AN URBAN OSMOSIS: THE EXTENDED URBAN ORCHARD

a productive landscape, housing & industry

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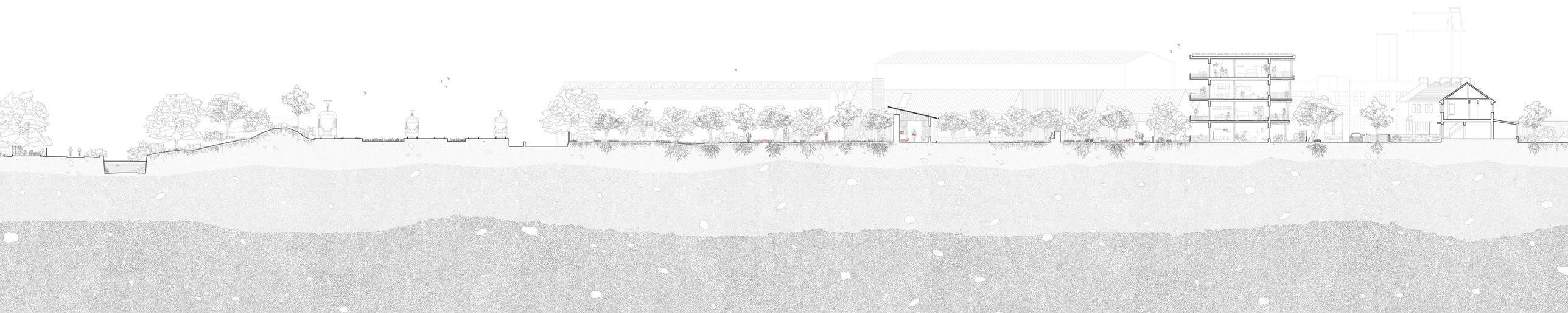
B.Arch 2023



ACKNOWLEDGEMENTS

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To my family for their constant encouragement, especially my late Dad, who constantly supported me and helped me look at design from a different perspective. I couldn't have produced this work without you.

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"Connections that function across scales or levels of influence and doublecoded zones that work as 'glue' between different elements have the capacity to support the connectivity of urban landscapes."

(Clemmensen, Daugaard & Nielsen, 2010).

ABSTRACT

This thesis investigates how to diffuse between areas of divergent territorial claims in order to provide an opportunity for ‘accommodation’ between adjoining worlds (Hertzberger, 2016).

This thesis began with an interest in border conditions at both a small-scale and large-scale levels, and how it is at this particular point between conflicting polarities that interaction, connection and identity could be intensified rather than separate entities turning their backs on one another.

Initial analysis and study of Tolka Valley led me to realise that the overall site has a series of areas with their own unique characteristics that do not interact with one another and instead, the overall urban landscape becomes a combination of different elements within one whole system that does not try to integrate with one another. As a result, there is a series of dead ends and weak space left over in-between these contrasting zones, a space of great potential and opportunity to prompt interaction and intrigue between these areas of differential territorial claims.

From my primary thesis research, along with the characteristics of Tolka Valley’s edge conditions, I knew I wanted a way to test how to interconnect these disparate areas - these threshold areas between zones - in order to utilise leftover spaces, diffuse between contrasting entities and to prompt interaction; thus, instilling a city of interaction, identity and resilience

As such, the edge can be described as a ubiquitous and all-important site in urban landscapes. However, edges are seldom considered sites in their own right but rather as boundaries between different sites. As a consequence, enclaves and other entities that turn their backs to each other, expressing a lack of communication on all levels of influence from physical appearance to appropriation, characterise many edge conditions. What could be an important site of connection and exchange is in many cases simply ignored or treated as marginal space.

(Clemmensen, Daugaard & Nielsen, 2010)

Osmosis: a process by which molecules [of a solvent] tend to pass through a semi-permeable membrane from a less concentrated solution into a more concentrated one.

(Oxford Dictionary)

OBSERVATIONS

An interest in these fractal edge conditions came about from initial research and observations made in Semester One. My recorded submission was a sketch of Reilly's Community Garden (fig.2). The space left between canal, infrastructure, industrial estate and future developments became a site of opportunity for the people of Tolka Valley as shared allotments.

The juxtaposition of zones (fig.1) and creation of community-led space became a key part in my interest for overlapping zones throughout my thesis to come.

Furthermore, the inclusion of local produce and self-sufficiency inspired me for my brief and programme for Semester Two.

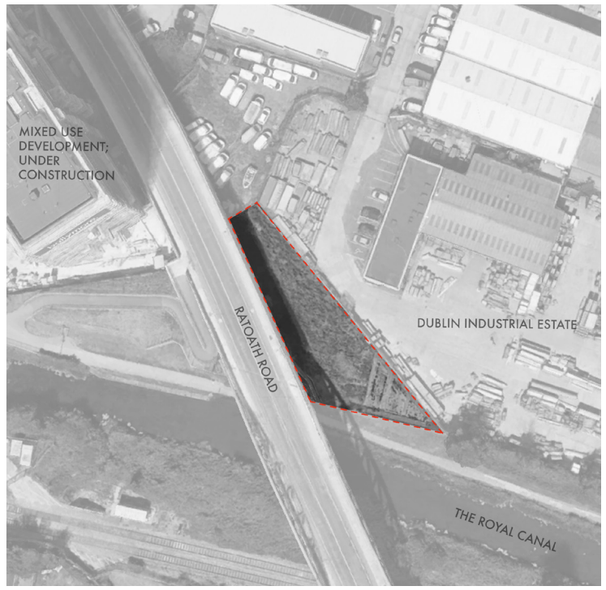


Fig. 1. A series of contrasting zones

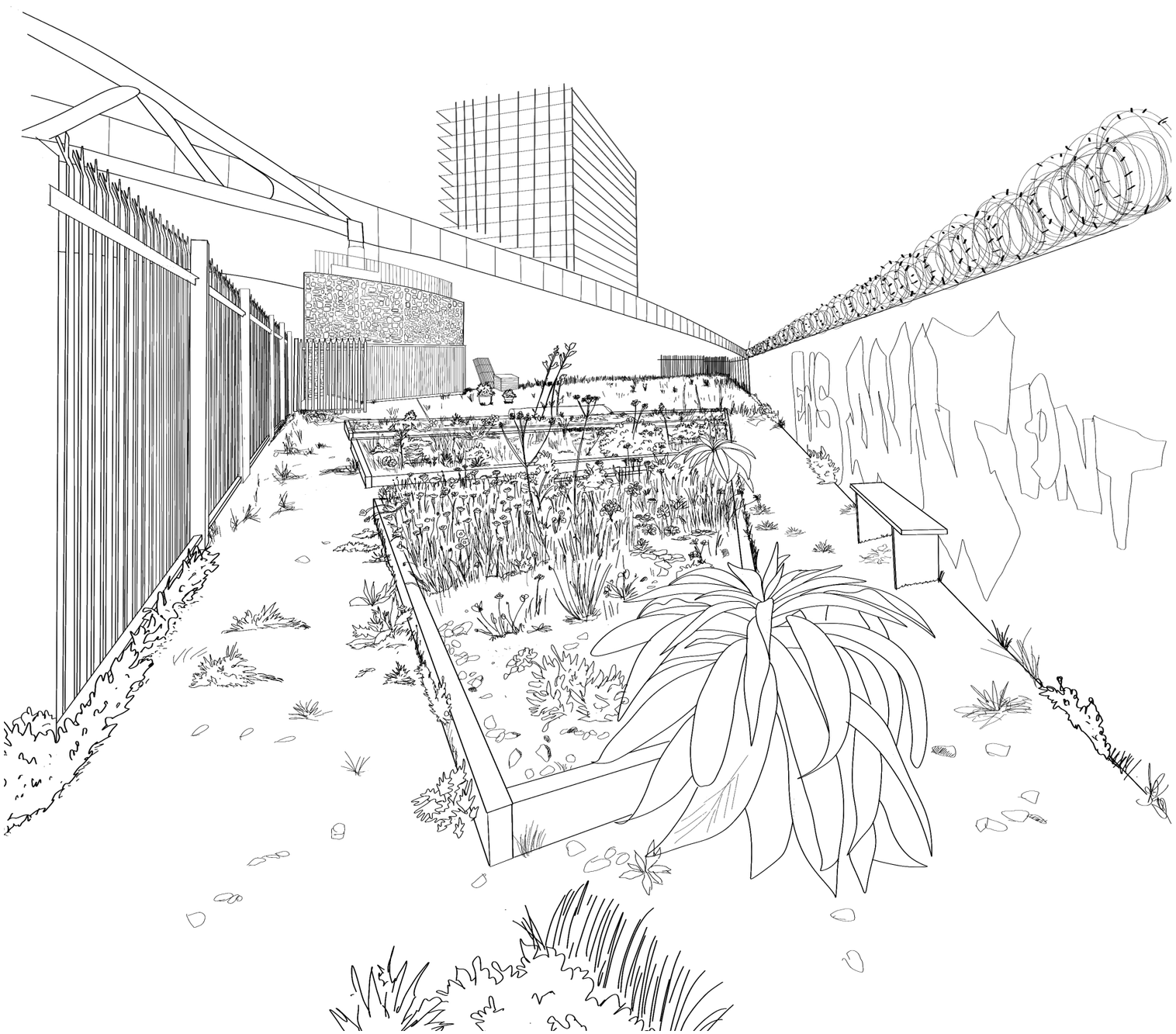


Fig. 2. Sketch - A space of opportunity

Observations of Tolka Valley led me to realise that the area reminds me of a series of islands (fig. 3) where each area turns their back on one another with hardly any points of overlap between one another. As a result, enclaves develop exponentially, areas become further separated and there becomes a sense of disbelonging within the overall area. As architects in a time of urgency, it is vital that we recognise that communities have different patterns and desires, and that each generation will be slightly different from its predecessors. We must think of these areas of contrasting characteristics as spaces that can accommodate diverse needs for the various individuals and groups that will be utilising these transitory spaces over time whilst also creating a city of longevity and connectiveness.

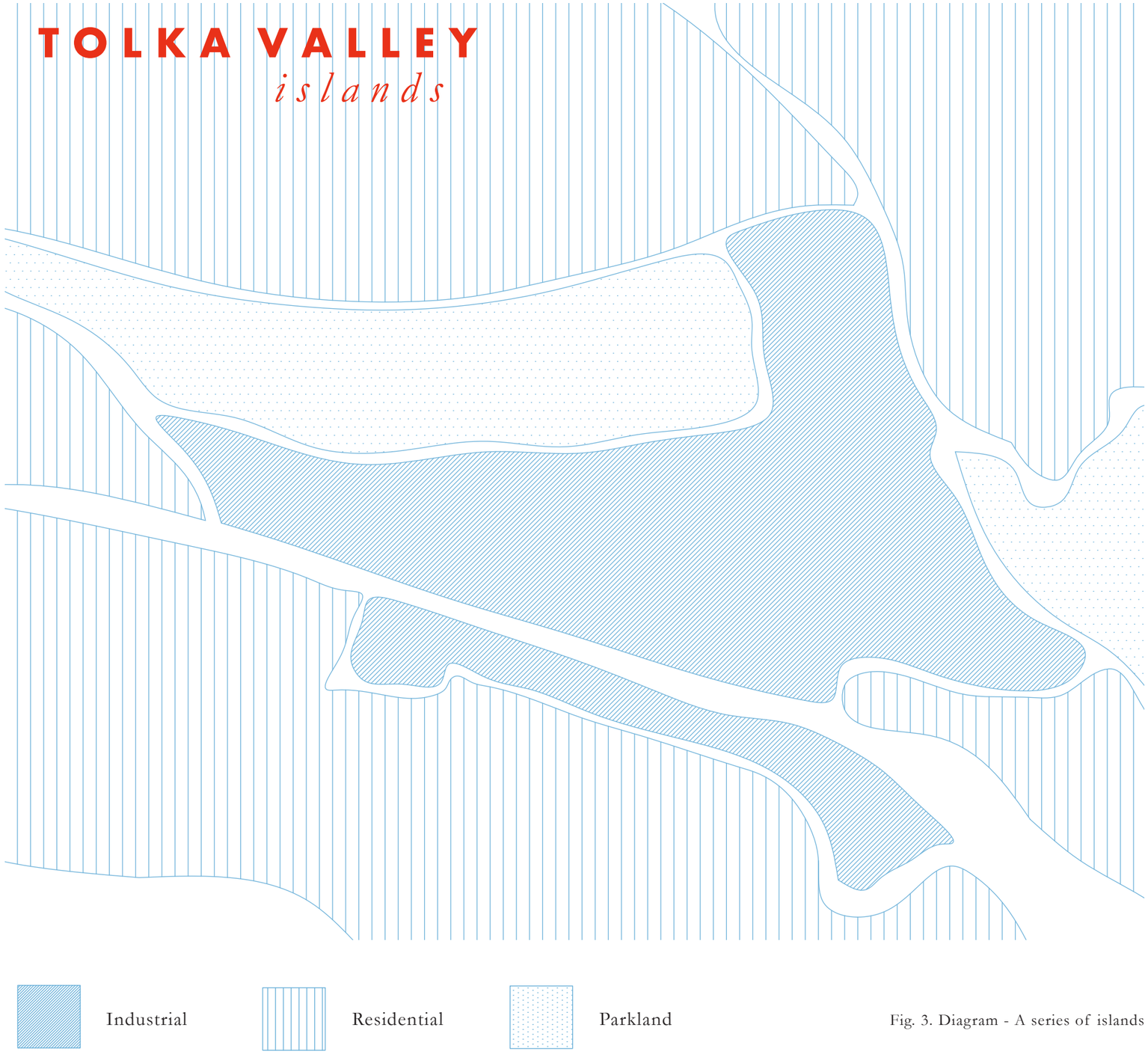


Fig. 3. Diagram - A series of islands

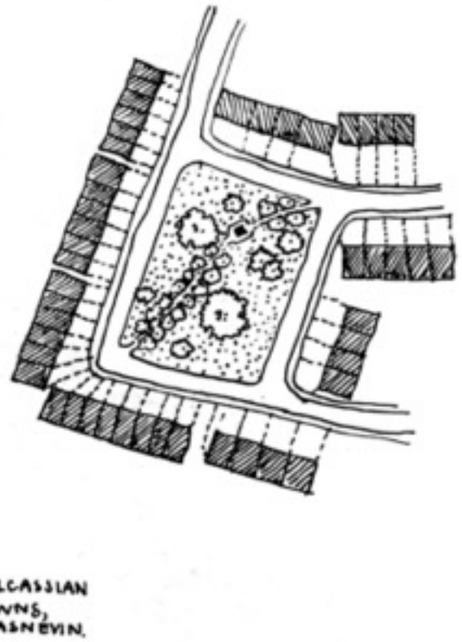


Fig. 4 & 5. Sketches - Comparing zonal osmosis present in different residential neighbourhoods of Tolka Valley

As bordering conditions between differential zones became interesting to me, I began to think about the characteristics of these thresholds. Sociologist, Richard Sennett (2000), differentiates between the words 'borders' and 'boundaries' - boundaries being limits or edges which separate one territory from another, and borders being a zone of interactive edge between territories. Boundaries are hard while borders are permeable.

Further initial studies led me to researching into the spaces between the residential units in Tolka Valley. It struck me that the areas that are less advantaged, have disappointingly designed middle space (fig.4), while the more affluential residencies (fig.5) have a more useable and interactive in-between dwelling space. When comparing Cloonlara Drive in Finglas with Dalcassian Downs in Glasnevin, although both neighbourhoods show permeable edges i.e. what Sennett would classify as a border – Dalcassian Downs in Glasnevin shows an integration of nature, seating space and a pedestrian focused space between dwellings, whole Cloonlara Drive in Finglas shows a green space central of the housing with more regard for additional car parking space than for the interaction with the natural environment.

Because so much of our urban landscapes have become encampments, territories utilised primarily by particular groups (tourist zone, shopping district, upper class residential, ethnic neighbourhood, etc.) it is where one territory touches another and the possibility of movement between them that any possibility of experiencing the other is possible. This does not necessarily mean that centralised or open spaces can never work as public realms, but they have become limited in their capacity. (Sennett, 2000)

DUBLIN INDUSTRIAL ESTATE LANEWAY

When the space that surrounds a building is designed with particular qualities, it becomes intriguing to people and draws them in. This inhabitation creates passive surveillance and a greater sense of collectiveness within an area.

In a 2022 data collection survey carried out by TUD Architecture students, residents of the Tolka Valley region stated that there is no connection between roads and paths to pedestrian level; resulting in pedestrians taking awkward routes or detours to their destination due to a prioritisation of vehicles. A local architect in the area stated that the area becomes a peninsula as a consequence of the dismissal of pedestrian, and with that, emerges a lack of sense of belonging in the area. (McGurrin, et al., 2022) Streets become simple transit areas among the different 'islands' due to the lack of opportunity for incidental interaction. The roads create physical and symbolic barriers between different areas of the vicinity, preventing integration and enhancing social division.

Further analysis showed that there is only one pedestrian route (fig.6) from the industrial estate to the canal. The surroundings of this walkway are neglected, resulting in ruderal growth, graffiti, and a build-up of rubbish which provokes a sense of eeriness and unpleasantness. Users of this laneway have no space to explore or enjoy the transition between an area of industry to an area of nature; a rushed mentality by the user is derived due to the lack of thought put into the threshold between these two zones, albeit a particularly important, heavily utilised route.

