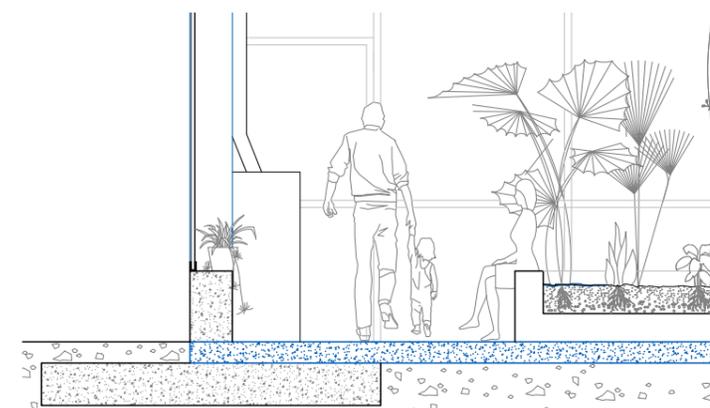
Wall section 1:20

1. existing steel column 300mmx250mm
2. rubber gasket 4mm
3. insulated panel frame 125mm (aluminium 3mm, polyiso insulation 125mm, aluminium 3mm)
4. double glazing 28mm
5. concrete block wall

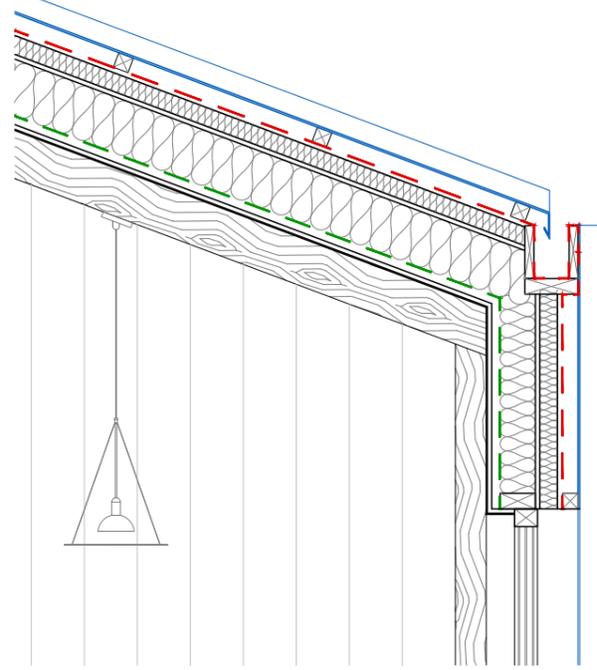


Floor/ foundation 1:20

1. existing concrete screed
2. ring wall
3. foundation underpin pad 1200x1200mm, 300mm h
4. hardcore 150mm
5. earth



**CLT CONSTRUCTION DETAILS
- BOAT HOUSE TOWER**



Roof section 1:10

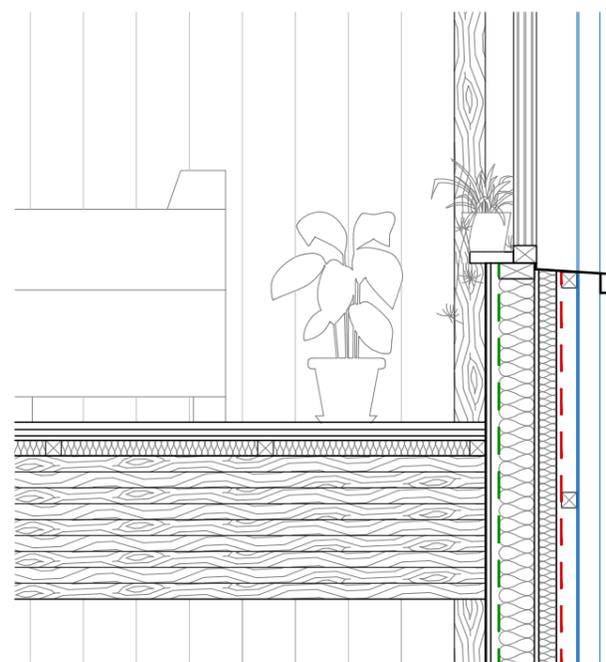
1. glulam timber 300mm
2. airtight membrane
3. plywood 12.5mm
4. polyiso insulation 150mm
5. plywood 12.5mm
6. vapour barrier
7. timber batten 44x44mm
8. reused corrugated metal cladding 5mm

