milton
comm[unity]
project

SUSTAINABLE HOUSING REPORT

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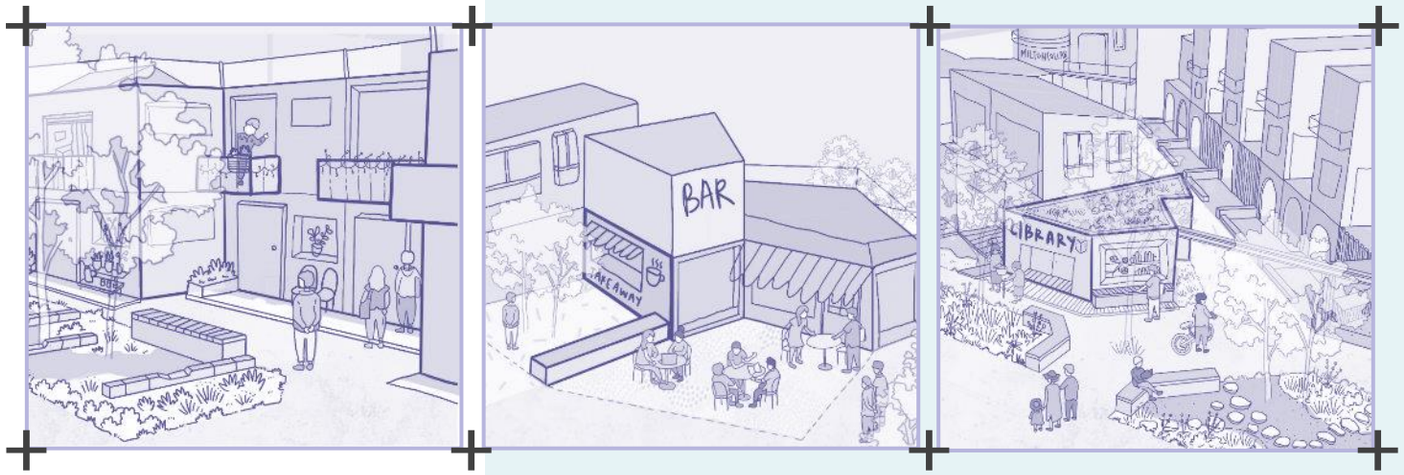

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introduction

Response to developer's brief - A paradigm shift of lifestyle

The importance of home design and green spaces are highlighted and emphasised even more during the on-going global pandemic.(Edgar, L., 2020; Surico, J., 2020) The need to rethink access to green and housing infrastructure is imperative and will be one of the factors that tests urban resilience.

Working towards the objectives set for Simp-Thwait Developers brief, the over-provision of Purpose-Built Student Accommodation (PBSA) is recognized. Instead, it **prioritises permanent communities** in mind. Analysing successful multigenerational and **intergenerational** precedent studies that reflect the ethos of the developer have been considered, encourages to building towards **a trusted and safe community** set in Milton Comm[unity].

Instead of cookie-cutter, lip-service sustainability and sociability, neglection of existing context as mentioned, where houses are built to meet the White Paper (2020) algorithm-set goal, the Milton Comm[unity] housing process takes a different approach. It considers the invisible dimension of **emotion attachment**, **sense of ownership** and trust amongst neighbours and the existing wider community.

NATIONAL & LOCAL POLICIES

Social and environmental objectives set in local Sheffield City Council (2020) and national NPPF (2019) are considered throughout the process of this document. They are further analysed with the Strategic Housing Market Assessment (2019) with specific considerations at Milton Street, Sheffield. [Review of relevant literature can be found in Appendix.]

SHIFT OF MINDSET IN SPACES

Homes and workspaces are no longer just a single use space where they are seen as monocultured spaces, especially in the City Centre where high density of work/live environments are located. **Spatial efficiency**, amenities and flexibility are crucial elements to be considered.

Additionally, with the current COVID19 situation where a percentage of people are working from home, and nearly two thirds of businesses had adopted some form of flexible-work policy (Harper, S., 2020), conversion of mono-use of spaces should be thought of. There is also a realisation that space and nature are a need, not a luxury and spaces have to be designed by **wellbeing** (Levete, A., 2020).

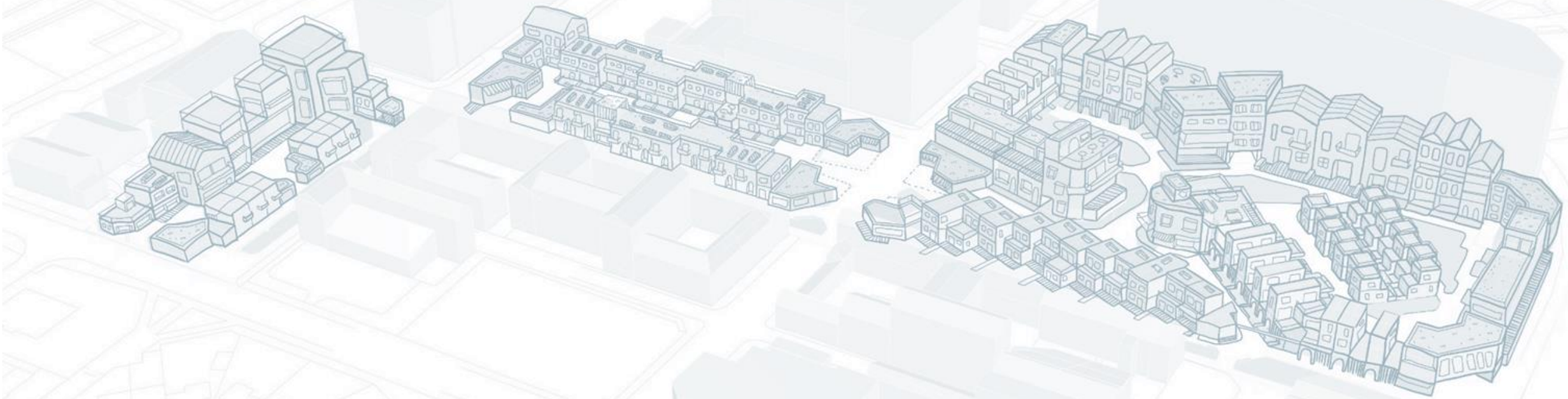
At Milton Comm[unity], it recognised the concept that people need **flexible and adaptable spaces** to carry out desired activities. Hence, strategic parts of the residence will implement such spaces for residents.

A SPACE FOR ALONE TIME; A SPACE FOR GETTING TOGETHER – RECOGNISING THRESHOLDS

Considerations of different scales and experiences ranging from relationships between built form to open spaces, **private and public intimacy gradient and thresholds** to individual personalization of spaces.

Communal spaces that inspire **collaboration**, connection and coordination that encourage social, economic vulnerabilities that exist today.

People are increasingly expecting choices and variation in housing. Some elements that were considered presently when people are buying a house include: surroundings, environment, landscaping, natural lighting, high ceilings, inventive use of space, variety and interesting use of materials. (Dezeen, 2020)



current issues

01 - Housing Affordability

Within England, 2.5 million are unable to afford their rent or mortgage, and it has impacted all ages across every part of the country (BBC, 2019)

According to Office for National Statistics, over the last two decades there has been a 46% increase in number of young people (age 20-34) living with their parents. Over the same period, the average house prices have also **tripled**. (Collinson, P., 2019) In Sheffield, only 97 homes out of 6943 (1.4%) were approved by planners in 2016 & 2017 that met the government's affordable definition, as compared to the national average of 16%.

The issue within Sheffield city centre, with its rapidly built PBSA by private developers, is that they are notably allowed to go forward with multi-storey student accommodation and are not required to contribute to affordable housing. (Walker, A., 2018). This affects local communities and local home buyers from opportunities to purchase in this area.

With rising sales prices and increase in supply of dwellings, it has affected the cost of affordability, home ownership declining especially in younger households, as the private rented sector expanded, and people **prefer to rent than buy** as it is the only scheme they could afford. (Ferrari et al, 2019)

02 - Housing Shortage

The White Paper (2020) recommends building 300,000 new homes every year to match demand and keep housing cost affordable derived from an algorithm. In reality, fewer than 250,000 were built the previous year. (Breach, A., 2020)

Locally in Sheffield, 12,000 people are on the **urgent waiting list** to purchase a council property, out of 40,000 in total. (Ashton, L., 2020)

The issue with the algorithm formula it that it is based on predictions of how much growth there will be to determine the number of new homes each, and that it does not deliver homes at the right scale or in the right places, where new homes are needed. (Breach, A., 2020)

And as Kersley, A (2020) emphasized, the **new algorithm would backfire** and could have a big impact and could potentially worsen an already critical shortage of affordable homes. The use of the algorithm to determine an actual crisis is worrying, as it does not consider factors such as homes that are built on specific land, which if profit-driven, would create even more houses on expensive land with intended luxury houses that defeats the demand of affordable housing. Even if it hits the targeted calculated amount, it will not completely solve the housing shortages. Building more affordable and targeted required homes on previously developed land and sustainable locations could be more effective and considering realistic factors of housing needs such as **multigenerational, adaptable, affordable homes** that could benefit and meet the basic needs of the local communities.

03 - Ageing Population

The UK population is ageing. In mid-2014, the average age exceeded 40 for the first time. By 2040, nearly one in seven people is projected to be aged over 75. Supporting the ageing population will put a **huge stress** on the nation - **unsuitable housing** is the source of multiple problems and costs. Poor housing creates hazards that cost the NHS an estimated £2.5 billion per year. New housing can adapt to people's changing needs as they age will also be important, reducing demand on health and care services and enabling people to work flexibly and for longer. (Govt office for science, 2016)

By 2034, Sheffield's population of aged 65 and over is projected to increase from 92,000 to 124,000. Sheffield already has a larger population of older people as compared to other cities in UK, and would continue to increase. (Sheffield City Council, 2016)

04 - Sustainability - Climate Resilient Neighbourhoods

Nearly 30 million homes are not in condition to keep us safe and protected against climate change (Carbon Brief, 2019). Both policies of Zero Carbon Homes and Code for Sustainable Homes were scrapped in 2015, leading to many new homes being built only to **minimum standards** for water and energy efficiency. There are also no targets for the uptake of property-level flood resilience. (Carbon Brief, 2019).

New homes are targeted to be prepared for the impacts of climate change and must be built to be low-carbon, energy and water efficient and climate resilient. Efforts for property-level flood protection, green infrastructure, sustainable drainage and sustainable transport are recognised in the UK Housing Fit for Future document, contributing to long-term emission reductions and resilience to climate change.

Support of housebuilders incorporating good-quality biodiversity net gain requirements across the UK has also been brought up for future homes. (Edgar, L., 2020)

05 - Variety And Choices Of Housing Typologies

According to The White Paper (2020), it **supports variety and site-specific design** as compared to mass produced cookie cutter design buildings which are churned up by volume builders. However, Racing for tight deadlines and efficiency results in over provision of poor-quality housing.

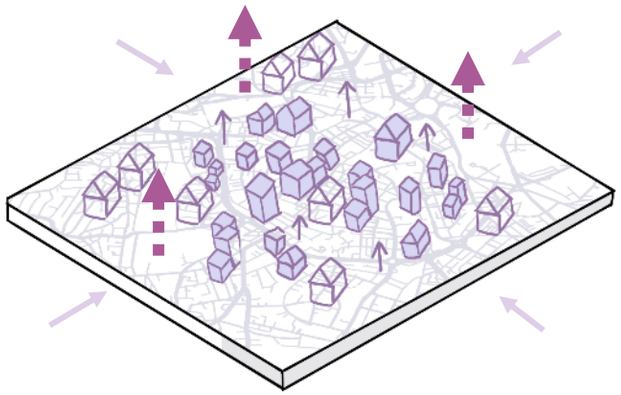
Although young people are more likely to live in city centres while older people are much more concentrated in suburbs and rural areas, **variety and choices of intergenerational living** should be encouraged. Unfortunately, the current assessment shows that Sheffield's City Centre plans mainly for PBSA and very few family-oriented homes, especially with considerations of the local housing needs. (Ferrari et al, 2019).

Developers are not providing any affordable housing in the City Centre and this ensues problems where no mix of local and international, age groups and wider community, hence unsustainable and a backfire to the city centre regeneration scheme plan (Guardian, 2018)

Specifically to site, developers are required to transfer 30% stock to registered providers of affordable housing, however they can bypass the quotas if it is proven to not be economically viable. (Walker, A., 2018)

Additionally, Sheffield has higher than national average rate of single person households (Ferrari et al, 2019) which may potentially result in loneliness or impacts on mental health, further emphasising the needs of non-monoculture housing.

current trends



City Centre Living

Historically, city centres in United Kingdom had a crime reputation and are known to be dreary and dilapidated places. However in recent years, they are the most desirable areas of the countries to live in. (Swinney, P. and Carter, A., 2018) Evident from site walks, the amount of older generations are not seen as much and city centres are mostly dominated by young people. The perception over the years have improved and change, and there is a **shift in lifestyles**. With the increase in population leading to an increase in employment, people prefer to live closer to amenities rather than spacious suburbs.

City centre living will be increasingly attractive to generations - old and young -- hence a provision of a range of routes into housing too from traditional buying and renting, to shared or cooperative ownership and new forms of tenure is needed.

Locally in Sheffield from 2002-2015, it has been one of the fastest growing city centre populations, growing up to 139% increase. (Swinney, P. and Carter, A., 2018) The city centre had fewer than 3000 residents in 1998. Now in Sheffield, it has over 27,000.

Temporary communities including students contribute to the rise, whereby there was a growth of more than 300% of student population between 2001 and 2011 according to census data (Homes for the young). Included in The Sheffield Plan (Sheffield City Council, 2020), it is expected that there will be a **higher demand and proportion of younger households for City Centre living.** Though the City Centre has always been regarded as a place for work, but it has potential to create a stronger community and sense of place with implemented amenities to create demand for city centre living.

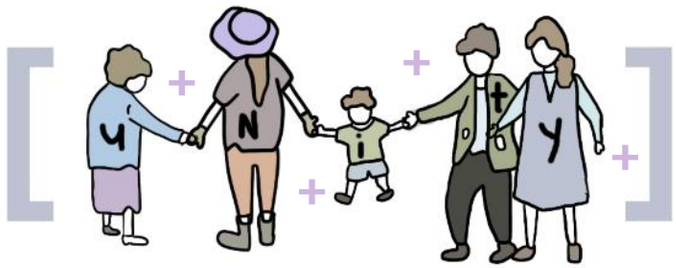
Intergenerational & Multigenerational Living

Sheffield OPIL Housing Strategy vision (2016) and The Sheffield Plan (2020) both supports intergenerational living that facilitates active-ageing and the benefits it will contribute back socially, civically and economically. According to United for All ages (2020), there is also a supported vision where in 2030 people of all ages are respected and valued, where they can mix and share experiences, live alongside each other and communities that are fit for life, work, learning and play.

A rise of 35% since 2009, 1.8million UK households are living in a multigenerational household and it will **continue to rise in the future**. Although this is partly a result of youth struggling to afford housing and lack of affordable retirement homes or the need of company/care of older generations, there have been positive results living together. (Harris, M., 2019)

Residing in **an intergenerational demographic brings benefits across generations** – for example, promoting children's social and emotional skills and demonstrated positive interactions with the older generations; reducing age segregation and tackling social isolation. (Peach, K., 2017) It is also evident from the precedent studies that provision of communal spaces allow individuals to interact and exchange knowledge, resulting in building trust and mutual support between the groups.

The success case studies of intergenerational and multigenerational living shows that it lies within the environment and **affordances of spaces** within the community. As the population ages, housing and infrastructure must be appropriate and adaptable to the changing needs and lifestyles that can **accommodate everyone**. Considerations of amenities to be included in the proposal should range from safe street play for children, common dining areas for all age groups to unexpected encounters within sociable environments.



A Sharing Community – Co-working & Co-living

With the changing patterns and flexibility of work schedules, there is a shift in the way we live and work. The trend of co-living and co-working is one of the solutions that arise, riding on the plus points of limited and individual input, users get additional benefits from living or working with like-minded communities. Trendy for the millennial's generation and tech-savvy age group, the **collaborative model is thriving**, and it can be seen from other shared services such as Uber to WeWork models. The limitations of this however includes requiring an active and overarching top-down management.

CO-WORKING

Co-working started out as a start-up environment, based on sharing physical workspaces, facilitates networking and increases exchange of knowledge, ideas and business opportunities. Without the need of renting a large scale office space, users can rent a desk depending on how many hours they would require, yet working in an office-like environment and its' benefits of interactions with like-minded business people. (Bordi, R., 2020)

CO-LIVING

A housing system that gives priorities to shared spaces for common use of certain services. The aim is favourably to have social interactions with a supportive community and optimizing resources that can be shared. It emphasizes the idea of community and striking a balance between shared and private space. (Bordi, R., 2020; KTGY, 2020) The provision of **communal facilities and curation of experiences** in these spaces and active participants brings out the ideal outcomes of co-living.

Learning from the co-housing framework

With the successes and rising trend in co-housing, it is useful to analyse the framework, extract and understand why it makes these communities so successful. At the same time, learn from what the limitations are to prevent it. It is also notable to mention that co-housing schemes are usually of a smaller group size as compared to the community capacity expected.

CO-HOUSING DEFINITION: A bottom-up approach with invested like-minded people who intentionally come together, create and manage the entire community. Each household owns a unit themselves a d share communal spaces. Residents do activities together such as dining together regularly, building strong trusted bonds with each other. (UK Cohousing Network, 2020)

Fig 1. Section of Manchester Co-housing illustrating environmental benefits and communal spaces

Key elements that contribute to the success of co-housing

COMMUNAL SPACES AND FACILITIES

Indoor spaces include having a **Common House**, which features resident-use only facilities like a shared kitchen, dining space, community managed childcare, and rooms for flexible use. These rooms can be for temporary occupancy such as guests bedroom, birthday celebrations and work space. (Felstead, A., 2020) This reflects the same learning points extracted from Marmalade lane case study.

Outdoor spaces include **green open spaces** mostly with allotments and chicken rearing, experimental planting and play spaces that can be used for children's play, celebrations and gatherings which promotes neighbourhood vibrancy. (Felstead, A., 2020)

COMMUNITY-LED PARTICIPATION & SOCIAL ACTIVITIES (Felstead, A., 2020)

RESIDENT ASSOCIATION & MANAGEMENT - UPKEEPING AND MAINTENANCE (Felstead, A., 2020)

SHARED RESOURCES & FACILITIES - I.E., LAUNDRY, CAR-SHARING, CHILDCARE, GARDENING TOOLS. (Schacher, C., 2006)

COMMITMENT TO SUSTAINABLE PRACTICES FOR REDUCED COST OF LIVING (Wang et al, 2020; McCamant, K. and Durrett, C., 2011)

Advantages & Positive Output

AFFORDABILITY

Co-housing communities often perform better in economic and ecological terms than conventional housing (Wang et al, 2020)

The reduction in cost of living, overall energy demand, waste and consumption comes from shared sustainable habits and practices within the community. These include sharing common household appliances, tools, equipment and functions to food, utilities, goods and services. (Jarvis et al, 2016)

INTENTIONAL SHARING COMMUNITIES RESULTING IN A CARING COMMUNITY

Shared responsibilities and maintaining the community long term creates a compassionate and caring community through shared skills, taking care of each other, intergenerational interactions. For example, a young adult is able to provide low-level support such as helping his neighbour, an elderly, to collect prescriptions or pick up groceries. (Makin, C., 2018) The mental and emotional wellbeing of living in an interdependent community is evident. (Schacher, C., 2006)

SUSTAINABLE LIFESTYLE (ENVIRONMENTAL)

With a commitment as a community to sustainable living, the shared resources result in environmental sustainability, energy efficiency and resource efficiency. The co-housing model shows effectiveness in encouraging each other to adopt pro-environmental behaviours such as opting a bike instead of a private car.. (Wang, 2020)

Shared resources have shown better performance in economic and environmental terms through sustainable practices. (Jarvis et al, 2016)

Understanding Limitations

COMMUNITY CAPACITY

Co-housing is usually made up a group of 10-40 households (UK CoHousing Network, 2020). Any larger than that, it becomes an unsustainable model as it involves too many people. The consensus become difficult to make, as it is tough to please everyone. Seemingly trivial issues can become a burden despite all parties having well intentions. This causes conflict and friction within the community, as it is difficult for people to use dialogue to resolve issues of mutual concerns (McCamant, K. and Durrett, C., 2011).

INEQUALITY IN RECRUITMENT OF HOUSEHOLDS PROCESS

Cohousing communities reflect societies in smaller scales, which are not always free from inequalities based on gender, age, race, income for recruitment. It can result in both ends of a spectrum, living in harmony or living in divide. (Jarvis et al, 2016)

MANAGING THE COMMUNITY

Many co-housing communities struggle to get off the ground both financially and procurement of space (Jarvis et al, 2016). Successful cases require experienced facilitation, otherwise it would just be tired out. Though there are case studies that rotates schedules and responsibilities, it is a committed managing role to upkeep and maintain a standard in the long run (McCamant, K. and Durrett, C., 2011).

LIMITED PRIVACY AND INDIVIDUALISM

While most members enjoy the perks and social benefits of the co-housing model, it can be exhausting, invasive and restrictive to some (Schacher, C., 2006).

vision & concept

VISION:

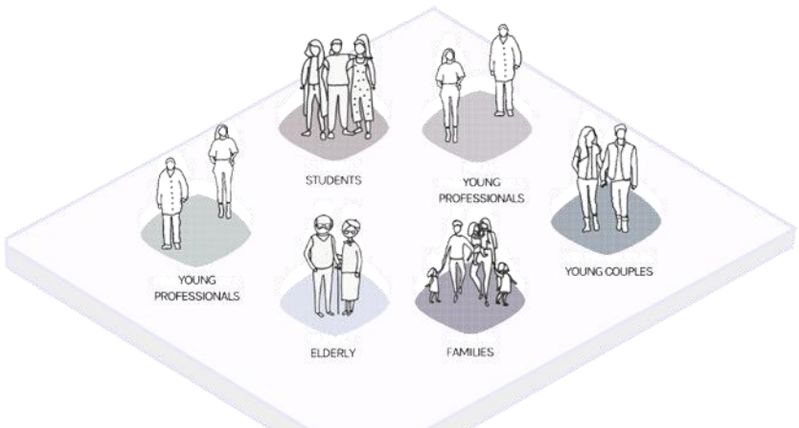
Milton Comm[unity] is designed to nurture a **genuine relationship** built amongst the residents through engagement and communal activities.

The irregular layout guide users to main communal spaces throughout the development. It creates **interesting perspectives and experiences** while users navigate the site on a daily basis.

Based on a framework of 5 guiding principles (right) and reference to Soft City (2019), Responsive Environments (1985) and Cities for People (2010).

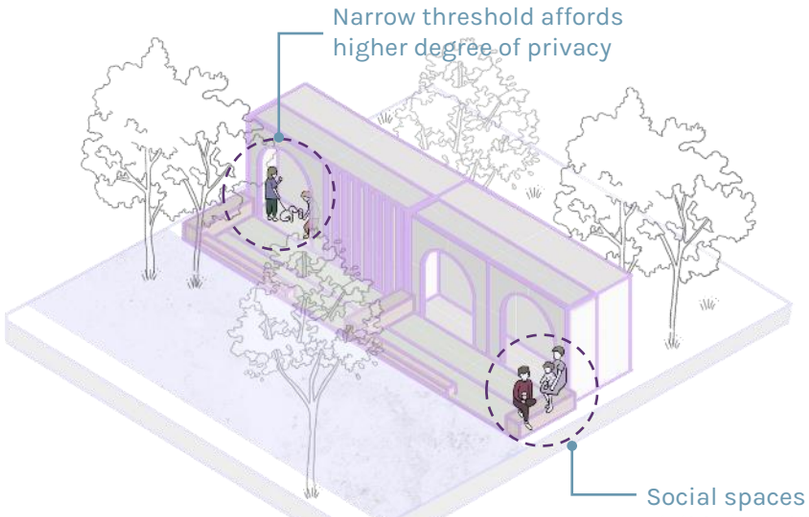
01 A space for everyone - Intergenerational living

Homes would cater for multigenerational living and encouraging intergenerational living through facilities within the community such as adult day centre placed next to community managed childcare. This encourages cross interaction between age groups.