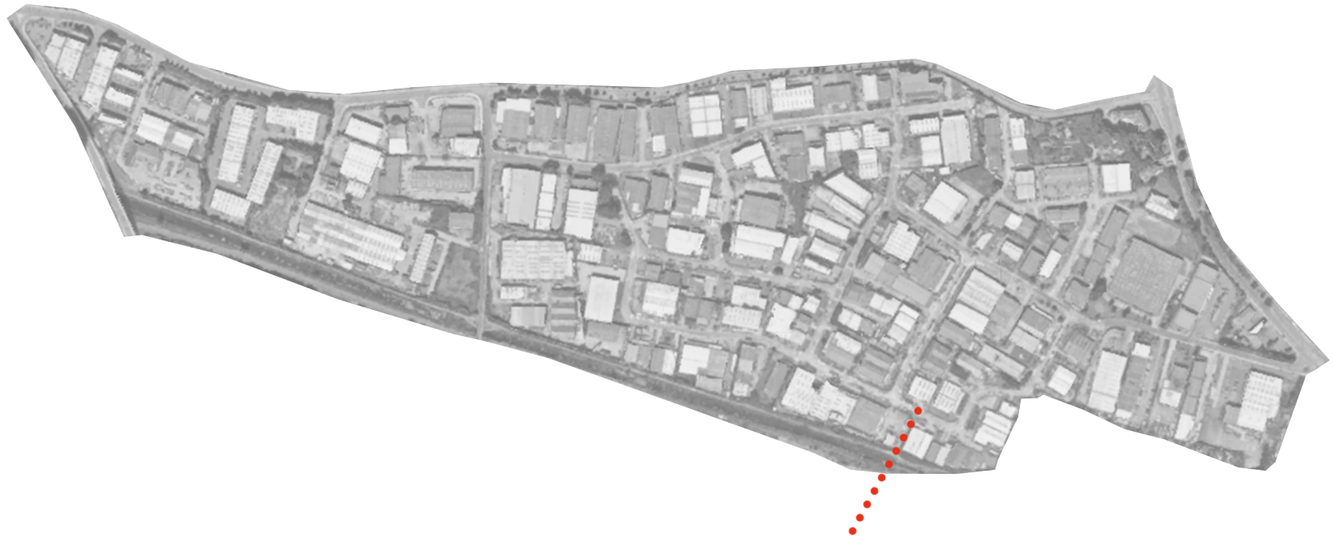


Fig. 6. Diagram - Dublin Industrial Estate's only pedestrian laneway to canal

Fig. 7 & 8. Photographs - Condition of laneway between canal & industry

SEMESTER ONE GROUPWORK ;
THE COLLECTIVE KITCHEN

Groupwork from the first semester allowed for initial testing on how to connect the greater area of Tolka Valley as we collectively agreed that there were little to no connections from north to south of the area.

Furthermore, my initial observations of communal allotments, such as Reilly's on the periphery of the industrial estate, led to the realisation of how the production of food brings people together.

Through the design of a community kitchen and dining space, my interest and growing knowledge on food production linking to deprivation and connection, further intensified my later research in my individual thesis design project.

In addition to this, the decision to use an existing building within Finglas Industrial Estate in order to blur the boundaries between nature, residency and industry, further confirmed that I wanted create an urban osmosis in my design project in Semester Two.

Fig. 9 & 10. Photographs - Building used to retrofit

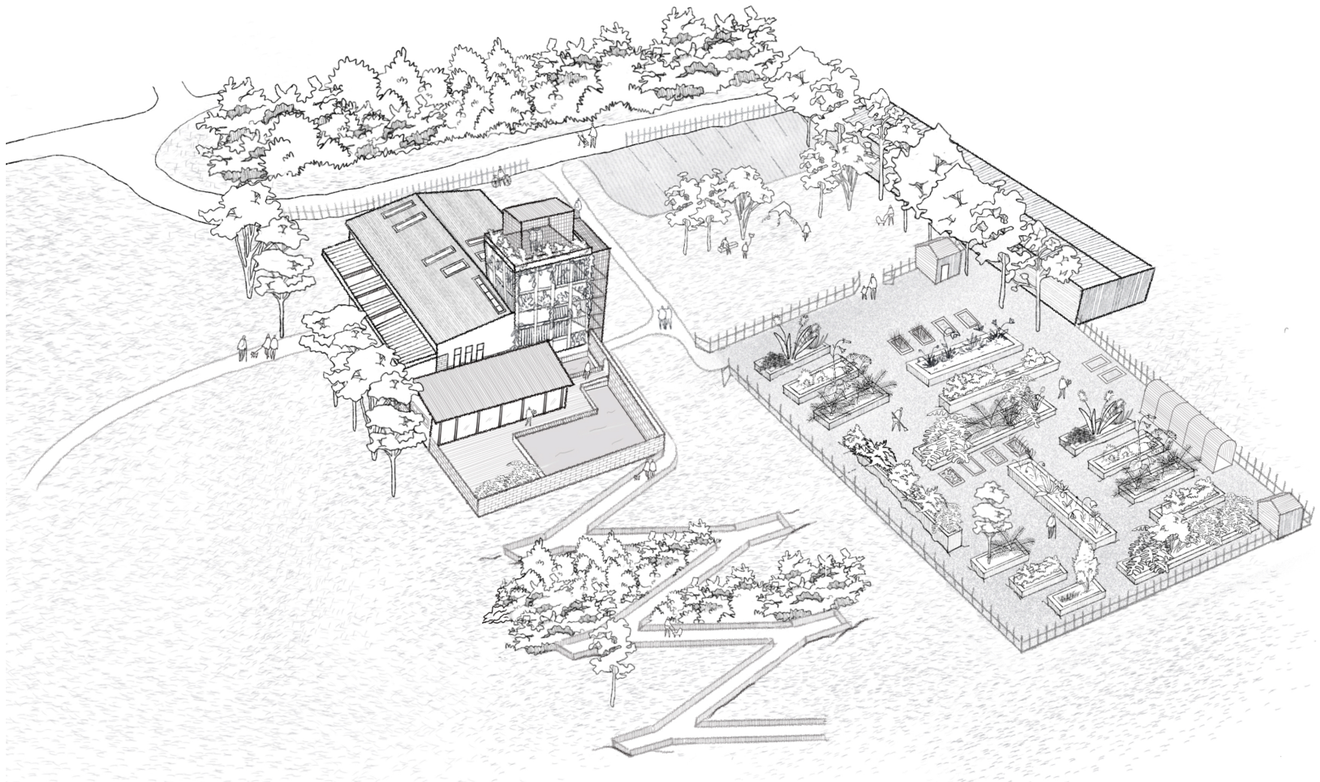
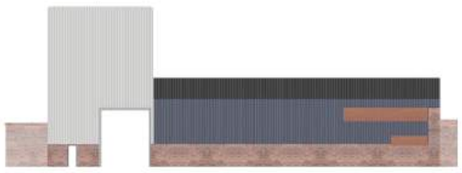


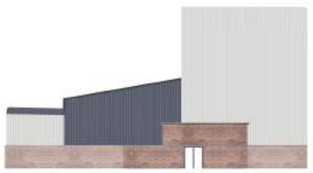
Fig. 11. Sketch - Proposed productive landscape and connection to the south of Tolka Valley through new ramped route

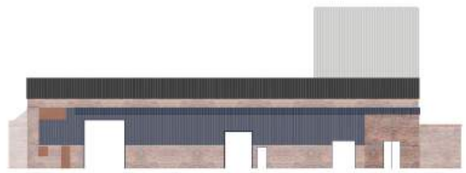
This short group project also reiterated the importance in the re-use of existing buildings and how vital it is in understanding the current state of a site (fig. 12) and built form in order to re-use as much material as possible in a time of urgency.

Fig. 12. Above; Diagram - Material inventory in order to re-use as much existing materials as possible

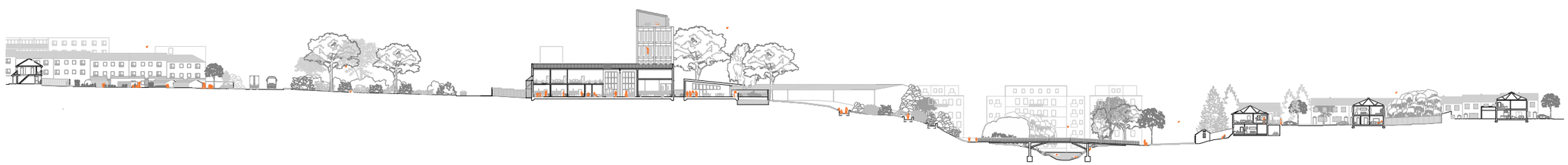
Fig. 13. Below; Proposed Section - North to south connections made through new community kitchen, ramped route and footbridge







built fabric		on site	totals			
brick	roof panels	concrete panels	n/a	407m2	116	898m2
corrigated alluminium panels type 1	rusted window covers		128	512m2	11	65m2
corrigated alluminium panels type 2			100	508m2	43	215m2



"Small scale architectural moves can encourage interaction and inclusion within communities and result in a greater degree of neighbourliness."

(Murray, 2022)

Fig. 14. Photograph - Site location

SITE

The chosen site is located on Bannow Road in Cabra, a road of great character; with one edge predominately industrial, and the opposite residential. The luas and rail run north of the site creating a juxtaposition of zones that do not interact with one another.

There is a derelict 1940's red brick derelict industrial building adjacent to the brownfield site, further lying in line with my Semester One objectives of re-using existing material whilst also being located in an area where zones of differential territories have great potential to overlap and integrate between one another.

The abundance of leftover material, neglect of the street condition and lack of biodiversity corridors further solidified my choice in site.

Fig. 15, 16, 17 & 18. Site photographs

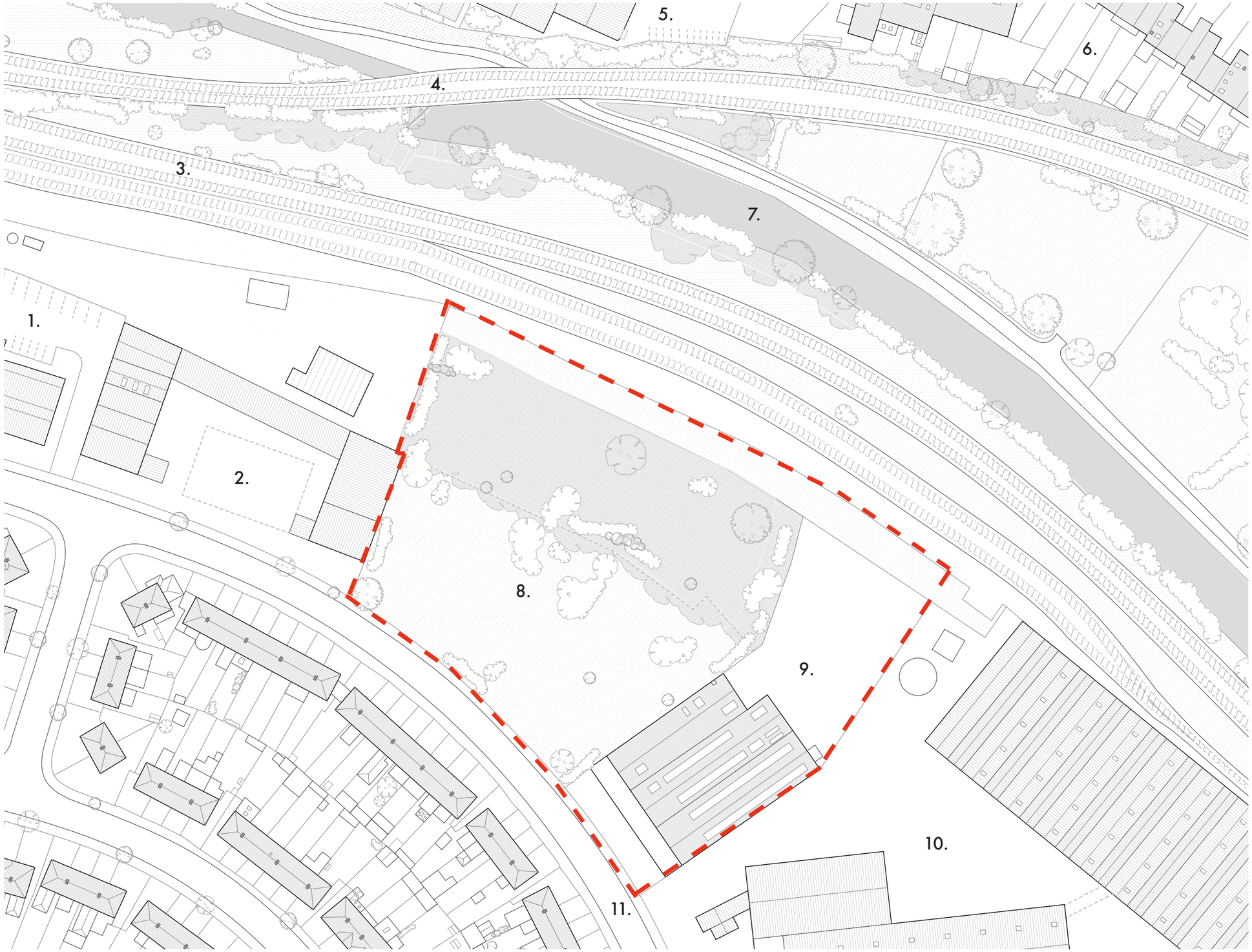
On the chosen site, the combination of existing residential units, industrial buildings, rail, and flora and fauna from the canal, led me to think about the types of activities and actions that happen within each of these 'islands' and how each zone encourages its own types of movements (fig.19). I also began to think about what could merge these islands at points in order to eliminate fragmentation and prompt interaction.

As Oswald Mathias Ungers alludes as the 'shoreline' in his essay, "The City within the City," thresholds host the union of opposition. The islands within an area are static and it is the sea that surrounds these enclaves that is in permanent flux; there is a clear distinction between these entities, but it is where the island and the sea meet, at the shoreline, which is crucial. (Aureli & Ungers, 2011) Where the sea and shore meet throughout Tolka Valley, has been neglected. Through an urban osmosis, the possibility to connect seemingly disparate zones becomes apparent.

Fig. 19. Diagram - Properties of different islands

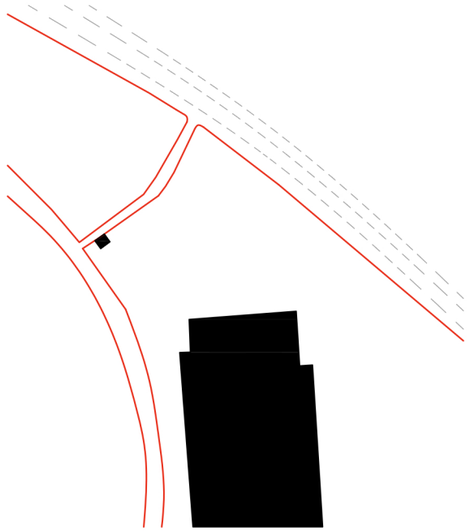
"We must consider the quality of street space and of buildings in relation to each other. A mosaic of interrelationships – as we imagine urban life to be - calls for spatial organization in which built form and exterior space (which we call street) are not only complementary in the spatial sense and therefore reciprocate in forming each other, but also and especially – for that is what we are primarily concerned with here – in which built form and exterior space offer maximal accessibility to penetrate each other in such a way that not only the borderlines between outside and inside become less explicit, but also that the sharp division between private and public domain is softened."

(Hertzberger, 2016)



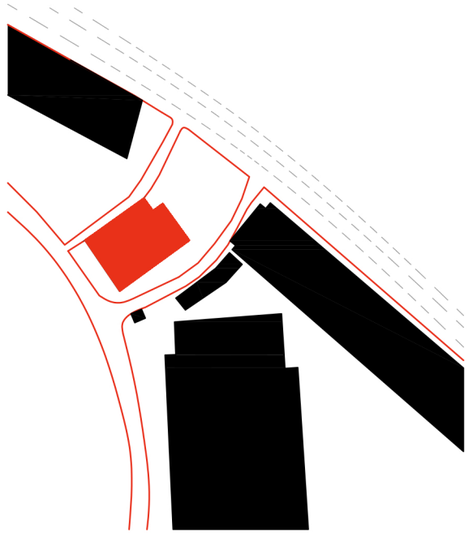
Existing Site Plan

1. Post Office
2. Cabra Boxing Club
3. Green Luas Line
4. Irish Rail
5. Dublin Industrial Estate
6. Claremont Court
7. The Royal Canal
8. Brownfield site
9. Premier Chicks
10. Batchelors Factory
11. Bannow Road



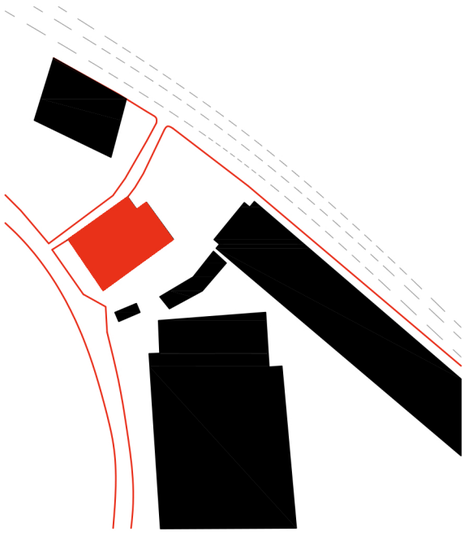
1949

Vacant



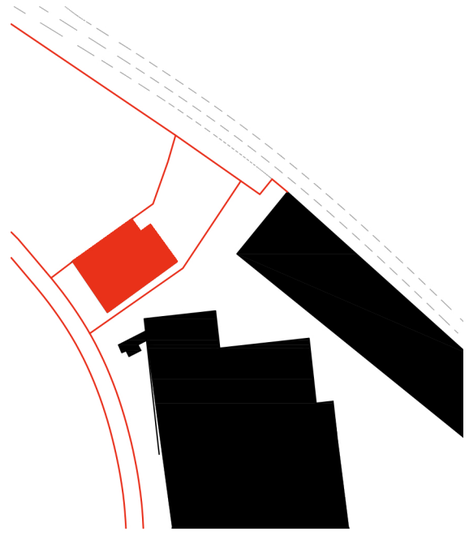
1964

Hallmark LTD.



1966

Batchelor's Canteen



n.d.

