

The Densification of Tolka Valley -
An Architectural Response

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Acknowledgements

To Johanna and Calbhac thank you for your guidance throughout this year and pushing me to achieve the best. It has been a pleasure to work with you.

To the class of 2023 thank you for all the memories and laughter along the way. I wish you all every success.

Finally, thank you to my loving parents who have constantly supported me over the past 6 years. I am forever grateful.

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Thesis Idea

Considering this year's thesis theme of Urgency: Radical Thinking and Transformative Actions, I believe that placing people at the core of all decisions is necessary to really understand how we can address and apply these themes to today's societal issues. This thesis began with an interest in people's evolving needs and the continued transformation of these needs. The thesis explores how these needs have shifted over time and will continue to in an ever-changing society.

Ireland is currently facing a housing dystopia in its cities and major centres of population. The Dublin City Development Plan (2022, p. 129) noted the challenges that are faced due to the predicted population growth and the diversifying and ageing communities while Social Justice Ireland (2021) 'has continuously highlighted the need for policies to adapt to the needs of an increasing and ageing population and for policymakers to tackle the challenge of demographic change.'

This thesis aims to explore densification and the resulting needs of a community. This stemmed from research in semester one, where an analysis of current and projected demographics and housing needs were carried out. Having concluded that there is potential for a population increase within Tolka Valley, it is important that the needs of this new population are met with sufficient services to create a diversified and vibrant community.

The Development Plan outlines how population increase can be handled in terms of housing; however, the impact of this population increase on communities has not been adequately addressed. The plan examines the current and expected population of Dublin in terms of the housing supply that is required to cater for this mass increase (Chapter 2.2.1 Population and Housing Delivery) yet the impact this will have on existing communities and the strain that will ensue if the proper community infrastructures are not supplied prior to the increase has been overlooked. It is vital to develop a framework for anticipated needs and to provide for these needs before a surge in population occurs. This surge will result in communities with more socially and culturally diverse needs. Planning for these needs will promote urban renewal and bring life to communities and encourage economic prosperity. The city must undergo a radical transformation culturally to cope with these issues.

The thesis is described in various chapters, firstly through an overview of the current and projected demographics in Tolka Valley as a foundation for the thesis. Building upon this, feasibility studies were conducted in semester one, examining house typologies in Tolka Valley to test the suitability of the area for densification. Finally, the subsequent chapters focus on the testing of the design through an architectural interpretation of a community-based facility that would provide for all members of the community. This aims to align with objectives that emerge in the previous chapters. By following this systematic approach, the thesis methodically unveils the insights collected, ensuring a coherent and logical exploration of the thesis idea.

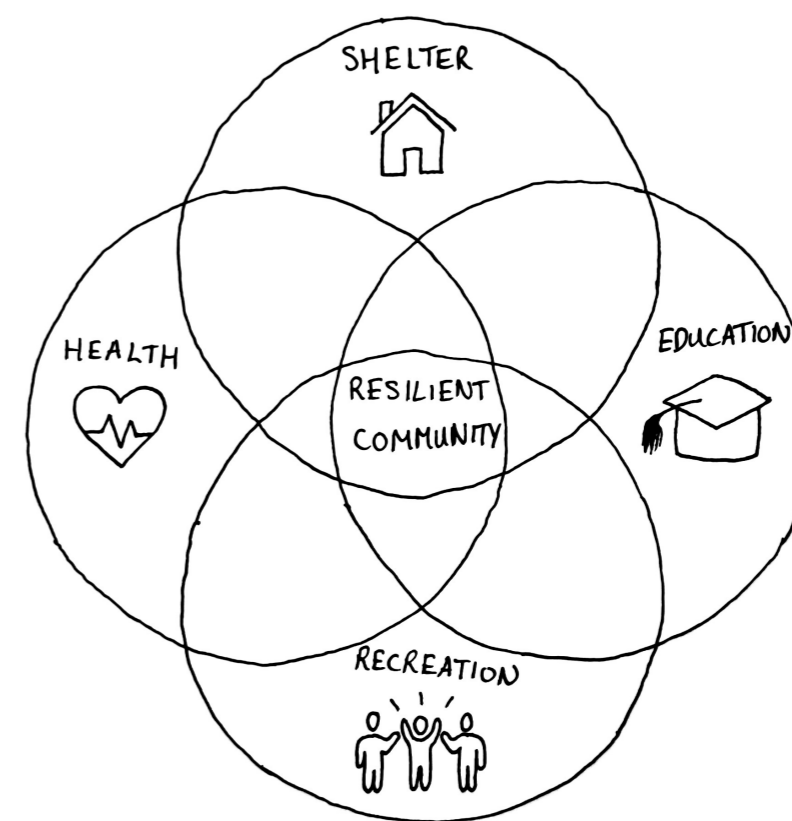
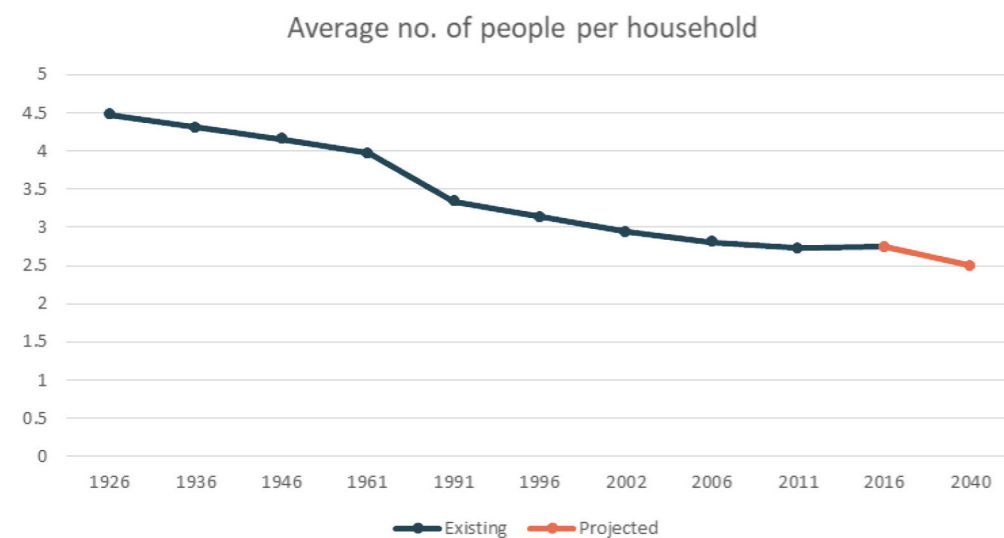


Fig. 1 - Venn diagram of Social needs

Demographics

Overview of national demographic trends

Demographics in Ireland have changed significantly over the past few decades. In 1926, there was an average of 4.5 people per household (pph). In the century since then, occupancy has dropped to 2.75pph. There has been a steady decline with it plateauing in 2011 and with a small rise in 2016 (Central Statistics Office (CSO)). This small rise is interesting and is possibly due to overcrowding in accommodation, rising house prices/rents and an overall shortage of housing units. The following graph (Fig. 2) illustrates that the average number of persons in a private household is expected to decrease to 2.5 by 2040 (Government of Ireland, 2018, p. 95).



This change in household occupancy can be linked to ageing. ‘One of the most notable features of Ireland’s changing demographics is the pace at which the population is ageing, particularly the rate of growth in the older age cohorts.’ (KPMG Future Analytics, 2021, p. 15) The CSO projects that there will be a mass increase in population by 2051. This is across the board with a notable increase in the 65+ age bracket (Fig. 3 & 4). Society must cater for both the young and old to create a mixed and unified community for the future.

Fig. 2 - Average number of people per household

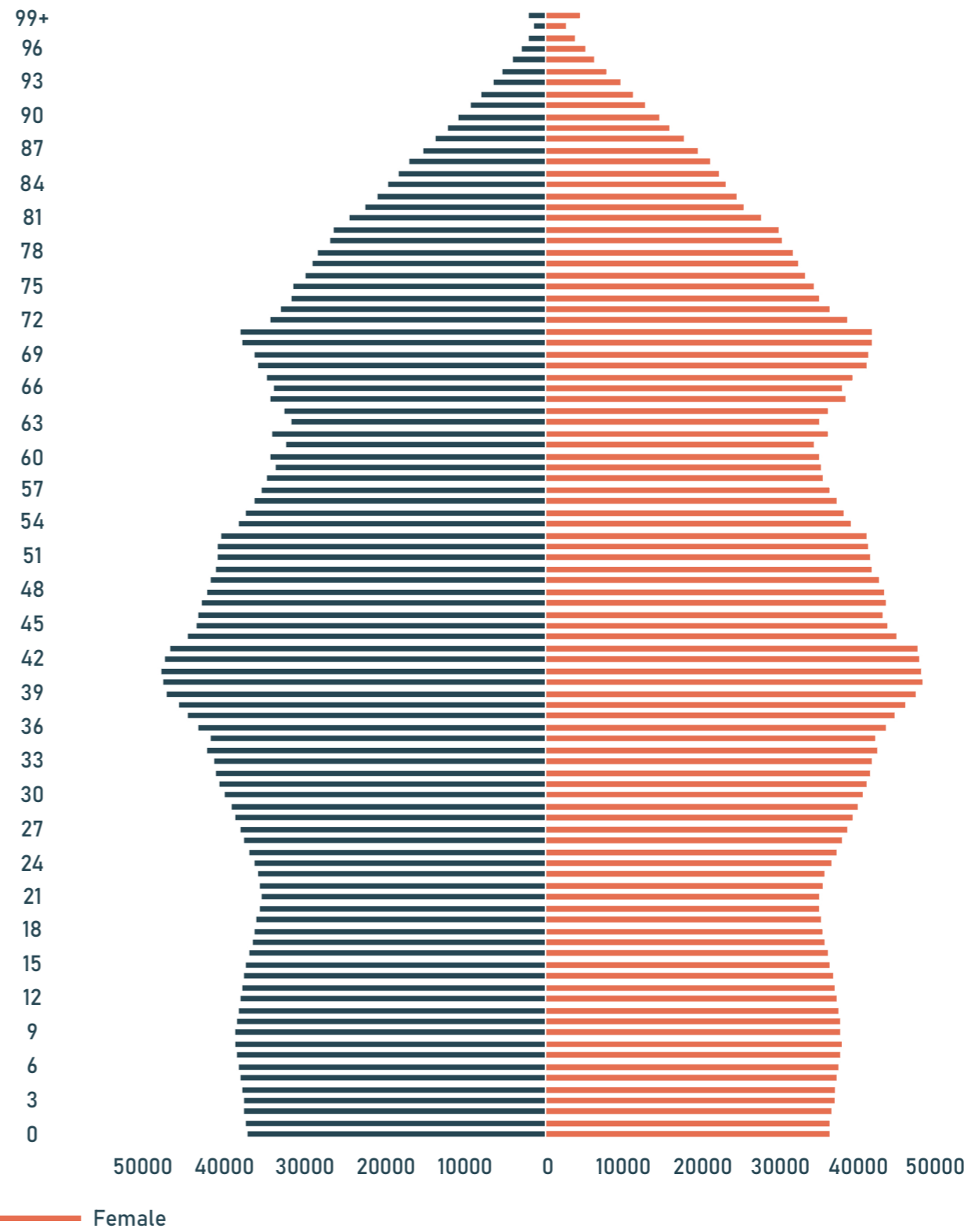
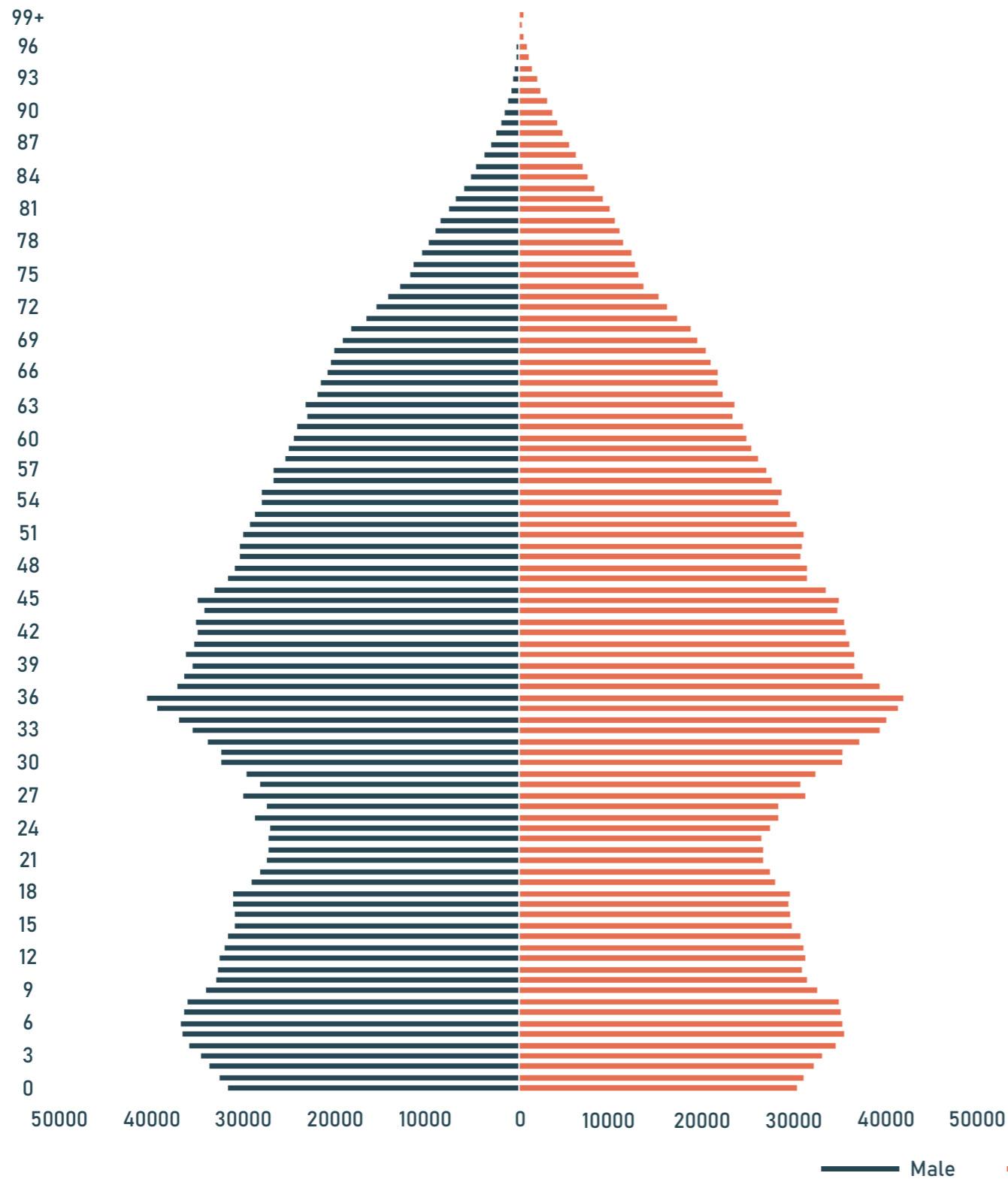


Fig. 3 - Population pyramid by single year of age, 2016
 Fig. 4 -Population pyramid by single year of age, 2051

Tolka Valley Specific Demographics

The data obtained for this section has been taken from analysing several small area maps from the CSO. This data relates to the 2016 Census and compares 37 small areas (Fig. 5) to create a demographic overview of Tolka Valley as it exists today. Refer to Appendix 1.

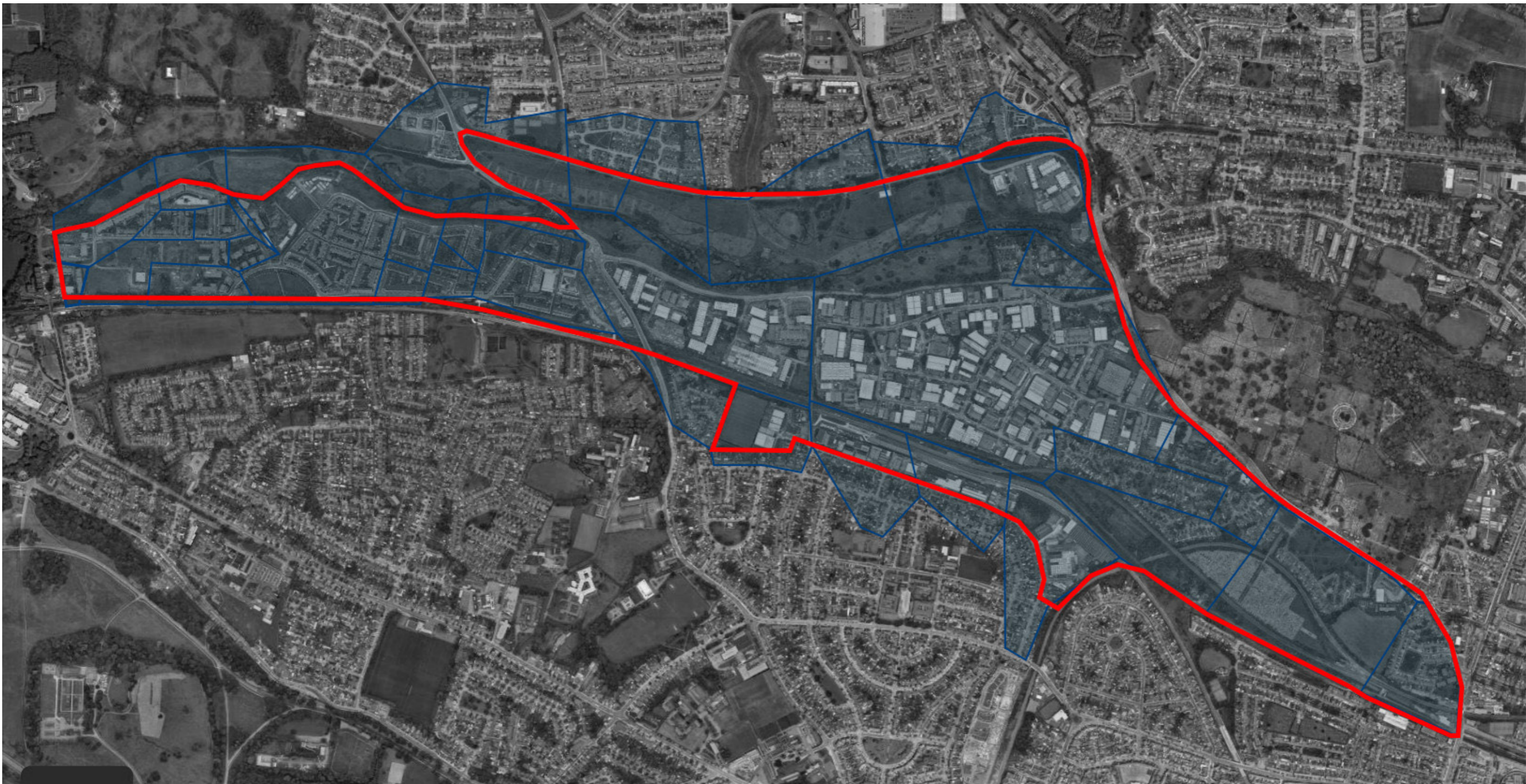
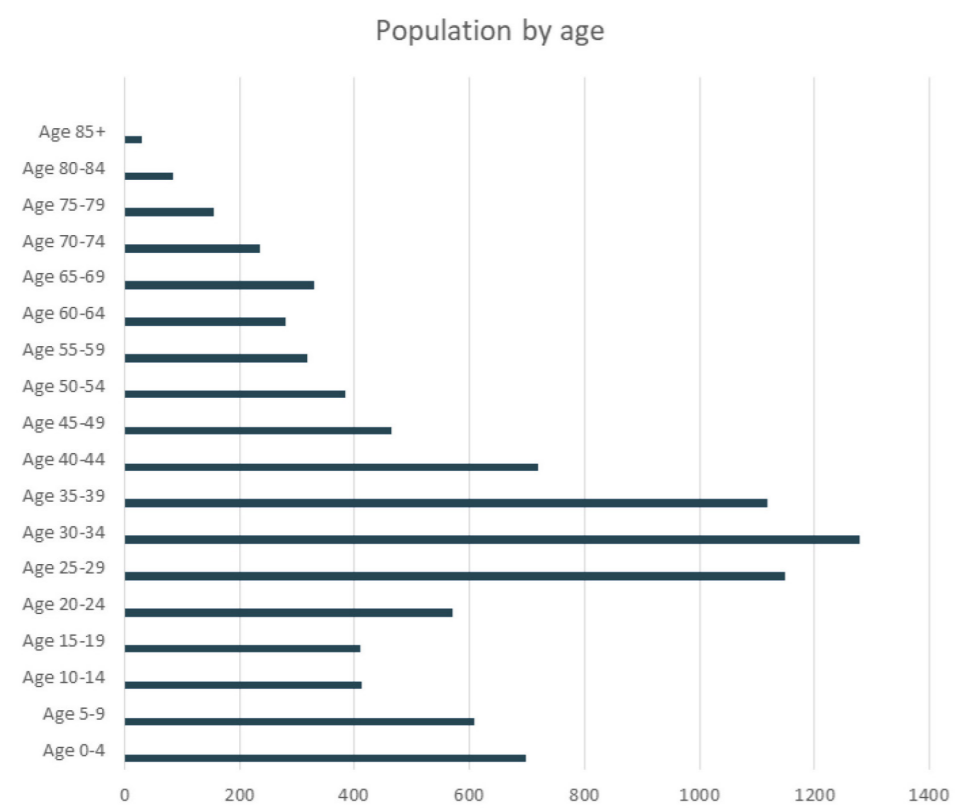


Fig. 5 - Selected 37 analysed small area maps

The current population of the Tolka Valley area is 9,240 and consists of 3,655 permanent private households. The current age configuration of Tolka Valley aligns generally with the national figures. The largest age bracket is 25–44 year olds (Fig. 6). Having previously noted the national projections of population by 2051, both the younger and older age bracket requirements must be considered over the coming years to create a well-rounded society.



Some of the conclusions I took from the Tolka Valley specific demographic analysis were:

- There are higher proportions of two, three and four persons per household, this is potentially due to adult children remaining at home for longer and non-related people living together.
- Single people make up the most predominant portion of population by marital status.
- There is an insufficient supply of one bed units for the growing trend of single people and couples, both young and old.
- There is a reasonable supply of two-bedroom households currently, but there may not be for the future generations that are having fewer children or who are choosing not to at all.
- Three-bedroom households are the highest proportion of houses, however, they are less likely to be required in the future due to declining family sizes.
- Most houses in the area were built between 2001-2010 to quite different needs.
- Married couples with children are the predominant household type, however, other types such as non-related persons living together and lone parent families are becoming commonplace and therefore must be provided for.

Fig. 6 - Population in Tolka Valley by age

Feasibility study of the existing housing stock in Tolka Valley

In semester one, I chose five house typologies in selected localised areas to examine if the existing housing stock in Tolka Valley could in some way accommodate the changing demographic demands of today's society. In each case, I looked at the existing house typology to examine whether they had capacity to be subdivided into separate self-contained units. With the demographics in mind, there was a focus on achieving one and two bed units, but three bed units would be considered where space is available. These three bed units would play an important role in providing a good density mix and allow for an adaptable space that could be converted into an office at a time when many people work from home. In each instance, I analysed the proposal in terms of it meeting the Design Standards for New Apartments (2020) as set out by the Department of Housing, Local Government and Heritage. This included a study of the required floor areas, kitchen/living/dining space, storage space, and private open space.

In total the proposed interventions in the selected areas would provide 317 additional units across the 5 house typologies chosen. A mix of 132 one beds (the most required unit type currently), 71 two beds, 61 three beds, and 53 mews houses were provided. In total this would provide 935 bedspaces (Fig. 7). 400 extra bedspaces could be created without significantly altering the existing infrastructure in Tolka Valley. These would be the maximum increases achievable, however, it should be noted that all of these should not be carried out as some units should retain their existing layout to create a vibrant and mixed community with one, two, three, and four bed unit mixes. The interventions in these selected areas can be extended throughout the Tolka Valley where these house typologies occur.

Unit Type	Total No. of Potential Units	Total No. of Bedspaces created
One Bed (2 persons)	132	264
Two Bed (3 personss)	24	72
Two Bed (4 personss)	47	188
Three Bed (5 persons)	61	305
Mews (2 persons)	53	106
	Total = 317 Units	Total = 935 Bedspaces

Mandal (2020) suggests that Dublin city's suburbs could work well with densities similar to the suburbs of Basel with 50 units per hectare (uph), while the city itself has the capacity to reach a density similar to that of Paris (100-225uph). I looked at the existing number of uph and compared them to identify if they could reach higher densities. The following table (Fig. 8) shows the densities DCC would approve of under the City's Development Plan (2022, p. 216). I suggest that Tolka Valley would fall under the outer suburb zone that should achieve 60-120uph which would align with Mandals suggested figures.

Location	Net Density Range (units per ha)
City Centre and Canal Belt	100-250
SDRA	100-250
SDZ/LAP	As per SDZ Planning Scheme/LAP
Key Urban Village	60-150
Former Z6	100-150
Outer Suburbs	60-120

(Left) Fig. 7 - Table of potential units
(Right) Fig. 8 - Dublin City Council approved densities

Site Area

- 1. Glasnevin Woods
- 2. Bannow Road
- 3. Claremont Crescent
- 4. St. Philomena's Road
- 5. Ashtown



Fig. 9 - Location of chosen house typologies

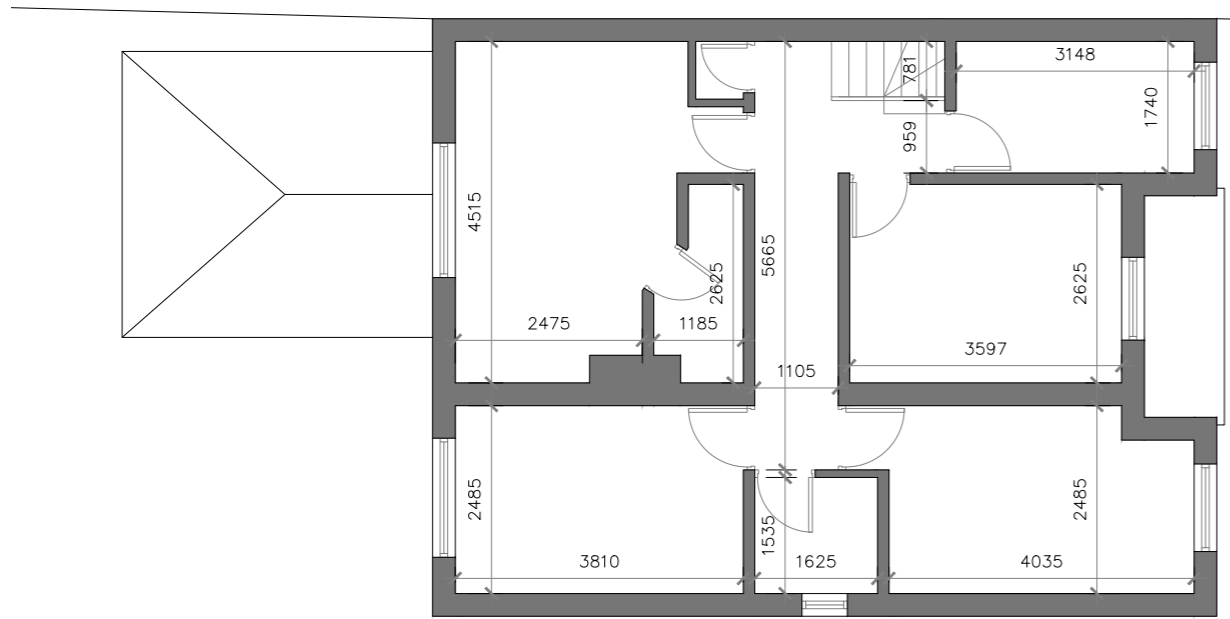
1. Glasnevin Woods

This estate was built around the 1990's. These houses are typically two storey with a pitched roof. The typical existing house comprises of a kitchen, living room, dining room, utility room, conservatory, five bedrooms and two bathrooms. The attic of this house type could be converted into a living space creating a one bed ground floor unit, while the first and second floor could be transformed into a three bed unit. The site area of Glasnevin Woods is 0.53 hectares. The current units per hectare is 47 uph. The proposals I have outlined have the potential to achieve 100 uph.

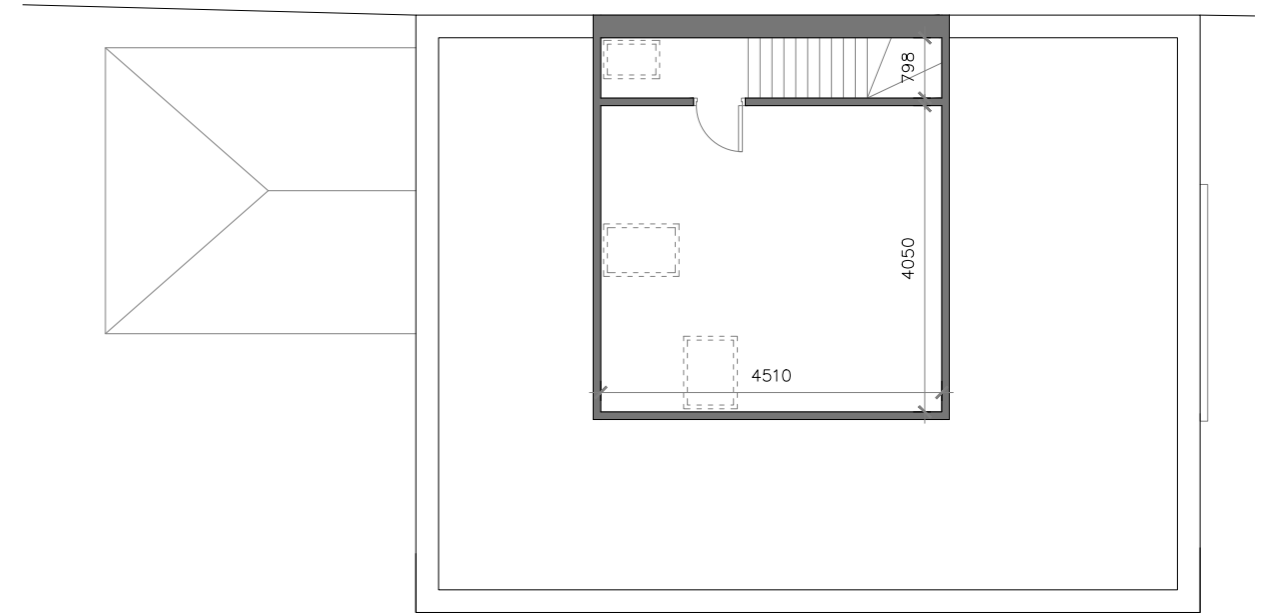


1. Glasnevin Woods											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	80m ²	80m ²	71m ²		41m ²	13m ²			28	56
Duplex on First Floor	2 Bed (4 persons)	67m ²	89m ²	12.1m ²	1.5m ²	39m ²	11.7m ²			28	112
Upper floor of duplex	2 Bed (4 persons)	22m ²	89m ²		3.6m ²			13m ²			

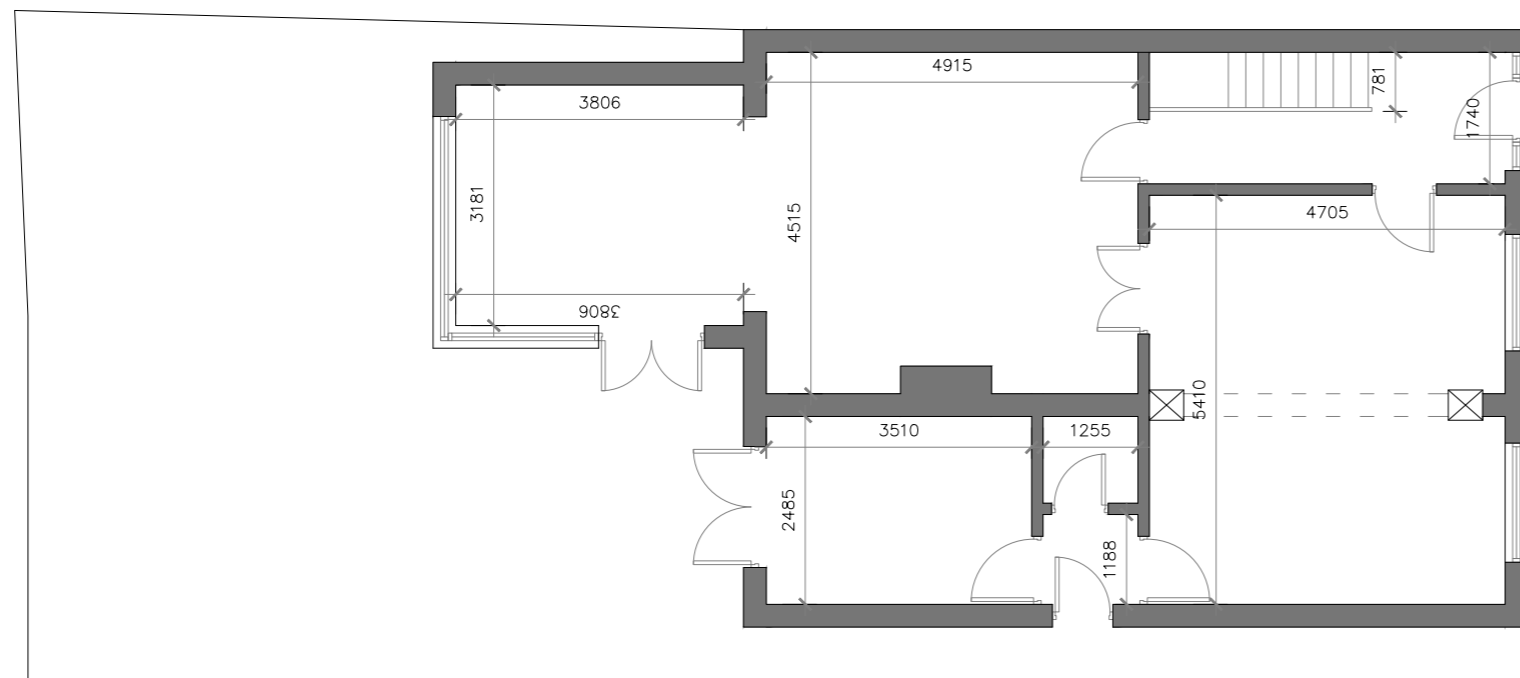
(Left) Fig. 10 - Glasnevin Woods
 (Right) Fig. 11 - Glasnevin Woods siteplan
 (Below) Fig. 12 -Table of areas



