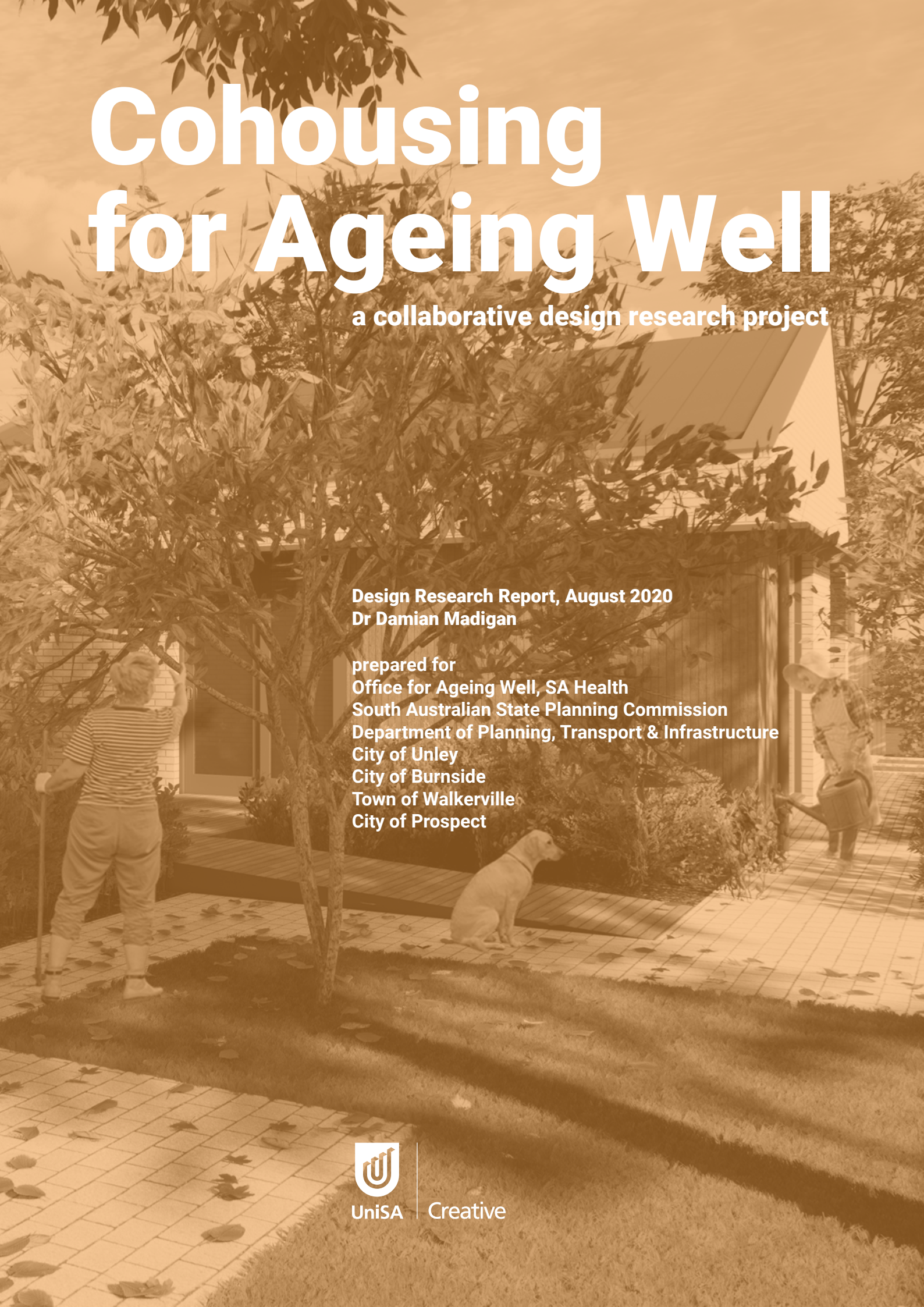
Cohousing for Ageing Well

a collaborative design research project



Design Research Report, August 2020
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prepared for
Office for Ageing Well, SA Health
South Australian State Planning Commission
Department of Planning, Transport & Infrastructure
City of Unley
City of Burnside
Town of Walkerville
City of Prospect

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Office for Ageing Well
Government of South Australia
SA Health

STATE PLANNING COMMISSION

Government of South Australia
Department of Planning, Transport and Infrastructure

THE CITY of Unley

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Acknowledgements

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The project was coordinated by the City of Unley, with the design research undertaken by the University of South Australia.

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Executive Summary

The *Cohousing for Ageing Well* project addresses:

- How the cohousing model of community-focused living might be adapted to the much smaller scale of the single allotment in order to support collaborative infill housing for people wishing to age within their community;
- How such a universal design approach for older residents might support a new general infill model suitable to every age and life-stage;
- How such infill housing might retain and reuse existing housing stock in older suburbs in order to strike a balance between the necessity to provide new and more diverse housing and the desire to retain and enhance local character as the suburbs change; and
- What policy mechanisms might be necessary to enable such a model, if it is deemed desirable.

To inform the project, a codesign workshop was held with older residents of the four council areas, with general support and encouragement received for the model.

During the project a submission was made by the project team as part of the public consultation process for the South Australian State Government's draft state-wide Planning and Design Code, advocating that the model be incorporated as a new form of permitted development defined as 'Cohousing Accommodation'.

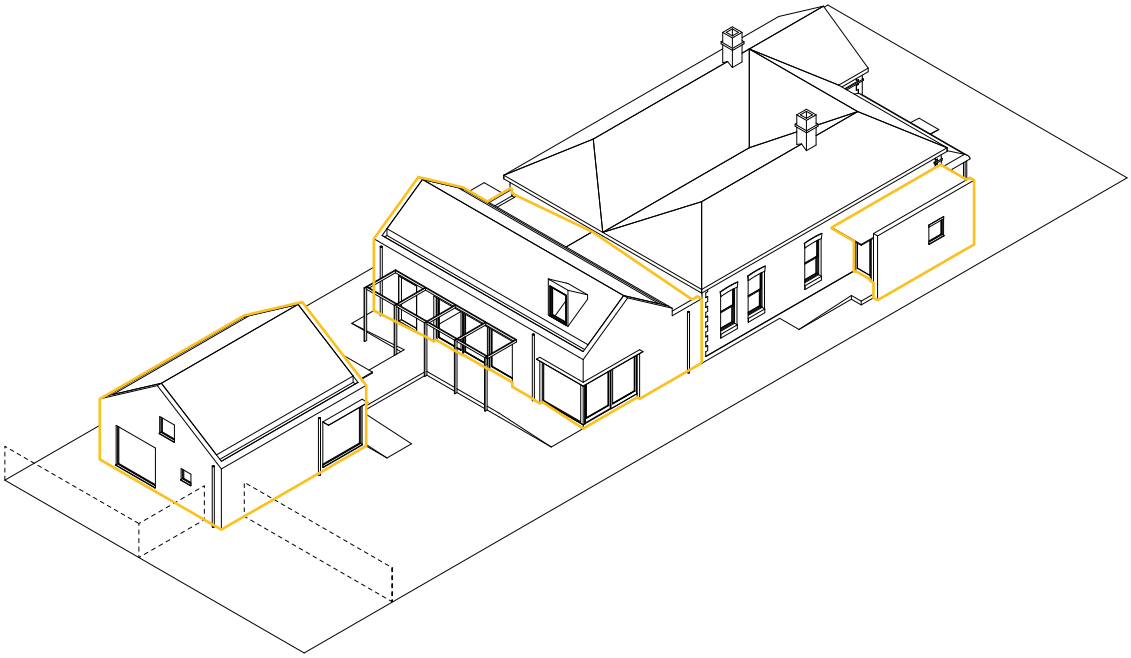
This Design Report presents four detailed Cohousing for Ageing Well (CHAW) design projects that explore and explain what a small scale cohousing model might offer in established suburbs. It concludes with recommendations for the steps to be taken in order to progress the concept.

The four design schemes demonstrate new infill possibilities across four allotment types typically seen in older Adelaide suburbs. Rather than setting a minimum allotment size on which the model might operate, the work instead explores different site options that test degrees of sharing indoor and outdoor space.

The sites are defined simply as Small, Medium, Large and Extra Large. Based on real allotments, they are anonymised in order to demonstrate deployability of the housing concept across different suburbs. Together they demonstrate that a whole-of-site design approach can realise infill housing opportunities that a purely GIS or numeric site measurement system cannot.

Where the four design schemes illustrate bespoke approaches to infill cohousing for the sites, broader design tactics that are embedded in the projects are discussed as discrete elements that can be included in a project to increase amenity and liveability.

The report concludes with recommended next steps, which include the authoring of new infill policy in support of the housing model and an accompanying design guide. Designed in the first instance for older residents in the inner suburbs of Adelaide, the aim of the work is to be broadly applicable to general infill housing in other suburbs and in other cities, under the assumption that good housing for older members of our communities is good housing for all.



Contents

South Australia's strategic vision for Ageing Well is to be "a healthy, connected, equitable and sustainable community, which takes a whole of life approach that fosters many years of living well . . ."

The State has three strategic priorities to make this happen:

1. **Home & Community**
   Homes and communities enable flexibility and choice, and support us to live how we choose, no matter our age, needs, wants and desires.

2. **Meaningful Connections**
   A future where everyone has the opportunity, support and encouragement to maintain and develop meaningful connections.

3. **Navigating Change**
   A future where we all have the capabilities and supports for remaining active participants throughout all life's transitions.

South Australia's Plan for Ageing Well 2020-2025

Cohousing for Ageing Well seeks to contribute to the realisation of this vision.

Part 1: A background to ageing well together

87.3 years Australian **female** life expectancy

84.6 years Australian **male** life expectancy

71% of 75+ South Australian **females** report being in **good health**

67% of 75+ South Australian **males** report being in **good health**

24% of South Australians are aged **60+**

74% of 50+ South Australians live in the **metropolitan** area

95% of 65+ South Australians live **independently** in the community

73% of 65+ Australians are **homeowners**

15% of **50+** South Australians live **alone**

33% of **80+** South Australians live **alone**

data source:
South Australian Department for Health and Wellbeing (2020). *South Australia's Plan for Ageing Well 2020-2025.* Adelaide, Government of South Australia.

A Housing Challenge

South Australia is an ageing community. Its older residents are diverse and do not form a single homogeneous group.[1] They largely enjoy good health and make up a significant proportion of the State's population. The vast majority of older people are fortunate to live independently in the community, and most do so in their own home in the greater metropolitan area of Adelaide. Older people often wish to stay in their own home and within their community, however as the State's residents age, many of them do so alone.[2]

For residents wishing to downsize to something smaller within the neighbourhood and community with which they are familiar, there can be little choice or opportunity. The same can be true for people of any age who seek to enter a suburb through the purchase or rental of a smaller and more affordable property. Even as the suburbs continue to change through urban densification, they often do so with a like-for-like replacement: a three bedroom family home might be demolished in order to provide two new dwellings, but these replacement dwellings will often offer the same three bedroom accommodation as their predecessor. The city gains the additional housing it needs to support population growth and longer life expectancies, but does not gain the housing diversity required of the changing demographic.

Complicating and often clouding this diversity issue is the fact that the new infill housing that drives the densification of cities like Adelaide is often decried as character-breaking. In the efforts to rebuild the suburbs at a greater density, site coverage, building mass and car parking have all increased, leading to an increase in hard roof- and ground-scapes and a loss of mature landscape and tree canopies. This risks the creation of an urban heat island effect and erodes the low scale, low density and heavily landscaped nature of older suburbs.

An urban planning counterpoint is to quarantine certain suburbs against densification, thereby encouraging knock-down-rebuild infill housing in those suburbs deemed to be less negatively affected by the loss of character and amenity. However, it can be argued that such a quarantining of certain suburbs from infill is shortsighted:

- it risks gentrifying entire neighbourhoods, thereby locking many new residents out;
- by failing to allow smaller allotments and houses, it risks locking existing residents into their large homes when they feel this is no longer the right fit for them; and
- it fails to recognise that established suburbs see perpetual change regardless, as existing houses are altered and extended, even as the average number of occupants per dwelling decreases.

An alternative form of infill housing exists that sees the pattern of existing suburban alterations and additions used to create not just bigger single homes, but smaller multiple homes on the one site; in essence, building the same amount of material but in a different disposition. The outcome is 2- and 3-for-1 intensification that renovates and extends the existing house into multiple dwellings and reconfigures the garden to be a single high-quality shared landscape as opposed to small private courtyards.[3] The efficacy of this approach is tested in this project for four local Councils that each face the pressures of infill. The imagined audience is residents wishing to age-in-community with family, with friends or with like-minded others.

1. The Australian Centre for Social Innovation (2018). *Future Directions to Support Ageing Well.* Adelaide, TACSI, pp 22-24.

2. ibid., pp 4-15.

3. Madigan, D. (2016). *Alternative Infill: a design study of housing intensification, adaptation and choice in the established suburbs of Adelaide.* Doctor of Philosophy Thesis, Monash University.

What is 'ageing well'?

In this project, the people we are hoping to help 'age well' are not defined by their age, but by their ambitions.

They are those who wish to age-in-place in familiar surroundings and with increased confidence and wellbeing. They are those who wish to live independently for as long as they can and to do so in connection with others. These others might be relatives, friends, or new connections who are coming together with a shared set of goals for the type of housing to which they would like to transition.

As such, the imagined proponents of these housing propositions might be a group of hitherto strangers - singles or couples - who redevelop an allotment together in order to create independent dwellings that enjoy the spatial and personal benefits that some form of sharing can deliver. They might be a community housing provider creating a new model of lifetime rental properties that sit alongside their traditional portfolio. They could be a family who decide to adapt their existing home and garden to preemptively create the final home for the oldest members and a first home for the youngest.

Thought of in this way, the concept of cohousing for ageing well has a common thread: the desire for a suburban housing model that sits alongside existing single family homes but with a downsized footprint and in a more socially connected manner. Such a model works to achieve the 'independence, integration and innovation' crucial to creating age-appropriate housing, while strategically avoiding any planning, aesthetic or organisational manoeuvres that can otherwise render housing for older people as institutional.[4]

While home modifications for elements such as grab rails and step-free doorways are often the focus of housing considerations for older people, they are assumed as givens in this project. The advantage of moving beyond modifications towards a model that encompasses a broader housing strategy, is that housing designed for 'ageing well' can be considered more directly as housing for *living well.* Designing with older residents at the forefront of the imagined occupant group results in housing that can be appropriate for anyone of any age who wishes to live in a smaller suburban house in a garden setting.

Perhaps more challenging, though, is the concept of sharing living arrangements with others. Two factors are key here. The first is that the cohousing model put forward in this project is for those who proactively decide to share and have control of their living choices, meaning they are predisposed to wanting to share. The second is that many people are not only happy to share, but to do so with others who are not necessarily the same as themselves.[5]

> *Co-living arrangements seem particularly likely to gain popularity. Multigenerational living in purpose-built housing with distinct, but connected, domains would be ideal for some extended families. Choosing to live with friends is also beginning to feel a very natural instinct later in life - for single people and couples. Today's young people have to wait longer for a home of their own and many, perhaps even most, will have house-shared . . .*
>
> - Julia Park and Jeremy Porteus [6]

4. Cameron, C. 'Housing for an ageing population', in Levitt, D. and J. McCafferty (2018). *The Housing Design Handbook: A Guide to Good Practice,* 2nd Edition. London; New York, Routledge, p 82-85.

5. When Bridge *et al* surveyed lower income older Australian residents, asking them to comment on their attitudes to sharing, only 27% felt that it was important to share with those of similar religious, gender or other characteristics. Bridge, C., L. Davy, B. Judd, P. Flatau, A. Morris and P. Phibbs (2011). *Age-specific Housing and Care for Low to Moderate Income Older People.* Melbourne, AHURI Final Report No. 174, Australian Housing and Urban Research Institute Limited, p 44.

6. Park, J. and J. Porteus (2018). Age-friendly Housing: Future Design for Older People. London, RIBA Publishing, p 114.

What is 'cohousing'?

Cohousing is by no means a new concept. The first development was undertaken in 1972 by 27 families outside Copenhagen. Kathryn McCamant and Charles Durrett, architects who introduced the concept of cohousing to the United States in the 1990s, describe it as a contemporary approach to a new idea. They explain it as a logical extension to the traditional notion of the village, noting that where a village develops organically over time along with a set of social rules, cohousing develops strategically and deliberately, defining its rules through consensus.[7]

Often mistaken for a commune, cohousing is increasingly becoming a mainstream housing form. In 2016 the UK Government established The Community Housing Fund aimed at creating a national network of technical, regulatory and financial services to support those wishing to undertake a cohousing development.[8]

Usually consisting of between 20 to 30 homes arranged across a large site of often agglomerated allotments, cohousing developments usually work off a common structure:

- the houses are privately owned, with residents owning a share of common areas, as per a unit development;
- houses are self-contained, with their own kitchen, dining space, living space and bedroom(s);
- houses often have a front porch or some form of outward-facing design to encourage engagement among residents;
- a common house provides a large kitchen, dining area and a living space(s) for residents to share a meal when they choose, to undertake hobbies, to socialise and to have meetings;
- a common laundry and drying areas can be included, freeing space in the individual houses;
- a guest room in the common house can be booked by residents for when family, friends or a carer come to stay, further freeing space in the individual houses;
- shared amenities such as a swimming pool and barbecues can be incorporated;
- car parking is consolidated such that residents must walk through the facility and past residences, further encouraging interaction and providing passive surveillance as a check on the welfare of neighbours.

Importantly, cohousing developments are designed *with* the residents rather than *for* them. Designed to create a neighbourhood within the neighbourhood, the system functions well for families as much as it does when designed specifically for older people, where there is a particularly good fit between the ambitions of cohousing and the needs for older residents to stay connected as they age.[9]

The four design propositions of this Cohousing for Ageing Well project display a range of sharing, but on a vastly reduced scale. Ranging from a full common-house model down to simply sharing the garden, cohousing in this model takes the form of what might be described as cohousing 'lite'.[10]

7. McCamant, K. and C. Durrett (2011). *Creating Cohousing: Building Sustainable Communities.* Gabriola Island, British Columbia, New Society Publishers.

8. Levitt, D. and J. McCafferty (2018). *The Housing Design Handbook: A Guide to Good Practice,* 2nd Edition. London; New York, Routledge, pp 301-303.

9. Durrett, C. (2009). *The Senior Cohousing Handbook: A Community Approach to Independent Living,* 2nd ed. Gabriola Island, British Columbia, New Society Publishers.

10. 'Cohousing lite' is a concept described by Park et al, whereby some of the key concepts and advantages of traditional cohousing developments are integrated into an otherwise normative residential development. Park, A., F. Ziegler and S. Wigglesworth (2016). *Designing With Downsizers: The Next Generation of 'Downsizer Homes' for an Active Third Age.* Sheffield, England, University of Sheffield.


BATH
OUTDOOR
SHED
LIVING
BED
DINING
KITCHEN
LAUNDRY

The Codesign Workshop

Informing the project with the wants and needs of older people has been important for this project and was achieved by running a codesign workshop in its early stages. Two draft designs were prepared to illustrate to residents how a cohousing model might be created for the Small and Extra large sites. These were presented to residents of the four councils at the workshop, which was facilitated by the City of Unley and designed for the project and run by Dr Aaron Davis from UniSA's Match Studio.

Rather than confirming a hypothesis, the workshop sought the 'lived experiences' of participants, regardless of their level of interest in living in a cohousing development themselves. As such, residents were tasked with individually identifying the degrees of sharing they could imagine living with, and those that would be barriers or outright 'deal breakers'. This enabled those who were very open to shared living and those who were not to share their knowledge of how the cohousing model could be made to work. Importantly, the workshop was designed such that every participant was able to record their own experiences and their individual responses. This enabled information to be gathered from all participants equally, thereby avoiding the feedback being dominated or skewed by the most vocal participants.

The workshop began with a presentation of preliminary designs for the Small and Extra Large sites, to show how a cohousing development on a single allotment might function and be arranged, and to demonstrate that the model required a potentially substantial downsizing from the type of dwelling in which the participants might currently be living. Designed in two parts, participants were first tasked with working through a spatial budgeting exercise.

The typical elements of a house (large bedroom, small bedroom, laundry, kitchen, etc) and its garden (large shed, small shed, small garden, large garden, etc) were provided as cutout blocks, all to scale. A base sheet at the same scale, allowing 50m^2 for a private dwelling, 20m^2 for private outdoor space and 50m^2 for shared indoor facilities, was provided for residents to fill with their cutout functions. These budgeted sizes were determined from the two preliminary designs, which suggested that a backyard dwelling of around 50m^2 and a common house of 50-70m^2 was a good balance when attempting to maximise the number of additional houses created while still maintaining a garden setting compatible with the existing conditions.

Going over these spatial budgets was not permitted. With more choice in the functional cutouts than space allowed for their allocation, the exercise challenged participants to prioritise their inclusions and exclusions, as they imagined downsizing to a much smaller dwelling footprint. Furthermore, the exercise enabled participants to consider which elements they felt they could forego in their private dwellings by locating them in the shared facilities.

In the second exercise, split into three worksheets, participants reflected on and described the elements of a common house they would be happy to share and not share (and the reasons why), the people they would be happy or unhappy to share with, and the things that would help them feel more comfortable about sharing facilities.

facing page:
the spatial budgeting exercise in the Codesign Workshop, which was attended by residents who responded to open invitations issued by each of the four Councils

What we heard

The methodology of the Codesign Workshop provided the opportunity for individuals to provide honest feedback on the concept of a small-scale cohousing model for the established suburbs, based on their lived experience. It allowed them to highlight potential problems and opportunities in the model and to provide the project team with the insight that it otherwise lacked. We heard that:

- People are **generally open to the principles of cohousing** and can see the benefits when they are explained to them.
- Residents strongly support a **contextualised infill model** that retains existing character housing and greenspace.
- The perceived benefits of sensitive infill extend beyond housing for older people, to **housing for multi-generations** of the same family as well as multiple generations of non-related people. Participants could see the **social and financial benefits** of creating an additional dwelling for renting to a younger person, couple or small family.
- A cohousing model can be **difficult to envisage**, particularly when certain aspects might resemble existing retirement villages or so-called 'granny flats' or accessory dwelling units (ADUs).[11]
- A **governance system** is desirable. Beyond the scope of traditional body corporate rules that cover general building maintenance and operational issues, a residents' charter that covers agreed behaviours and grievance procedures was considered important.
- A good **social mix** of residents is key, however not everyone wants to share with people who are similar to themselves. Some people like the idea of **sharing with others who are different** to themselves, with a cohousing model potentially providing the opportunity to broaden their connections and experiences.
- Some people would only consider **sharing with immediate or extended family** while others **never want to share with family**.
- Depending on the individual and their lived experiences, shared facilities such as laundries (and even sharing the same washing machine) can be anything from a **non-issue** to a **deal-breaker**.
- **Storage** is important, and overflow seasonal storage in something like a small garden shed becomes increasingly important as the dwelling footprint reduces.
- Even for those in good health, potential short-term mobility issues and longer-term physical decline are considered very real possibilities. Housing that can cater to **reduced mobility** is desirable.

Together, these workshop insights point to the potential for a cohousing model to be successfully implemented in established suburbs. Whilst each development's creators will need to determine the level of sharing involved and the form their development will take, the model as a concept appears robust, allowing older residents to see its potential as a new housing form not only for themselves, but for a potentially broad age mix.

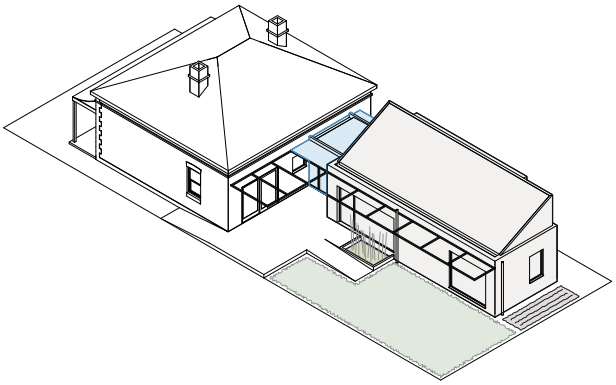
The key appears to lie in the residents having a common belief in how they want their particular system to work, coupled with the tools to ensure that it can.

11. The term 'granny flat' is used as a comparison reference here only due to its general use within the community. It is more easily understood and identifiable than the equivalent 'Accessory Dwelling Unit', or ADU, which is the technical term used in planning nomenclature. 'Backyard dwelling' is preferred over both labels. It avoids unnecessary and potentially discriminatory age labels, opens up the possibility that the new house can be more than a mere accessory to the existing, and points to the universality of a well-designed small house for occupants of any age.

Why one bedroom?

When designing context-appropriate low rise infill in and around existing housing, it becomes necessary to reduce the building footprint when extending an existing house and when proposing a backyard dwelling for the garden. Put simply, reducing the footprint of a house helps to reduce its height, makes it easier to minimise its bulk, and retains more of the landscape. This emulates a typical suburban house with additions, thereby reinforcing the existing character and prevailing garden setting of the neighbourhood.

In this project, a mix of mostly one- and two-bedroom dwellings have been strategically proposed for two reasons: it allows for a doubling and tripling of existing density to be trialled, while testing the amenity of small dwellings. It is easy to challenge the appropriateness and appeal of one bedroom dwellings, and it can be argued that two bedrooms should always be provided as a minimum in order to provide residents with space. However, as more and more people live alone and housing affordability moves further out of reach for many - particularly in established suburbs - it is important that high quality, efficient and adaptable one bedroom homes be added to our suburban housing mix. While it is relatively inexpensive to add a second bedroom when building a house (due to it being an unserviced space, unlike a bathroom), this additional accommodation not only significantly increases the building footprint over a one bedroom offering, it increases the purchase and rental prices of the property. If we are to add to our suburban housing stock at an affordable price point for both purchase and rent, it is important to provide well-designed one bedroom dwellings, and these are tested in the Small, Large and Extra Large schemes. The Medium scheme tests a three-bedroom backyard dwelling that can be converted to two one-bedroom dwellings.