Premier Chicks

Fig. 20. Diagram - Site Morphology

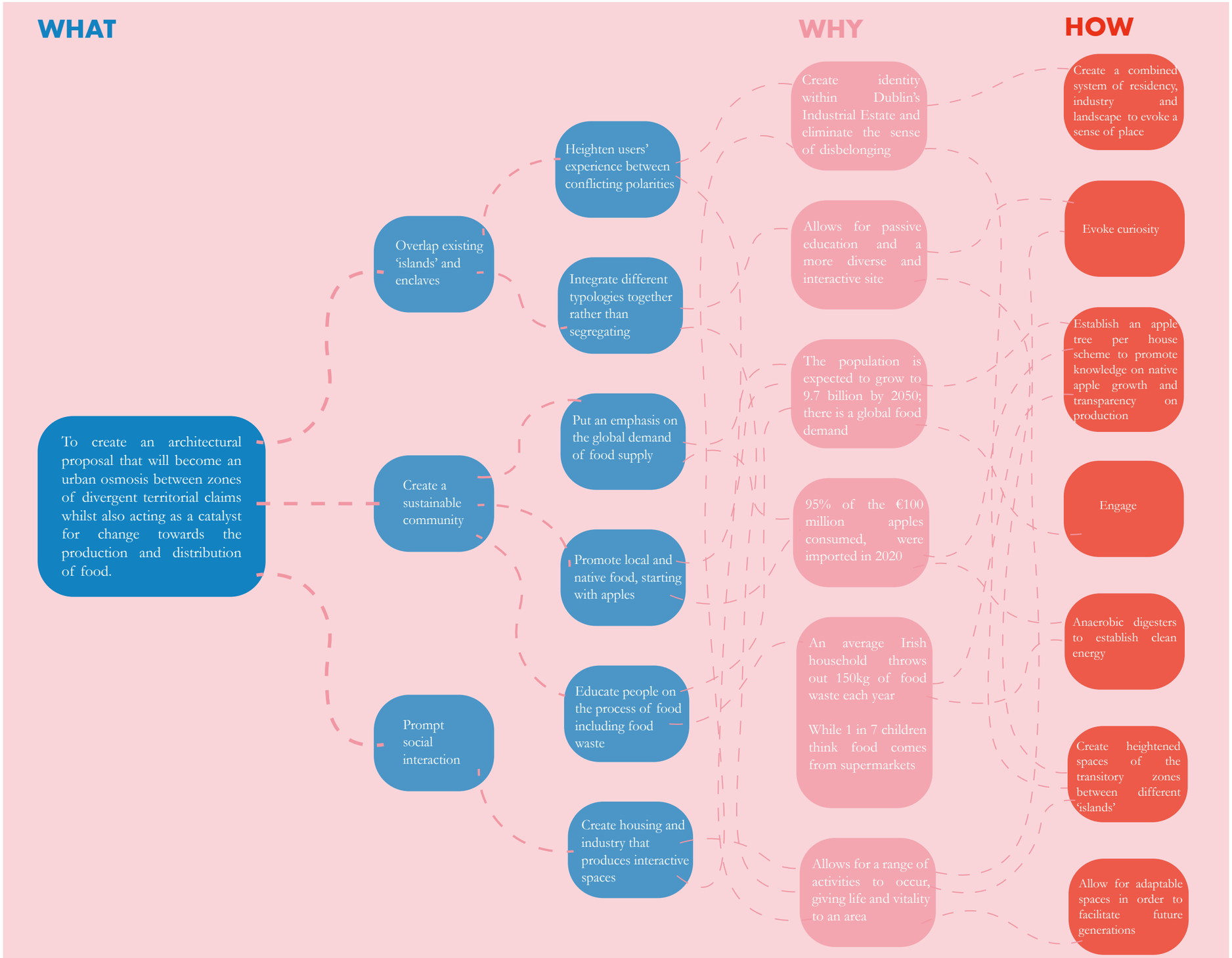


Fig. 21. Diagram - Mindmap of objectives

SUSTAINABLE DEVELOPMENT GOALS

My objectives solidified my intent of wanting to align with the Sustainable Development Goals of 11, 12 and 15.

Goal 11 emphasises the importance of sustainable cities and communities. This became a key goal within my objectives; to overlap contrasting territories. As architects, we ought to value and prioritise a community's patterns, rhythms and social interactions within a city in order to ensure cultural and communal longevity in a time of urgency, where spontaneous and random interactions are diminishing. We must recognise that as architects, we have the power to design neighbourhoods that aim to create a feeling of safety, encourage self-sufficiency and aim to include a variety of users in order to become cities of inclusion and resilience.

Goal 12 is about ensuring sustainable consumption and production patterns, which is key to sustain the livelihoods of current and future generations (United Nations, 2022). From the research on food waste and food production in Semester One, SDG 12.8 (Sustainable Development Goal) became the driving force within my scheme.

"12.8: By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature"

With food production being an urgent issue as its estimated that food production needs to increase by 70% by 2050 as the global population constantly grows; along with food waste accounting for over 30% of all global waste (www.epa.ie, 2022), it is important to change our knowledge and appreciation on food.

Lastly, SDG 15.9 states we must integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts in order to recognise the importance of life on land. As architects, we must think of 'the other' and we must not undermine the importance of biodiversity in sustaining life. Healthy ecosystems and the biological diversity they support are a source of food, water, medicine, shelter and other material goods. We must not take ecology for granted as they also provide ecosystem services – the cleaning of air and water – which sustain life and increase resiliency in the face of mounting pressures (United Nations, 2022).

The creation of a productive landscape became crucial to my design strategy in order to bridge barriers between zones of differential territorial claims, create a neighbourhood of resilience, provide passive education and new knowledge on native food produce whilst also providing an extended green corridor for the existing flora and fauna within Tolka Valley.

Fig. 22, 23 & 24. Diagram - SDG's

Fig. 25. Collage - Manifesto

BRIEF

As this thesis became a test in how to overlap areas of contrasting identites, I knew I wanted to create a combination of differential zones on site and not primarily stay within my immediate site boundary. Furthermore, the intriguing mixed nature of Bannow Road confirmed my aim in wanting to create a scheme which provides an opportunity for interaction between divergent territories in order to encourage boundary crossing, spatial encounters, and appreciation of contrasting identities.

The brief became:
- to create a productive landscape of an urban orchard extending into Cabra
- to provide temporal harvest worker's accomodation
- to provide more permanent residential units
- to re-use the existing industrial nature of Premier Chicks as a cidery

An extended urban orchard becomes the heart of my project, as further research into imports of food produce led me to apples.

With studies showing Irish people not knowing the name of one Irish apple (Magan, 2016), and with food production accounting for 37% of greenhouse gas emissions (www.epa.ie, 2022), there is a need in educating new knowledge and habits to the population on food culture. Through the implenetation of an urban orchard, zones will overlap; providing passive education, encouraging interaction and establishing a sense of place.

RESEARCH

As this stage of the project, the more I researched into food waste and food imports, the more it consilidated that not only would an urban orchard provide information and appreciation on local food to the people, but it also had the potential to connect the disparate islands surrounding my site as a means of testing how to stitch up fragmented cities of the future.

770,300 tonnes of food waste in Ireland in 2020.

www.epa.ie

URGENCY
of the
ORCHARD

Households wasted 241,000 tonnes of food (31% of total) in 2020.

www.epa.ie

1 in 7 Irish children believe that fruit and vegetables originate in supermarkets

www.themirror.ie

66,000 tonnes of apples were imported into Ireland in 2020.

www.cso.ie

95% of the €100 million worth of apples consumed in Ireland annually are imported

www.thejournal.ie

Fig. 26. Diagram - Food research

CONDITION

It became very important to me to study the current condition of the site carefully in order to not only re-use as much leftover material as possible, but also to look at the greater picture of Cabra and to continue my objective of an extended urban orchard.

As an orchard is proposed, the current ground condition was analysed in order for me to understand how any left-over materials could be re-used as much as possible whilst also creating the correct conditions for the apple trees.

With an abundance of leftover concrete foundations on site, it became important to me to use this material within my scheme as both gabions within the orchard and as an aggregate for a durable ground floor plinth.

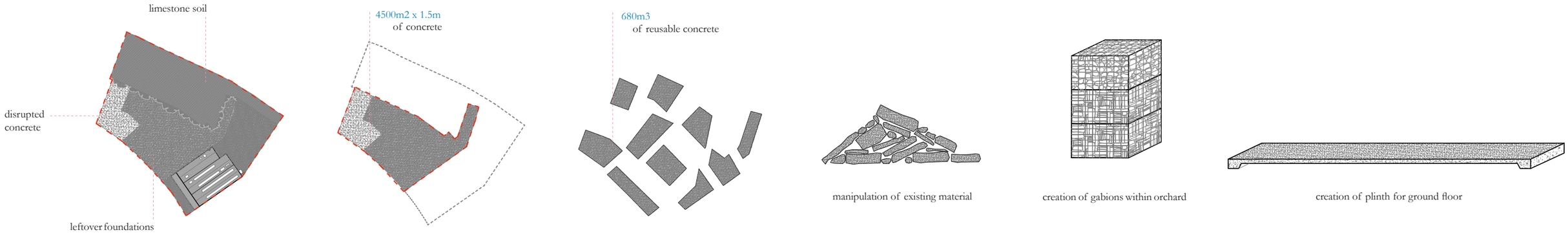
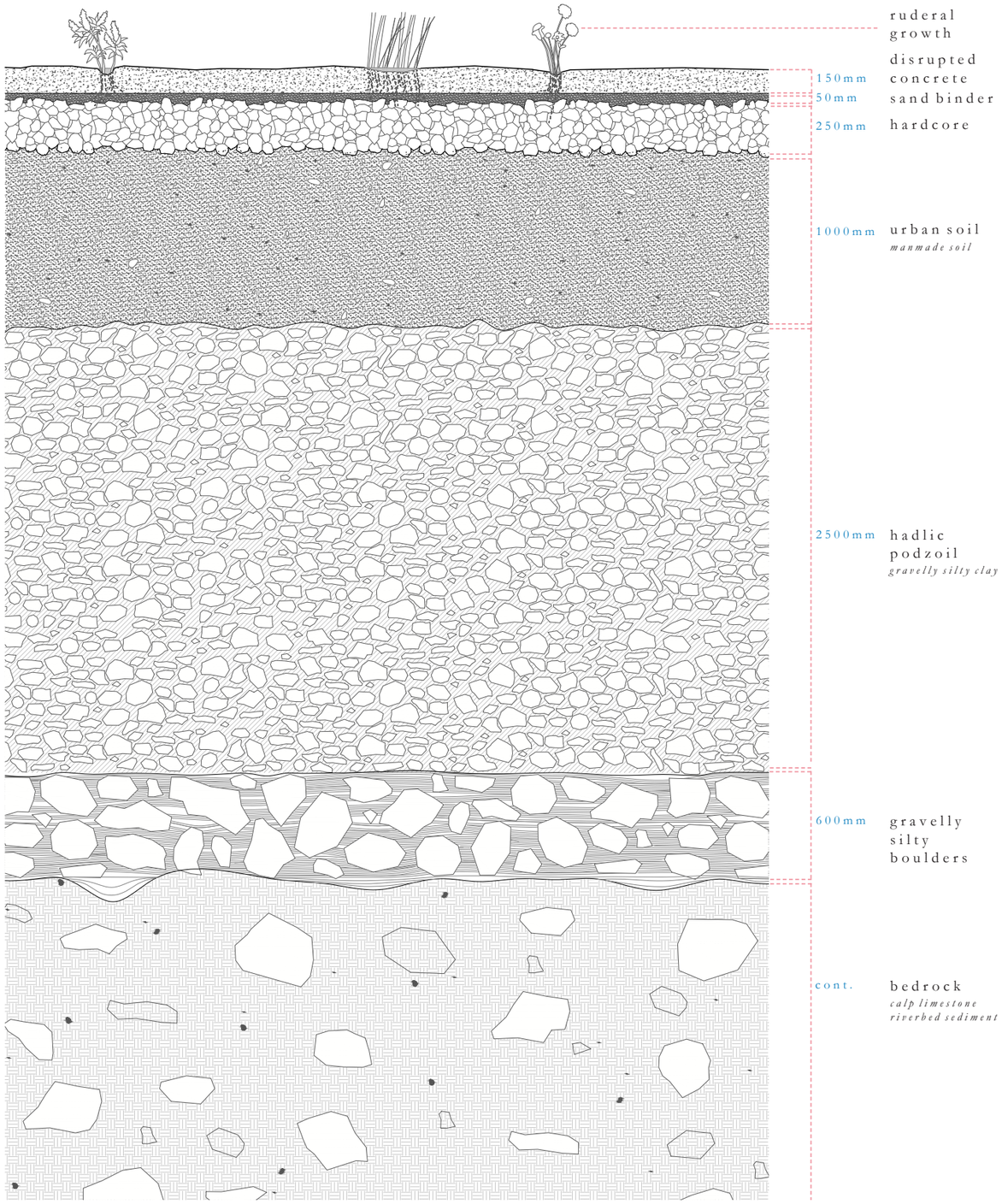
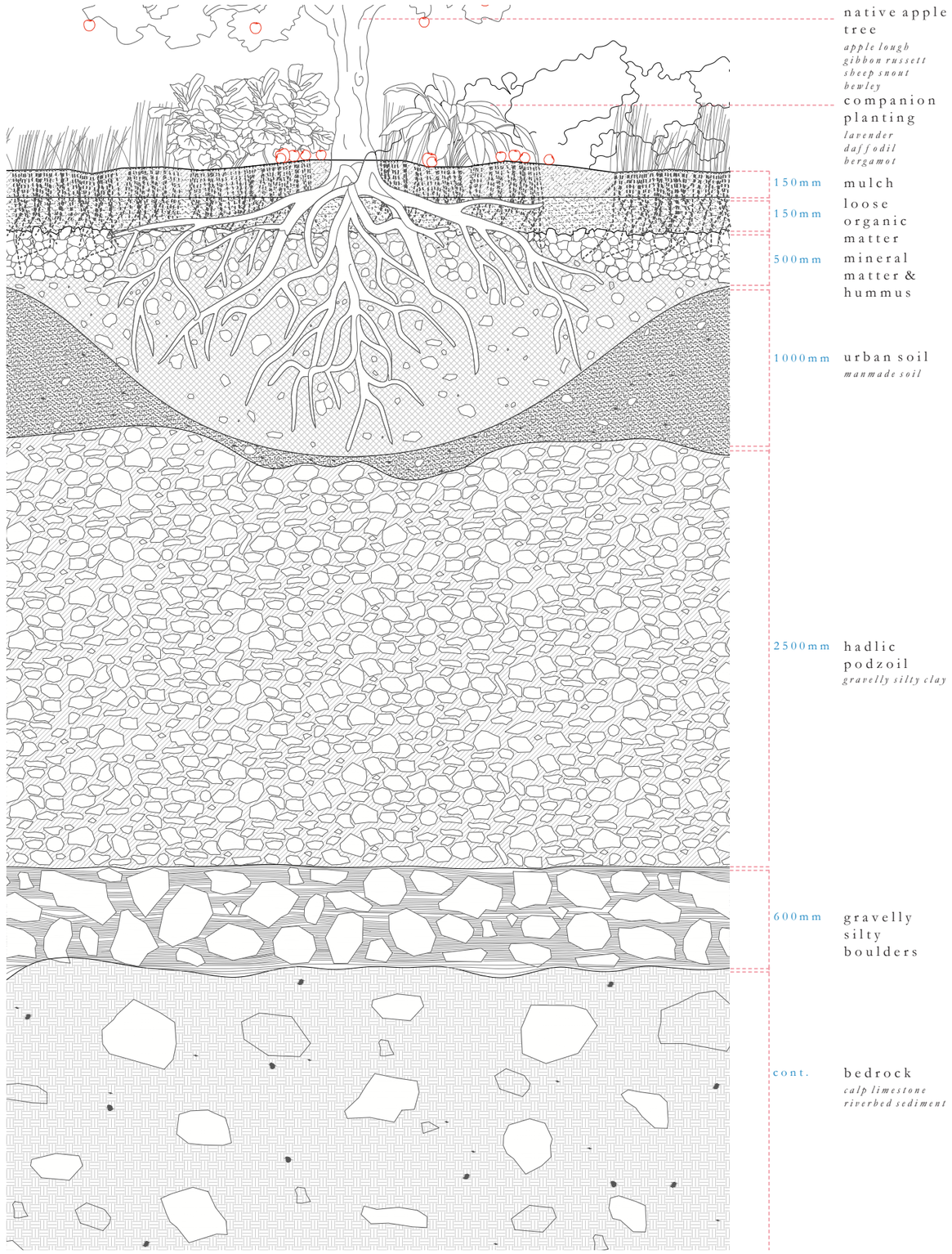


Fig. 27. Diagram - Material re-use



Detail Section
Existing soil condition on site



Detail Section
Proposed soil of urban orchard

Detail Section
Existing Condition of Bannow Road

Detail Section
Proposed Condition of Bannow Road

REACHING OUT

This extended orchard project proposes to plant 900 native Irish trees throughout Cabra as a means of testing how through this new productive landscape speckled throughout the neighbourhoodareas of different territorial claims.

I got in contact with different organisations in order to gain better insight into how a community project like this could be made a reality.

Bloomin' Crumlin, a community-led group, have carried out similar projects to that of mine. They have focused on enhancing streets, green infrastructure and biodiversity throughout Crumlin and Kimmage. Through further investigation and contact with the organisation, I gained more knowledge on what was feasible in order to create a product and industry with the abundance of this new native produce - apples. This organisation reiterated that the planting of native flora throughout the areas of Crumlin and Kimmage had strengthened a sense of community between the residents whilst also helping with pollution, attracting biodiversity and improving the overall wellbeing of those around them.

In addition to this, I reached out to the Irish Seedsavers Association to gain more information on native Irish apple tree types and what properties these trees have as they curate Ireland's national herritage apple tree collection, ensuring traditional varieties are preserved and knowledge on these delicious species can be appreciated and expanded to the wider community of Ireland.