Existing First Floor Plan 1.100



Existing Second Floor Plan 1.100



Existing Ground Floor Plan 1.100

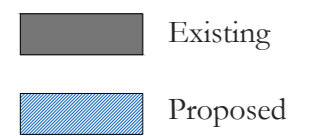
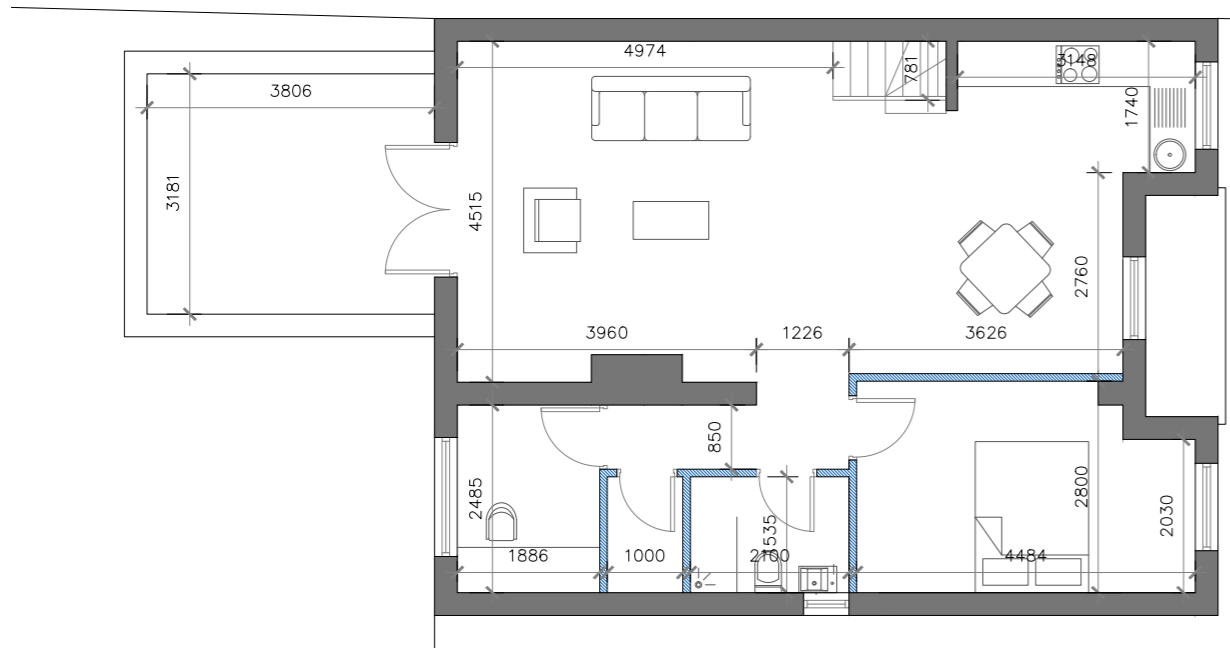
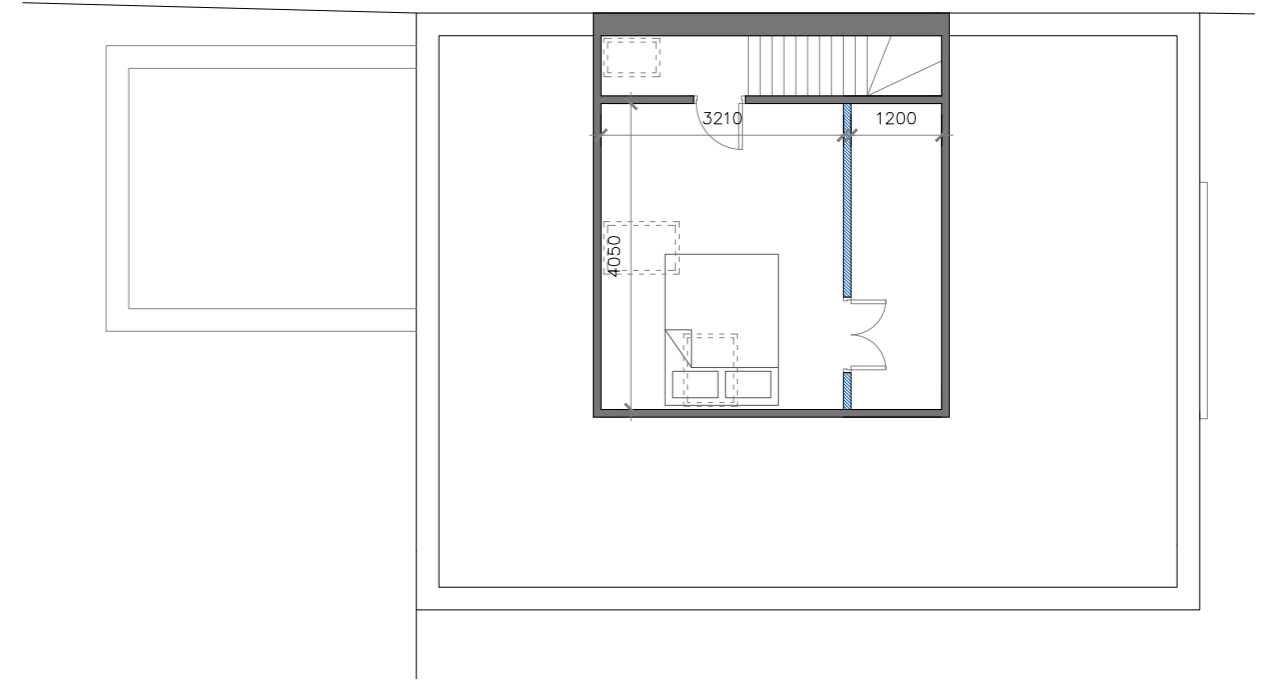


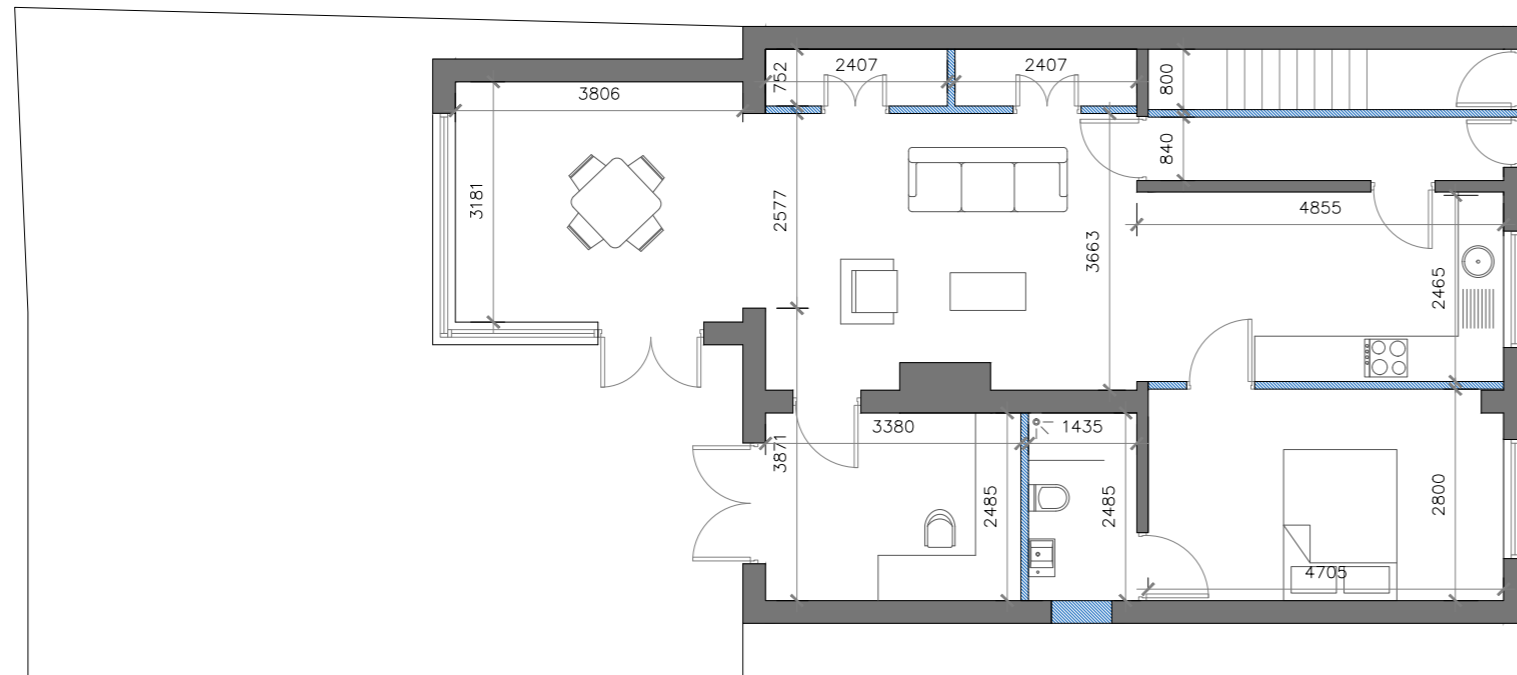
Fig. 13 - Existing floor plans



Proposed First Floor Plan 1.100



Proposed Second Floor Plan 1.100



Proposed Ground Floor Plan 1.100

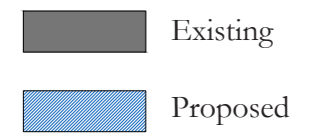


Fig. 14 - Proposed floor plans

2. Bannow Road

This estate was built around the 1940's. These houses are typically two storey with a pitched roof. The existing house consists of a kitchen and living room downstairs and two bedrooms and a bathroom upstairs. A significant number of the houses in the area have small extensions constructed to the rear as shown on the existing aerial photo, therefore I have shown the extensions on the existing floor plans as being the typical typology.

These houses are quite small and have little room for intervention within the existing fabric. As there is a need for one and two bedroom houses in the area, I suggest it is appropriate to leave these houses in their current layout. Although the preferred option is to build within the existing fabric, I am cognisant of the fact that there are elderly people in these areas who may need accessible wheelchair-friendly housing in the future. These houses have long back gardens which could be adopted to accommodate mews housing to the rear.

Under DCC guidelines for mews housing, the minimum distance between the main dwelling and the mews dwelling should be 22m. I have used the project 'Start Spreading the Mews' (Acabes, Foley, & Wall, 2022) as an example of where this 22m limitation was relaxed. Here they used 12.5m as their distance and had no windows overlooking the existing houses. These basic parameters have been applied in the proposal.

The site area of the selected houses on Bannow Road is 1.99 hectares. The current units per hectare is 54 uph. The proposals I have outlined could achieve up to 65 uph.



2. Bannow Road											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Proposed Mews	1 Bed (2 persons)	51.6m ²	51.6m ²	25.8m ²	3m ²	26.5m ²	12.7m ²			22	44

(Top) Fig. 15 - Bannow road
(Bottom) Fig. 16 -Table of areas



Existing Site Plan 1:1000


- | | | | |
|---|-----------------------|---|---------------------|
|  | Housing type of study |  | Site boundary |
|  | Various housing types |  | Site area = 1.99 Ha |
|  | Proposed development | | |

Fig. 17 - Existing siteplan



Proposed Site Plan 1:1000







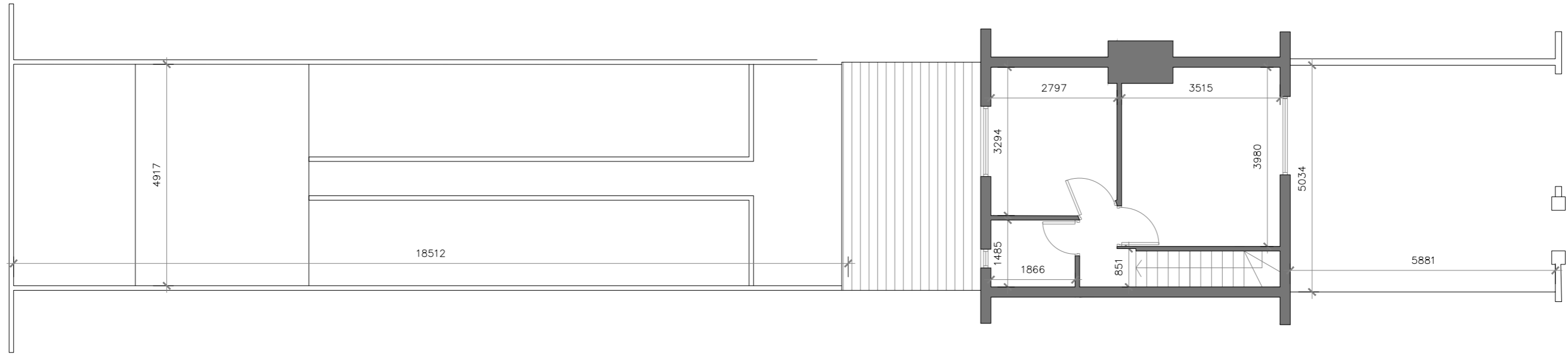
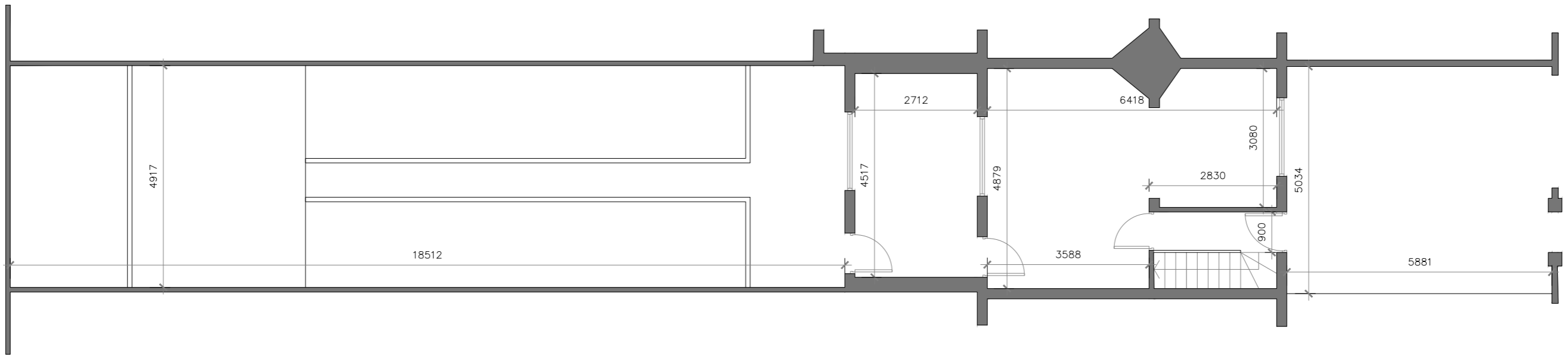
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|---|-----------------------|---|-----------------------|
|  | Housing type of study |  | Site boundary |
|  | Various housing types |  | Site area = 1.99 Ha |
|  | Proposed development |  | Access to mews houses |

Fig. 18 - Proposed siteplan



Existing First Floor Plan 1.100



Existing Ground Floor Plan 1.100

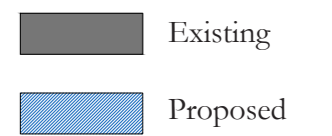
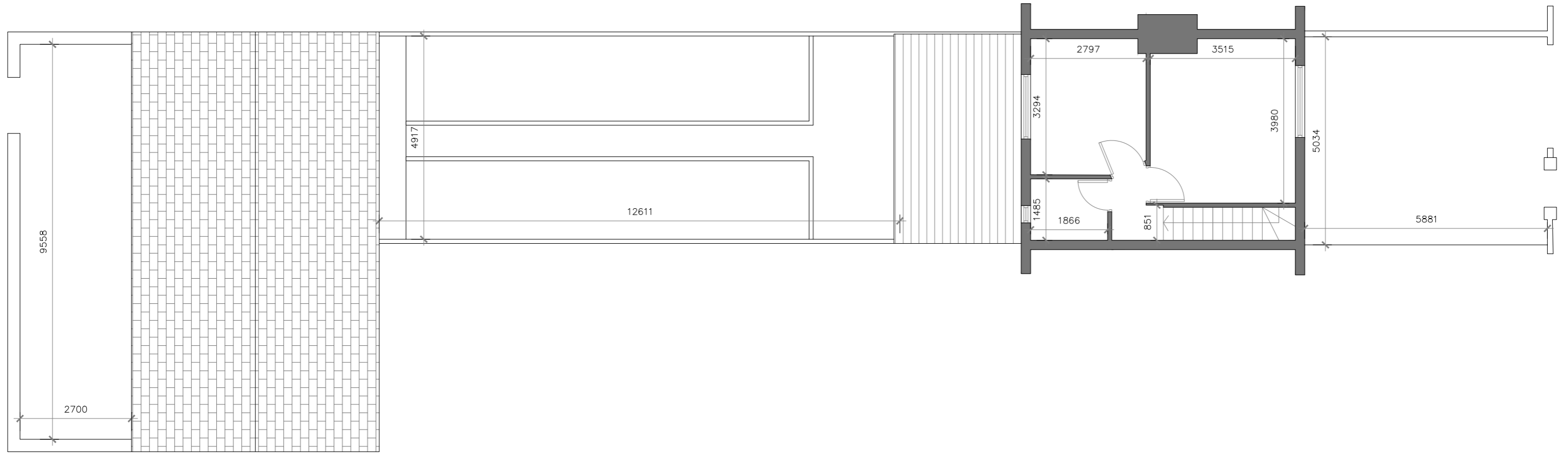
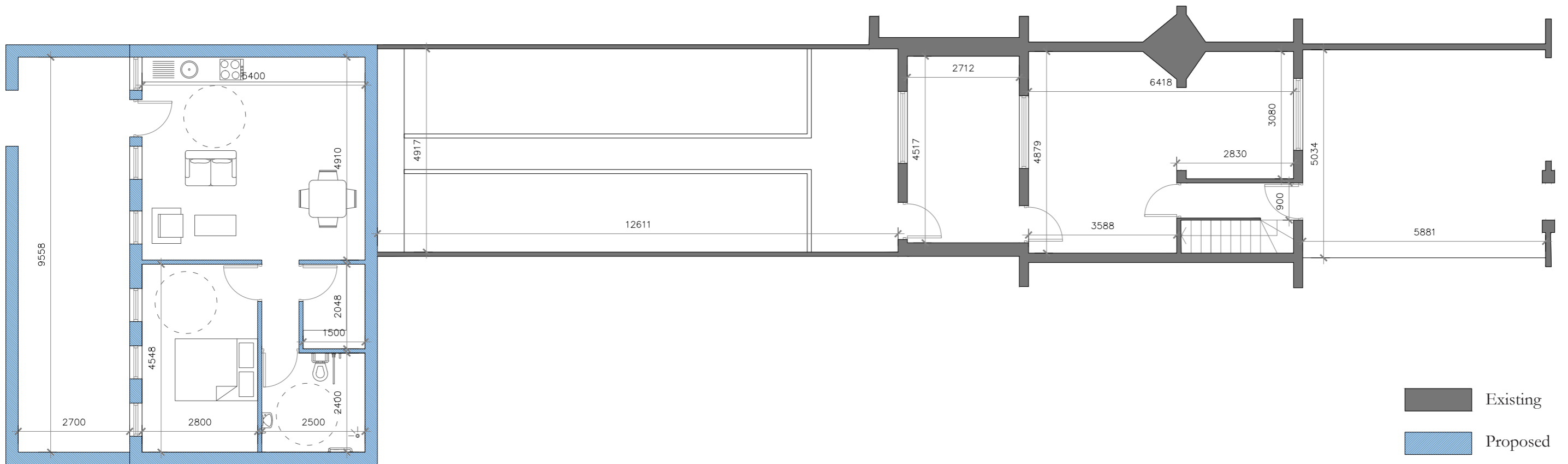


Fig. 19 - Existing floor plans



Proposed First Floor Plan 1.100



Proposed Ground Floor Plan 1.100

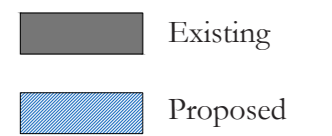
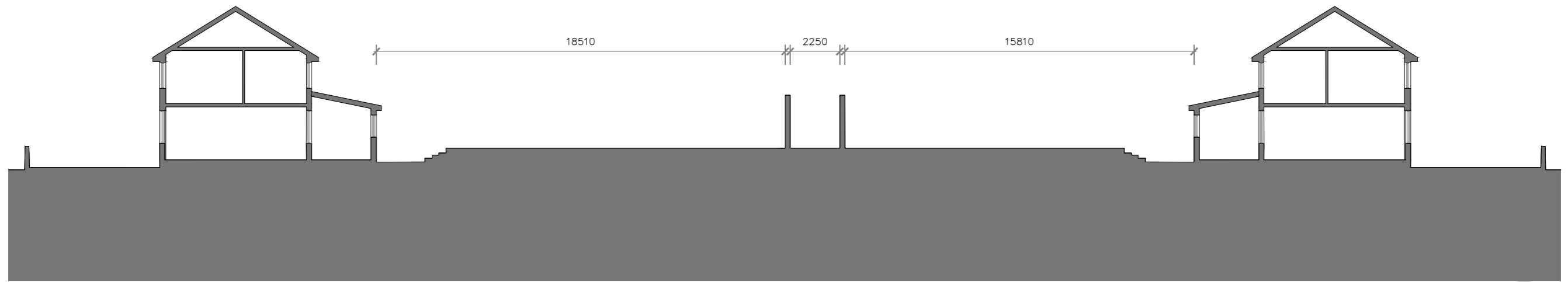
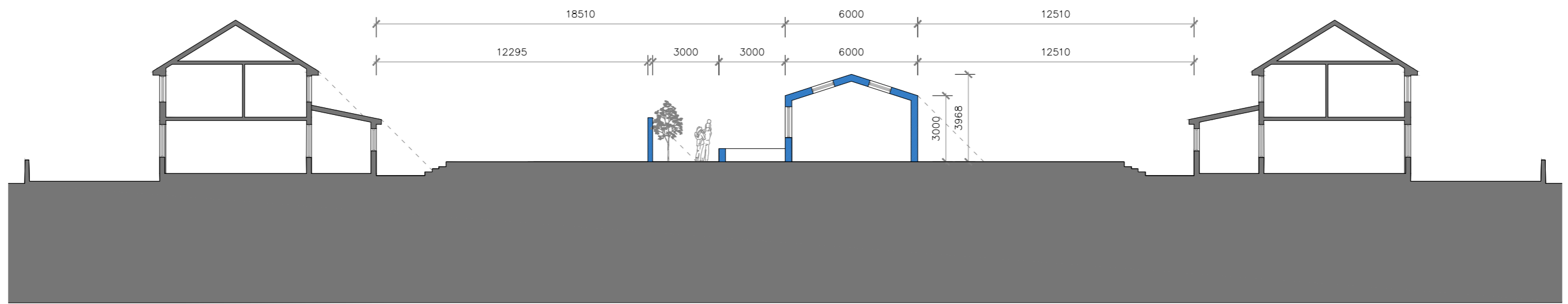


Fig. 20 - Proposed floor plans



Existing Site Section 1.200



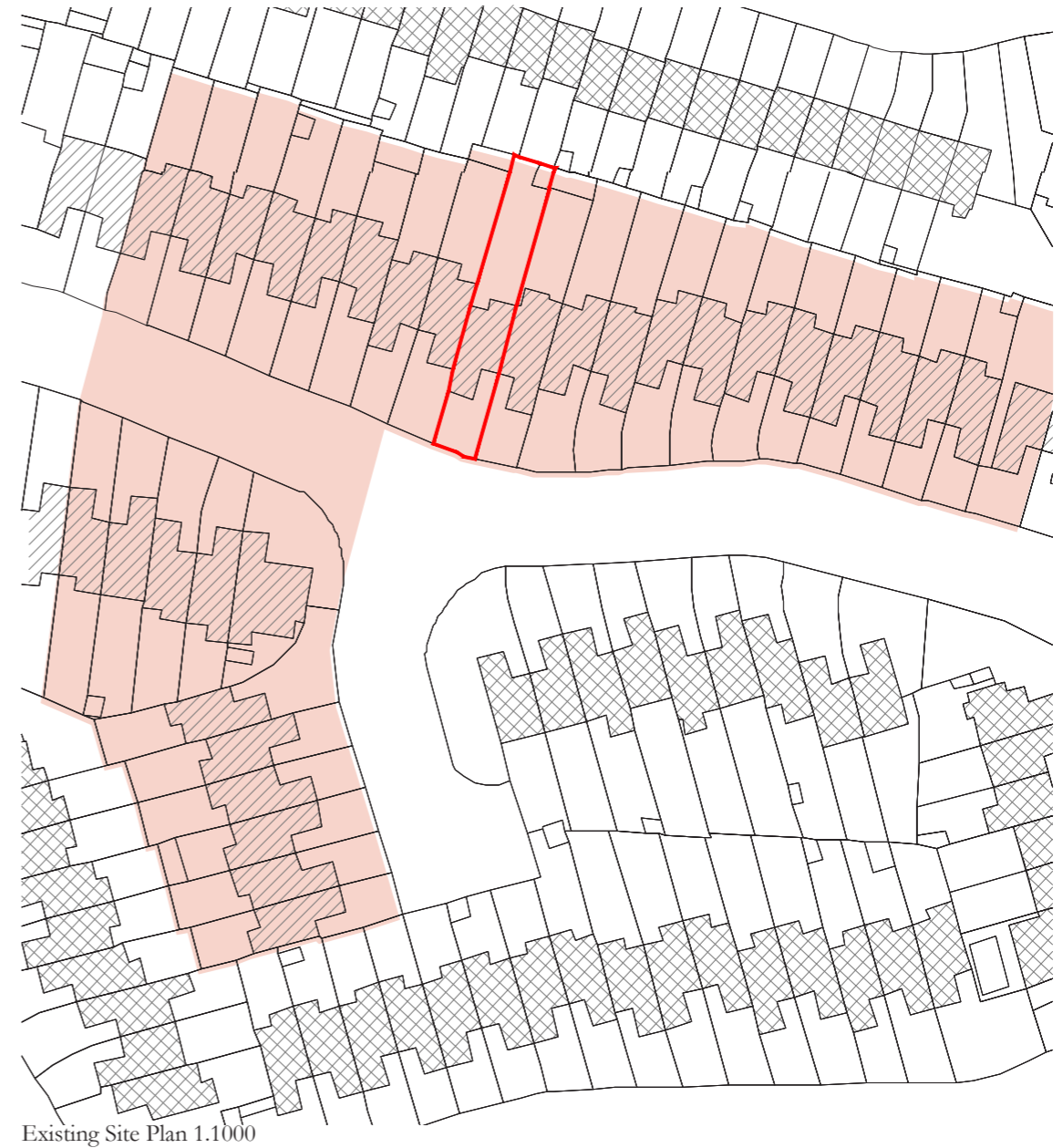
Proposed Site Section 1.200

Existing
Proposed

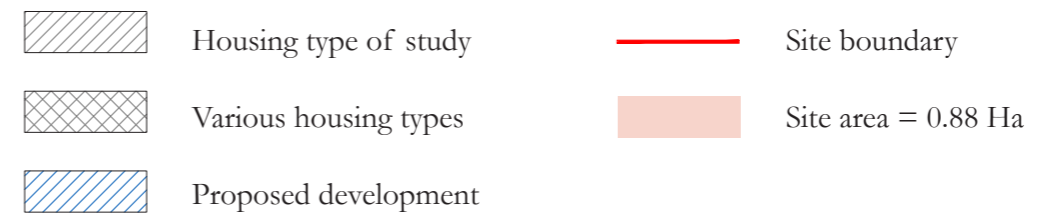
Fig. 21 - Existing & proposed sections

3. Claremont Crescent

This estate was built around the 1970's. These houses are typically two storey with a mono-pitch roof. The existing house consists of a kitchen, living room, dining room, four bedrooms and a bathroom. The attic of this house could be transformed into a living space creating a one bed ground floor unit while the first and second floor could be transformed into a three bed unit. The site area of the selected houses in Claremont Crescent is 0.83 hectares. The current units per hectare is 38 uph. The proposals I have outlined have potential to achieve 77 uph.



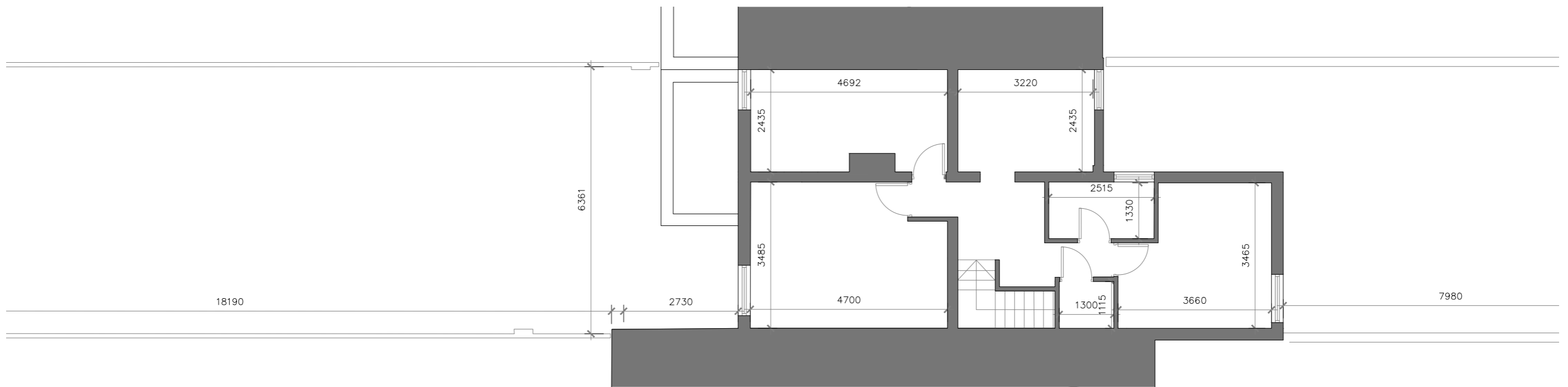
Existing Site Plan 1:1000



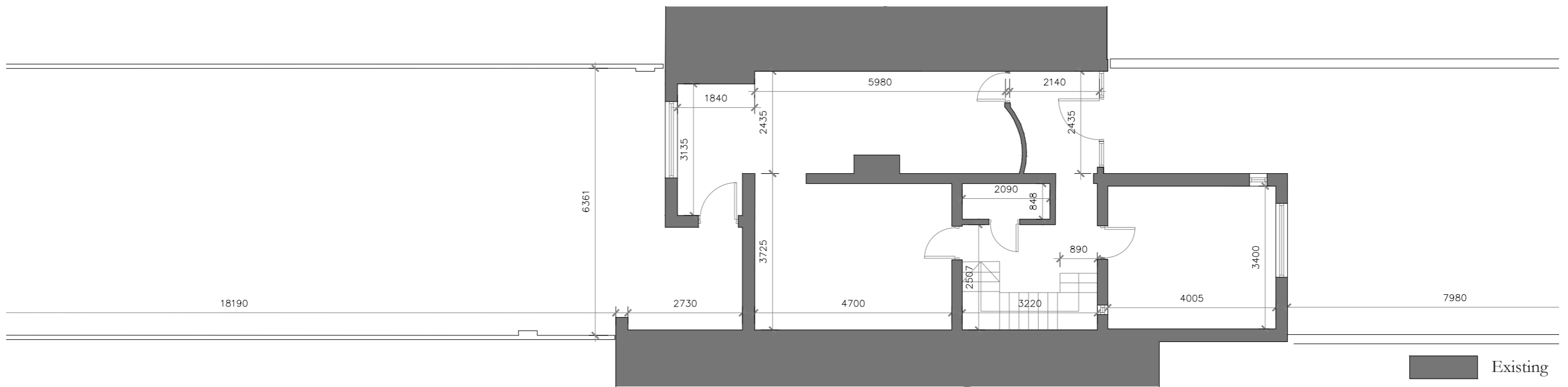
3.Claremont Crescent											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	62.4 m ²	62.4m ²	54.5m	3.1m ²	33.5m ²	13.6m ²			32	64
Duplex on First Floor	3 Bed (5 persons)	65 m ²	108m ²	71m ²	4.7m ²	34.3m ²	11.4m ²			32	160
Upper floor of Duplex	3 Bed (5 persons)	43m ²	108m ²		2.9m ²			11.4m ²	12.4m ²		

*Should be 9m² Storage for a 3 Bed

(Left) Fig. 22 - Claremont Crescent
 (Right) Fig. 23 - Claremont Crescent siteplan
 (Below) Fig. 24 -Table of areas



Existing First Floor Plan 1.100



Existing Ground Floor Plan 1.100

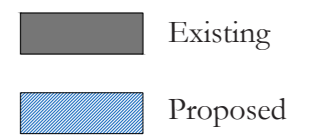
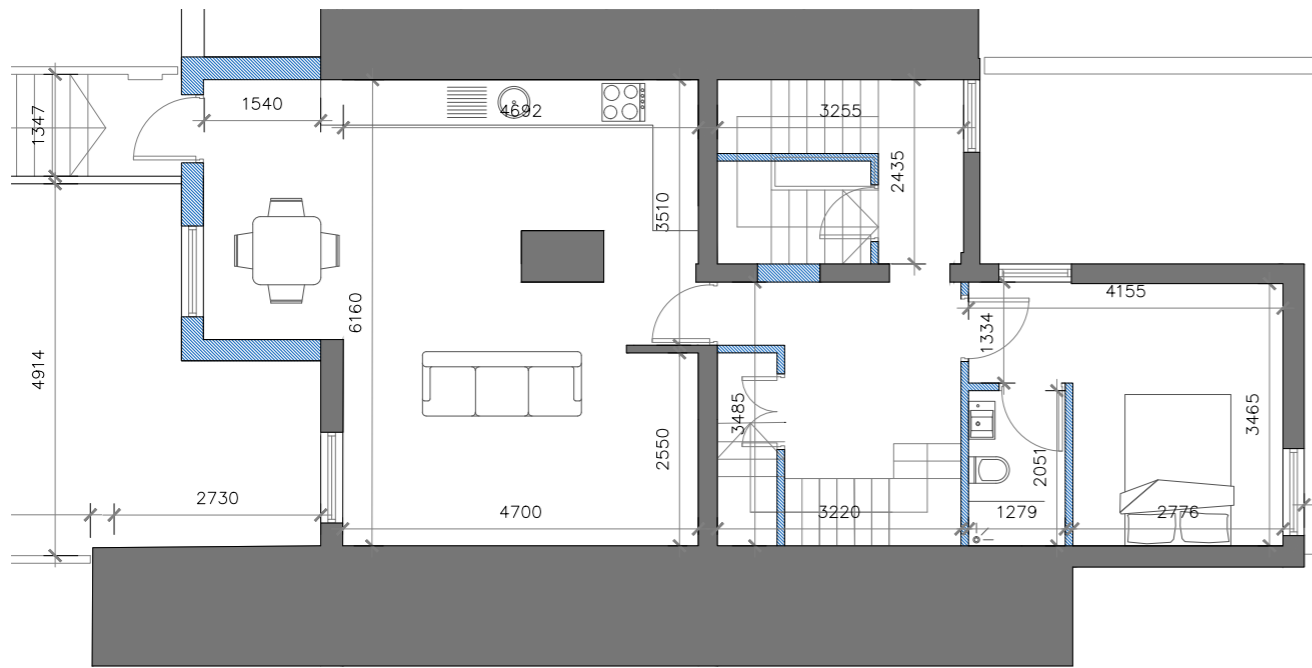
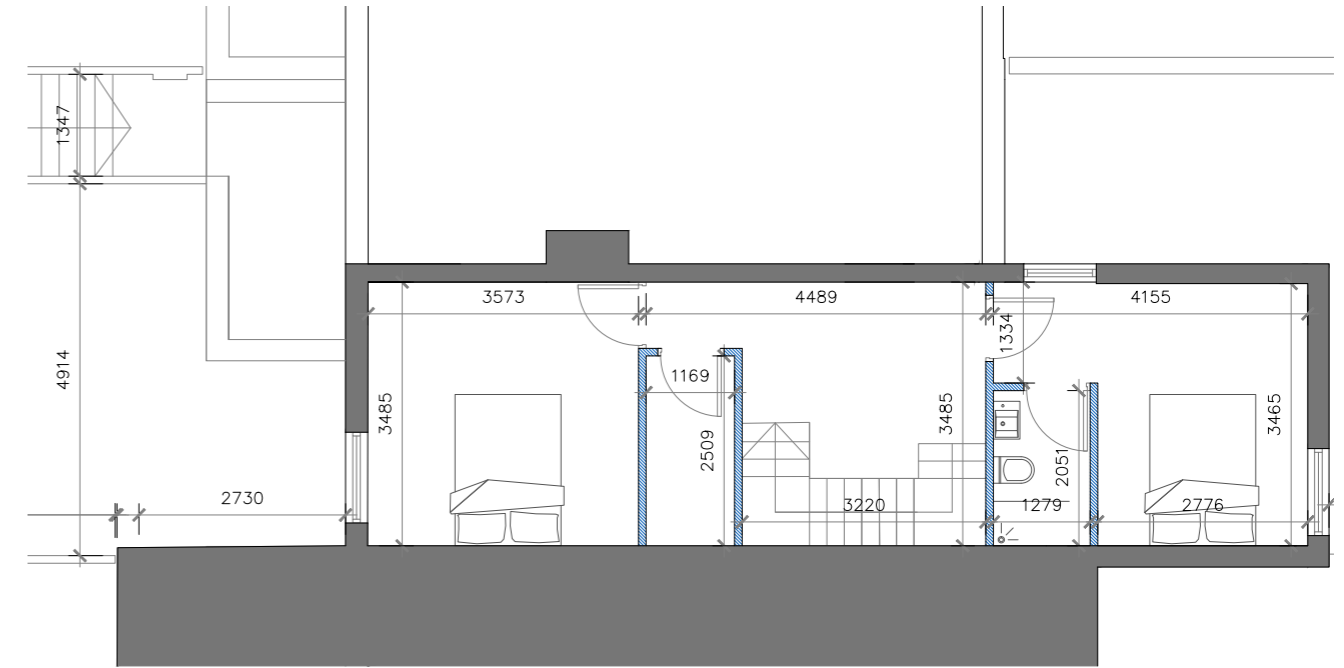