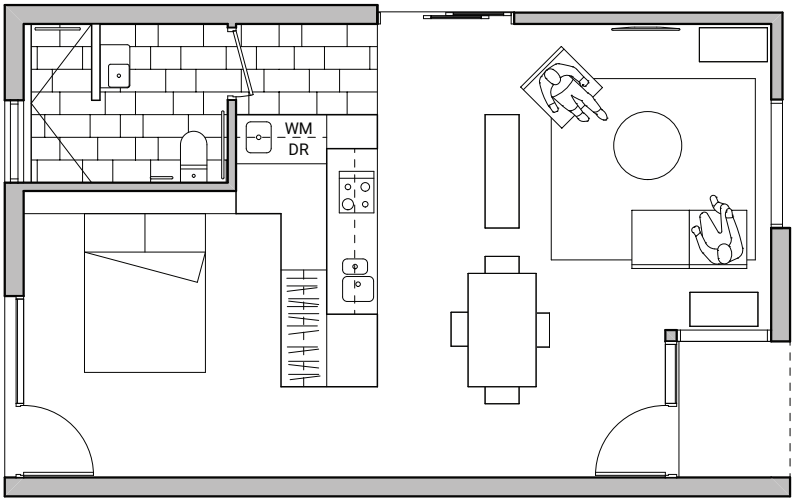
small footprint, high amenity: the Small scheme

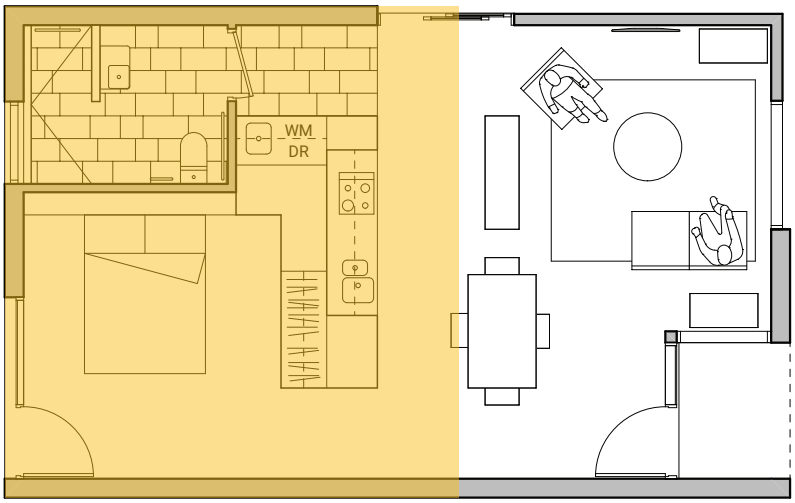
So they're tiny houses?

The one bedroom dwellings of this project are neither 'tiny houses', 'granny flats', nor 'ADUs'. Although small, the cohousing accommodation being proposed is differentiated by both its size and its amenity. Importantly, none of the housing in this project is designed to be subordinate to a 'main house', but as dwellings of an equal hierarchy with others on the site. This is achieved through taking a whole-of-site design approach, rather than treating the site as only that residual backyard space where something small might be possible. The diagrams that follow compare two of the one-bedroom units of this project with tiny houses, a commercially available 'granny flat' and a typical 40m^2 ADU.[12]

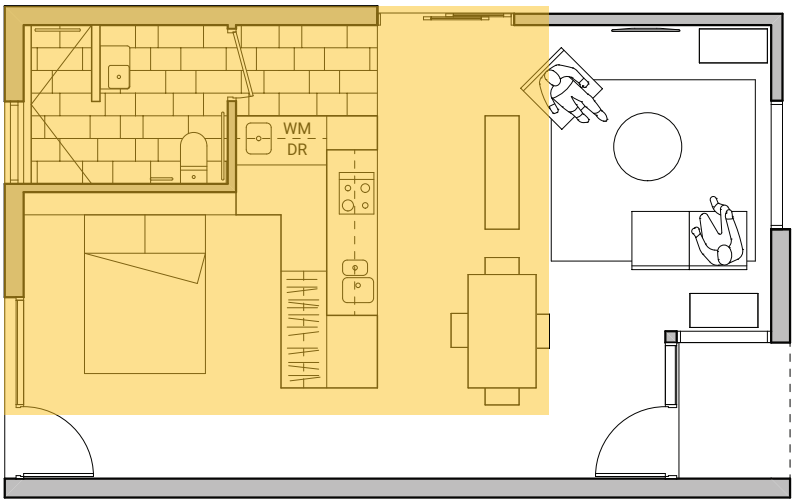
12. The draft South Australian Planning and Design Code stipulates that one form of ADU that can be considered as complying development is one that is no larger than 40m^2, subject to meeting conditions related to height and a subservient relationship with the main house.

CHAW (Cohousing for Ageing Well) 1 bedroom backyard home designed to the Livable Housing Australia Gold level: 6.5m x 10.4m (64m²)

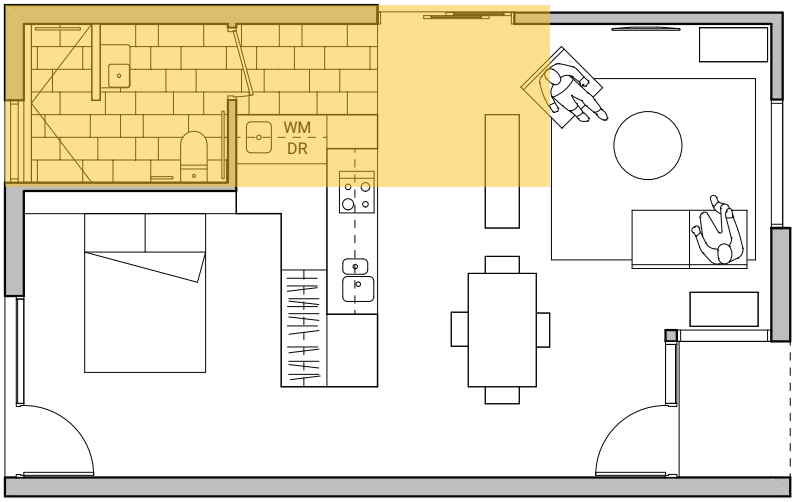




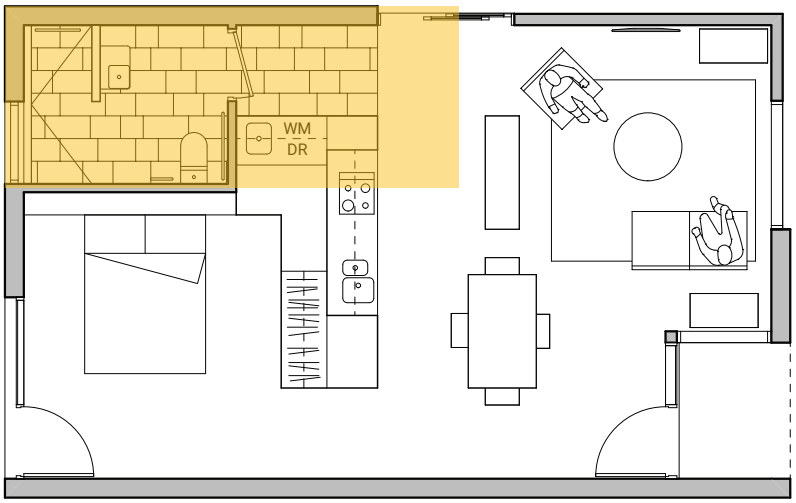
vs 6.5m x 6.0m (40m²) Planning and Design Code complying 1 bedroom ADU



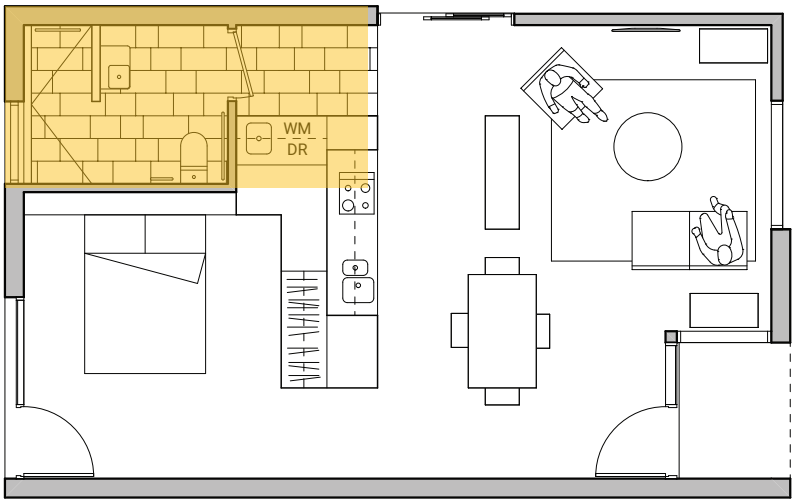
vs 5.4m x 7.2m (39m²) commercially available 1 bedroom 'granny flat'



vs 2.4m x 7.2m (17m^2)
commercially available
Tiny House with 1 bedroom

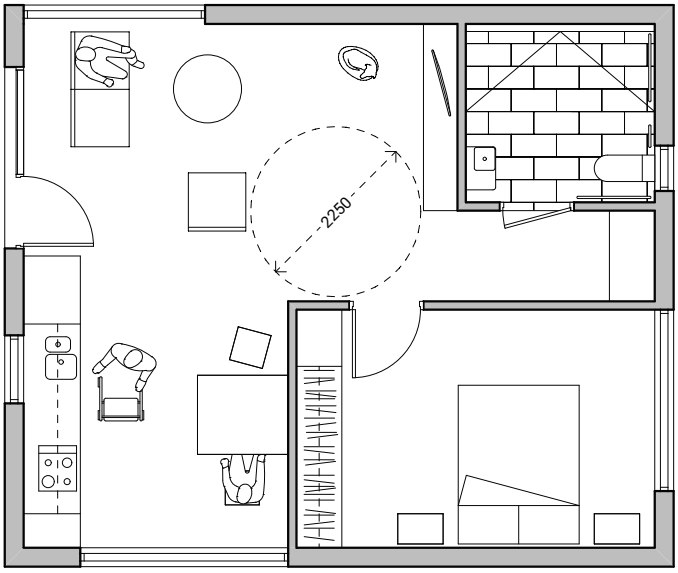


vs 2.4m x 6.0m (14m^2)
commercially available
Tiny House with 1 loft bedroom

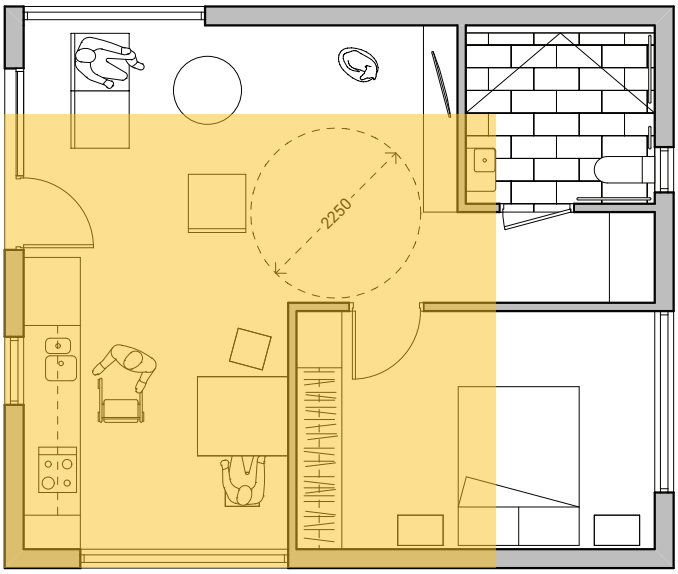


vs 2.4m x 4.8m (11.5m^2)
commercially available
Tiny House with 1 loft bedroom

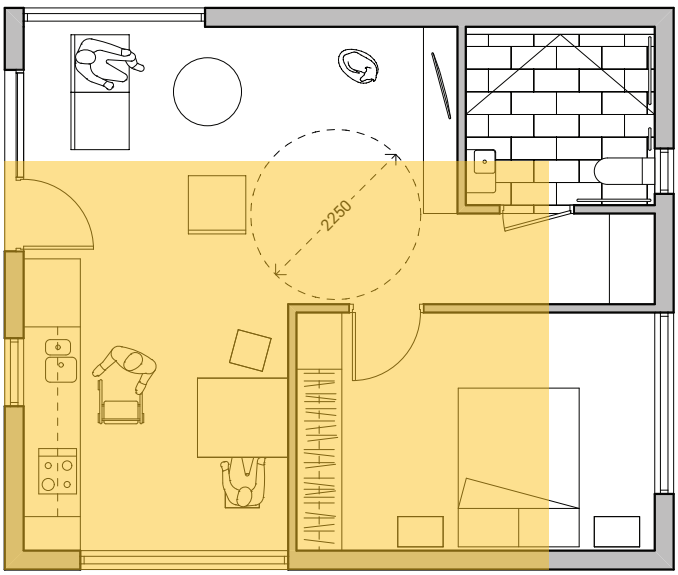
CHAW (Cohousing for Ageing Well) 1 bedroom backyard home designed to the Livable Housing Australia Platinum level: 9.0m x 7.5m (65m²)

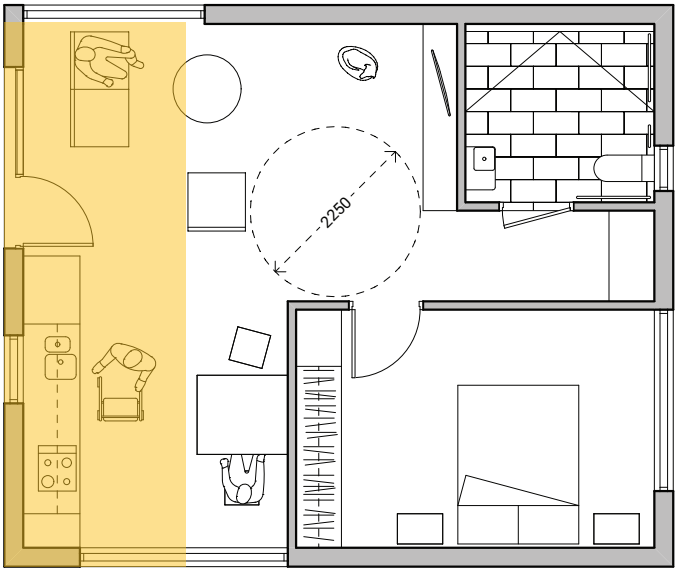


vs 6.5m x 6.0m (40m²) Planning and Design Code complying 1 bedroom ADU

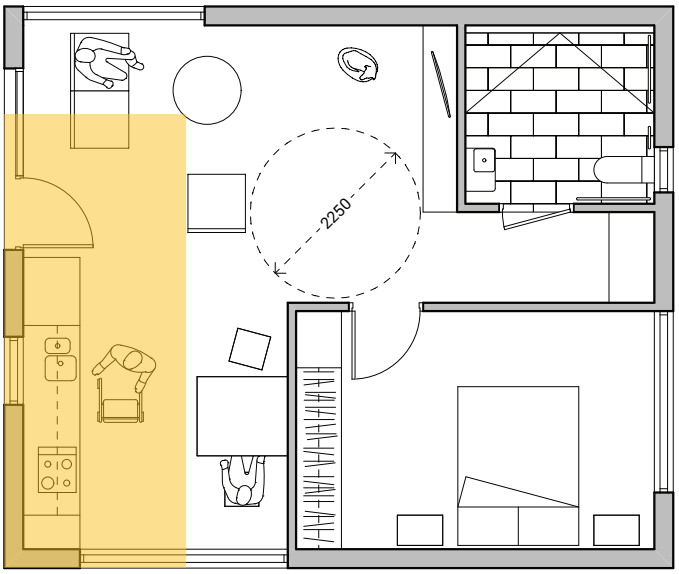


vs 5.4m x 7.2m (39m²) commercially available 1 bedroom 'granny flat'

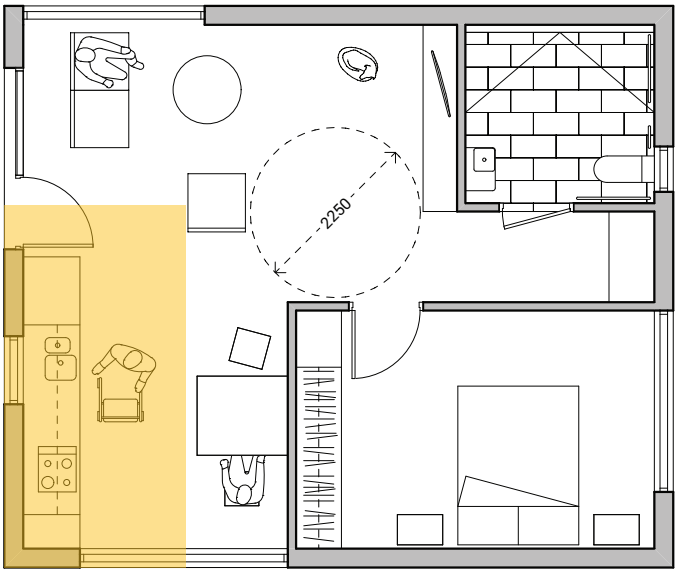




vs 2.4m x 7.2m (17m^2)
commercially available
Tiny House with 1 bedroom



vs 2.4m x 6.0m (14m^2)
commercially available
Tiny House with 1 loft bedroom



vs 2.4m x 4.8m (11.5m^2)
commercially available
Tiny House with 1 loft bedroom

A new housing definition

As the project attempts to transition a large established cohousing model to a much smaller single allotment scale, and to do so in an established suburban setting, it may be that 'cohousing' is ultimately the wrong (or at least a misleading) term for this new infill model. Where a traditional cohousing development would see many dwellings accommodated across very large allotments with a large common house and associated shared facilities, this Cohousing for Ageing Well project seeks to create sensitive 2-for-1 or 3-for-1 infill housing designed in the *spirit* of cohousing.

While something like a shared laundry may free space in individual dwellings and shared parking and garden space might increase amenity and foster resident connectivity, ultimately it remains for the proponents to develop the operational model, site design and dwelling designs appropriate for their needs, the site and the neighbourhood context. It may be that 'cohousing' becomes increasingly misleading or irrelevant as the model develops.

How best to label the model has therefore been debated during the life of the project, particularly in relation to the project group's response to the South Australian State Government's draft Planning and Design Code (the Code).

The Code is a single planning policy and assessment source that replaces the state's individual council-based development plans. It seeks to provide state-wide planning rules in order to deliver consistent and clear policy while making the planning application and approval process simpler, quicker and more reliable for applicants. The public consultation phase of the Code's implementation coincided with the development of this project and a joint submission was made by members of the project group, recommending a new housing definition be adopted in further iterations of the Code.[13]

The four design propositions of this project suggest a new form of housing not currently covered in the Code. Whilst the schemes may share certain properties with existing definitions, they are neither:

- Detached Dwellings;
- Accessory Dwelling Units;
- A Residential Flat Building; nor
- Group Dwellings.

This definition difficulty results from two key design traits:

1. The allotment is not subdivided into separate land titles nor discrete measured areas attributable to any one dwelling.
2. Each dwelling, while identifiable, self-contained and not subservient to any other dwelling on the site, relies on some level of common built and/or landscape space and/or shared facilities.

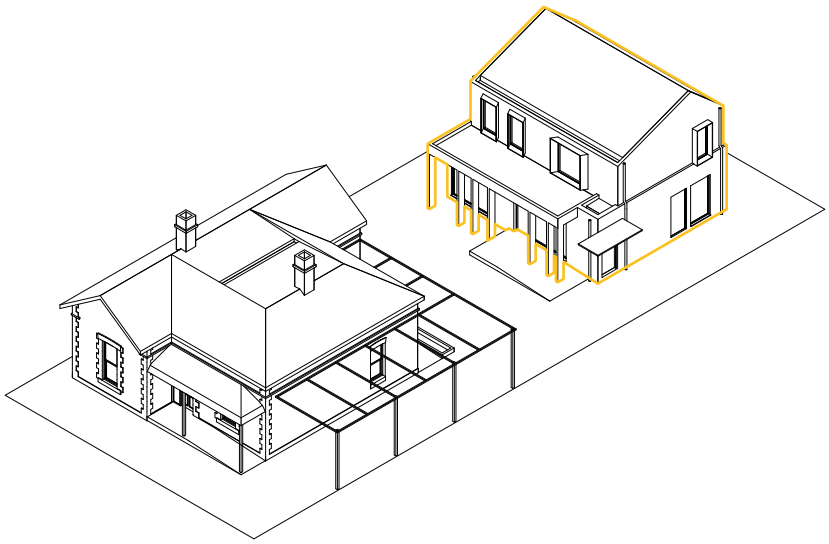
The draft Planning and Design Code submission therefore recommended a new '**Cohousing Accommodation**' definition be created, based on the preliminary designs and observations of this project.

13. Given the State Government is the author and implementor of the Code, the public consultation submission for this project was made collectively by the four councils and Dr Madigan. The State Planning Commission, DPTI and SA Health were not a party to the submission in order to maintain propriety.

Encouraging a design-led and site- and neighbourhood-specific development approach, the group's recommendation for Cohousing Accommodation puts the onus on the proponent to establish the appropriate mix of dwelling density, open space and car parking provisions and to demonstrate this as fit-for-purpose and context before an expert local design review panel. It allows for the consideration of reduced or zero car parking requirements and for density increases above anticipated maxima for a neighbourhood, based on evidenced need and a design response that demonstrates success across the entire site. Mandating a site strategy that retains mature landscape and/or establishes deep soil space, the recommendation initially suggests the model only be considered where existing housing is retained and incorporated into the scheme, regardless of whether or not it is subject to heritage protections. This is under the assumption that once established with a number of built examples, the model might be considered for expansion to a compatible and complementary knock-down-rebuild model.

> ***A new housing definition is needed that sits outside current land use definitions for dwellings and accommodation and is referred to as 'Cohousing Accommodation'.***
>
> *Cohousing Accommodation comprises development that:*
>
> - *Is situated on the same allotment as the existing dwelling and requires a land management agreement (or similar) to be entered into to maintain this relationship;*
> - *Provides site density dispensation, while maintaining site coverage and technical numerical variations in accordance with zone requirements;*
> - *Retains and incorporates the existing dwelling in association with other accommodation that is not subordinate to the existing dwelling;*
> - *Includes shared facilities (eg. common internal spaces) and utilities (eg. water, electricity, gas, sewer);*
> - *Reconsiders private open space in favour of consolidated areas of shared open space;*
> - *Is designed to contribute to local context and is fit-for-purpose within the site (eg. resolves private and communal areas and pedestrian and vehicle movement) and includes a recognised design review of the development as part of the pre-lodgement process;*
> - *Retains mature landscaping and/or provision of deep soil space and provides additional landscaping treatments to soften the appearance and provide 'green leafy' views from the street and to adjoining properties; and*
> - *Provides car parking (including the consideration of reduced and zero car parking requirements) using a flexible formula, relative to the nature of the development, its degrees of sharing, and demonstrated need.*

- extract from the CHAW Project Group public consultation submission to the South Australian Draft Planning and Design Code



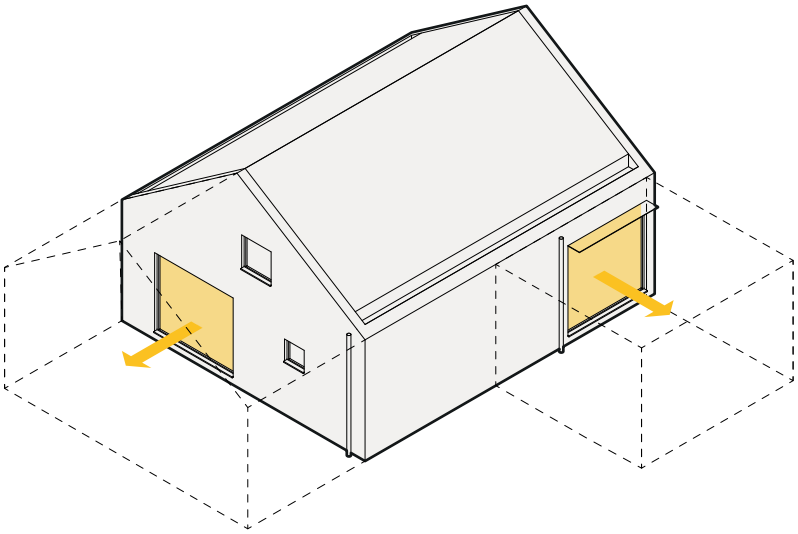
Part 2: Design Tactics

Whilst not a set of 'rules' by which to design a new form of 2-for-1 or 3-for-1 infill on single allotments, the design tactics presented here point to the embedded design thinking, logic and decisions in the four housing tests that follow in Part 3. They are the types of design and amenity considerations a proponent might put forward to a Design Review Panel and an approval authority when a cohousing scheme is being assessed on its merits.

Adaptability

Circumstances change. Houses sometimes need extending, while interiors require renovating or replacing over time due to domestic wear and tear or changing occupant needs.

The new housing additions in each of the four schemes have been designed to adapt to future needs as easily as possible. Hard infrastructure - those components of a house that are fixed and difficult to change - is limited to bathrooms and plumbing stacks.

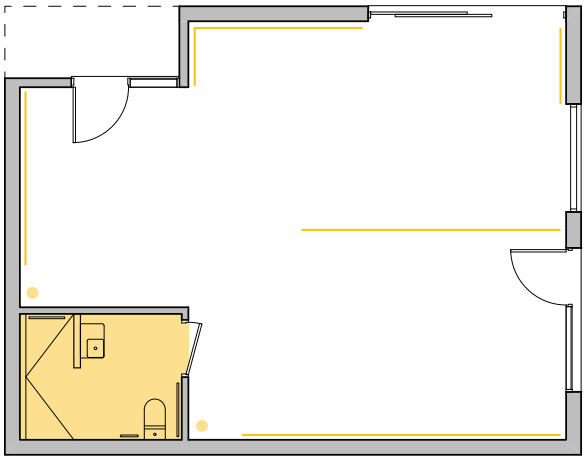


door-sized windows

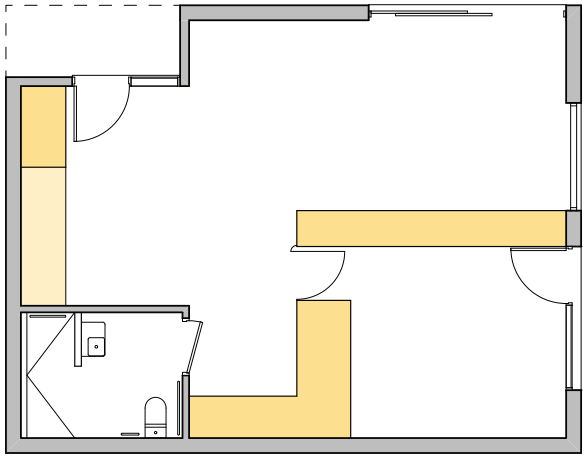
Room separation is provided not by fixed walls but by soft infrastructure; joinery which can either extend to the ceiling to maximise storage and separation, or can stop short to increase light and ventilation levels while giving the increased sense of space that a continuous ceiling can provide.