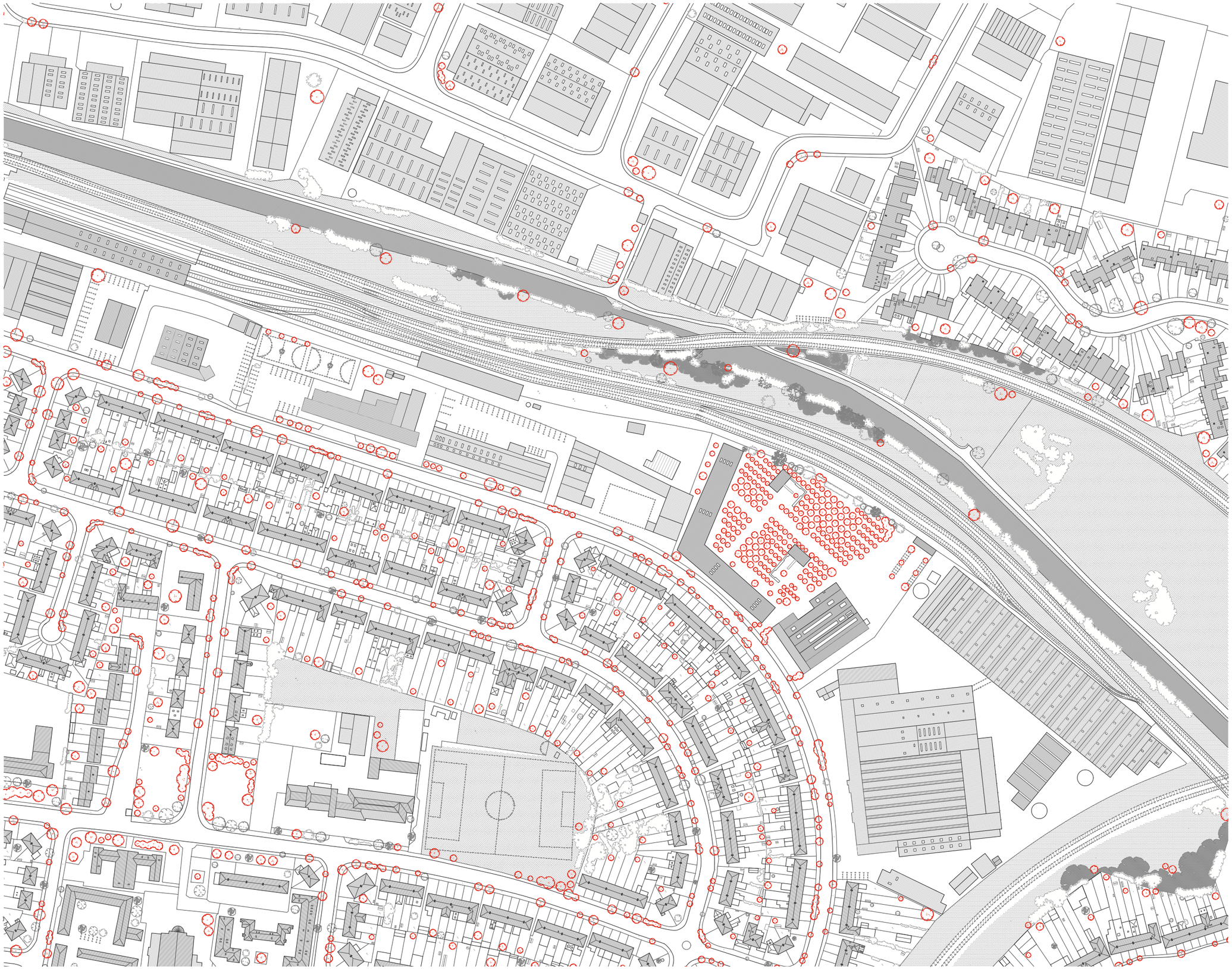
Lastly, speaking to Greg Mac Neice from MacIvor's Cider gave me figures in how many trees are optimum in order to create a viable cider production industry with the site area I had. The comparison of a smaller scale cider brand like MacIvor's with global industry, Bulmer's, facilitated my figure of 900 trees for the purpose of a successful cider factory.

My project proposes to plant 300 native apple trees along the streets in order to enhance the streetscape and contribute as a green corridor within Cabra. A further 300 are proposed to be planted in residential back gardens in order to encourage care and education on native produce. And, lastly, 300 are proposed within my immediate site boundary, as the intensive urban orchard.

Fig. 28. Photograph - Variety of native trees distributed to residents of Crumlin & Kimmage organised by Bloomin' Crumlin

Fig. 29. Photograph - Tours carried out by Irish Seedsavers in order to educate others on the importance of native produce

Fig 30. Photograph - Apples collected at MacIvor's orchard before being pressed into cider



Proposed Site Plan

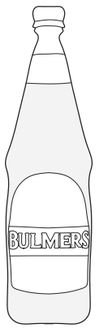
Stitching together fragmented islands through a productive landscape of native apple trees.

THE ORCHARD PROJECT

Bulmers, Clonmel

Apples used per annum:
25,000 tonnes

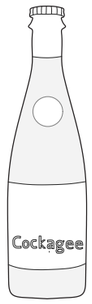
Cider produced per annum:
135 million litres



Cockagee, Slane

Apples used per annum:
3.7tonnes

Cider produced per annum:
20 thousand litres



Goal = 3.7 tonnes of apples

Apple weight ≈ 150-200 grams (avg. 175g)

Apples per tree ≈ 200-300 (avg. 250)

1 Tree = 175g x 250 apples = 43,750 grams

Goal = 3,700,000 / 43,750 = 846 Trees

846 trees ≈ 20,000 litres

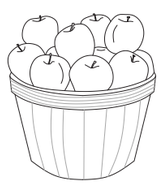
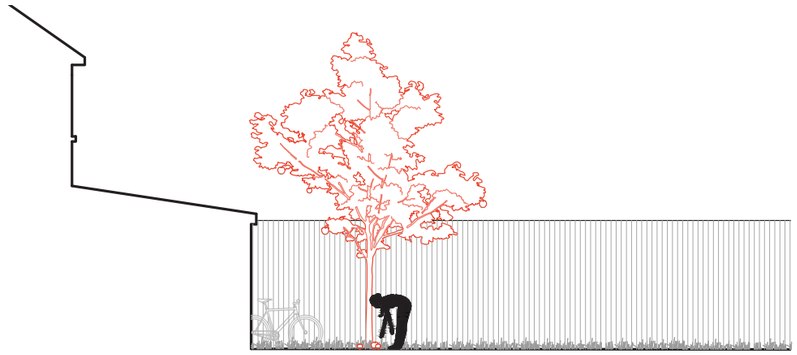
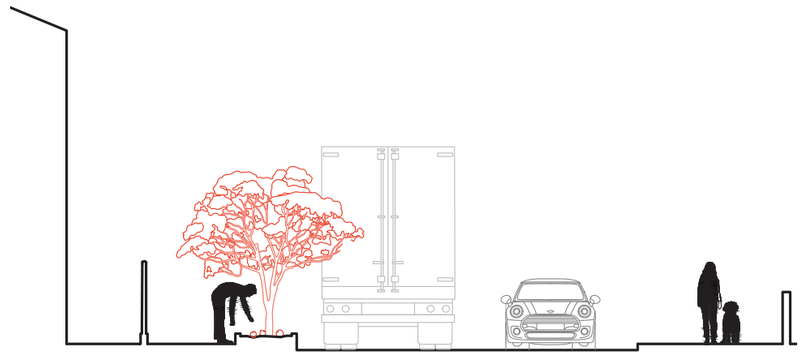


Fig. 31. Diagram - Figures of the extended urban orchard



300 native apple trees planted in Cabra back gardens



300 native apple trees planted on Cabra roads

300 native apple trees planted in orchard on production site grounds

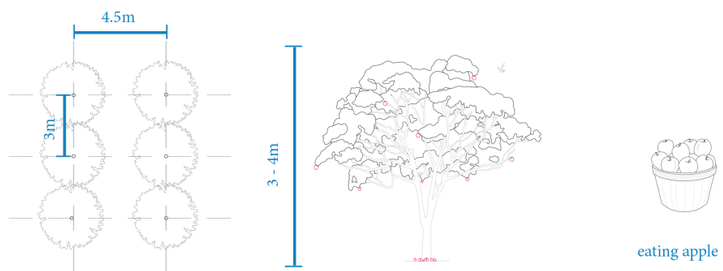
SPECIES PROPERTIES

APPLE LOUGH TREE
Origins: Co. Wexford

Pick apples: *late August*

Keep apples: *mid October*

Espalier potential: *yes*



GIBBON RUSSET
Origins: Co. Tyrone

Pick apples: *late September*

Keep apples: *mid December*

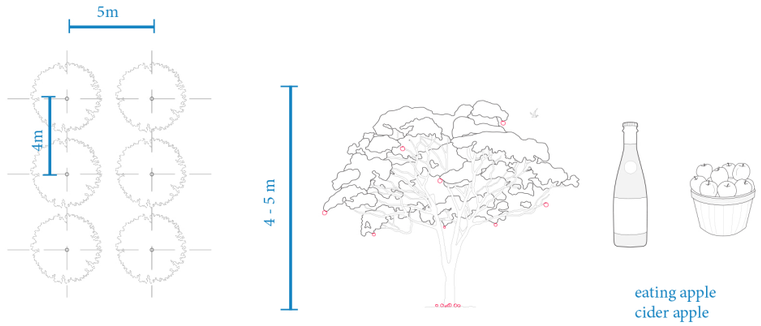
Espalier potential: *no*

SHEEP SNOUT
Origins: Co. Waterford

Pick apples: *late September*

Keep apples: *late December*

Espalier potential: *yes*



BEWLEY
Origins: Co. Waterford

Pick apples: *late October*

Keep apples: *mid January*

Espalier potential: *no*

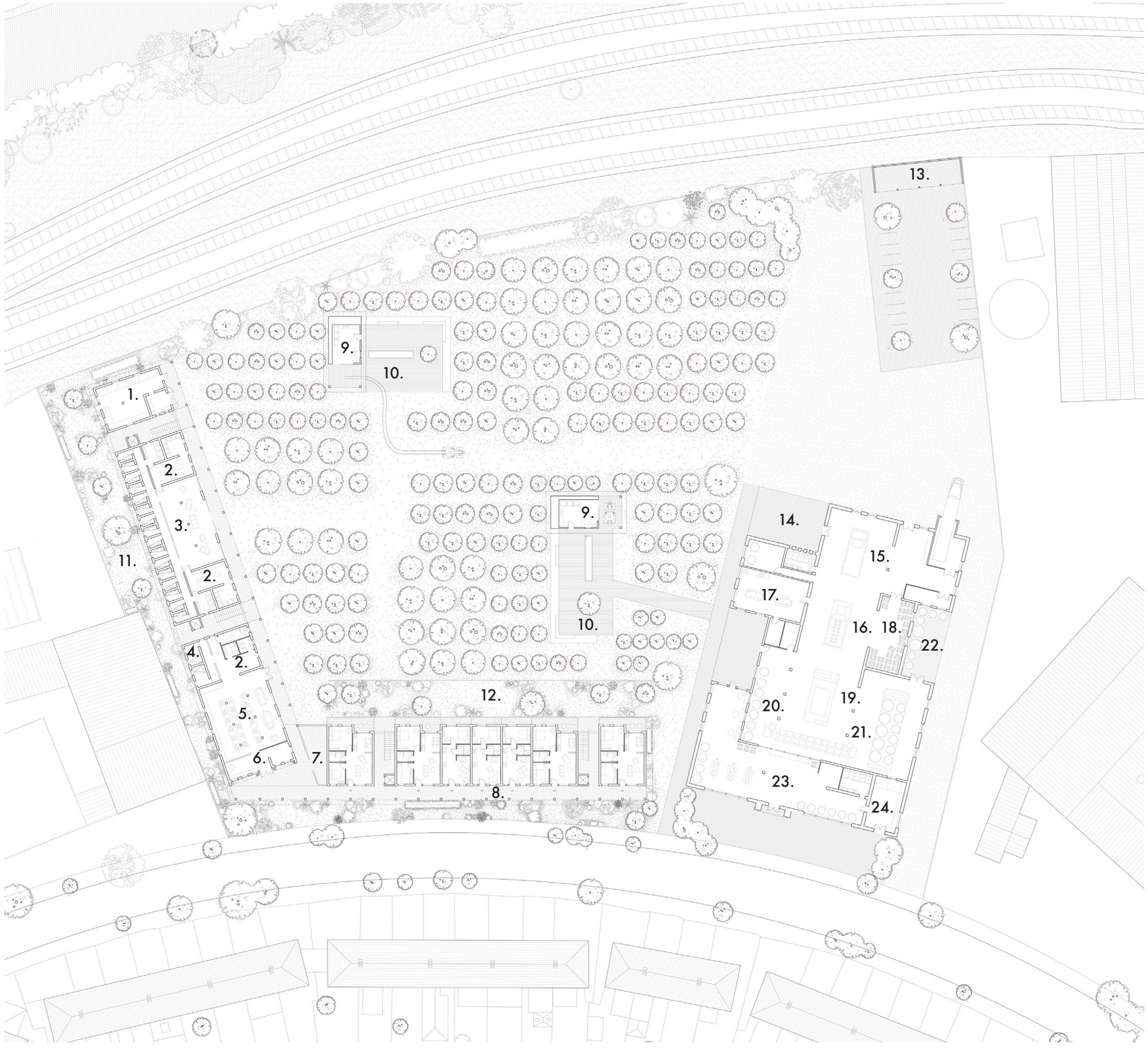
Fig. 32. Diagram - Properties of chosen native apple trees for urban orchard

GROUND FLOOR

It became important to me to create an interactive ground floor as the nature of the orchard, the permanence of the new residential units, and the flexibility of the seasonal workers accomodation blend together along with the cider production.

The buildings almost form a walled garden from the street, allowing glimpses of the orchard out from rail and street but giving it protection at the same time.

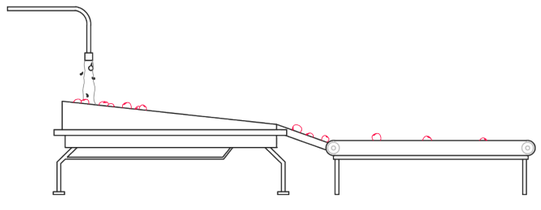
Seasonal work during the harvest means people can come and stay on site to pick and tend to the productive landscape while learning and educating others, interacting with one another; while permanent residents live above, enjoying the views of the orchard within. The workers have their most private activity of sleeping to themselves but all other facilities are shared, and in a larger space so that the space can be used by for the residents above for more communal facilities off harvest season.

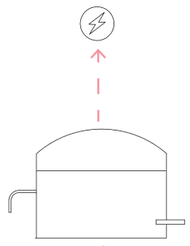


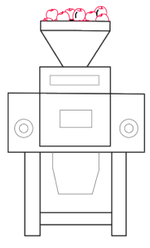
Proposed Ground Floor Plan

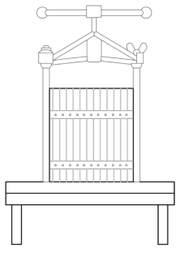
1. Laundry & Bin Store
2. Changing, Showers & Toilets
3. Lounge Area
4. Workers Sleeping ‘Pods’
5. Cooking & Dining
6. Workers Entrance & Store
7. Bike Store
8. Permanent Residential Units
9. Maintenance Shed
10. Espalier Walled Garden
11. Workers Private Garden
12. Residents Private Garden
13. Compost
14. Sorting Apples
15. Washing Applers
16. Milling Apples
17. Canteen
18. Barrel Store
19. Pressing Apples
20. Fermentation
21. Bottling & Packaging
22. Outdoor Store
23. Cider Tasting
24. Street Orchard Store

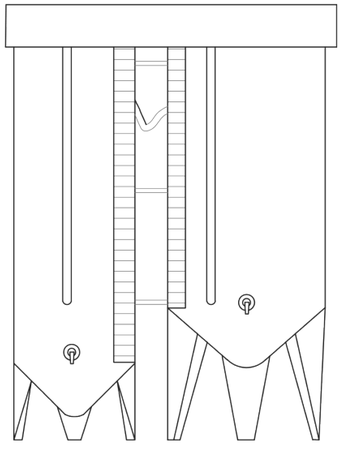
CIDER PROCESS

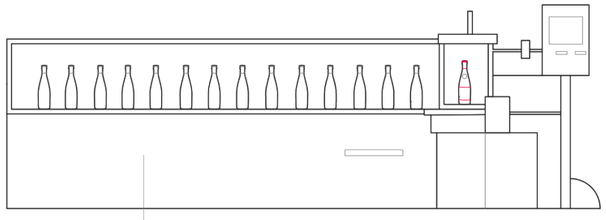


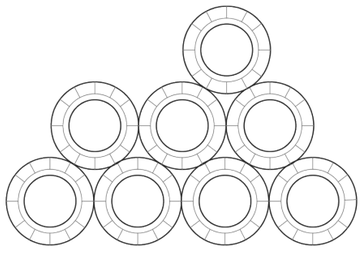












HARVEST → WASH → SORT → MILL → PRESS → FERMENT → AGE → BOTTLING & PACKAGING → DISTRIBUTE

GREEN ENERGY

ANAEROBIC DIGESTER

APPLE WASTE

Fig. 33. Diagram - Cider production process

MOVEMENT

Van Eyck conceived of the ‘in-between’ as a place where different things can meet and unite, or more specifically, as “the common ground where conflicting polarities can again become twin phenomena.” (Strauven, 1998)

The transition between the outside world with an internal form is an example of Van Eyck’s ‘twin phenomena’. In this very pivotal moment where contrasting boundaries or polarities come into contact, there is a moment of osmosis where neighbouring areas of difference spill into one another. Thresholds therefore separate while connecting areas, that are distinct but also interdependent.