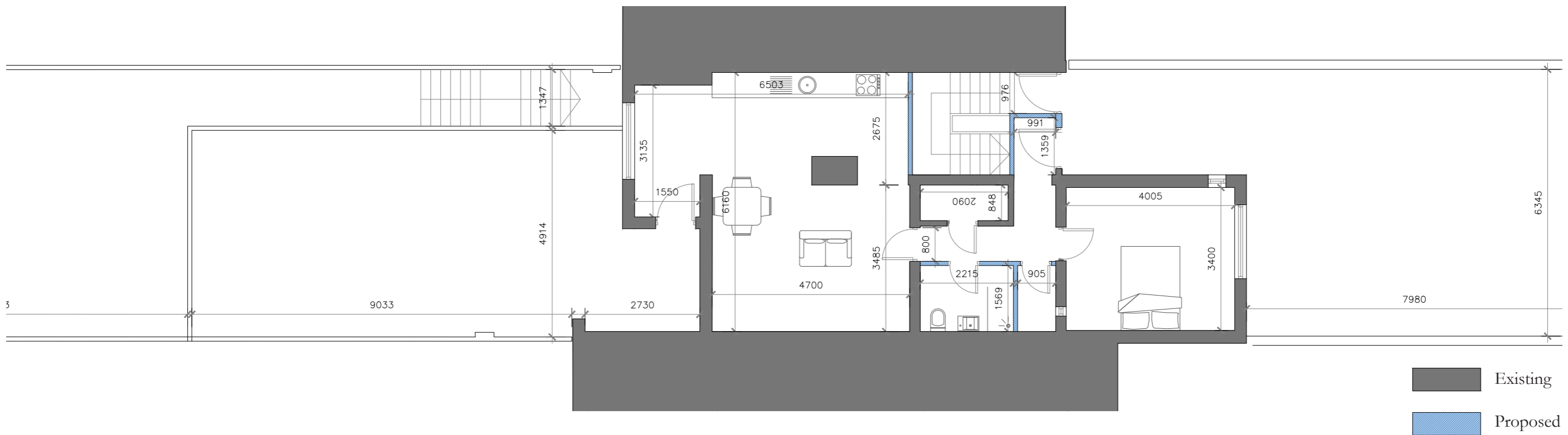
Fig. 25 - Existing floor plans



Proposed First Floor Plan 1.100



Proposed Second Floor Plan 1.100



Proposed Ground Floor Plan 1.100

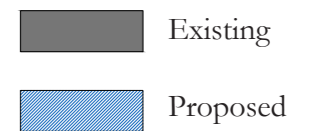
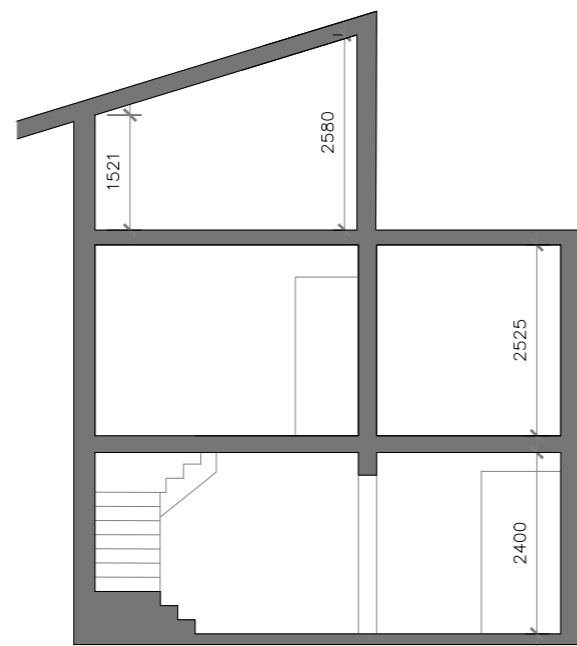
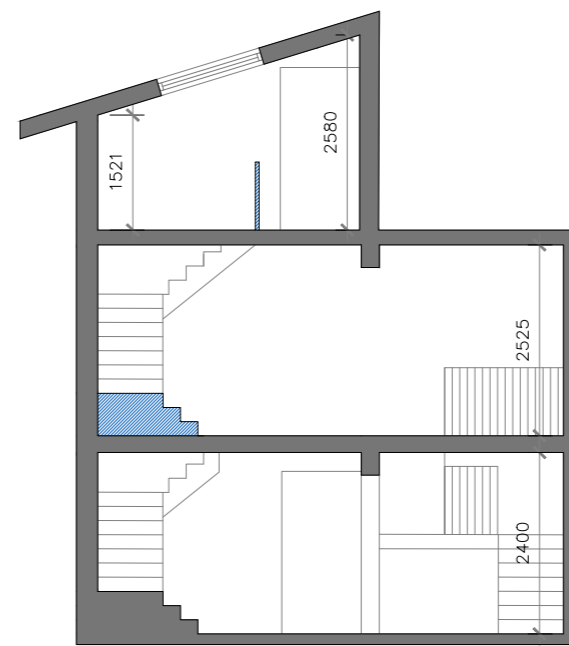


Fig. 26 - Proposed floor plans



Existing Section 1.100



Proposed Section 1.100

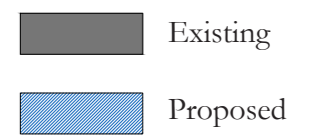


Fig. 27 - Existing & proposed section

4. St. Philomena's Road

These houses were built around the 1890's on long narrow plots. These houses are typically three storeys high with various level changes throughout. The typical existing house comprises of a kitchen, living room, dining room, five bedrooms and two bathrooms. There is an existing laneway which provides access to rear gardens and garages. This house is currently very large in terms of today's demographic needs and the conversion of this house type is possible with the ground floor becoming a one bed unit for a young couple, while the first and second floor can be transformed into a two bed unit.

These houses are not very practical for housing elderly people due to the various level changes. I propose that any elderly living in these houses could relocate to more appropriate mews houses constructed to the rear. The private open space of the existing house would not be compromised as the gardens are large and would still satisfy the 72m² open space requirement. This would provide for the accessible needs of the elderly, while providing their own independent living space and a small courtyard garden. In terms of the sensitivity of moving elderly people the Knowle West case study in England recognized that elderly people were willing to move out of their larger homes as long as they were moving within their own community (Knowle West Media Centre, 2022). This is a delicate issue and would have to be approached sensitively.

The site area of St. Philomena's Road is 0.78 hectares. The current units per hectare is 28 uph, which is very low for an inner-city suburb. The proposals I have outlined could achieve up to 67 uph.









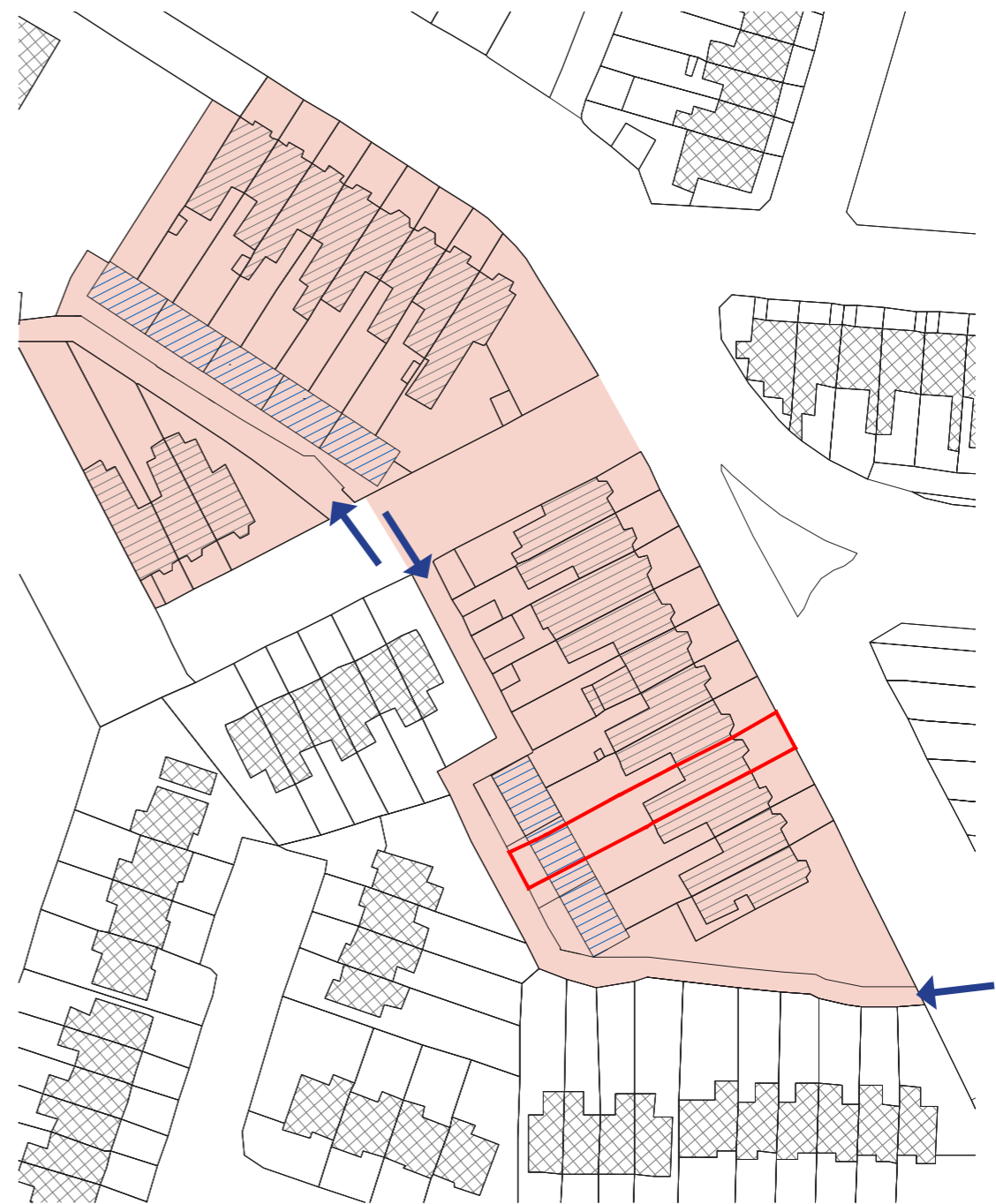
4. St. Philomenas Road											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	68m ²	68m ²	89m ²	3m ²	40.9m ²	17.7m ²			22	44
Duplex on First Floor	2 Bed (4 persons)	51.8 ²	98.9m ²	17.6m ²		37.2m ²				22	88
Upper Floor of Duplex	2 Bed (4 persons)	47.1m ²	98.9m ²		6m ²		15.3m ²	12.9m ²			
Proposed Mews	1 Bed (2 persons)	51.6m ²	51.6m ²	27.1m ²	3m ²	26.5m ²	12.7m ²			8	16

(Right) Fig. 28 - St. Philomenas Road
(Below) Fig. 29 -Table of areas



Existing Site Plan 1.1000

-  Housing type of study
-  Various housing types
-  Proposed development
-  Site boundary
-  Site area = 0.53 Ha
-  Site access to mews houses



Proposed Site Plan 1.1000

Fig. 30 - Existing & proposed siteplan

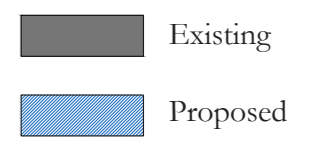
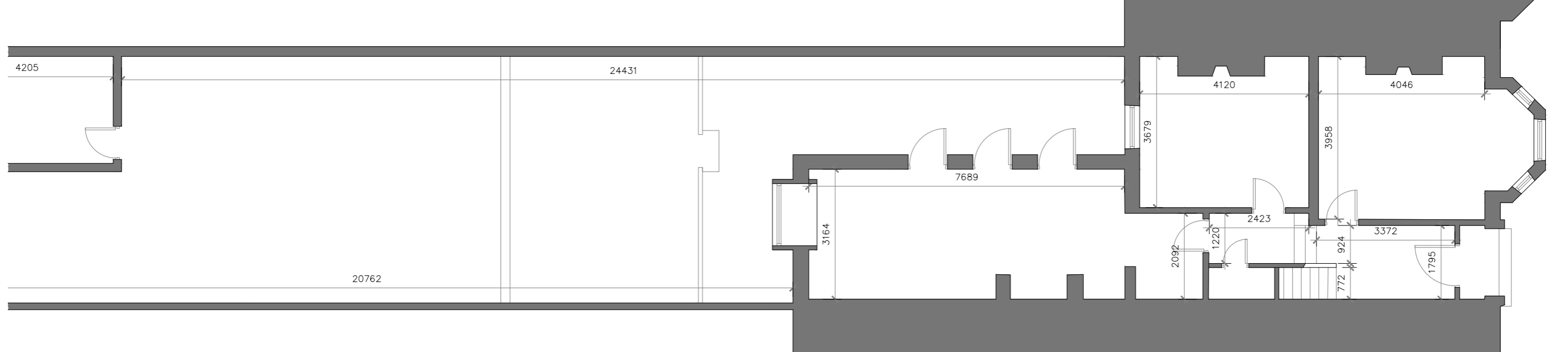
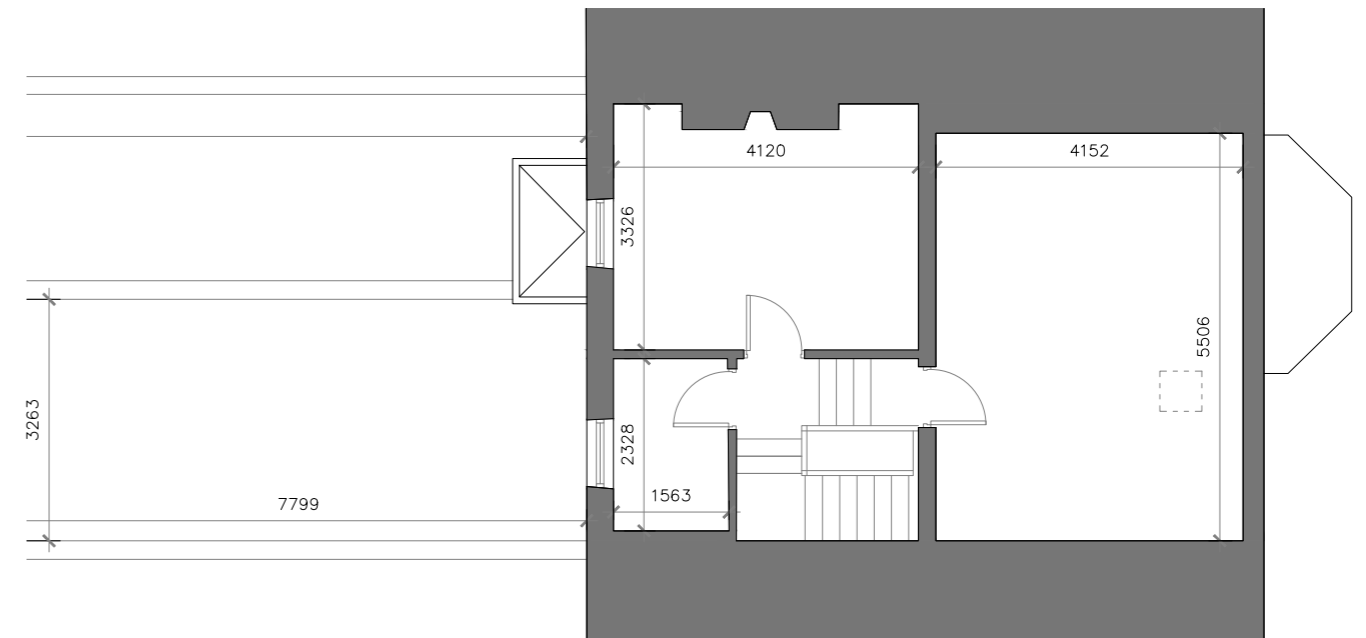
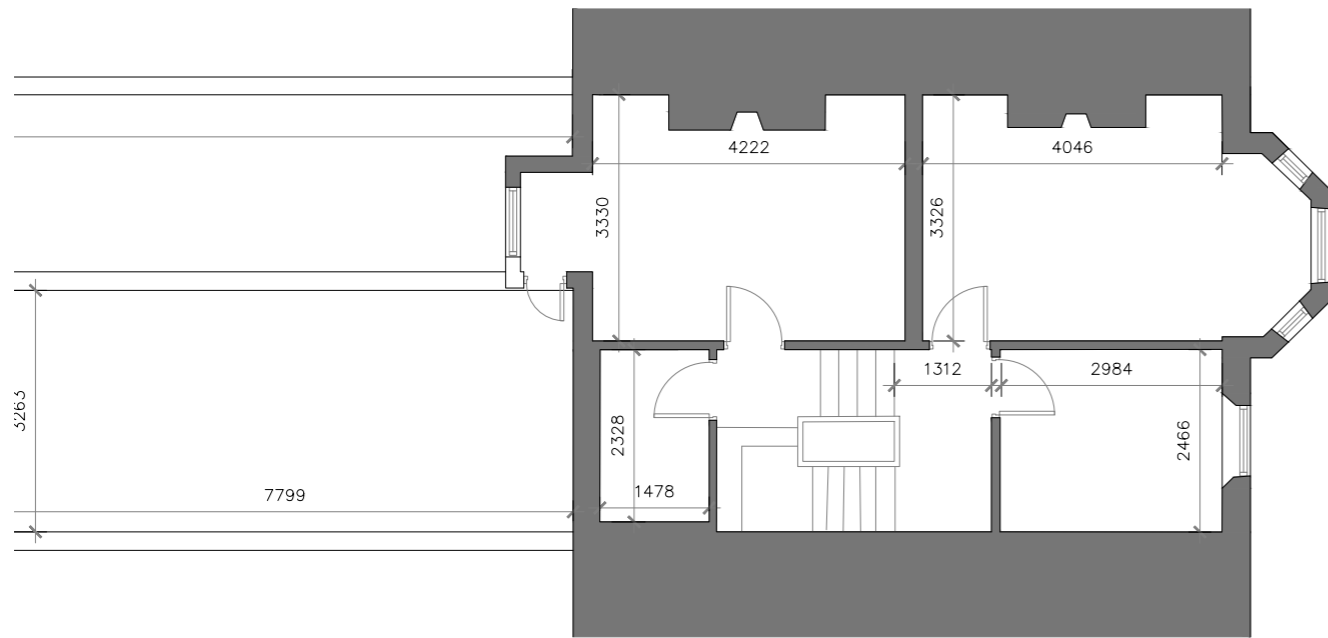
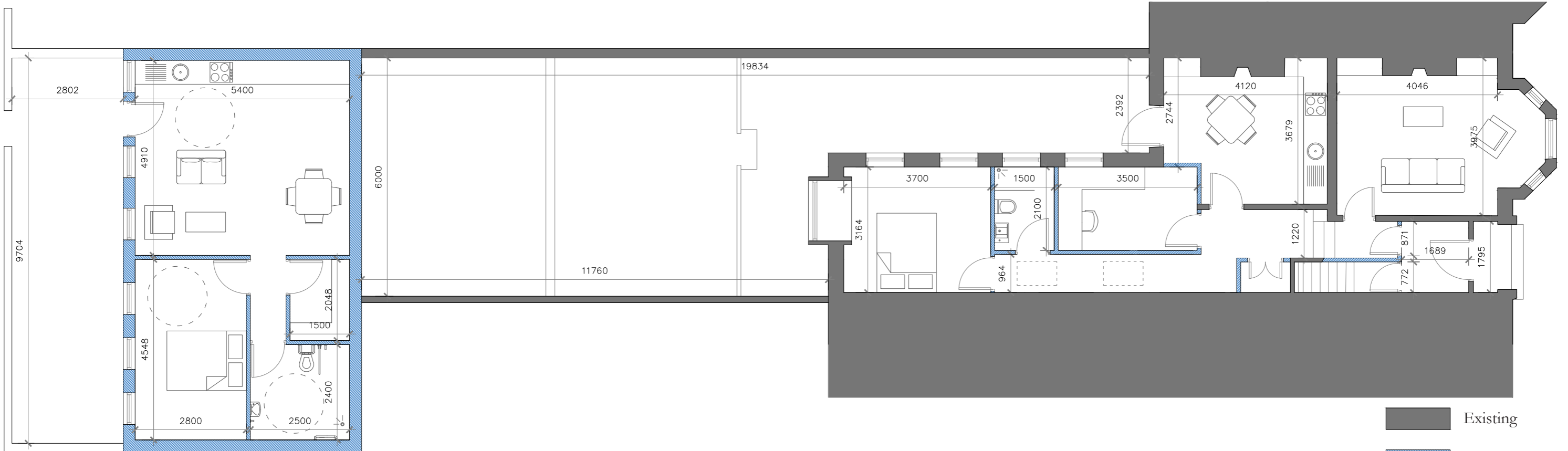
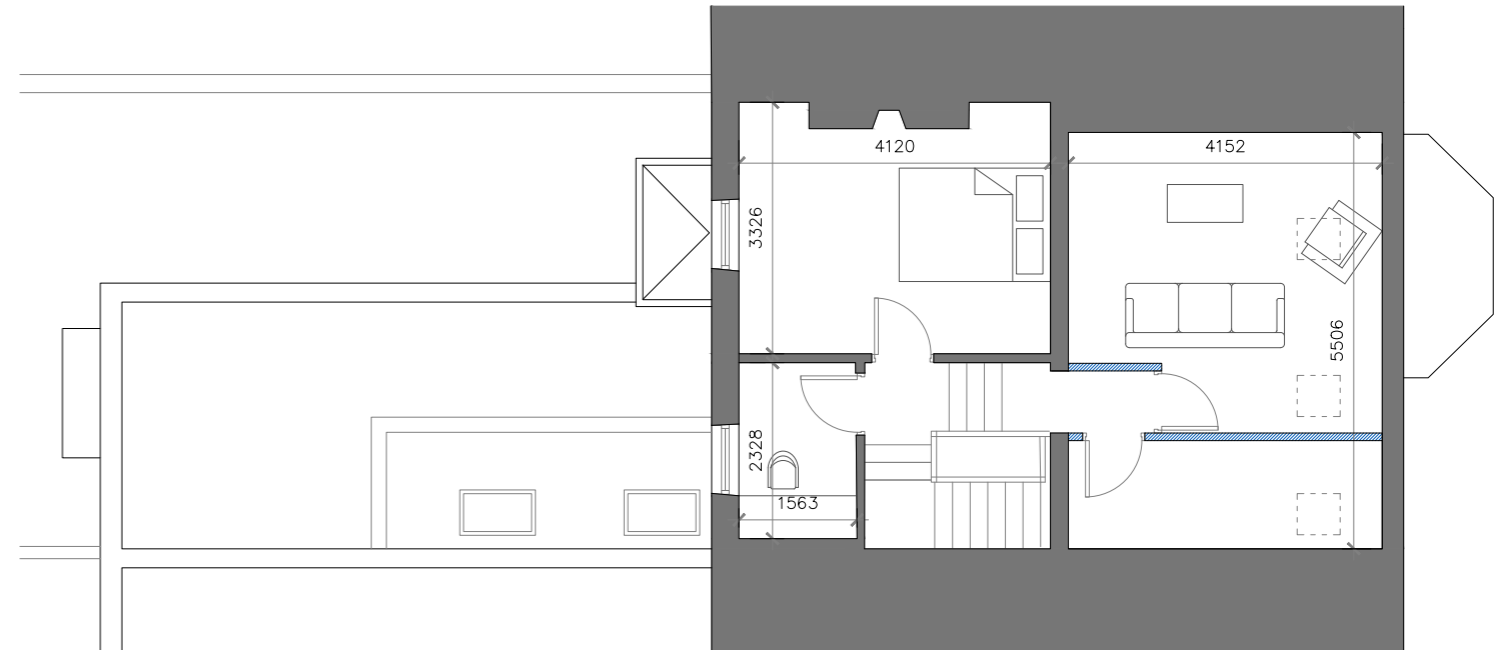
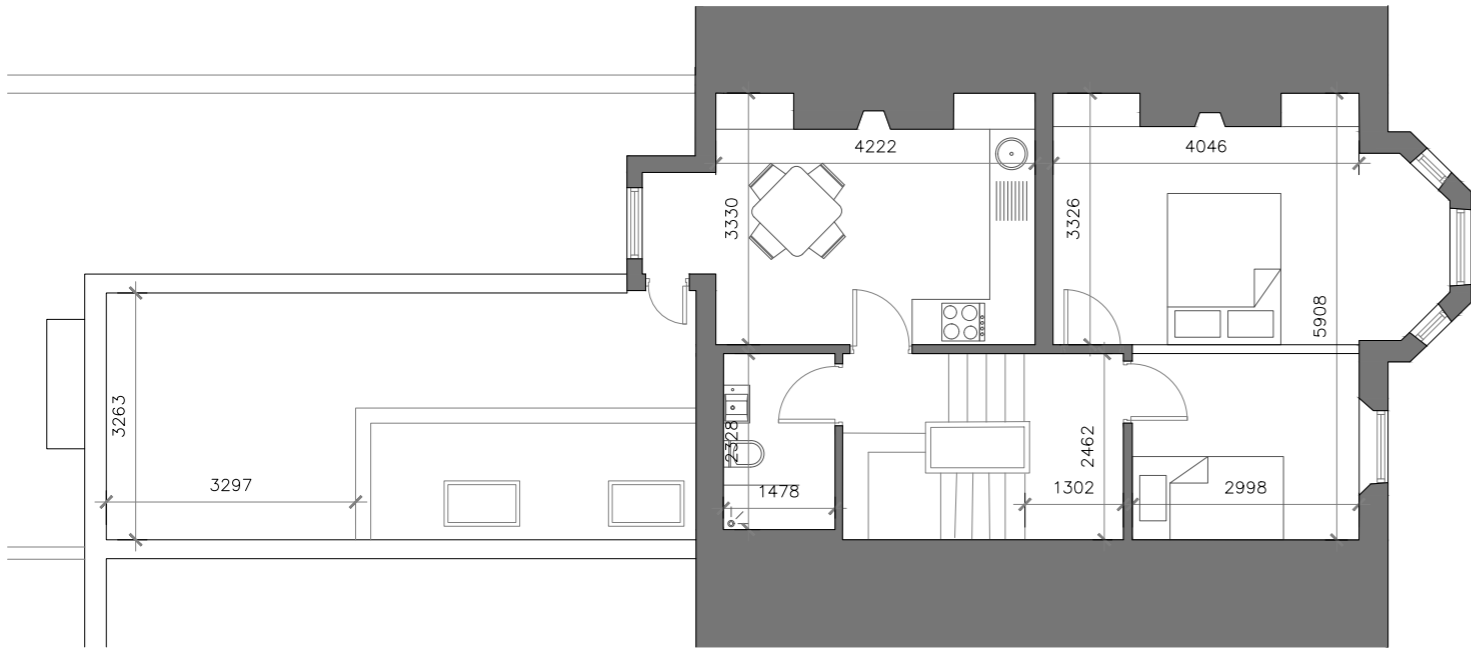
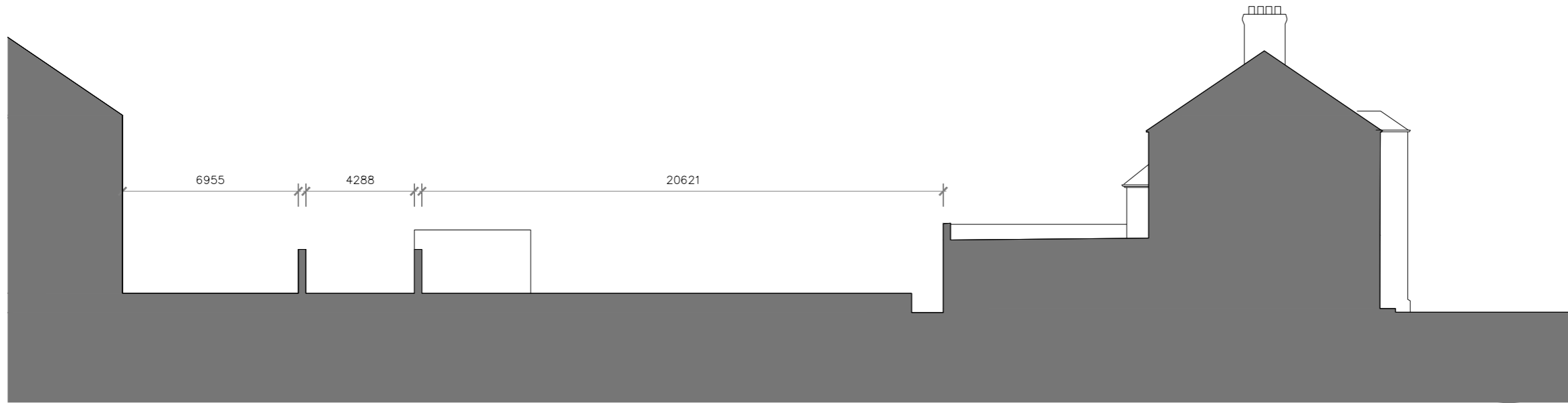


Fig. 31 - Existing floor plans

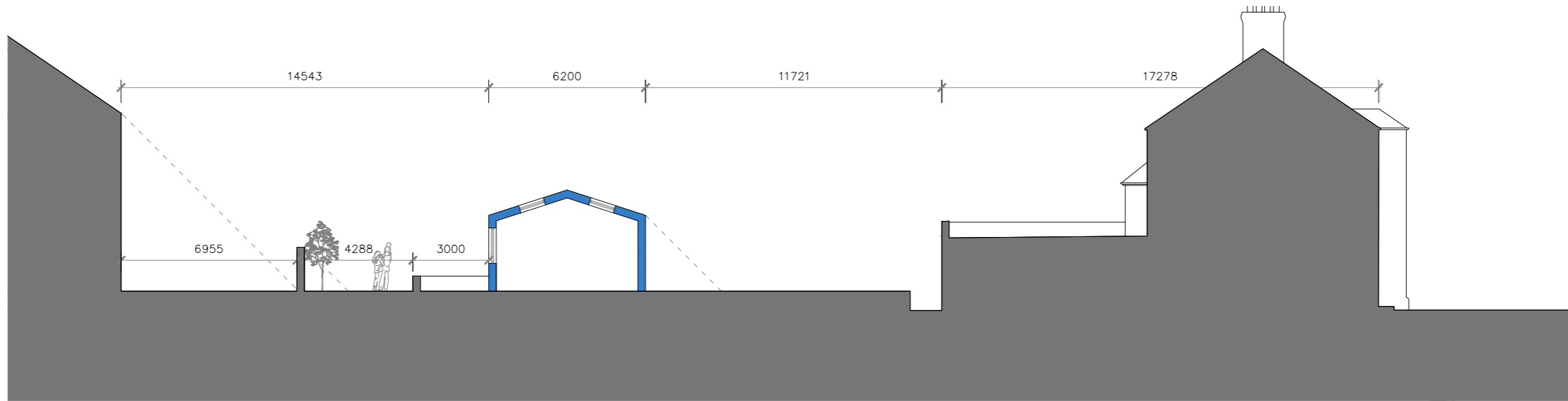


Proposed Ground Floor Plan 1.100

Fig. 32 - Proposed floor plans



Existing Site Section 1.1000



Proposed Site Section 1.1000

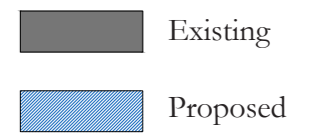
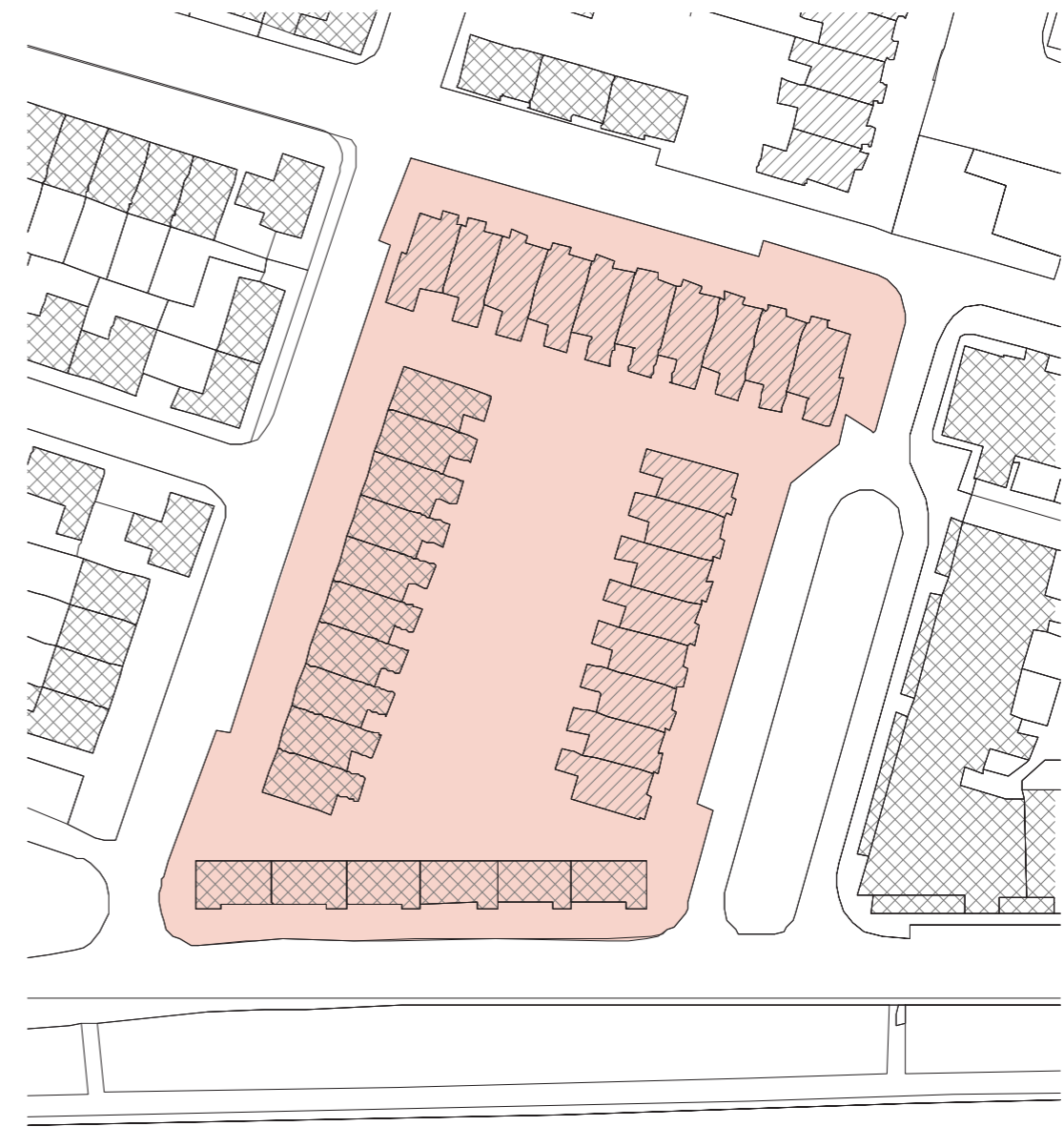


Fig. 33 - Existing & proposed sections

5. Ashtown

These houses were built in 2018. This housing typology consists of large houses that are three storeys high. This house consists of a kitchen, living room, family room, bathrooms, four bedrooms and ample attic storage. The subdivision of this house could create a one unit ground floor and a two bed unit on the first floor. The site area of the selected houses in the Ashtown area is 0.70 hectares. The current units per hectare are 48 uph. The proposals I have outlined could accommodate up to 74 uph.