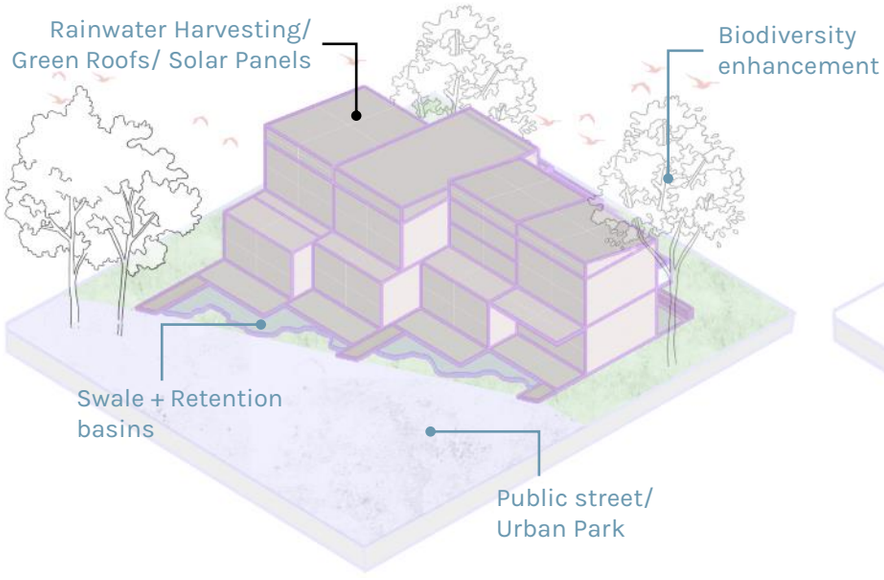
02 Gradient of thresholds

Understanding the need of privacy and the possible negligence of spaces (Saaby, T., 2014), private and public thresholds are thoroughly considered through interfaces.



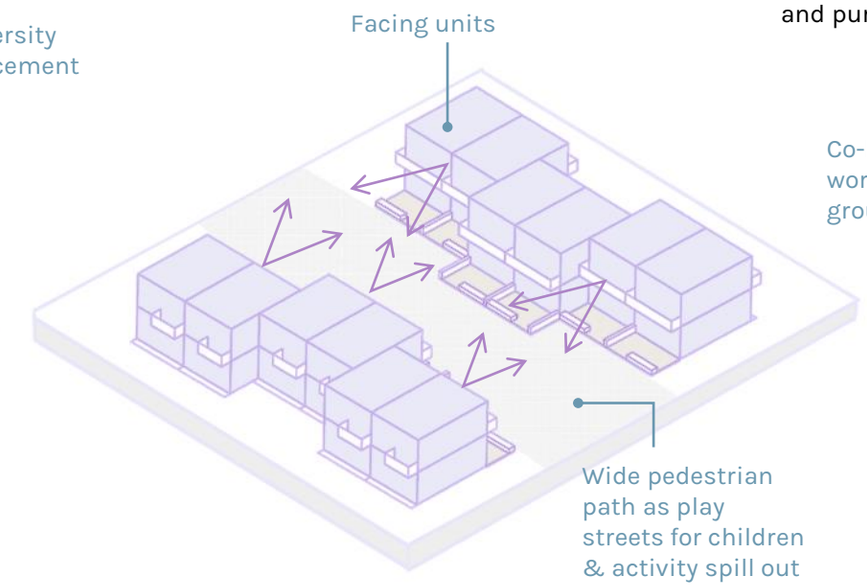
03 Climate resilient

Aligned with the guidelines of UK Fit for the Future (2019), homes are designed with climate resilient strategies such as implementing SUDs scheme and biodiversity enhancement within the housing development.



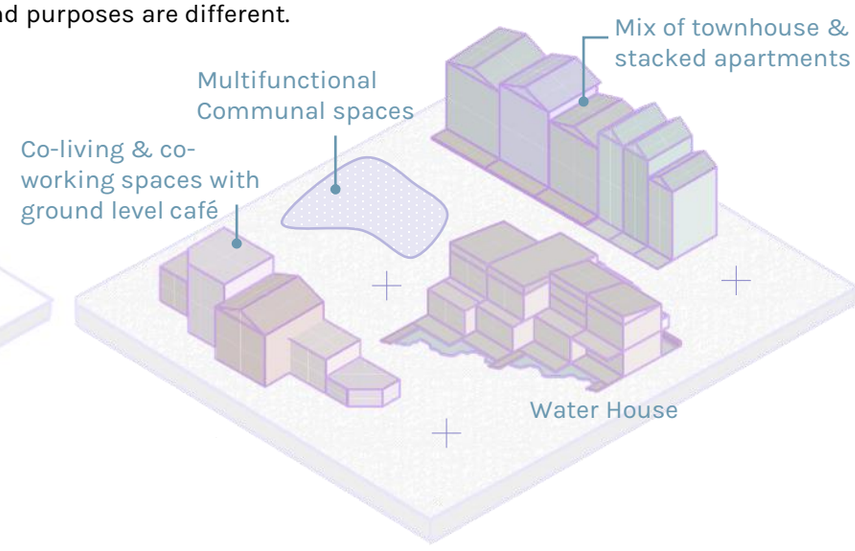
04 Socialise outside your doorstep

Encouraging social interactions between neighbours through design and placement of houses – such as facing units, low walls as seating/ resting opportunities and presence of balconies, loggias and roof terraces. (Gehl, 2010; Sims, 2019)



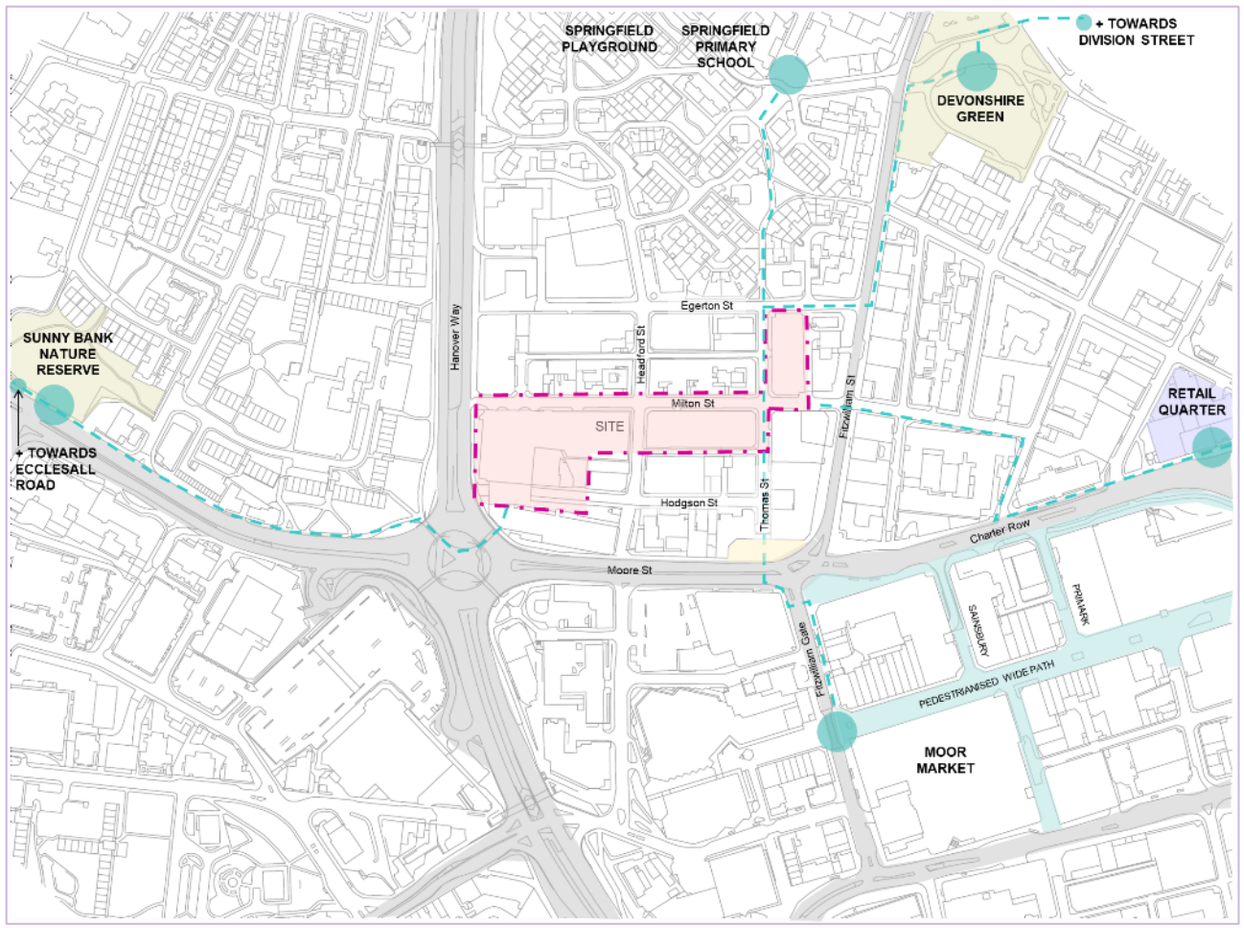
05 Housing Variety

With a diverse range of designs creates unique visual identity that accommodates for different needs of users, it takes guidance from joined-up typology principles mentioned in Soft City. Some blocks such as the communal building will be of a layered typology (Sims, 2019), where in each level the activities and purposes are different.

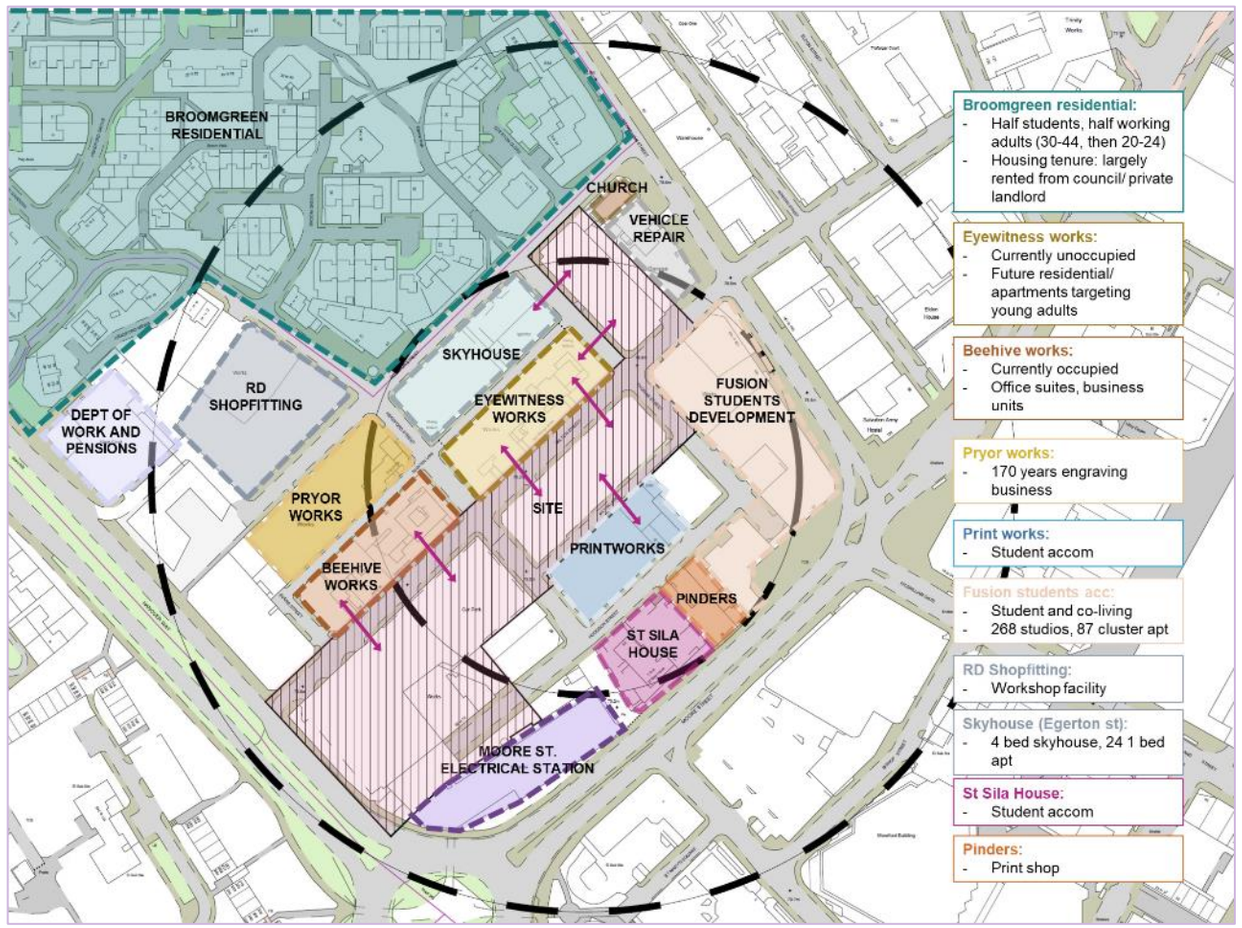


wider network & existing/future communities

existing wider network



existing/future communities



The site is situated in a strategic location that is well-connected to the existing network of frequent spaces. It sits at the intersection between The Moor, Division Street and Ecclesall Road, where most shops, restaurants and hangout places are at. It is also connected to culture filled spaces such as the Creative Industrial Quarters, art galleries and theatre.

Acting as a catalyst, the site could **strengthen existing connections** for both pedestrian and green infrastructure. This would be important for residents here as jobs are mostly situated in the city centre, which eliminates the need car-transport to work.

The existing communities include residential from Broomgreen Residential, Broomhall Residential and Broomhall Flats across the highway that are rented from the council.

The future communities are sites that have yet to be built or are currently undergoing construction. A prominent development at the junction that sits in between the site and The Moor pedestrian, Fusion Students development building, would be over-powering the street space with its height and density.

With these communities coming together, the potential of having a communal inviting space that gathers and strengthens the bond of the wider community is apparent. This would contribute and boost social and economic factors within the city centre.

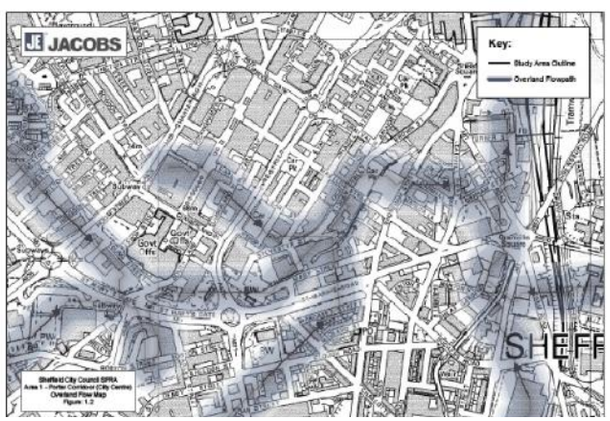


Fig 2.1 Overland flow map

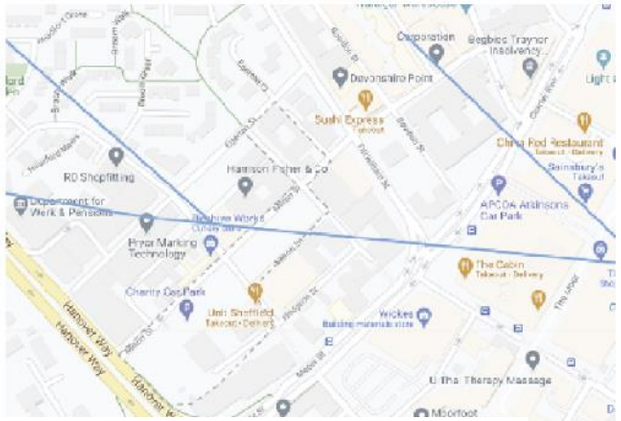


Fig 2.2 Hidden Rivers – Underground channels

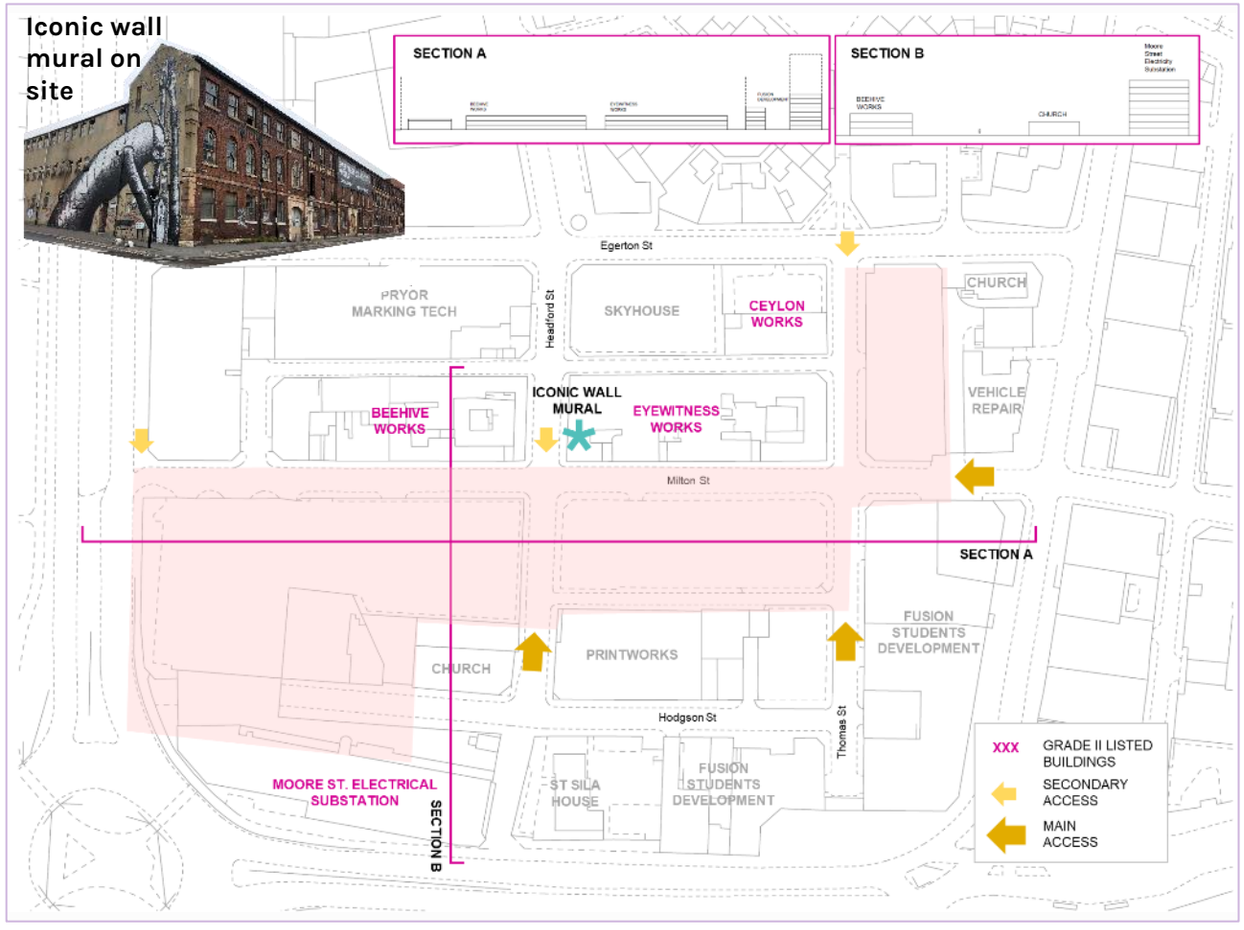
existing hidden water network

Understanding overland flow paths are essential for creating resilient and future ready communities. The site sits on top of the hidden rivers of Sheffield (Fig 2.2). Cross referencing to the overland flow map (Fig 2.1) (Sheffield City Council, 2020), designing with SUDs integration is an imperative measure and is one that is supported by mentioned policies and documents.

site analysis and response

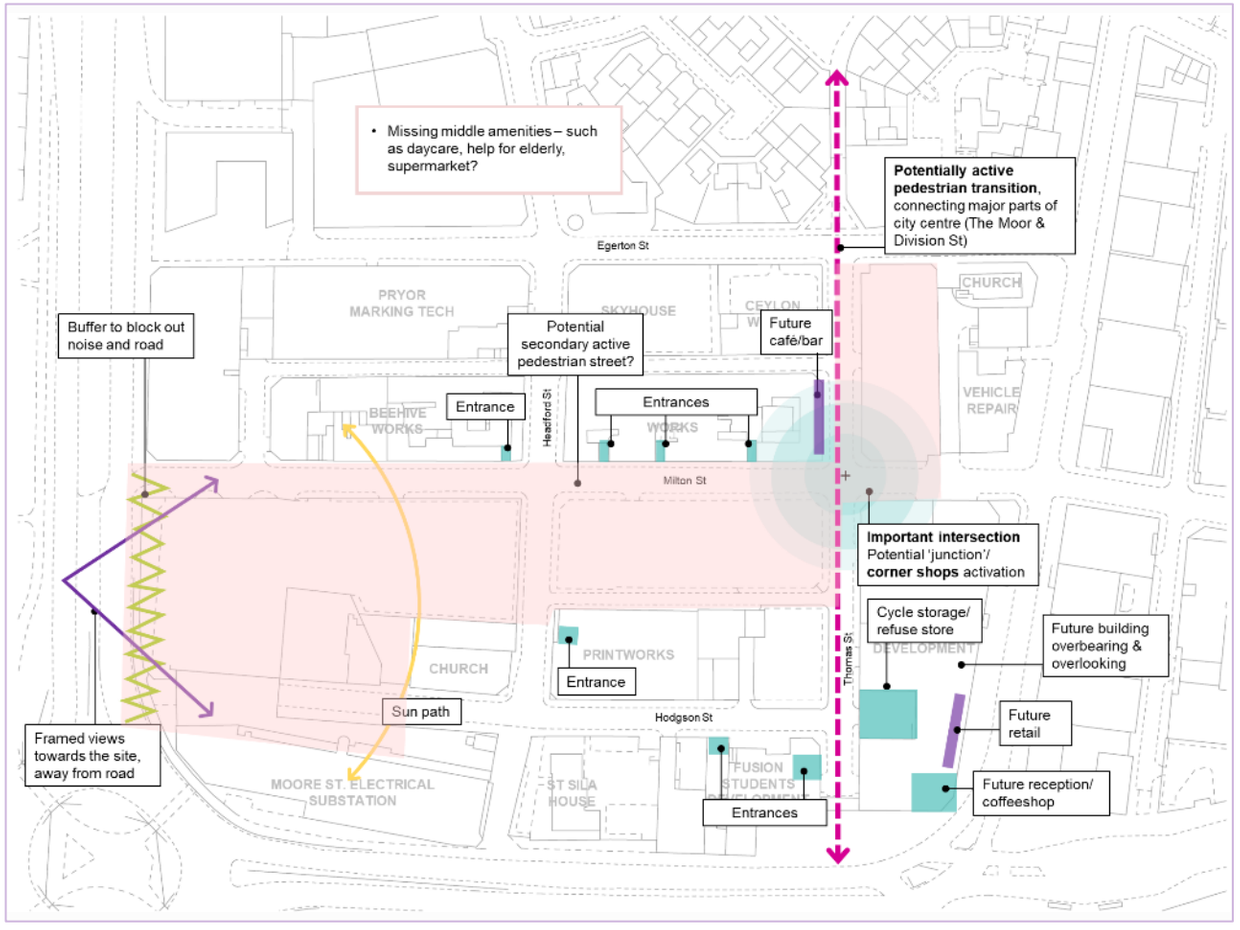
existing site analysis

Surrounded by Grade-ii listed buildings including Beehive Works, Eyewitness Works & Moore St Electrical substation. These existing architectures have to be kept and repurposed, hence it will be a permanent feature which sits on the site that should be considered. It would also continue to form site orientation of the site. (Thwaites, 2005)



response to site

With the overlay of future Fusion Students Development and Eyewitness Works, the proposal of Milton Comm[unity] should be responsive to the proposed outward facing amenities. This is to capitalise existing and future assets that can be incorporated in the residence masterplan.