The movement of seasonal workers, cidery workers, permanent residents, cidery tasting visitors, and fauna throughout the urban orchard, cumilates a sense of richness and diversity. Interactions between humans, the environment and built form occur which in turn forms a sense of identity; creating a resilient neighbourhood. The movement within these different polarities on site is what intensifies the appreciation for these different worlds and how important it is to break the cycle of homogenous environments.

- Seasonal Orchard Worker
- Cidery Worker
- Apartment Resident
- Cider Tasting Visitor
- Tolka Valley Fauna

Fig. 34. Diagram - Movement overlap

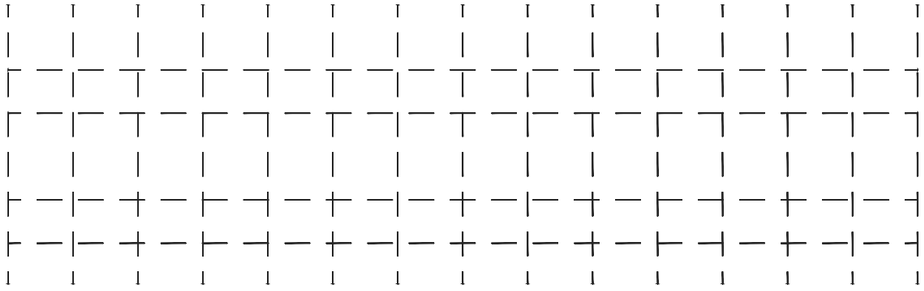
Fig. 35. Collage - Visual connection between orchard and built form throughout the scheme

THE GRID

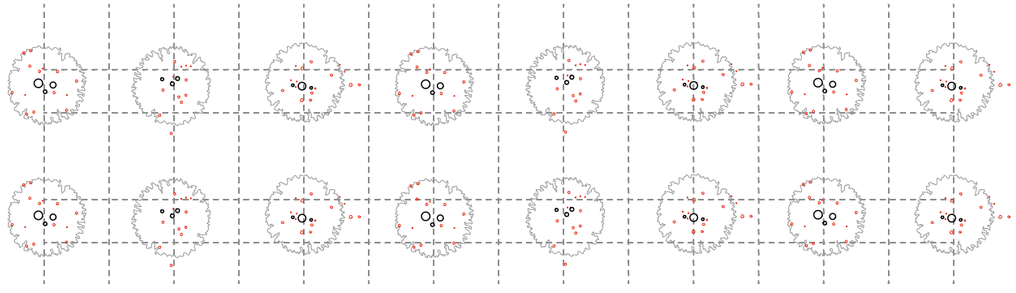
With the apple trees being planted certain dimensions apart, and with my material choice of CLT, it became important to me to look to a grid while designing my overall scheme.

The grid used in my project works in intervals of 1.2m which primarily is set at a 3.6m x 3.6m structural system.

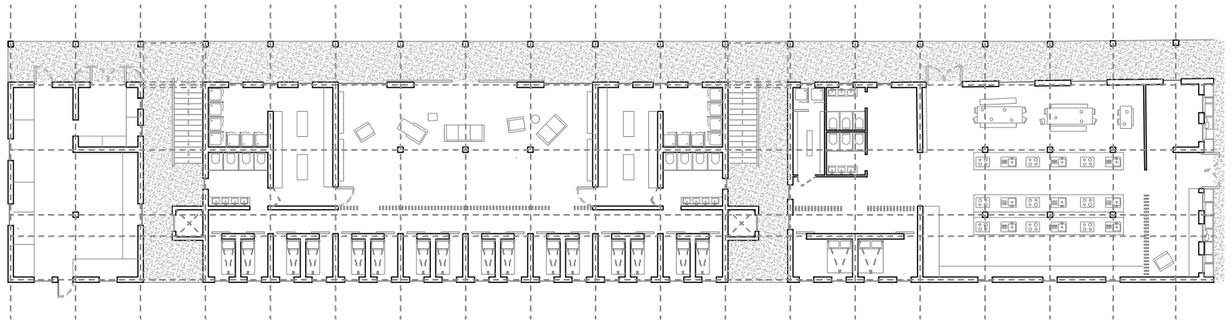
The orchard, the worker's spaces, and the residential units all work off the same grid; ensuring architectural consistency such as colonnades within different territories.



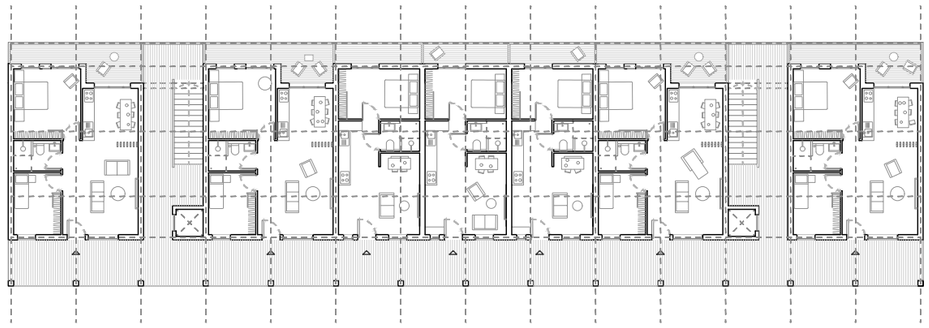
The Grid



The Grid - Orchard



The Grid - Seasonal Workers Spaces



The Grid - Permanent Residential Units

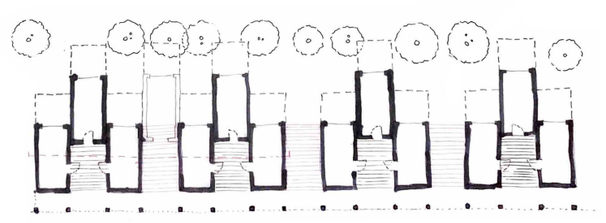
Fig. 36. Diagram - The grid used throughout the scheme for different typologies

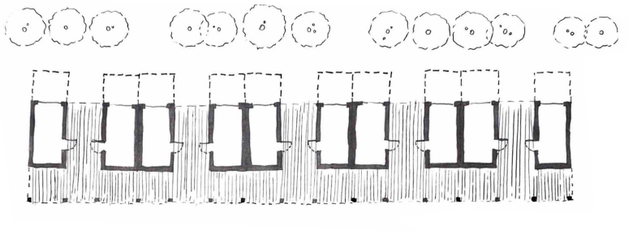
DESIGN PROCESS OF WORKER'S UNITS

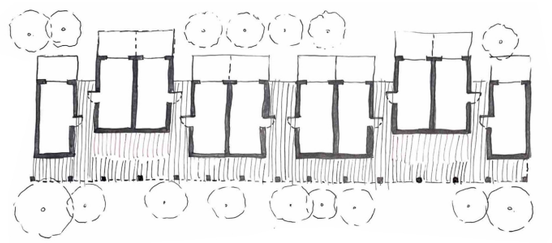
As seasonal work during harvest became a key moment within my project, I began to look at the arrangement and design of the temporal workers coming to stay on site to pick and tend to the apples. I began with individual units taking inspiration from the monks - how they set out for their tasks and daily routines together but had a cell to themselves as a sacred space where they performed their spiritual activities of prayer and contemplation in solitude.

At a time of urgency, I knew the abundance of material to make these individual units was probably not the most efficient as once the harvest season was over, they would be empty. It became important for me to try and make the spaces more flexible so that the permanent residents above could utilise this space below during off season. The large communal lounge space and dining spaces could become an areas for special occasions, banquets, communal meetings and more whilst the smaller pods cell-like spaces solely for sleeping in can have the bed folded up as smaller storage facilities.

The final stoa-type workers space further tests my thesis, allowing communal spaces to prompt interaction and encourage engagement while the sleeping areas allow for soltitude and interaction with the landscape, as they face directly out onto a semi-private garden space (fig. 37).







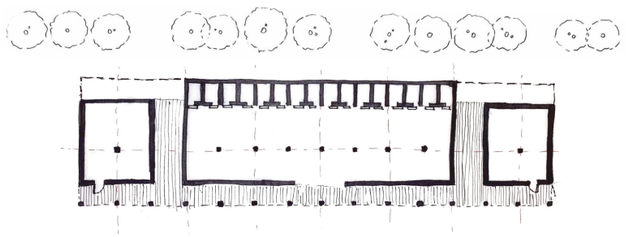


Fig. 37. Left; Sketch - Semi-private gardens outside the workers bedrooms

Fig. 38. Right; Sketch - Variations of workers unit throughout my design process

FIRST - THIRD FLOOR PLAN

There are 58 permanent residential units in total which consist of predominately of 1 and 2 bed units as I wanted to cater for the influx in new living arrangements, as Cabra typically has 3 bed houses.

Research by the Department of Children and Youth Affairs along with TUSLA, recorded that in 2016, there were 1940 one-parent families with children (32.74%) in the Cabra area. (Mahony, 2018) Furthermore, the standard of living has increased immensely meaning elderly people are living longer than previously. In addition to this, research has shown that young couples would need to earn nearly €100,000 a year to afford a two bed apartment in Dublin (Dunne, 2021).

Total Units: 58

1 Bed: 24 Units
2 Bed: 31 Units
3 Bed: 3 Units

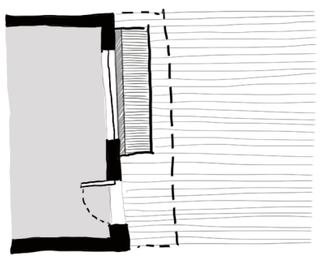
Site area (taking 50% of the orchard as the full plot ratio): 4200m2
Total unit floor area: (1734 x 4) = 6940m2

Units Per Hectare = 138
Cabra UPH = 50

INTERACTIVE THRESHOLDS

Throughout my thesis research, I became interested in the way Herman Hertzberger designed and spoke about the space between adjoining worlds.

At the De Overloop Home for the Elderly, by Herman Hertzberger, a bench is placed beneath a sheltered area at the front door. (fig.39) This bench is outside the private home and within the public street. This place, however, is clearly part of both the private and public realm. Both realms have given of themselves. The private realm has given up some privacy in order to enter the public realm. The public realm has allowed the extension of the private into its realm. Eliade (1968) also discusses this extension of realms when he states, "an unknown, foreign, and unoccupied territory still shares in the fluid and larval modality of chaos" - the overlap between the public and private realms forms the 'in-between'. This is a threshold and results from reciprocity between two dichotomies.



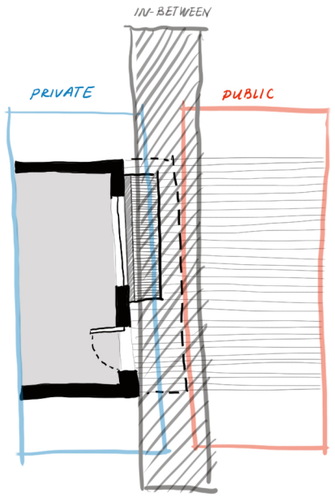


Fig. 39. Left; Sketch - Analysis of worlds adjoining at De Overloop Housing for the Elderly

Fig. 40. Above; Photograph - A threshold as an opportunity for interaction

"The decorum of individual buildings seems to derive from the ways in which façades of individual buildings relate to their neighbours, and in doing so both reveal and enclose spatial settings, and can even act as spatial settings themselves, both as niches for performances, and as thresholds for demonstrations."

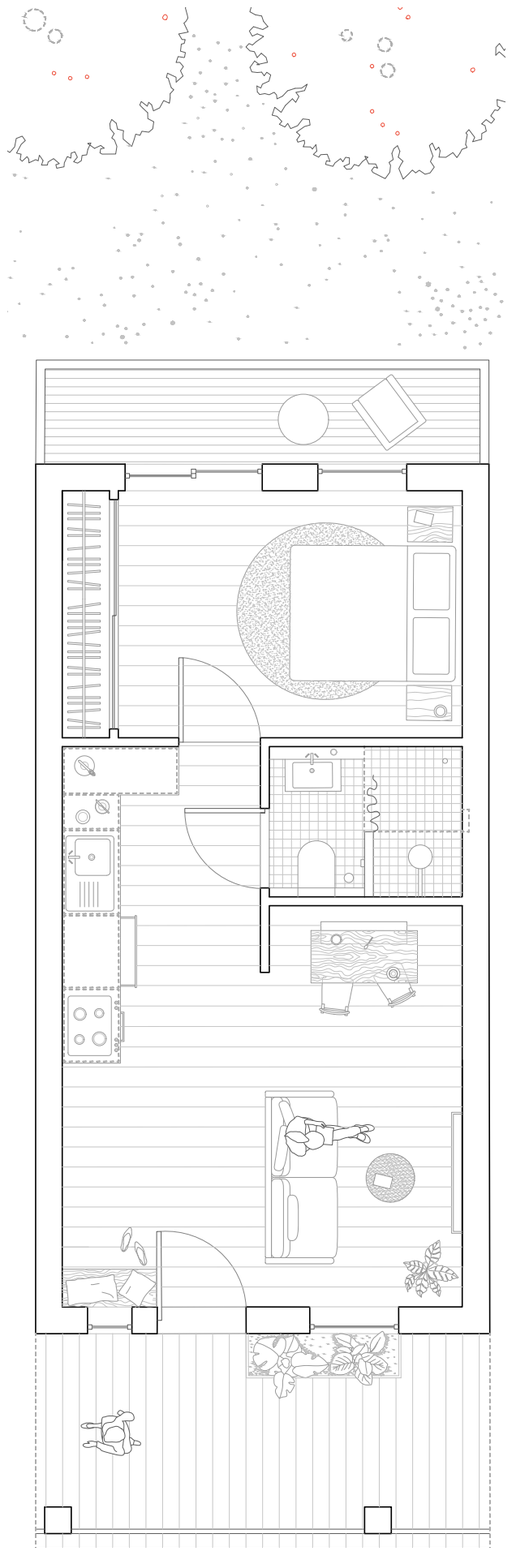
(Lynch, 2017)

UNITS

A building, or elements of built form, should be seen within the rhythm of life and as a setting for recurring situations.

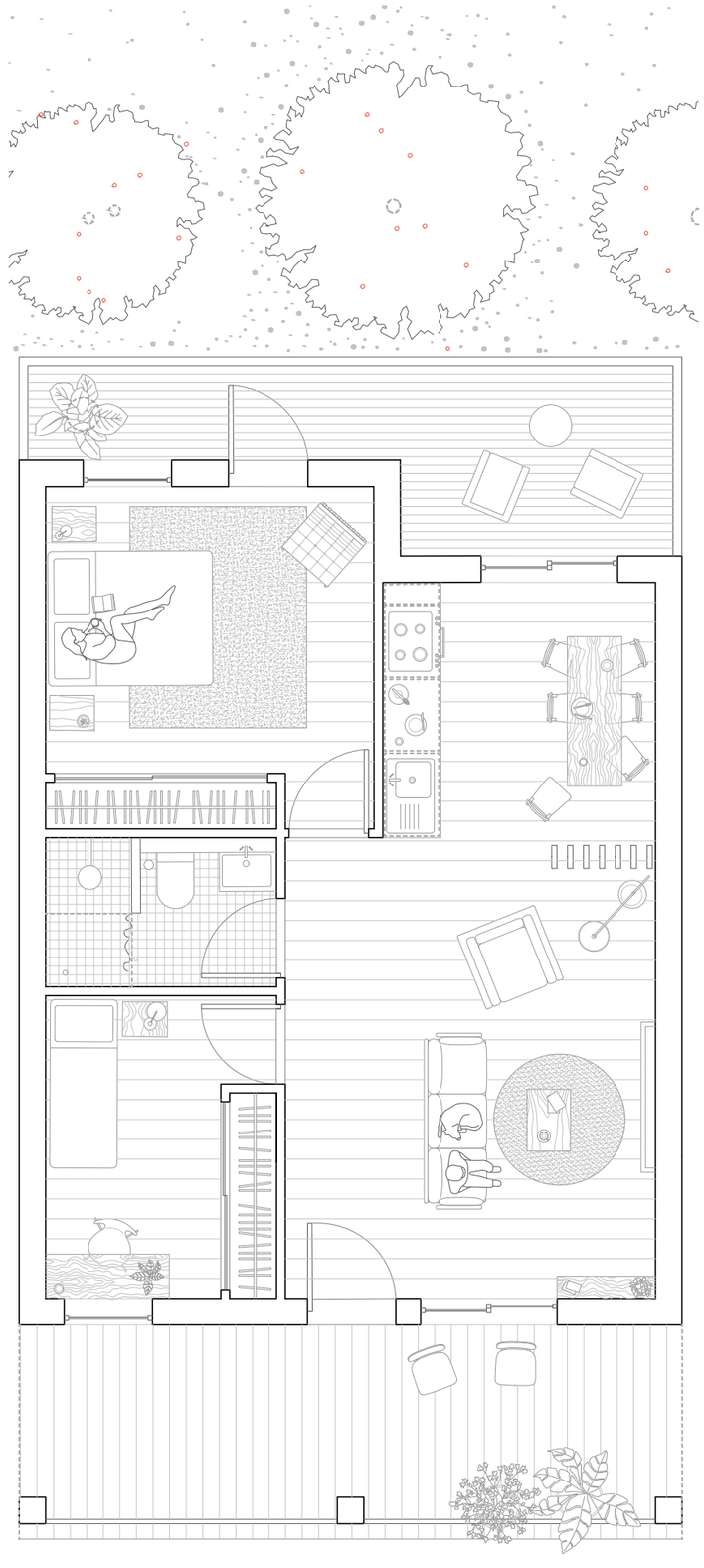
Being inspired by Hertzberger's approach to heighten experiences of contrasting worlds, and in order to further integrate different zones, I knew I wanted an active street edge and façade in order to create interaction and movement. As a result, all units have a generous south or west facing gallery to encourage this and allowing for personalisation of ones unit through this extended in-between space.

A further sense of twin phenomena occurs at the private balcony of the units which overlooks the productive landscape. The merging of zones from nature, residential and infrastructure becomes intensified through these transitory spaces.