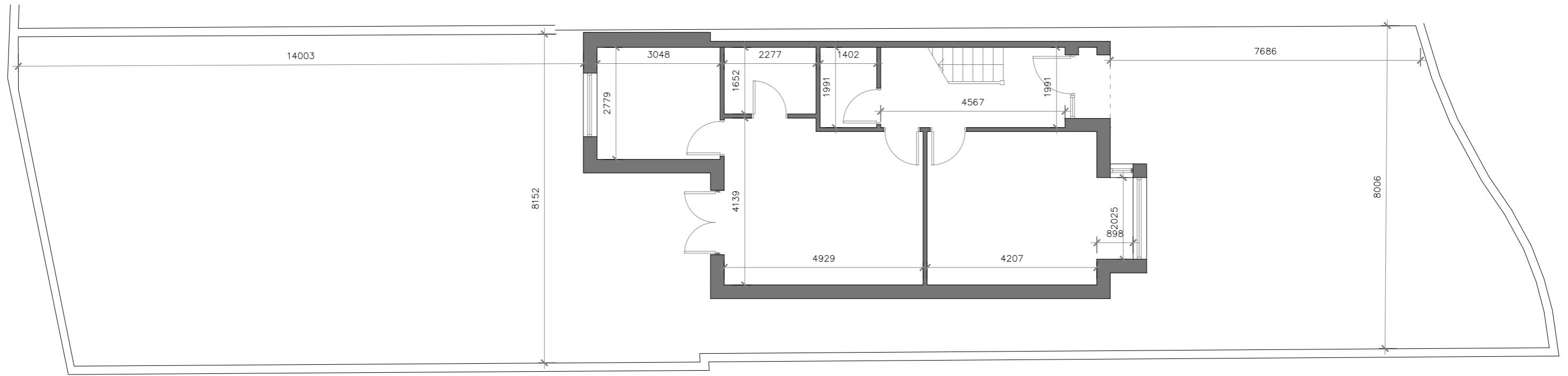
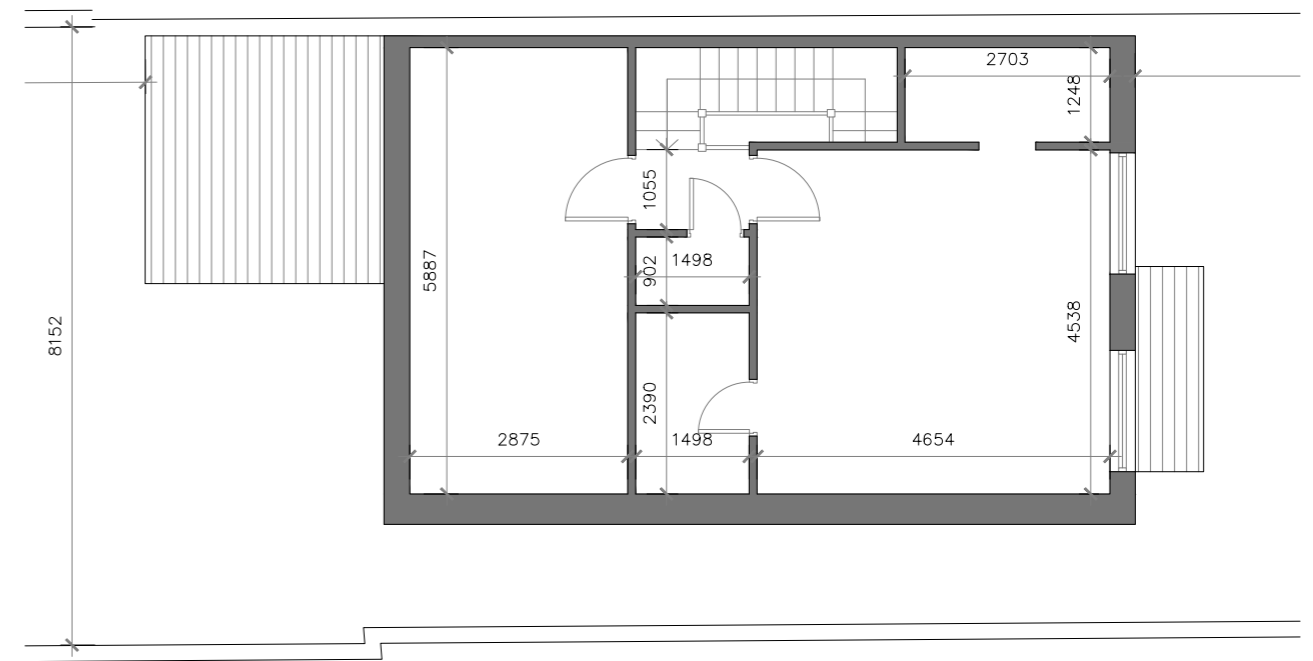
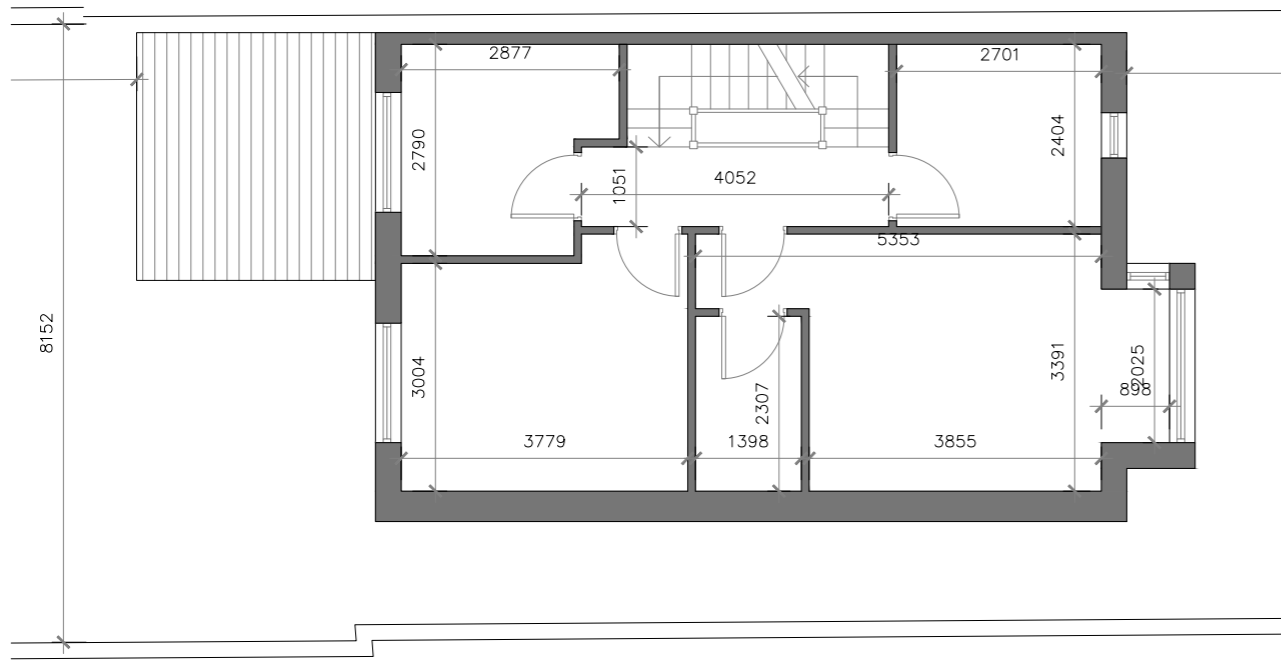


Existing Site Plan 1:1000

- Housing type of study
- Various housing types
- Proposed development
- Site boundary
- Site area = 0.70 Ha

5.Ashtown											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	58m ²	58m ²	124m ²	3m ²	35m ²	11.7m ²			18	36
Duplex on First Floor	2 Bed (3 persons)	56m ²	110m ²	7.5m ²		32m ²	13m ²	8m ²		18	54
Upper Floor of Duplex	2 Bed (3 persons)	54m ²	110m ²		16.9m ²						

(Left) Fig. 34 - Ashtown
 (Right) Fig. 35 - Ashtown siteplan
 (Below) Fig. 36 - Table of areas



- Existing
- Proposed

Fig. 37 - Existing floor plans

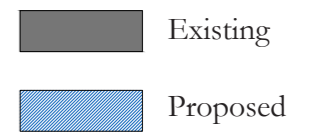
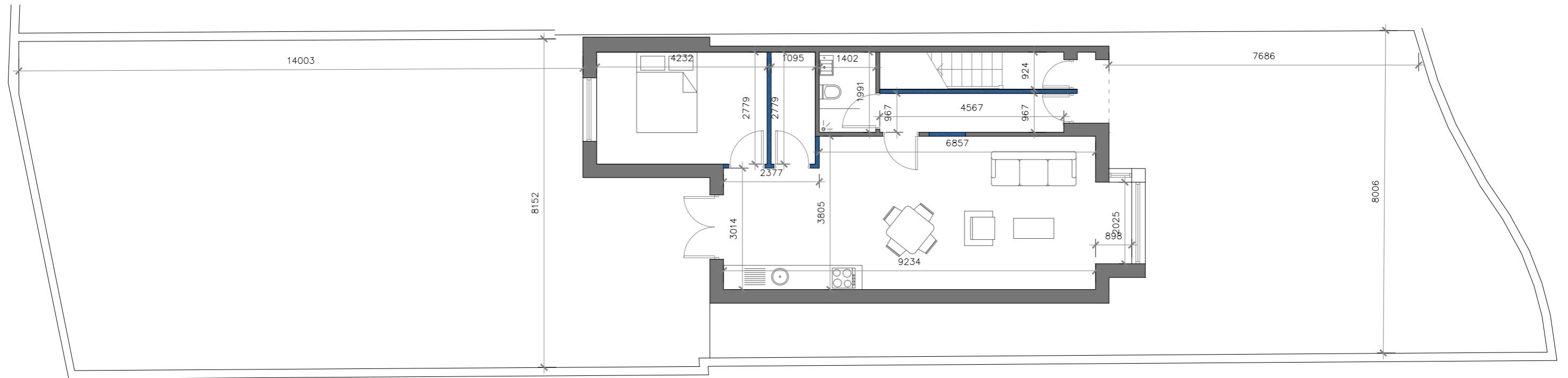
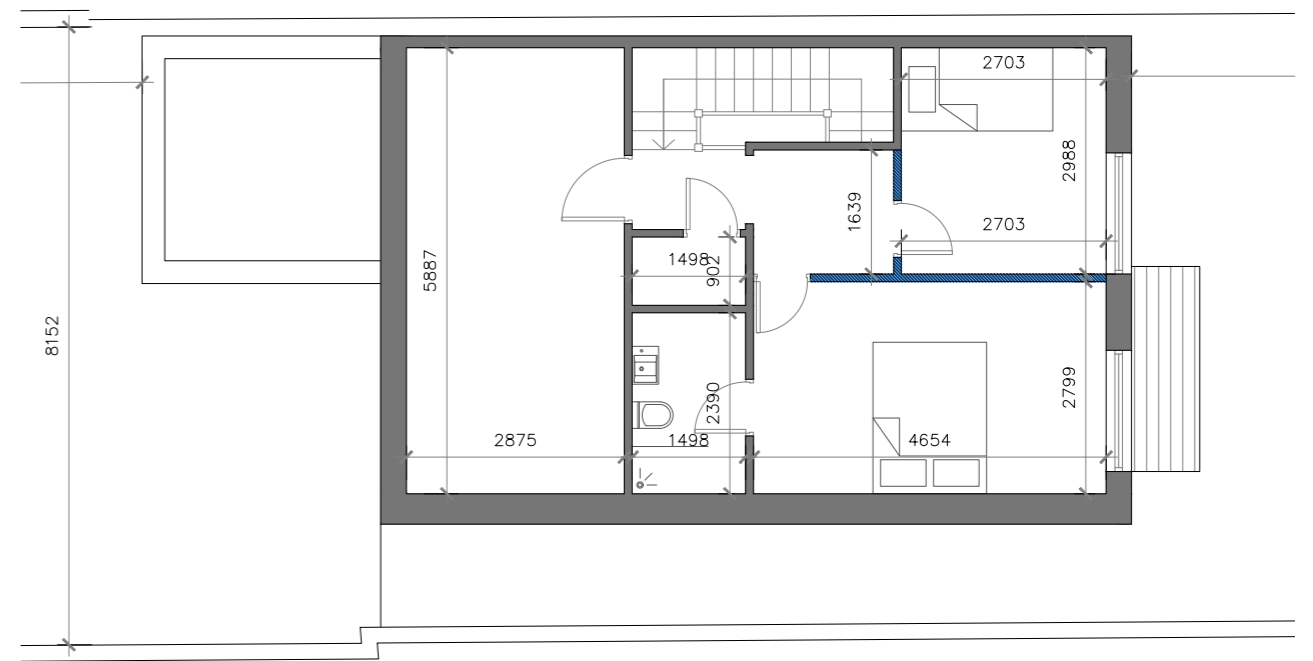
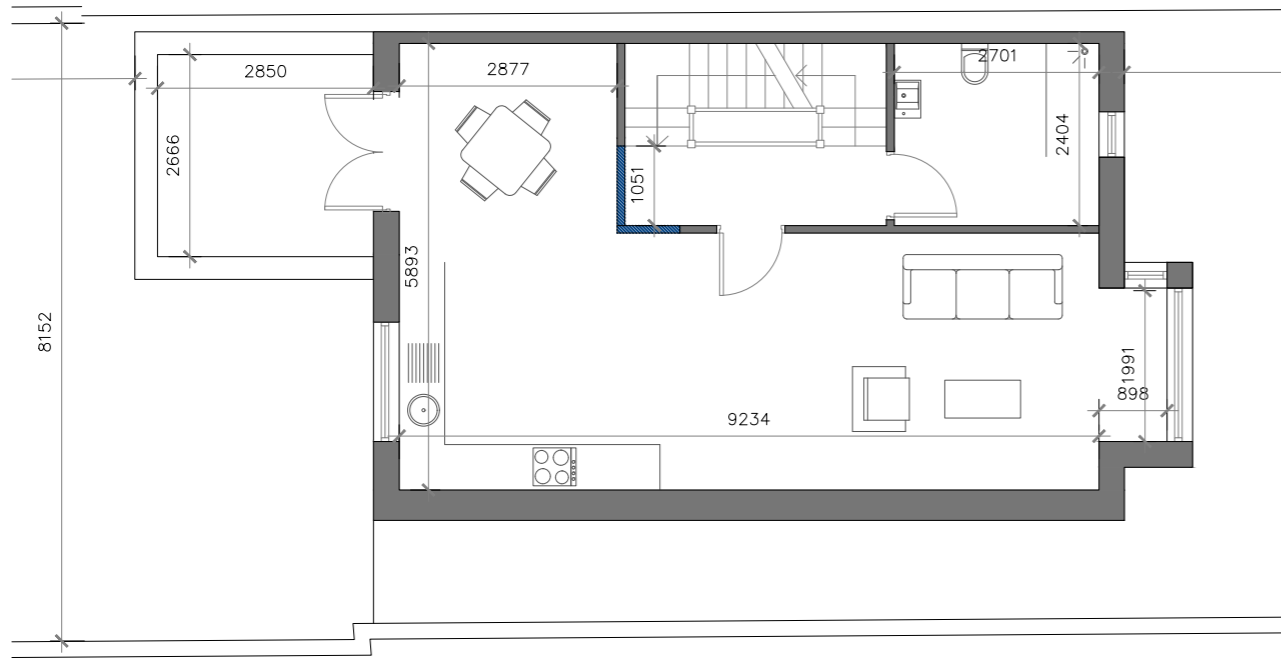
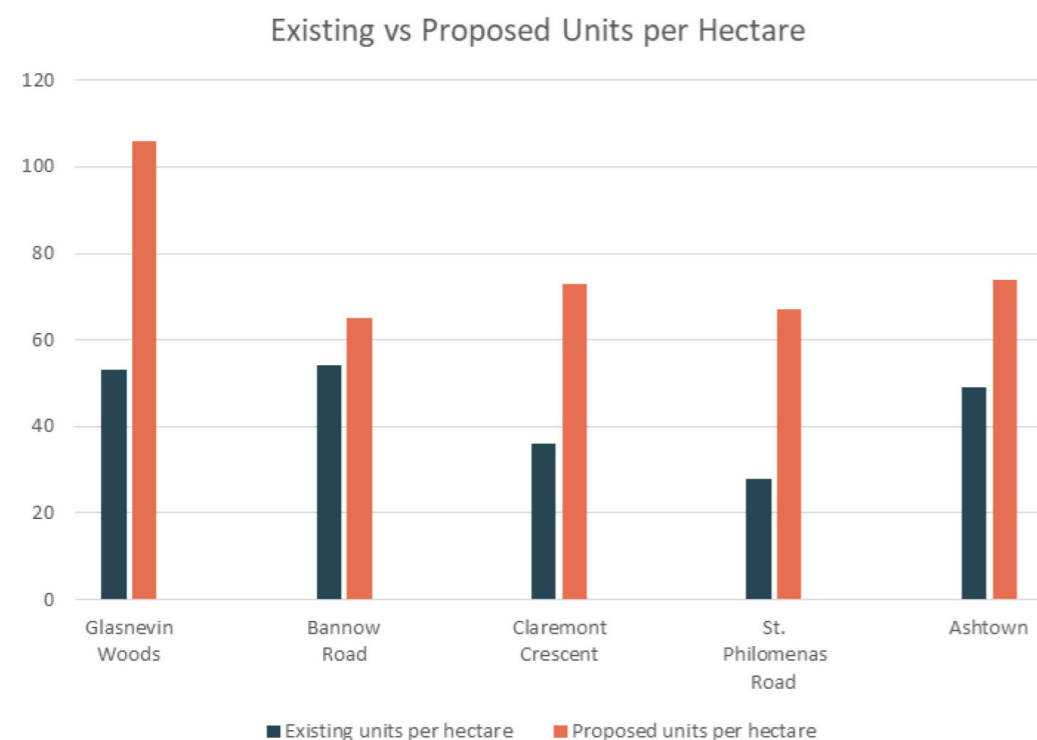


Fig. 38 - Proposed floor plans

(Fig. 39 & 40) below shows that each of these case studies has scope for densification, while meeting approved densities of 60-120uph as outlined by DCC (2022).

	Site Area	Existing uph	Proposed uph	Percentage increase
1. Glasnevin Woods	0.53 Ha	53	106	100%
2. Bannow Road	1.99 Ha	54	65	20%
3. Claremont Crescent	0.88 Ha	36	73	128%
4. St. Philomenas Road	0.78 Ha	28	67	139%
5. Ashtown	0.70 Ha	49	74	51%



Tolka Valley has a diverse demographic that has changed in the past few decades and will continue to change. Many of the houses in the area were built to very different demographic needs of larger family sizes. There is a particular absence of adequate one bed units available. There is capacity for a number of these large houses to be subdivided to create two different units within the existing building footprint. These are small-scale fabric interventions which could make the existing housing suitable for current and future generations. These interventions could significantly densify Dublin’s inner suburbs and create more diverse communities. I recognize that it is important to keep some of the existing stock in their current

configuration as it provides for a mixed and varied community.

‘The Government’s vision for the housing system over the longer term is to achieve a steady supply of housing in the right locations with economic, social and environmental sustainability built into the system.’ (Department of Housing, Local Government and Heritage, 2021). Tolka Valley is in a prime location for development with great links into the city and the development of the existing housing stock could help achieve this vision. Dublin City’s Development Plan 2022-2028 has outlined that by 2028 the city will need to provide approximately 40,000 extra units to accommodate the population growth. The city currently has enough zoned land to house 50,000 units (Dublin City Council, 2022, p. 3). The interventions proposed would achieve the recommended densities outlined by DCC and could reduce the land requirement and the ever-growing problem of urban sprawl.

This scheme is not necessarily site-specific and could be replicated elsewhere in Tolka Valley and Dublin. The impact of the introduction of these dense neighbourhoods on a community must be noted. Important community services must be introduced prior to this population increase to truly allow the community to thrive.

(Top) Fig. 39 - Existing and proposed units per hectare
(Botto) Fig. 40 - Existing vs. proposed units per hectare graph

Site

The thesis required me to locate a suitable site in the Tolka Valley area that could be utilised to accommodate services for the increase in population. I examined the existing services in Tolka Valley and where there was an amalgamation of services, I tested the 15-minute city circle on the map to identify areas of overlap and to highlight areas that may require more amenities.

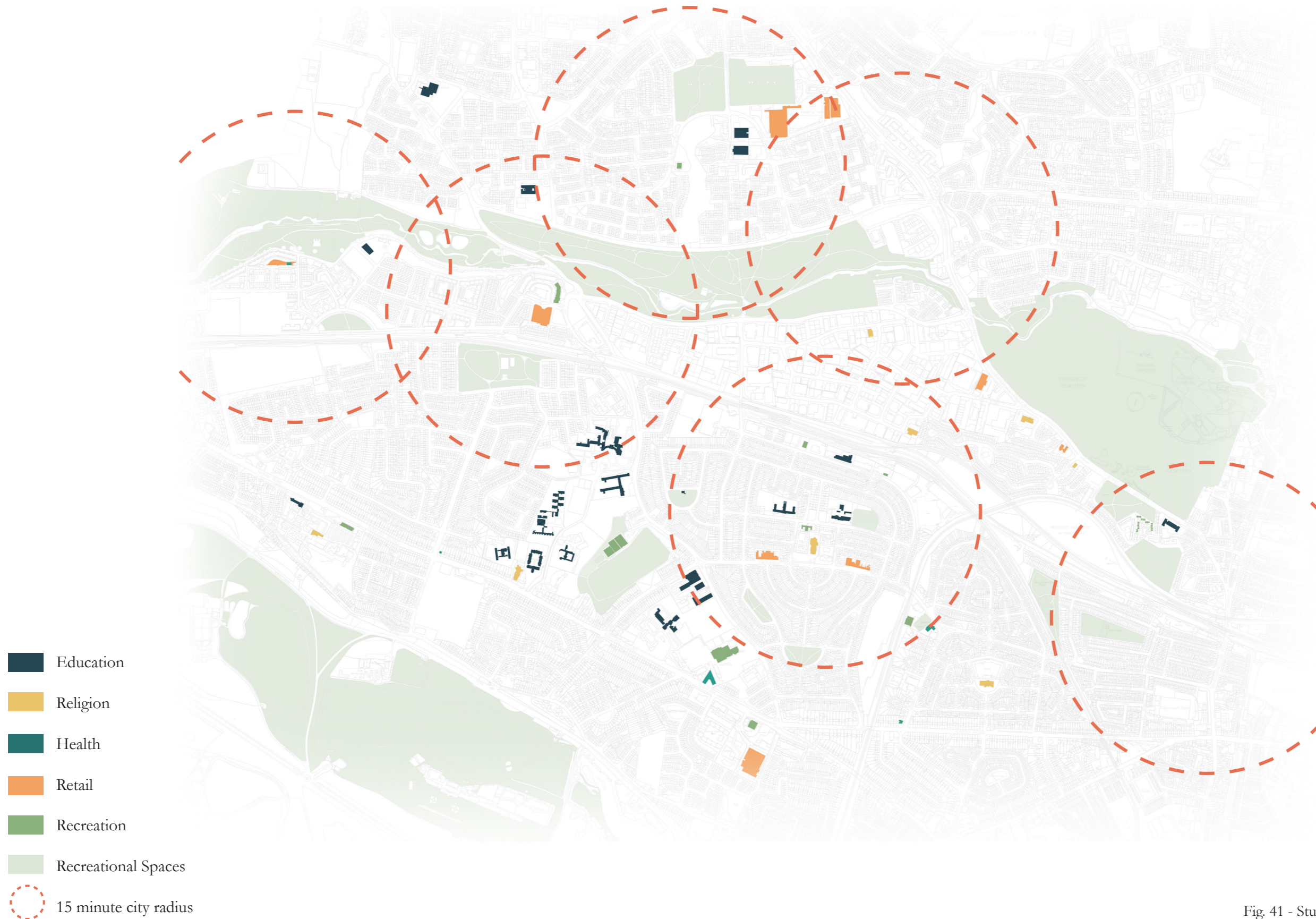


Fig. 41 - Study of services in Tolka Valley

From this analysis, I have chosen a derelict site in North Cabra to test the thesis. This site was chosen as it would have originally been the heart of Cabra and is located adjacent to St. Finbarr's Boys Catholic School, Cabra Community College, The Church of the Most Precious Blood, Sancta Maria Day Care Centre and a 2 minute walk from Cabra's main retail street. The area is predominantly residential and has capacity to supply 68 new houses, as outlined in semester one, to the rear of existing houses. There are also two large residential planning proposals to the North at Broombridge which would cater to 944 new residents and to the South, Hamilton Gardens which is almost complete and will cater for 945 new residents. The current population within this 15 minute city radius is 8,700 and with these proposed developments there is a potential for a 25% population increase to 10,900. The area currently has a variety of services, but it has very few recreational services for residents in the area. As part of my research, I interviewed members of the community. They highlighted current problems in the area such as anti-social behaviour and the lack of a community-based facility where people could gather and meet socially.

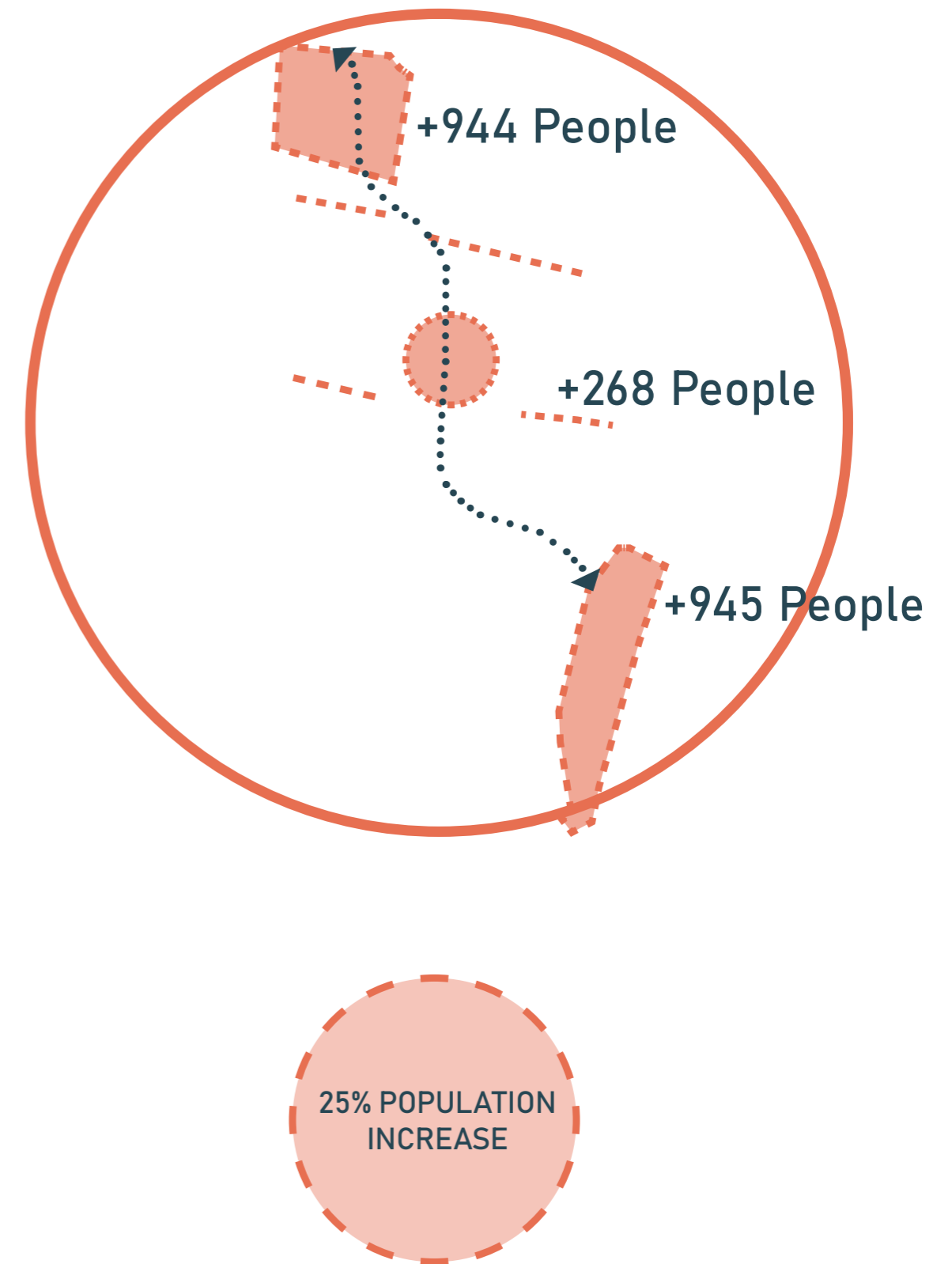


Fig. 42 - Concept diagram of population increase



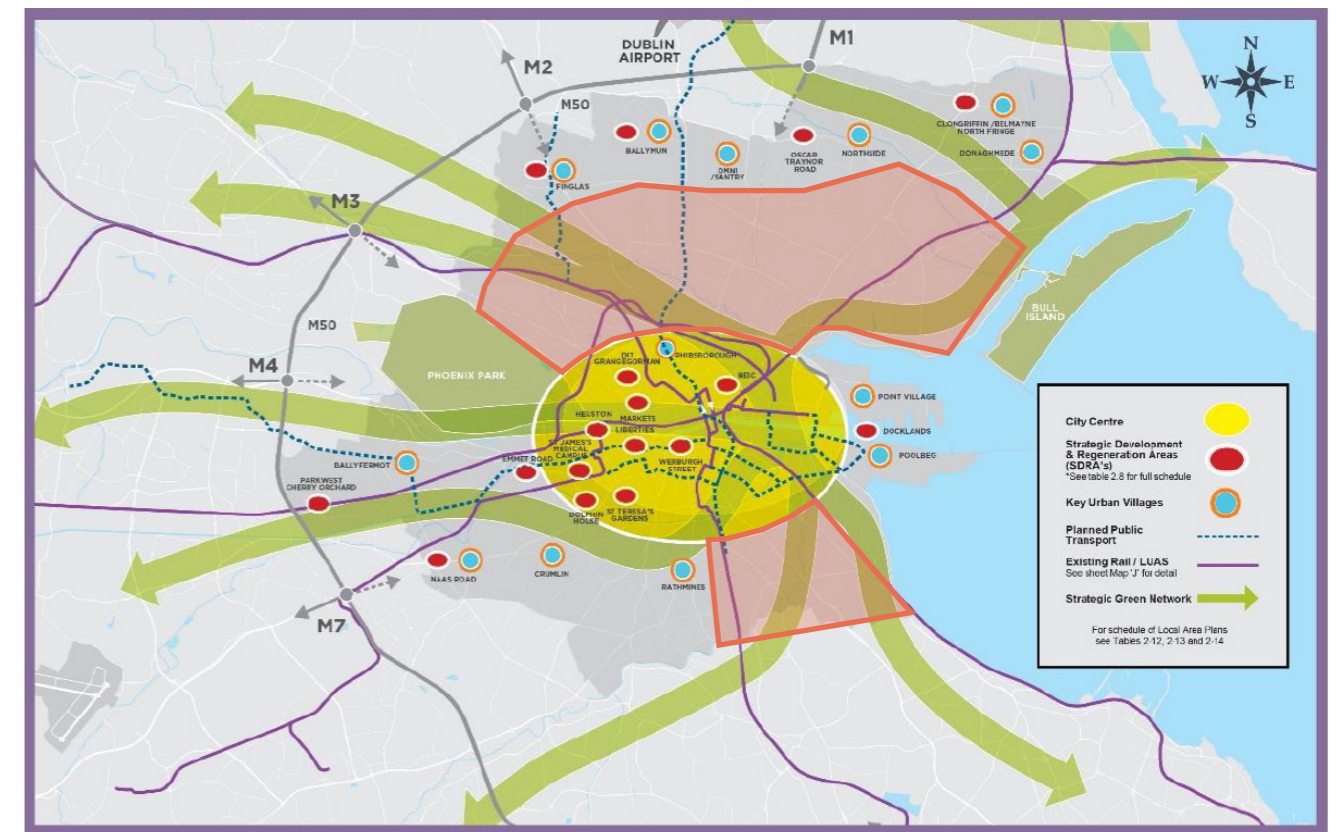
- | | |
|--|--------------------------------------|
| 1. Broombridge Train/ Luas Stop | 5. Cabra Community College |
| 2. Broombridge Educate Together School | 6. Santa Maria Day Care Centre |
| 3. Cabra Credit Union | 7. Church of the Most Precious Blood |
| 4. St. Finbarr's Boys National School | 8. Retail units |

 Proposed Development

(Left) Fig. 43 - Existing site location
(Right) Fig. 44 - Proposed site location

During my research, I noted that there are not enough key urban villages identified in the Development plan to allow for the integration of communities. There is a clear gap forming between inner city centre and the suburbs. While the plan states that it ‘supports the sustainable consolidation of the city and aligns with the principles of the 15 minute city;’ I feel that this 15 minute city idea is not promoted adequately and the numbers of key urban villages is limited.

My studies have been focused in Cabra and I have noted that there is currently a shortage of services in the area for the existing population. Cabra is a longstanding community in Dublin but has been overlooked for many years. There is no real feel of a village centre in the area and one should be re-established to unify the community and to be able to cater for the expected population growth. This village centre will be heavily linked to the Luas/Train stop at Broombridge, the proposed Broombridge apartment development and the newly developed Hamilton Gardens. I proposed the brownfield site at St. Finbarr’s Road and Kilkieran Road be rezoned as a key urban village to allow for community/education infrastructure. This would make for a more efficient use of space and consolidate what could be a beautiful town centre and promote a vibrant community.



Areas lacking in dedicated key urban villages

Fig. 45 - Dublin City Council core strategy map

Objectives

This population increase will create a variety of issues and put enormous pressure on current community facilities. The needs of this projected population must be anticipated and it is important that early infrastructure planning must be carried out before such population and density increases occur. The thesis objectives are to provide for the needs of this incoming population that will be more socially and culturally diverse and to create a density of services that will enhance this community.

PROVIDE FOR NEEDS



DENSITY

Fig. 46 - Thesis objectives - concept diagram

Site Strategy

The site currently feels very closed off at times with many areas gated off, even though some of Cabra's most prominent buildings are located here. Although the church area is pedestrianised, much of the time it is closed off and not accessible to the community.