UNIQUE POINTS TO NOTE FROM SITE:

- The existing courtyards within both Beehive works and Eyewitness works are features where people in the past and current gather and is a space for chanced encounters
- Future terracing of Fusion Student Development – use of multifunctional spaces, roof space and upper-level connections
- Existing mural on wall of eyewitness work – Iconic element that was seen photographed for wedding photoshoots
- Height and roof variations of existing and future architecture buildings – for consideration of new proposal as it contributes to ground level interaction, sense of scale and overall elevation
- Existing flow of pedestrian network and access to be strengthened or restructured

KEY POINTS:

- Defining important intersections to create or direct social spaces for the wider community encourages interaction and knowing the existing residents, resulting in a trusted community.
- Identifying with the missing middle amenities that should be introduced to the site that would benefit Milton Comm[unity] and for the facilities that is retail oriented it would be placed along the edges of the masterplan.
- Responding to existing/future access and entrances for convenience and smooth transition between the spaces. Inviting angles and directionality would create flow of pedestrian routes for an efficient use of space.
- Pedestrianising street networks that expands the existing cycling route and discourage the use of cars as with proximity to most facilities and public transport, the use of cars can be reduced within this residence.

site & SWOT analysis

STRENGTHS:

- Strong identity and character as the site is flanked by Grade ii listed buildings
- Proximity to city centre – retail, chain supermarkets and F&B stores.
- Convenient access to public transport – existing cycleway hugs the site & walking distance to buses, trams and trains
- Flat existing topography – a blank canvas to work on, without removal of building/green spaces or mitigating too much level changes
- Proximity to green spaces (Devonshire Green, Botanical Gardens) & local wildlife site (Sunnybank Nature Reserve 240m)
- Nursery, Primary school, University are of walking distance

OPPORTUNITIES:

- Located in the middle of the adjacent buildings, it has the potential to harmonise the existing site that invites and interacts with the surrounding buildings
- Capitalise on existing infrastructure and embed elements to form a unique Milton Comm[unity] character that sits familiar with the site
- Create a space of inclusiveness of wider residential community – encourage older residents to city-centre living & shared outdoor spaces
- Potential of directing and visually linking green spaces (from sunnybank to devonshire green)
- Economic development – partnership with existing occupants
- 'Hidden Rivers' – reviving the water element back to site
- Emphasize usage of cycling and pedestrian routes

Fig 3.

Future Fusion Students Development

WEAKNESSES:

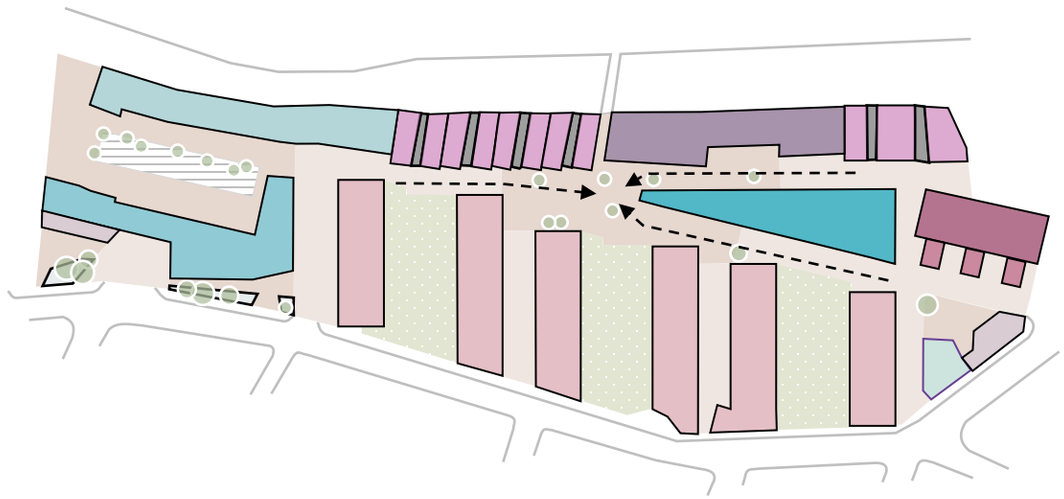
- Sound and Air pollution from adjacent dual carriageway/ ring road
- Existing transition and single use space as carpark
- Scale of future developments over towering the site, might result in lack of privacy within the site
- Surrounded by monocultured occupants – mostly students and under 35
- Minimal outward looking views as site is enclosed by other adjacent buildings
- Lack of functional green space within the site

THREATS:

- Existing architecture and future development can be quite overbearing and blocks the site
- Over-design, gentrification and hostile housing designs might end up foreign to site and may lead to anti-social behaviour
- Meeting the needs of high-density quality living and adequate green space
- Noise from highway might produce unpleasant sounds for future residents
- Privacy and safety of surrounding temporary communities

precedent studies

LITTLE KELHAM, SHEFFIELD



Arch house
Garden House
Cube House
Houses

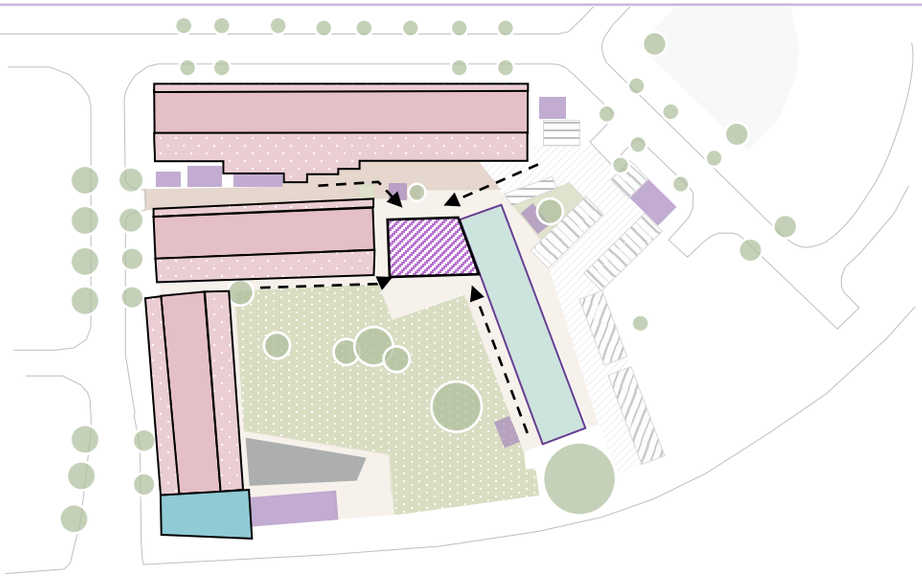
Layered Apartments
Birch landing Apartments
Stacked Apartments
Wedge apartments

Shared Streets
Social spaces
Semi-private green spaces

Café & Bakery
Eagle Works – Repurposed to restaurant

TOPIC:	ANALYSIS:
Community type	Multigenerational
Housing typologies	Mixed types of households, from apartments to variety of sizes house
Tenure type	Leasehold
Shared facilities	Bike storage located at staircase
Commercial within residence	Restaurants and Bakery
Distinct Layout	Restaurant in the centre of the residence – brings public into the semi-public zone of the residence, may not be most ideal scenario amongst residence. However, it offers an alternative for distraction so that public will not wander about the residence.
Social spaces	Shared balconies between apartments, ground level shared street
Personalisation opportunity	Raised deck attached to houses and shared balconies affords personalisation to their own outdoor space.
Historical elements	Repair and refurbished Green Lane Works and Eagle Works (Grade-ii listed) – links to historical industrial past and using it to characterise the development, creating a sense of place and identity. (Historic England, 2016)

MARMALADE LANE, CAMBRIDGE



Terrace Houses
Apartments A
Apartments B

Communal facilities/ bike storage & storage space
Common House
Social space between housing

Central green
Allotments
Pathway

Vehicular Access
Carpark

TOPIC:	ANALYSIS:
Community type	Co-housing, multigenerational, inter-national
Housing typologies	Mix of 2-5 bedroom terraced houses, 1-2 bedroom apartments and flats (Mole Architects, 2018)
Tenure type	Range of tenures
Shared facilities	**Common House with distinct feature** – Shared kitchen, laundry facilities, communal storage, children's playroom, meeting spaces, guest bedrooms. **Shared gardens** - Raised beds for food growing, Composting and propagation area, Tool shed **Others**: Carpooling and shared waste stores (Archdaily, 2018)
Distinct Layout	Courtyard & enclosure typology, encourages social activities to spill out
Social spaces	Facing units, car-free play street, courtyard, common house activities
Personalisation opportunity	Choice of dwelling and cladding options up to residents (Archdaily, 2018) Outdoor raised decks (public view) and roof terraces (private) allow for personalisations.

precedent studies

ASHCHURCH PLACE/GOLDHAWK VILLAGE, WEST LONDON

- 1 bed mobility unit
- 1-2 bed house
- Mobility 1-2 bed house
- Semi-private green space
- Shop + Apartments
- Work + Live units
- Supported accommodation
- Pathway
- Plaza

TOPIC:	ANALYSIS:
Community type	Multigenerational
Housing typologies	68 homes, 2 to 4 storey terraced houses, apartments, work+live units (Fairs, M., 2009)
Tenure type	-
Shared facilities	-
Commercial within residence	Layered typology of ground level shop and upper floors apartments
Distinct Layout	3 pedestrian streets with 2 tree lined public squares, with work+live units in the corner and in the middle of the site. Structural trees planted in a row provides privacy from front doors and provides directionality throughout.
Social spaces	Public squares and street frontages
Personalisation opportunity	An outdoor space of balcony, courtyard or roof terrace attached to every house (Dezeen, 2009) that can be personalised by each unit, giving life and character to space. Windows and unique balconies that protrude out adds personalisation ovariation to the overall dimension of space.

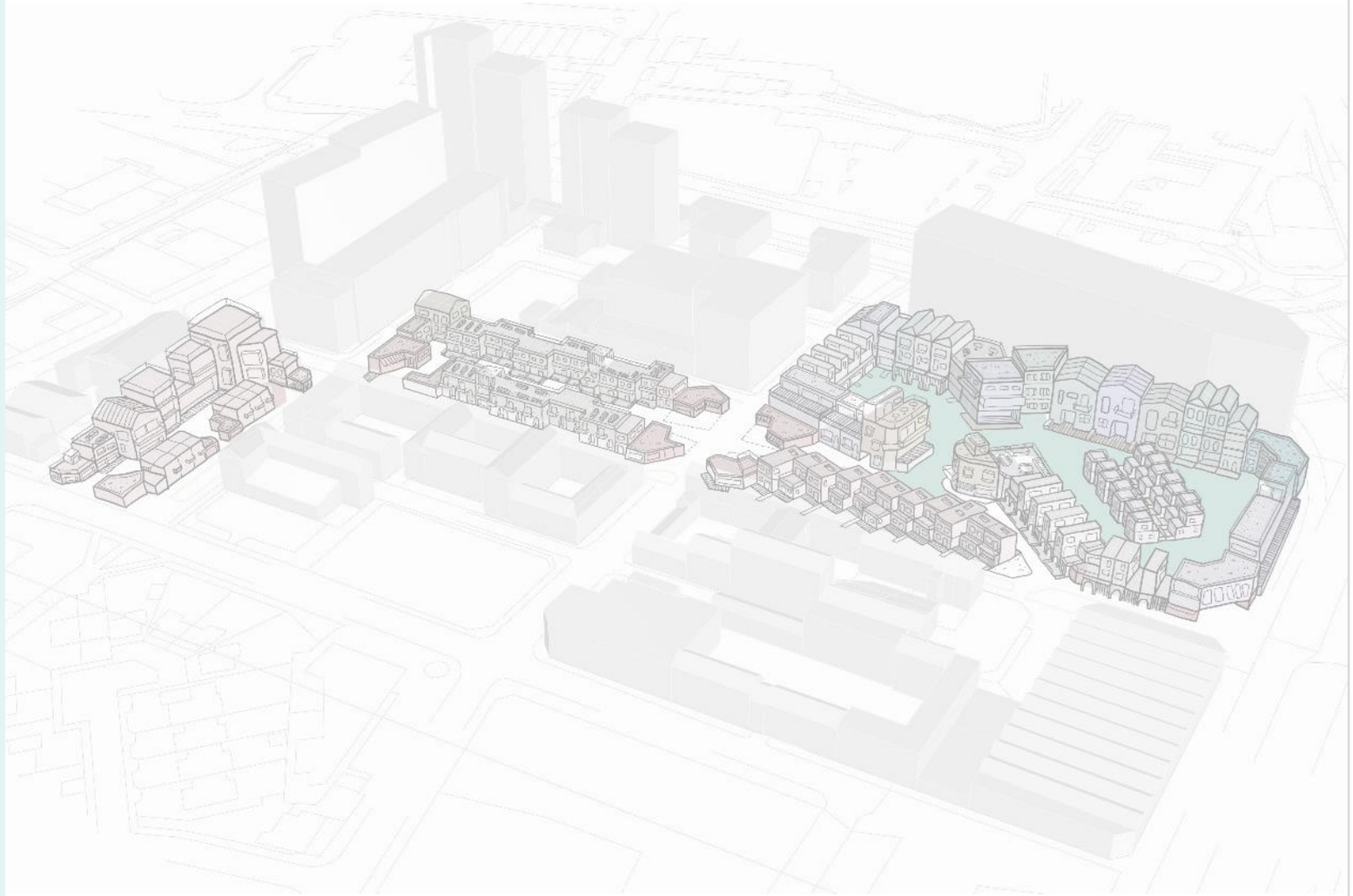
TIBBY'S TRIANGLE, SOUTHWOLD, SUFFOLK

TOPIC:	ANALYSIS: (HousingLIN, 2013)
Community type	Intergenerational
Housing typologies	38 homes, 22 houses and 16 apartments ranging from 1-4 bedrooms with private gardens or roof terraces
Tenure type	Ten scattered affordable homes including shared ownership, 16 apartments and 12 houses for sale
Shared facilities	Shared carpark
Commercial within residence	Weekly farmers' market, wine & kitchen shop, café
Distinct Layout	Shared street between two irregular triangular clusters of homes, with the shop and public square in the middle of the site. A jigsaw layout with a rich collection of interesting external spaces.
Social spaces	Permeable streets to encourage lively interactions between residents and passersby, front gardens for social activities, private courtyards and roof terraces. Public square outside café.
Personalisation opportunity	Lots of options for houses as they are all of different heights, widths, layouts and variety of materials, with ground and roof gardens to personalise
Historical elements	Converting Adnams Brewery into a shop instead of a brewery, linking back to previous use of space. Using natural materials that are all locally sourced from Suffolk that is scattered throughout the site, giving character to the residence.

milton comm[unity] project

stage 2 – strategic masterplan

MADELINE LEONG | 190157432

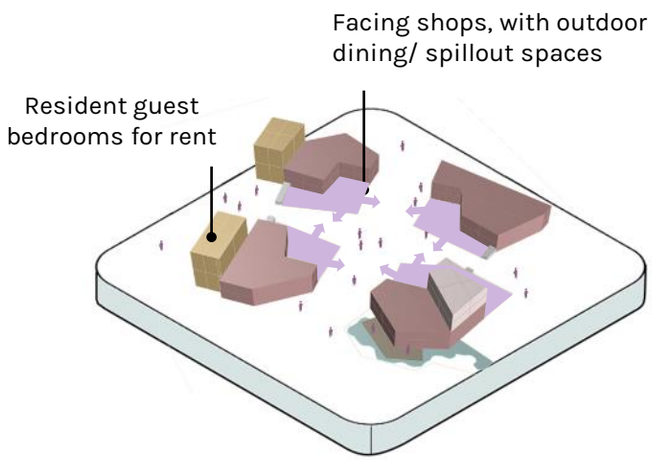


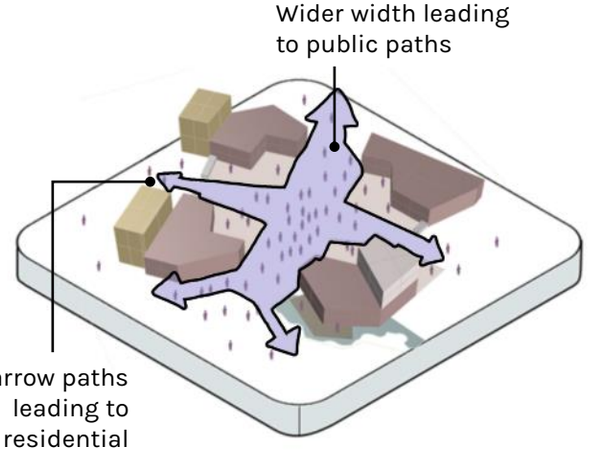
a social society

DESIGNED FOR TEMPORARY EVENTS & SPONTANEOUS INTERACTIONS

A convivial approach to outdoor and communal spaces, which affords opportunities for larger gatherings.

Instead of the traditionally car-boot sale, residents get to own a personal table to sell their preloved items. Being strategically held outside shops and cafes, it boosts sales and brings the community together with a sustainable practice.

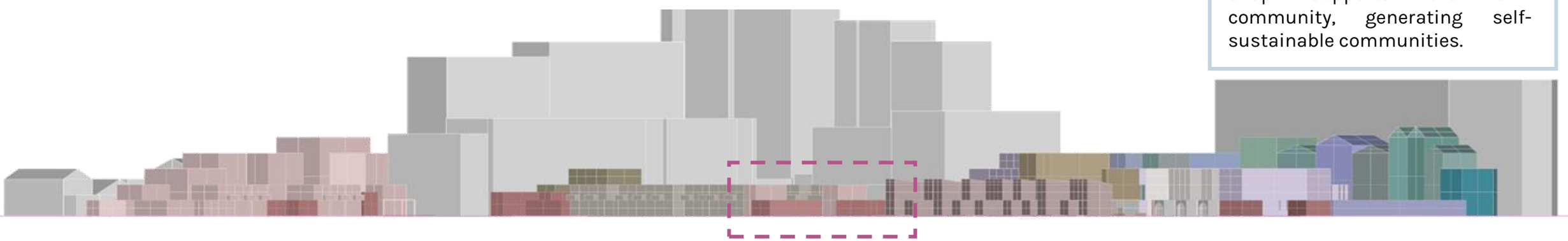




SUSTAINABLE HABITS

To reduce household waste in general, refuse stores are placed next to the recycling store + repair café. With the visual proximity that hints that there is an alternative, social opportunities, and shared repairing tools it provides a platform to engage and repair instead of throwing directly.

A thrift store and local produce shop supports the own community, generating self-sustainable communities.

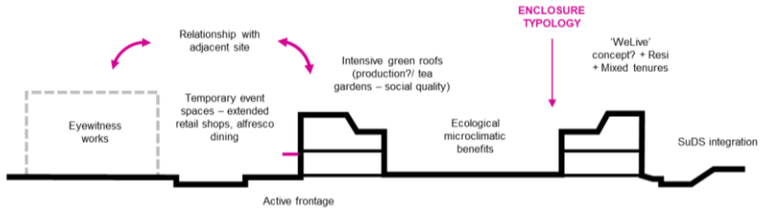


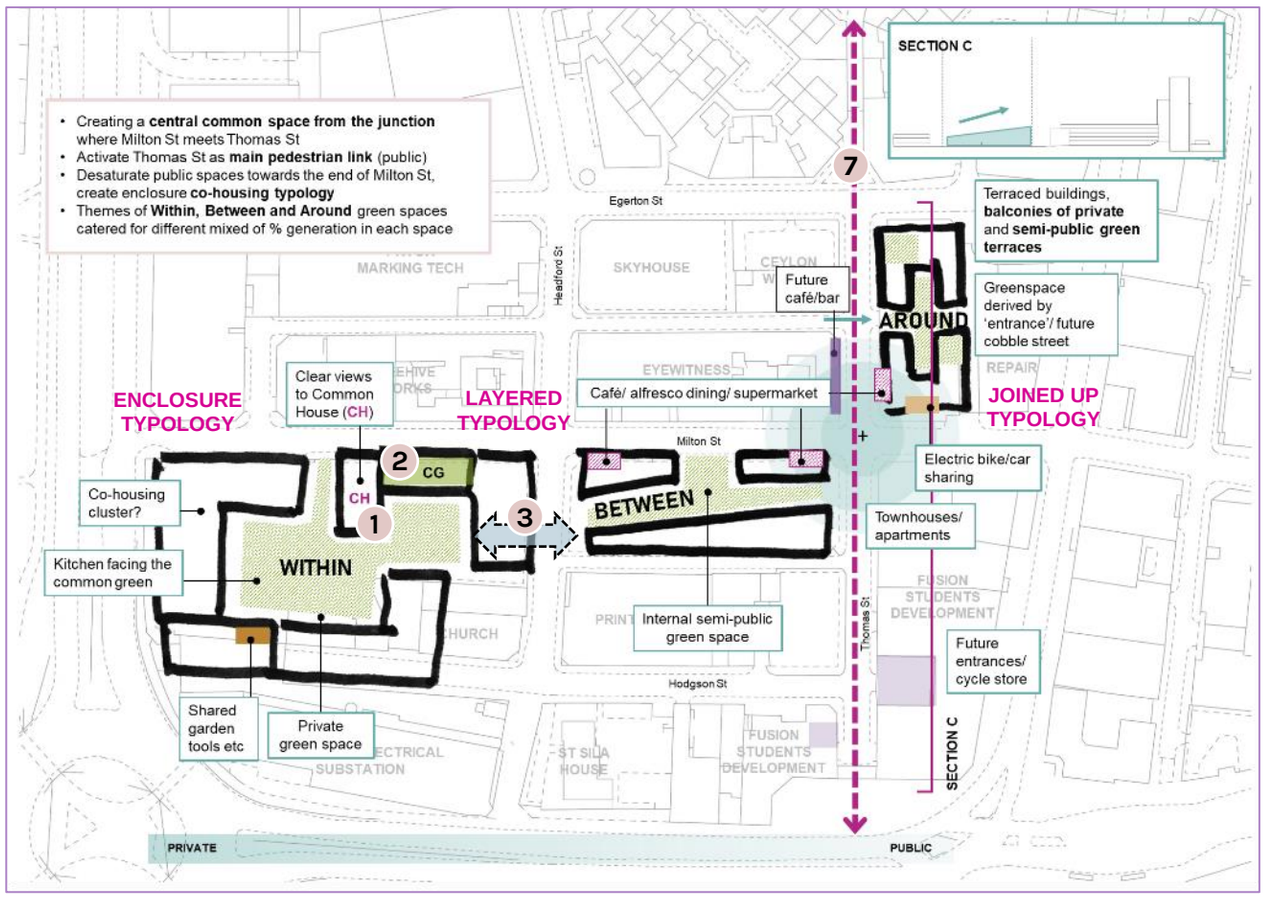
variations in layout – design processes

VARIATION 01

Design intentions:

1. One communal space for the community at Milton Street x Thomas Street intersection
2. Exploring how spaces can be shaped using building forms (within, between and around greenery)
3. Testing spaces through enclosure, layered and joined up typology as mentioned in Soft City (Sim, 2019)





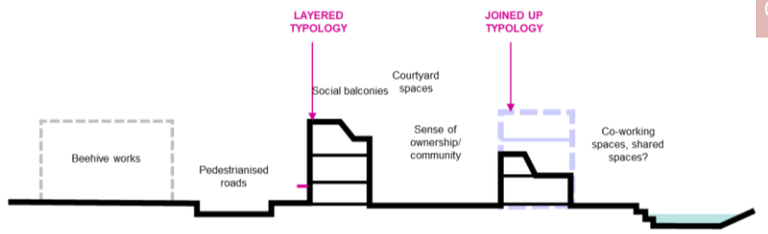
REFLECTIONS:

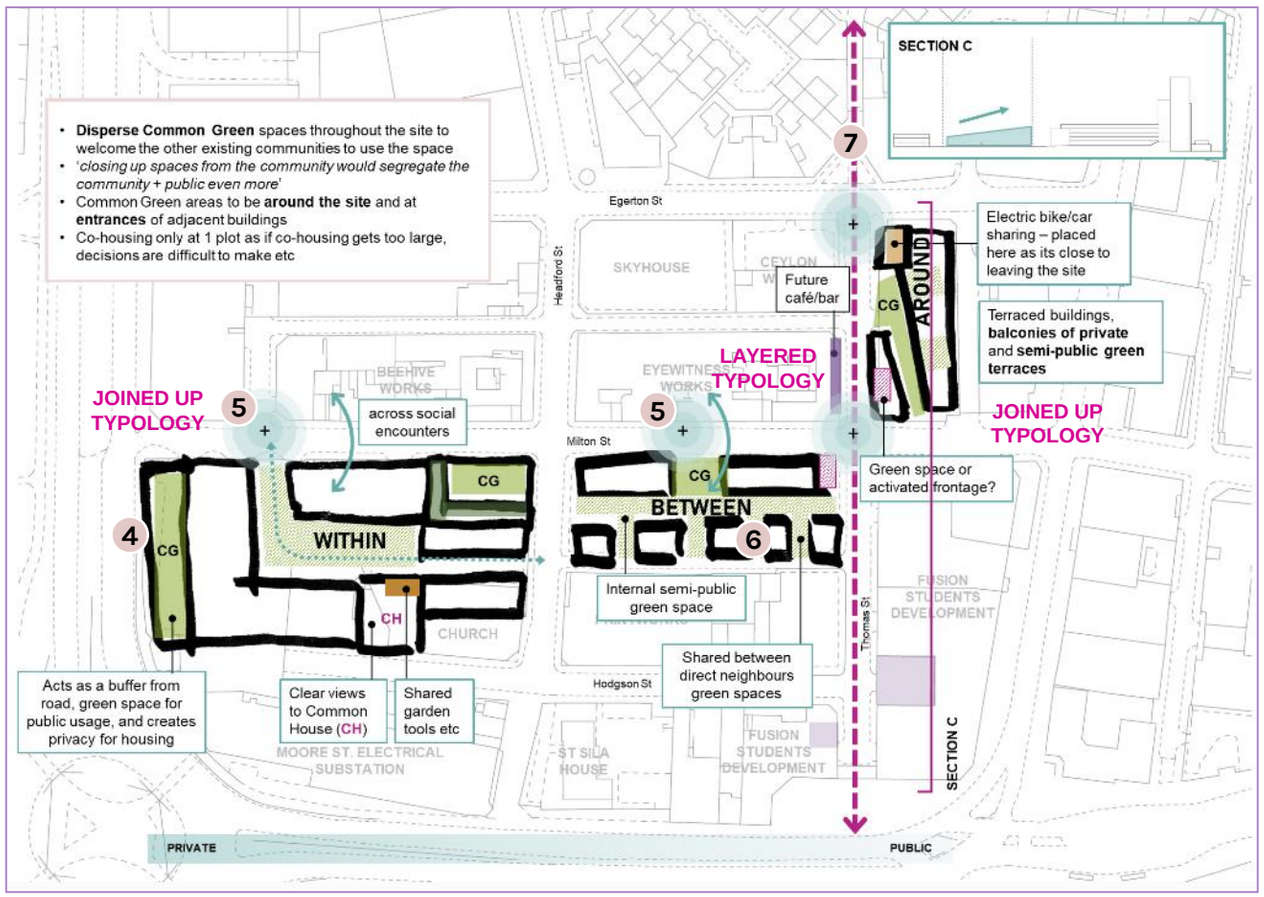
1. Common House for all residents in this plot as it is the largest plot, it is able to accommodate more, but it will neglect the other 2 plots
2. Public Green spaces should defer from Semi-Public green spaces, it should have a physical or visual separation (Jacobs, 2002)
3. Architecturally and spatially, the spaces are divided and not responding to each other. Headford St divides both 'blocks' up, if the focus communal intersection is at Milton St x Thomas St.