Timber floors on joists provide opportunities for flexible power runs within the building's floorpate and the addition of new floor-fixed power outlets, while removable skirtings can flexibly power the perimeter, allowing outlets to be moved or added.

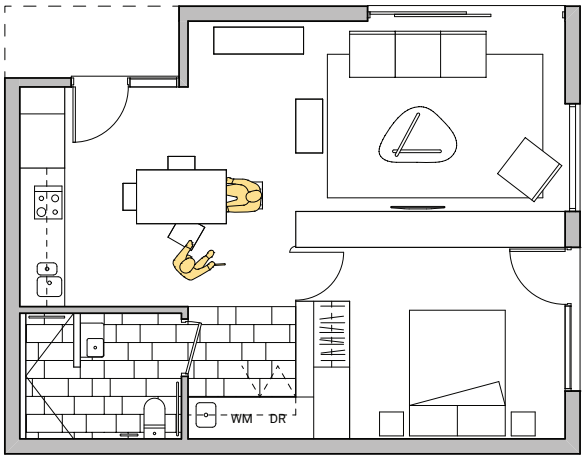
Windows that are at least as wide and high as a door and extend to the floor provide high light levels and external views when sitting in a chair or lying on a bed. They also allow a simple connection to an extension by removing the glazing and frame, thereby avoiding messy reworking to the affected walls.



hard infrastructure: plumbing and electrics



soft infrastructure: joinery



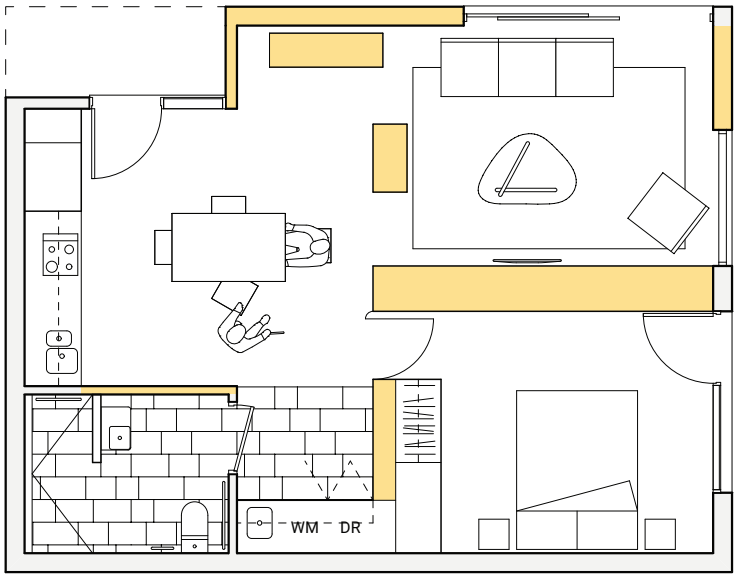
adaptable house

Memories

Over time, we accumulate memories in multiple forms, such as furniture pieces, photographs, pictures, and collectibles. In previous research undertaken for Office for Ageing Well, we heard that the housing of these memories can become increasingly difficult for older residents. Participants in the *Innovations in Social Housing* project described that as they age and inherit items from family and friends, the storage and display of these pieces becomes increasingly important but comes with the challenge of how to adequately accommodate these additional items in a small dwelling.[14]

Whilst small, each new dwelling has been designed with some form of 'slack' space, where possible - room within the dwelling that anticipates potential occupation.[15] By locating windows and doors to the sides of spaces, rather than in the centre of walls, blank wall space is created for loose furniture and wall mounted items. Storage, which can take the form of cupboards or open shelves, is maximised with this memory-keeping in mind.

By treating the open floor plan as a series of discrete spaces with a degree of separation, loose furniture can act as a spatial divide whilst still maintaining good circulation.



'slack' space for memories

14. Madigan, D. (2017). *Innovation in Social Housing 90 Day Project: Design Principles Report.* Adelaide, University of South Australia.

15. Slack Space is a concept described by Tatjana Schneider and Jeremy Till (2007) in *Flexible Housing.* London, Architectural Press.

attic spaces over bedrooms and bathrooms; generous volumes over living spaces

Storage

A pitched roof serves multiple purposes: it helps provide contextual fit in a neighbourhood with established older homes and is a ready-made surface for solar panels.

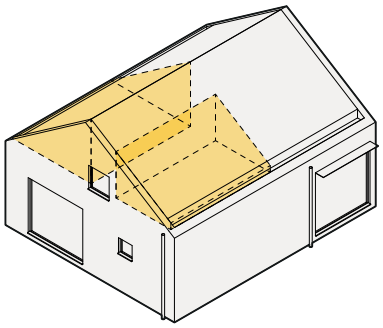
It also provides valuable roof-space storage.

If framed traditionally, using rafters and ceiling joists in lieu of roof trusses, roof spaces can be occupied. The inclusion of a pull-down attic ladder, which can be fitted with handrails for safety and even an electric motor for increased ease of use, allows for both regular and occasional use of the space.

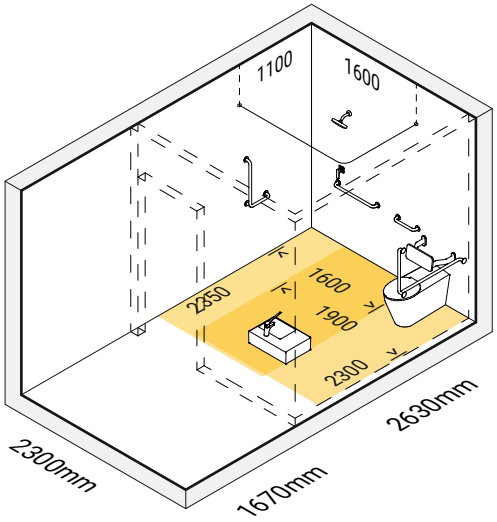
Residents with reduced mobility or concerns over safety might use the attic with the assistance of a carer, relative, friend or neighbour who can rotate seasonal storage for them. An example is winter and summer clothing, which can be stored in tubs in the attic when not required day-to-day in a wardrobe. Similarly, keepsakes that are important for the resident to retain but may not need to be on hand in the home can be safely stored in the attic to provide peace-of-mind that they are protected and comfort that they are nearby.

Each of the design proposals assumes that seasonal attic storage is provided over each bathroom and bedroom, thereby significantly increasing the livability of these small footprint dwellings.

Additionally, each shared space (such as laundries) provides shared storage for all residents. The success of these assumes an agreed usage system across the residents to ensure equity and functionality.



attic storage



a fully accessible bathroom to AS 1428.2, showing minimum overlapping circulation zones for a shower and toilet, with overall internal dimensions and corridor space

facing page: the minimum circulation zones of the four Cohousing for Ageing Well schemes, designed to Livable Housing Australia's Gold or Platinum standards

Accessibility

Although this project is targeted at independent living for older residents of a variety of ages, participants in the codesign workshop voiced a clear preference for housing that could anticipate either temporarily or permanently affected mobility. An example is a resident who has hip replacement or knee surgery and recuperates at home with a walker or rollator for several weeks before transitioning to improved mobility with the reduced support of a walking stick. In such a scenario, a home designed to be fully compliant to the Australian Standard for Access and Mobility (AS1428.2) may prove temporarily useful, but a spatial over-provision in the long term.[16]

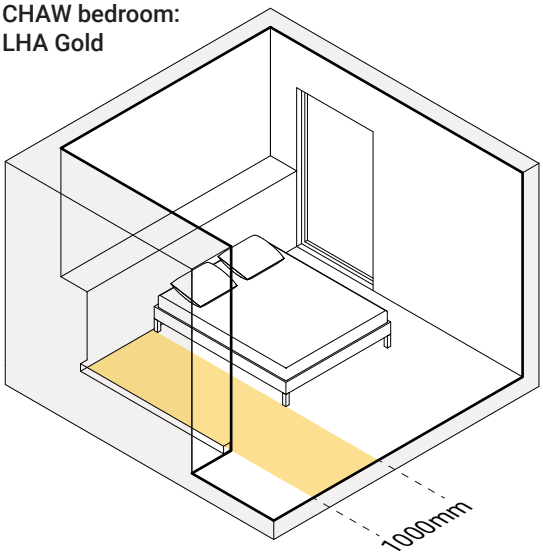
The downsized dwellings of this project therefore seek to allocate such additional space more prudently. Whilst not designed to AS1428.2, the homes have been designed to the spatial requirements of the Livable Housing Australia (LHA) Design Guidelines,[17] which strive to create more functional and responsive housing as occupant needs change over time. LHA's liveability is measured over three levels: Silver, Gold and Platinum; with an organisational goal of seeing all new housing in Australia designed to the Silver level by 2020 - the year of this project.

All of the renovated and new housing of the Cohousing for Ageing Well project is designed to the Gold level, with the common house and backyard dwelling of the Extra Large scheme achieving the more generous sizings of the Platinum level. The designs see greater mobility and access than might generally be found in market housing, with the layouts avoiding unnecessarily designing for high needs while acknowledging the fact that safety and movement in and around the home can become compromised as we age.

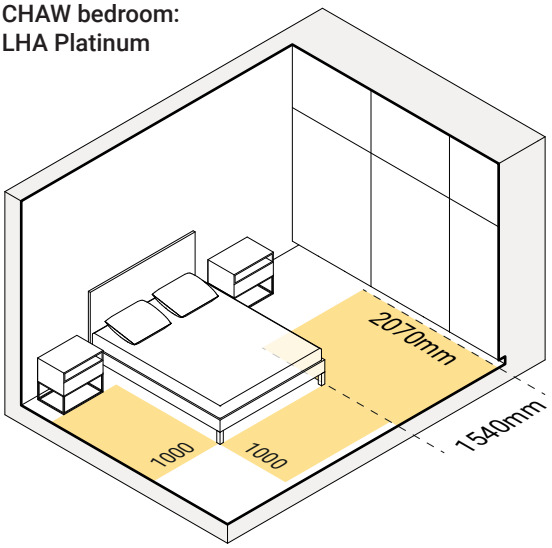
16. Standards Australia (1992). *AS 1428.2 Design for Access and Mobility - Part 2: Enhanced and additional requirements - Buildings and facilities.* Sydney, Standards Australia. A fully compliant home requires not just a larger bathroom, as shown above, but increased circulation and door clearance spaces throughout, including externally.

17. Livable Housing Australia (2017). *Livable Housing Design Guidelines,* 4th Edition. Forest Lodge, New South Wales, Livable Housing Australia.

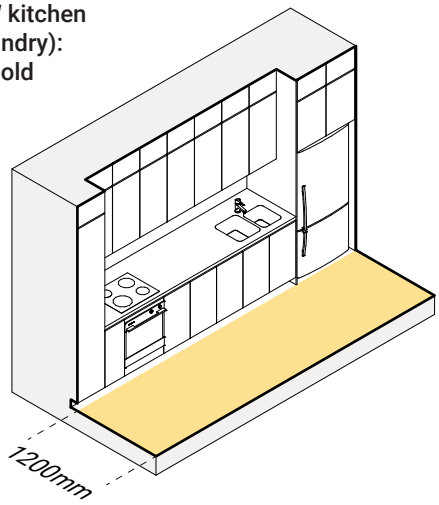
CHAW bedroom:
LHA Gold



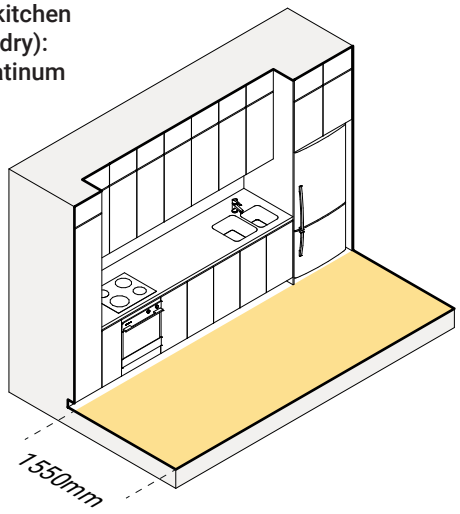
CHAW bedroom:
LHA Platinum



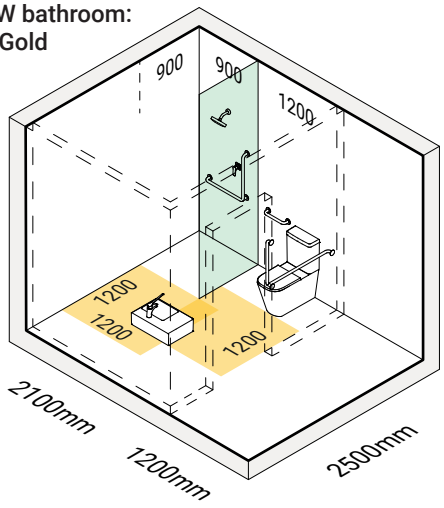
CHAW kitchen
(or laundry):
LHA Gold



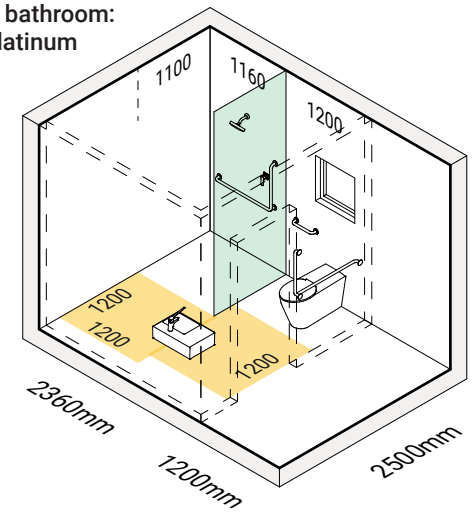
CHAW kitchen
(or laundry):
LHA Platinum

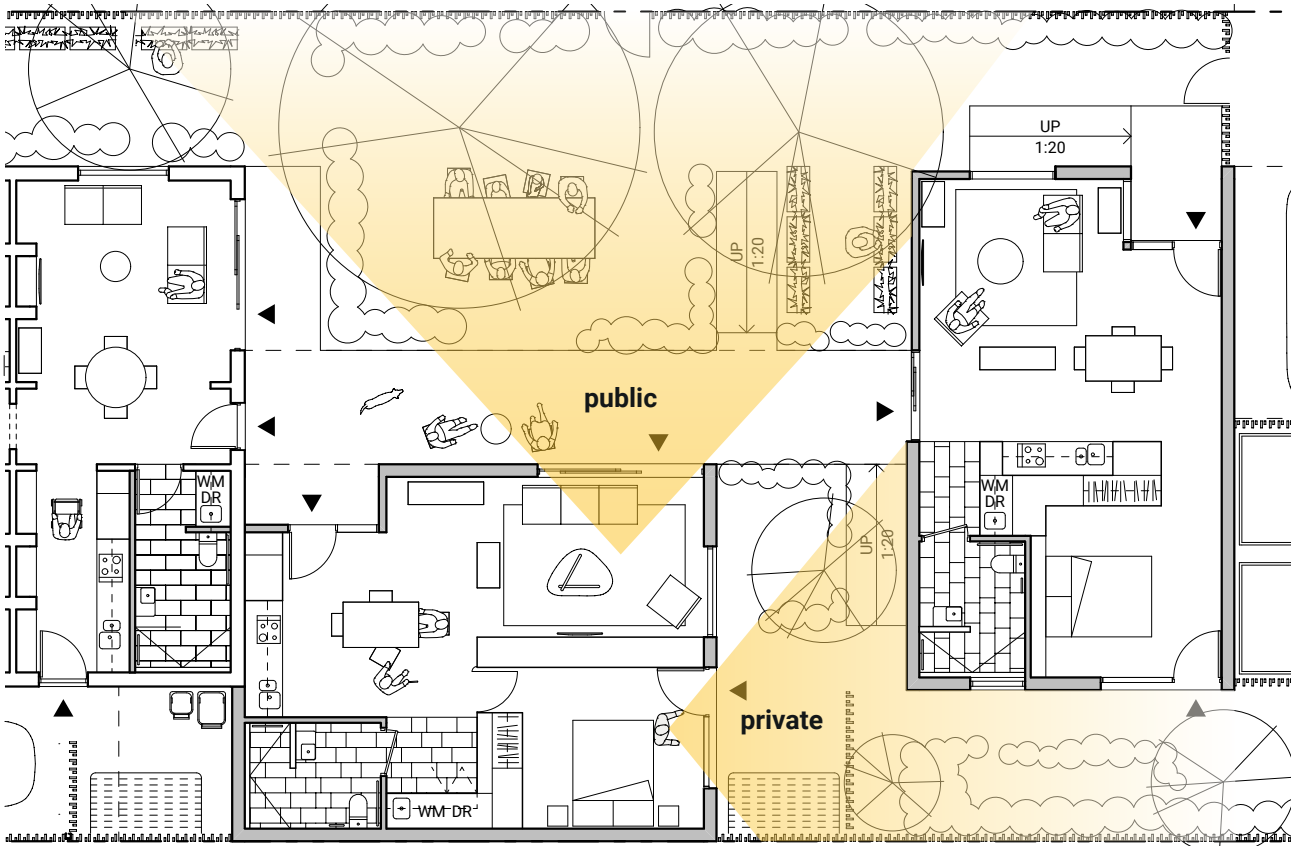


CHAW bathroom:
LHA Gold



CHAW bathroom:
LHA Platinum





Private and Public

Embedded in the designs is an attitude towards balancing the requirements for privacy with those of engagement.

Positive interaction - a staple of cohousing developments and a driving reason why people choose this form of living - is achieved by creating central landscape elements that act as a fulcrum around which the housing can be sited. Living areas are strategically placed off these gardens to create strong connections between inside and out and to provide passive surveillance across the site.

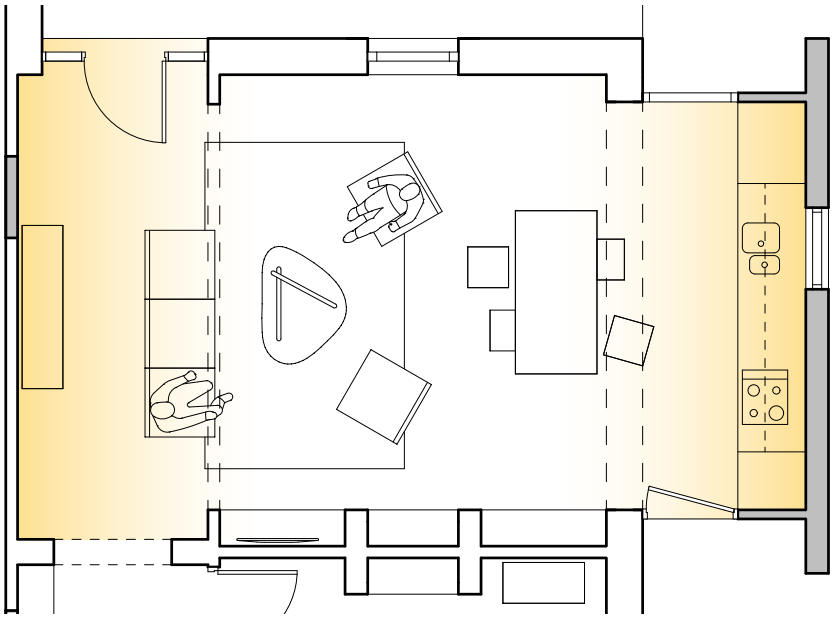
Decks and paved areas are provided to encourage sitting outdoors and incidental contact between neighbours. If a resident who would normally have blinds open during the day suddenly has them shut, or they have not been seen outside for a while, a neighbour might be prompted to knock on their door to check on them.

Bedrooms, however, obviously benefit from a greater level of privacy. This can become even more important as the dwelling gets smaller. In a one bedroom home the bedroom itself can become an important second living space: a place to sit and read or somewhere to rest during the day without sleeping. Replacing a larger bed with a single bed can allow for a desk or table, doubling the function of the bedroom to a study or hobby space.

With this in mind, bedrooms are oriented away from the large common gardens but are given large windows (and sometimes doors), with views of and access to more private outdoor spaces.

Finding Space

When renovating older houses, it is not uncommon to cut large openings in existing walls to combine spaces. This can be done without affecting the ceiling lines, which also enables an opening to be filled in the future in order to reinstate the original rooms. Done in this manner, the legibility and identity of the original rooms is maintained. This opening-up tactic can be employed successfully for hallways. Typically no narrower than 1.2m (4'), often 1.5m (5') and sometimes as wide as 1.8m (6'), these opened hallways add significant space to what can otherwise be a tight floor plan, enabling improved function and easier movement. An opening in an external wall - often undertaken to add an ensuite bathroom to a room being used as a bedroom - provides the opportunity to create a kitchen or new entry, unlocking the potential for a house to be divided.[18]



18. These opening up concepts, and their capacity to significantly unlock possibilities for infill housing in the established suburbs, is diagrammed and defined as 'porous rooms' in Chapter 3 of Madigan (2016) *Alternative Infill,* pp 152-239.

Getting Along

One of the key factors in successfully implementing infill housing is managing the increase in utility areas necessary for any home. The consideration and organisation of rubbish bins, clothes lines and sheds during the design process becomes increasingly important as densities on a site increase.

While it is possible (and indeed likely) that many residents will choose to locate bins, washing lines and sheds next to their individual dwellings for both convenience and a sense of ownership, each of the four schemes includes a deliberate strategy around either dispersing these elements across the site, or consolidating them in a single location. In each case, consideration is given to screening rubbish bins and washing lines from view whilst maximising garden space, generating ease of access and avoiding disadvantaging one dwelling over others due to its proximity to or distance from these utilities.

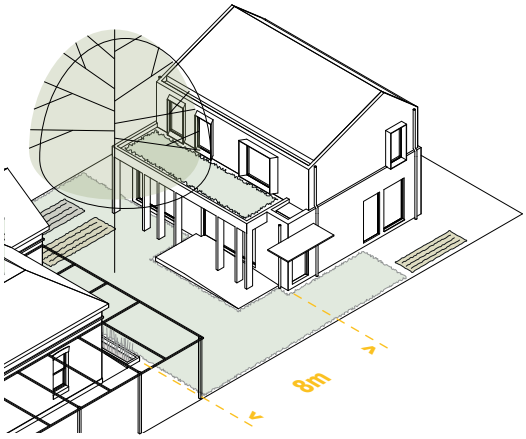
Including the strategic location of these spaces in a whole-of-site design approach is crucial to the success of the overall infill design concept and a major factor in helping residents avoid unnecessary conflict.

Shared Gardens

The project's premise that the backyard and housing mass are redistributed across the allotment requires a whole-of-site strategy in relation to:

- building separation that allows for existing trees to be retained and/ or for new deep soil areas to be created;
- dwelling separation and floor plan distribution for privacy;
- pedestrian movement through the site to ensure equitable and safe access to facilities and garden areas;
- parking disposition in order to minimise the impact of cars while remaining practical;
- the location and (where necessary) screening of rubbish bins and washing lines for discrete yet easy access.

Together, a targeted strategy that designs these outdoor spaces holistically with the housing can help mitigate concerns over more dense and proximate living.



the shared garden of the Medium CHAW scheme

8m Zones

Eight metres has been determined as a sound benchmark for building separation in the project. From a spatial perspective, it sits within the 8-12m dwelling separation zone found to be ideal in large formal cohousing schemes.[19] Given the single allotment schemes of this project are substantially smaller than the multi-allotment sites of established cohousing schemes, 8m strikes the right balance for privacy and amenity.

Eight metres also provides an appropriate deep soil zone for a mature medium or large tree of up to 12m high and with a canopy spread of 8m. This allows for the retention of an existing mature tree or the planting of a new large tree.[20] Where space is limited, permeable paving and decking can assist in movement around the site without compromising water levels in the soil.

Importantly, the garden spaces created by adhering to an 8m rule create proportions large enough for a variety of gardens, at the residents' discretion. Activities such as mowing, planting, watering and tending provide opportunities for individual and group activity, coupled with residual spaces for outdoor living.

19. Durrett, C. (2009). *The Senior Cohousing Handbook: A Community Approach to Independent Living.* Gabriola Island, New Society Publishers, pp 144-145.