(Top) Fig. 47 - Existing site (closed)
(Middle) Fig. 48 - Existing site (open)
(Bottom) Fig. 49 - Proposed site



(Left) Fig. 50 - Photo of Kilkieran Road, looking towards site
(Middle) Fig. 51 - Photo of site
(Right) Fig. 52 - Photo of Kilkieran Road, looking towards site



(Left) Fig. 53 - Photo of St. Finbarrs Road, looking towards site
(Middle) Fig. 54 - Photo of the Church of the Most Precious Blood
(Right) Fig. 55 - Photo of Church grounds, looking towards site



⌚ Fig. 56 - Existing site plan

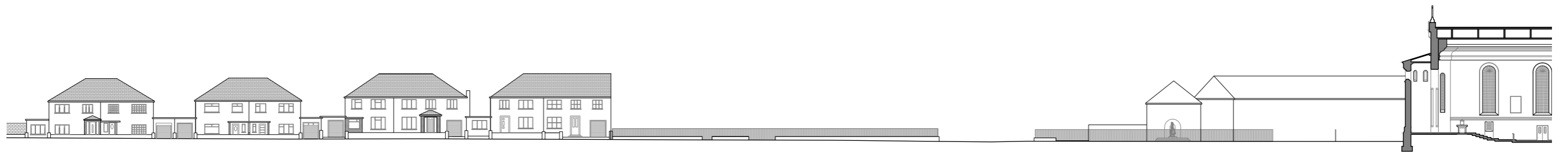
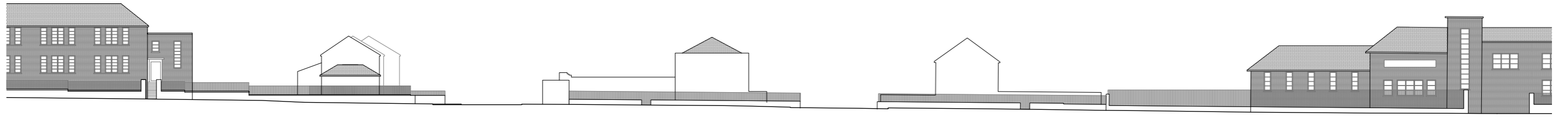


Fig. 57 - Existing site sections

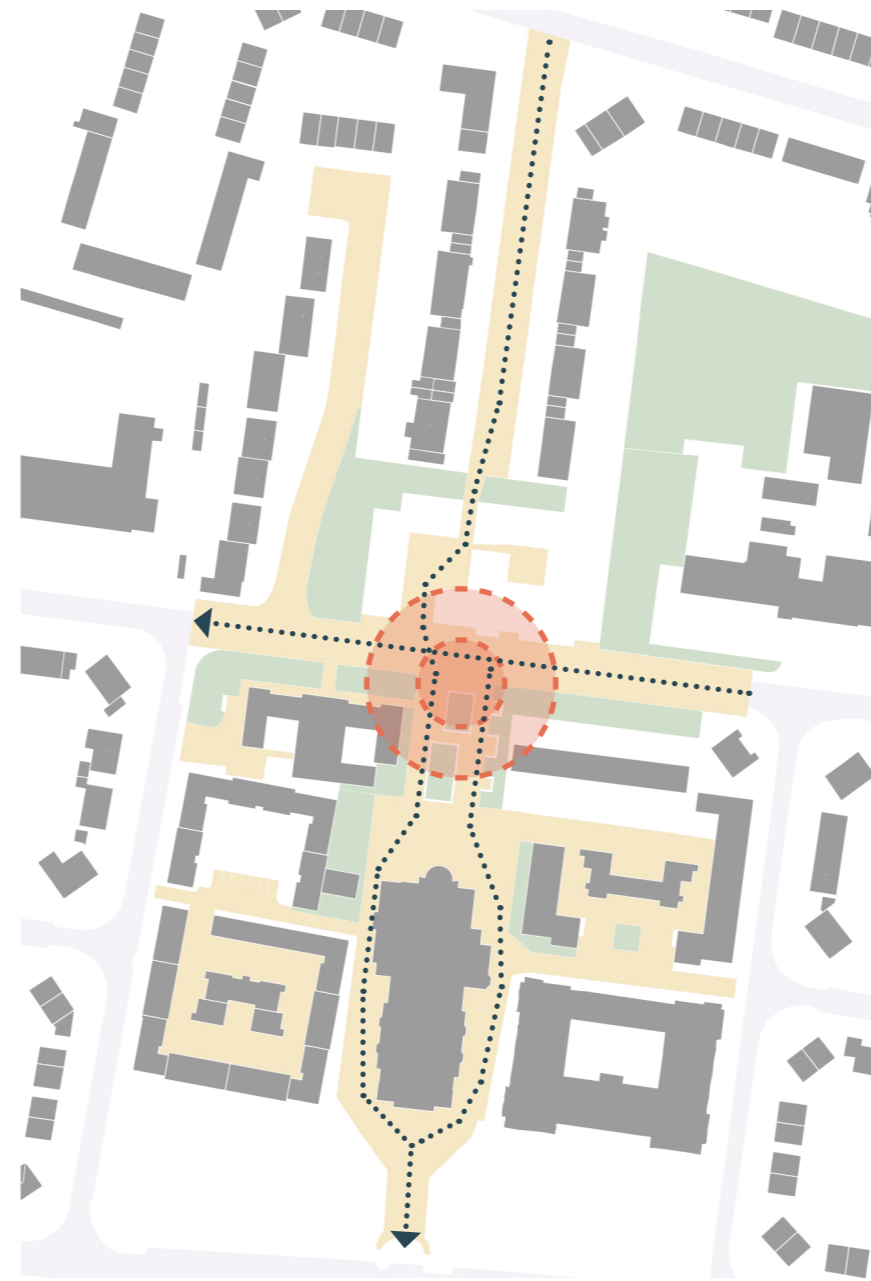
It is important to consolidate the existing town fabric and to re-establish the heart of Cabra by creating a focal point linking each of the existing buildings and further afield to the Broombridge Station. The proposal is to pedestrianize these streets and to prioritise the pedestrian and to help draw people to the area. This proposed building and its environs should establish a strong urban presence in the community.



EXISTING

The community lacks a structure focal point with priority given to the road user.

The church area which was once the heart of Cabra is gated and only accessible at certain times.



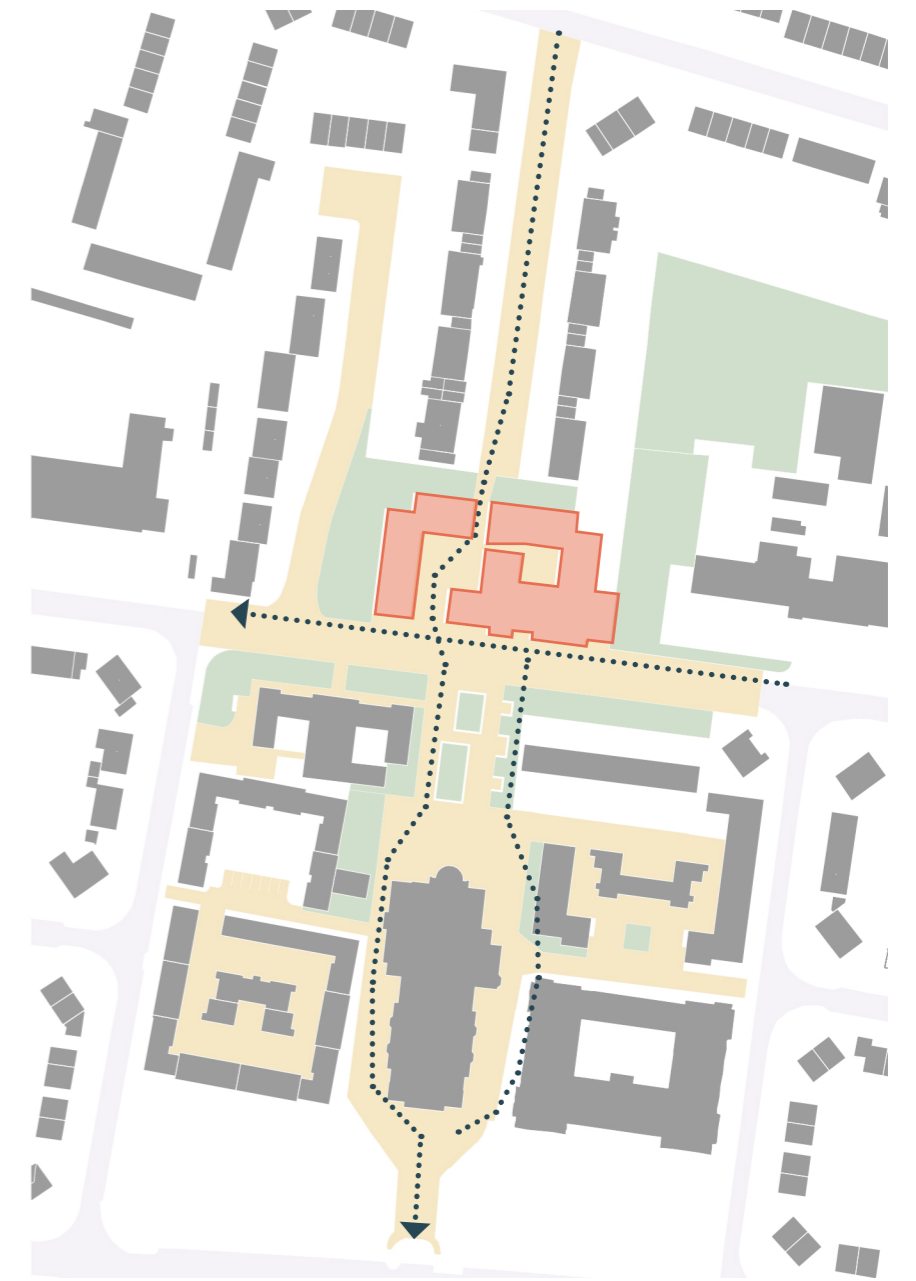
PROPOSED

Pedestrainised zones with local access for residents.

Gating is removed and a more open and cohevisive atmosphere is created.

Consolidates the existing town fabric and re-envisions the heart of Cabra.

Creates a focal point within the community.



PROPOSED

Creates a nodal point within the community

Building line steps back from existing houses to the rear to allow for daylighting.

Landscape buffer zone is created around the building.

Fig. 58 - Existing & proposed site strategy

Brief

Education is a vital part of life and should be incorporated into the daily life of all people. The proposal is to create a community based educational hub which would informally educate young people with afterschool services, study areas, library facilities and classes. Additionally informal and formal education will be offered in terms of day and evening classes for adults. This proposal will look at density in terms of density of use, needs, space, light, structure, rhythm and circulation.

To create a building that would consolidate the existing town fabric, there must be a dense multi-use facility which would provide for the needs of all members of the community from young to old. The services this building aims to provide are:

- Adult education - I.T, beauty, childcare and general classrooms
- Creche - 2-3 year old and 3-4 year old areas.
- Afterschool
- Staff areas
- Public Use - Library with childrens,teens and adult sections, café, event and flexi spaces
- Public Realm - Courtyards

These uses are accessible to all age groups with education at the core as a vital link across all generations.

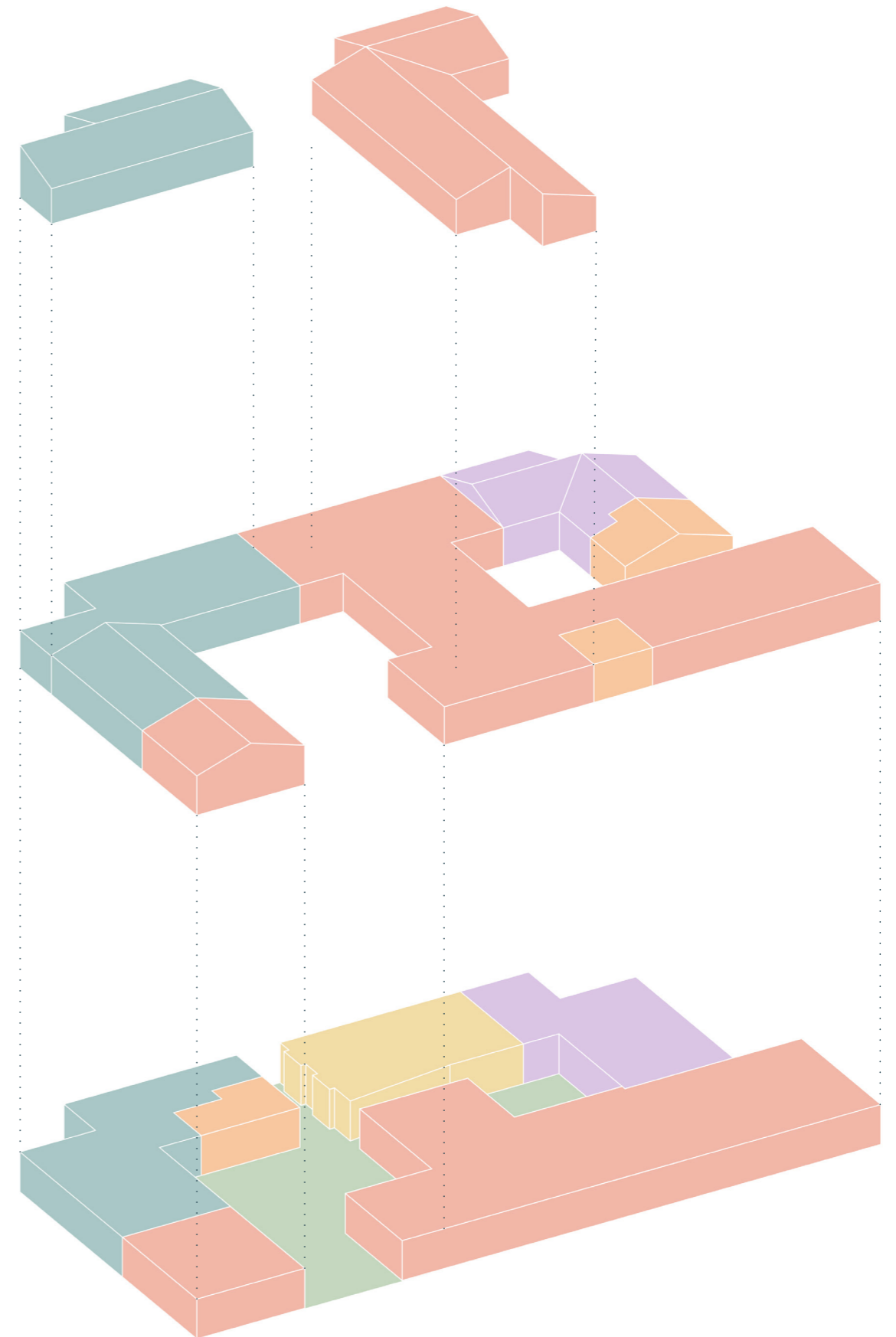


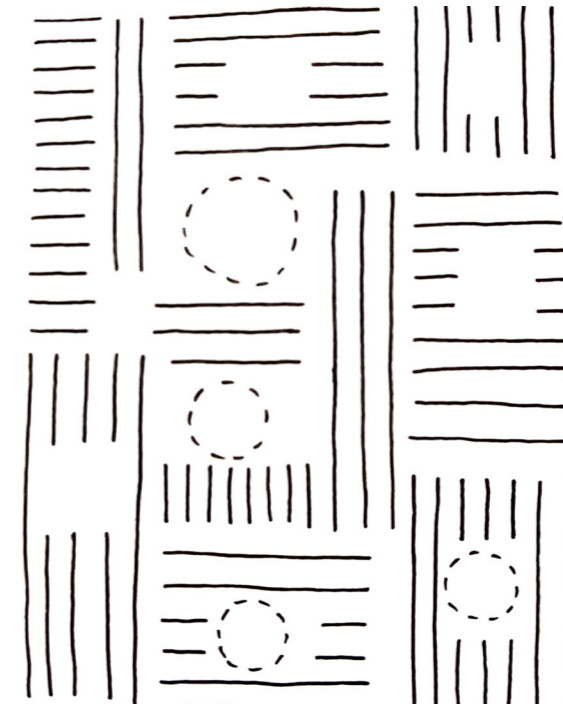
Fig. 59 - Concept axonometric of uses

Design Process

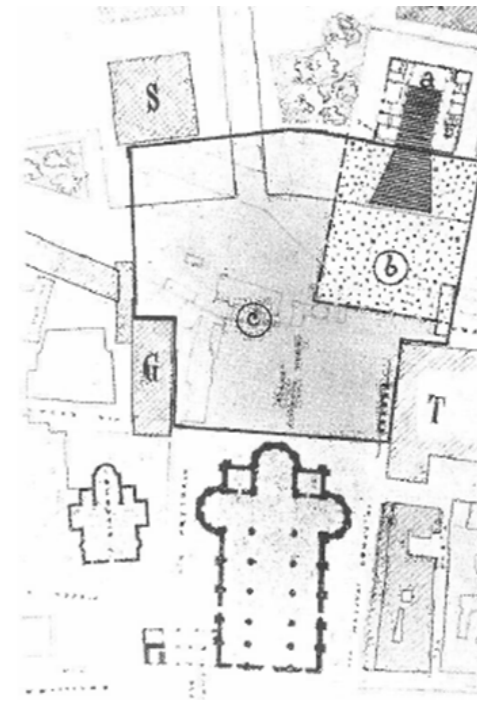
Precedence

The Sound Box Pavillion – Peter Zumthor

Zumthor designed this building to provide a place of refuge, a place to rest and a place to just be. The pavilion is designed with various routes and nodal points which allows users to make their own decision as to where they want to explore. This precedent helped develop an attitude as to how people move through space.



(Top) Fig. 60 - Concept Sketch of the Sound box plan
(Bottom) Fig. 61 - The Sound Box Pavillion



Casa Del Fascio - Giuseppe Terragni

Casa Del Fascio is a civic building which sits in front of the dominant Como Cathedral in Como, Italy. The buildings design had to consider the relationship of these two dominant buildings and large public squares were designed to create an openness and separation between the two.

This was an invaluable reference when looking at my proposed building and how a relationship would be formed with the existing buildings on site of the Church of The Most Precious Blood, St Finbarr's Boys Catholic School and Cabra Community College.



(Top) Fig. 62 - Site plan of Casa Del Fascio
(Bottom) Fig. 63 - Aerial view of Casa Del Fascio

Community Space Kangawa – Aki Hamada

This project epitomises how flexibility of design can really enhance a project and allow it to prosper in various ways. The project has reconfigurable internal partitions which allows the space to be adapted for different needs. It provides an invaluable space for the community where people can gather and creates an active involvement within the community.



Fig. 64 - Kangawa Community Centre

Form

Building form was the first initial design challenge. The form of the building had to compete with the Church's dominant nature and the two schools either side of the site. This meant the buildings form had to have its own unique presence in the community.

As there are existing houses to the rear of the site, it was important that these were not affected by the proposal and would still receive sufficient daylight throughout the course of the day. Various physical models were created to test these forms while computer models were made to test the daylighting affects these forms would have.

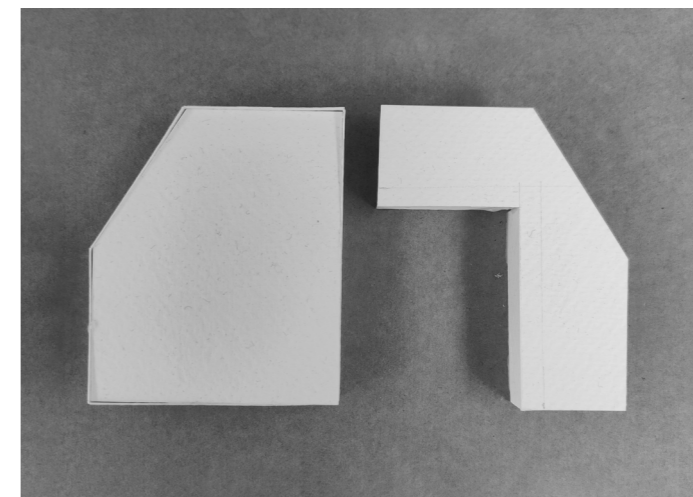
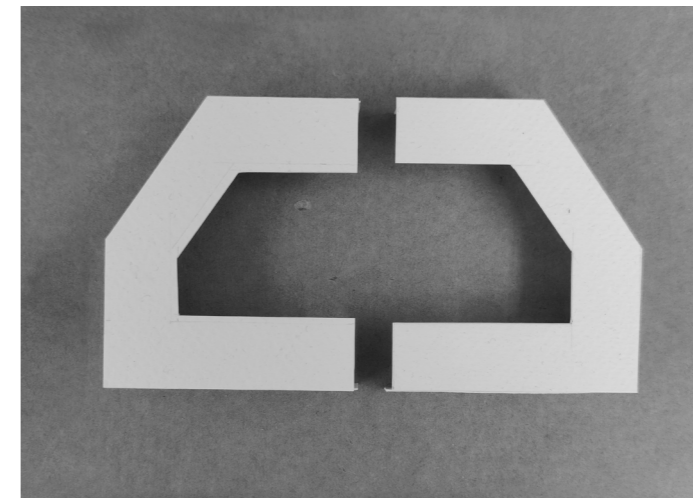
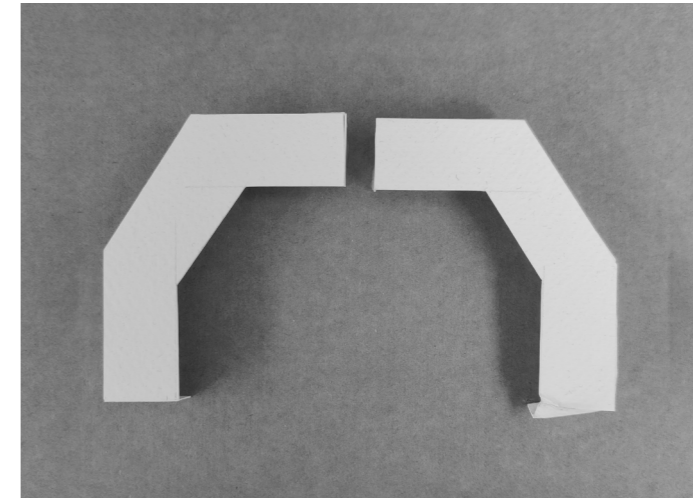


Fig. 65 - Sketch models

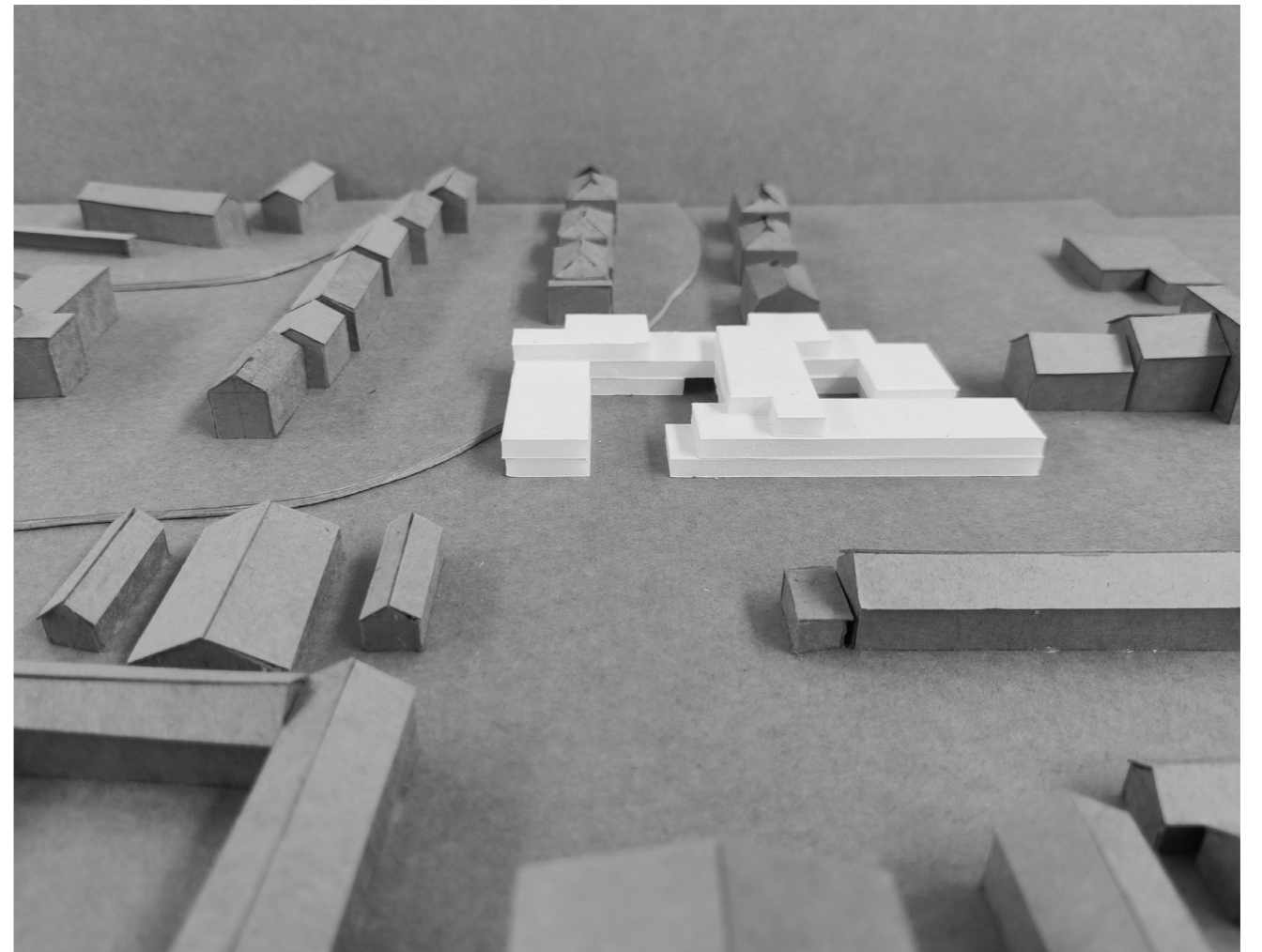
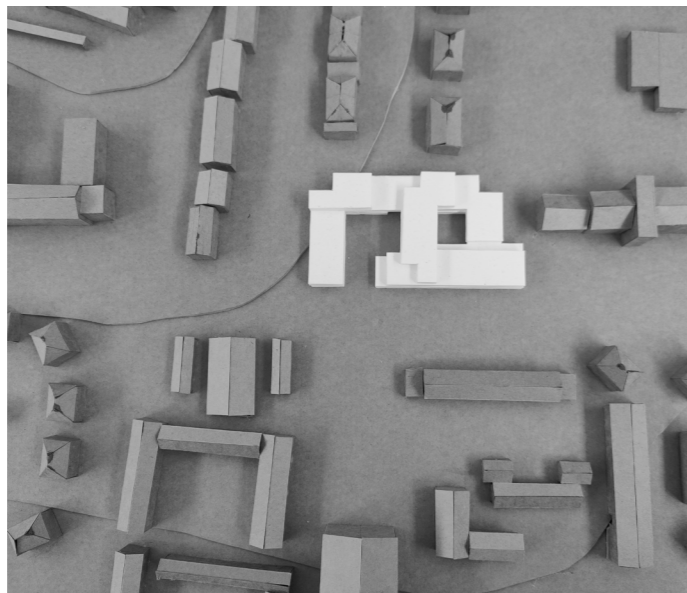
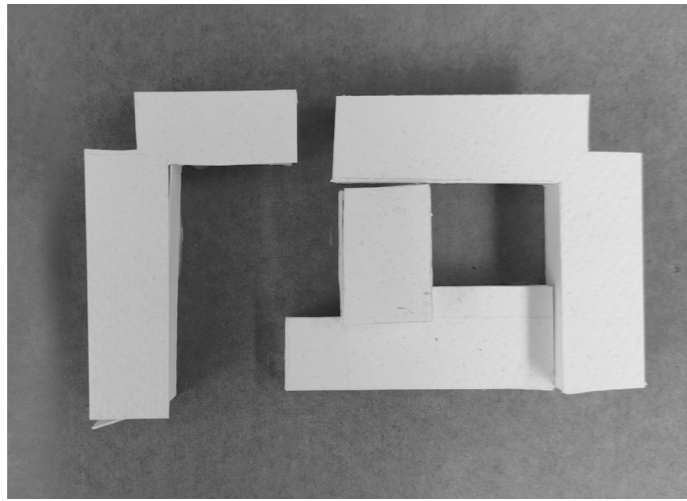
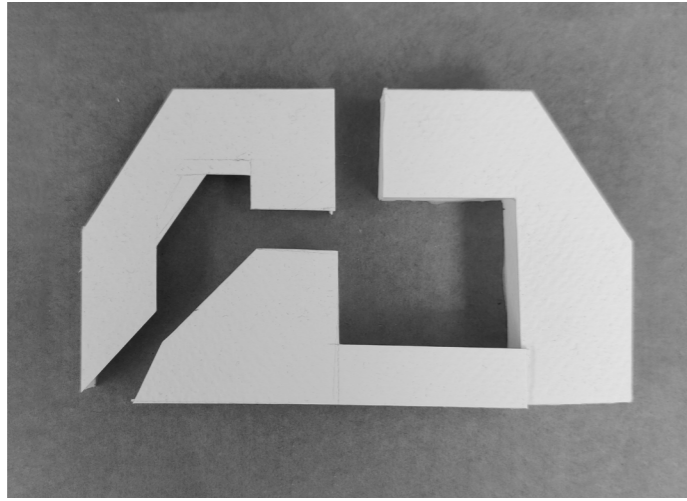


Fig. 66 - Sketch models

Density of Use

To allow the building to be used by all members of the community, density of use was a key aspect of the design to be explored through diagrams, sketching and model making. To ensure the building functions efficiently, I examined the overlapping of functions and how they occur throughout the day. This allowed for density of use over a 24-hour period and demonstrates that various activities can happen in one space at different times throughout the day.

Afterschool space example:

8am – Breakfast club

10am – Parent and toddler meeting group

3pm – Afterschool

7pm – Youth club and scouts club

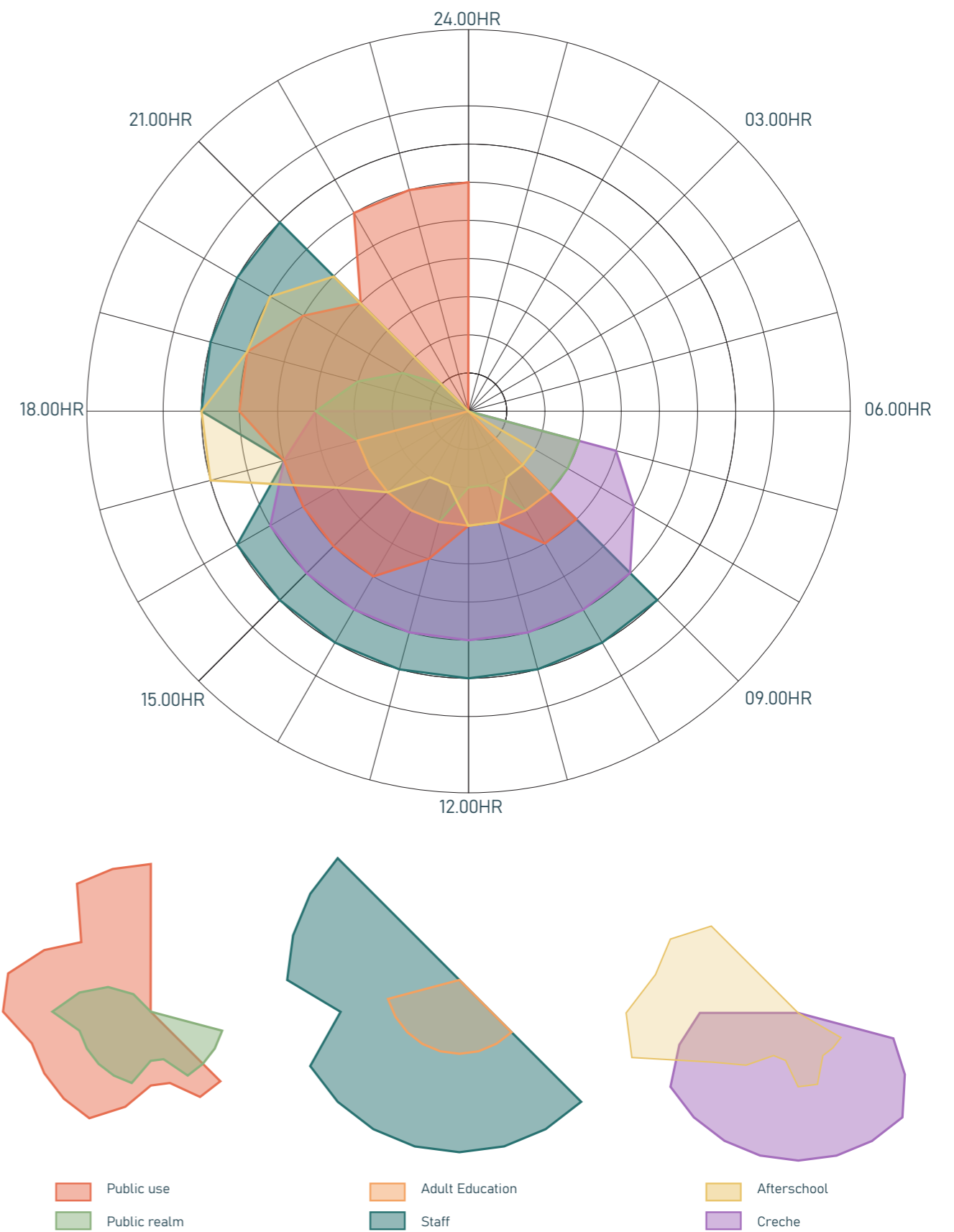


Fig. 67 - Building use concept diagram

Internally, many of the rooms have been designed to have folding screens/ partitions that can divide the room into three various spaces when closed or into one large space when open. This variance in room size will allow for different activities to occur at different times of day. It allows members of the community to decide how the space will be formed.