VARIATION 02

Design intentions:

1. Several distributed communal spaces for the community
2. Individual houses that are connected through greenery
3. Testing spaces through a mixture of layered and joined up typologies (Sim, 2019) to add vibrancy, variety (Bentley et al, 1985) of occupants and building types.





REFLECTIONS:

4. Common green located at this area can potentially be responding to adjacent sites, not just a green buffer to block noise out. Potential active frontage.
5. Distributed communal space works well as it is within proximity to the residents, these spaces can be surrounded by different facilities to encourage cross interactions of the 3 plots
6. Individual houses layout discourages vibrancy and isolates the community instead of introducing sociability

7. By pedestrianizing only Thomas St, it segregates the plots and does not harmonize the spaces together

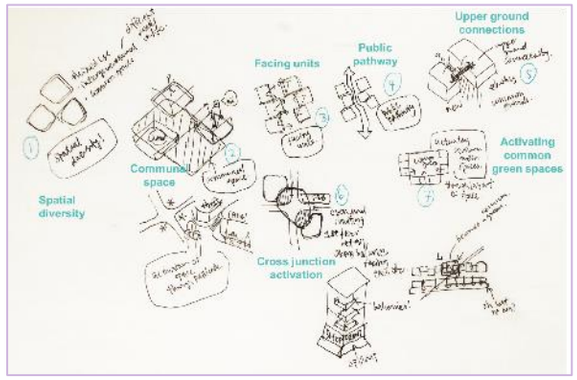
variations in layout – design processes

VARIATION 03

Design intentions:

1. Facing units with semi-public pathway within the residential area
2. Reshaping building typologies to increase spatial diversity and interest
3. Cross junction activations along Milton St
4. Capitalizing on and responding to existing/ future adjacent spaces

Forming design principles as guidance:

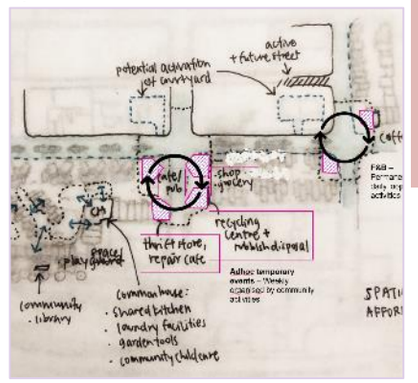


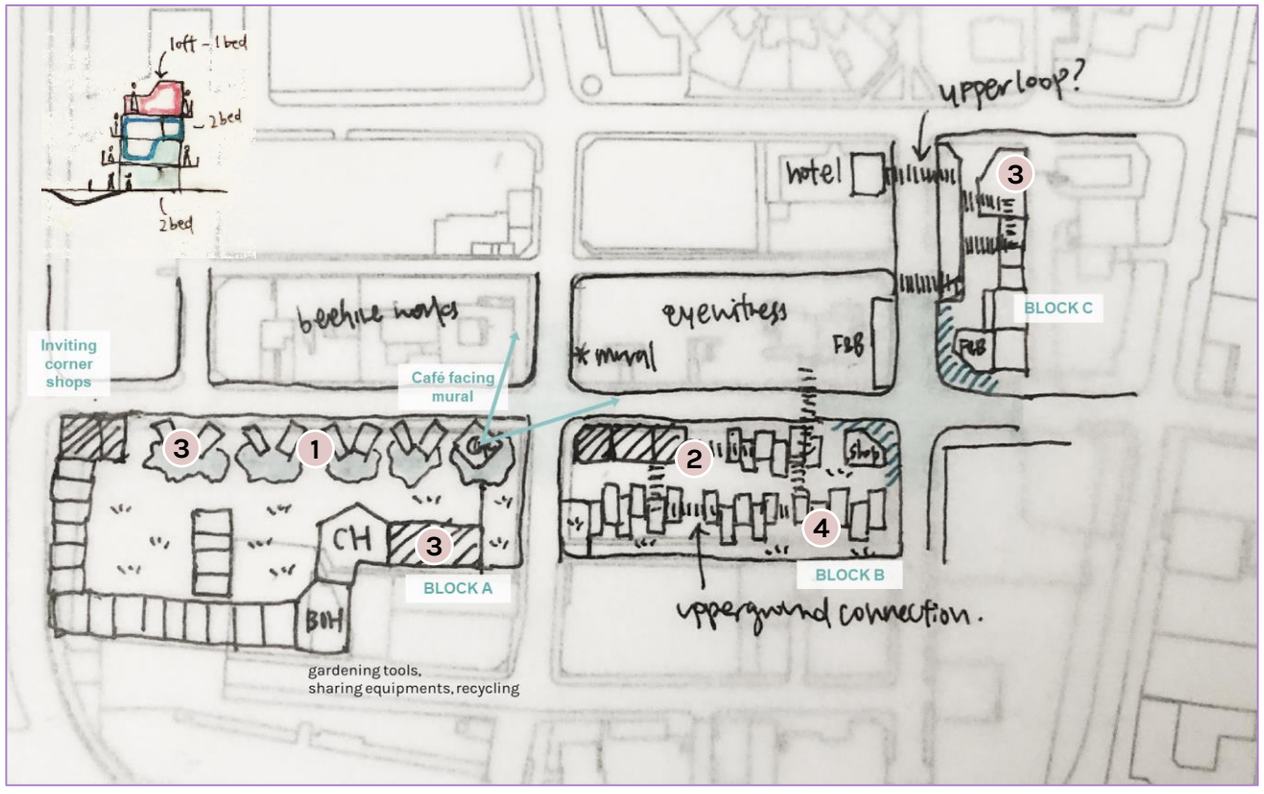
VARIATION 04

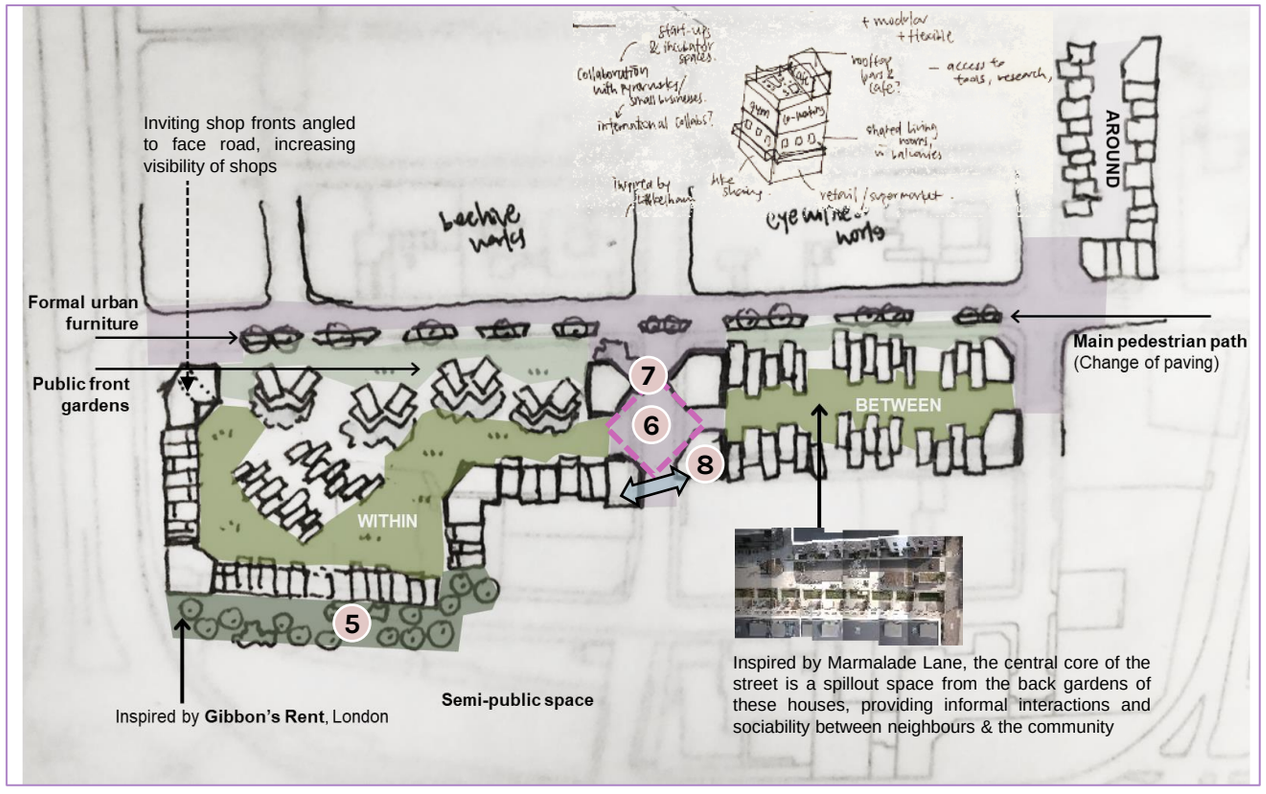
Design intentions:

1. South facing upper-level gardens variation allows more sunlight to get into the building
2. Pedestrianizing Milton Street and turning it into an urban park - trees are placed to frame the entrances of the residents, providing a threshold between main public street and semi-public space
3. Unique taller corner buildings help to screen overbearing adjacent buildings and creates identity of the residence

Spatial affordances:

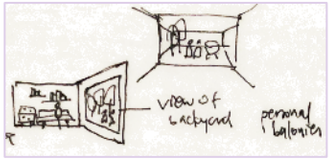






REFLECTIONS:

1

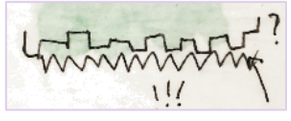


Thinking of the views that can be seen from the interior helps to shape the immediate outdoor space of the unit. Integrating 'outside' space into indoors encourages outdoor living.

2 Upper ground connections utilize space on the roof and creates green spaces amongst denser & compact environments such as city center

3 Different typologies of housing create identity and choices within the site. Mixed housing types encourages intergenerational living as different families have different living space requirements.

4



Engaging edges allow for vibrancy with adjacent student accommodation and pedestrian street + creates interesting perspectives instead of predictable one-point perspective

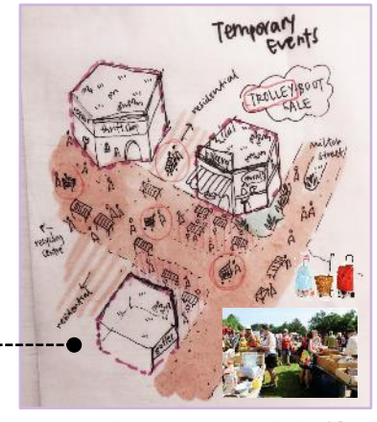
REFLECTIONS:

5 Shared carpark spaces to be reduced in phases, to return as green space back to the community once the bond is established, residents to reappropriate the space for their own use

6 Spatial affordances and flexibility allow residents to appropriate the spaces in their own schedule

7 Facing and forming units shape a space that works successfully individually and/or together.

8 Routes to throwing thrash out can be structured to encourage a sustainable lifestyle by placing a repair café and recycle centers next to a place to socialize. Temporary events such as a Trolley Boot sale can occur in the shared plaza periodically.



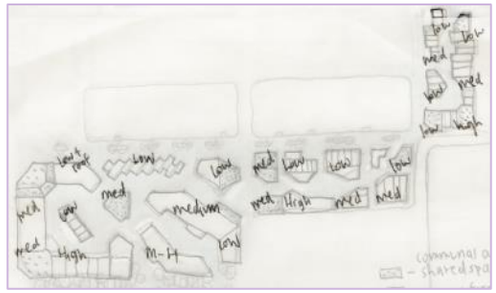
variations in layout – design processes

VARIATION 05

Design intentions:

1. Changes in paving material to define site premises and safe space to walk without cars
2. Defined facilities within the residence to promote self-sustaining and vibrant community
3. Housing typologies are of different heights, to create visual interest, engaging and responding to the site context i.e., increasing heights from Egerton street to Moore Street where there is a stark height difference due to future Fusion Development.

Determining heights based on adjacent sites:

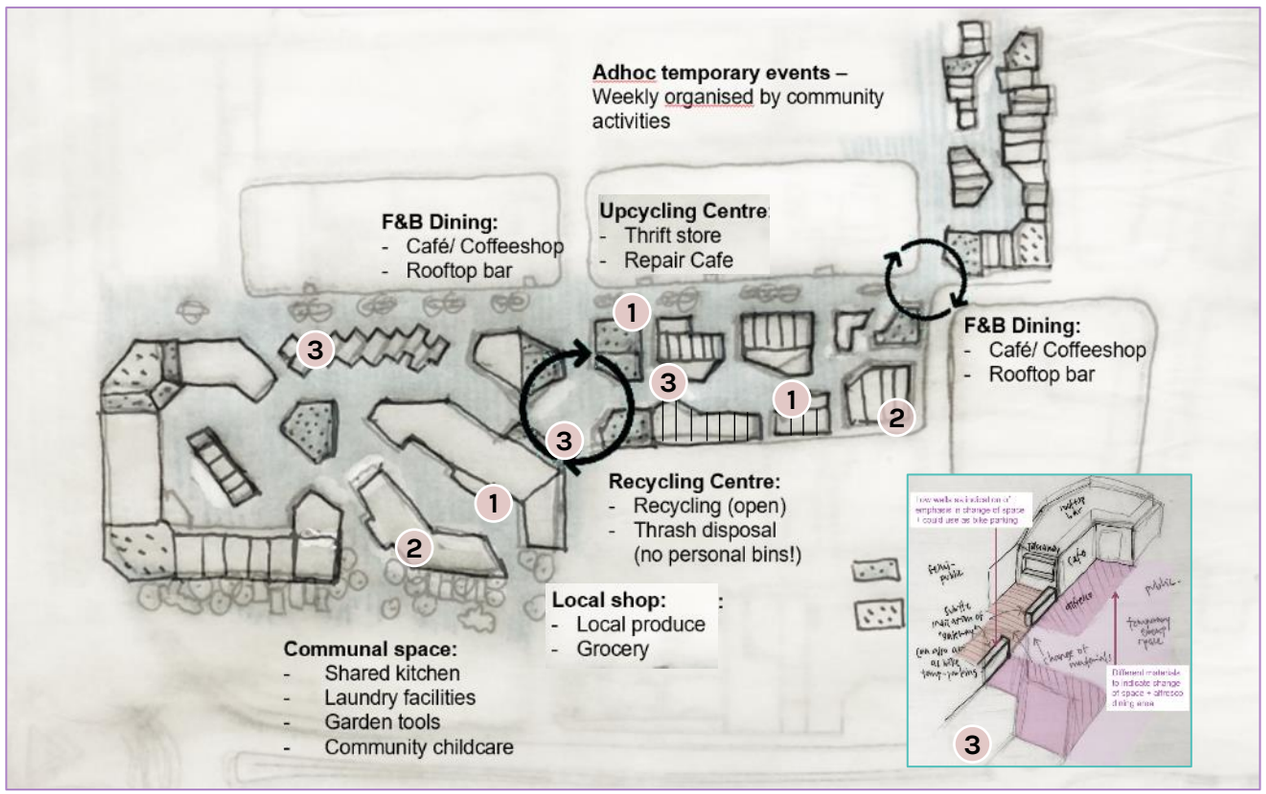


VARIATION 06

Design intentions:

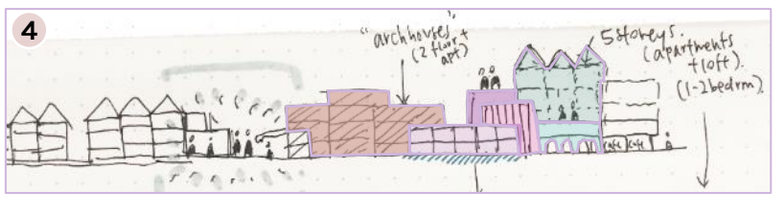
1. Implementing public-private narrow and wide thresholds for frontages of both houses and facilities
2. Connecting all housing typologies with minimal entrances as more enclosed and active spaces creates vibrant spaces & greater ownership of residents

Defining thresholds:



REFLECTIONS:

1. Clearly demarcated spaces using paving types would be better informing public street and semi-public streets. Materials such as decking or low walls as boundaries can serve as a seating spot or bicycle parking to subtly differentiate semi-public and private spaces
2. Does not require too many entrances, just two main ones would be able to define the enclosed space better



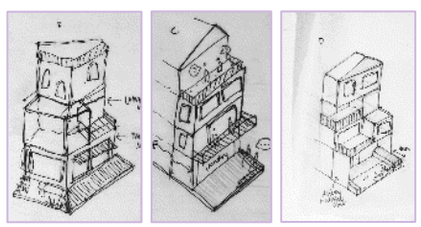
3. Archways, low walls and narrow entrances can deter general public from entering the space, without the need of a security guard or fenced area
4. Maximum 5 storeys in height to maintain human scale (Gehl, 2010)

   5 Storey apts distracts height and focus of Moore St Substation within residence

REFLECTIONS:

5. Interconnecting spaces helps bond residents together through events and unexpected social encounters
6. Shared community spaces in iconic and central location provides a character and sense of place, inspired by Goldhawk Village & Tibby's triangle precedent studies
7. Using SUDS and topography to define thresholds, inspired by *Arkadien Winnenden* residential. It creates a green intervention that subtlely transitions into the urban street at Milton St

8



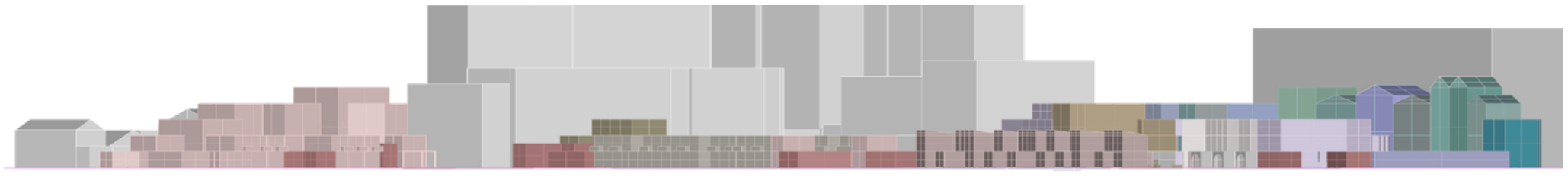
Varied engaging facades, commercial active frontages, recessed balconies or windows adds accents and life to the residential semi-public street. It also provides 'eyes on the street' (Jacobs, 2002)

conceptual masterplan

NORTH SCALE 1:800

LEGEND:

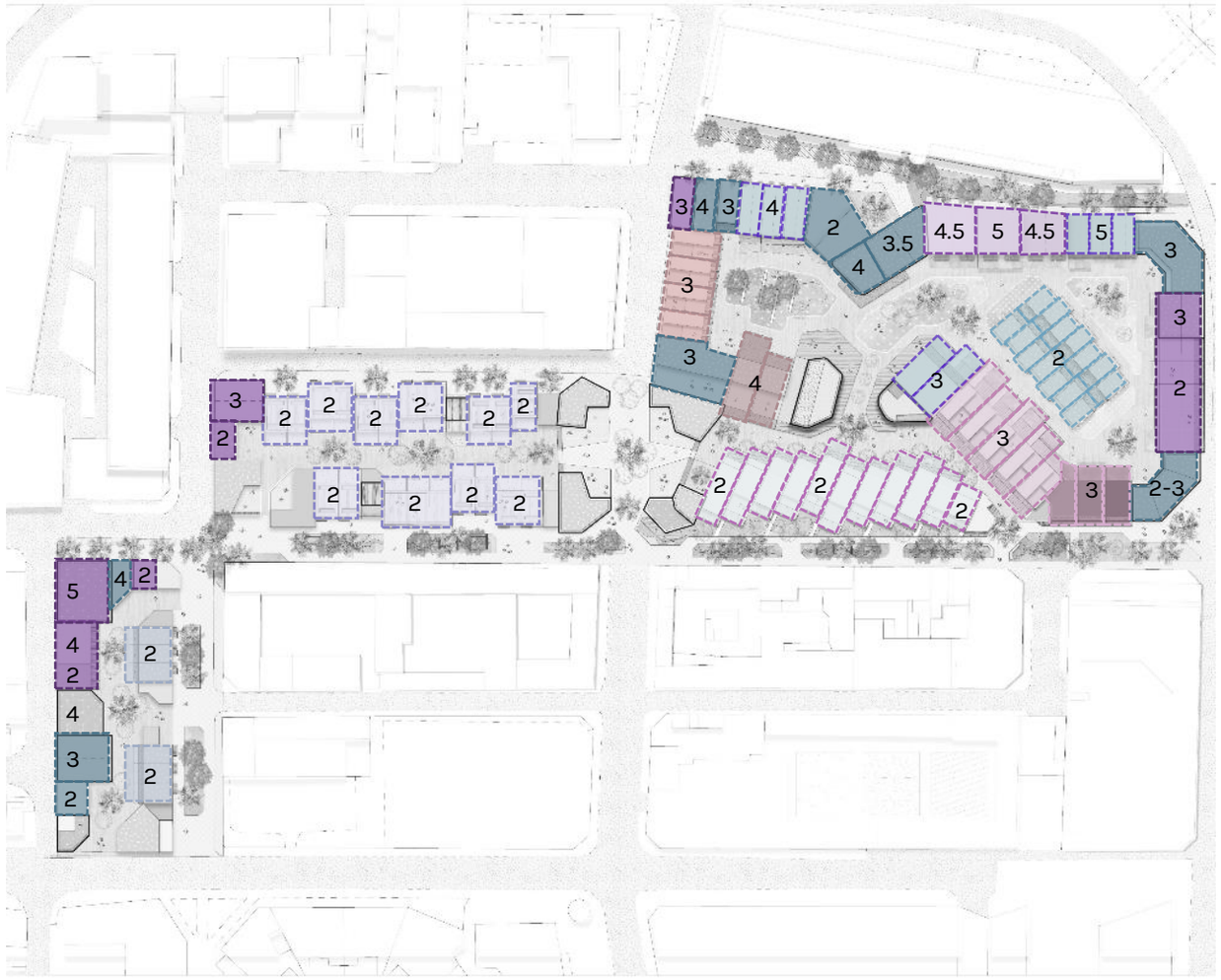
1. MILTON GATHERING PLAZA
2. RECYCLING STORE + REPAIR CAFE
3. LOCAL PRODUCE SHOP
4. CAFÉ + BAR/ RESTAURANTS
5. UPCYCLING CENTER + THRIFT STORE
6. MILTON COMMUNE HUB
7. MILTON COLLAB - SHARED FACILITIES
8. OPEN GREEN SPACE FOR RESIDENT APPROPRIATION
9. COMMUNITY LIBRARY
10. LOCAL SALON
11. APARTMENTS + GROUND LEVEL SHOP
12. APARTMENTS + GROUND LEVEL CO-WORKING SPACE
13. APARTMENTS + INTERLEVEL CO-WORKING SPACES
14. STACKED UNITS
15. INDIVIDUAL UNITS



zoning diagrams

HOUSING TYPOLOGIES

Mixture of housing typologies allow for **a diverse family capacity**, individuals, temporary and permanent communities to settle in Milton Comm[unity]. This creates and supports an **intergenerational network** across the 3 plots.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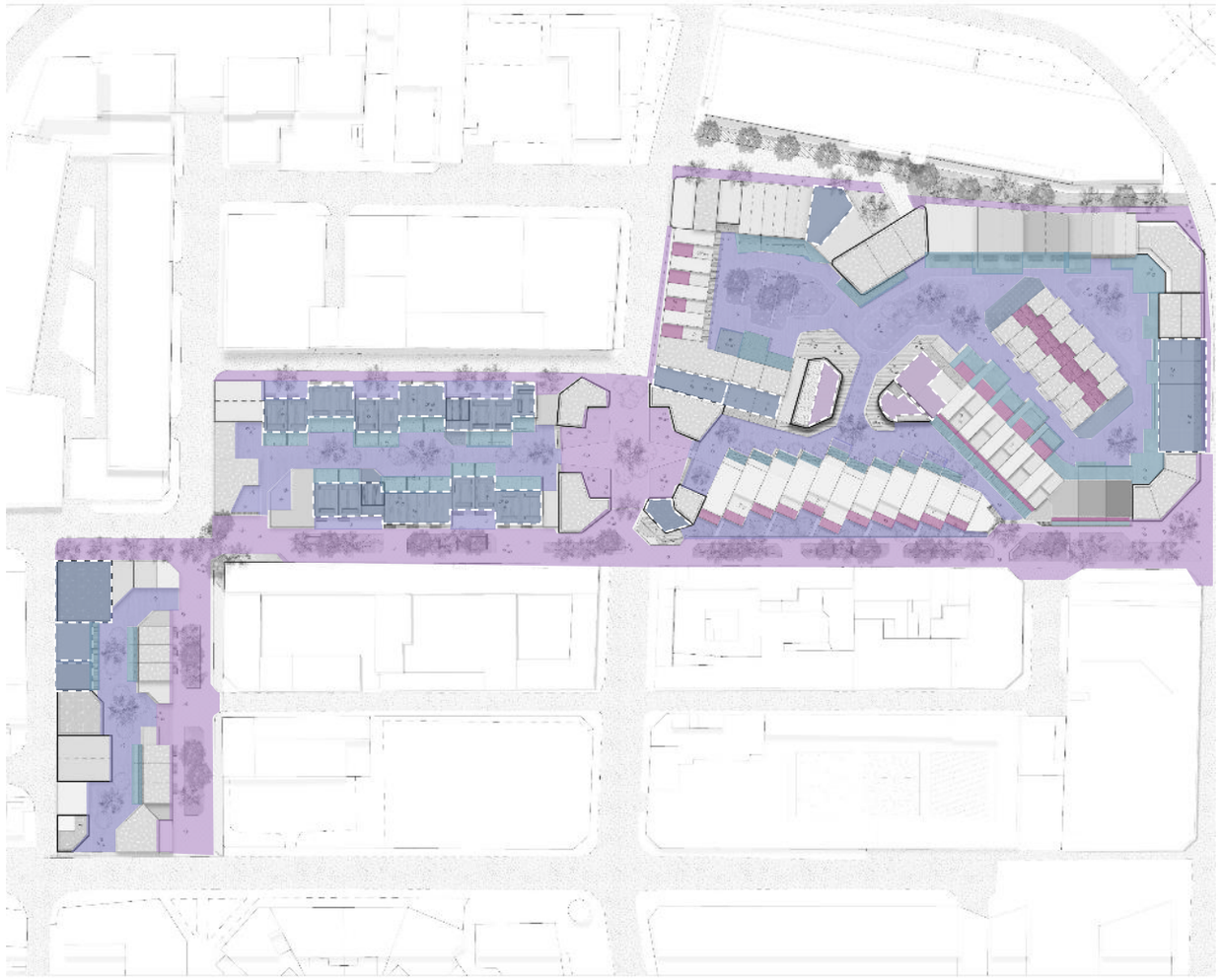
zoning diagrams

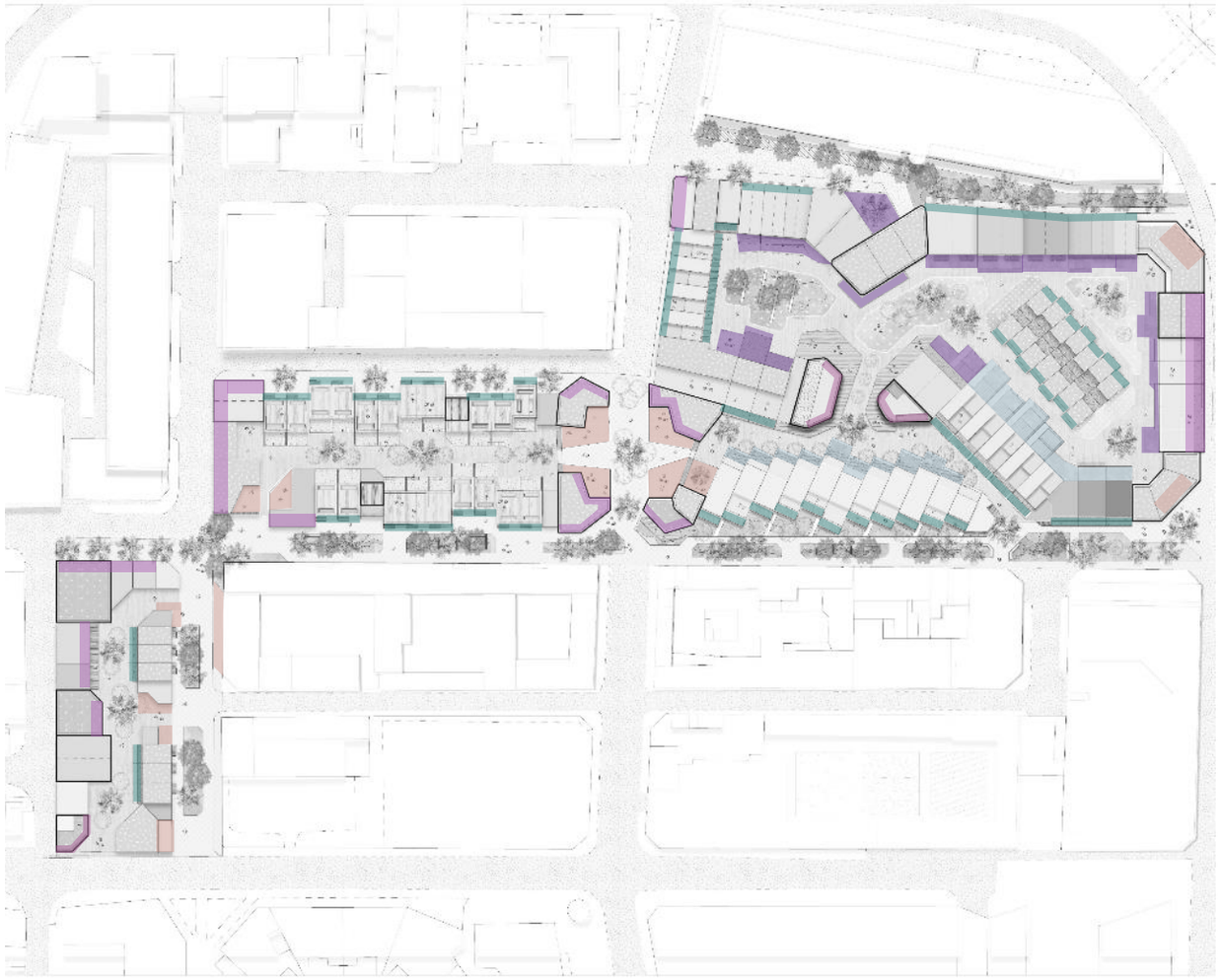
GRADIENTS OF PUBLIC TO PRIVATE SPACE

To provide **an active and engaging neighbourhood**, 'front/back gardens' comes with provision of **varying levels of privacy options**; communal balconies are situated on ground level as an extension of the entrance/exit. The concept of **intimacy gradient** (Alexander et al, 1977) applied in public space is being explored.

PUBLIC/PRIVATE FRONTAGES + NARROW/WIDE THRESHOLDS

Active frontages along the road and entrances **supports vibrancy**, **provides surveillance**, Threshold zones functions as **an unofficial space** for meeting other people, friends or strangers – it allows contact with people walking by in the same space, which allows everybody in the same **shared space connected** through the variety of threshold zones.





Public (Accessible to all)

Semi-public (Accessible to all, however in an enclosed space, and entered through narrow entrances/ subtle boundary markers)

Semi-private (Extended outdoor areas from residence that is visible to public's eye [provision of 0.6m low walls/ hedge])

Semi-private communal (Accessible exclusively to residents living in the particular block)

Private (Extended outdoor areas with higher degrees of screening provision)

Active frontage (shops)

Active frontage (residence)

At intersections or openings, there will be spaces for people to socialise (raised deck + movable chairs)

Open facades (high visibility of interior)

For an engaging interaction between inside and outside spaces

Narrow private threshold (residence)

Narrow thresholds on the frontages facing outside development (so that public will not want to go too near) 1.0m length (Saaby, T.,)

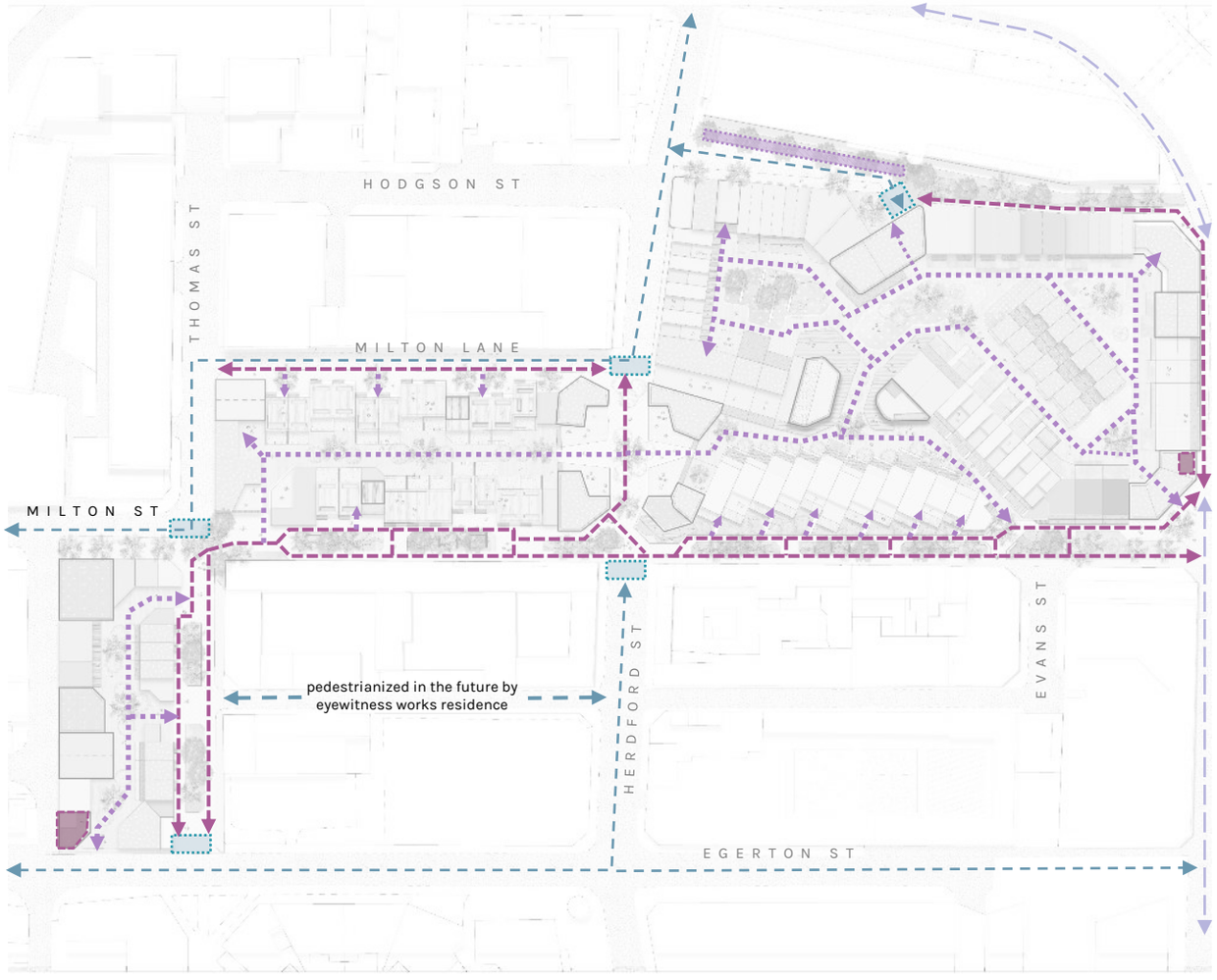
Wide private threshold (residence)

Wide private thresholds on the frontages facing inwards (inspired by De Deeltuin – Utrecht and BIGYard) Minimum 2.5m length (Saaby, T.,)

zoning diagrams

ACCESS & CIRCULATION

Existing roads within the site boundary are pedestrianised to shared pedestrian and cyclist pathways for safety and ease of access within the site. To support a cycle instead of car lifestyle, carparks will be replaced & bike facilities are supported throughout the site.



- Existing cycle way to be connected to new shared path
- Main shared pedestrian + cyclist path (Distinct coloured paving)
- Pedestrian path within residence (Paving with details)
- Car and Services route
- Drop-Off point for pedestrian drop off, unloading of goods and services and unloading thrash
- Carpark space to be phased out after 1 year and replaced with community park space
- Bike rental & storage

GREEN/BLUE INFRASTRUCTURE

Vegetation is used to provide **structure**, enhance **visual quality** of residence and connecting wider green networks for biodiversity through the site. It provides **seasonal interest** in urban streets and open areas, **demarcate thresholds** using porous foliage/ bark trees outside and between residences. The implementation of SUDs accommodates rainfall and allow residents to experience a different landscape after rain events.

- Roadside trees (trees with low leaf litter fall, easier maintenance for roads)
- Swale trees (water tolerant)
- Entrance trees (i.e., *Magnolia spp.*)
- Feature trees (i.e., *Acer spp.*)
- Urban street trees (straight trunks with foliage)
- Trees for demarcating thresholds & directionality (straight trunks with porous foliage)
- Seasonal interest trees (i.e., *Prunus spp.*)
- SUDs (vegetated swale/ gravel swale/ detention pond)
- SUDs attached to front of house
- Semi-public accessible open green space (to be appropriated and personalized by future residents)
- Green islands with perennial planting

journey through the site

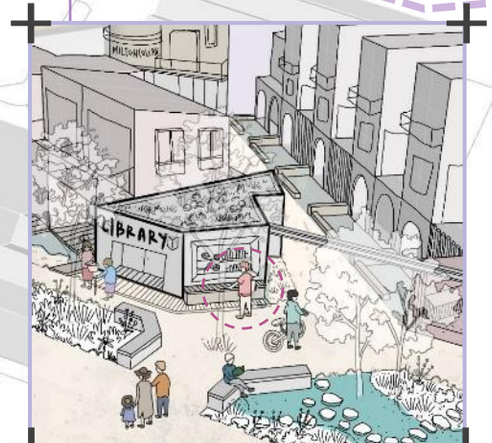
Meet John! He will show us a day in his life.

Neighbourhood amenities and facilities include – pedestrianised Milton St that supports food trucks; community gardens, co-working spaces, community managed childcare, adult learning spaces, pharmacy, health amenities, library, electric rental bikes

Leave house and send children to community childcare 1

Walks partner to her co-working office 2

Return books at library 3



Shop at local produce shop 8

Take away morning coffee 4

Meet up with neighbour 5

After dinner, took trash out to sort at recycling centre. Bumped into Dan, scheduled next day to fix up broken laptop. 9

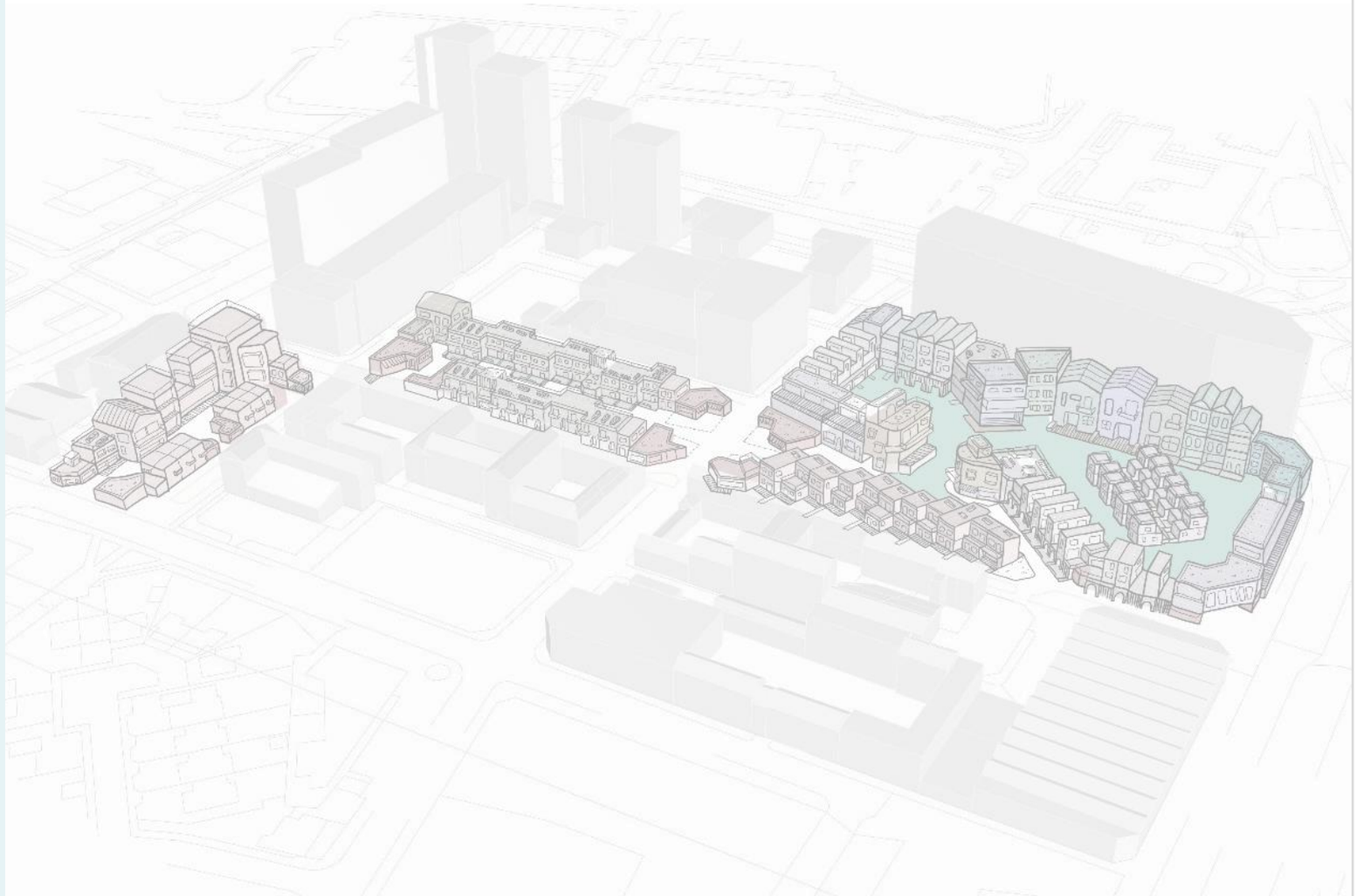
Meet with colleague to discuss work 6

Rent bike to cycle to city centre 7

milton comm[unity] project

stage 3 - interface

MADELINE LEONG | 190157432



entering Milton Comm[unity]

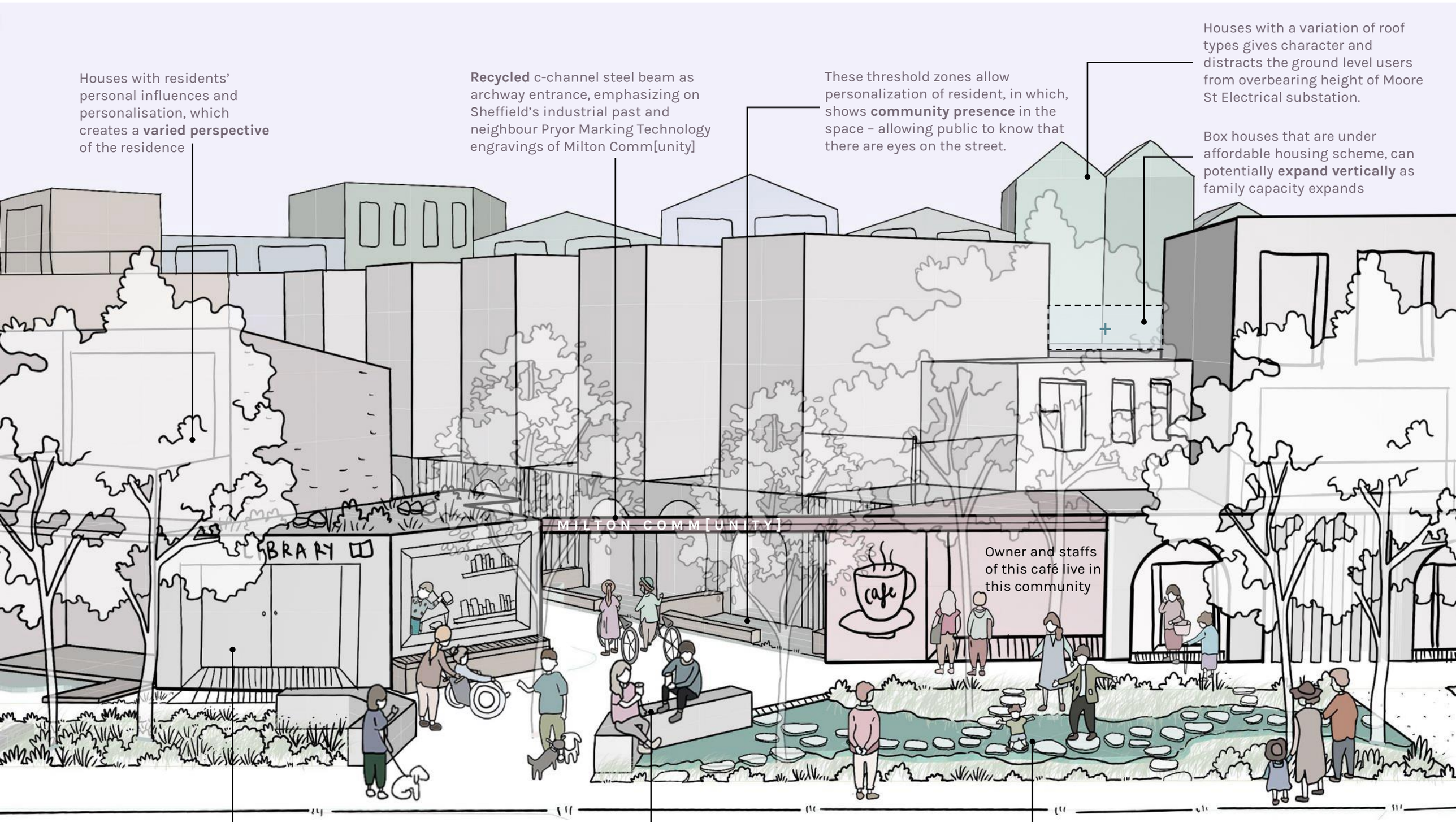
Houses with residents' personal influences and personalisation, which creates a **varied perspective** of the residence

Recycled c-channel steel beam as archway entrance, emphasizing on Sheffield's industrial past and neighbour Pryor Marking Technology engravings of Milton Comm[unity]

These threshold zones allow personalization of resident, in which, shows **community presence** in the space – allowing public to know that there are eyes on the street.