20. The 8m separation accords with DPTI's deep soil zone requirement for the provision of medium and large trees at maturity, as stated in the *Draft South Australian Planning and Design Code.*

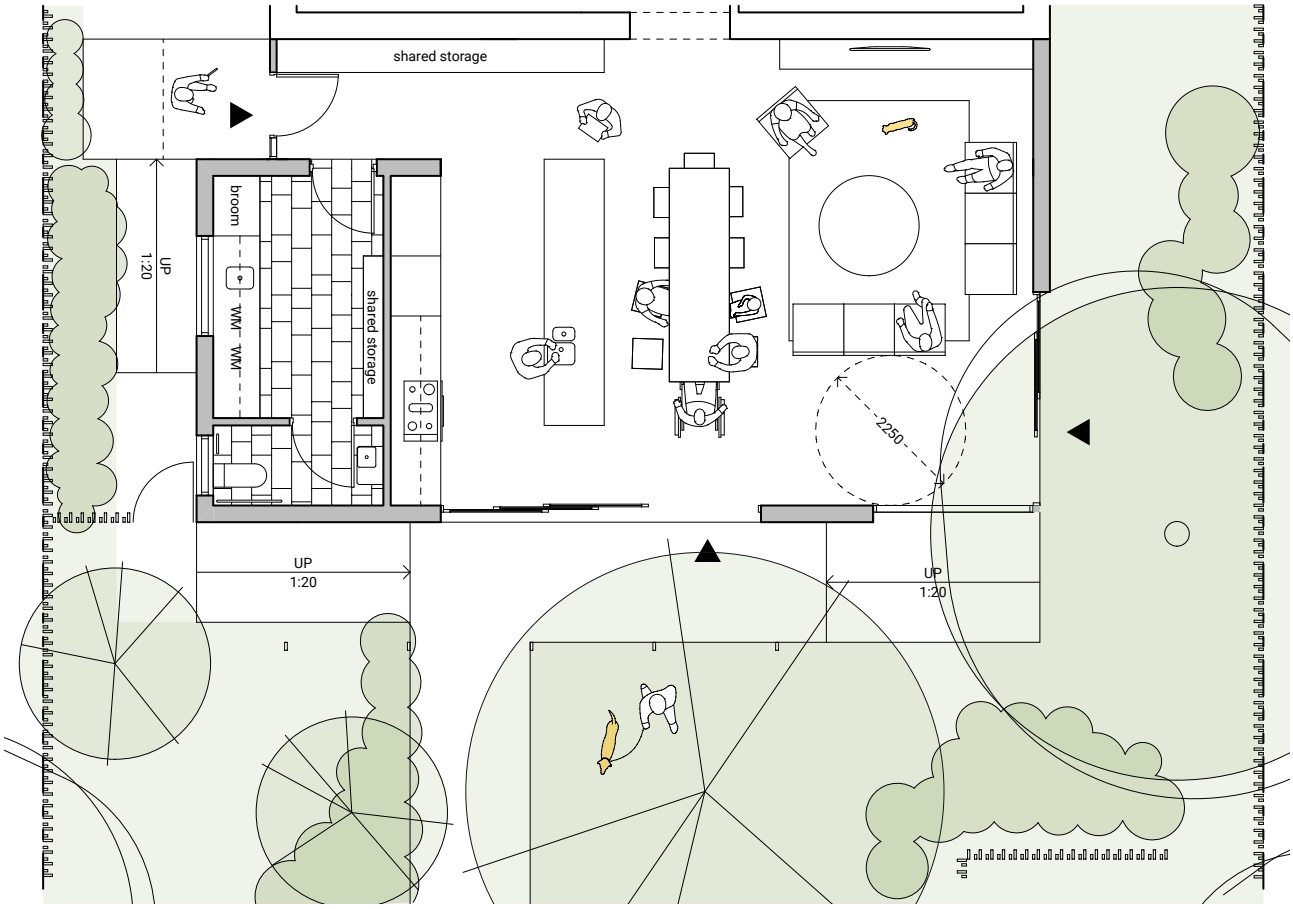
Pets

Beyond the amenity that generous landscaped spaces can provide, a large shared garden opens up the opportunity for companion animals that may otherwise not be possible in smaller 'courtyard' gardens.

Pet ownership has been demonstrated to be significantly positive for the health and wellbeing of people over 60. In extreme circumstances, pet ownership can reduce suicide risk, while the day-to-day ownership responsibilities of feeding, exercising and grooming a pet contributes to physical and emotional wellbeing.[21]

The provision of a consolidated large garden allows for pets that might otherwise be given up in a transition to downsized or retirement accommodation. In the scenarios of this project, one can imagine an example where a dog might legally be owned by the occupant(s) of one dwelling, while the companionship and responsibility benefits are shared across all residents; an arrangement well-suited to older people for whom individual pet ownership might be highly desirable but impractical outside of a cohousing relationship.

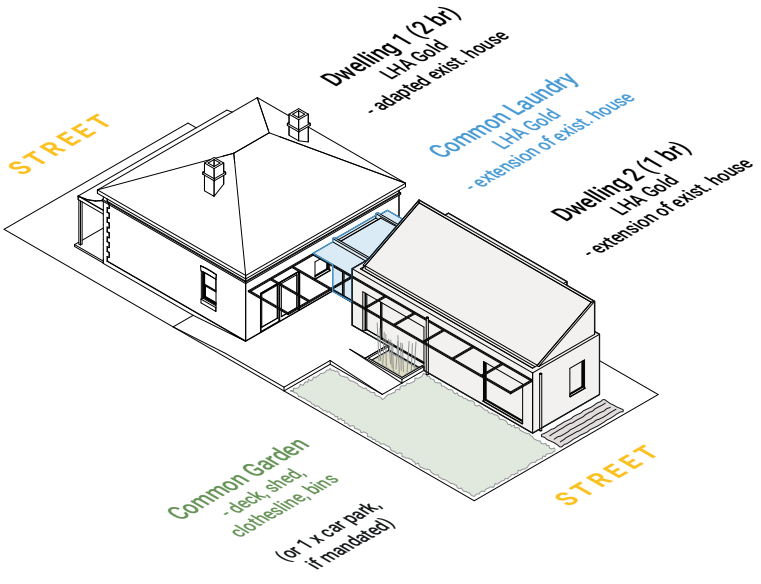
21. The work of Dr Janette Young, Lecturer in Health Sciences at the University of South Australia is a valuable resource for issues around the positive relationship between ageing and pet ownership.

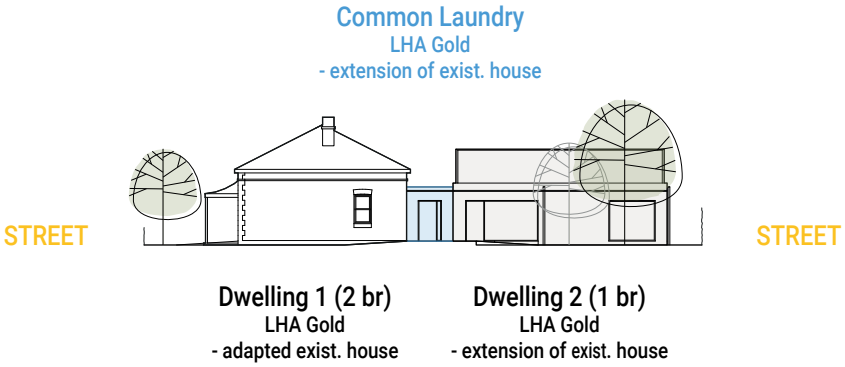


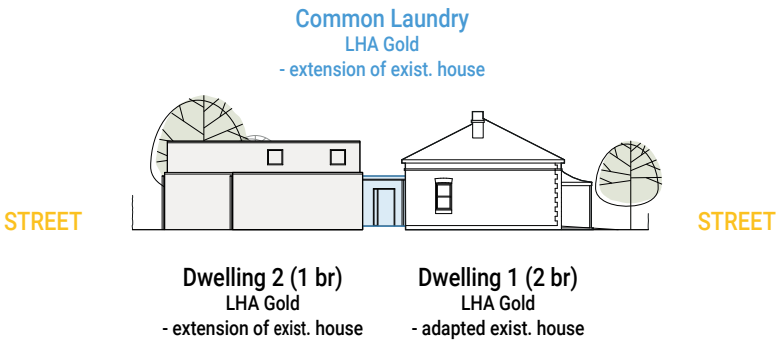
the shared Common House and garden of the Extra Large CHAW scheme

Part 3_1:
Small - 325m²

S
325m²


Dwelling 1 (2 br)
LHA Gold
- adapted exist. house
Common Laundry
LHA Gold
- extension of exist. house
Dwelling 2 (1 br)
LHA Gold
- extension of exist. house
STREET
STREET
Common Garden
- deck, shed, clothesline, bins
(or 1 x car park, if mandated)


Common Laundry
LHA Gold
- extension of exist. house
STREET
STREET
Dwelling 1 (2 br)
LHA Gold
- adapted exist. house
Dwelling 2 (1 br)
LHA Gold
- extension of exist. house


Common Laundry
LHA Gold
- extension of exist. house
STREET
STREET
Dwelling 2 (1 br)
LHA Gold
- extension of exist. house
Dwelling 1 (2 br)
LHA Gold
- adapted exist. house

Scenario

Facing the social and financial upheaval of separation from their partner, a recently single 50+ resident moves in with their older parents, who own a cottage on a small block, but with dual street access. The living arrangement is mutually beneficial: the parents receive assistance around the house from their adult child, while the child takes comfort in having secure and affordable housing. All enjoy the company that living together once more provides.

Seeing the long term benefits of the arrangement, the trio undertake a renovation together in order to formalise the living arrangements across two discrete dwellings. A narrow footprint addition is added to the rear of the cottage to provide a one bedroom self-contained dwelling. A shared laundry links the two dwellings, freeing valuable space within the houses themselves. Determining that this could be the final housing choice for each of them, and looking to the future, each dwelling and the common laundry are designed to the Livable Housing Australia Gold standard for mobility, and 1:20 walkways are added externally to create step-free movement throughout.

Successfully mounting an argument that mandated on-site car parking can be provided in different circumstances but should be removed in this scenario in favour of allowing for improved housing and landscape options, the residents design the two dwellings such that the bedrooms are separated whilst the living rooms address the shared deck and rear garden without looking directly into each other.

Design

The original four-room cottage is retained and renovated into a two bedroom dwelling. The bedrooms face the front garden and street, and the living spaces the rear garden. The cottage receives a rear extension that creates a second dwelling. This is smaller than a garage for two cars parked in-line, but designed for maximum space, light and amenity. Each dwelling addresses a shared yard, with pedestrian movement freely achieved from one end of the site to the other. A shared laundry with storage links the two dwellings.

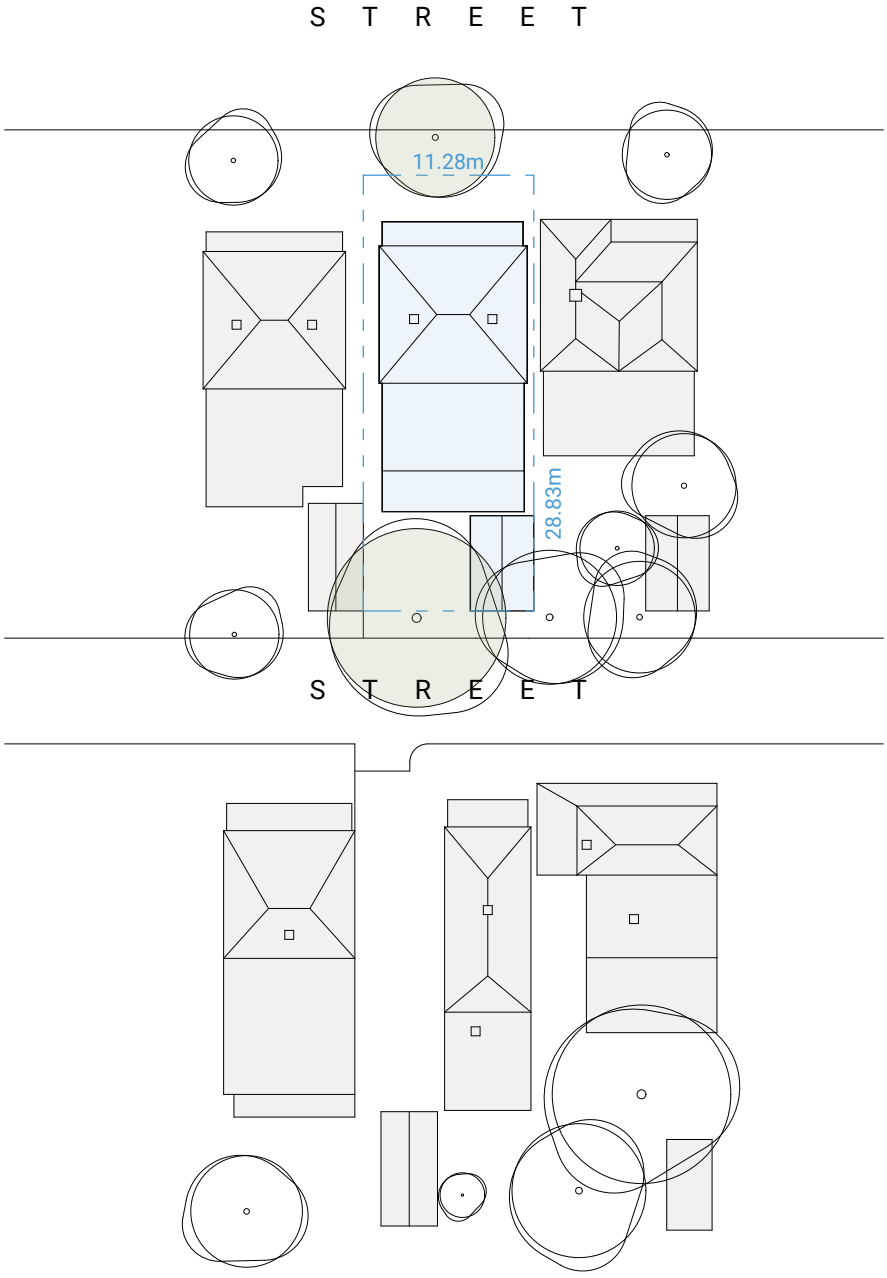
Dwelling 1 (2 br)	is created in the four rooms of the original cottage
Dwelling 2 (1 br)	is created in a new backyard extension, sensitively scaled and massed, and incorporating appropriate boundary setbacks and site coverage; it addresses the second street to improve its streetscape, which is predominated by garages
Sharing	a common laundry is created in a rear extension to the cottage; it is designed as a linking element which sits under the eaves of the cottage and below the roofline of Dwelling 2, creating separation and reducing bulk; the main garden is shared
Parking	is not provided, in favour of increasing the garden; the absence of a driveway cross-over adds one parking space to the street
Services	a shared washing line is provided in a small courtyard off the laundry; a bin enclosure is provided behind a screen in the garden
Also suits	**short blocks without a second street; short blocks with driveway access down one side**

Also suits...

existing

31 dw
per ha

52%
site cover

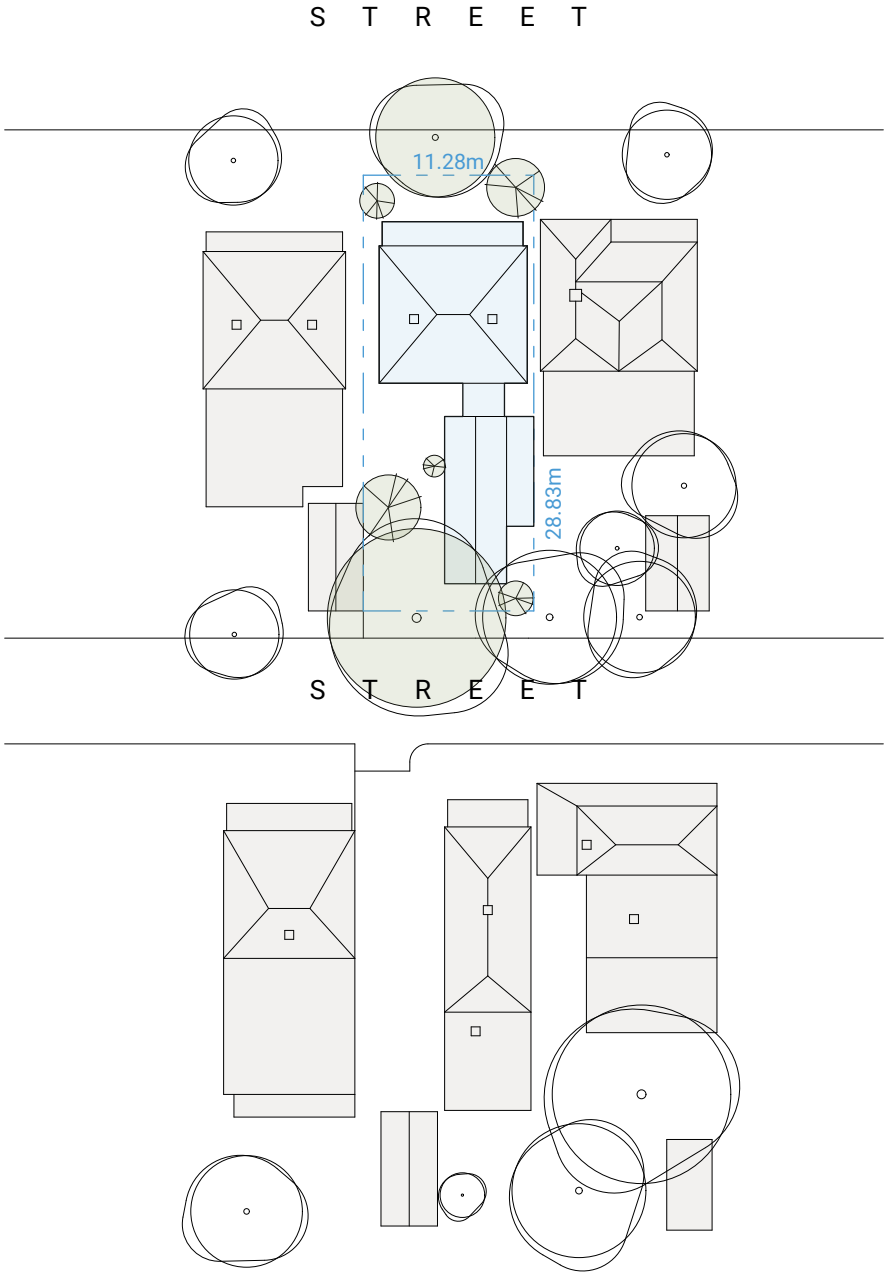


CHAW

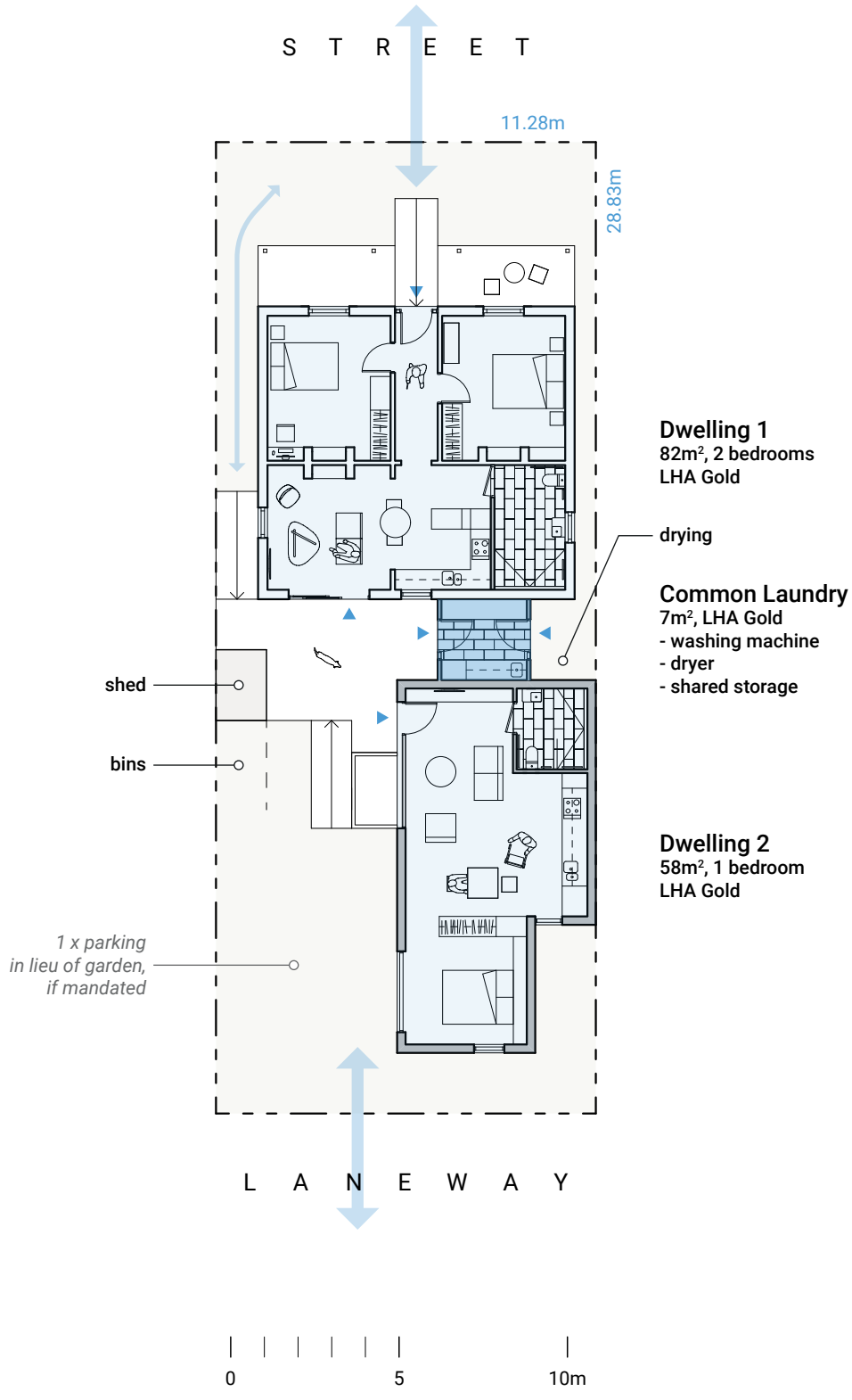
62 dw
per ha

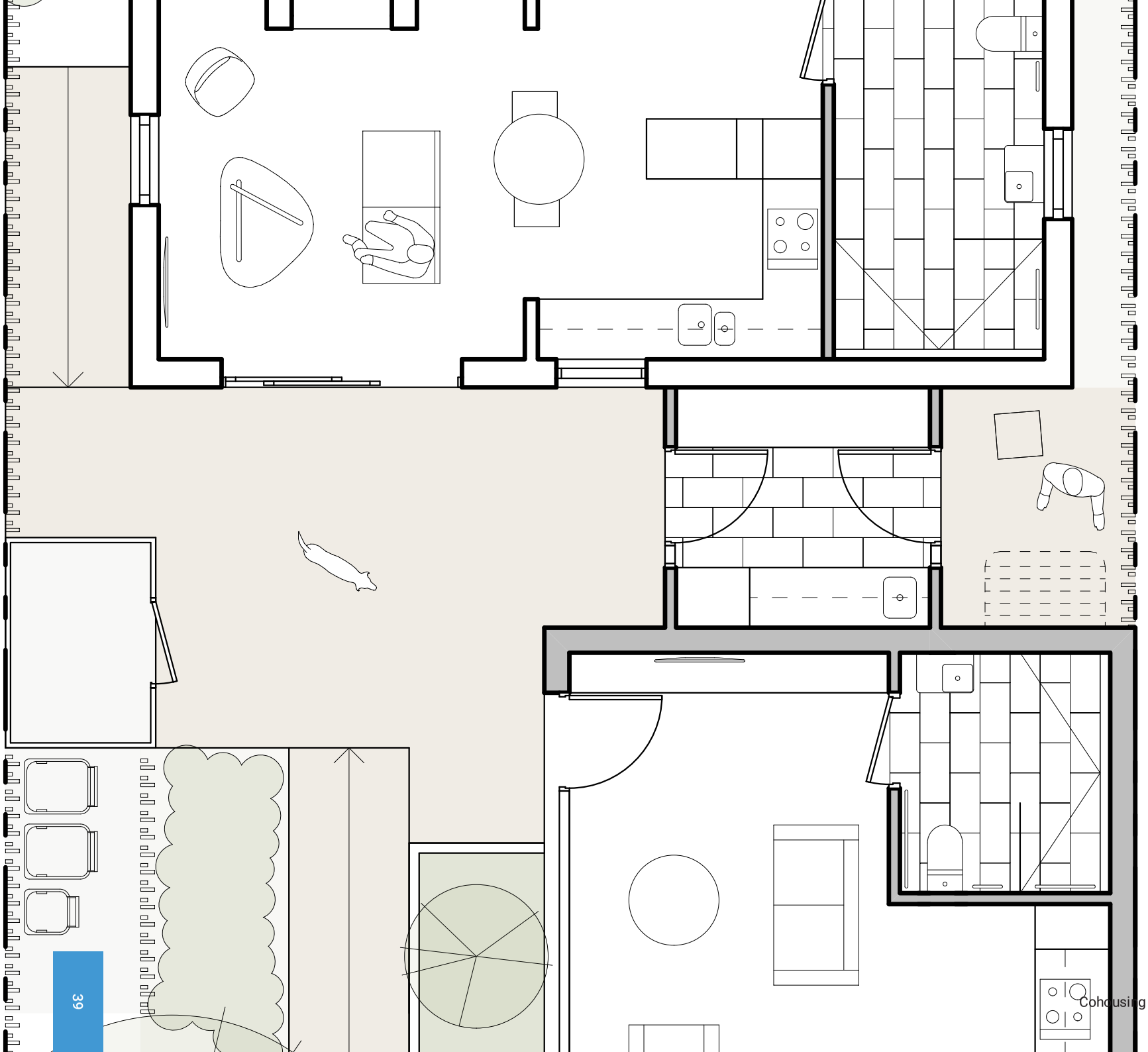
50%
site cover

0 cars
for 3 br



CHAW

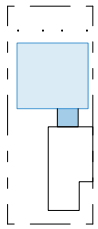

S T R E E T
11.28m
28.83m
Dwelling 1
82m², 2 bedrooms
LHA Gold
drying
Common Laundry
7m², LHA Gold
- washing machine
- dryer
- shared storage
shed
bins
Dwelling 2
58m², 1 bedroom
LHA Gold
1 x parking
in lieu of garden,
if mandated
L A N E W A Y
0
5
10m