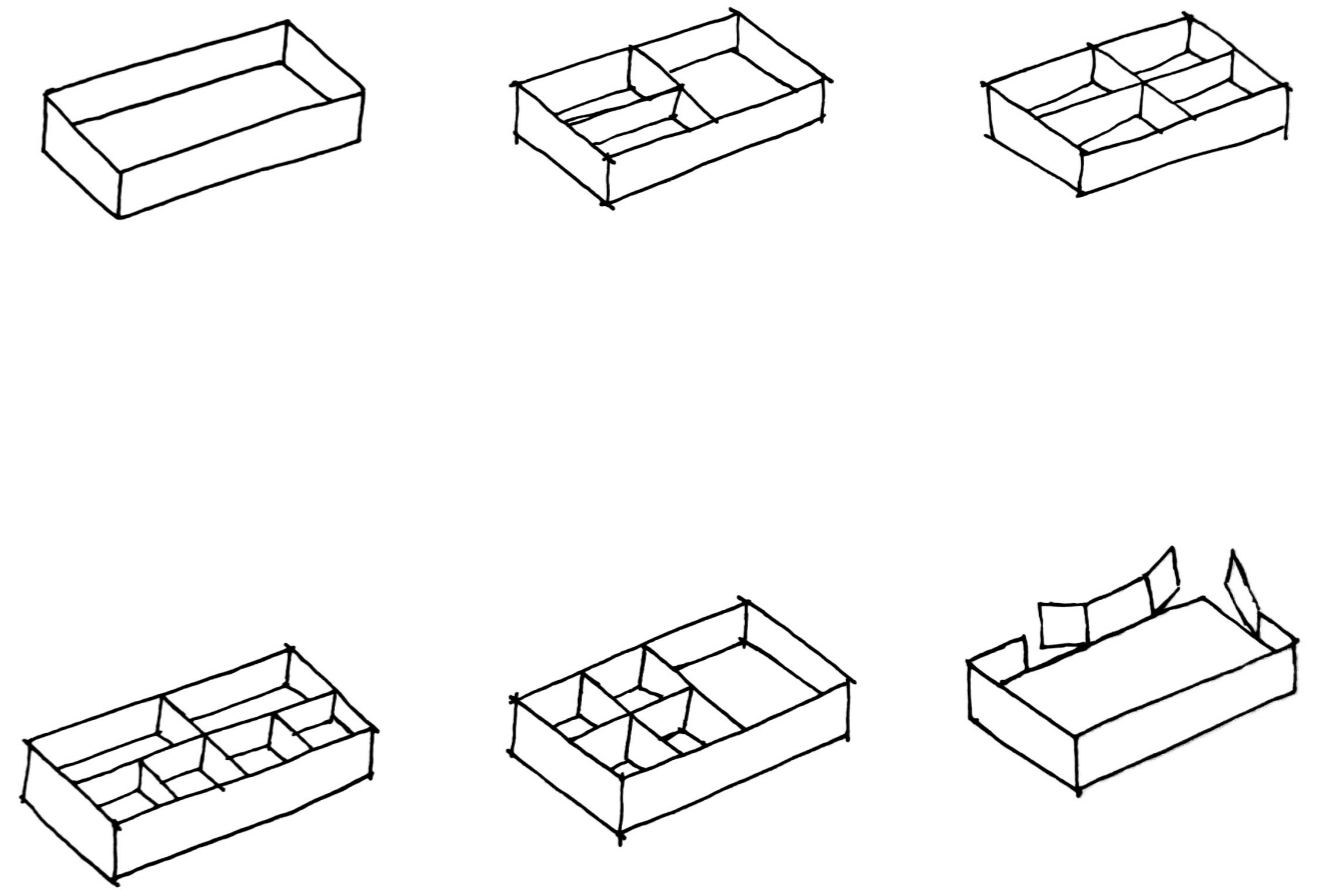
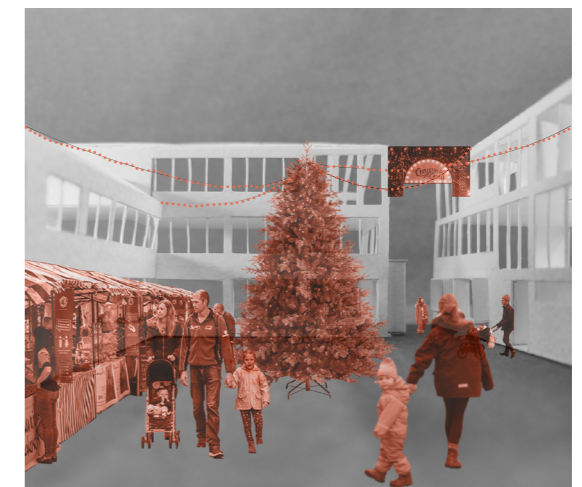
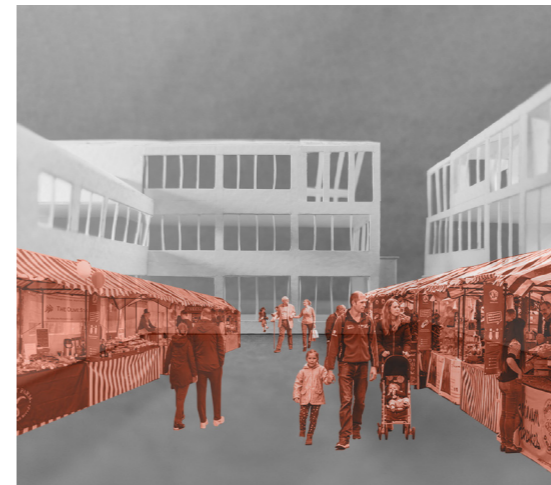


Fig. 68 - Sketch of various uses of space with moveable partitions

This flexibility concept was explored through the different uses of the main courtyard space throughout the day/week and this was tested through collages of activities in the courtyard. The openness of the courtyard allows for a variety of activities to occur in the space and for all members of the community to use it in different ways.



(Top left) Fig. 69 - Courtyard in everyday use
(Middle left) Fig. 70 - Market space
(Bottom left) Fig. 71 - Courtyard used for boules
(Top right) Fig. 72 - Event space
(Middle right) Fig. 73 - Courtyard used as an outdoor fitness class
(Bottom right) Fig. 74 - Christmas market space



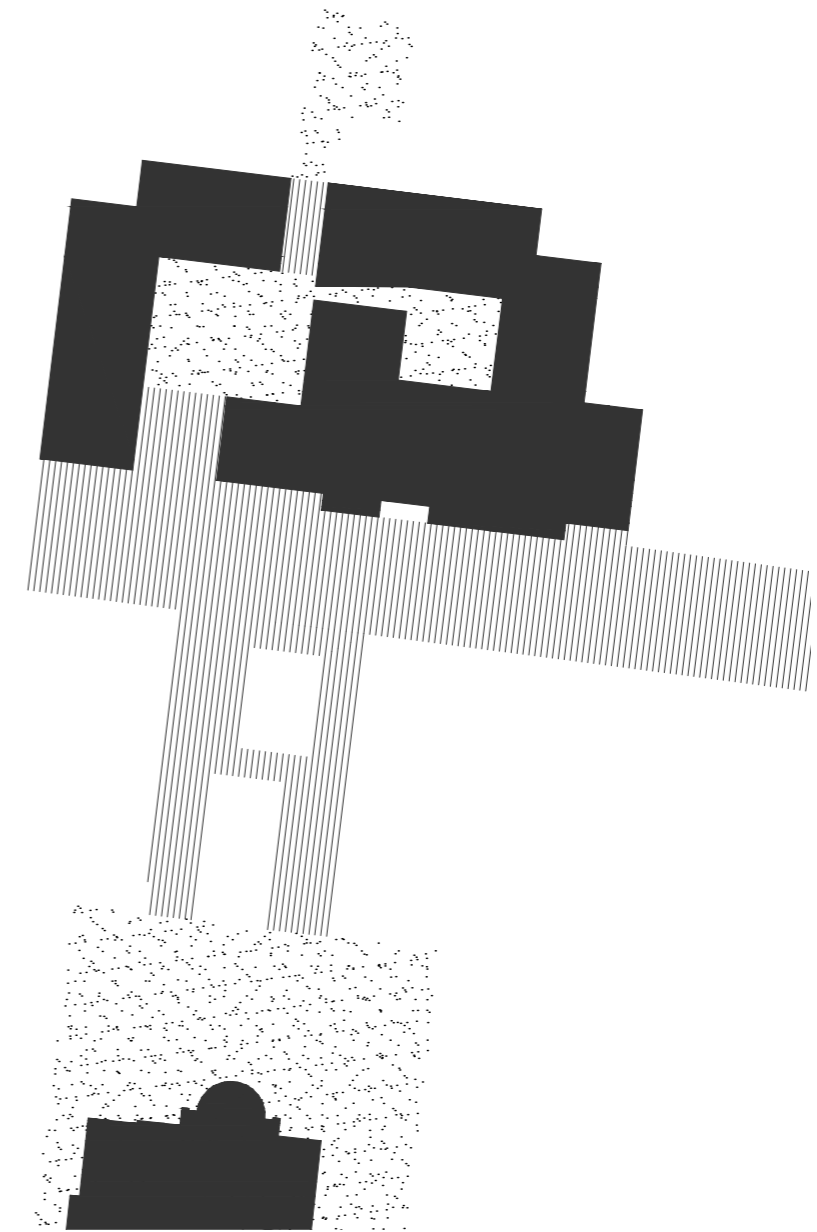
Circulation Routes

As the building is to become a focal point of Cabra, the access routes were an essential element in creating this design. The primary access route links the axis of the Church with the proposed building and extends to the Broombridge Station. The secondary accessible route links the schools adjacent to the proposal.



(Top) Fig. 75 - Collage idea of reimagined Killkieran Road
(Bottom) Fig. 76 - Collage idea of reimagined St. Finbarr's Road

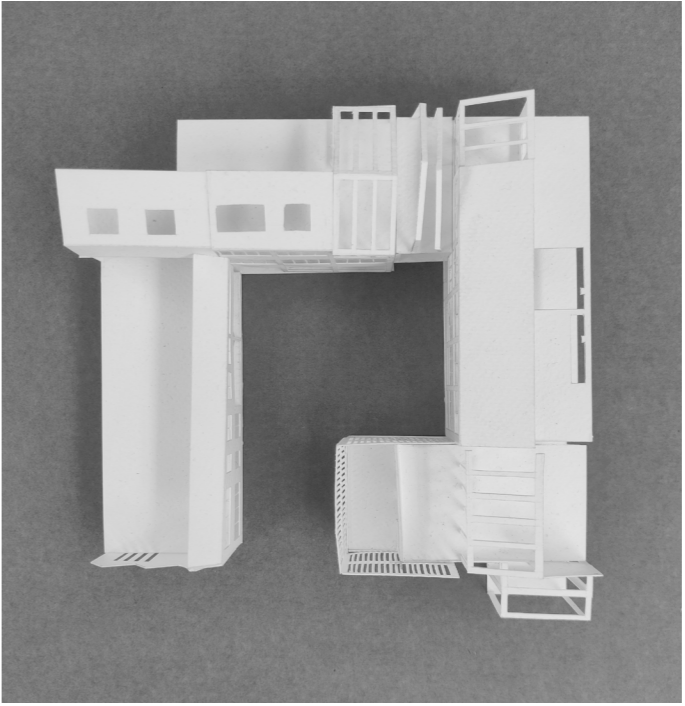
While designing these access routes, programmed and unprogrammed space became a theme, drawing on some of Peter Zumthor's ideas in the Sound Box pavilion. Programmed space being areas where seating, colonnades, areas of shelter and planting areas are and unprogrammed space being areas which are left open to allow activities to occur in these spaces. The programmed spaces are augmented with sheltered and unsheltered walkways which gives users a choice of route.



||||| Programmed

..... Unprogrammed

Fig. 77 - Diagram of programmed vs. unprogrammed space



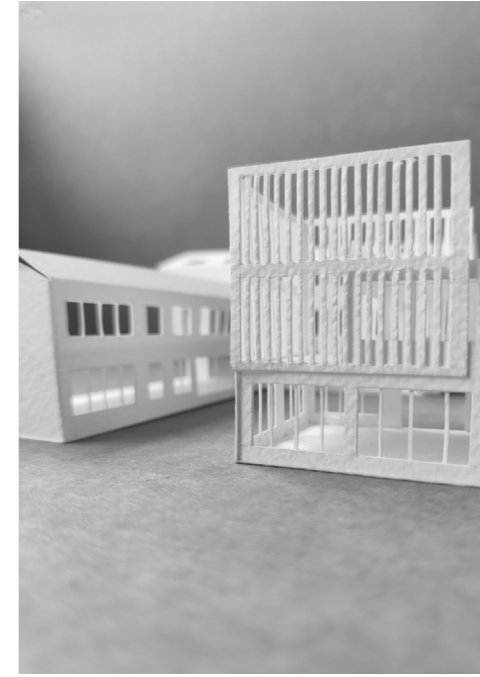
Courtyards

The scheme is reliant on courtyards to provide open space for various activities to occur and to provide natural light to the building. The sizing of the courtyard was highly important. It was essential that the courtyard was not too big or too small and that people would feel comfortable in the space. I looked to Christopher Alexanders (1977) theories on courtyards to create an open space that could provide for a comfortable density of people in the area.



(Top) Fig. 78 - Model of courtyard
(Bottom) Fig. 79 - Collage of courtyard idea

Within the building itself, various courtyards are created. These courtyards play an important role in providing natural daylight to various parts of the building and also offers users a tranquil space to escape and relax.



(Top) Fig. 80 - Model of panelled courtyard
(Bottom) Fig. 81 - Model of internal courtyard

Activation of Edges

To create this dense scheme, the façade was designed to integrate and become active with areas for seating, planting and shelter. This idea activates the edges of the building, bringing life to it and creates a place where people may want to stay and linger in a comfortable and safe way where they can enjoy their surroundings and its activities.

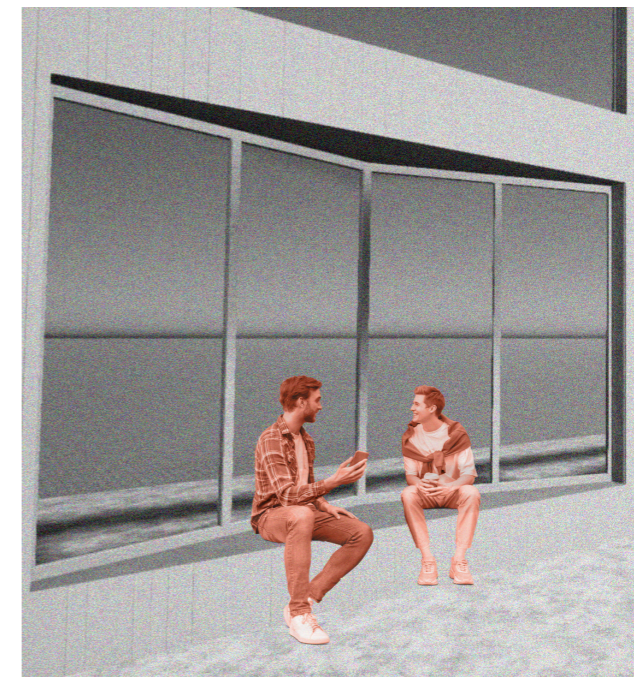
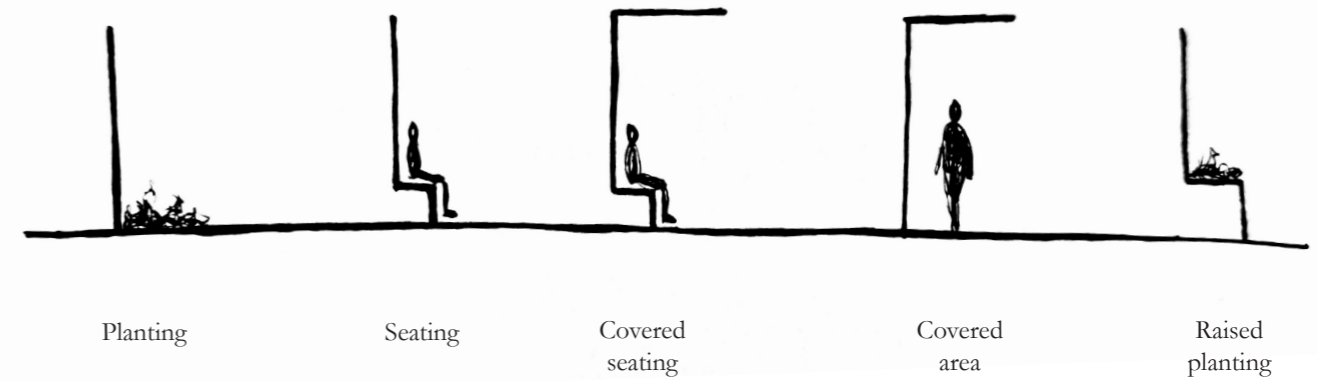
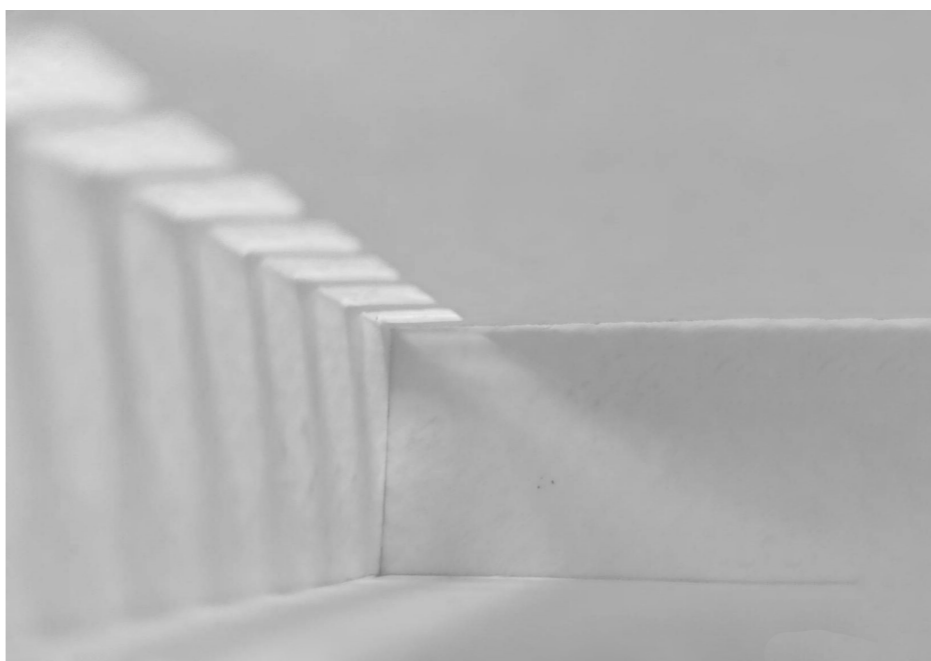
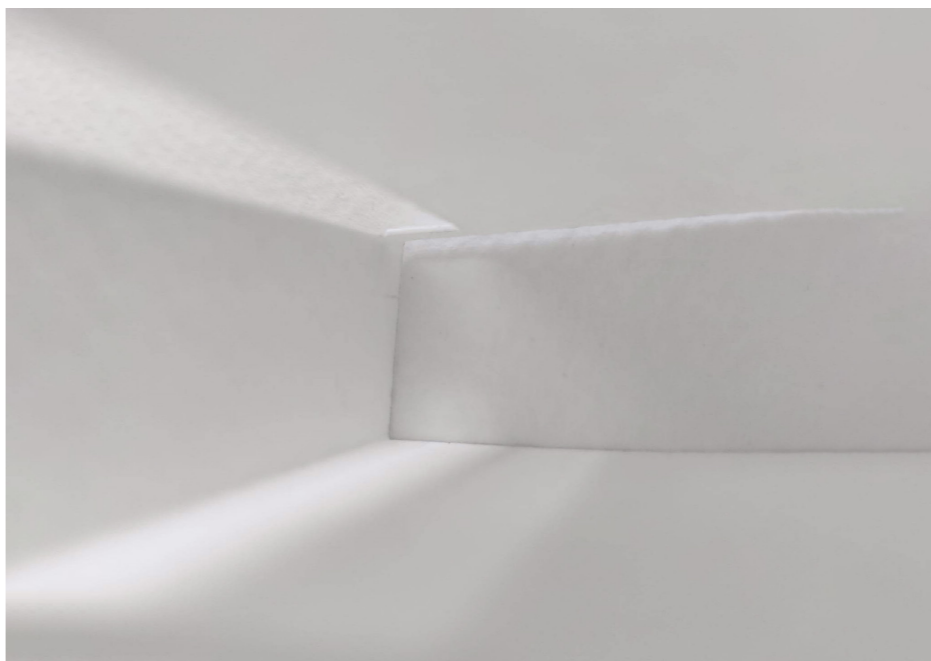


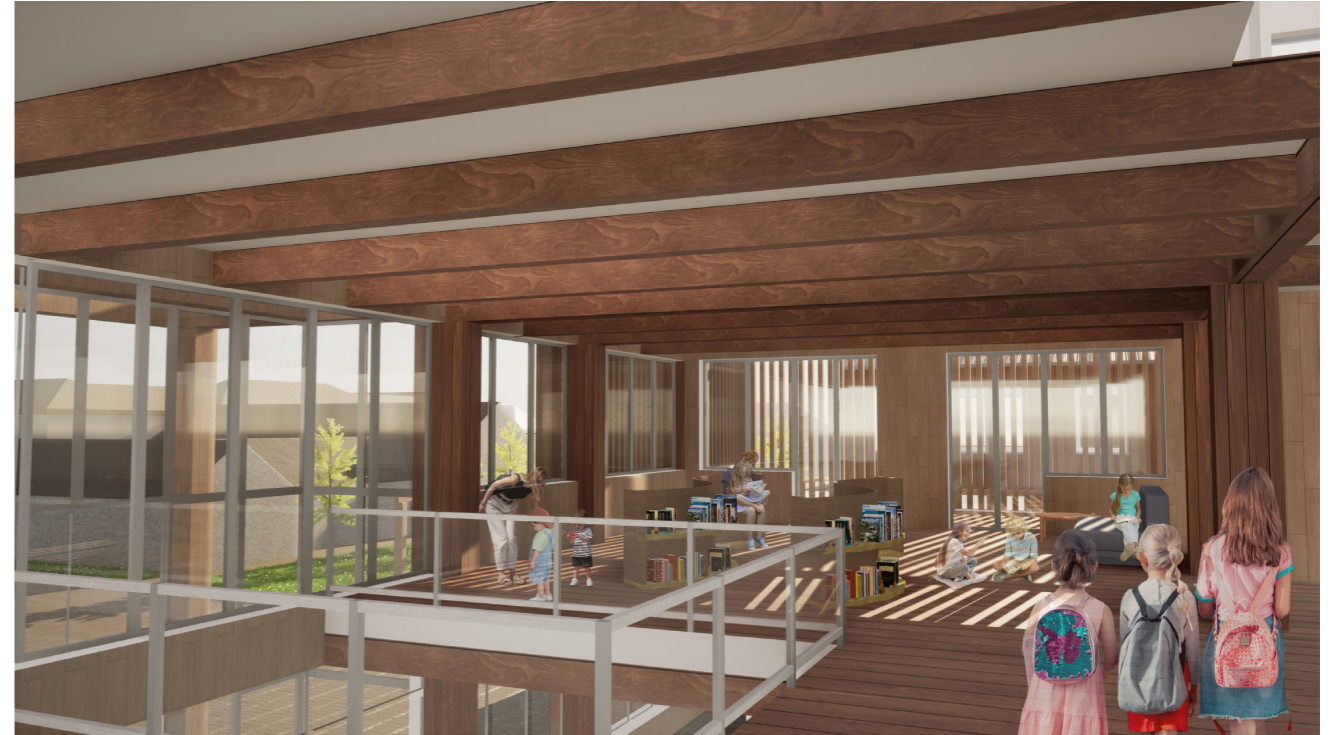
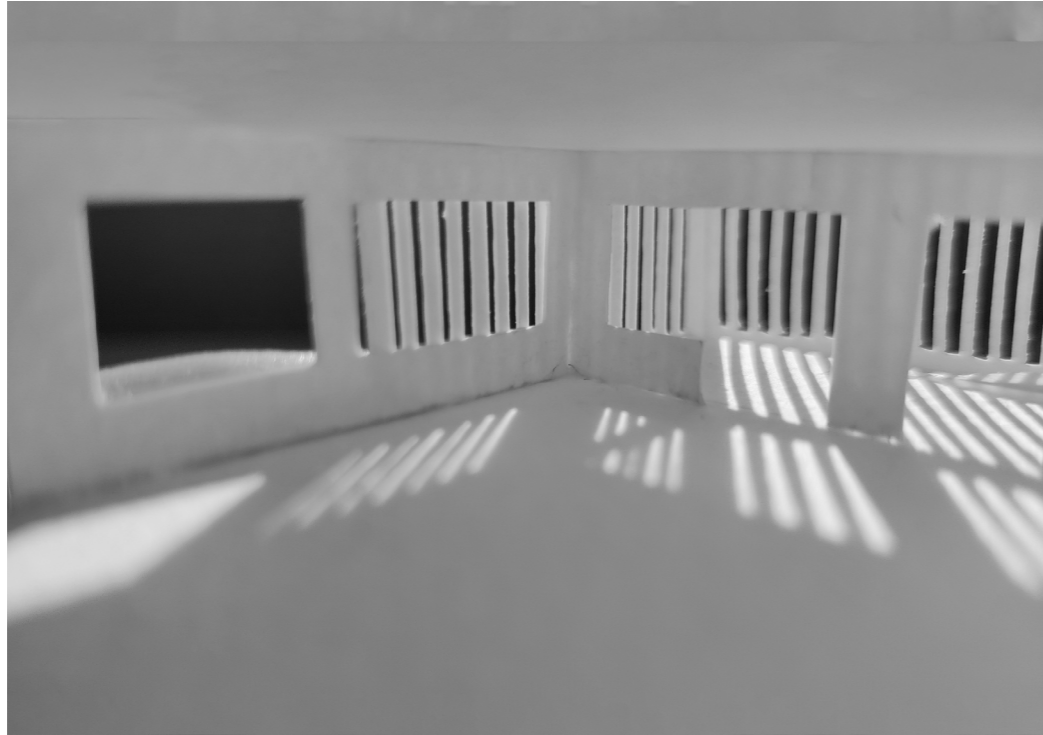
Fig. 82 - Sketches of activation of edges idea
Fig. 83 - Collage of window seating



Light

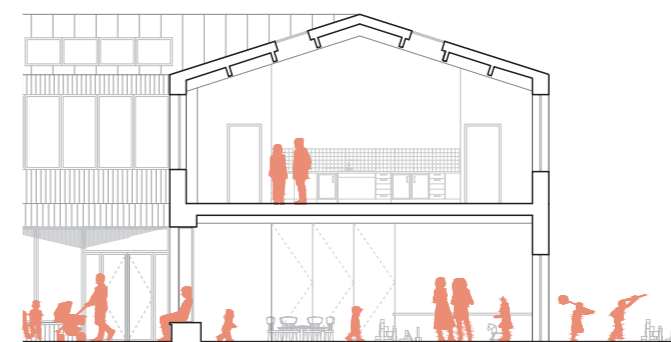
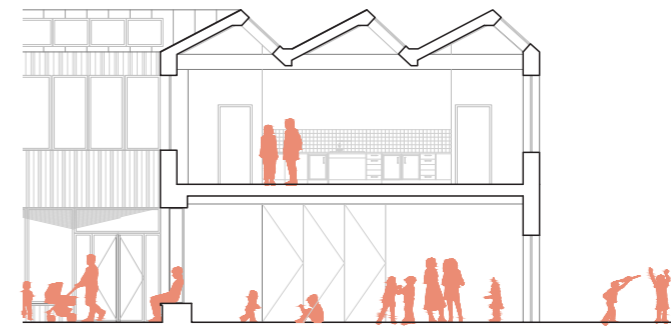
With density being a core theme in the project, density and openness of light became a key element in the design exploration process. This was largely achieved through the creation of models of the various spaces. In certain areas of the building, it was important to have filtered light which would transcend the space and create beautiful moments within the scheme. This light filtration was used extensively in the library, with study nooks and the children’s library being emphasised to create spaces with a warm comfortable ambience for the individual user.

Fig. 84 - Sketches model testing light



(Top left) Fig. 85 - Sketch model of children's library space Fig. 86 - Sketch model of study nooks
(Top right) Fig. 87 - Render of children's library space
(Bottom right) Fig. 88 - Render of study nooks

The use of natural light was also incorporated in the design and form of the roof layout. The creche and adult education blocks were originally designed with three pitches to create a system of rooflights that would capture the morning sun coming from the East in the case of the creche and evening sun coming from the West in the case of the adult education block. These were later changed to a duo-pitch roof as the overall roof design was becoming too complex with too many different roof types occurring. The duo pitch roof achieves a similar lighting effect and allows the building to take full advantage of the morning and evening sun.



(Top) Fig. 89 - Section through creche - stage 4
(Bottom) Fig. 90 - Section through creche - stage 5

Structure

Structure was a key component to the building which allowed for a flexible scheme to be created. As the building would provide for a variety of uses, large unimpeded spans would be required to facilitate the changing needs and uses throughout a day. A glulam post and beam structural solution was chosen to facilitate these spans also for the environmental benefits of glulam over steel or concrete.

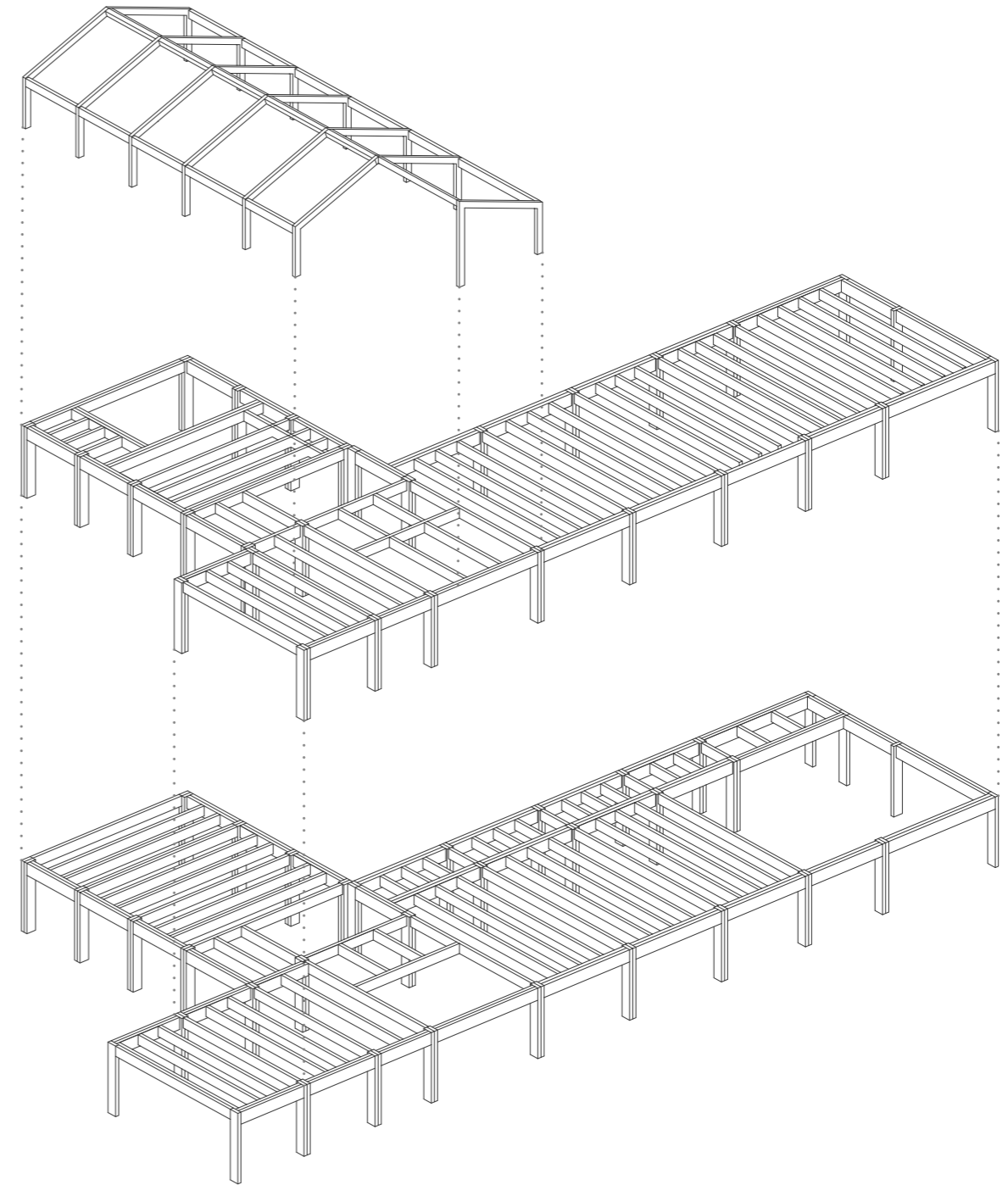
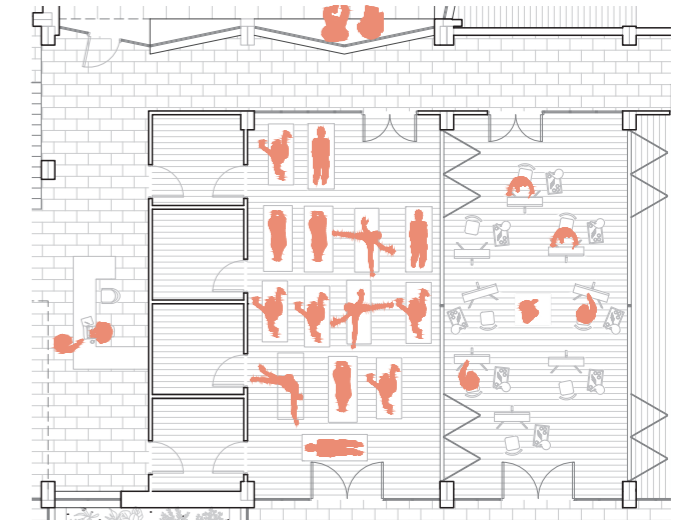
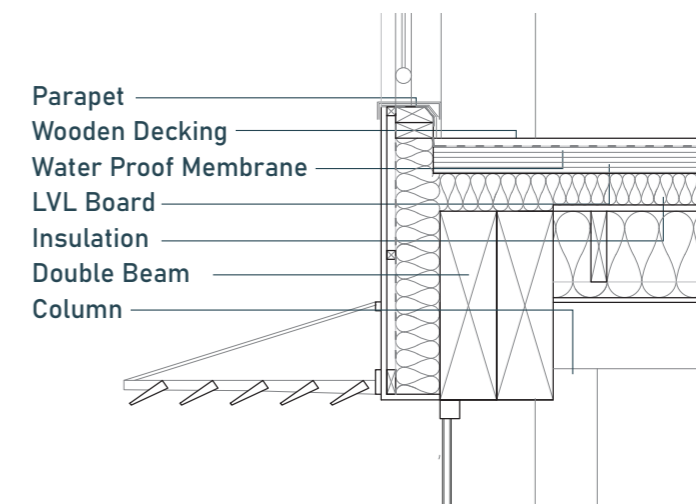
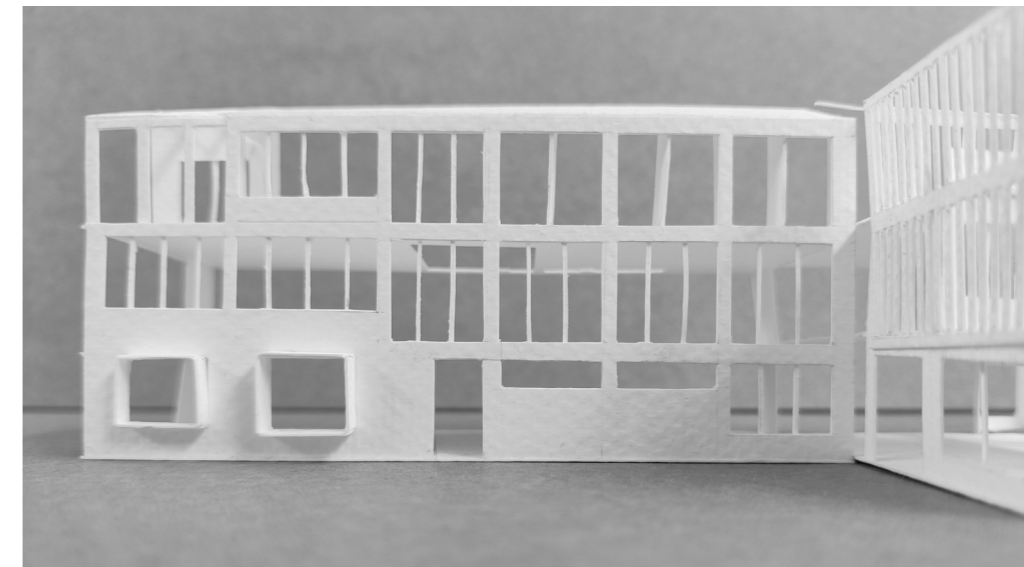


Fig. 91 - Structural exploded axonometric



In areas of heavy loading such as the three storey section and library, double columns and beam structures were utilised rather than increasing the density of the structural frame spacing. To express this structure, the facade endeavours to highlight the structural rhythm. The Structure is also highlighted internally with exposed beams and columns.



(Top) Fig. 92 - Structural columns
 (Middle) Fig. 93 - Model of structure emphasised in the facade
 (Bottom) Fig. 94 -Detail

Materials

The building's material choice was important when trying to create a focal point in Cabra. The building needed to stand out and have its own presence in the community without being over dominating. Timber cladding was chosen as the material of choice for the external façade. Many of the surrounding houses have traditional plaster and brick finishes and the timber cladding naturally compliments these. The cladding is detailed with horizontal joints, some of which align with the structural zones. The zinc roof provides a contrasting finish to the timber.



Fig. 95 - Detail elevation

Urban Street Presence

It was essential that the building held its own urban street presence to create a focal point in the community. Various ways of creating this street presence were explored through the pedestrianisation of the street, landscape, programmed and unprogrammed space, activation of the façade, seating, planting areas and colonnades.