Gutter 1:10

1. insulated consealed gutter

Window section 1:10

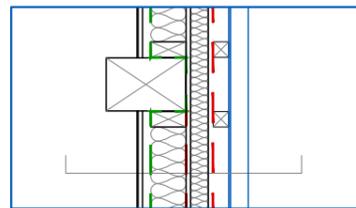
1. timber wall plate
2. aluminium window frame
3. triple glazing 44mm
4. powder coated aluminium sill



Wall 1:10

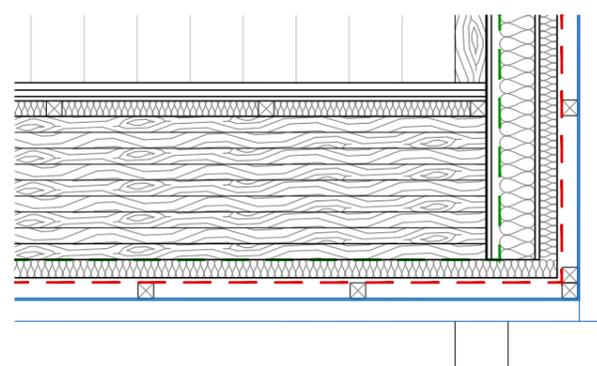
1. glulam timber 300mm
2. airtight membrane
3. plywood 12.5mm
4. polyiso insulation 150mm
5. plywood 12.5mm
6. vapour barrier
7. timber batten 44x44mm
8. reused corrugated metal cladding 5mm

Wall plan/ section cut 1:10

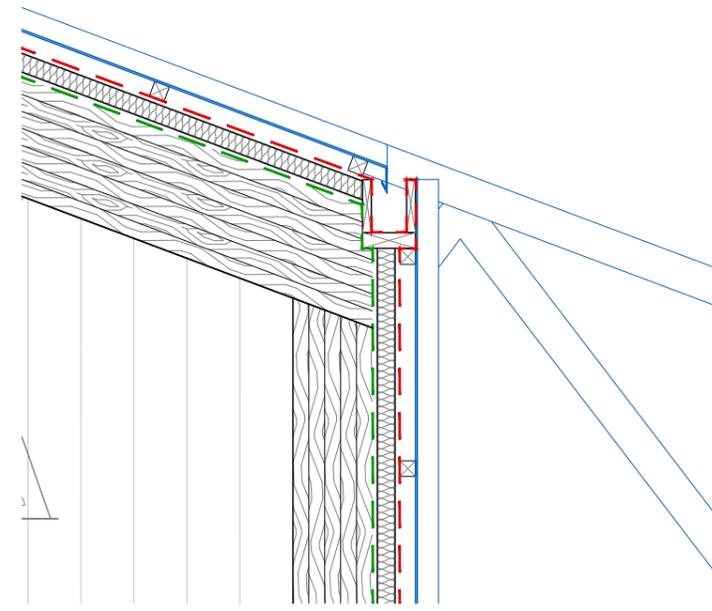


Floor/ cantiliever 1:10

1. floor finish
2. silent battens
3. plasterboard
4. plywood 12.5mm
5. sound insulation
6. glulam 400mm
7. airtight membrane
8. polyiso insulation
9. plywood 12,5mm
10. vapour nbarrier
11. timber battens 44x44mm
12. reused metal cladding