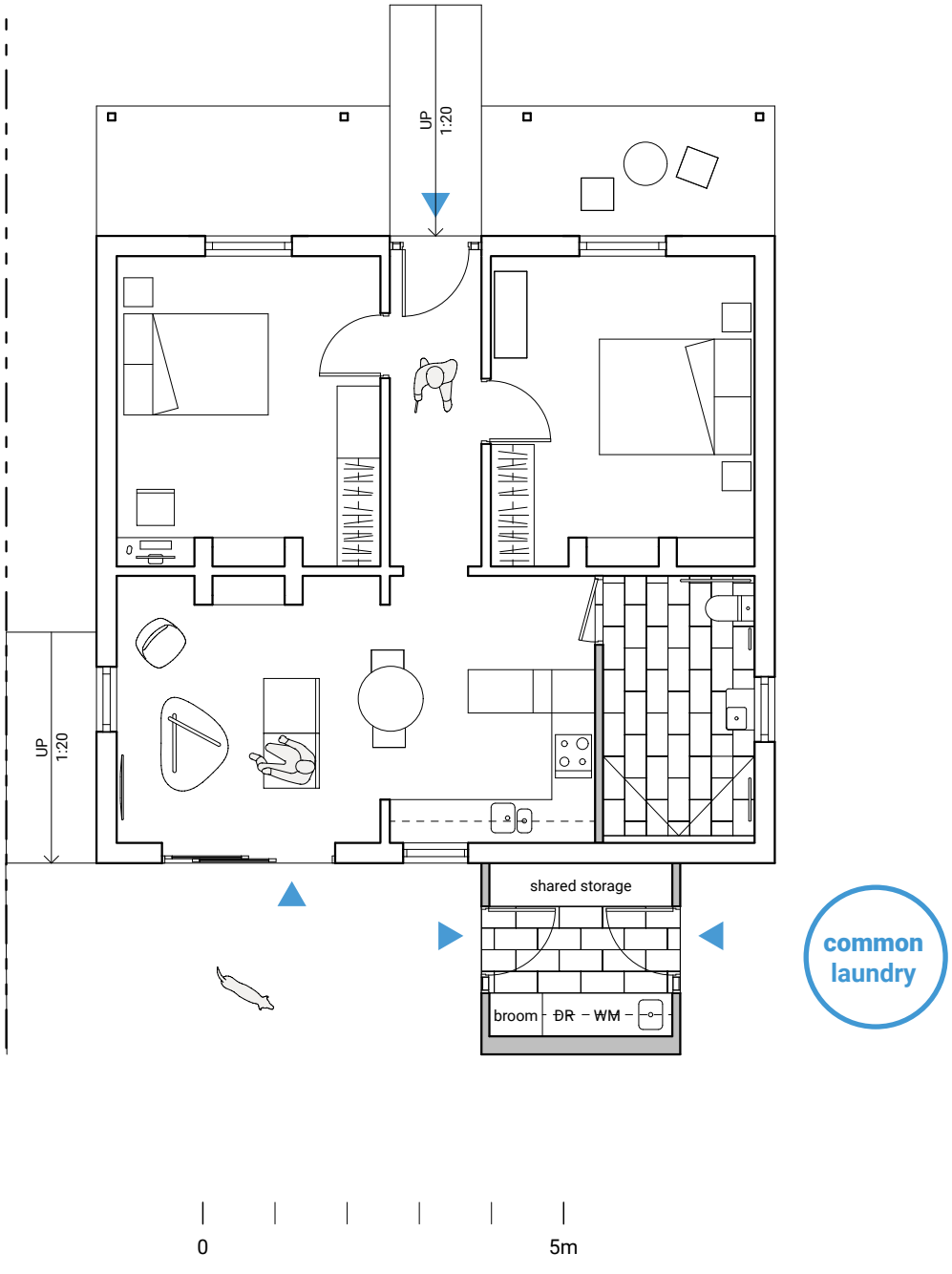


Cohousing for Ageing Well: Small - 325m²

dw 1
2 br, 82m²

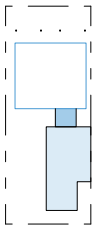
Gold
Livable
Housing Design

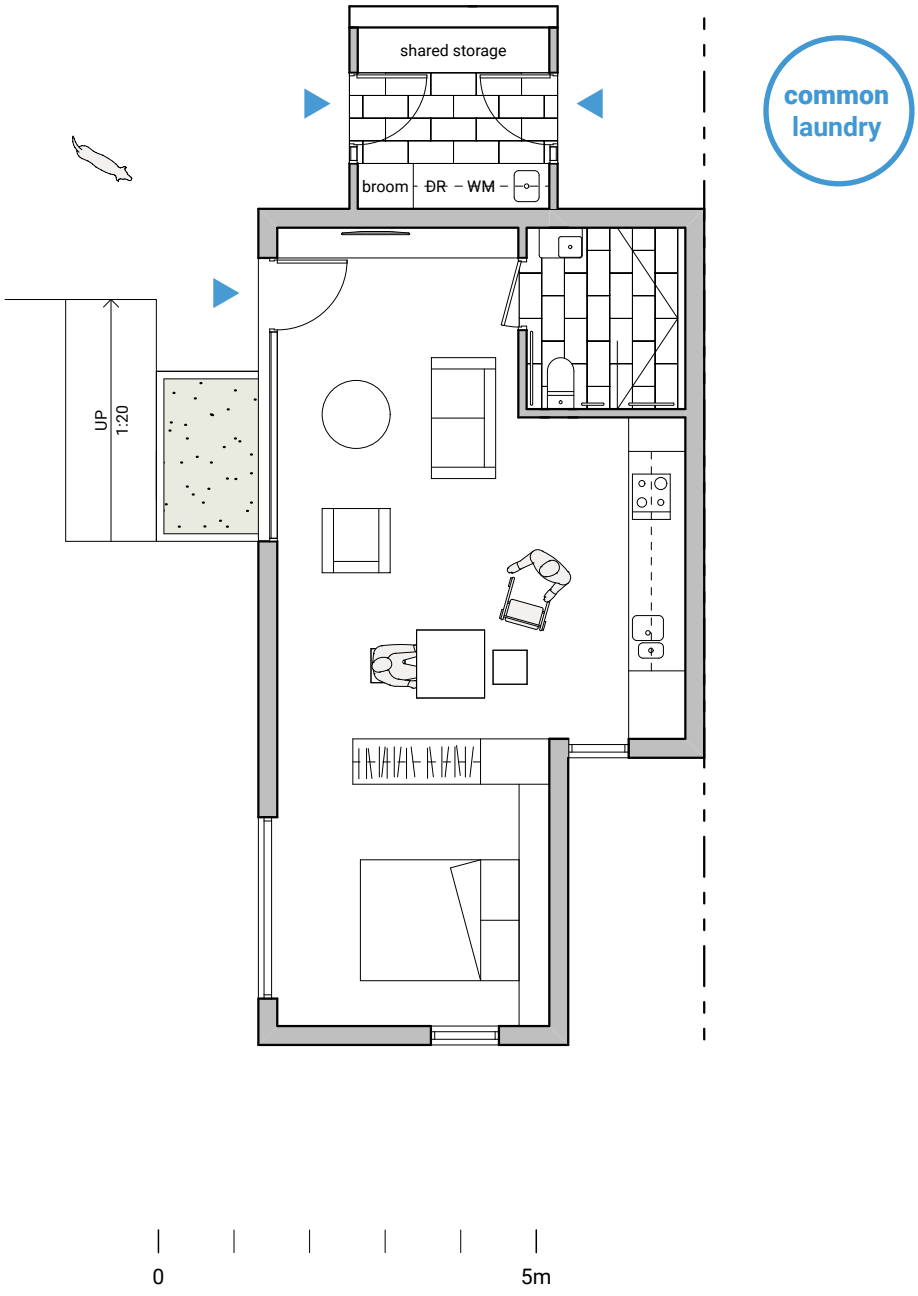




dw 2
1 br, 58m²

Gold Livable Housing Design





S
325m²

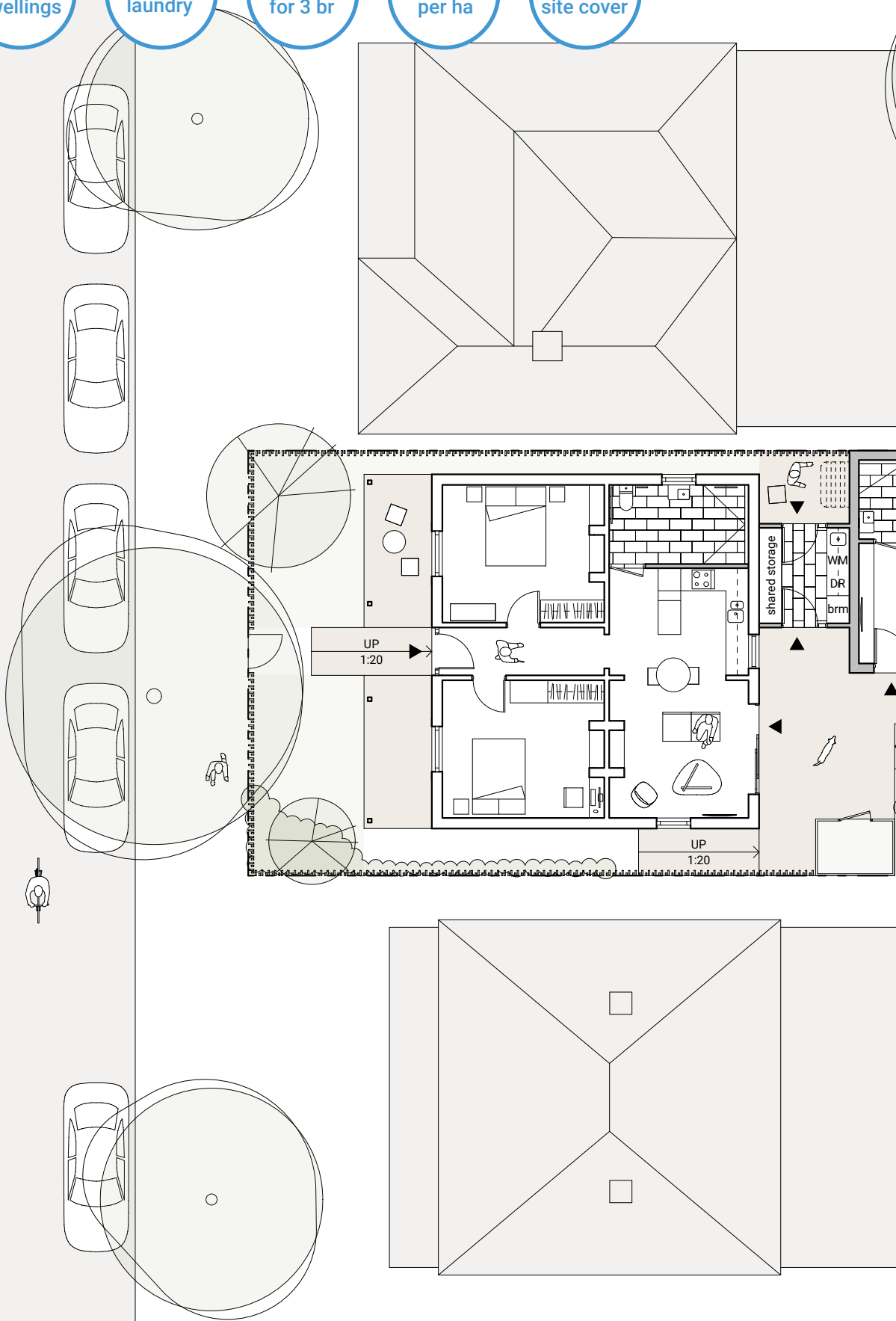
2
dwellings

common
laundry

0 cars
for 3 br

62 dw
per ha

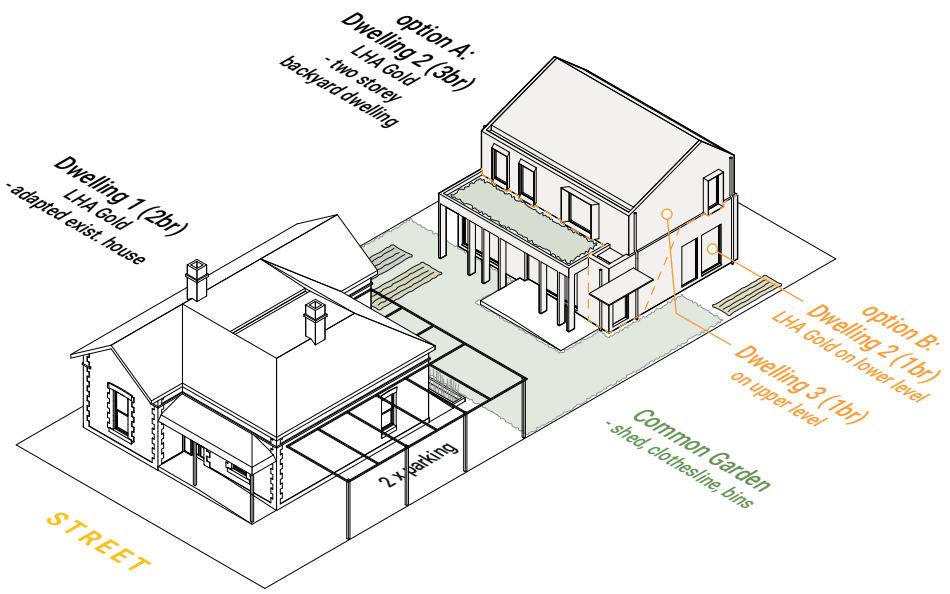
50%
site cover

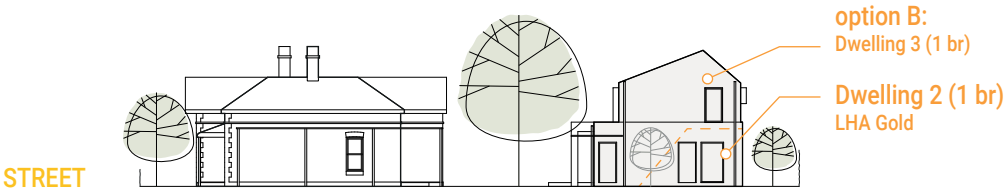


Cohousing for Ageing Well: Small - 325m²
UP
1:20
0
5m
10m

Part 3_2: Medium - 530m²

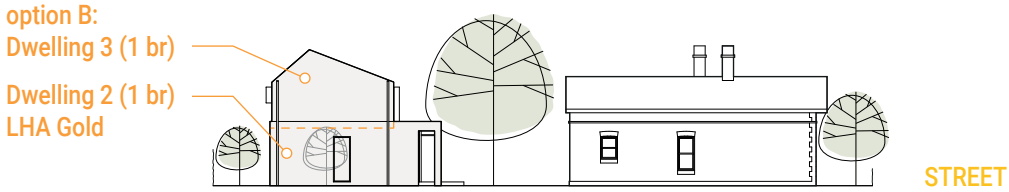
M
530m²





Dwelling 1 (2 br)
LHA Gold
- adapted exist. house

option A:
Dwelling 2 (3 br) LHA Gold
- two storey backyard dwelling



option A: Dwelling 2 (3 br)
LHA Gold
- two storey backyard dwelling

Dwelling 1 (2 br)
LHA Gold
- adapted exist. house

Scenario

The owners of a four-roomed villa on a traditional 15.2m (50') wide block undertake a future-proofing renovation, suiting their needs now and into the foreseeable future. Targeting semi-retirement and wishing to create an independent house for their young-adult child, for whom they are carers, the owners undertake a renovation of the villa to create step-free spaces and a more open layout. The proportions of the traditional 15.2m wide block enable them to create a backyard dwelling with 3m clearances on each side.

This 9.2m dwelling width allows for a generous one bedroom plan suited to reduced mobility, and for a stair, which provides access to an additional two bedrooms on an upper level. Designed for flexibility, the second level is built without dividing walls and with joinery fitted with power and plumbing services. Coupled with the inclusion of two doors (an external door into the stairwell and a fire-rated door between the stairwell and the ground floor) these design tactics allow for the upper floor to be fully self-contained via simple modifications. The residents thereby provide themselves dwelling flexibility into the future, and as needs change.

The site can be configured as one dwelling plus one work-from-home arrangement, two dwellings of two and three bedrooms respectively, three smaller dwellings, or two dwellings plus a home office. Renting parts of the accommodation is feasible, as is shifting between the accommodation. Importantly, the changes enable the owners to age-in-place with improved peace of mind for their child's independence, furthering their ability to age well.

Design

The original four-room cottage is retained and renovated into a two bedroom dwelling, with the bedrooms and wet areas running one side of the hallway and living spaces the other. The kitchen and dining area faces the front garden, and the living space the rear garden. A two storey backyard dwelling is designed to complement the scale of the villa and provides varied accommodation of up to three bedrooms Each dwelling addresses a shared central garden.

Dwelling 1 (2 br)	is created in the four rooms of the original villa
Dwelling 2 (3 br)	is a new two storey backyard home, sensitively scaled and massed, and incorporating appropriate boundary setbacks and site coverage
Dwelling 3 (1 br)	can be created in the upper level of the backyard home, reducing Dwelling 2 to one bedroom
Sharing	each dwelling is fully independent; the central garden is shared
Parking	two spaces are provided in-line in the existing side driveway, as suited to the family-based scenario
Services	a shared washing line is provided at the side of the backyard dwelling; a bin enclosure is provided at the end of the carport; each is behind screens

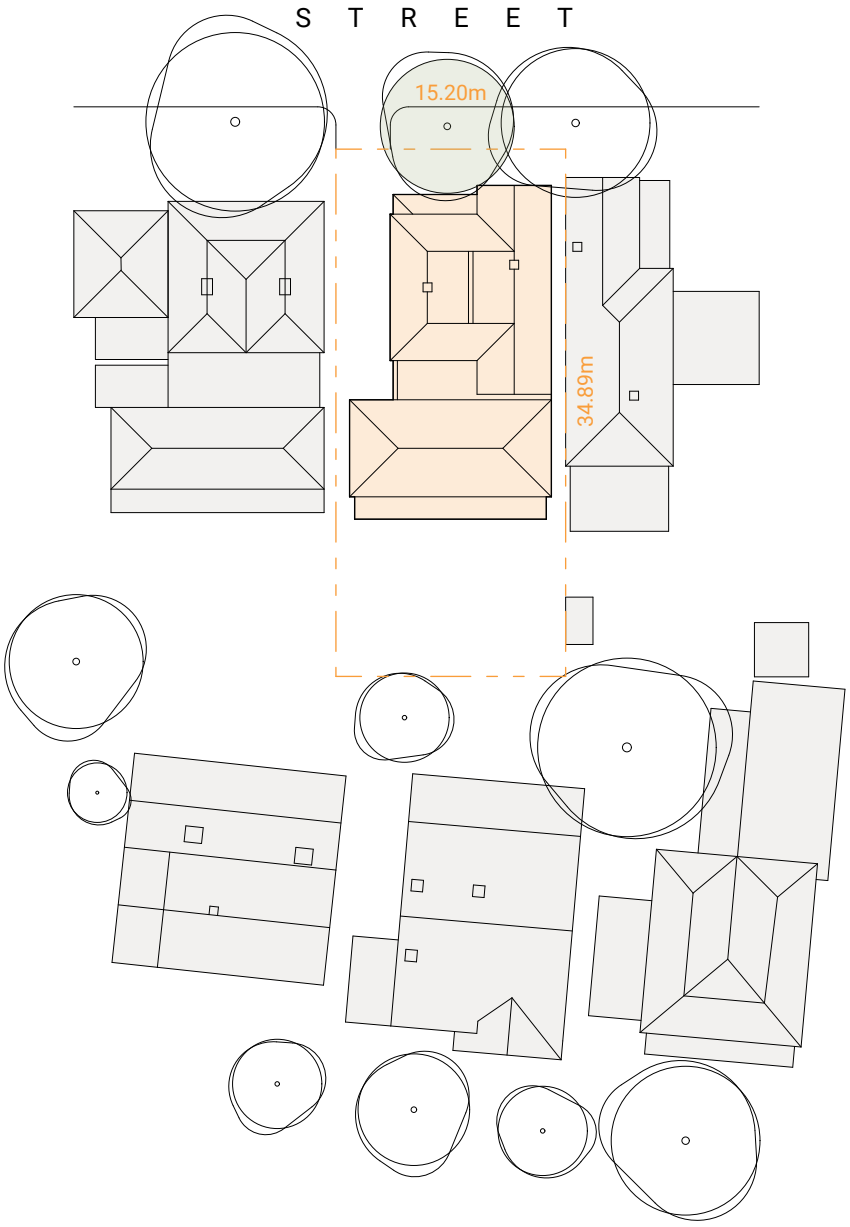
Also suits...

Also suits — **longer 15.2m wide blocks;**
multi-generational housing;
working from home with a public interface
build-to-rent

existing

19 dw
per ha

40%
site cover

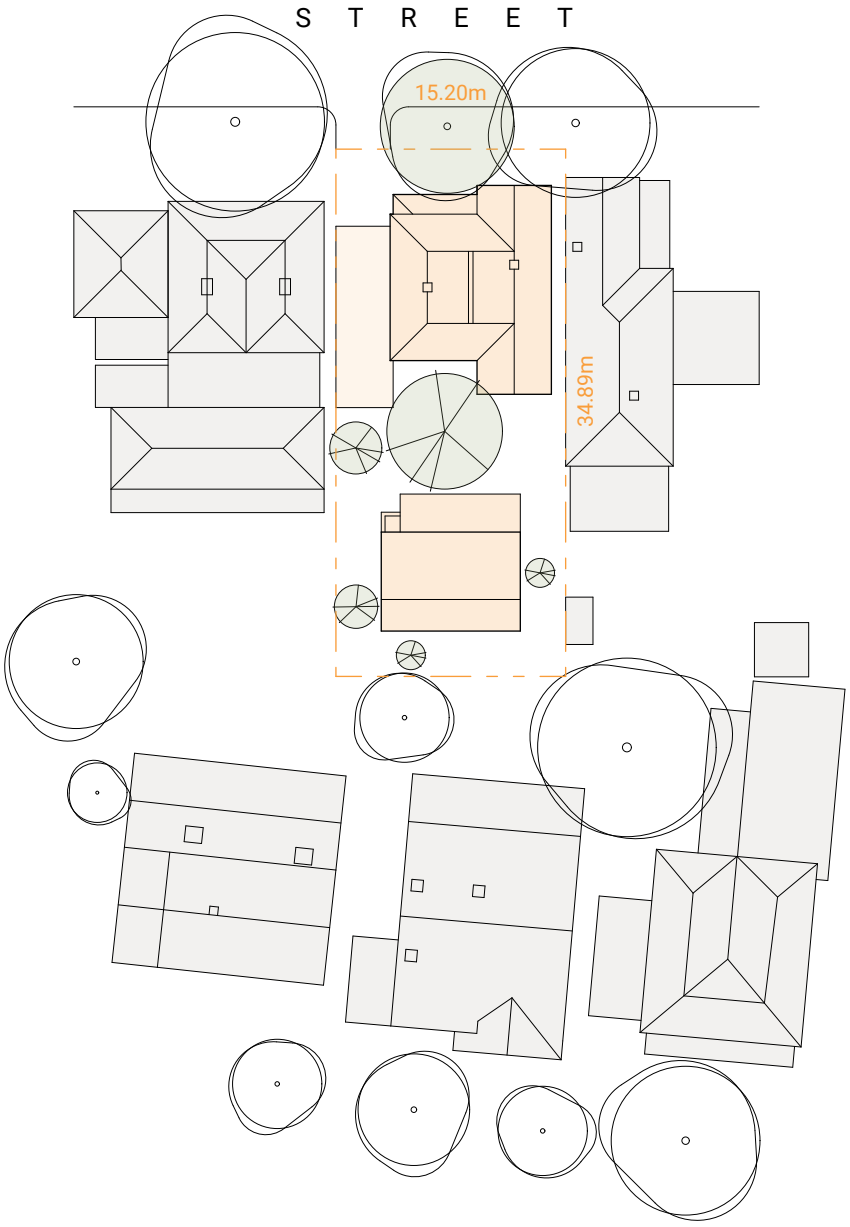


CHAW

38/57dw
per ha

35%
site cover

2 cars
for 4-5 br



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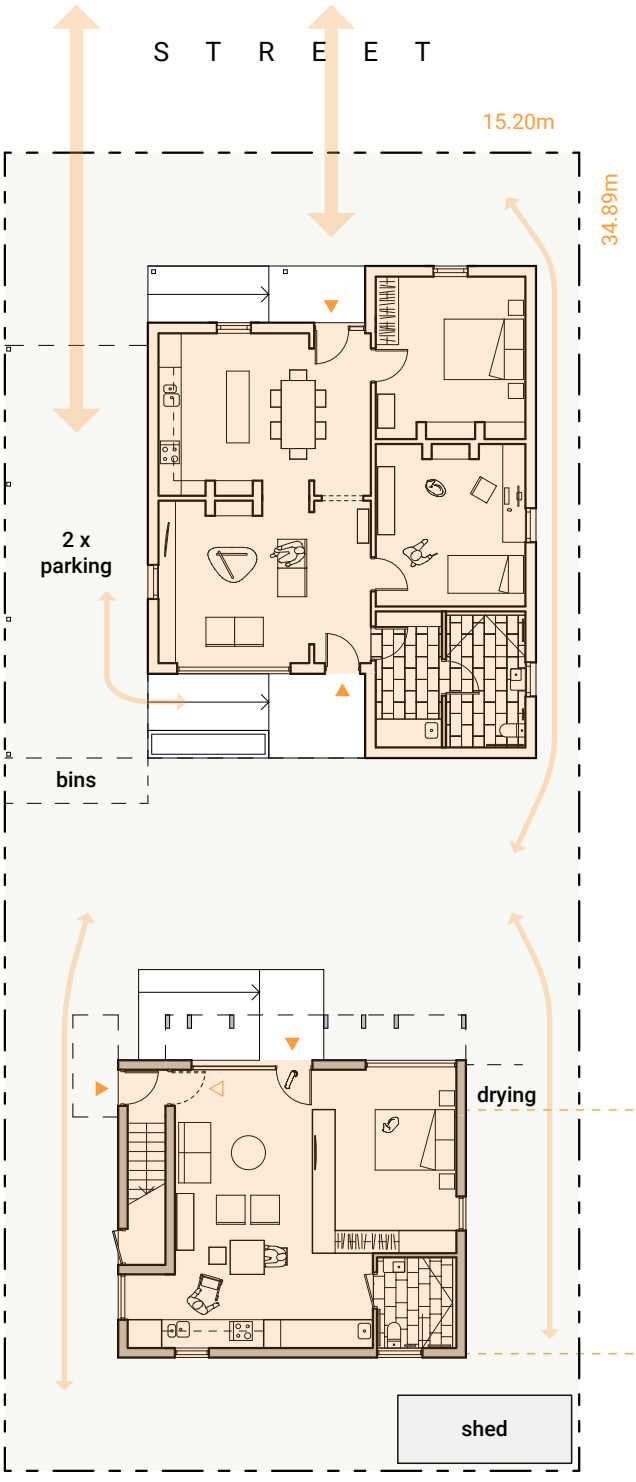