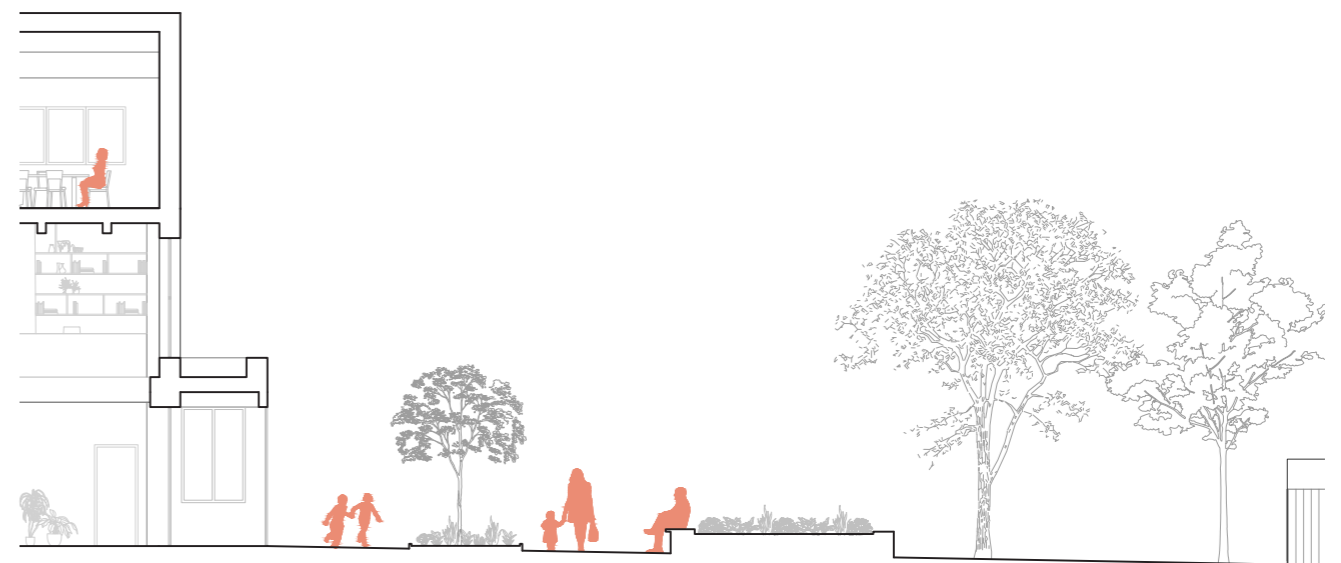
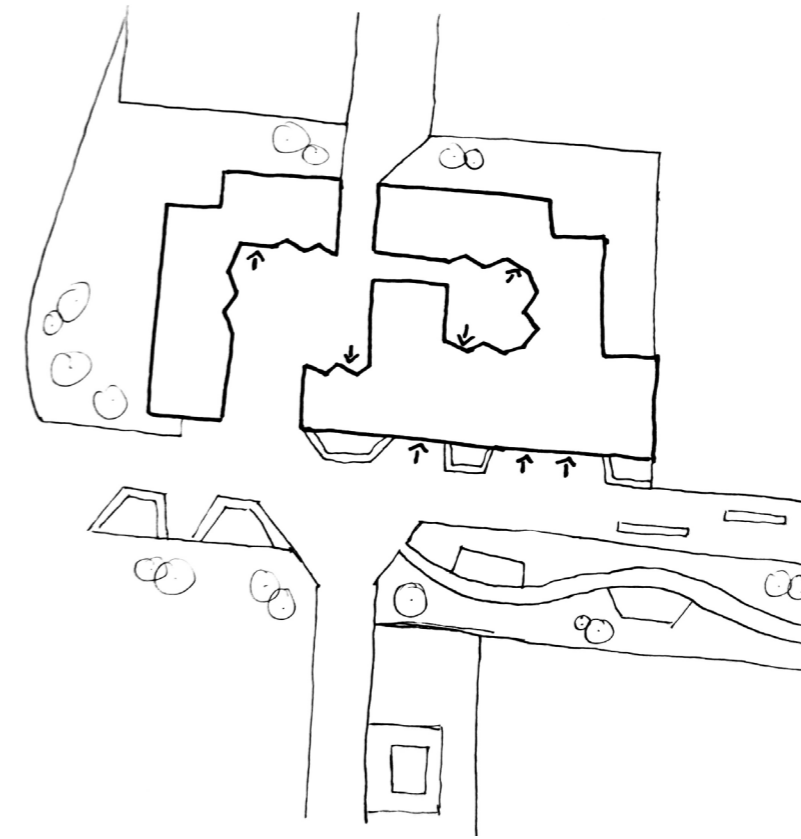


Fig. 96 - Early concept strategy
Fig. 97 - Section through street - Stage 4

Variations of the front façade were tested through models. These models included variations of colonnades and iterations of overhangs/ roof structure and varying levels. This exploration led to the building's street presence being formed.

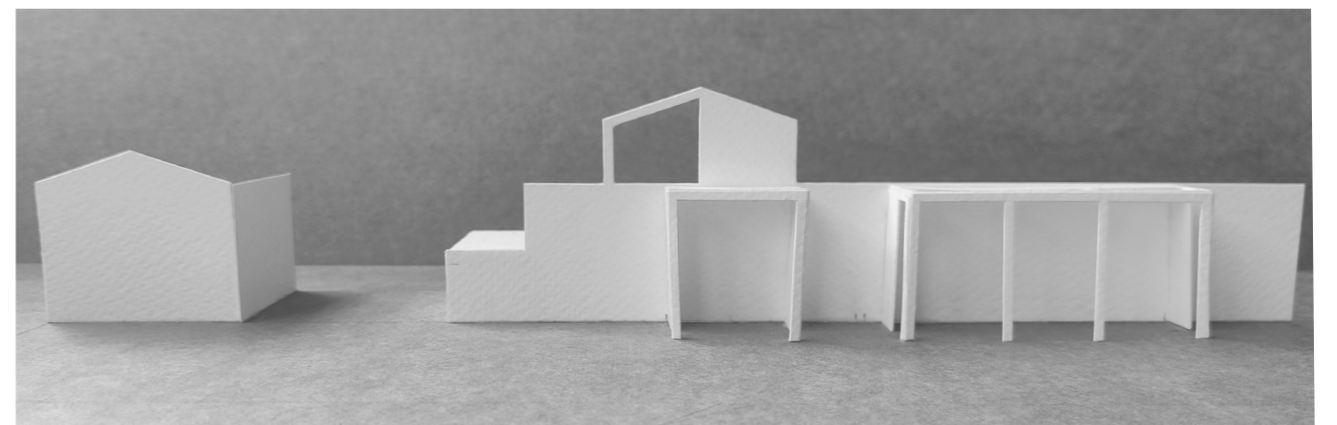
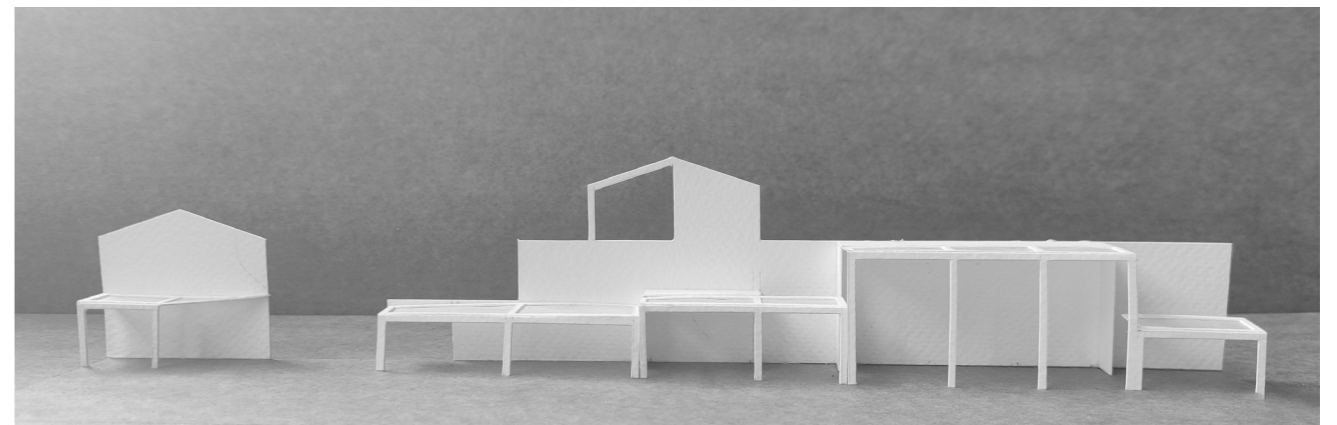
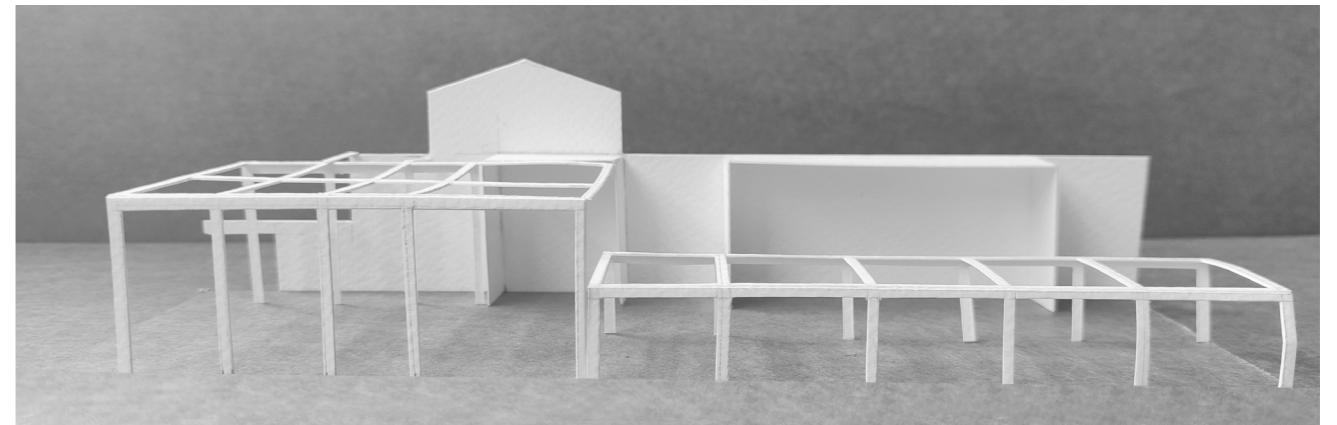
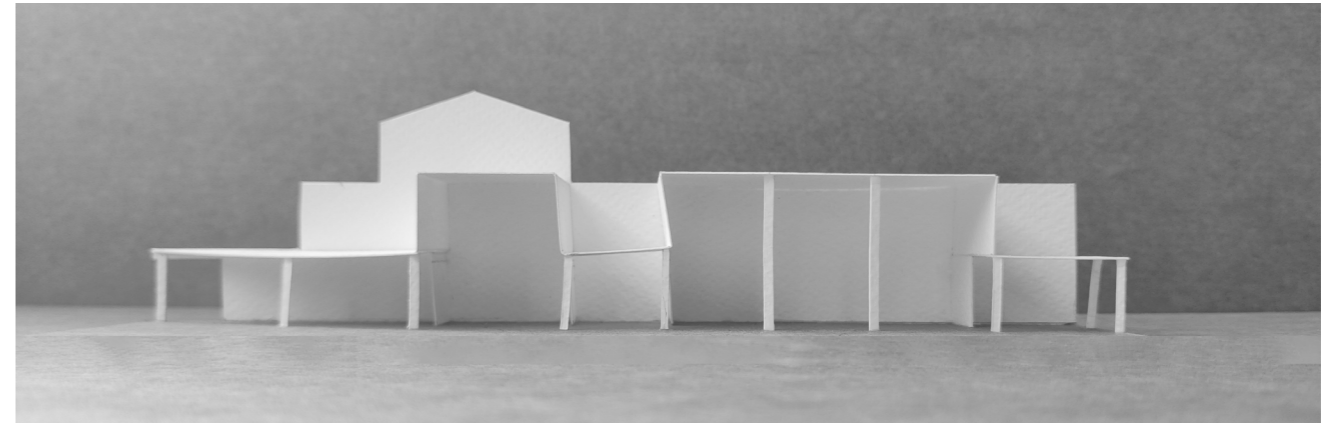


Fig. 98 - Sketch models of front facade

Final Design



Fig. 99 - Render view towards building

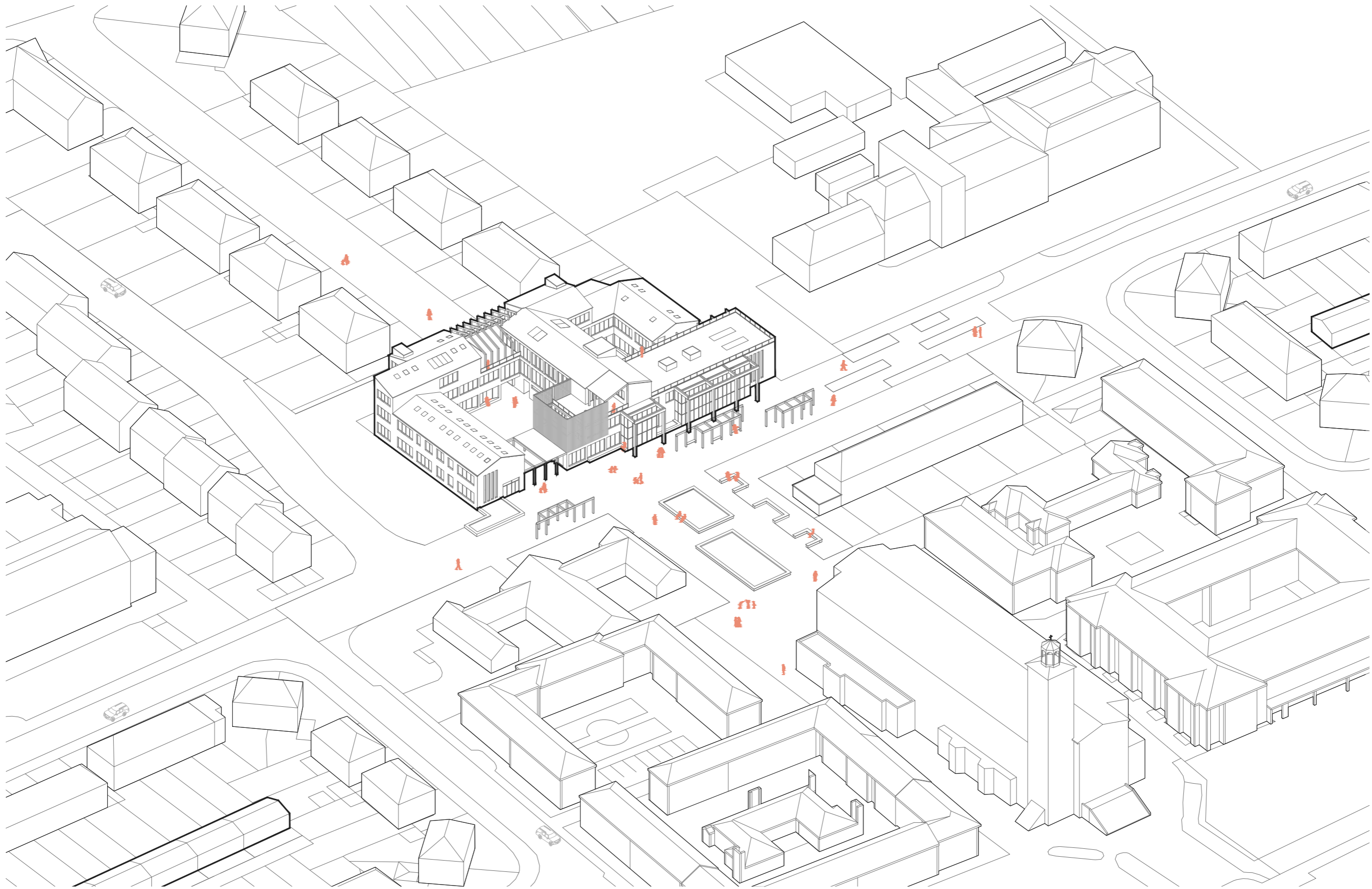


Fig. 100 - Site axonometric



Fig. 101 - Proposed siteplan



Fig. 102 - Proposed ground floor plan



Fig. 103 - Proposed first floor plan



Fig. 104 - Proposed second floor plan

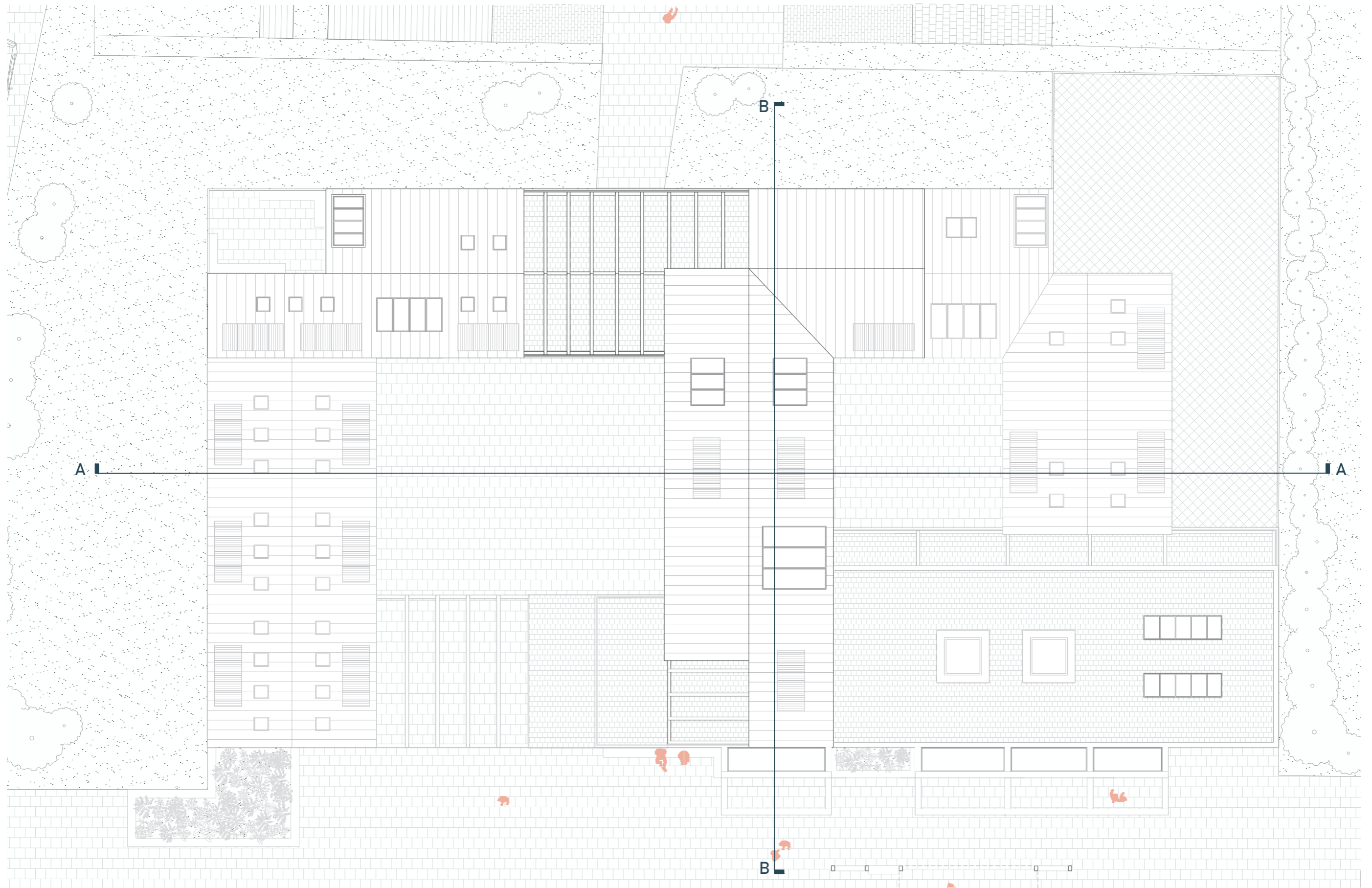
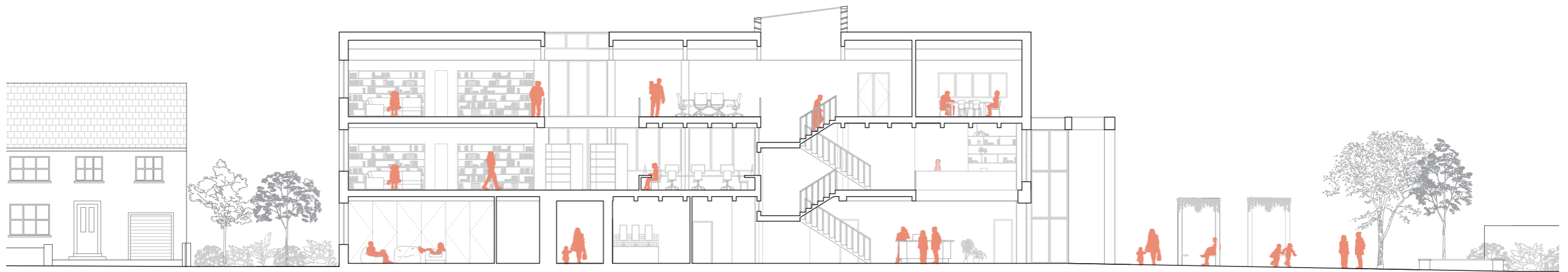


Fig. 105 - Proposed roof plan



Fig. 106 - Proposed Section A.A



(Top) Fig. 107 - Proposed Section B.B
(Bottom) Fig. 108 - Proposed Section B.B in context



(Top) Fig. 109 - Proposed front elevation
(Bottom) Fig. 110 - Proposed front elevation in context



Fig. 111 - Main street



Fig. 112 - Panelled courtyard

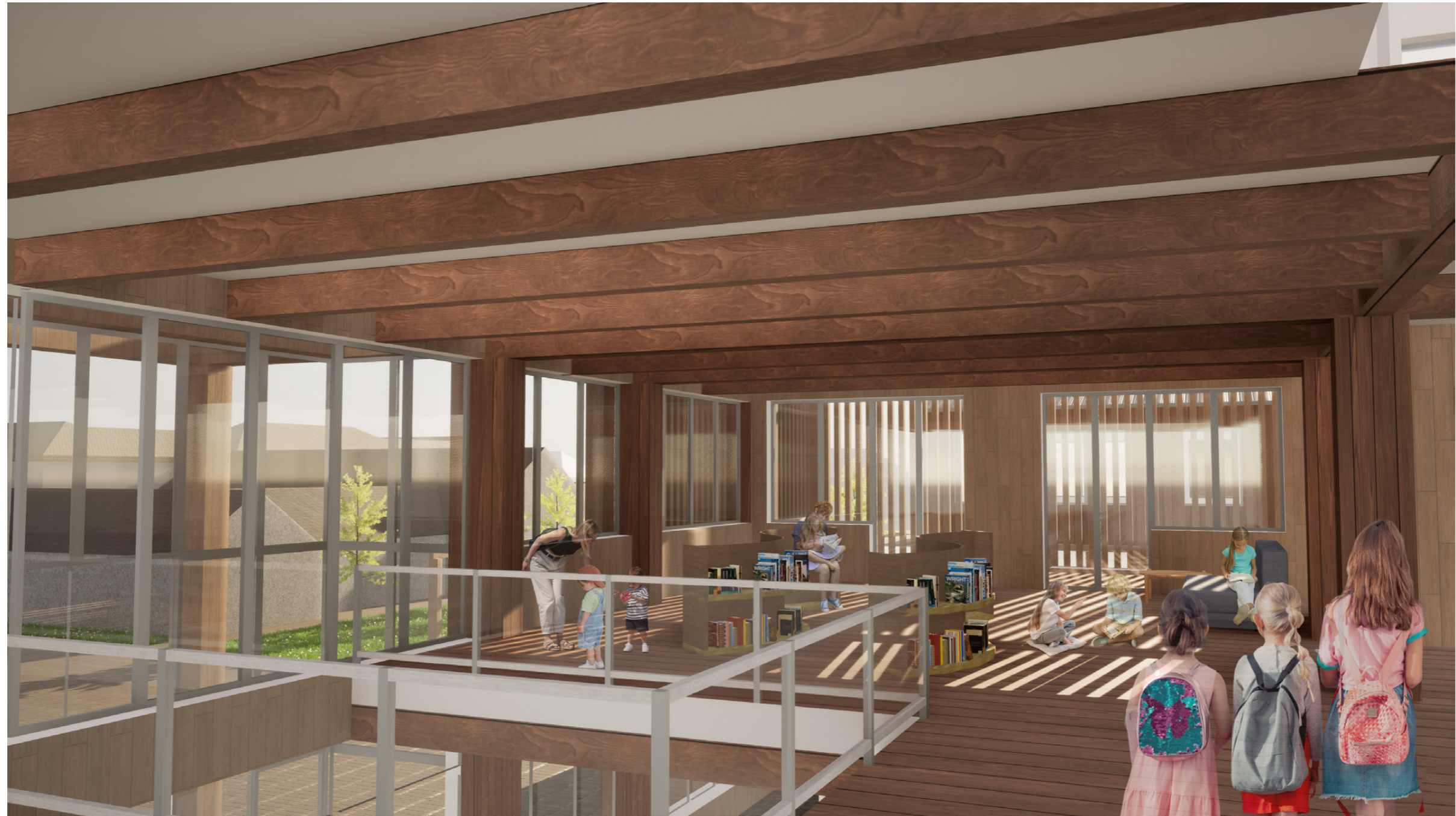


Fig. 113 - Childrens library



Fig. 114 - Study nooks

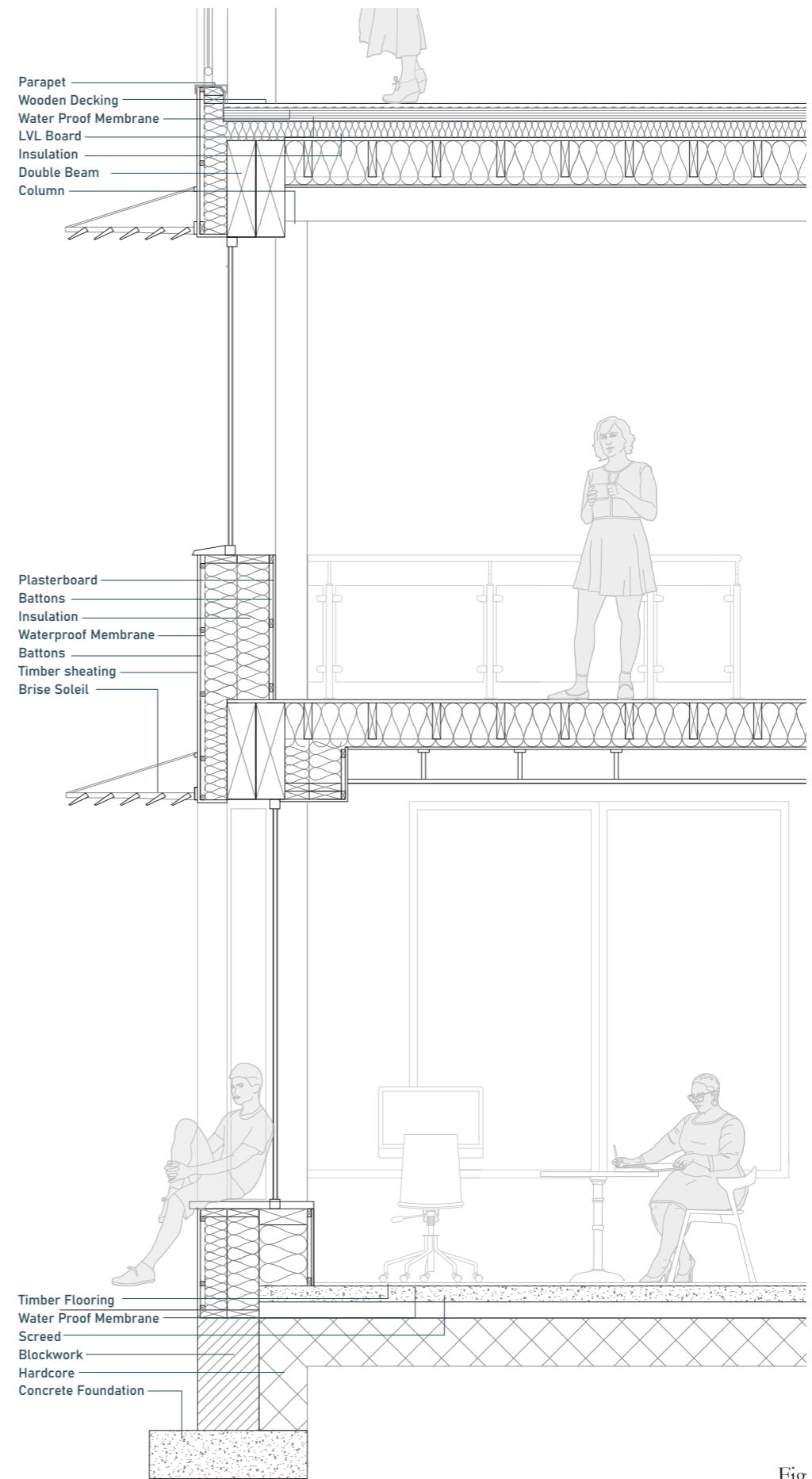
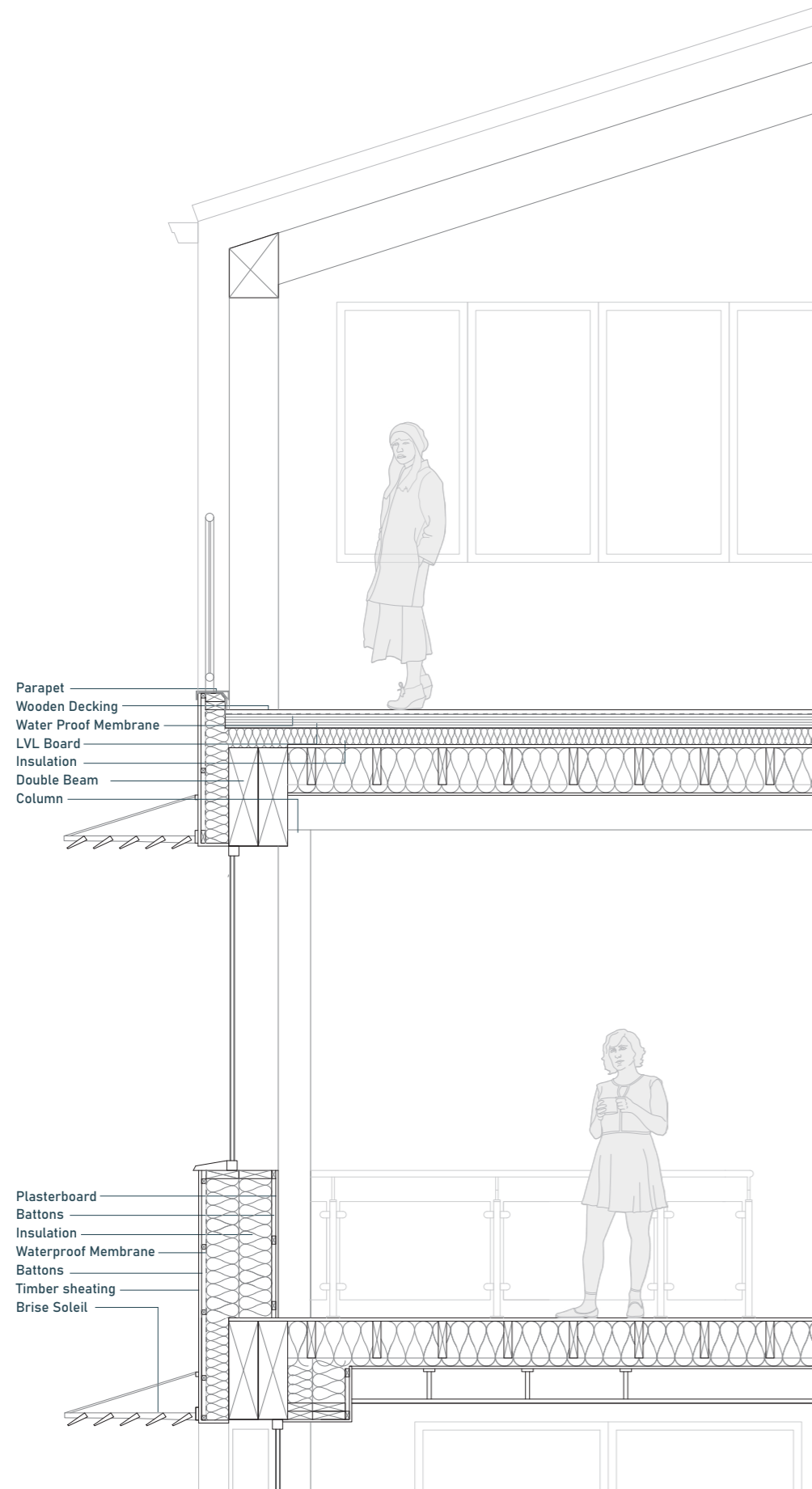


Fig. 115 - Detail section



Fig. 116 - Study of various activities throughout the day in one space - Morning: 10am



Fig. 117 - Study of various activities throughout the day in one space - Afternoon: 2pm



Fig. 118 - Study of various activities throughout the day in one space - Evening: 8pm

Reflection

Looking back on my final review it was noted that fire safety was not fully addressed. While the travel distance to stair cores and access for fire trucks to parts of the site, as well as locations for fire hydrants were accounted for within the design, a fire stair would be required within the building or alternatively enclosing the proposed stairwells. This issue was not fully addressed due to time constraints and would need further assessment.

Another aspect where the buildings design could be improved on is the environmental strategy and the impact the building has on the environment.

I looked at the environmental strategy of the building in terms of:

- Daylighting – The building is no larger than 9m to allow for natural light in all spaces.
- Energy – The buildings main energy source will be from solar panels on the roof.
- Materials – Sustainable materials were prioritised.
- Water strategy - The use of permeable paving, rain gardens and surface water attenuation system.
- Ventilation – Most of the building was designed to allow for natural ventilation. Louvred panelled lightwells are provided in stair cores too cool down the building in summer months.

I would like to look at this in more detail to create a fully comprehensive scheme. A full Life Cycle Assessment of the building, with calculations and statistics would be vital to ensuring the buildings longevity.