**CLT CONSTRUCTION DETAILS
- KITCHEN BLOCK**



Roof section 1:10

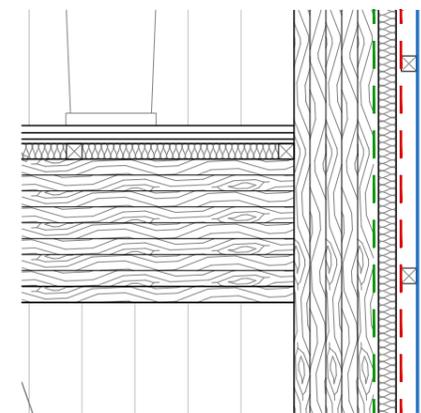
1. glulam timber 300mm
2. airtight membrane
3. plywood 12.5mm
4. polyiso insulation 150mm
5. plywood 12.5mm
6. vapour barrier
7. timber batten 44x44mm
8. reused corrugated metal cladding 5mm

Gutter 1:10

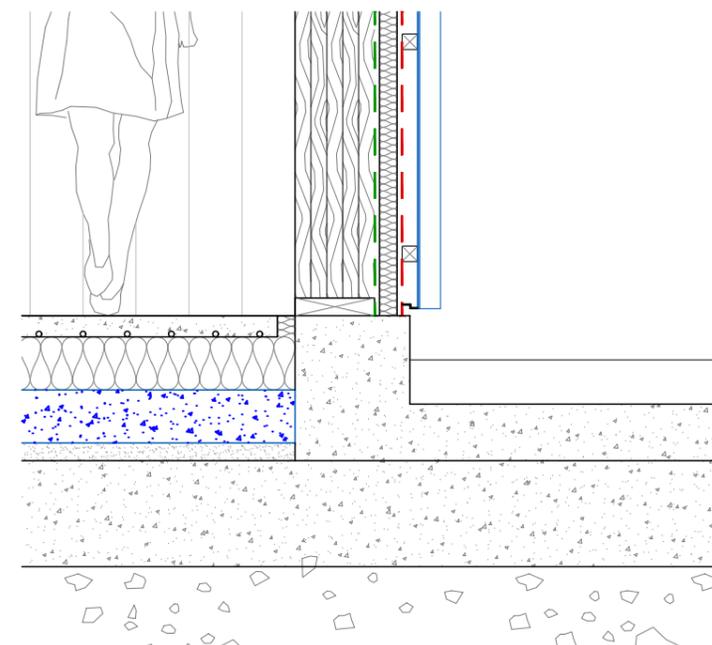
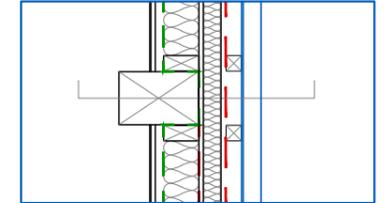
1. insulated consealed gutter

Wall 1:10

1. glulam timber 300mm
2. airtight membrane
3. plywood 12.5mm
4. polyiso insulation 150mm
5. plywood 12.5mm
6. vapour barrier
7. timber batten 44x44mm
8. reused corrugated metal cladding 5mm



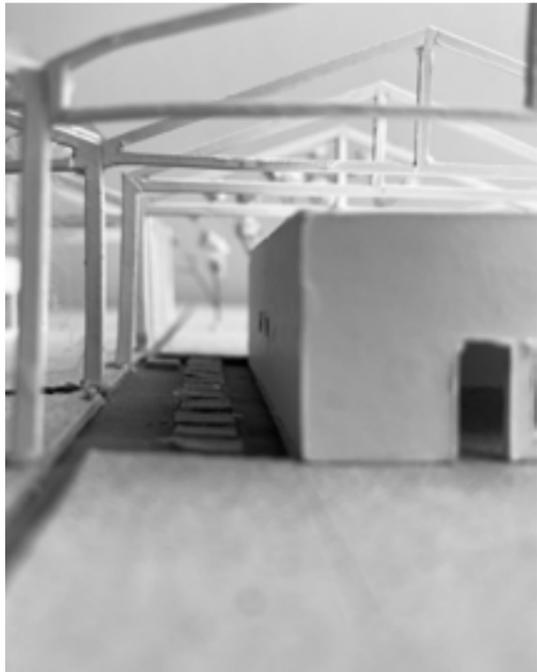
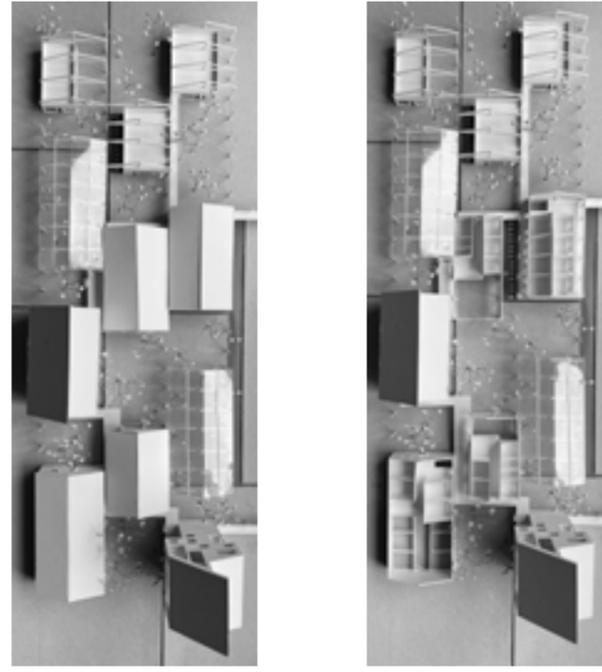
Wall plan/ section cut 1:10