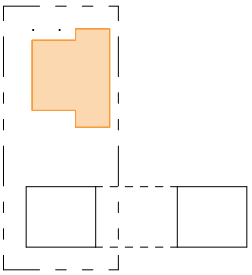
Dwelling 1
112m², 2 bedrooms
LHA Gold

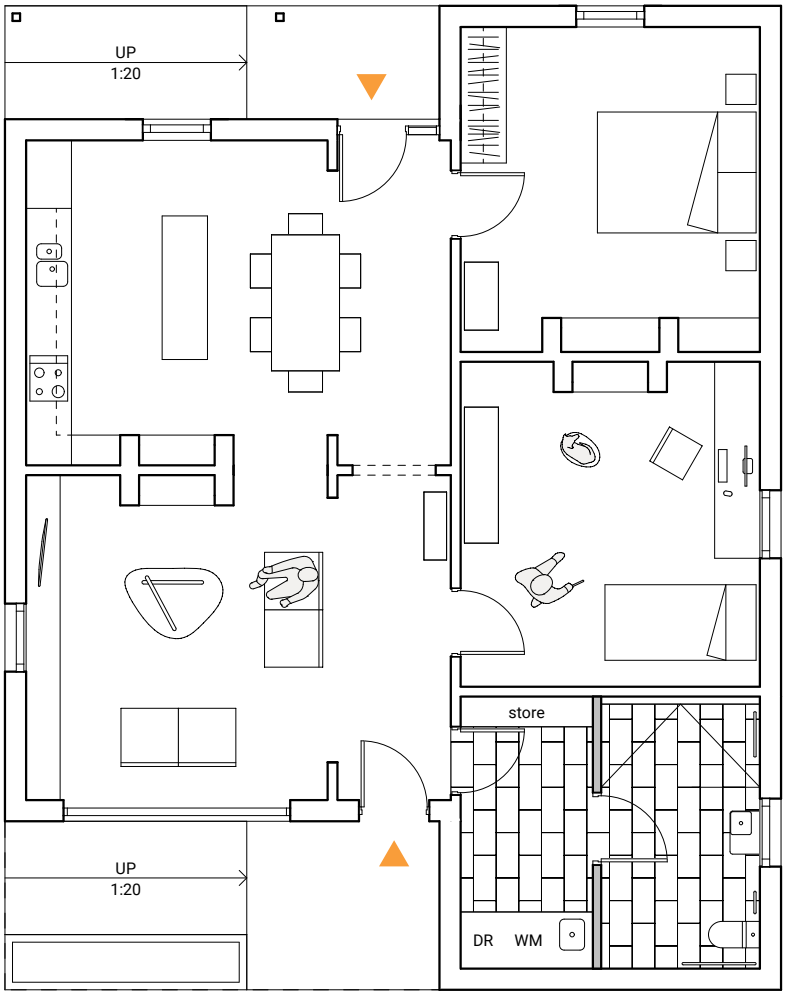
Option A:
Dwelling 2
122m², 3 bedrooms,
over two levels,
LHA Gold on ground

Option B:
Dwelling 2
64m², 1 bedroom
on ground level,
LHA Gold
+
Dwelling 3
58m², 1 bedroom
on upper level
(repeated floor plan)

dw1
2 br,
112m²

Gold
Livable
Housing Design





0 5m

Option A

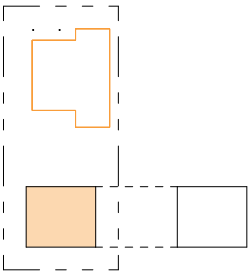
dw2
3 br,
122m²

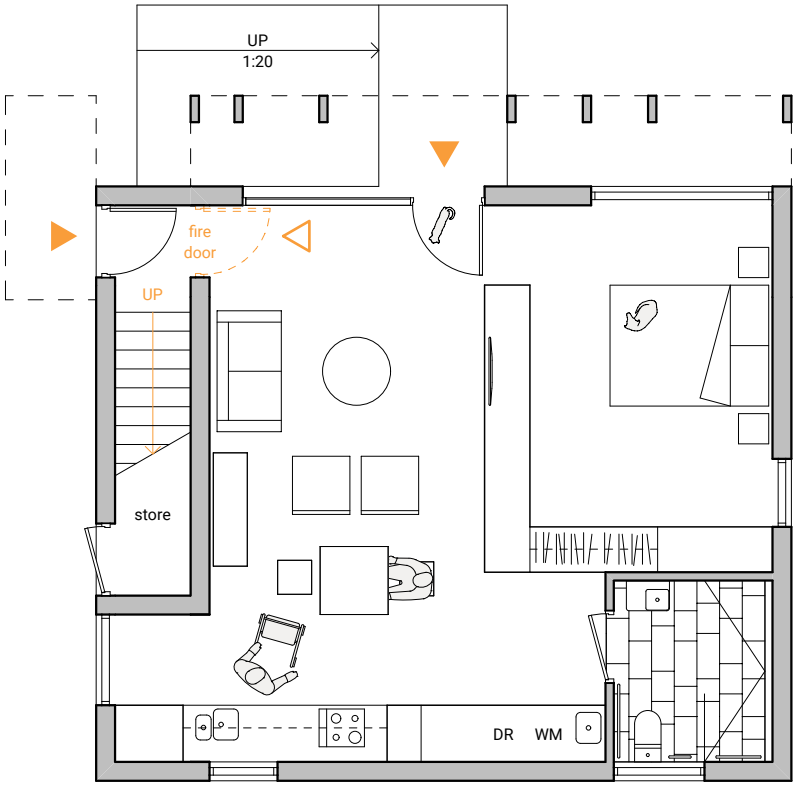
Gold Livable Housing Design

Option B

dw 2
1 br, 64m²

Gold Livable Housing Design





Ground Level

0 5m

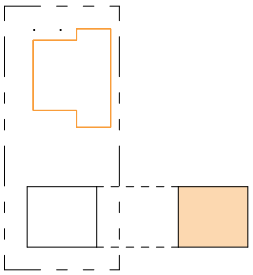
Option A

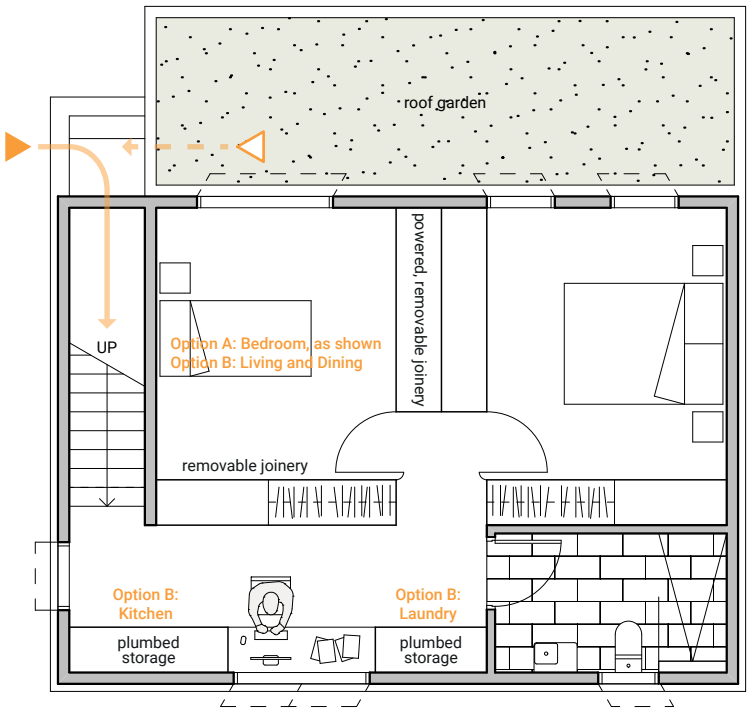
dw2
3 br,
122m²

Gold
Livable
Housing Design

Option B

dw 3
1 br, 58m²





Upper Level

0 5m

M
530m²

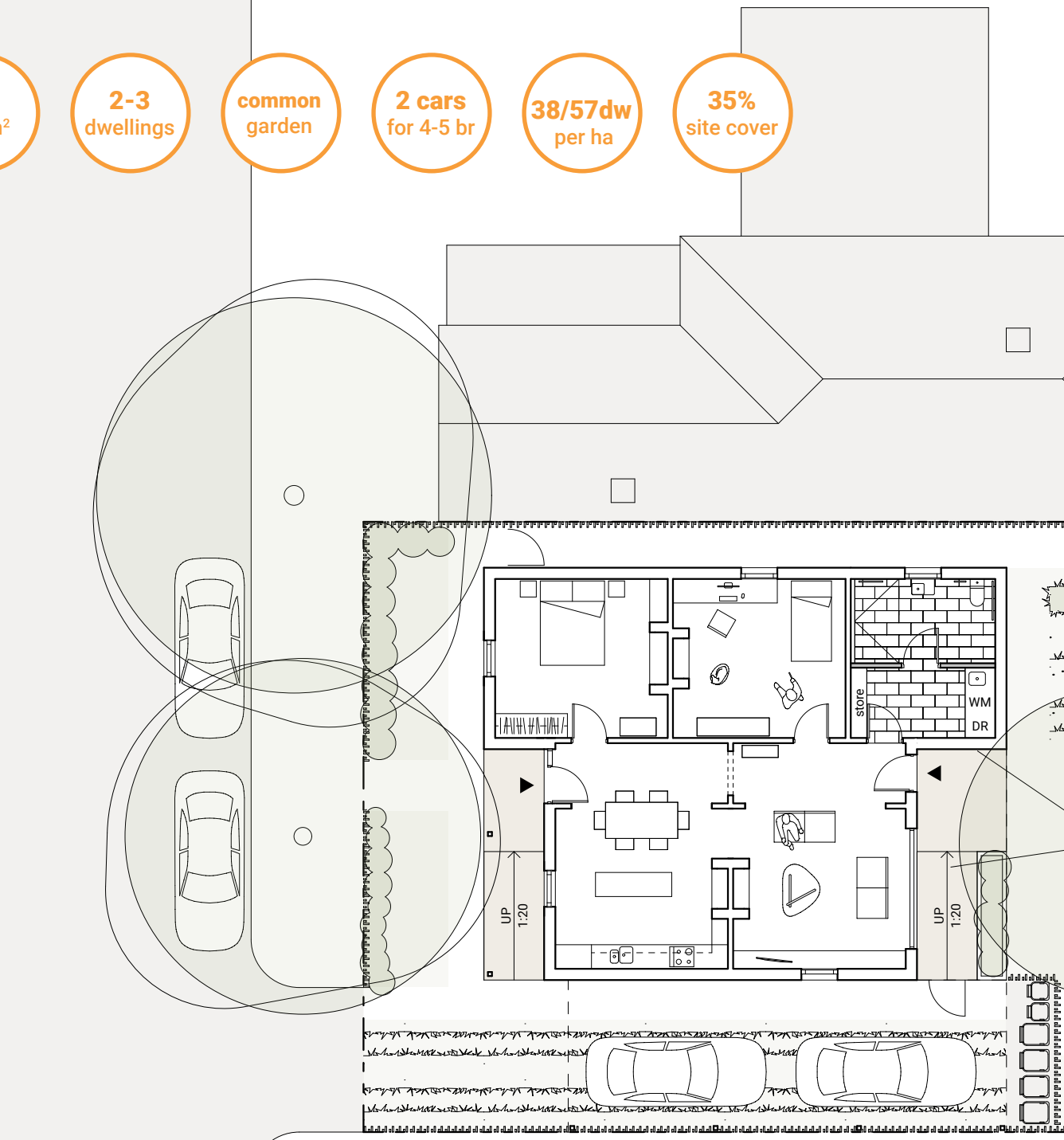
2-3
dwellings

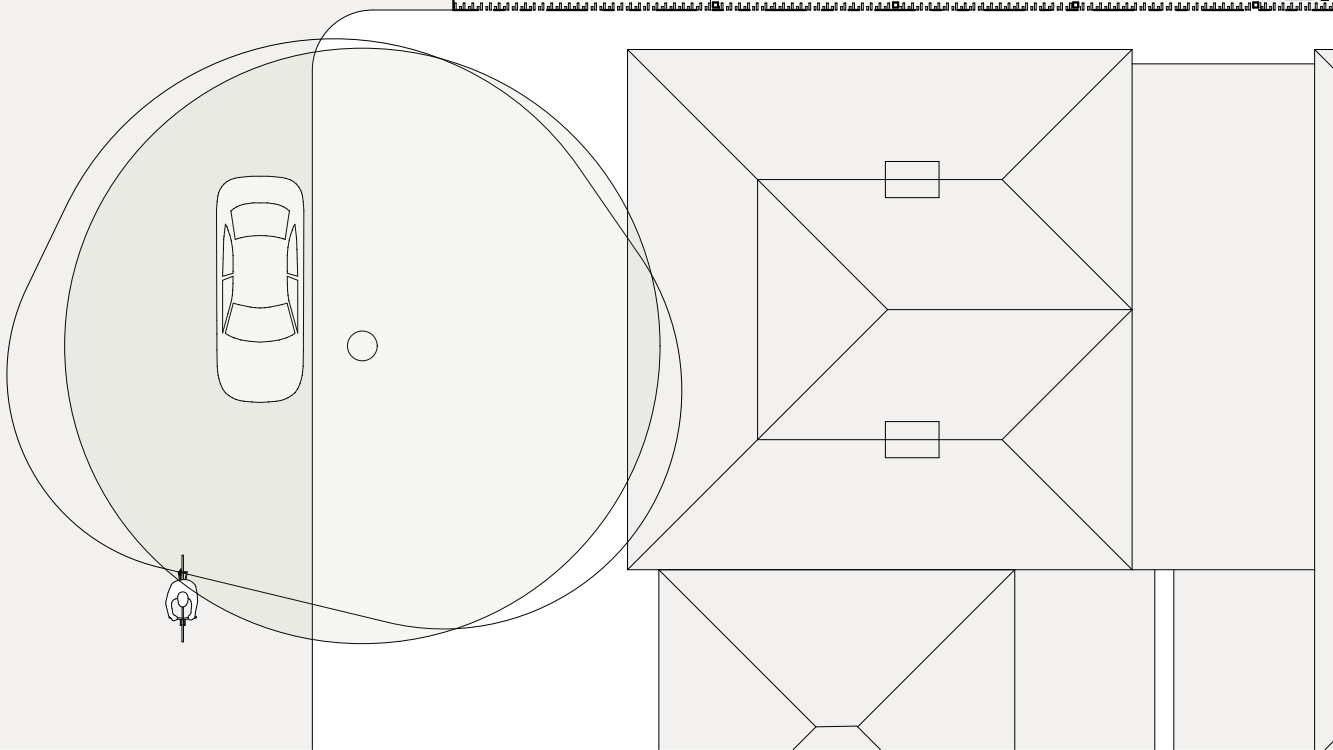
common
garden

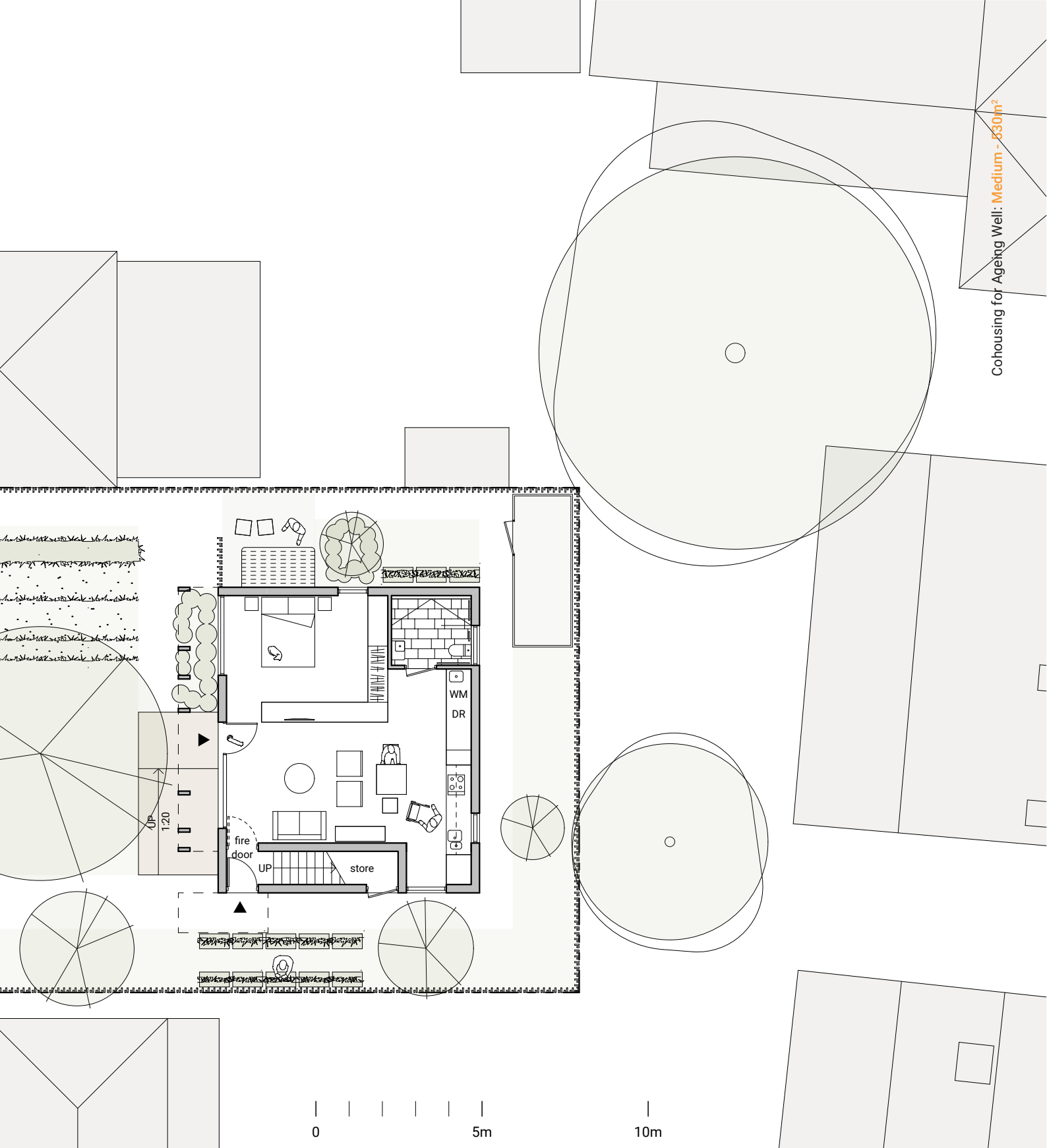
2 cars
for 4-5 br

38/57dw
per ha

35%
site cover

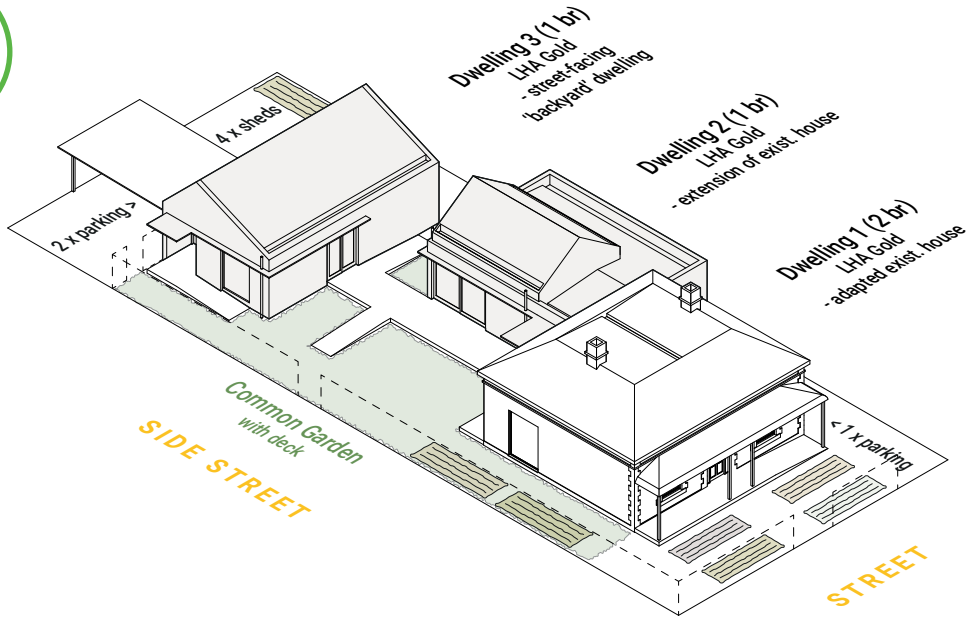


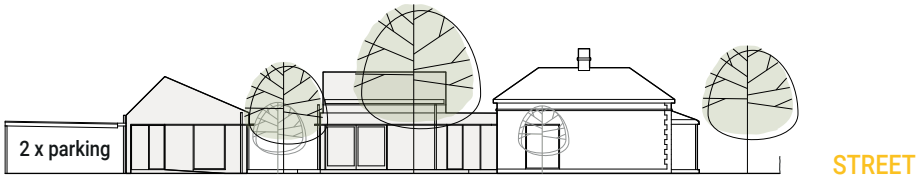



WM
DR
fire
door
UP
store
UP
1:20
0
5m
10m

Part 3_3: Large - 675m²

L
675m²

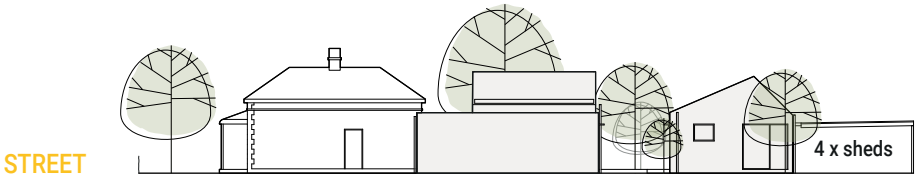




Dwelling 3 (1 br)
LHA Gold
- street-facing
backyard dwelling

Dwelling 2 (1 br)
LHA Gold
- extension of exist. house

Dwelling 1 (2 br)
LHA Gold
- adapted exist. house



Dwelling 1 (2 br)
LHA Gold
- adapted exist. house

Dwelling 2 (1 br)
LHA Gold
- extension of exist. house

Dwelling 3 (1 br)
LHA Gold
- street-facing
backyard dwelling

Scenario

Looking to expand its portfolio and diversify its housing mix, a Community Housing Provider (CHP) buys a cottage in a suburb well-serviced by public transport and close to civic, medical, service and retail facilities. Rather than demolishing the existing house and replacing it with a unit development typical of its usual model, the CHP leverages the property's suburban characteristics in order to offer an alternative model for older members of its client base.

The existing cottage is renovated to create a two bedroom dwelling and a small footprint extension creates a second one bedroom dwelling. A third one bedroom dwelling is created in the form of a backyard dwelling. This is the same width as double garages in the neighbourhood and located in a similar manner. Taking advantage of the allotment being a corner site, this backyard dwelling addresses the side street more sympathetically than a garage would, improving the streetscape amenity in a secondary street that is otherwise dominated by garage doors, sheds and long-sided house extensions.

The CHP sees this single allotment model as one that can be replicated and dispersed throughout the suburbs, and its forward-planning highlights the potential for corner sites such as this to be hubs, where one of the dwellings can be given over to a community house for residents to access for visiting services and activities.

Design

The original four-room cottage is retained and renovated into a two bedroom dwelling. The bedrooms face the front garden and street, and the living spaces the rear garden. The cottage receives a rear extension that creates a second dwelling, while a backyard home creates a third. Each dwelling is independent, but with a shared garden and ramped deck. The additions are arranged around a yard that strategically addresses the side street, increasing the amenity of the street itself and extending the residents' views out of their site and across the road. The bedrooms of each dwelling face away from communal areas for privacy, while the living areas deliberately address the shared garden for amenity and positive interaction.