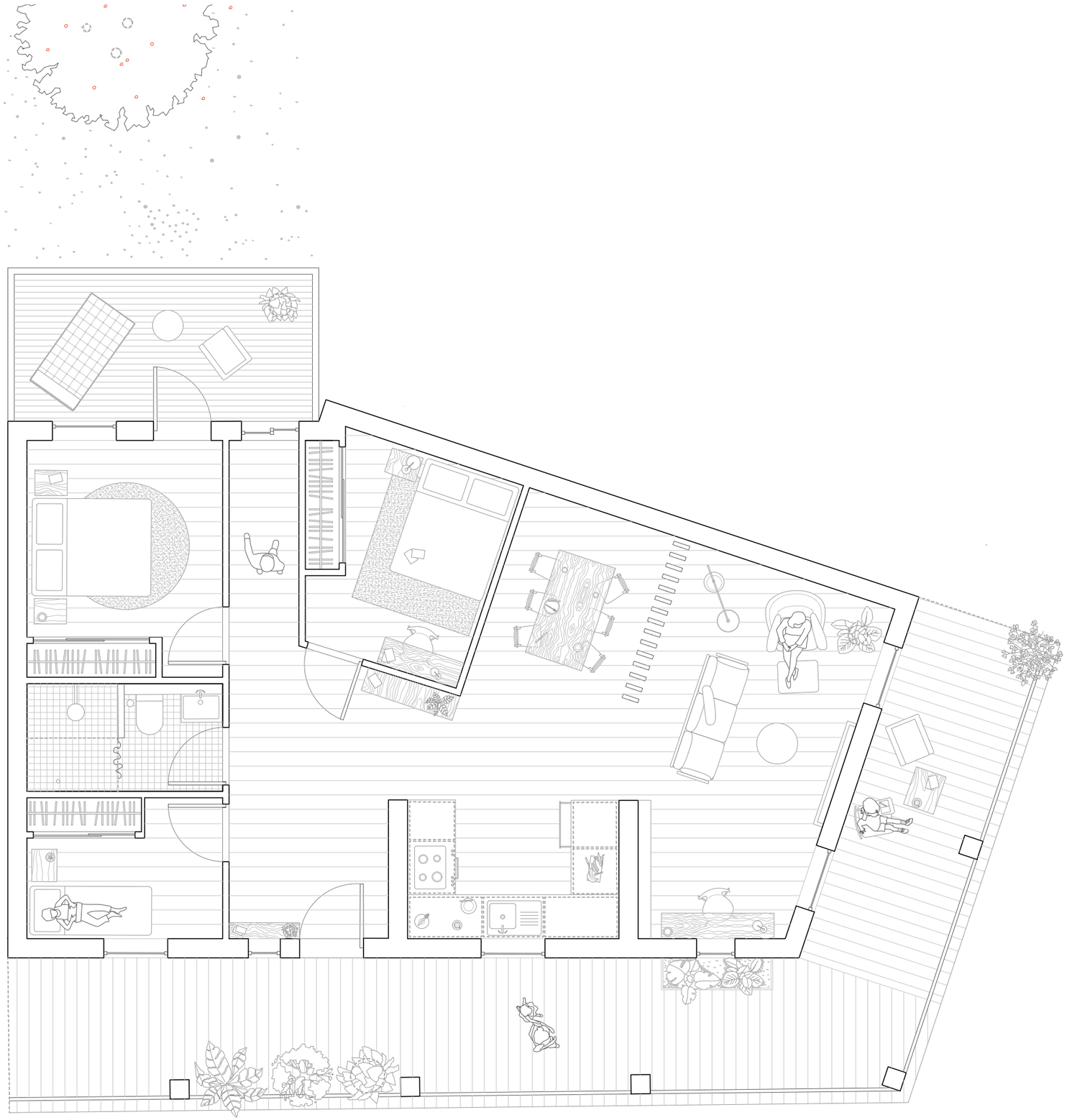
1 Bed Apartment

45m2



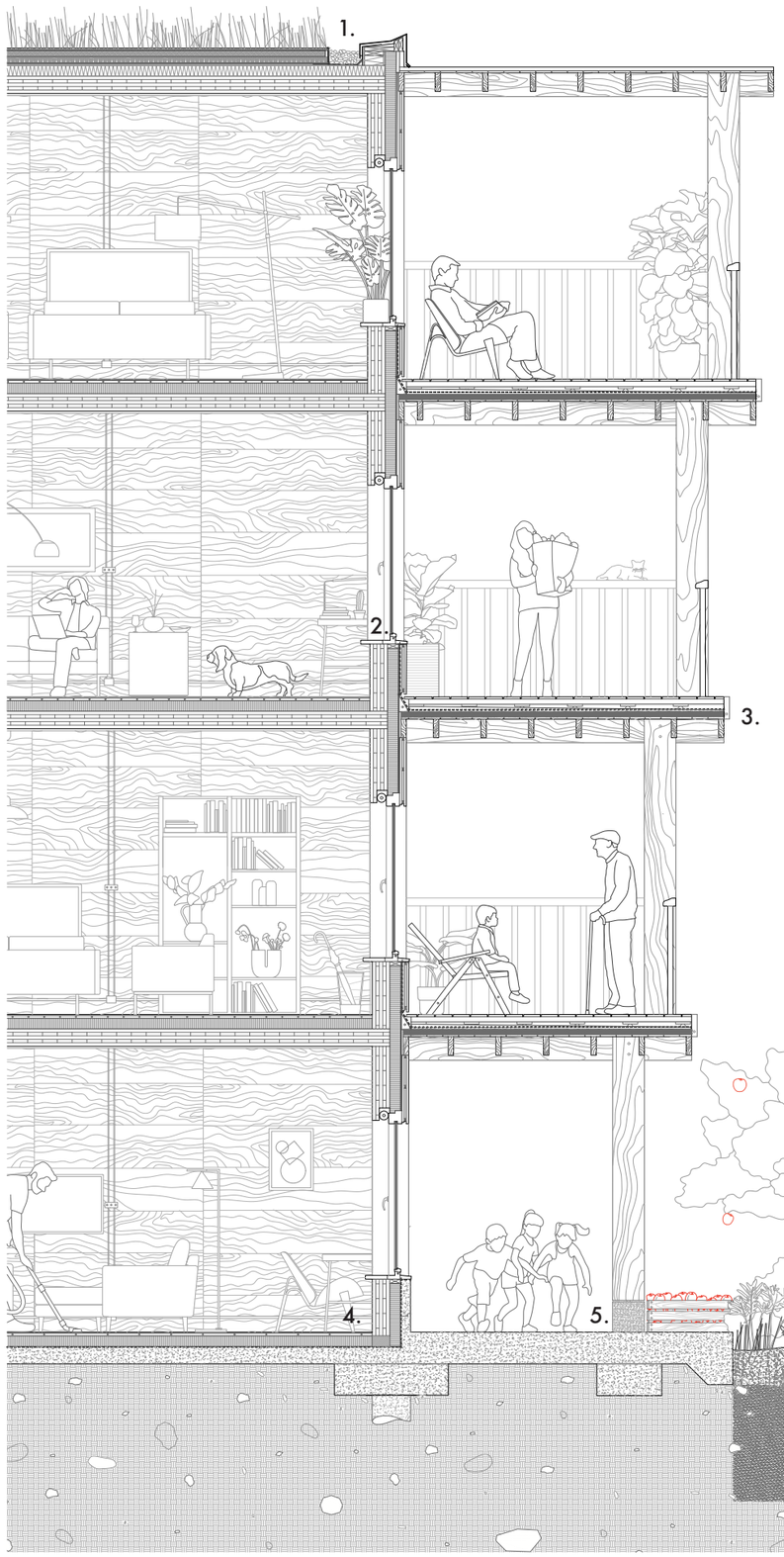
2 Bed Apartment

74m2



3 Bed Apartment

96m2



1. Roof Construction

Vegetation
Substrate 20mm
Filteration Layer 60mm
Drainage Layer 50mm
Protection Layer 10mm
Waterproofing Membrane
Thermal Insulation 100mm
CLT 200mm (5 panels at 40mm thick)

2. Wall Construction

Timber Cladding Outer Leaf 18mm
Furring Strips
Plywood 20mm
Solitex Breather Membrane
Gutex Insulation 100mm
CLT 200mm (5 panels at 40mm thick)

3. Gallery Floor Construction

Balau Decking 20mm at 76mm centres
Plywood 25mm
Deck Supports 25mm
Breather Membrane
Firring Plywood 50mm at 1°
Tongue and Groove Plywood Finish 20mm
Treated Timber Joists 175mm x 50mm, at 400mm centres
Timber Beam 225mm

4. Floor Construction

Timber Flooring 11mm
Screed 25mm
Gutex Insulation 100mm
Radon Membrane
Reused Concrete Foundation 175mm

5. Ground Floor Plinth

Polished Concrete Plinth 200mm
Concrete Column Base 260mm
Steel Connection

GALLERY DETAIL

CLT is used for the units while the gallery becomes post and beam, further contrasting this intermediate zone between dwelling and landscape or dwelling and street.

The existing concrete on site becomes a robust plinth for the active ground floor movement of residents and workers, differentiating between the variety of mixed uses on the ground level whilst the continuation of timber for the permanent residential units.

Fig. 41. Collage - Robust ground floor plinth accomodating for movement and activity

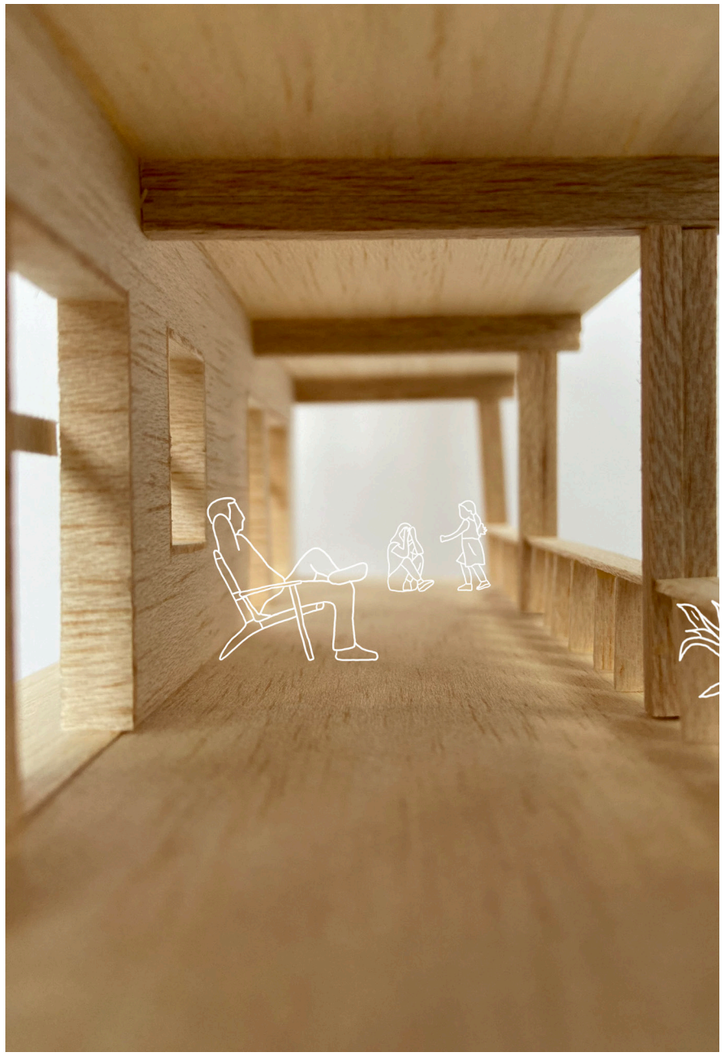
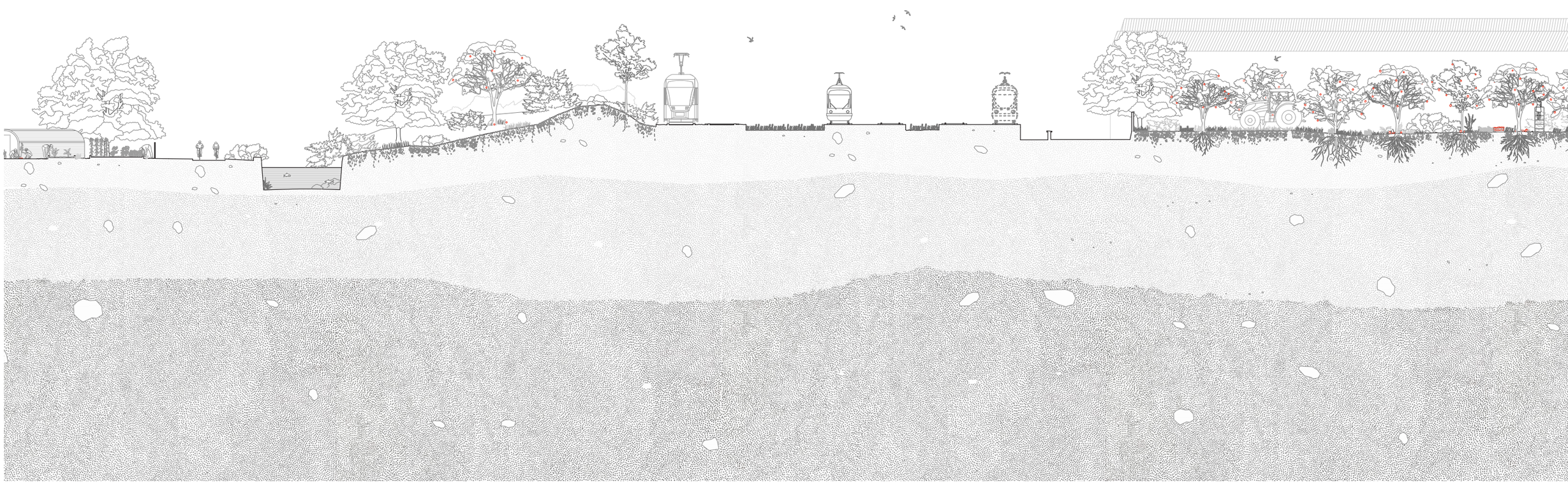


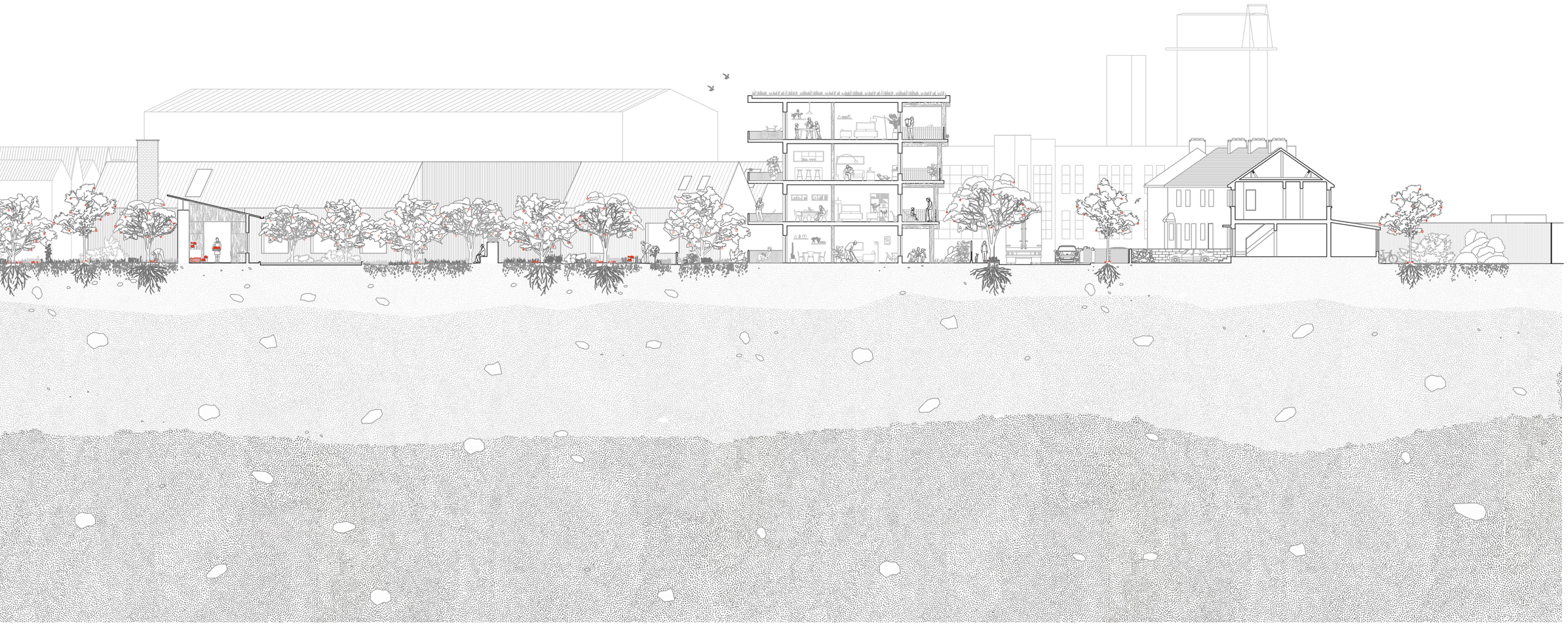
Fig. 42 & 43: Model photographs - Activities of the gallery space