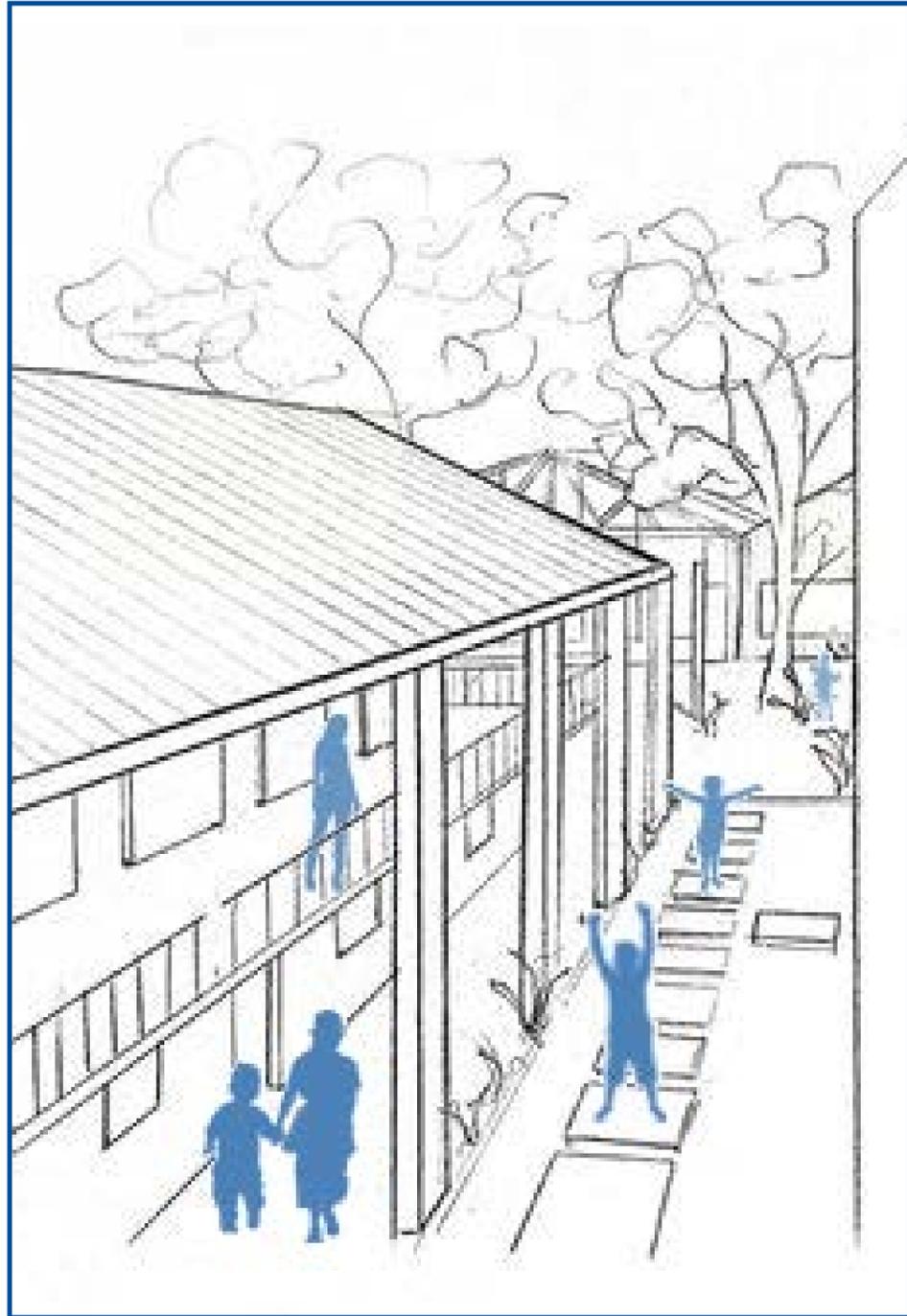
Floor/ foundation 1:10

1. liquid floor screed 60mm with underfloor heating
2. polyiso insulation 150mm
3. existing concrete slab 150mm
4. dpm radon barrier
5. sand blinding 50mm
6. hardcore 150mm
7. earth
8. cast pond base
9. existing rising block wall
10. foundation underpin pad 1200x1200mm, 300mm h