Conclusion

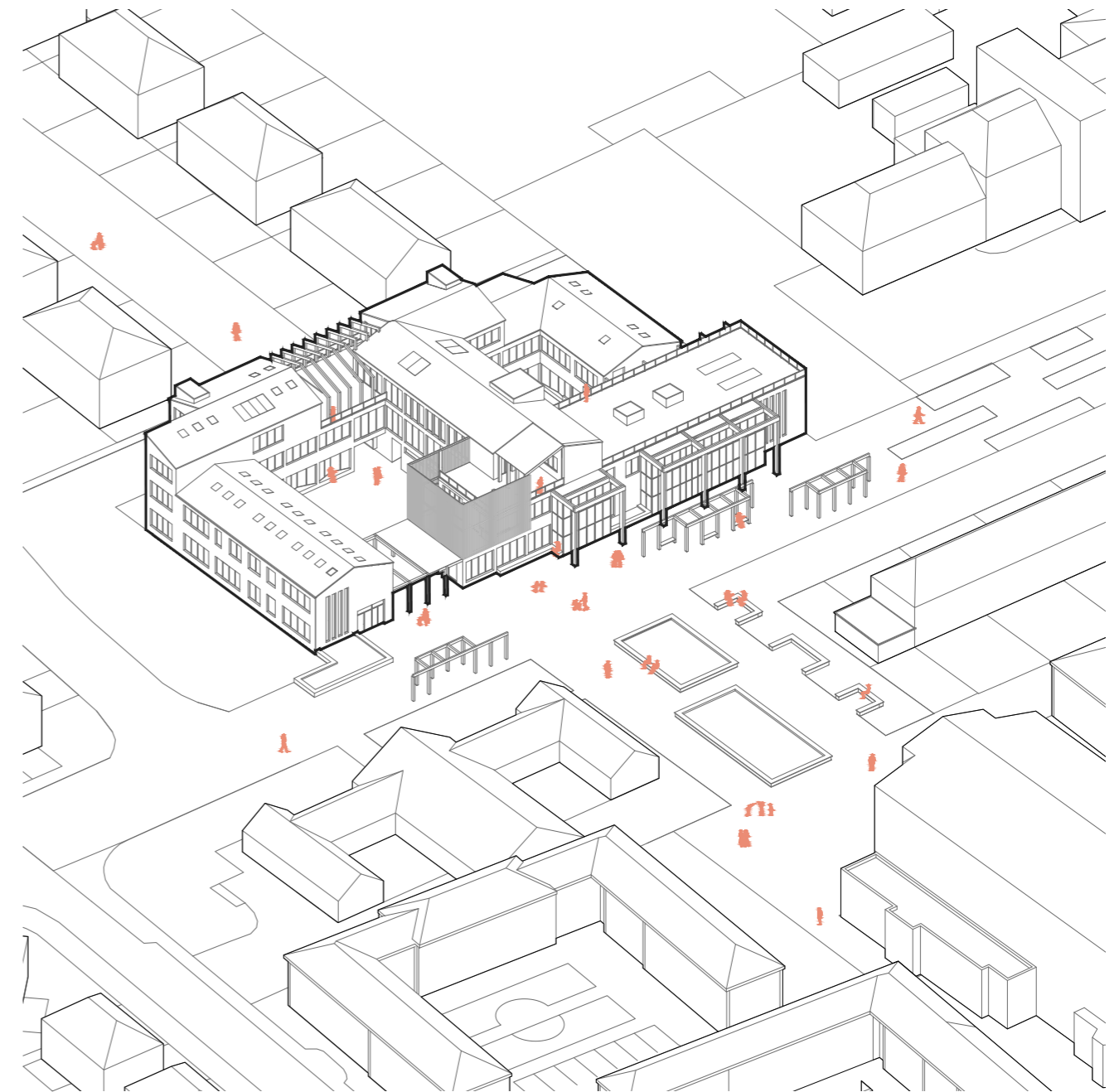
Research into demographics, density and community needs has highlighted a valuable social, cultural, political and architectural issue. One of the issues facing society today is a housing dystopia. With an investigation into the scope to densify existing neighbourhoods, the issue of the strain placed upon existing services was exposed. As a result, this thesis aims to shift the thinking of society and to anticipate the needs of a nation before they become pressing issues. This idea will ensure that sustainable, resilient communities are created and fostered.

'Nothing in this world is more simple and more cheap than making cities that provide better for people.'

- Jan Gehl

Dublin City Council have included in their Development Plan, strategies that address some of the housing issue, however the issue of population increase as a whole has not been comprehensively addressed. There is potential to address these to engage and create prosperous communities. This thesis outlines a method of dealing with population increases and this method can be used as an example as to how to replicate this in other areas of Tolka Valley and throughout Dublin.

It is evident that a large population increase is inevitable and that as Architects we must provide a dense intersectional infrastructure as a means of dealing with this population increase in order to rethink and transform the future of our society for the better.



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Persons in permanent private households by number of rooms																																						
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7	Area 8	Area 9	Area 10	Area 11	Area 12	Area 13	Area 14	Area 15	Area 16	Area 17	Area 18	Area 19	Area 20	Area 21	Area 22	Area 23	Area 24	Area 25	Area 26	Area 27	Area 28	Area 29	Area 30	Area 31	Area 32	Area 33	Area 34	Area 35	Area 36	Area 37	TOTAL
1 room	5	14	14	11	4	5	8	3	6	0	1	19	20	7	11	10	4	14	6	0	0	0	0	0	0	2	10	0	1	32	2	0	0	0	0	14	11	234
2 rooms	53	24	42	58	36	22	45	42	55	34	19	42	67	29	41	61	40	71	96	0	0	0	0	3	3	23	9	12	12	111	40	26	4	1	2	45	19	1187
3 rooms	106	44	101	36	51	70	158	86	57	155	12	134	113	88	76	86	54	108	144	39	57	10	8	32	35	31	28	40	45	131	130	16	4	1	29	37	43	2395
4 rooms	39	45	29	23	72	24	76	51	26	60	3	82	57	82	28	27	44	29	70	11	12	0	12	63	34	26	83	102	71	35	12	51	11	15	18	16	13	1452
5 rooms	2	27	21	7	33	15	0	10	2	23	111	24	5	7	9	0	9	0	15	211	150	139	154	92	106	39	108	58	74	43	1	68	18	2	109	45	24	1761
6 rooms	0	10	0	44	12	51	12	0	11	15	23	0	3	3	0	0	0	3	5	32	53	64	27	30	24	10	27	29	40	0	0	41	32	58	53	46	107	865
7 rooms	0	0	0	4	0	33	0	0	26	0	0	0	0	7	0	0	0	0	4	3	7	10	0	3	6	4	10	4	18	0	0	11	170	129	24	14	31	518
8 or more rooms	0	0	0	0	0	2	0	0	0	5	8	0	0	0	0	0	0	0	0	3	0	3	0	0	0	2	0	2	5	0	0	15	102	99	14	15	43	318
Not stated	1	5	2	12	0	9	19	17	9	17	25	11	13	1	4	7	7	24	24	44	44	8	7	15	17	20	37	16	13	10	15	8	42	51	10	21	21	606
Total	206	169	209	195	208	231	318	209	192	309	202	312	278	224	169	191	158	249	364	343	323	234	208	238	225	157	312	263	279	362	200	236	383	356	259	253	312	9336

A two person household is currently the most common private household size consisting of 2,562 people (27.44%), three and four person households would be the next most common household size (Fig. 6).

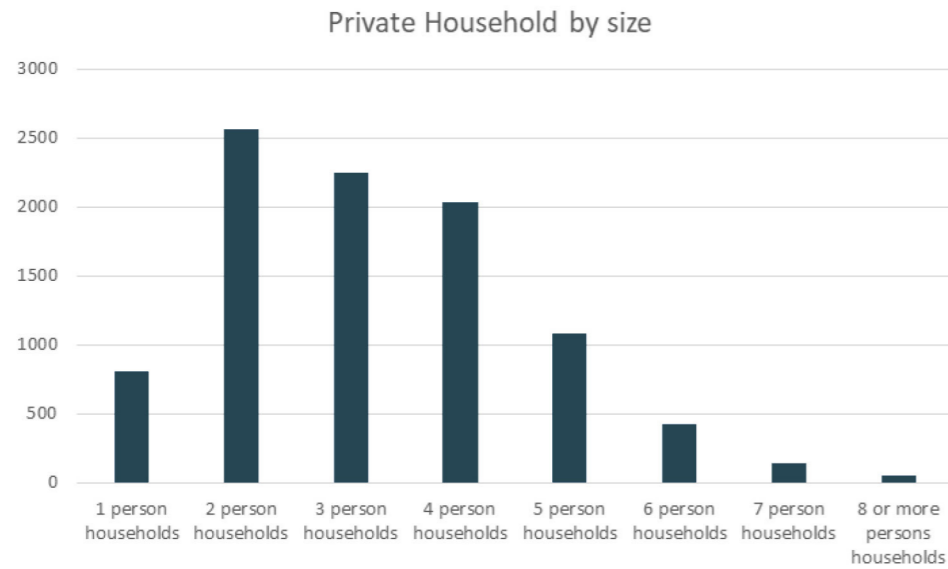


Fig. 6 - Tolka Valley - Private household by size, 2016

When looking at the family cycle (Fig. 7) in comparison to this data it is important to note that an adult family (family nucleus where the oldest child is 20 or over) (CSO) is the most common family type accounting for 1,484 people (21.58%), this may be the three/four person household. The pre-family (family nucleus of a married or cohabiting couple without children where the female is under 45) (CSO) follows this with 1,150 people (16.72%) which would relate to the two person household. This may suggest that older children are remaining in their family home for longer than past generations and that couples and singles may be cohabiting with others.

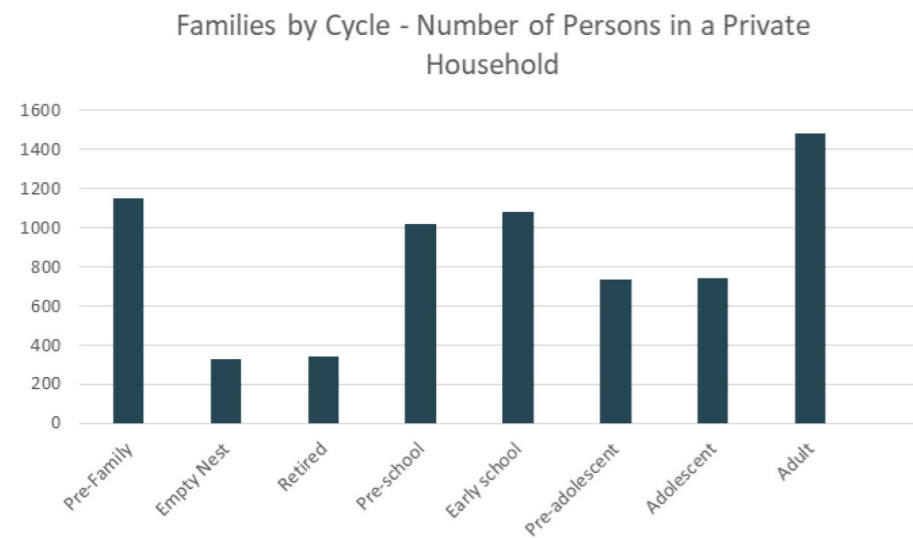


Fig. 7 - Tolka Valley - Families by cycle - number of persons in a private household, 2016

In terms of marital status, single people comprise a vast portion of the population at 5,750 people (62%) (Fig. 8). This figure starkly contrasts the number of one room households available in Tolka Valley (Fig. 9). This suggests that many single people are either remaining in their family home or cohabiting with other non-related persons.

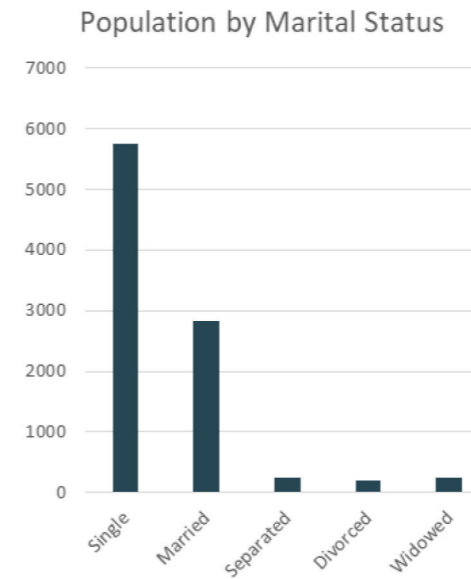


Fig. 8 - Tolka Valley - population by marital status, 2016

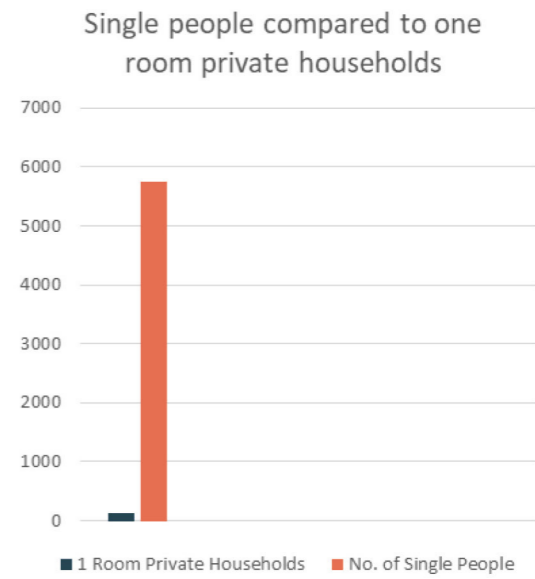


Fig. 9 - Tolka Valley -Single people compared to number of one room private households, 2016

In Tolka Valley there is a variety of houses built in different eras with 2001-2010 being the most prevalent accounting for 1,678 houses (45.9% of the housing stock). 1971-1980 is the second highest number of houses by year built (Fig. 10).

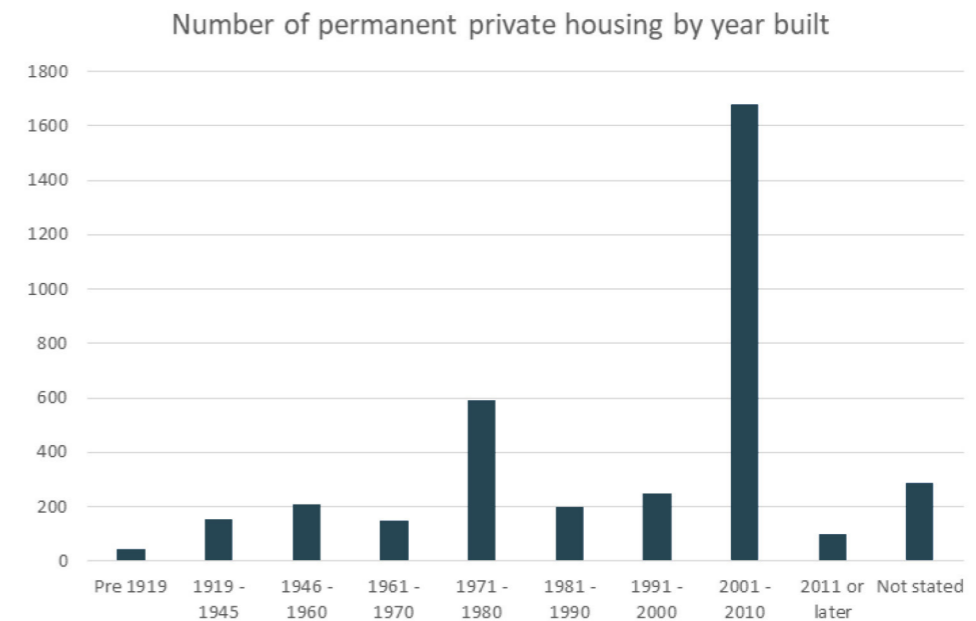


Fig. 10 - Tolka Valley - Number of permanent private housing by year built, 2016

While three bedroom houses are the most frequent household type which may align with the national average of 2.75pph, two, four and five bedroom households are still quite prevalent (Fig. 11).

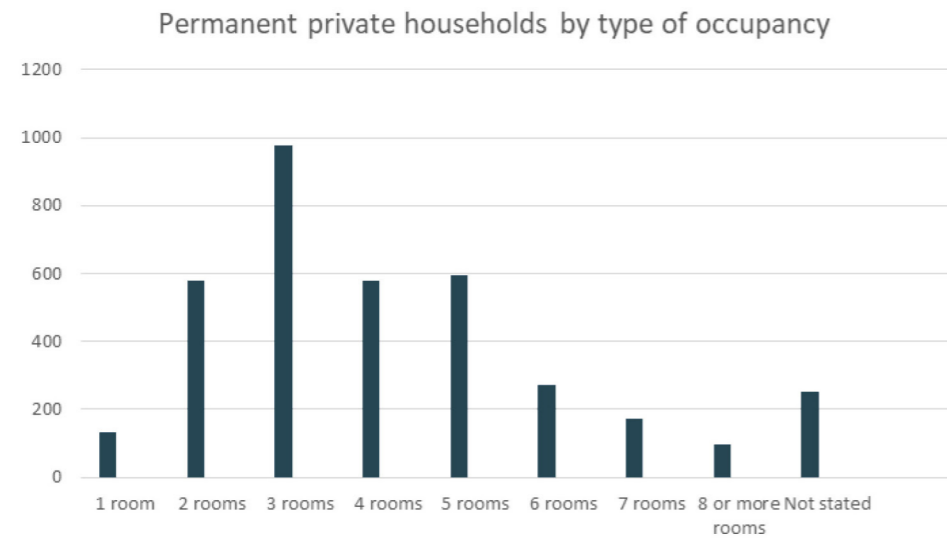


Fig 11 - Tolka Valley - Permanent private households by type of occupancy, 2016

In the last decade demographics have changed significantly. When comparing these figures of housing built by years vs. number of rooms per household it suggests that the current housing stock was not designed for today's 2.75pph national average.

Analysing household type, married couples with children have the highest proportion of 2,780 people (29.75%). However, combining married and cohabiting couples, they account for 1,578 people (16.89%). One parent (mother) with children follows closely with 1,060 people (11.35%) (Fig. 12).

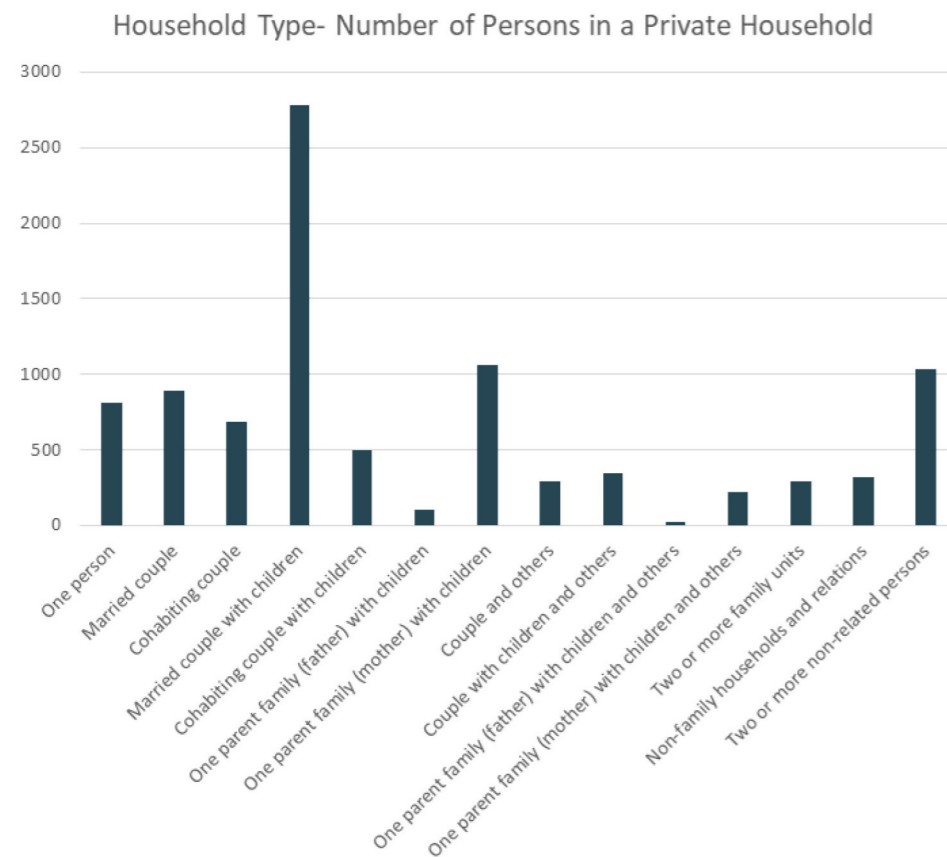


Fig 12 - Tolka Valley - Household type - Number of persons in a private household, 2016

Appendix 2

Housing issues today

Over the past 10 years, the residential sector has not operated efficiently in tandem with these changing demographics and is creating a housing dystopia. In Dublin between 2011 and 2020, there were on average 4,004 units built per year, resulting in a total of 40,043 units. This was not sufficient to meet the changing needs of the rising population and has led to a substantial demand for new units in the capital, with 140,000 additional people in the Dublin Region in 2020 compared to 2010 (KPMG Future Analytics, 2021, p. 8). Figure 13 below, from KPMG's 'Housing Demand and Unit Mix Study' highlights that population and housing are interwoven challenges that must be met in parallel. These numbers do not reflect a society that has coped well with demographic change.

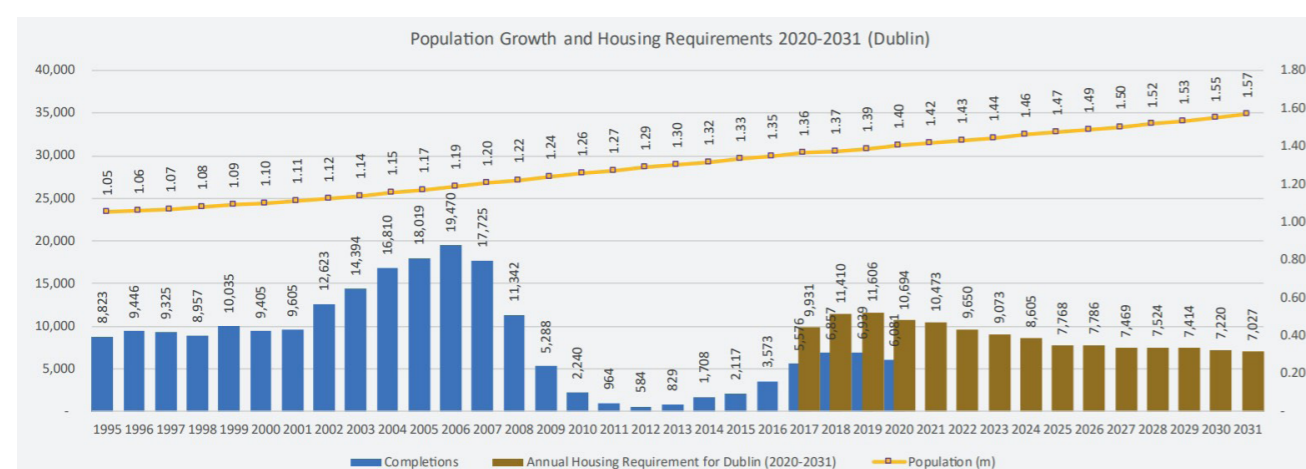


Fig. 13 Housing Completions, Population Growth and ESRI Housing Need 1995-2031 (KPMG Future Analytics, 2021, p. 26)

One issue exacerbating the housing crisis is the inadequate availability of one and two bed units. The former Tánaiste and current Taoiseach, Leo Varadkar, has stated that there is an insufficient number of one bed apartments in Ireland to accommodate the increasing number of single, young people today (Press Association, 2021). From the analysis of Tolka Valley's demographics, this is a considerable issue for the area. In 2021 there were nearly 10,000 people on the DCC waiting list for a two bed house in the capital alone (Donoghue, 2021). This is a staggering figure and a solution must be found to address this problem.

KPMG Future Analytics Report, (2021, p. 16) listed several reasons for impacted supply demand as follows:

- A higher proportion of people living alone.
- Reduced rates of marriage and higher divorce rates.
- An ageing population in a developed economy where life expectancy is increasing.
- Cities having much higher concentrations of young professionals.
- Delayed household formation and fewer children.
- Increased social mobility (higher income, educational attainment)

Looking at the types of accommodation by year built, there has been a relatively steady rate of housing built through the decades but there is a dearth of post-2011 housing (Fig. 14). This trend is similar in Tolka Valley. Having examined planning permissions and house typologies in Tolka Valley, I have noted that many of these houses were designed as three to five bed units, particularly in the Ashtown/Pelletstown

area, where there has been a recent uplift in the building of housing developments. However, these developments do not conform to today's 2.75 pph national average and have not been designed with the demographic needs of one and two bed units in mind.

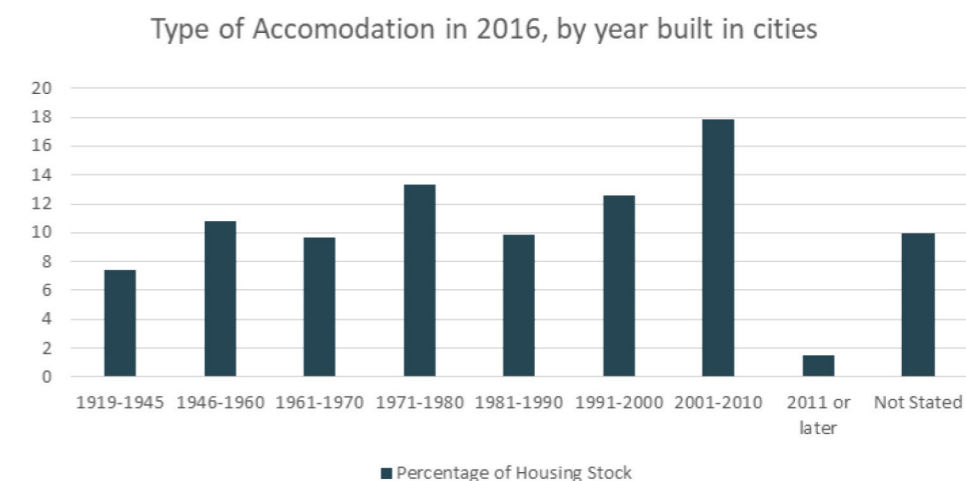


Fig. 14 - Type of accommodation by year built in cities, 2016

Another problem that plays a major role in the Irish housing crisis is the link between overcrowding in houses and large houses being occupied by one person. In 2021 'almost 7 in 10 people in Ireland are living in homes that are too large for their household needs' (McCarthaigh, 2021b). Within this statistic, it is important to look at what age groups are affected most by it, 'with 5.8% of those aged 20-25 living in overcrowded homes, in comparison to 0.3% of those aged over 65' (McCarthaigh, 2021a). With older people remaining in houses built for their original family size, it is leaving a lack of housing appropriate for today's generation of families, (Barrett & Kelly, 2016, p. 1) forcing young people into overcrowded accommodation and paying astronomical prices for these inadequate spaces. Adults returning to live with parents is another phenomenon related to the housing crisis and may also contribute to the slight rise in people per household in 2016, with a fifth of adults considering moving home to their parents to combat the cost of living (Aviva, 2022).

It is important to note the social and psychological affect the housing crisis can have on people. Emmet Scanlon (2019, p. 9) describes the housing crisis as not just a physical and economic issue but one that denies people the opportunity to own their own homes. If you are fortunate enough to have accommodation often this can still come with stress due to 'a lack of long-term security, fear of eviction or anxiety paying rent or the mortgage or being forced to choose between paying rent, having enough food in the house, or paying medical bills or school costs.' (Hearne, 2020, p. 4).

Ultimately this housing crisis has brought great stress and uncertainty to the nation. A lack of suitable accommodation has resulted in Ireland being 'left with an extraordinary mismatch between dwellings and households.' (Lyons, 2019). To combat the housing crisis, densification of the existing housing stock to suit today's demographic needs, could play a significant role in mitigating this problem.

Appendix 3

Housing case studies

Knowle West, Bristol, England:

Knowle West is an area on the western edges of Bristol, England where Craig White of White Designs has been endeavouring to increase the density of the area. The area consists of 5,000 council houses which were built in the 1930's. In this estate which consists of three bedroom houses, there is a colossal 54% of people in the area lived alone or in couples (Young, 2018). 'We Can Make' which is an 'asset-based approach to 're-imagine how to do housing'' (Knowle West Media Centre, 2022) found residents wanted to downsize or upscale but wanted to continue to live in their communities. The idea for this project is to create smaller homes in the rear gardens and in between spaces of these sites so that people who want to downsize can and people who want to upscale have the option to do so in a flexible way. The project listens to individuals needs and aims to address them (Knowle West Media Centre, 2022). This case study offers the idea that people are willing to move homes to suit their needs, provided it is within their existing community.



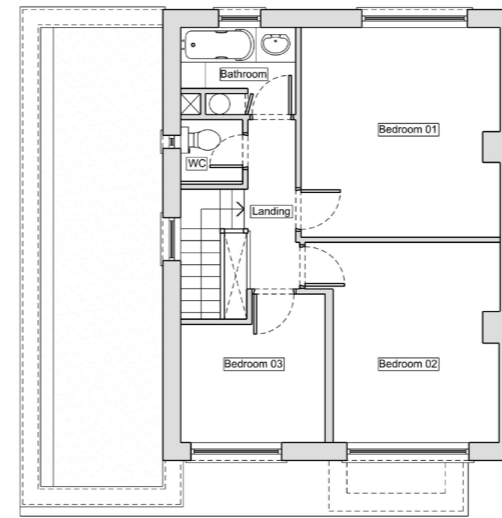
Knowle West, case study

Ava Housing, Dublin

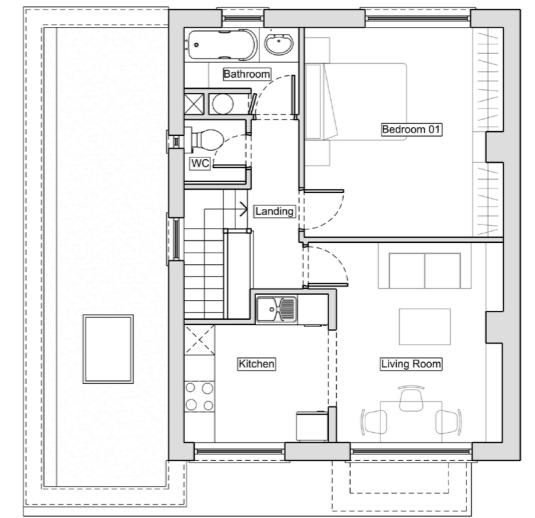
Ava Housing is a not-for-profit housing scheme founded in 2016, which redesigns family-sized homes for the elderly, producing a reconfigured ground floor living arrangement for the homeowner and a new rental unit upstairs (Ava Housing, 2022). The scheme aims to improve quality of living and give independence to elderly people with individuals changing needs being incorporated within the project (Clarke, 2021). They have currently completed two case studies of the scheme in Beaumont and Clondalkin. Client testimonials from these projects describe the richness and the life it has brought back to them:

‘I don’t think it’s a good idea, I think it’s a wonderful idea. It keeps the older person where they are secure and feel happy, and then it gives them the security of having someone else in the home which, if you are living on your own, means a lot to you. It also gives someone else a home’ (Ava Housing, 2022).

The Clondalkin project is a four bedroom house that was too big for the occupiers needs and has now been converted to serve the needs of the owner, with a one-bedroom unit on the ground floor and a new tenant with a one bedroom unit on the first floor. This project, while it focuses specifically on older people aims to meet the needs of the ever-changing communities. This embodies the core principle that the users’ needs in the existing housing unit were not being met and required intervention. This is a valuable precedent when I look to densify the current housing stock of Tolka Valley.



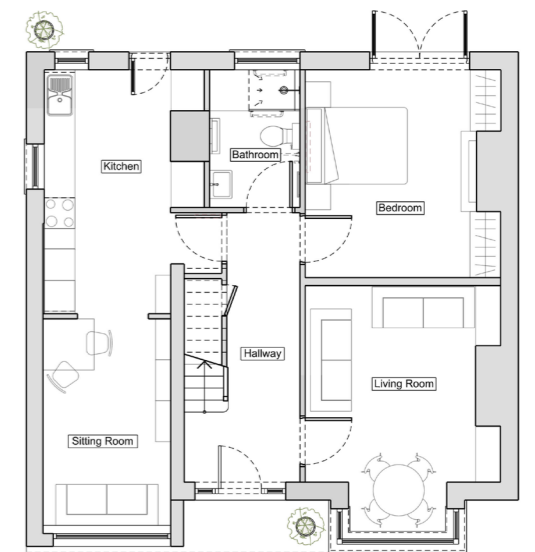
Original First Floor Plan



New First Floor Plan



Original Ground Floor Plan



New Ground Floor Plan

Ava Housing - Clondalkin project

Ava Housing - Clondalkin project

Appendix 4

Housing typologies - schedule of areas

1. Glasnevin Woods											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	80m ²	80m ²	71m ²		41m ²	13m ²			28	56
Duplex on First Floor	2 Bed (4 persons)	67m ²	89m ²	12.1m ²	1.5m ²	39m ²	11.7m ²			28	112
Upper floor of duplex	2 Bed (4 persons)	22m ²	89m ²		3.6m ²			13m ²			

2. Bannow Road											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Proposed Mews	1 Bed (2 persons)	51.6m ²	51.6m ²	25.8m ²	3m ²	26.5m ²	12.7m ²			22	44

3. Claremont Crescent											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	62.4 m ²	62.4m ²	54.5m	3.1m ²	33.5m ²	13.6m ²			32	64
Duplex on First Floor	3 Bed (5 persons)	65 m ²	108m ²	71m ²	4.7m ²	34.3m ²	11.4m ²			32	160
Upper floor of Duplex	3 Bed (5 persons)	43m ²	108m ²		2.9m ²			11.4m ²	12.4m ²		

*Should be 9m² Storage for a 3 Bed

4. St. Philomenas Road											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	68m ²	68m ²	89m ²	3m ²	40.9m ²	17.7m ²			22	44
Duplex on First Floor	2 Bed (4 persons)	51.8 ²	98.9m ²	17.6m ²		37.2m ²				22	88
Upper Floor of Duplex	2 Bed (4 persons)	47.1m ²	98.9m ²		6m ²		15.3m ²	12.9m ²			
Proposed Mews	1 Bed (2 persons)	51.6m ²	51.6m ²	27.1m ²	3m ²	26.5m ²	12.7m ²			8	16

5. Ashtown											
	Unit Type	Floor Area	Total Floor Area	Private Open Space	Storage	Kitchen/Dining	Bedroom 1 - Area	Bedroom 2 - Area	Bedroom 3 - Area	Total No. of Potential Units	Potential Bedspaces
Ground Floor Apartment	1 Bed (2 persons)	58m ²	58m ²	124m ²	3m ²	35m ²	11.7m ²			18	36
Duplex on First Floor	2 Bed (3 persons)	56m ²	110m ²	7.5m ²		32m ²	13m ²	8m ²		18	54
Upper Floor of Duplex	2 Bed (3 persons)	54m ²	110m ²		16.9m ²						

Tolka Valley - Existing vs. Proposed uph

	Site Area	Existing uph	Proposed uph	Percentage increase
1. Glasnevin Woods	0.53 Ha	53	106	100%
2. Bannow Road	1.99 Ha	54	65	20%
3. Claremont Crescent	0.88 Ha	36	73	128%
4. St. Philomenas Road	0.78 Ha	28	67	139%
5. Ashtown	0.70 Ha	49	74	51%

Appendix 5

Letter to Dublin City Council

As part of my Architecture Thesis I have been examining projected population and density increase in Dublin City, with a 50% population increase expected by 2050. While I believe that the Development Plan outlines how these population increases can be handled in terms of housing, I feel the impact of this population increase on communities has not been appropriately addressed.

The plan examines the current and expected population of Dublin in terms of the housing supply that needs to be met to cater for this mass increase (Chapter 2.2.1 Population and Housing Delivery). But what has been overlooked is the impact this will have on existing communities and the strain that will ensue if the proper community infrastructures aren't supplied prior to the increase. It is vital to develop a framework for anticipated needs and to provide for these needs before a surge in population occurs. This will result in communities with socially and culturally diverse needs. Planning ahead for these needs will accommodate urban renewal and bring life to communities and encourage economic prosperity.

Currently I consider that there have not been enough key urban villages identified in the Development plan to allow for the integration of communities. There is a clear gap forming between inner city centre and the suburbs. While the plan states that it 'supports the sustainable consolidation of the city and aligns with the principles of the 15 minute city,' I feel that this 15 minute city idea is not being supported by adequate numbers of key urban villages.

My studies have been focused in Cabra and I have noted that there is currently a shortage of services in the area for the existing population and with expected population increases will create a bigger strain. Cabra has been a longstanding community in Dublin but has been overlooked for many years. There is no real feel of a village centre in the area, and one should be re-established to unify the community and to be able to cater for the expected population growth. This village centre will be heavily linked to the Luas/ Train stop at Broombridge, the granted Broombridge apartment development and the newly developed Hamilton gardens. I proposed the brownfield site at St. Finbarr's Road and Kilkieran Road be rezoned as key urban village to allow for community/education infrastructure. This would make for a more efficient use of space and consolidate what could be a beautiful town centre and create a vibrant community.