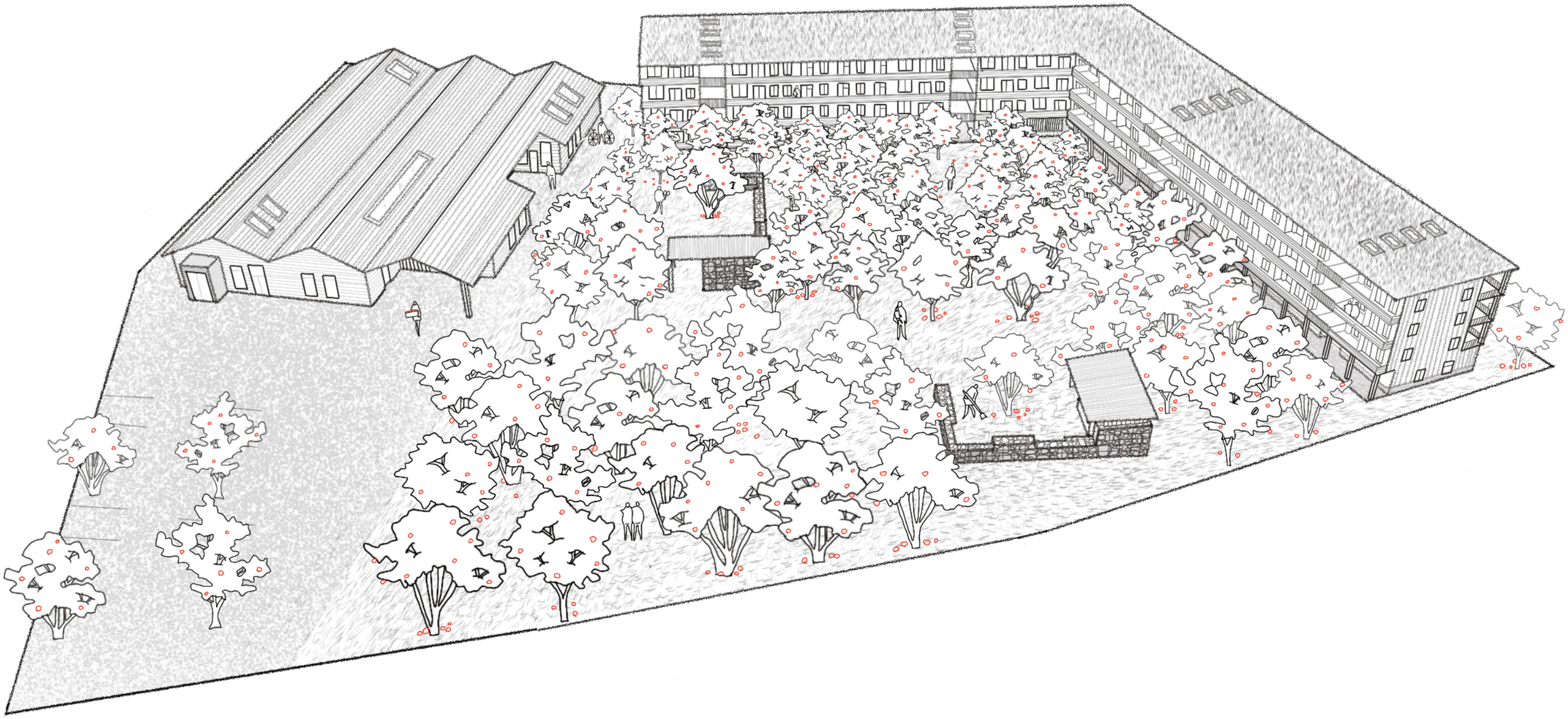
EXTENDED SECTION

The extended section from existing residential Cabra, to the new orchard streetscape, to the new residential housing, to the productive intensive orchard, to rail, to canal became a way for me to test the blurring or stitching of the islands with my new additions to the overall site.



07. OVERLAPPING ISLANDS





Sketch Axonometric

Adjoining worlds of residency, nature and industry

SECTION

The combination of different zones merging and integrating through this new productive landscape evokes curiousity, passive education and encourages interaction between human, built form and nature.

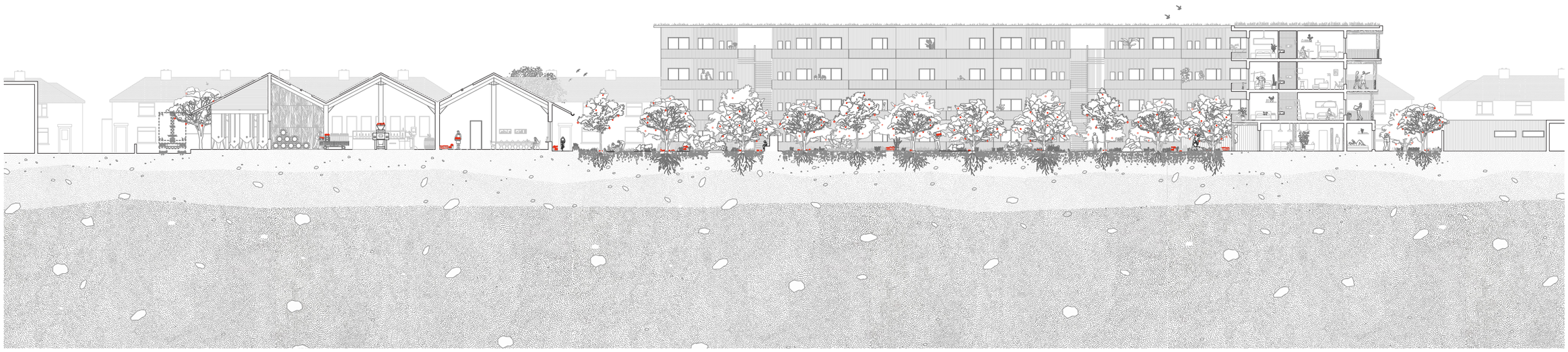


Fig. 48. Collage - Relationship of existing build form (cidery) with new (residential units)

TRANSITION

During my thesis research I began to look at transition through materiality and how material choices can create a merging or separation between spaces without a physical boundary having to be present.

The Katsura Imperial Villa is a paradigm of this. The careful placement of stepping stones and the variety of ground surfaces (fig.47) encourage visitors to walk, pause, and stand in particular ways in specific places before entering the built fabric itself. There becomes a realisation that there is a direct contrast between the natural environment and the dwelling itself and you are leaving one entity while entering another, yet there is a moment in time where you are neither fully inside nor fully outside; creating a feeling of ambiguity or 'otherness.'

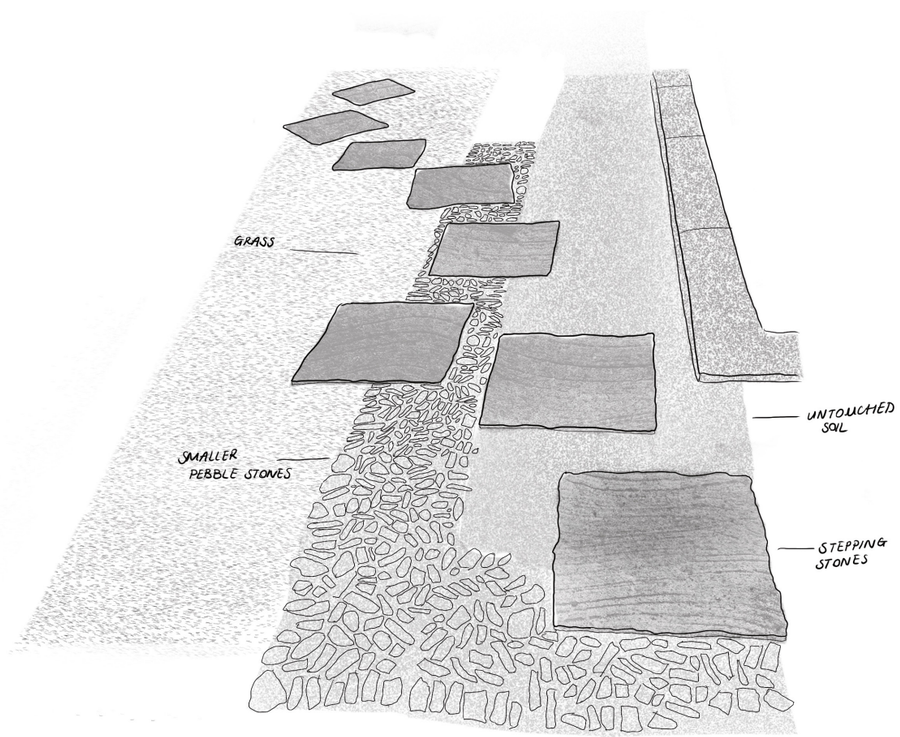


Fig. 45. Sketch - Analysis of materials creating thresholds

Fig. 46 & 47. Photographs - Katsura Imperial Villa

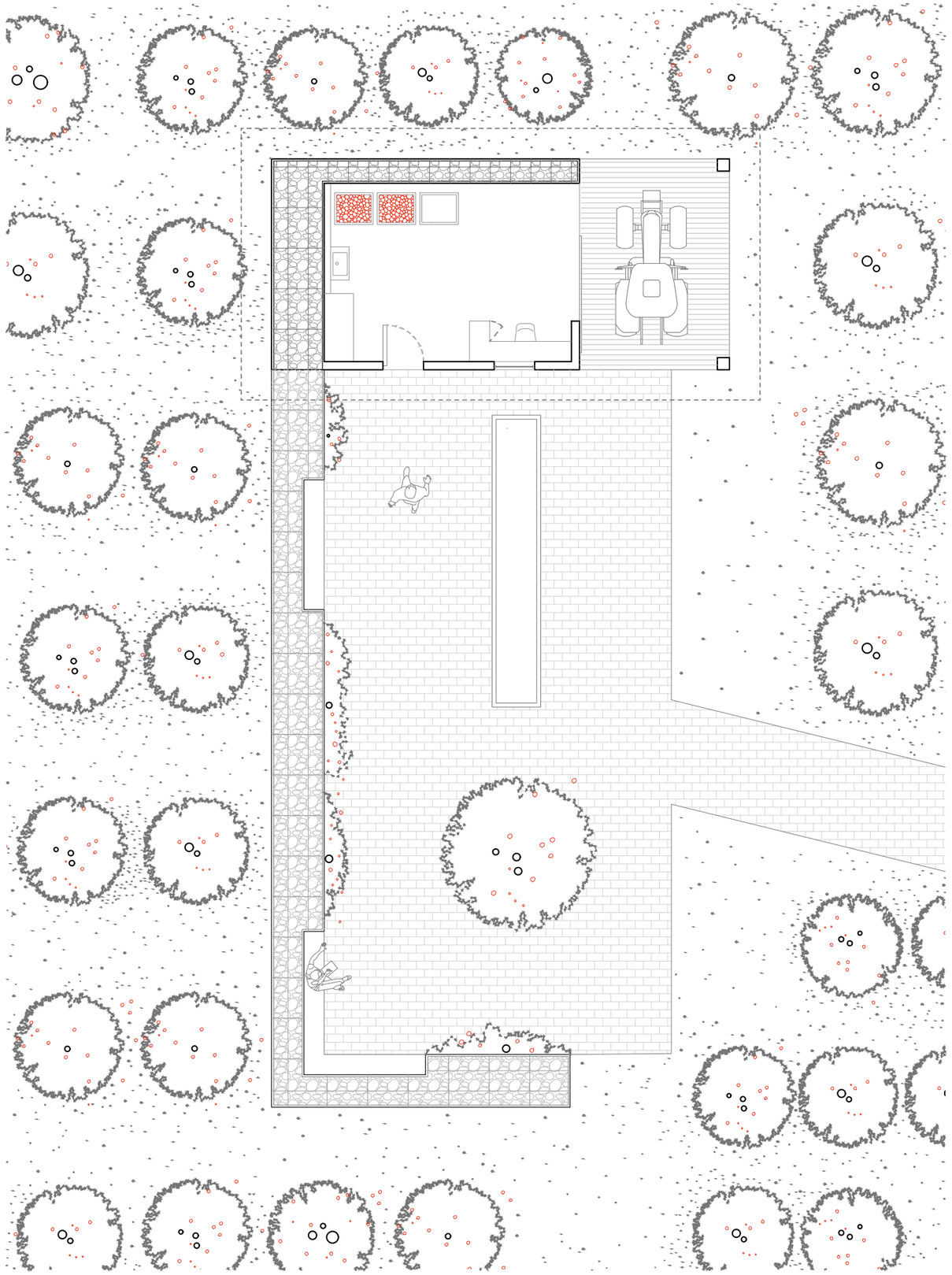
"The in-between is not a make-shift but a real place and a bearer of interhuman events."

(Van Eyck, 1998)

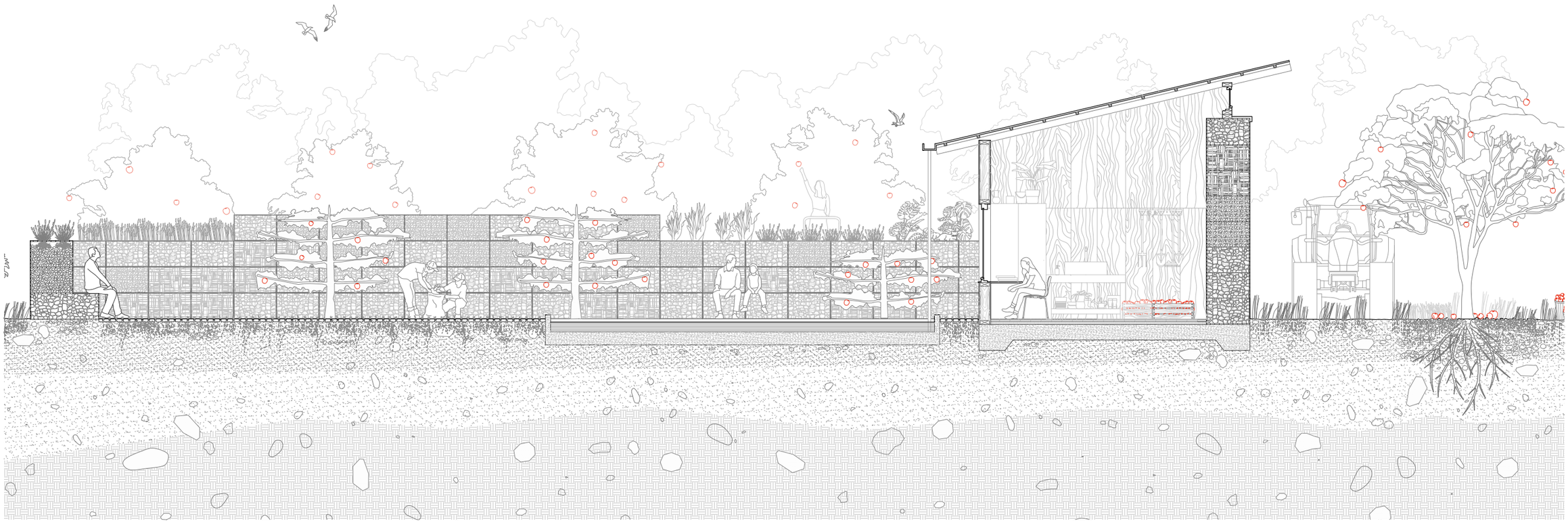
ESPALIER WALLED GARDEN

Maintenance and tractor sheds were designed in order to store apples, wash hands during or after picking time, and to store the site tractors. It became important to me to give the workers and visitors of the orchard spaces of pause and appreciation for the productive landscape through these espalier walled gardens.

The abundance of left-over concrete on site led to the investigation into gabions in the creation of these spaces.



07.
OVERLAPPING ISLANDS



ENCOURAGING INTERACTION

As my scheme attempts to engage a range of zones and the users associated with each ‘island’, a range of activities occur throughout the extended site; further prompting interaction and encouraging engagement between human, built form and nature.

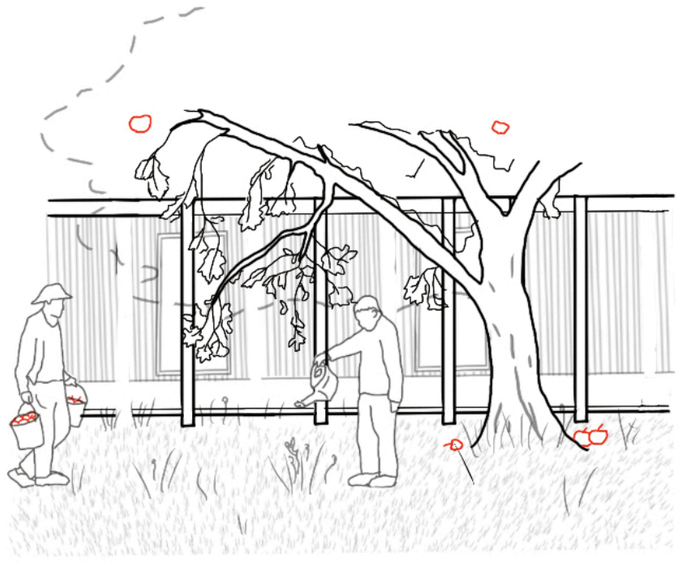
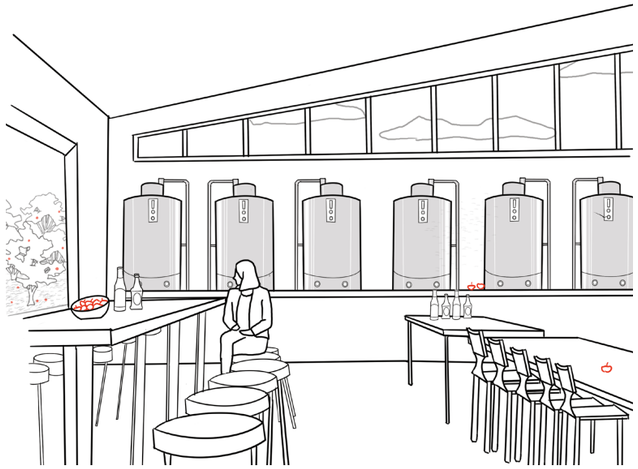