MODEL PHOTOGRAPHS



PERSPECTIVE MOMENT DRAWINGS

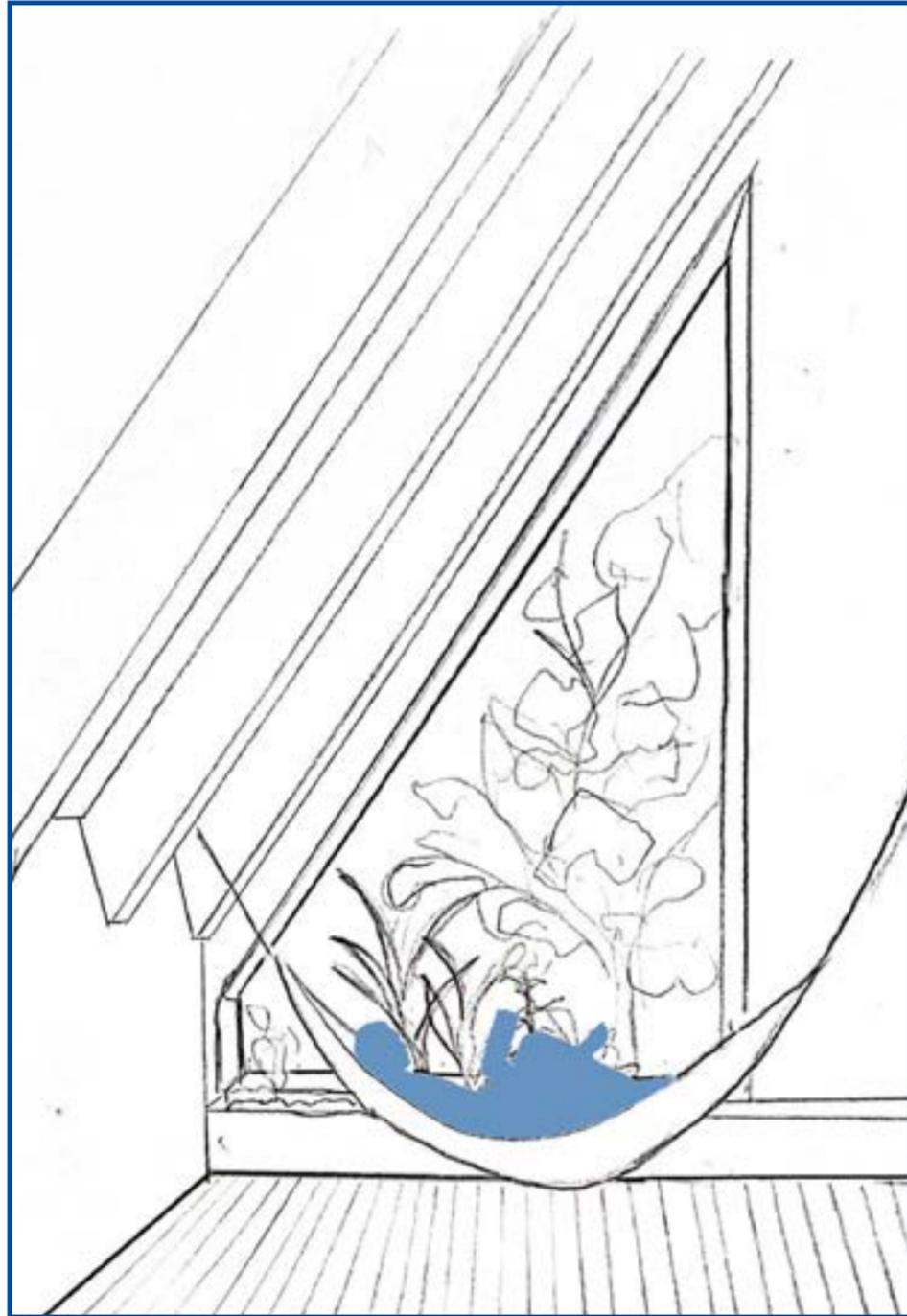


Terrace walkway and stepping stone threshold pond



Tree courtyard and roof garden balcony

PERSPECTIVE MOMENT DRAWINGS



Tree top tower reading nook



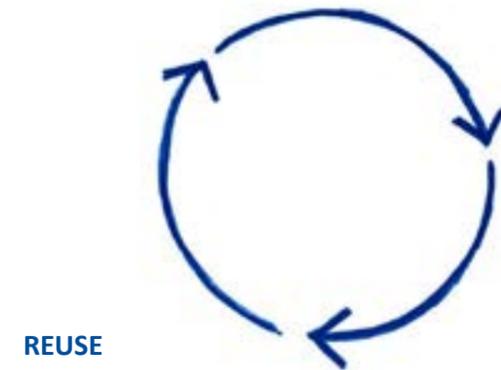
Boat house tower look out room

REFLECTIVE CONCLUSION

By integrating my research, writing, and design efforts throughout the year, my thesis has successfully demonstrated the vast opportunities presented by repurposing industrial sites. Initially, I examined precedents which focused on landscape regeneration, while later precedents explored the reuse of existing structures. Throughout the entire process, I remained committed to the four key objectives: Reuse, Renaturing, Porosity, and Open-endedness. These objectives not only guided my thesis but also served as the driving force behind my writing and design decisions.