Houses with a variation of roof types gives character and distracts the ground level users from overbearing height of Moore St Electrical substation.

Box houses that are under affordable housing scheme, can potentially **expand vertically** as family capacity expands

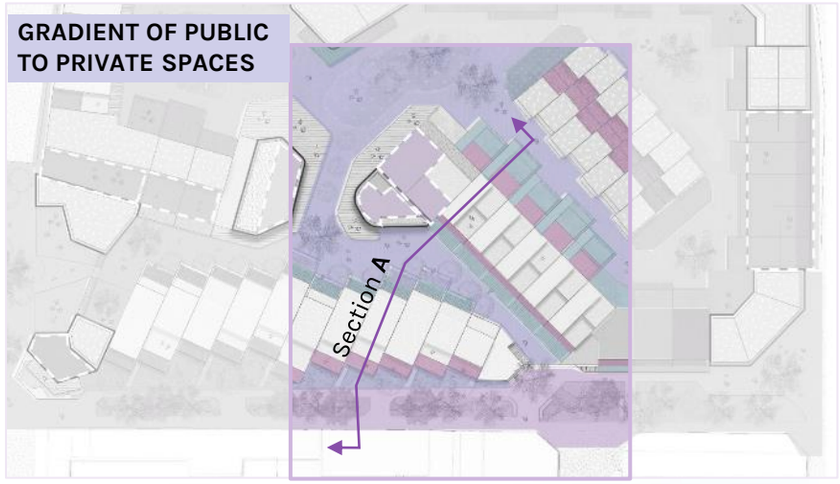


Public facilities such as a community library and café at the entrance invites public and creates active edges. The overarching entrance keeps them from going into the semi-public space of the residence.

Facing seatings in public space - invites people to stay longer and populates the urban space, which activates it and offers everybody a **sense of security**

Incorporating SUDs retention pond and swale scheme along with stepping stones that affords play opportunities

interfaces between public to private spaces



Public
Semi-Public
Semi-Private
Private

Section A – Gradient of Public to Private Spaces

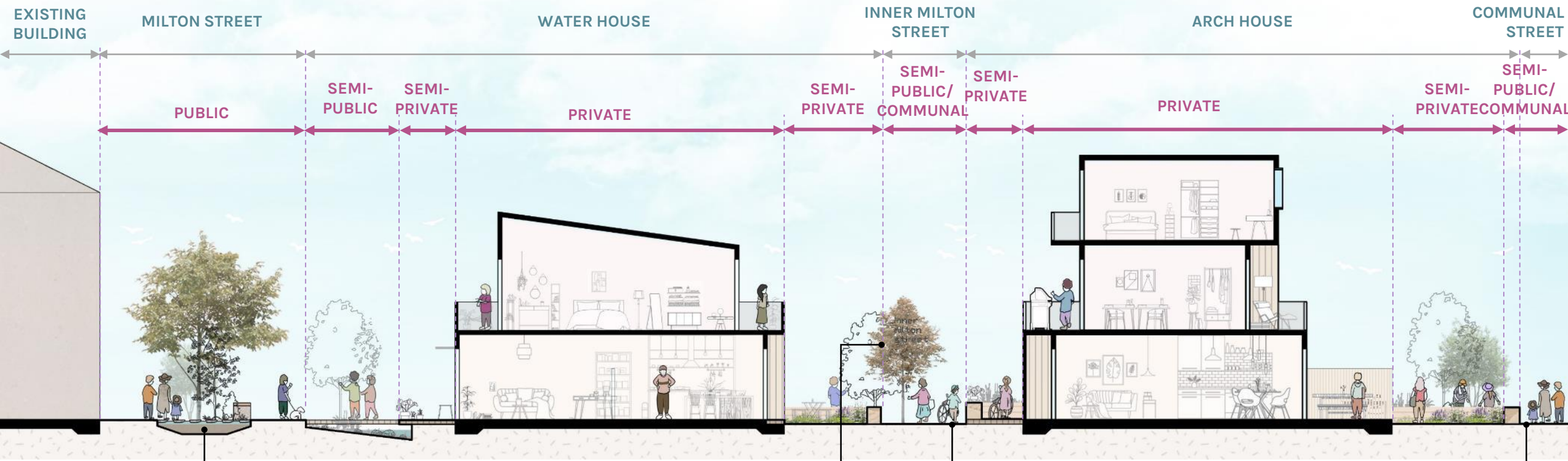


Fig 4. Mellemrummet public space

MILTON ST. INTERFACE

Inspired by Mellemrummet, the steppingstones act as a play space, which creates a functional buffer between the residential and shops. The addition of the green space gives an atmospheric break between the hard surfaces.

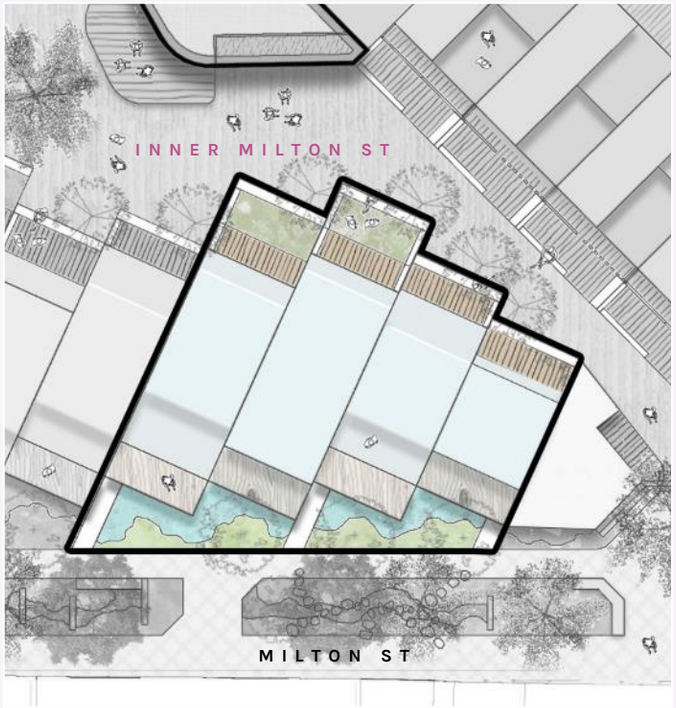
Placement of trees emphasizes on directionality and provides visual screening in front of houses. It is also an indication that there is a transition into a resident's private space.

Fig 5. Marmalade Lane play street

INNER ST. INTERFACE

Inspired by the interface between the residences at Marmalade Lane, the staggering of houses and facing units creates communal spaces that encourages social interaction between neighbours.

interface 01 – water house overview

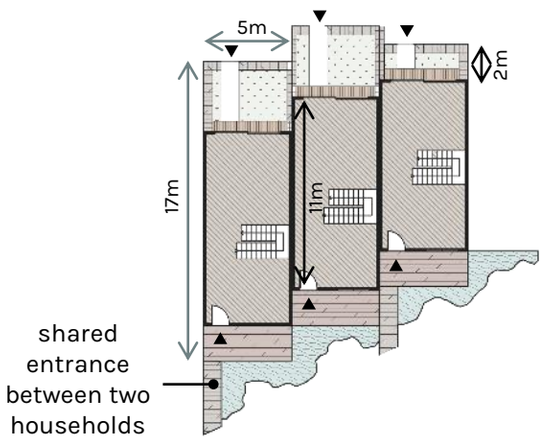


WATER HOUSE

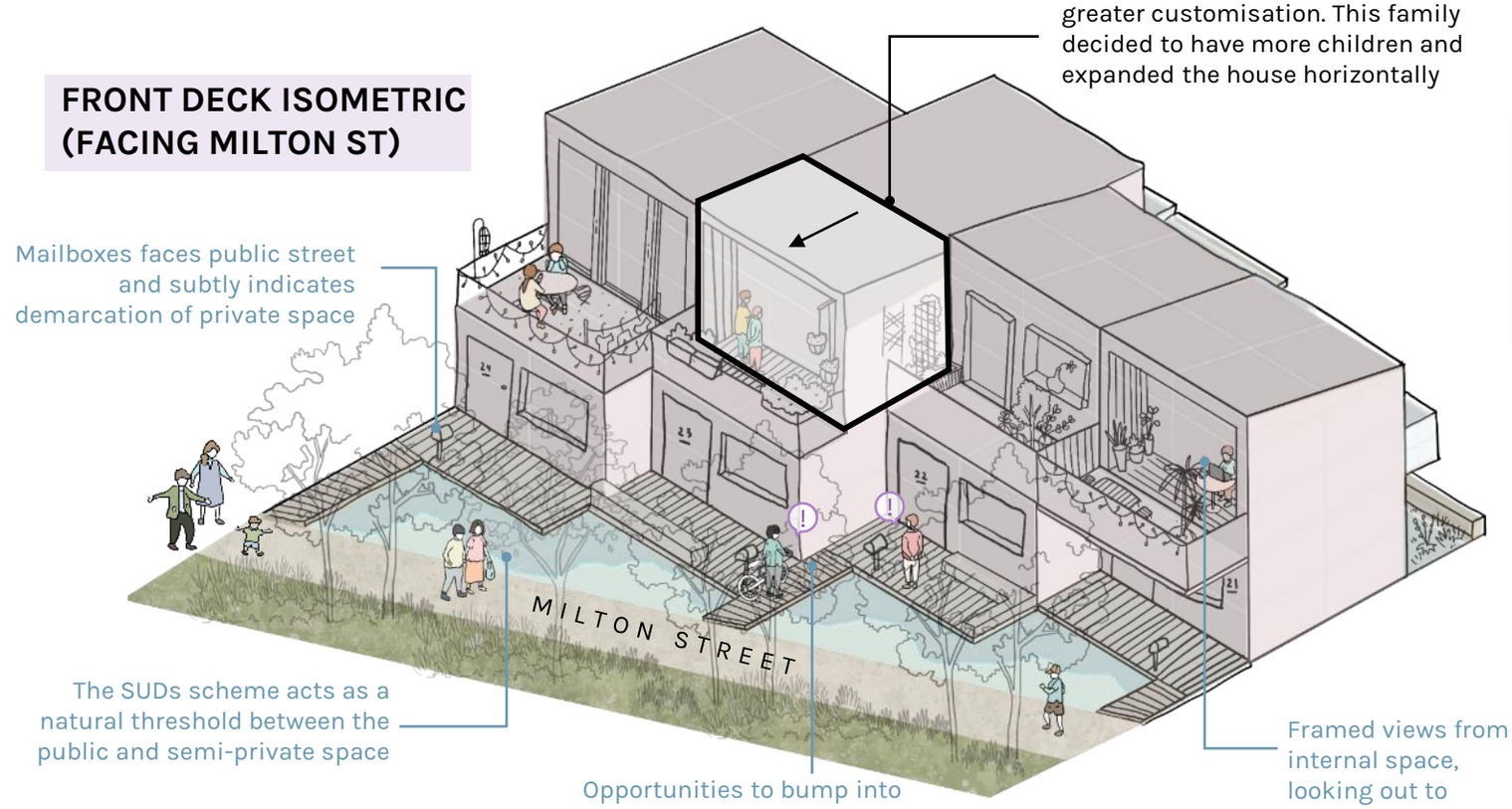
Facing a public space – Milton Street, SUDs is implemented as a threshold between the front of house and the pedestrian street.

The house is designed to accommodate small families, or couples who intend to expand their house capacity in the near future where they can adapt and expand the space freely.

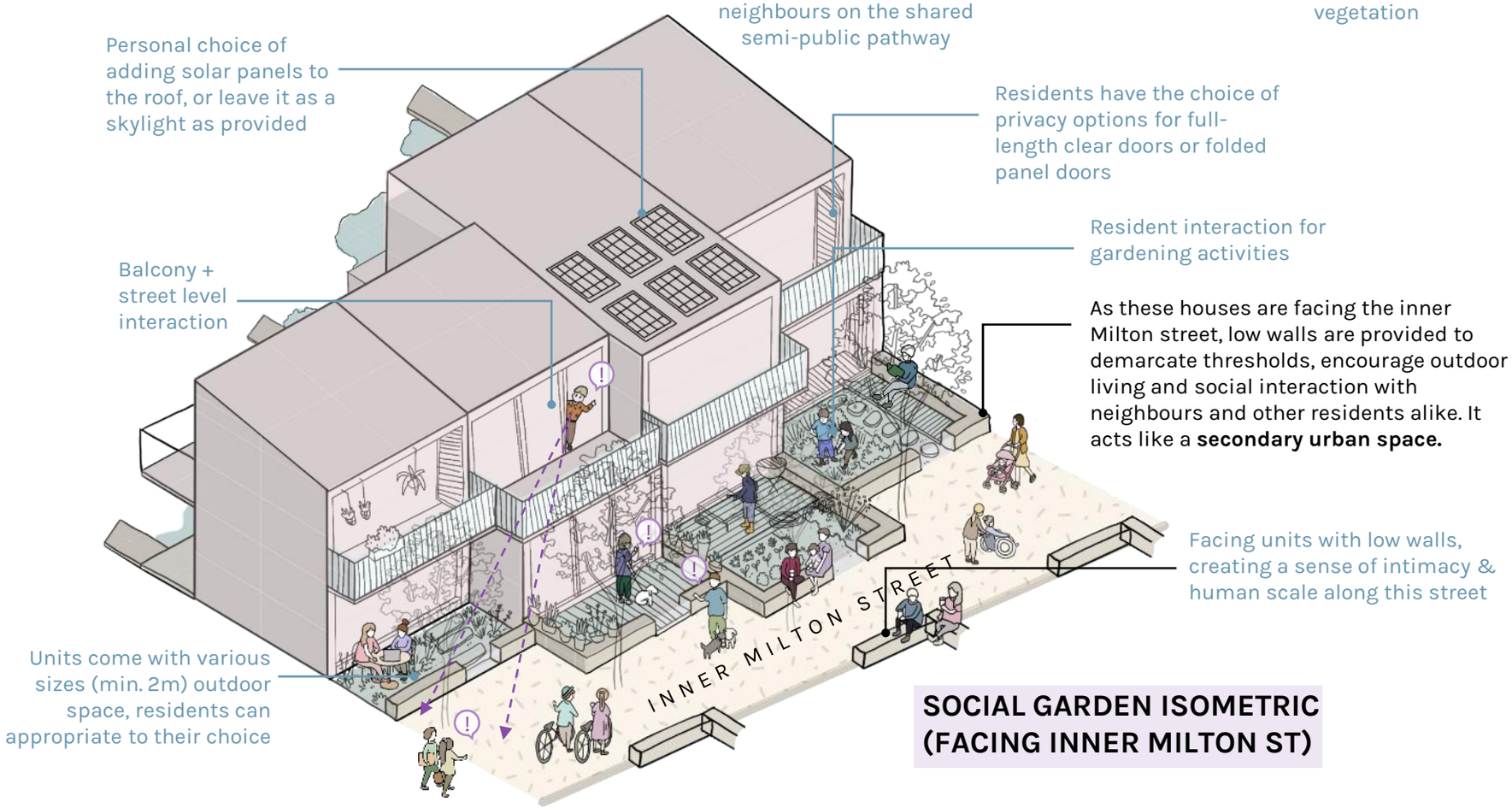
ORIGINAL GROUND FLOOR PLAN



FRONT DECK ISOMETRIC (FACING MILTON ST)



SOCIAL GARDEN ISOMETRIC (FACING INNER MILTON ST)

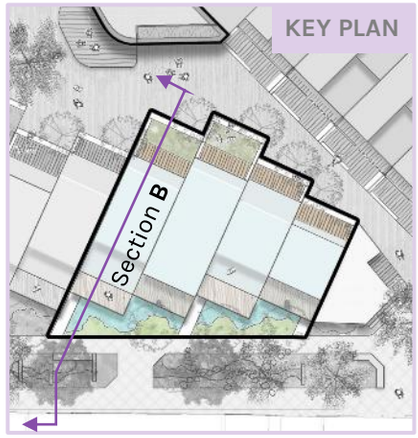


interface 01 – water house

Fig 6.1 & 6.2. Arkadien Winnenden Interfaces

HOUSE INTERFACE

Inspired by Arkadien Winnenden, the direct access to SUDs scheme where it is a play space for both adults and children alike, it creates a functional threshold and seasonal experience for residents.



EXISTING BUILDING | MILTON STREET | SUDS | FRONT DECK | WATER HOUSE | SOCIAL GARDENS | INNER MILTON STREET

PUBLIC | SEMI-PUBLIC | SEMI-PRIVATE | PRIVATE | SEMI-PRIVATE | SEMI-PUBLIC

During temporary events, the public space could be expanded and include the inner courtyards of Beehive Works

Creating topographical changes to form boundaries that separates public and semi-public spaces. 2 households share a singular boardwalk.

A 2m width deck that raises above water gives a unique identity of the house, and creates a threshold between public street and entrance of home.

Extended space (min. 2m) from the house with low walls & change of materiality as demarcation provides opportunities for people to spend more time at street level, connected to life going on outside.

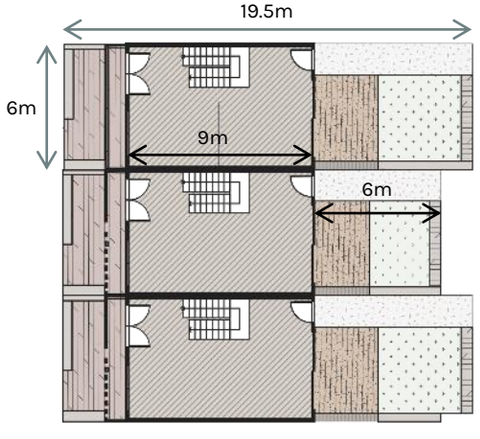
interface 02 – arch house overview

ARCH HOUSE

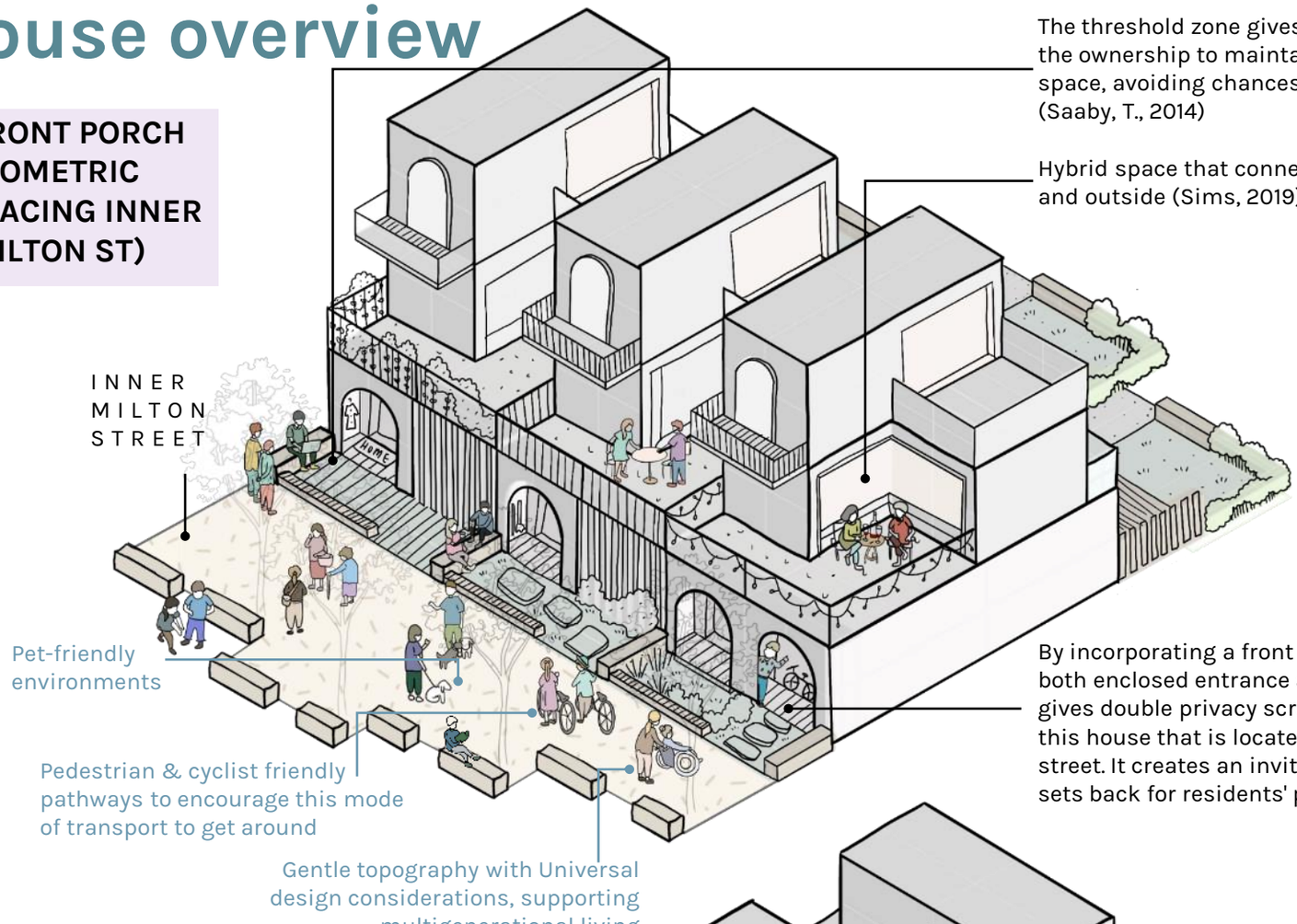
With a signature arch entrance, the arch house has layers of outdoor spaces integrated with each ‘rooms’ on the upper levels – from loggias to large outdoor balconies. On the first floor, it includes a south-facing outdoor space for resident’s choice of deck/garden ratio.

Designed for young working adults, who work from home or couples who would want to rent out half of the apartment temporarily.