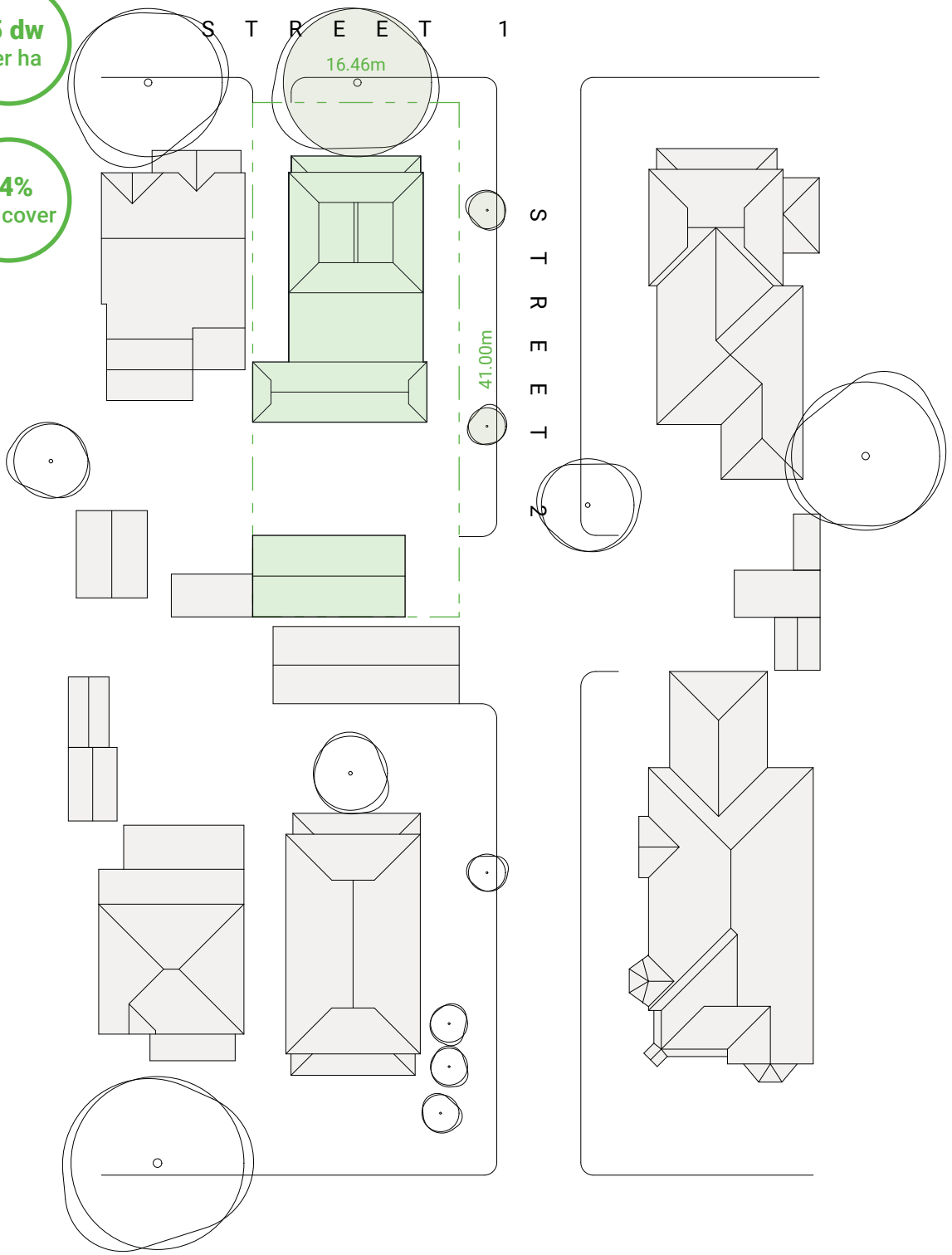
Dwelling 1 (2 br)	is created in the four rooms of the original cottage; the existing front door is retained as the main entrance
Dwelling 2 (1 br)	is created in a new narrow-footprint backyard extension
Dwelling 3 (1 br)	is a new single storey backyard home, sensitively scaled and massed, and incorporating appropriate boundary setbacks and site coverage
Sharing	each dwelling is fully independent; the central garden is shared
Parking	is provided adjacent the backyard dwelling (2) and in the driveway of the original cottage (1-2)
Services	individual washing lines are provided to each dwelling; a screened enclosure is provided for four sheds and for the bins of Dwellings 2 and 3; bins for Dwelling 1 are provided at the end of its carport
Also suits	**other corner blocks of varying sizes**

Also suits...

existing

15 dw
per ha

34%
site cover

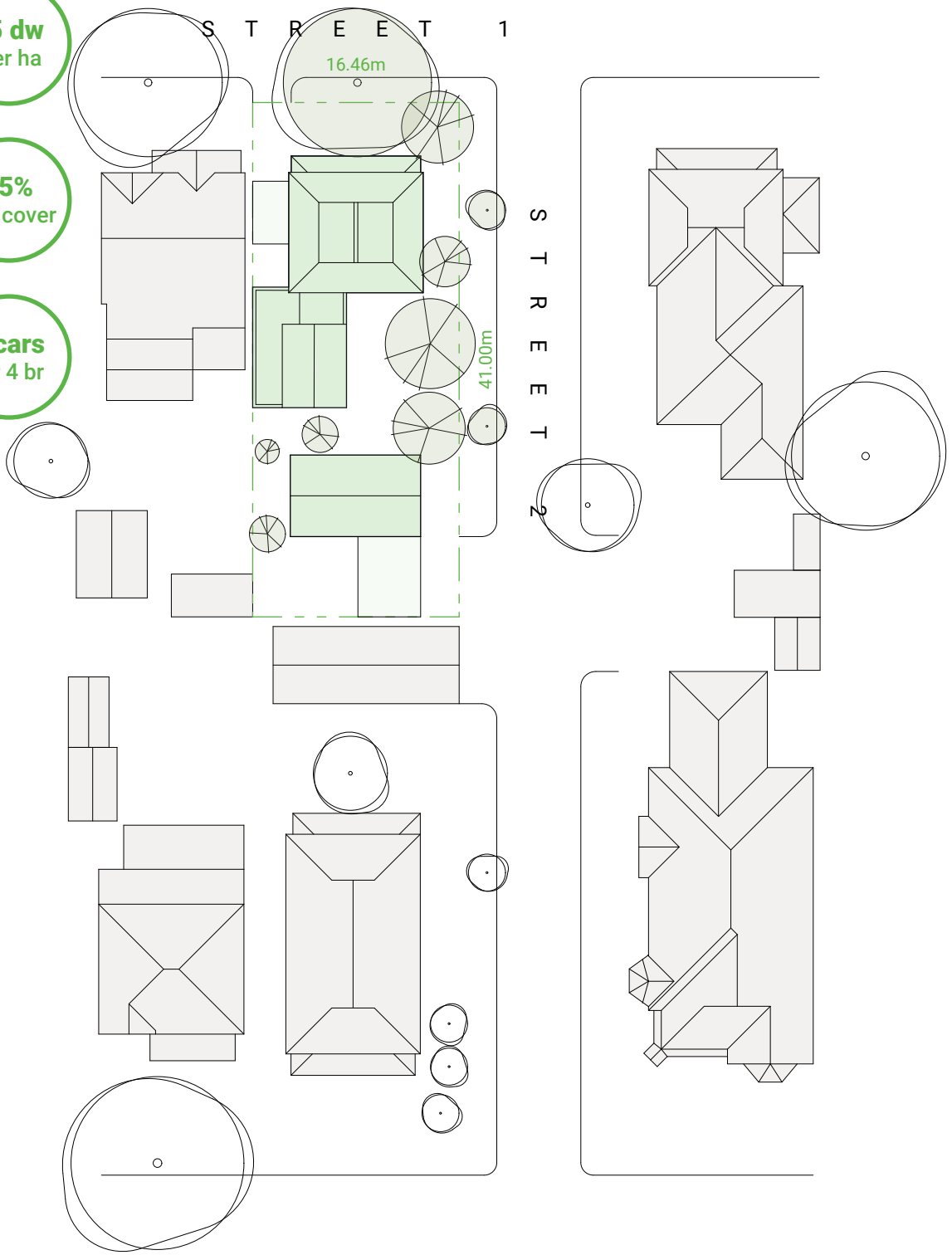


CHAW

45 dw
per ha

35%
site cover

3 cars
for 4 br

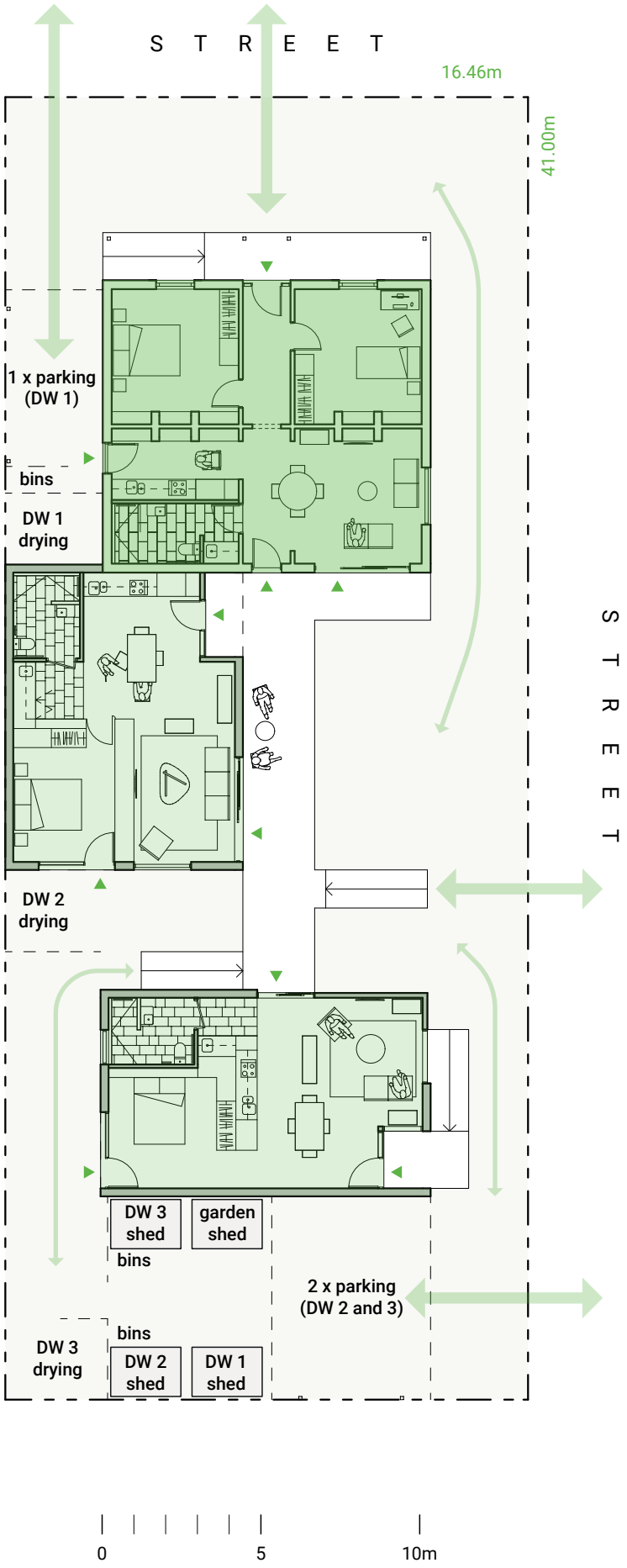


CHAW

Dwelling 1
95m², 2 bedrooms
LHA Gold

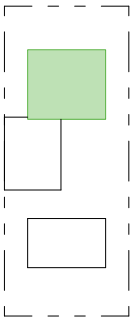
Dwelling 2
68m², 1 bedroom
LHA Gold

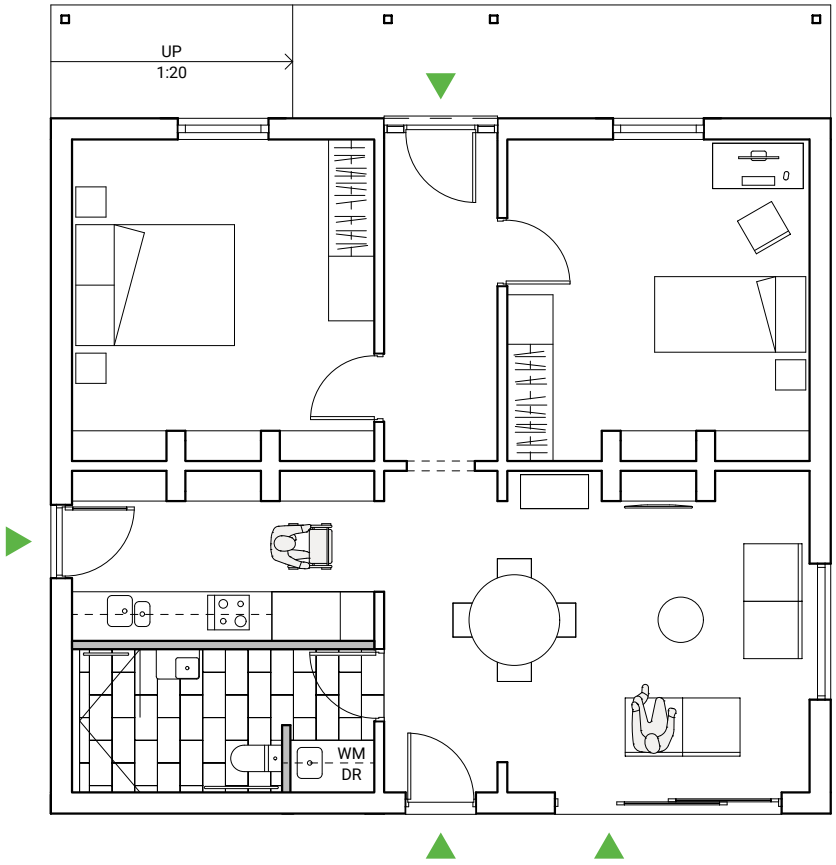
Dwelling 3
67m², 1 bedroom
LHA Gold



dw 1
2 br, 95m²

Gold
Livable
Housing Design

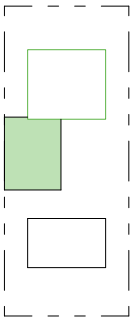


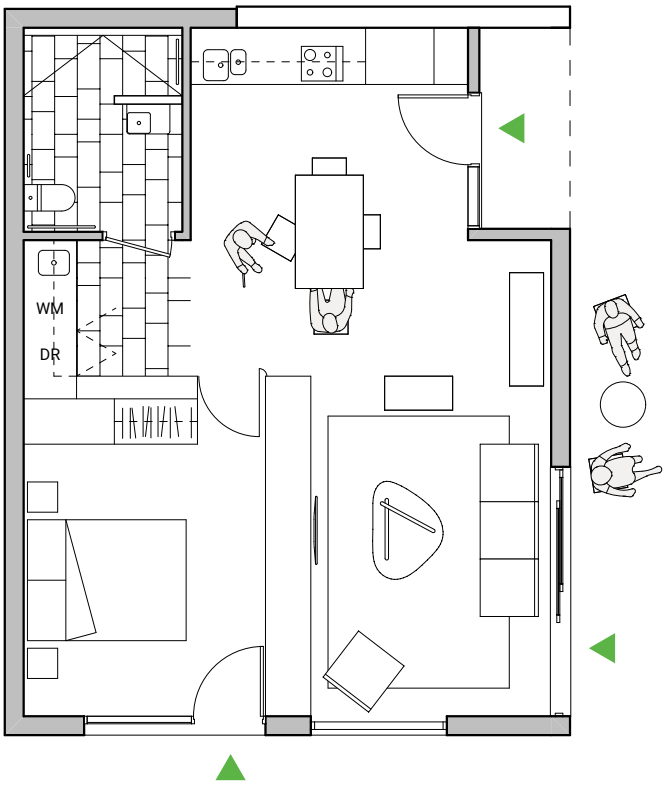


0 5m

dw 2
1 br, 68m²

Gold
Livable
Housing Design

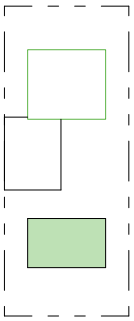


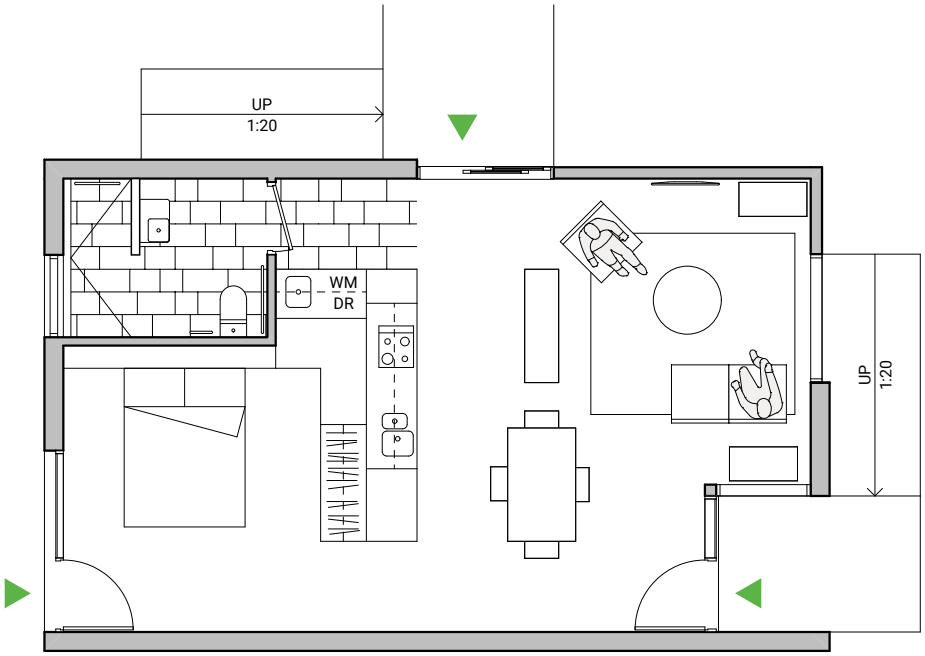


0 5m

dw 3
1 br, 67m²

Gold
Livable
Housing Design





0 5m

L
675m²

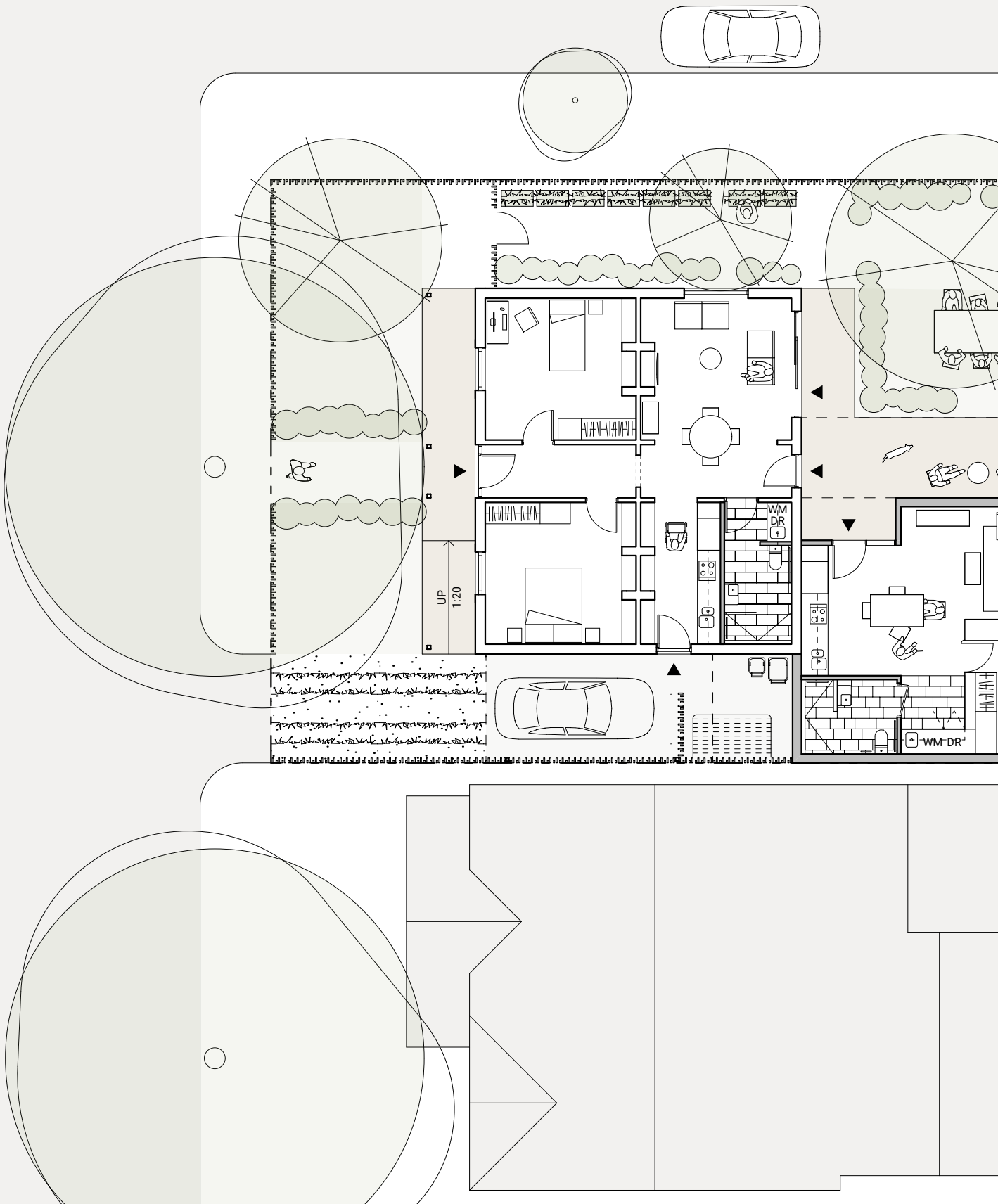
3
dwellings

common
garden

3 cars
for 4 br

45 dw
per ha

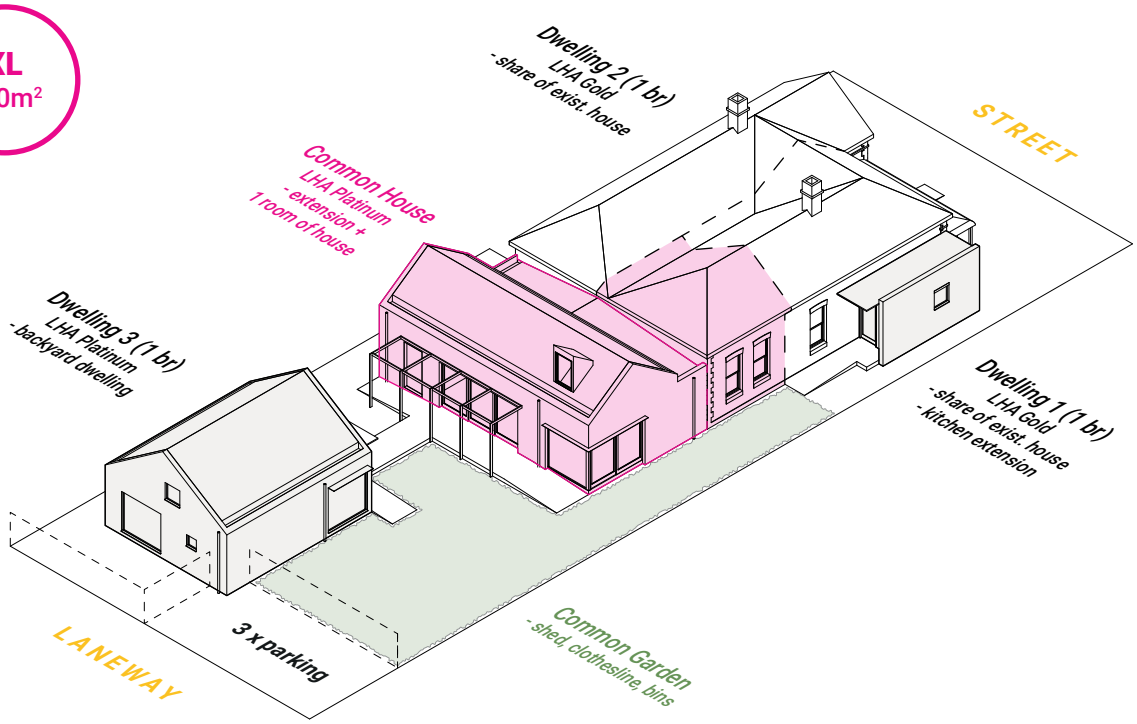
35%
site cover



UP
1:20
UP
1:20
UP
1:20
WM
DR
0
5m
10m

Part 3_4:
Extra Large - 920m^2

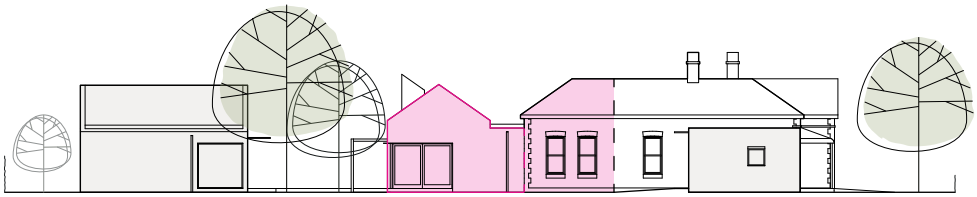
XL
920m²



Dwellings 1 & 2 (1 br)
LHA Gold
- sharing exist. house

Common House
LHA Platinum
- extension +
1 room of house

Dwelling 3 (1 br)
LHA Platinum
- backyard dwelling



Dwelling 3 (1 br)
LHA Platinum
- backyard dwelling

Common House
LHA Platinum
- extension +
1 room of house

Dwellings 1 & 2 (1br)
LHA Gold
- sharing exist. house

Scenario

The owner of a six-roomed villa on a traditional quarter acre block has lived alone for three years after the loss of their spouse. They have several friends living in the same circumstances, each having lived in their large family homes for many years.

None of the residents wish (nor need) to give up their suburban way of life, but each would like to downsize to a house that better fits their needs now that they are older and living alone. Importantly, they would each like the company and occasional support of others, without giving up their independence. Preferring a small house over an apartment, unit or formal retirement living, the three parties come together to develop the villa owner's property, creating three one bedroom dwellings and a common house.

Together, they set the rules for their property. Each week they share a number of meals and socialise in the common house. One of the residents is a keen gardener, and enjoys helping the hired gardener when they visit each fortnight. For this, she pays a reduced maintenance fee, as agreed by the residents and captured in their Residents' Charter. This document also includes an agreement around the use of the guest bedroom in the common house, which is available should a temporary live-in carer ever be required. Ordinarily, the guest room is available for residents to use as a study or for hobbies, and on a roster basis when guests come to stay.

Design

The original six-room villa is retained and divided into two dwellings. This is achieved by blocking the doors on one side of the central hallway and building the affected wall up to the underside of the roof for fire separation. The villa receives a rear extension similar in size and layout to those often carried out when older homes are renovated, and a small-footprint kitchen addition to the side of one of the front rooms. A small backyard home is added at the rear of the block, offset from the rear boundary in order to provide a garden.