Through thorough analysis of various precedents and the development of a design proposal, I have highlighted the unquestionable positive impact that implementing these objectives can have on both well-being and biodiversity. For my design proposal, I focused on transforming the site in Dublin industrial estate into Tolka Youth Wellbeing Centre and Urban Farm. This project proposal exemplifies how the integration of the four key objectives can create a harmonious environment that fosters the well-being of individuals and enhances biodiversity.

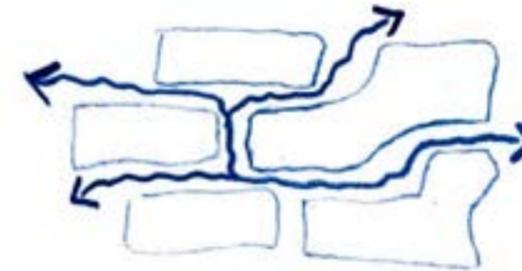
Overall, my thesis research and design endeavours have highlighted the immense potential that arises from repurposing industrial sites, emphasizing the transformative power of incorporating the key objectives: Reuse, Renaturing, Porosity, and Open-endedness.



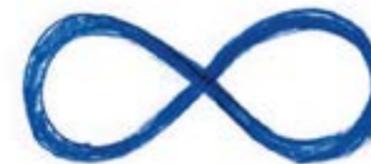
REUSE



RE-NATURING



POROSITY



OPEN-ENDEDNESS

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Text

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