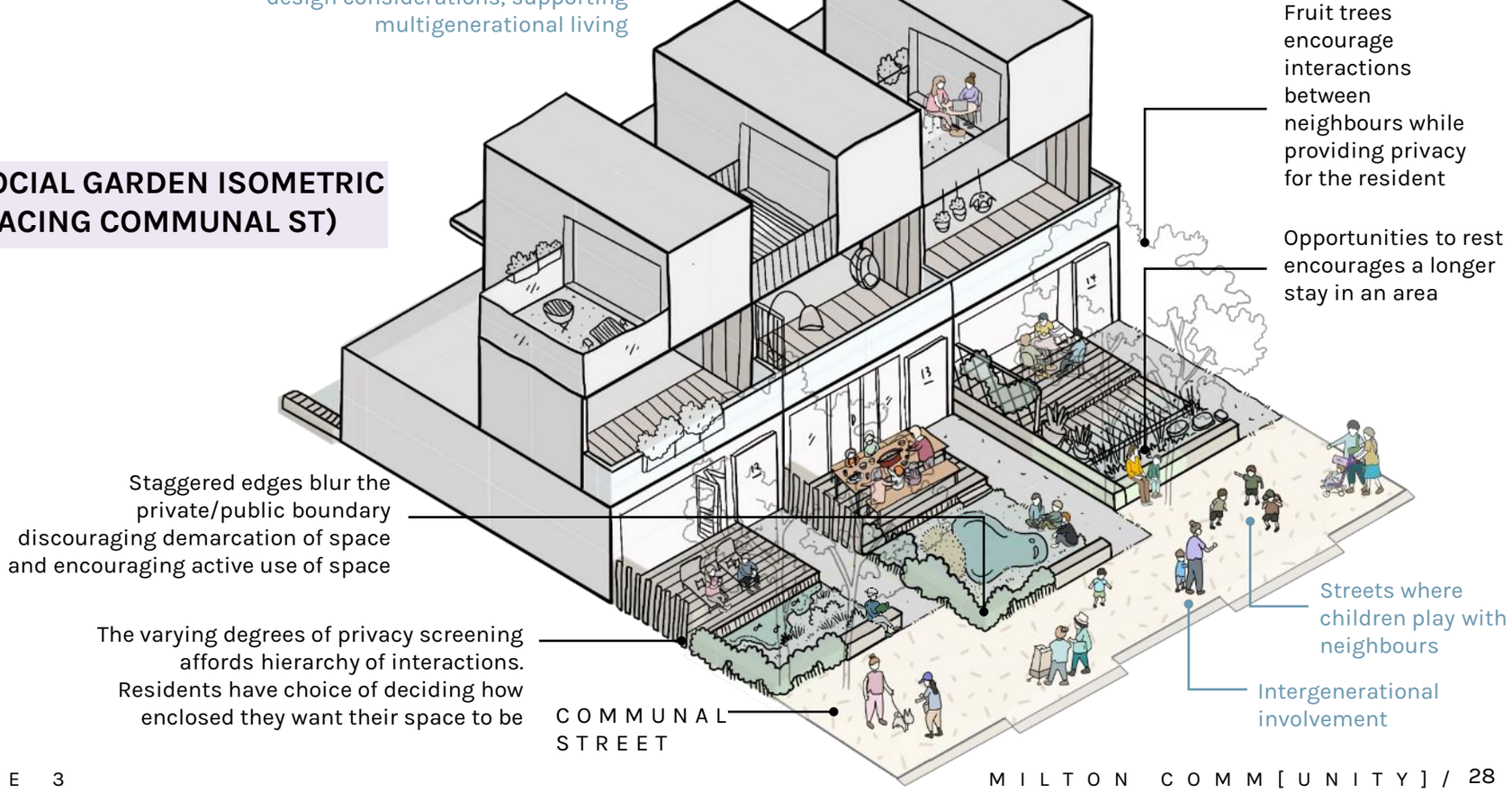
ORIGINAL GROUND FLOOR PLAN



FRONT PORCH ISOMETRIC (FACING INNER MILTON ST)



SOCIAL GARDEN ISOMETRIC (FACING COMMUNAL ST)



interface 02 – arch house

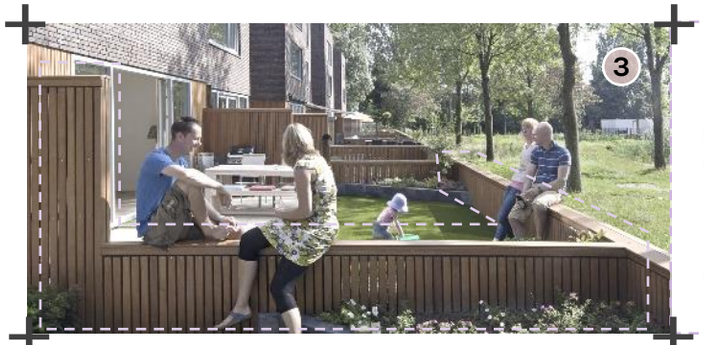
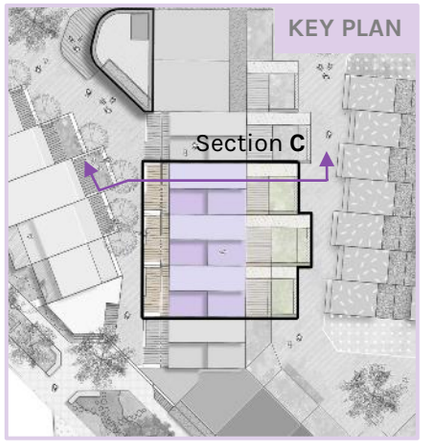


Fig 7.Varying heights of walls

HOUSE INTERFACE

Inspired by Wonen 'achter de Reitdijk' in Groningen, various degree of screening is provided for the residents, where there are options of activities depending on residents' choice of usage of space



WATER HOUSE | INNER MILTON ST | ARCH HOUSE | COMMUNAL STREET

PRIVATE | SEMI-PRIVATE | COMMUNAL | SEMI-PRIVATE | PRIVATE | SEMI-PRIVATE | SEMI-PUBLIC

The outdoor deck offers extra living space, the presence of the residents and private possessions in public realm brings intimacy and conviviality to the street.

Threshold zones function as an unofficial space for meeting other people, friends or strangers (Saaby, T., 2014)

Inspired by Peter Barber's Donnybrook, windows that pops out creates interesting facades and variation in windows

Being open on both ends, it gives better ventilation throughout the house, more daylight and connected to outside living

Loggias with shutters that allow for variations of privacy

BEDROOM

WORK/STUDIO

LIVING/KITCHEN

Resident could choose the ratio of green to deck in their outdoor space

1 Low walls afford the option for it to be seating, place planting pots or temporary leaning a bike

Raised deck affords a degree of privacy from the communal street

2 An archway entrance gives a private boundary in an outdoor space, where storage space - shoes, umbrellas can be kept here

Full length double door affords visual connections to the outdoor space while being indoors

A porous 1.8m height screening between neighbours for a higher degree of privacy

A 0.6m low wall as a separation between houses but complete visual connection with adjacent neighbours

interface 01 & 02 – front personalization of space

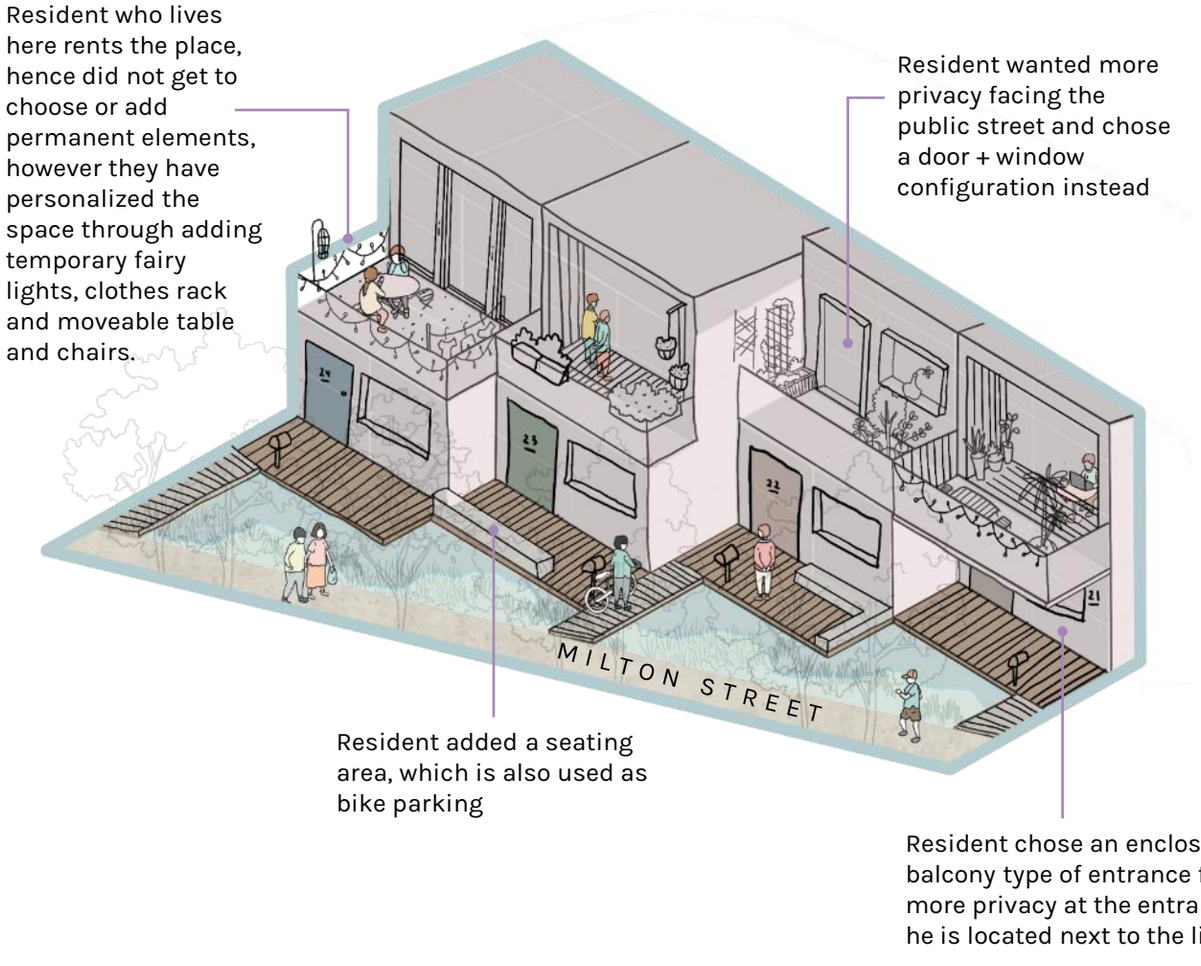
A BOTTOM-UP APPROACH

Residents play a part in the entire outlook and overview of the residence. Giving residents the chance to personalise their space and make their own mark provides a sense of place (Bentley, 1985). This allows for a **varied dimension of space** as the residents navigate through the site. It gives **a sense of ownership and pride to the residents**, forming a **trusted community**, as learned from mentioned precedent studies. Whilst the intention is to promote social interaction with neighbours, it is understood that it might not happen. Hence, residents could choose to appropriate and personalise their outdoor space to what suits them best.

WATER HOUSE – FRONT DECK ISOMETRIC

Resident's personalisation element options:

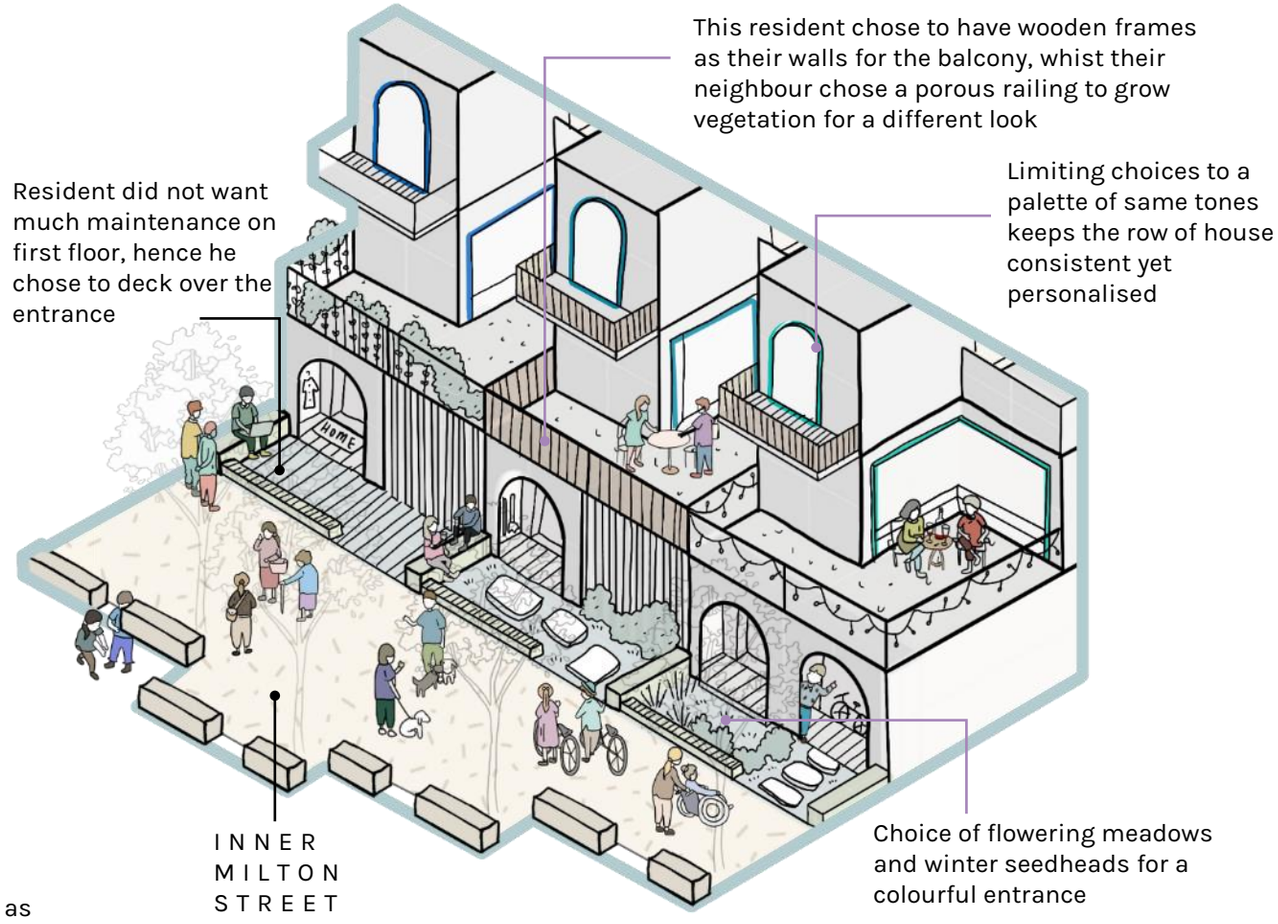
1. Choice of front door colour
2. Openings of 2nd storey balcony
3. Front decks to be consistent deck material as it faces the front public Milton Street



ARCH HOUSE – FRONT PORCH ISOMETRIC

Resident's personalisation element options:

1. Frame colour of openings for upper levels
2. Entrance archway or screening types
3. Resident preference of material choice for balcony railing/ wall, which could affect degree of privacy on overall elevation
4. Resident choice of front facing open narrow threshold to be vegetation or deck

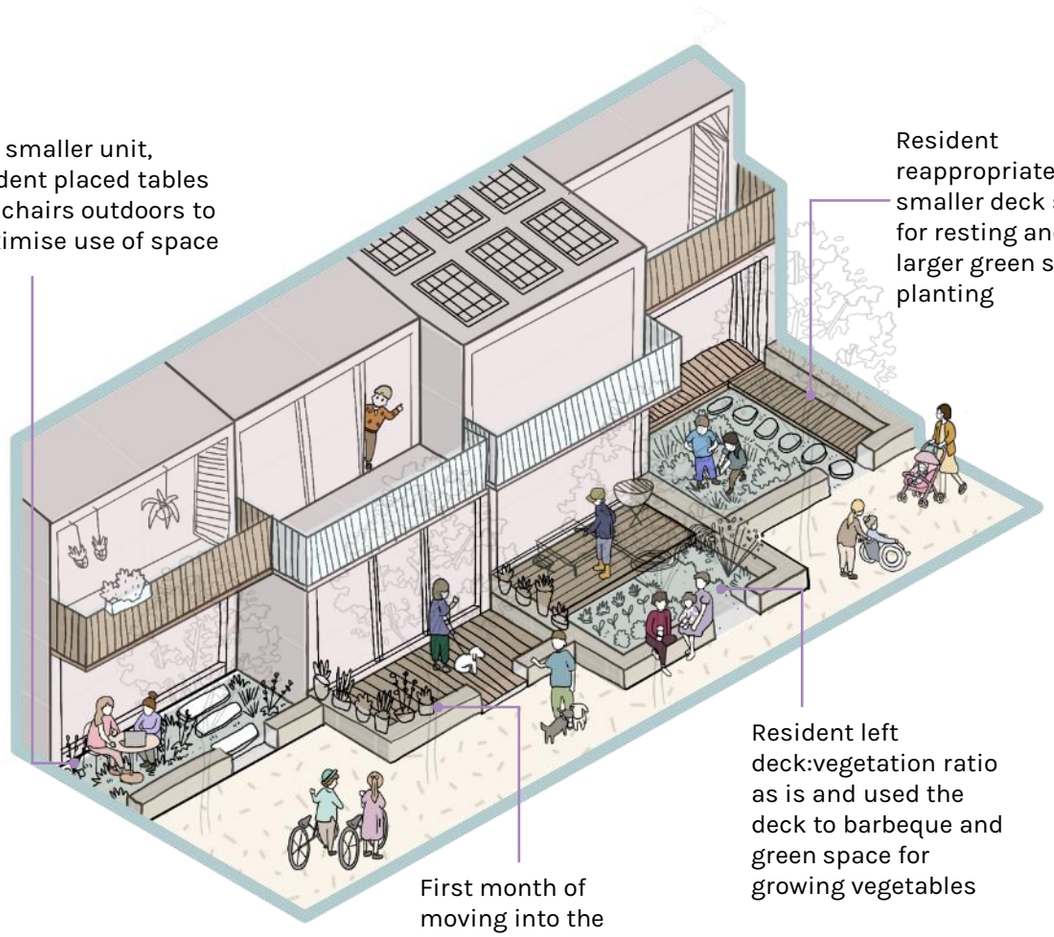


interface 01 & 02 – back personalization of space

WATER HOUSE – SOCIAL GARDEN ISOMETRIC

Resident's personalisation element options:

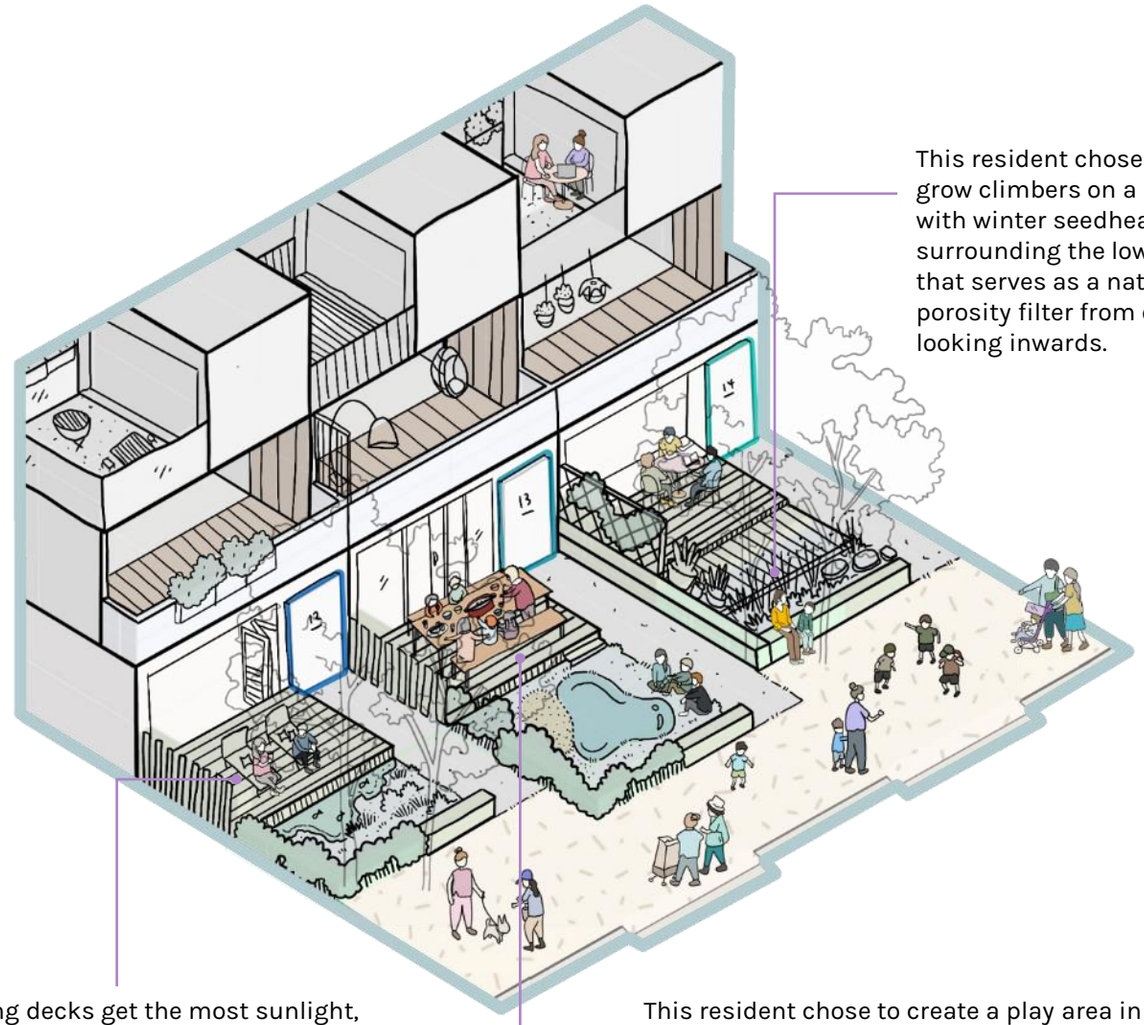
1. Resident preference of material choice for balcony railing/ wall, which could affect degree of privacy on overall elevation
2. Openings of 2nd storey balcony
3. Social gardens ratio of deck:vegetation



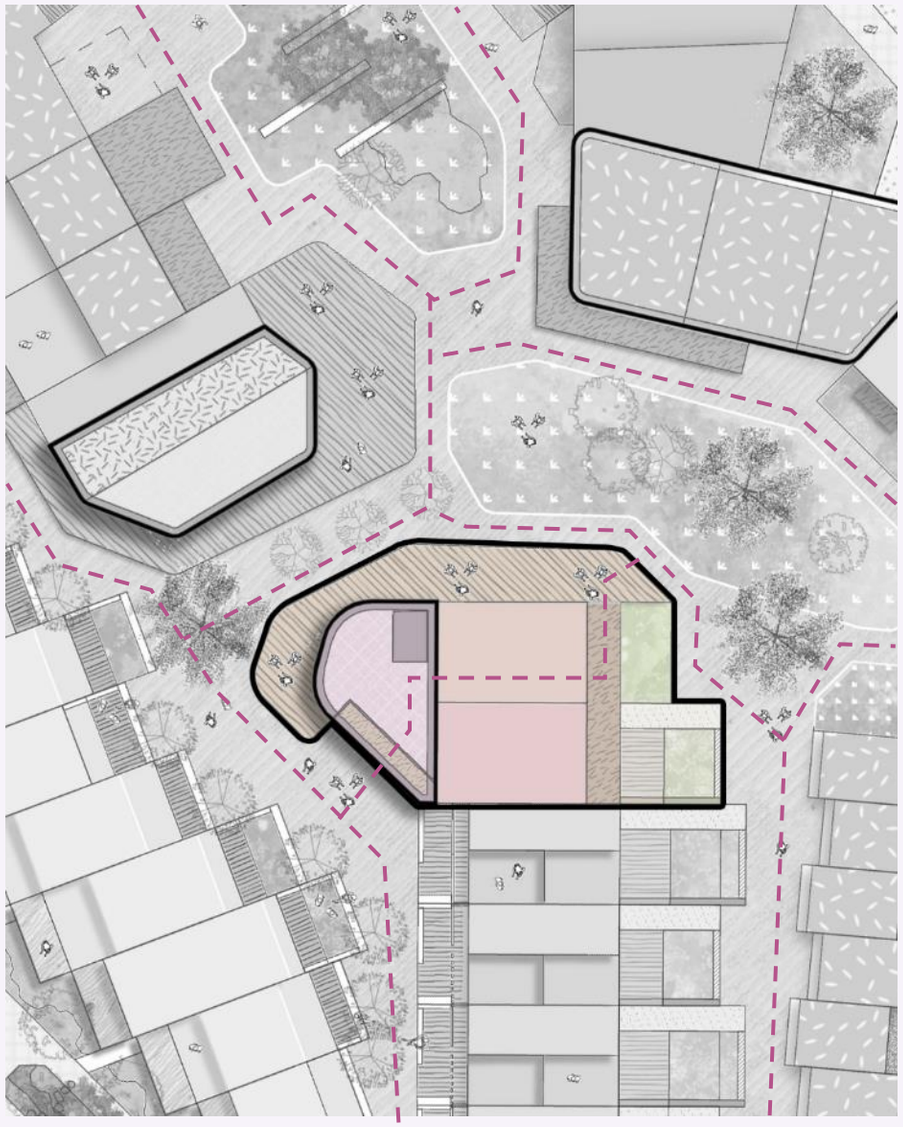
ARCH HOUSE - SOCIAL GARDEN ISOMETRIC

Resident's personalisation element options:

1. Frame colour of doors
2. Social gardens ratio of deck:vegetation
3. Two varying degrees of screening (1.8m and 0.6m) are provided, however it is resident's choice to appropriate accordingly
4. Options of hedge or low walls at the perimeter facing the communal street



interface 03 – Milton Collab overview



A COMMUNAL SPACE TO COLLABORATE -

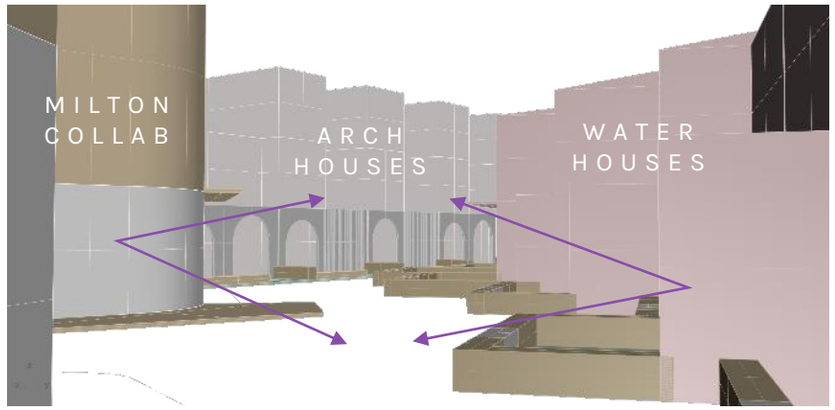
Being situated in the middle of the residence, Milton Collab space provides convenience to resident's accessibility to the building. It will be a space that residents past by before and after their destinations. Architecturally different from the residential typologies, it gives the communal space a unique, recognisable outlook.