Fig. 48. Sketch - Relationship between workers and landscape

Fig. 49. Sketch - Kilkieran Road, Cabra becoming part of the extended orchard

Fig. 50. Sketch - Orchard views from within residential units



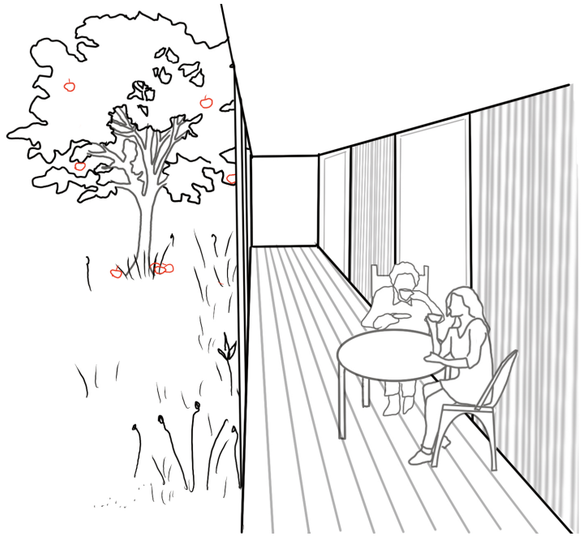
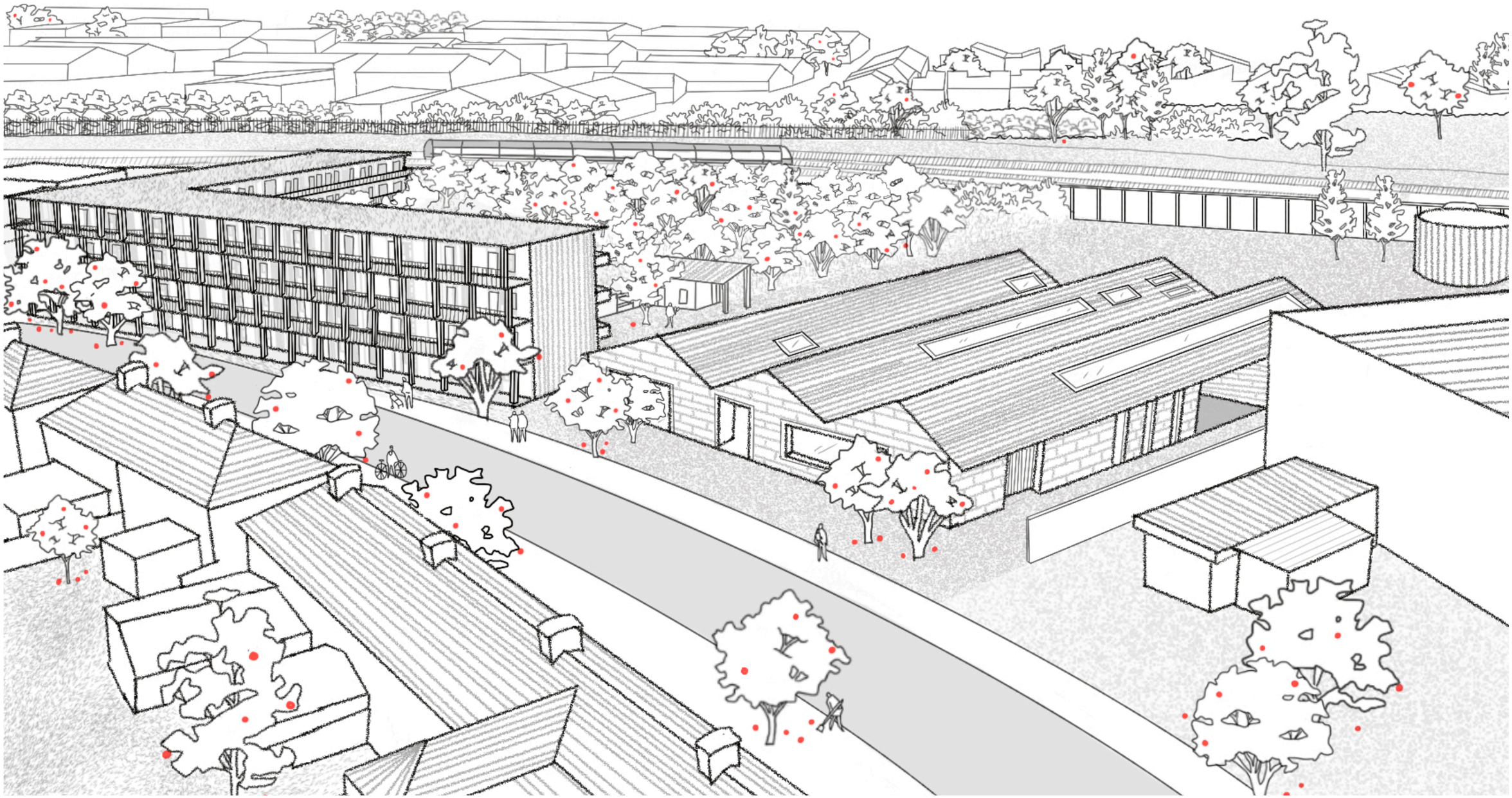


Fig. 51. Sketch - A new industry for Cabra

Fig. 52. Sketch - A space for interaction through generous galleries



Sketch of Street View

A blurring of boundaries through a patchwork of native apple trees

REFLECTION

As Sennett (2000) observes, streets and spaces where anyone can feel they have a right to be are disappearing and being replaced by versions that may appear to look like streets, squares and plazas but are either privately controlled, or which exclude particular groups in subtle yet powerful ways. Having spaces where people unlike you - the 'other' - can co-inhabit (and not necessarily without friction) is all the more significant for the fact that such basic spaces are diminishing and being designed out of cities.

My aim with this thesis was to find a way to stitch together these spaces of difference and find a way to celebrate contrasting zones through an urban osmosis. I found the research and initial studies of native apple trees along with reaching out to various Irish organisations extremely rewarding and interesting and it is something I will take with me in my future architecture endeavours; learning that we work better together. A combination of experts in different fields leads to a better design and leads to a more resilient architecture.

Upon reflection, I did initial form testing through sketch models but perhaps more three dimmensional studies should have been carried out in order to test light between built form and productive landscape. This in turn could have produced an even more interactive street edge as there could have been a play with volumes, perhaps through duplex units.

How the scheme interacts with the extended site of Cabra as a whole was important to me from the research carried out in my thesis and I am hoping the apple tree can connect these disparate areas in order to create a resilient neighbourhood as a test on how we can connect areas that turn their backs on one another in the future. A project that extends into the community and tries to gain understanding of the current site conditions is extremely important in a time of urgency in order to accomodate diverse needs for the various individuals and groups that utilise these spaces. In learning more about biodiversity and soil through my apple tree research, a further sense of admiration and appreciation has developed for biodiversity and just how important it is for us, as architects, to acknowledge *a l l* living things, not just the human.

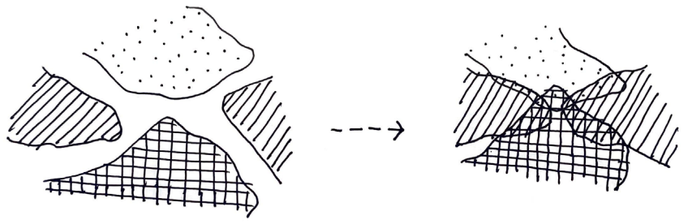
CONCLUSION

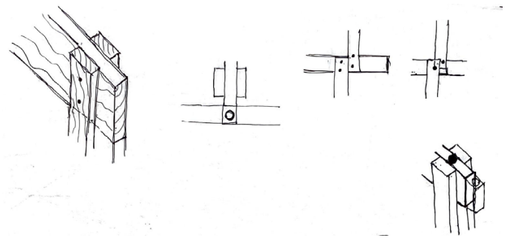
How we, as architects, recognise the importance of overlapping and merging zones of contrasting territories, has the ability to encourage and prompt social interaction which provides for a more enjoyable, diverse day to day life. The spaces between different zones should not be forgotten about and, instead, should be celebrated as having the ability to promote interaction between humans, the environment, and built form which in turn forms a sense of identity; creating a resilient city. How we, as architects, utilise the space between two dichtomies through the understanding of these site-specific zones, can allow for the development of an urban osmosis. The overlap and adjoining of edges between these divergent territories produces places left open to various interpretations whilst also engaging the community and evoking curiousity.

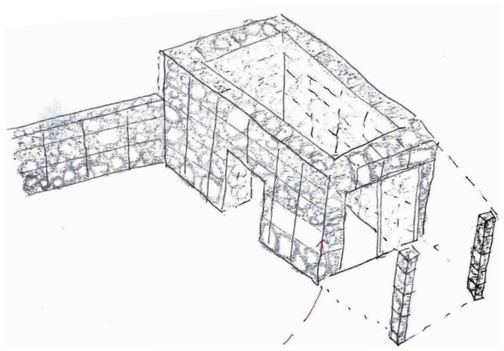
As Van Eyck's twin phenomenon concept states, the real polarities are not conflicting as such, but two distinctive halves of the same entity (Strauven, 1998). The in-between should not be considered a makeshift or a negligible margin but something as important as the reconciled opposites themselves.

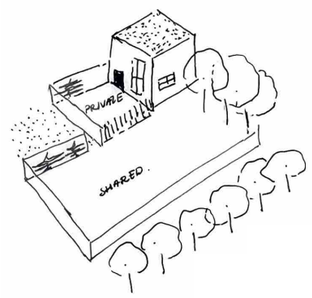
With food production being a pressing issue in today's climate, we must recognise the importance of encouraging self-sufficiency and appreciation towards Ireland's native produce. Imports of products that have the potential to be grown and made into an industry here, must be stopped in order to allow local industries to develop; reducing carbon emissions and encouraging passive education.

To conclude, we ought to value and prioritise a community's patterns, rhythms and social interactions within a city in order to ensure cultural and communal longevity in a time of urgency, where spontaneous and random interactions are diminishing. It is in these spaces between, that familiar or unpredicted, planned or unprogrammed, temporary or long-lasting activities occur; giving cities life and vitality and a sense of identity, and it is of utmost importance that we find a way to diffuse these contrasting areas that provide the breathing space of urban life, in order to patchwork together fragmented cities.





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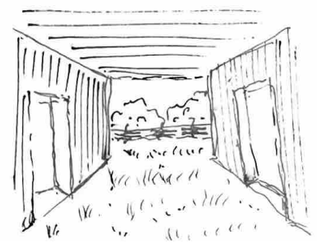

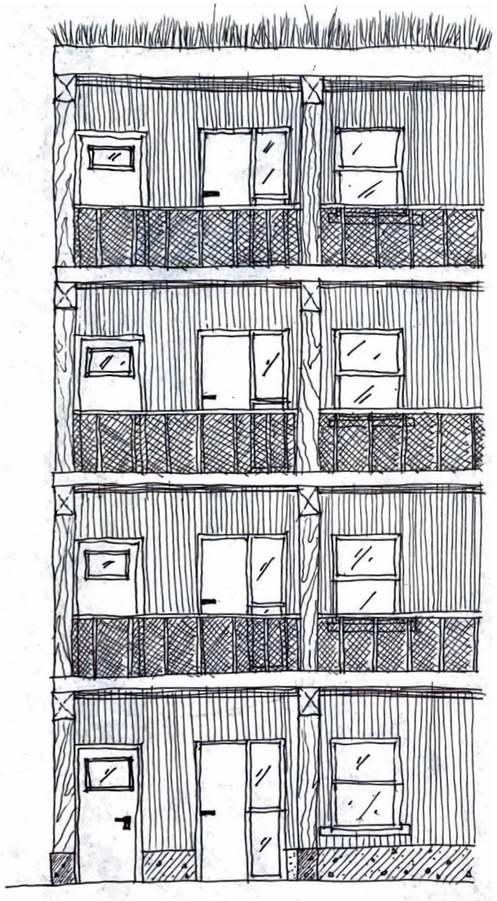

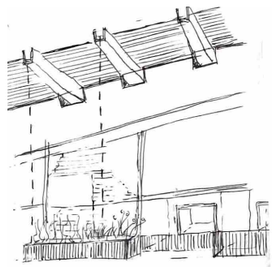

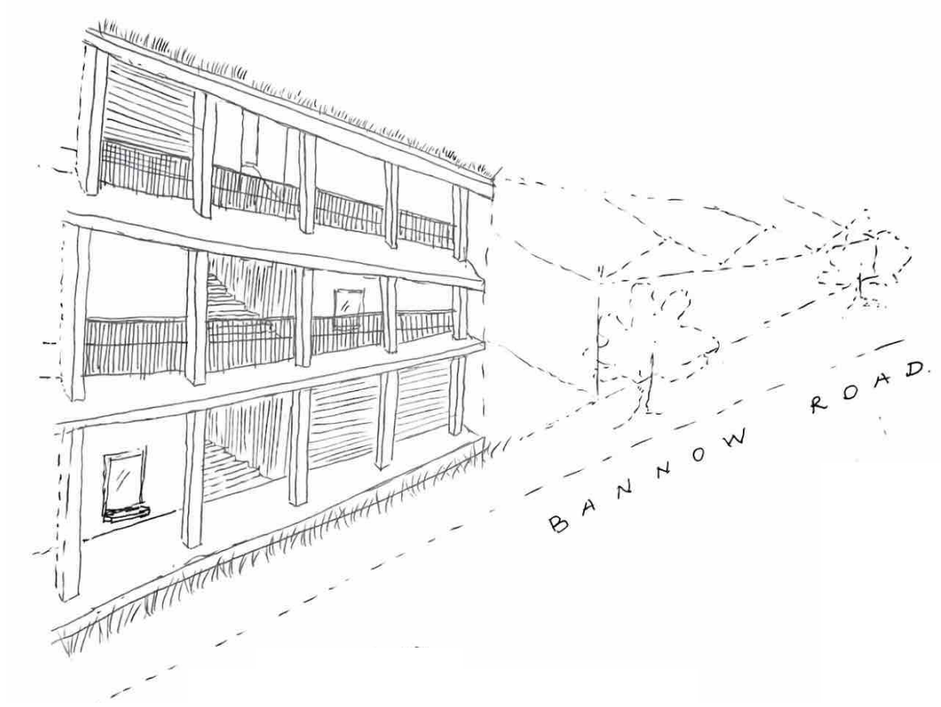
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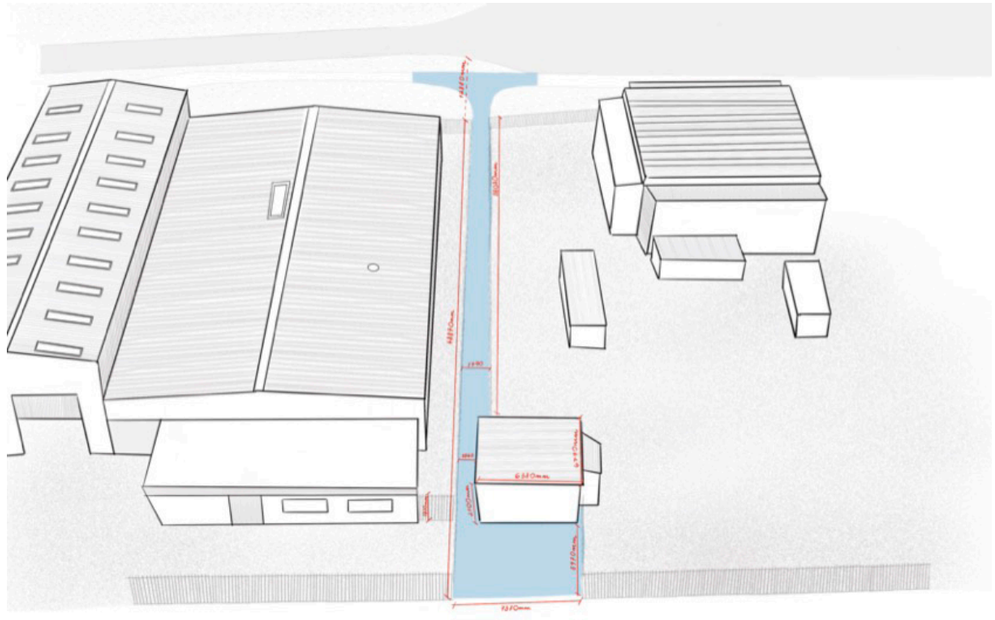
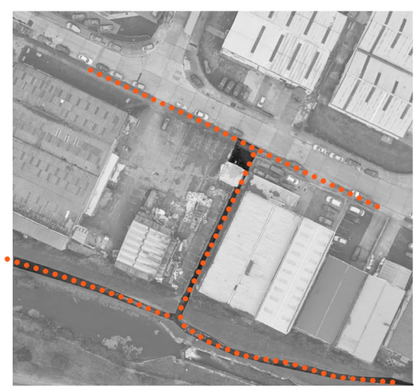
AN ANALYSIS:
Dublin Industrial Estate Laneway

Dublin's Industrial Estate which is heavily utilised by cyclists and pedestrians as it is the only route from canal to the industrial estate. The surroundings of this walkway are neglected, resulting in ruderal growth, graffiti, and a build-up of rubbish which provokes a sense of eeriness and unpleasantness. Users of this laneway have no space to explore or enjoy the transition between an area of industry to an area of nature; a rushed mentality by the user is derived due to the lack of thought put into the threshold between these two zones, albeit a particularly important, heavily utilised route.

When analysing the characteristics of Dublin Industrial Estate's laneway, it struck me that the width nor the length of the lane was the issue, but rather the lack of interaction between the boundaries. For the majority of the route, the width is at 1.79m which is more generous than that of Love Lane's dimensions - 1.51m - leading onto Essex Street in Temple Bar (Dublin City Council, 2014, para.2). The integration of art and planting in Love Lane results in an enjoyable journey; allowing pedestrians to wander, linger and encounter others. Furthermore, the placement of a courtyard adds to the compression and release of the alleyway, creating a spatial push and pull; heightening the experience between Dame Street and Essex Street.

It is already apparent that nature from the canal is spilling into the industrial world as briars and bushes grow through the fencing and poorly maintained grounds. The loose space between railing and dormant built form is restricted through fencing and barbed wire, preventing individuals to utilise it with ease. Perhaps if the lane were a more porous region, spontaneous events could occur that are not fixed to one purpose and the enrichment of osmosis between industry and nature could be demonstrated through architectural interventions.





8:30am midweek

1pm midweek

5pm weekend

Speculative Existing Floor Plan
of Premier Chicks