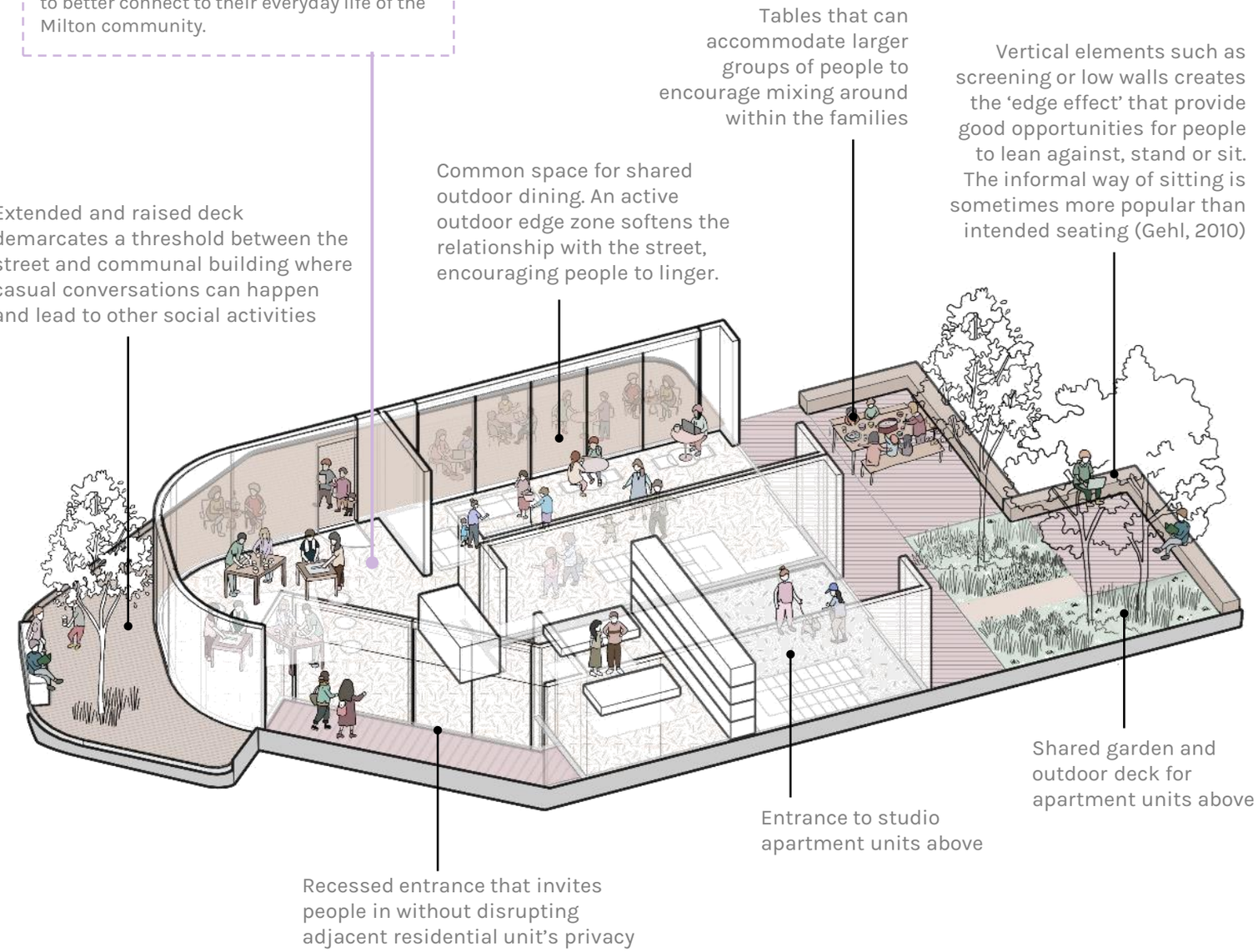
MILTON COLLAB WORKSHOP

A common space for Milton residents to collaborate, with a common tools workshop space inclusive of shared equipments.

These studio spaces are for creating, learning, conducting workshops for and from neighbours. Such activities allow for residents to better connect to their everyday life of the Milton community.

Creating social environments that allow spillout spaces from facing units



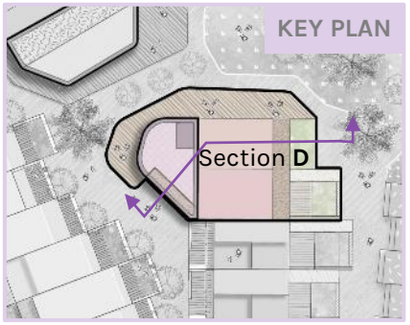


interface 03 – Milton Collab

Fig 8. Marmalade Lane Common House interior

COMMON HOUSE

Inspired by Marmalade Lane's common house, high ceilings with a meadow view was implemented as a co-housing scheme, with the intent to facilitate interaction. With a much larger resident capacity in Milton, a communal/ collab building is proposed.



Hierarchy of interactions throughout the communal building

WATER HOUSE | INNER MILTON ST | MILTON COLLAB | INNER COURTYARD STREET | OPEN GREEN PLAYSPACE

PRIVATE | SEMI-PRIVATE | SEMI-PUBLIC / COMMUNAL

A generous ceiling height accommodates more density and diversity (Sims, 2019) – a mezzanine variation at the top level that connects to a community garden.

Situated on the roof where it receives the most sunlight, the community garden allows residents to actively participate in the growth and distribution of shared food production. It also increases social interaction whilst managing the herbs/plants.

Recessed balconies with folding shutters that offer open and closed variations

Resident choice – a bottom-up approach where green space is provided to be personalized and decided by the community

Workspaces, common service functions are significant as a tool to bond resident relationships and have a purpose and space to hang out.

STUDIO SPACE FOR RESIDENT RENTAL

The outdoor space of residents opens up the possibility to have contact with people walking by, so that everybody shared the same space connected to the threshold zone

Active ground floor foster sense of community and security & with balconies looking out to the street, and direct access results in frequent comings and goings (Sims, 2019)

A walk straight-through typology (Sims, 2019) also creates an alternative route and opportunity to dwell in this communal space.

Moveable furniture for choice of seating configurations

Visual connection to the play space adjacent to Milton Collab allows parents to oversee their children whilst individuality have social connections with others

Reference List

Archdaily., (2018). Marmalade Lane Cohousing Development / Mole Architects [online]. [Viewed 1November 2020]. Available from: https://www.archdaily.com/918201/marmalade-lane-cohousing-development-mole-architects

Alexander, C., Ishikawa, S., Silverstein, M., Jacobson, M., Fiksdahl-King, I., Shlomo, A., (1977) A Pattern Language - Towns, Buildings, Construction. United States of America; OUP USA.

Ashton, L., (2020). Severe shortage of council houses in Sheffield, with more than 12,000 people on waiting list in 'desperate' need [online]. [Viewed 04 January 2021]. Available from: https://www.thestar.co.uk/news/politics/severe-shortage-council-houses-sheffield-more-12000-people-waiting-list-desperate-need-1367538

BBC., (2019). Housing crisis affects estimated 8.4 million in England - research. [Online.] BBC. [Viewed 21 December 2020]. Available from: https://www.bbc.co.uk/news/uk-49787913

Bentley, I., (1985). Responsive environments: a manual for designers. Abingdon: Burlington, Mass.

Bordi, R., (2020). What is coliving? Everything you should know. [Online]. Lugaris. [Viewed 27 October 2020]. Available from: https://www.lugaris.com/en/what-is-coliving/

Breach, A., (2020). Planning for the Future [Online]. Housing Centre for Cities. [Viewed 1 November 2020]. Available from: https://www.centreforcities.org/housing/

Casey, S., (2006). The good and the bad of co-housing [online]. Library worklife. HR E-news for todays leaders. [Viewed 10 December 2020]. Available from: https://ala-apa.org/newsletter/2006/10/17/the-good-and-the-bad-of-cohousing/#:~:text=While%20most%20members%20enjoy%20the,gossip%20can%20become%20common%20knowledge

Collinson, P., (2019). Record numbers of young adults in UK living with parents [Online]. The Guardian. [Viewed 05 January 2021]. Available from: https://www.theguardian.com/uk-news/2019/nov/15/record-numbers-of-young-adults-in-uk-living-with-parents#:~:text=In total%2C 1.1 million more,and dad into their 30s.

Dezeen., (2020). House by Urban Splash and Dezeen present a talk on housing [Online]. YouTube. [Viewed 10 December 2020]. Available from: https://www.youtube.com/watch?v=aXtTB1d8Esg

Edgar, L., (2020). Covid-19: Green space should be a priority in local plans [Online]. The Planner. [Viewed 27 October 2020]. Available from: https://www.theplanner.co.uk/news/covid-19-green-space-should-be-a-priority-in-local-plans

Fairs, M., (2009). Goldhawk Village by Peter Barber Architects [online]. [Viewed 1 November 2020]. Available from: https://www.dezeen.com/2009/01/12/goldhawk-village-by-peter-barber-architects/

Felstead, A., (2020). A pattern language for urban commons: resident participation in UK cohousing landscapes [Blackboard]. Departmental research talks. 1 Dec. [Viewed 1 December 2020]. Available from: Blackboard- Organisations- Department Research Talks

Ferrari, E., Archer, T., and Parkes, S., (2019). SHMA - Strategic Housing Market Assessment for Sheffield and Rotherham. [Online] [Viewed 21 December 2020]. Available from: https://drive.google.com/viewerng/viewer?url=https://www.rotherham.gov.uk/downloads/file/825/strategic-housing-market-assessment

Gehl, J., (2010). Cities for People. Washington, D.C: Island Press.

Harper, S., (2020). How co-living communities will replace our empty offices [Online]. Wired Article. [Viewed 27 October 2020]. Available from: https://www.wired.co.uk/article/co-working-community

Harris, M., (2019). UK multigenerational housing market to triple by 2040. [Online]. Griclub. [Viewed 05 January 2021]. Available from: https://www.griclub.org/news/real-estate/uk-multigenerational-housing-market-to-triple-by-2040_833

Historic England., (2016). Heritage Counts 2016 - Case Study [online]. [Viewed 1 November 2020]. Available from: https://historicengland.org.uk/content/heritage-counts/pub/2016/case-study-kelham-island-pdf/

HousingLIN., (2013). Tibby's Triangle in Southwold. [online]. [Viewed 07 January 2021]. Available from: https://www.housinglin.org.uk/_assets/Resources/Housing/Practice_examples/Housing_LIN_case_studies/HLIN_CaseStudy71_Tibbys_Triangle.pdf

Jarvis, H., Scanlon, K., Fernández A. M., Chatterton, P., Kear, A., O'Reilly, D., Sargisson, L., and Stevenson, F. Co-housing: Shared Futures (2016) [Online]. [Viewed 04 December 2020]. Available from:https://eprints.whiterose.ac.uk/132499/1/Cohousing_shared_futures_FINAL%20web.pdf

Kersley, A., (2020). Politicians have made an algorithm to fix the housing crisis. It's bad [Online]. Wired. [Viewed 04 January 2021]. Available from: https://www.wired.co.uk/article/housing-algorithm-flaws

KTGY., (2019). Co-dwell – Design for attainable housing [Online]. KTGY. [Viewed 27 October 2020]. Available from: http://ktgy.com/work/co-dwell/

Levete, A., (2020). How the spaces we inhabit will change after lockdown [Online]. BBC. [Viewed 06 January 2021]. Available from: https://www.bbc.co.uk/programmes/articles/4pwnvPzMQtSz7L1370gb71v/how-the-spaces-we-inhabit-will-change-after-lockdown

Makin, Carl., (2018). Five reasons why we need more cohousing [Online]. GM Housing Action. [Viewed 27 October 2020]. Available from: http://www.gmhousingaction.com/five-reasons-need-cohousing/

McCamant, K. and Durrett, C., (2011). Creating cohousing, Building sustainable communities. Gabriola islands, Canada.: New society publisher

Ministry of Housing, Communities & Local Government., (2019). National Planning Policy Framework. [Online]. [Viewed 03 January 2021]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810507/NPPF_Feb_2019_print_revised.pdf

Ministry of Housing, Communities & Local Government., (2020). White paper, Planning for the future [Online]. [Viewed 03 January 2021]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810507/NPPF_Feb_2019_print_revised.pdf

Mole Architects., (2018). MARMALADE LANE COHOUSING, CAMBRIDGE, 2018 [online]. [Viewed 1 November 2020]. Available from: https://www.molearchitects.co.uk/projects/housing/k1-cambridge-co-housing/

Peach, K., (2017). Intergenerational Living, its scope and potential: can age integration be promoted by co-location in extra care settings? [Online]. Housing LIN. [Viewed 05 January 2021]. Available from: https://www.housinglin.org.uk/blogs/Intergenerational-living-its-scope-and-potential/

Saaby, T., (2014). A Metropolis for People - Planning tools for vibrant ground floors. [online]. [Viewed 20 December 2020]. Available from: https://vle.shef.ac.uk/bbcswebdav/pid-4612038-dt-content-rid-30742416_1/courses/LSC330.A.217249/A%20Metropolis%20for%20People%20-%20Planning%20tools%20for%20vibrant%20ground%20floors%281%29.pdf

Sheffield City Council., (2013). Housing Strategy 2013-2023 [online]. [Viewed 1 November 2020]. Available from: https://www.sheffield.gov.uk/content/dam/sheffield/docs/housing/housing-strategy/Housing%20Strategy%202013-2023.pdf

Sheffield City Council., (2016). A city for all ages: making Sheffield a great place to grow older. [Online]. [Viewed 21 December 2020]. Available from : https://sheffield.citizenspace.com/communities-business-strategy/opil-housing-strategy/supporting_documents/Draft%20OPIL%20Housing%20Strategy_Public.pdf

Sheffield City Council., (2020). Issues and Options Report. [online]. Sheffield Plan - Issues and Options. [Viewed 02 December 2020]. Available from: https://www.sheffield.gov.uk/content/dam/sheffield/docs/planning-and-development/draft-sheffield-plan/Sheffield%20Plan%20Issues%20and%20Options%20document.pdf

Sim, D., (2019). Soft City: Building Density for Everyday Life. Washington, D.C: Island Press.

Swinney, P. and Carter, A., (2018) The UK's rapid return to city centre living [online]. BBC [Viewed 04 January 2021] Available from: https://www.bbc.co.uk/news/uk-44482291

Surico, J., (2020). The Power of Parks in a Pandemic [Online]. In a Pandemic, the Parks Are Keeping Us Alive. [Viewed 27 October 2020]. Available from: https://www.bloomberg.com/news/articles/2020-04-09/in-a-pandemic-the-parks-are-keeping-us-alive

UK Cohousing Network, (2020). About Co-housing [online]. [Viewed 1 November 2020]. Available from: https://cohousing.org.uk/about/about-cohousing/

United for All ages., (2020). Together in the 2020s: twenty ideas for creating a britain for all ages by 2030 [Online]. HousingLIN. [Viewed 4 January 2021] Available from: https://www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/Together-in-the-2020s-twenty-ideas-for-creating-a-Britain-for-all-ages-by-2030.pdf

Walker, A., (2018). Housing crisis: only 1.4 per cent of Sheffield's new-builds affordable [online]. JUSNews. [Viewed 4 January 2021]. Available from: https://www.jusnews.net/housing-crisis-only-1-4-per-cent-of-sheffields-new-builds-affordable/

Wang, J., Hadjri, K., Bennett, S., & Morris, D. (2020). The role of cohousing in social communication and sustainable living environments. Southampton: W I T Press. doi:http://dx.doi.org.sheffield.idm.oclc.org/10.2495/GD170201

Reference List - Images

Fig.1. ManCoHo., (2020). Home - Manchester Cohousing [Digital Image]. [Viewed 02 January 2021] Available from: https://manchestercohousing.co.uk/

Fig 2.1 Sheffield City Council., (2020). Strategic flood risk assessment [Digital Image.] [Viewed 10 October 2020] Available from: https://www.sheffield.gov.uk/home/public-health/strategic-flood-risk-assessment

Fig 2.2 Losturbanrivers., (2020). [Digital Image.] [Viewed 10 October 2020] Available from: https://www.google.com/maps/d/u/0/viewer?msa=0&dg=feature&mid=19tSCCu9CKO7ZVxXECStC0BF4Vt0&ll=53.36805800156956%2C-1.5062755000000072&z=12

Fig 3. Moorby, A., (2018). [Digital Image.] [Viewed 10 December 2020] Available from: https://www.constructionenquirer.com/2018/07/27/green-light-for-860-bed-sheffield-student-digs/

Fig 4. Landezine., (2020). [Digital Image.] [Viewed 23 November 2020] Available from: http://landezine.com/index.php/2020/10/mellemrummet/

Fig 5. Butler, D., (2020). [Digital Image.] [View 23 November 2020] Available from: https://www.urbanista.org/issues/dwell-in-possibility/features/marmalade-lane-cohousing-for-shared-living-in-cambridge

Fig 6.1. Landezine., (2020). [Digital Image.] [Viewed 03 January 2021] Available from: http://landezine.com/index.php/2013/04/arkadien-winnenden-by-atelier-dreiseitl/

Fig 6.2. Landezine., (2020). [Digital Image.] [Viewed 03 January 2021] Available from: http://landezine.com/index.php/2013/04/arkadien-winnenden-by-atelier-dreiseitl/

Fig 7. KAW., (2020). [Digital Image.] [View 03 January 2021] Available from: https://www.kaw.nl/projecten/wonen-achter-reitdijk-groningen/

Fig 8. Christian, D., (2019). [Digital Image.] The Miracle of Marmalade Lane [Digital Image]. [Viewed 4 December 2020] Available from: https://www.thedeveloper.live/places/places/the-miracle-of-marmalade-lane-

appendix - review of relevant literature

White Paper (2020) & a webinar discussion on White Paper

The white paper 2020 intends to take a considerably more bottom-up, community led approach in allocating targeted provision and needs for housing within a shorter timeframe. Together with sustainable principles applied, that would benefit the environment and boost the construction sector whilst meeting the demand and responding to the existing housing crisis.

It aims to set a system that targets a higher standard of quality, design and reflect local vernacular and character for future home owners. Requirements are that these houses are to be built to adaptable and flexible that are ready for changes for future needs. It mentioned that proposals that follow local design guidance and codes will get quick approvals to be built.

Whilst sounds promising, a discussion during a webinar pointed out on specific points such as lack of consideration in over-delivery of cookie cutter housing design, the speed and quantity goals might realistically result in poor quality, not well-thought designs, bottom-up approach in early stages would result in messy structures and conflicts.

Housing Aglorithm – White Paper

The mutant algorithm sets a formula to decide where to build the targeted 300,000 new homes and solve England's housing crisis, with the factors of each region's demand, population growth and local affordability. It is not a one size fits all. For example, in London, it was told to build thousand more homes and would eat into the Green Belt; but in Yorkshire where there is also high demand, it was told to reduce the output.

As Kersley, A (2020) emphasized, the new algorithm would backfire and could have a big impact and could potentially worsen an already critical shortage of affordable homes. The use of an algorithm to determine an actual crisis is concerning, as it does not consider factors such as homes that are built on specific land, which if profit-driven, would create even more houses on expensive land with intended luxury houses that defeats the demand of affordable housing. Even if it hits the targeted calculated amount, it will never completely solve the housing crisis. Building more affordable homes on previously developed land and sustainable locations would be more effective, and considering real factors of housing needs such as multigenerational homes that could benefit the local communities.

Sheffield City Council Housing Strategy (2020)

Population growth would occur at both ends of the spectrums, with increasing ageing population and rise of children. New private home buildings that are built over the last 5-7 years have been dominated by apartments, with the increase of demand in city centre living. The demand for student housing have significantly impacted the housing markets in certain areas of the city.

The Sheffield City Council housing strategy aims to produce high quality homes in the right places that will facilitate future local economic growth, whilst attracting and retaining home-grown professionals and graduates. The 3 key objectives that are mentioned are 1) increasing supply of new homes in the city 2) Capitalising existing housing stock assets to its' maximum potential 3) Help younger, older and vulnerable people live independently.

A range of homes with mixed and balance housing markets contributes to the everchanging housing needs, responding to ageing population and future family capacity needs. Community engagement with local councils will be more frequently held for the quality and delivery of housing services.

Helping the young people live independently was mentioned, and that resources and appropriate accommodation will be planned for. The preference of shared private rented accommodation was noted. Provision of age-friendly neighbourhoods is essential for creating a city where people maintain the highest possible of activity, independence and quality of life. New housing developments with mixed-use amenities, recreational and community facilities are targeted to be within walking distance.

National Planning Policy Framework (2019)

Aims and objectives of this document includes economic objectives, social objectives and environmental objectives.

Relevant topics covered include ensuring vitality of town centres, promoting healthy and safe communities, provision of social, recreational and cultural facilities for community needs, provision and promotion of sustainable transport, support mixed use developments where amenities are tightly integrated within the community, achieving appropriate densities, well-designed places, planning for climate change and convserving/enhancing the historic environment.

These are the framework outlines that will be reflected and carried out throughout the report.

SHMA – Strategic Housing Market Assessment for Sheffield and Rotherham (2019)

This assessment targets specifically at Sheffield and Rotherham region, highlighting key patterns and considerations concerning current and future housing markets.

Regeneration and placemaking amenities include a right mix of tenure and property sizes and types. Access to health and household needs, jobs, public safety and quality of physical environment are crucial in housing environments that are currently lacking in the built of new individual housing schemes. A holistic view of these placemaking elements should be taken into consideration as they are important determinants of the housing market and demand.

Sheffield population fluctuates greatly as compared to other districts but sees major inflow from international migration due to its outstanding universities. However, large amounts of students belong to the temporary community, which should be considered separately from permanent local residents. Additionally, the local labour market in Sheffield holds major employment for the wider region, this contributes to the higher housing demand locally.

61% of the locals cannot afford what they need to meet their housing needs, and new housing supplies are driven by private sector which are mostly profit-driven. This continues to be an on-going affordability problem.

Important factors that affect desirable homes included: type, quality and location. Space, issues of quality/design, and outdoor amenities are the most significant to existing residents and home buyers.

Demand of housing requirements include: Disabled-friendly environments, adaptations in expansion of homes, provision of storage space, options of downsizing a place, growing interest in flats and apartments, specialist apartments for older people.