Dwelling 1 (1 br)	is created in one half of the villa, using two rooms and the hallway plus a side addition; the existing front door is retained as the main entrance
Dwelling 2 (1 br)	is created in the other half of the villa, using three rooms; a new door opening is cut in the side wall to serve as the entrance
Dwelling 3 (1 br)	is a new backyard home, sensitively scaled and massed, and incorporating appropriate boundary setbacks and site coverage
Sharing	a Common House is created in a rear extension to the villa plus one of its rooms; it cannot be accessed directly by any dwelling to assist equity of use
Parking	is provided off the rear lane (3), with guest parking in the front driveway
Services	a large laundry with multiple machines is provided in the common house; a washing line and bin enclosure are consolidated in the garden

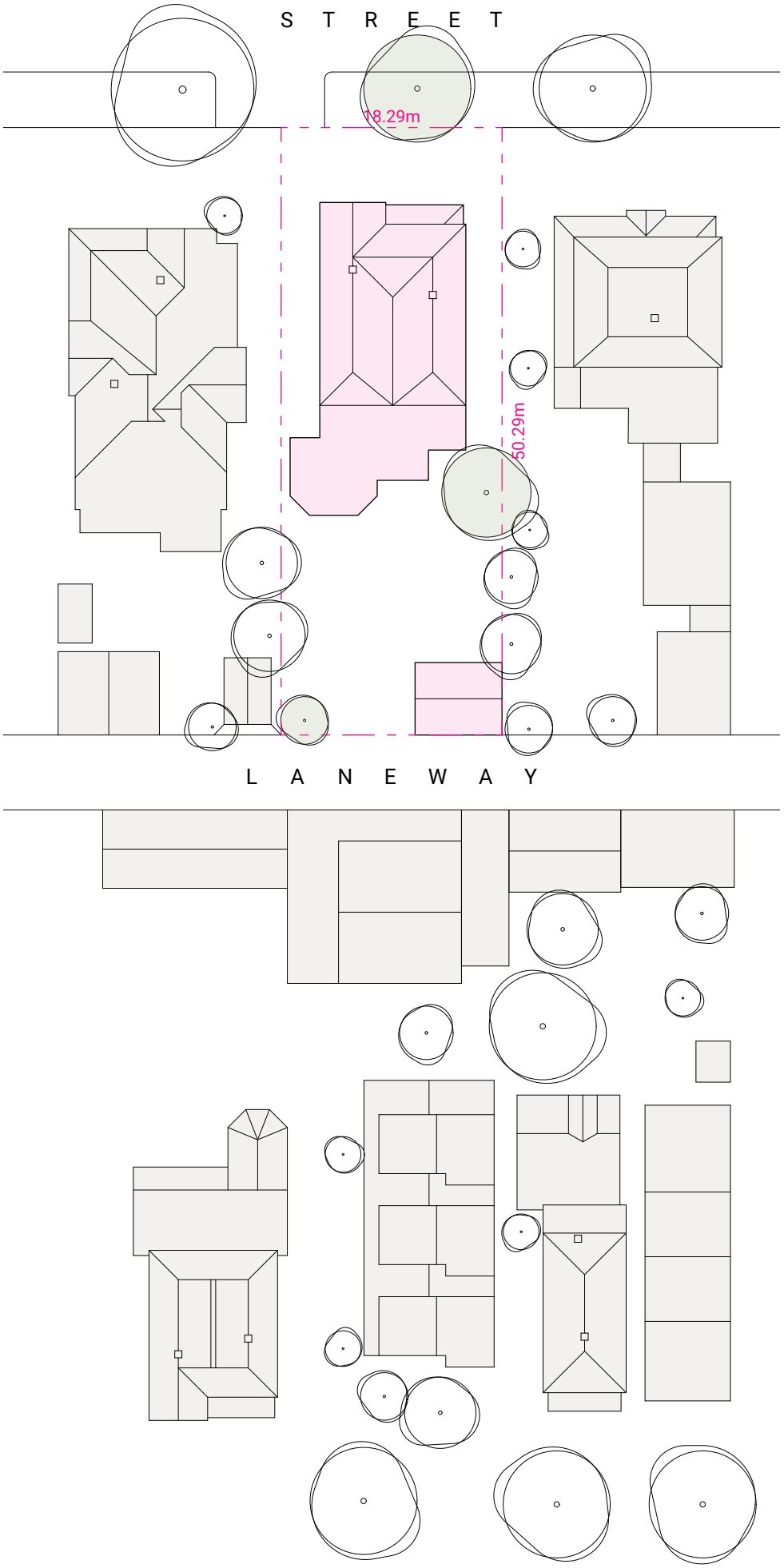
Also suits...

Also suits	**large blocks without a rear lane, with in-line parking provided in the driveway in lieu of ramps**

existing

11 dw
per ha

32%
site cover

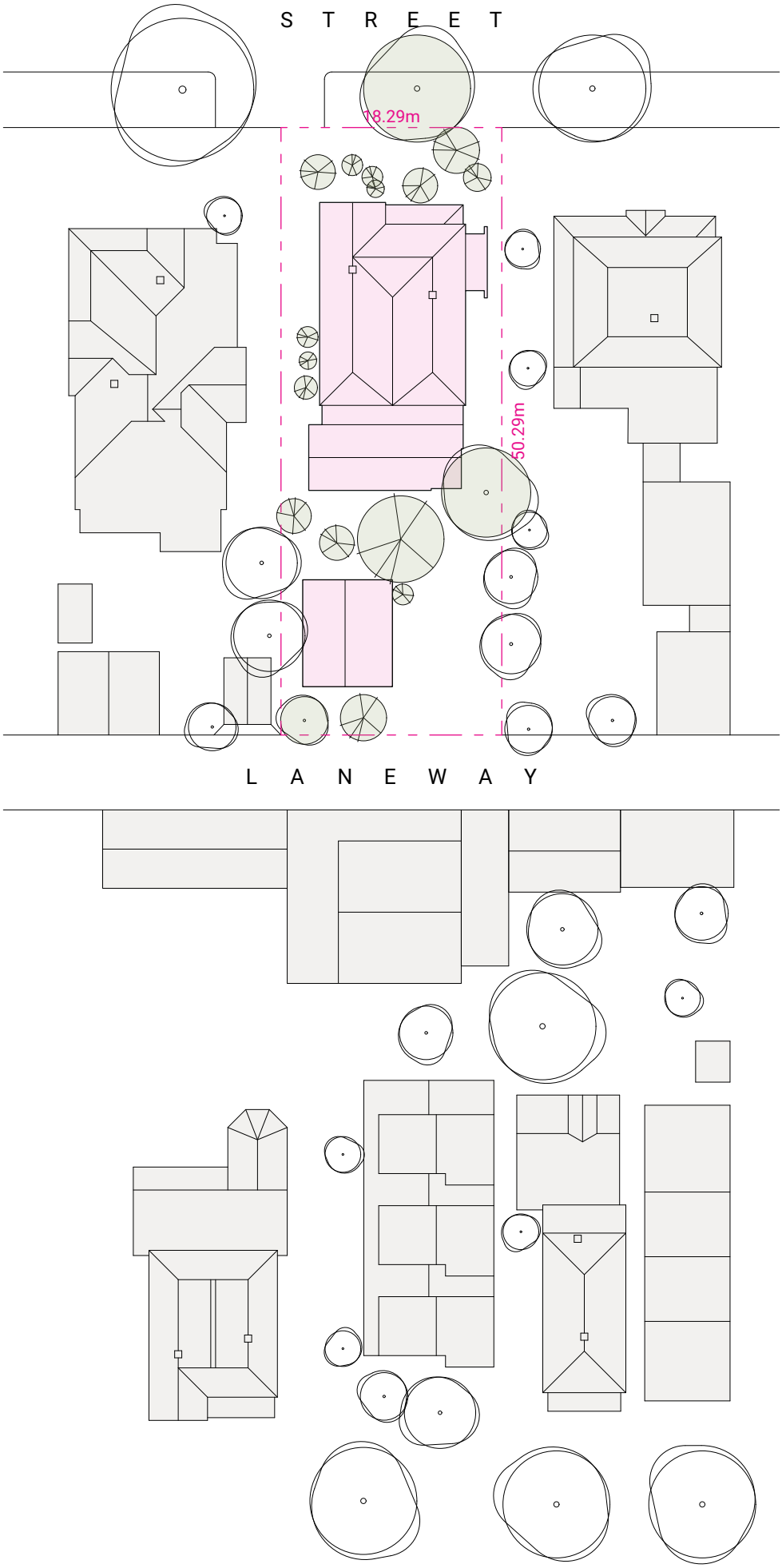


CHAW

33 dw
per ha

37%
site cover

4 cars
for 4 br



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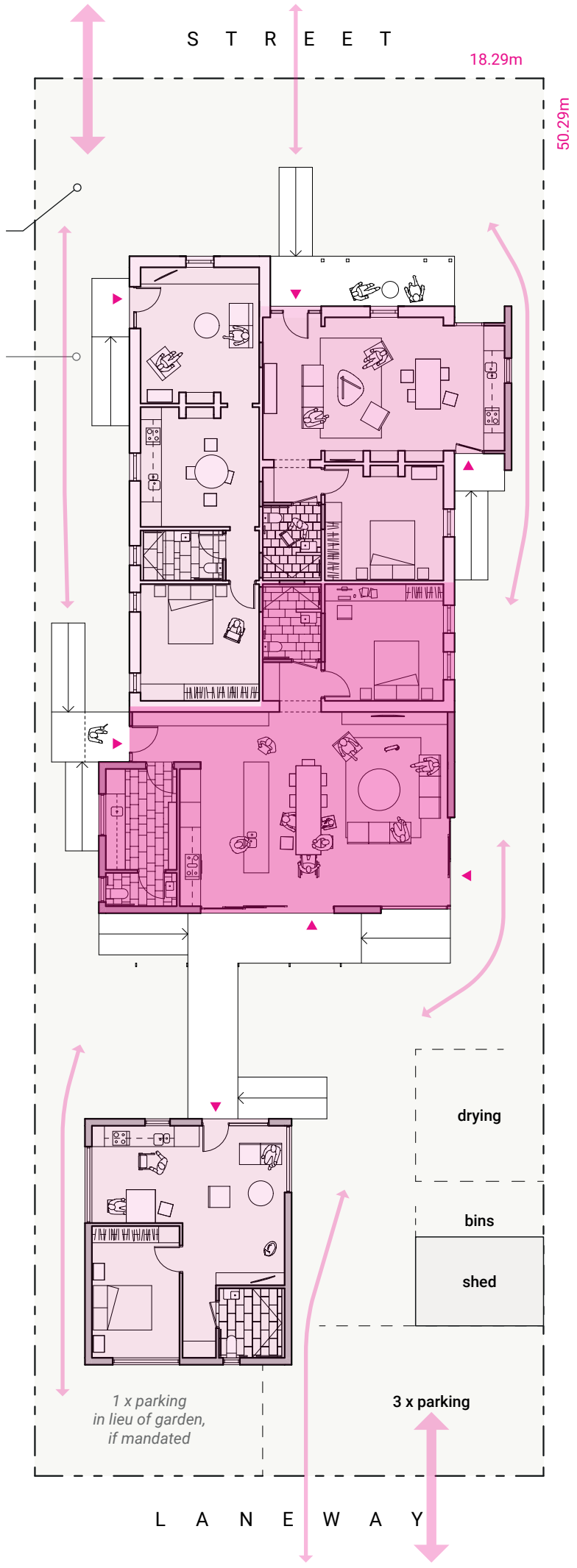


Dwelling 1
78m², 1 bedroom
LHA Gold

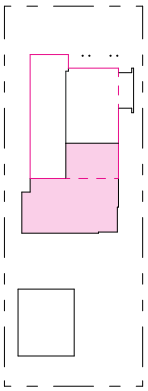
Dwelling 2
78m², 1 bedroom
LHA Gold

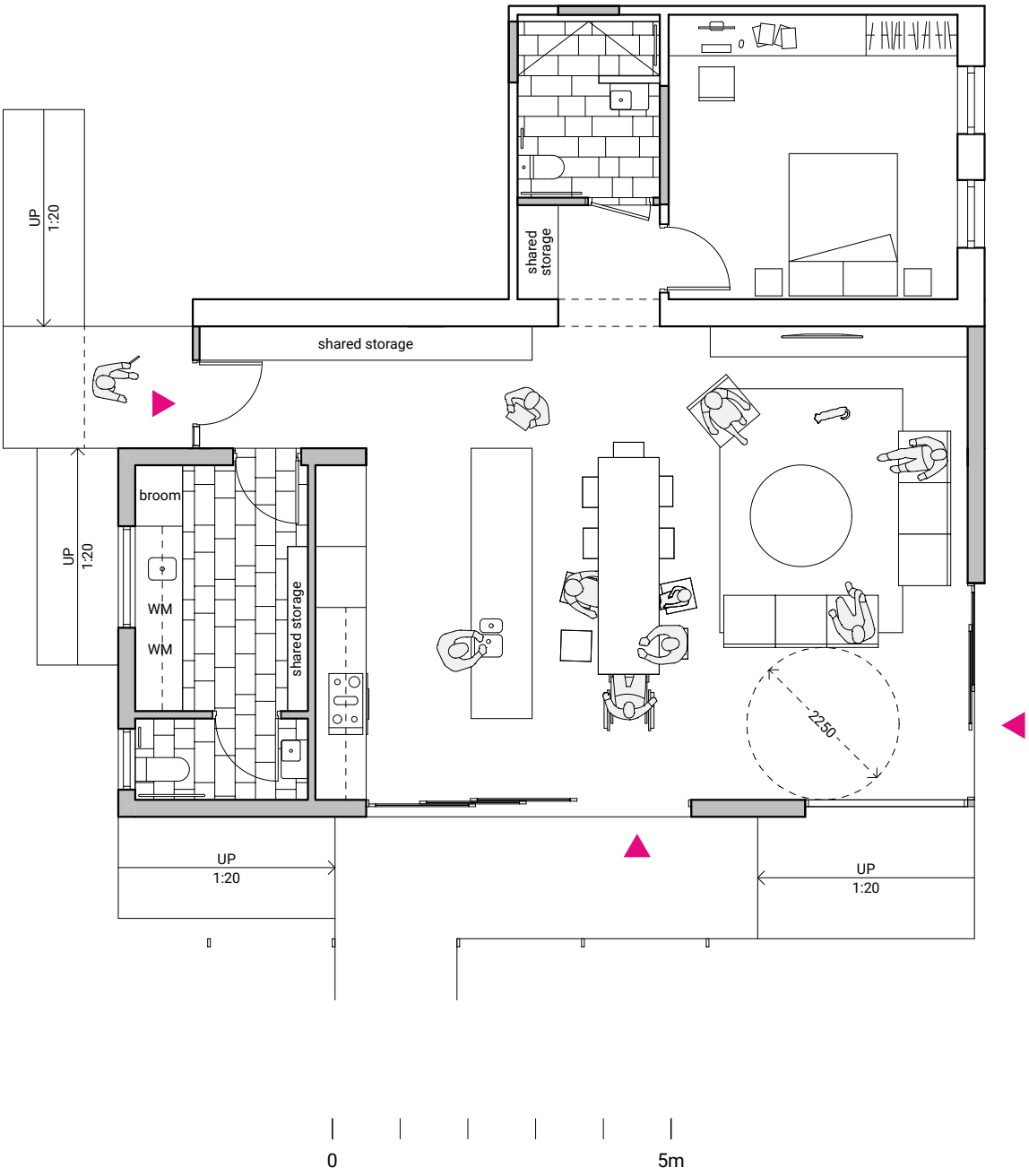
Common House
122m², LHA Platinum
- kitchen, dining, living
- laundry, powder room
- guest bedroom / study
- bathroom

Dwelling 3
66m², 1 bedroom
LHA Platinum

com.
1 br
122m²

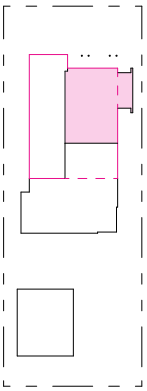
Platinum
Livable
Housing Design

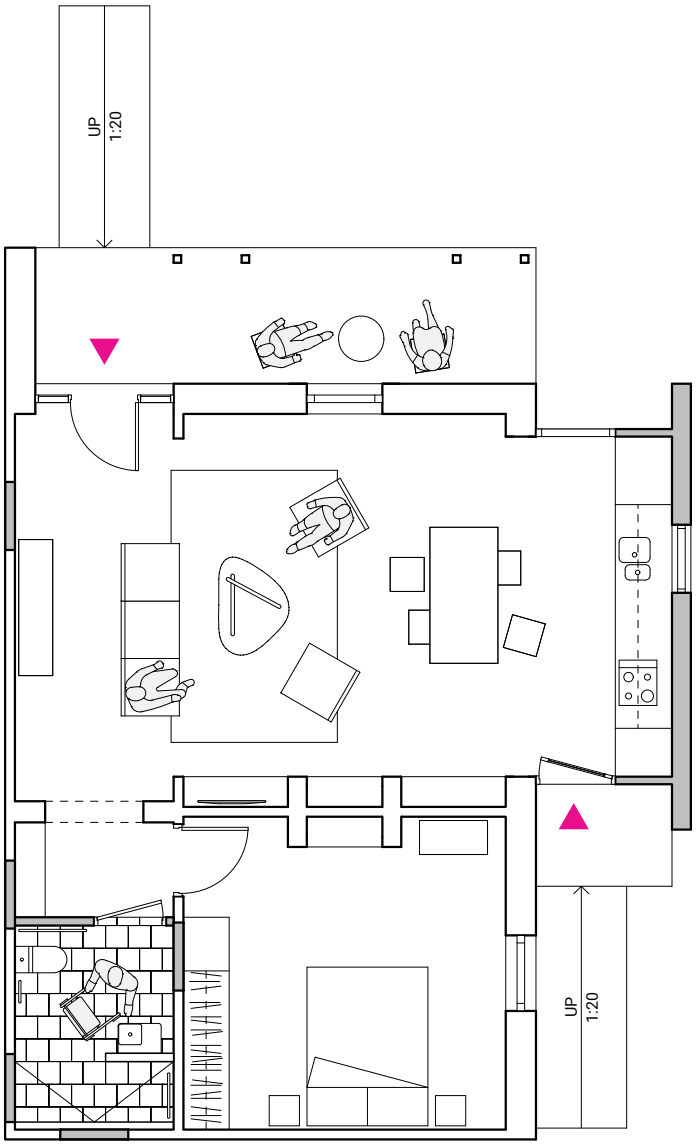




dw 1
1 br, 78m²

Gold
Livable
Housing Design

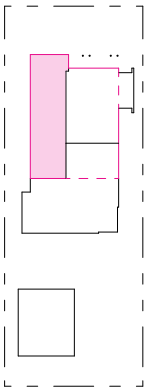


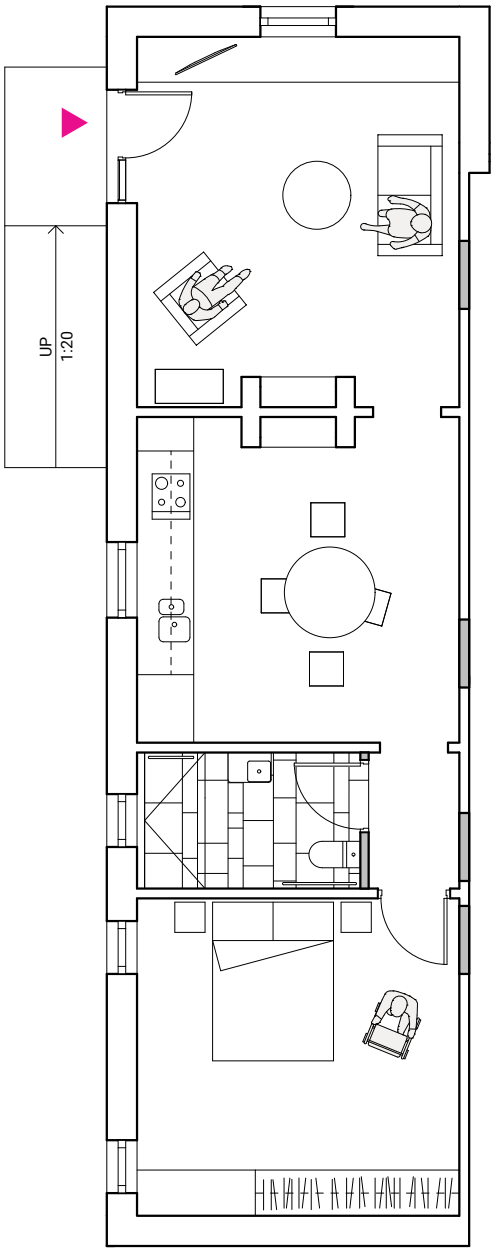


0 5m

dw 2
1 br, 78m²

Gold
Livable
Housing Design

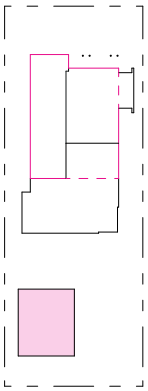


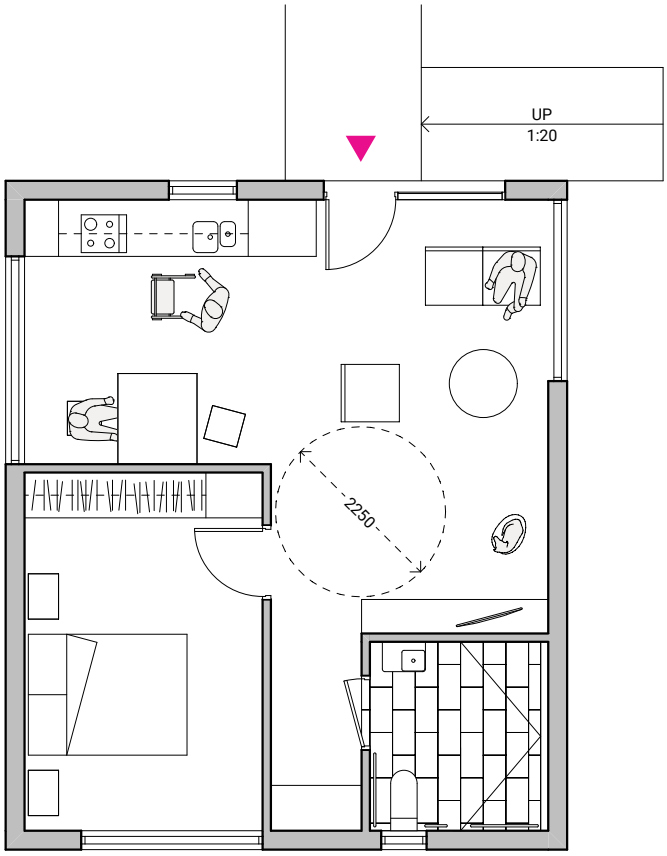


0 5m

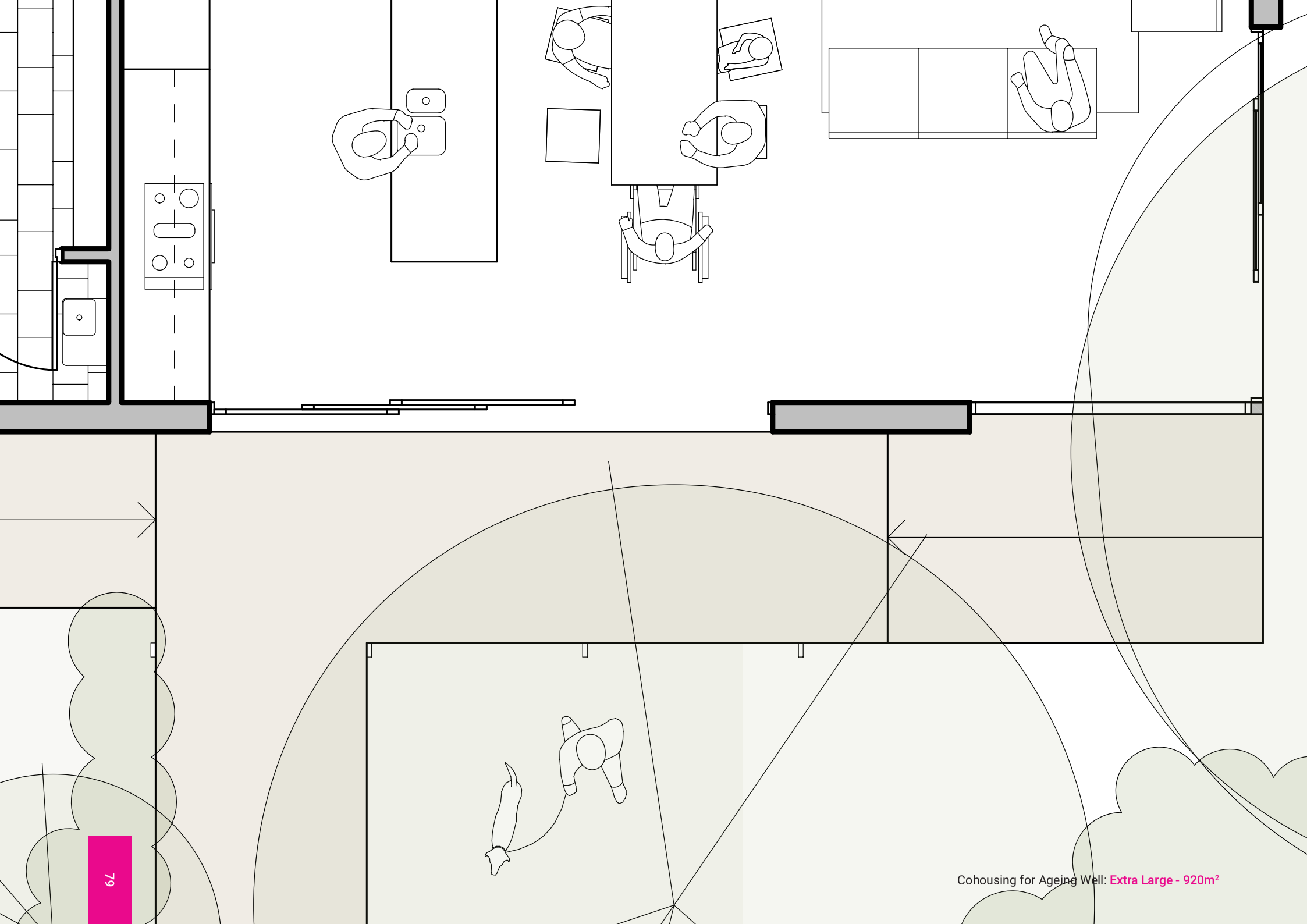
dw 3
1 br, 66m²

Platinum
Livable
Housing Design





0 5m



Cohousing for Ageing Well: **Extra Large - 920m²**

XL
920m²

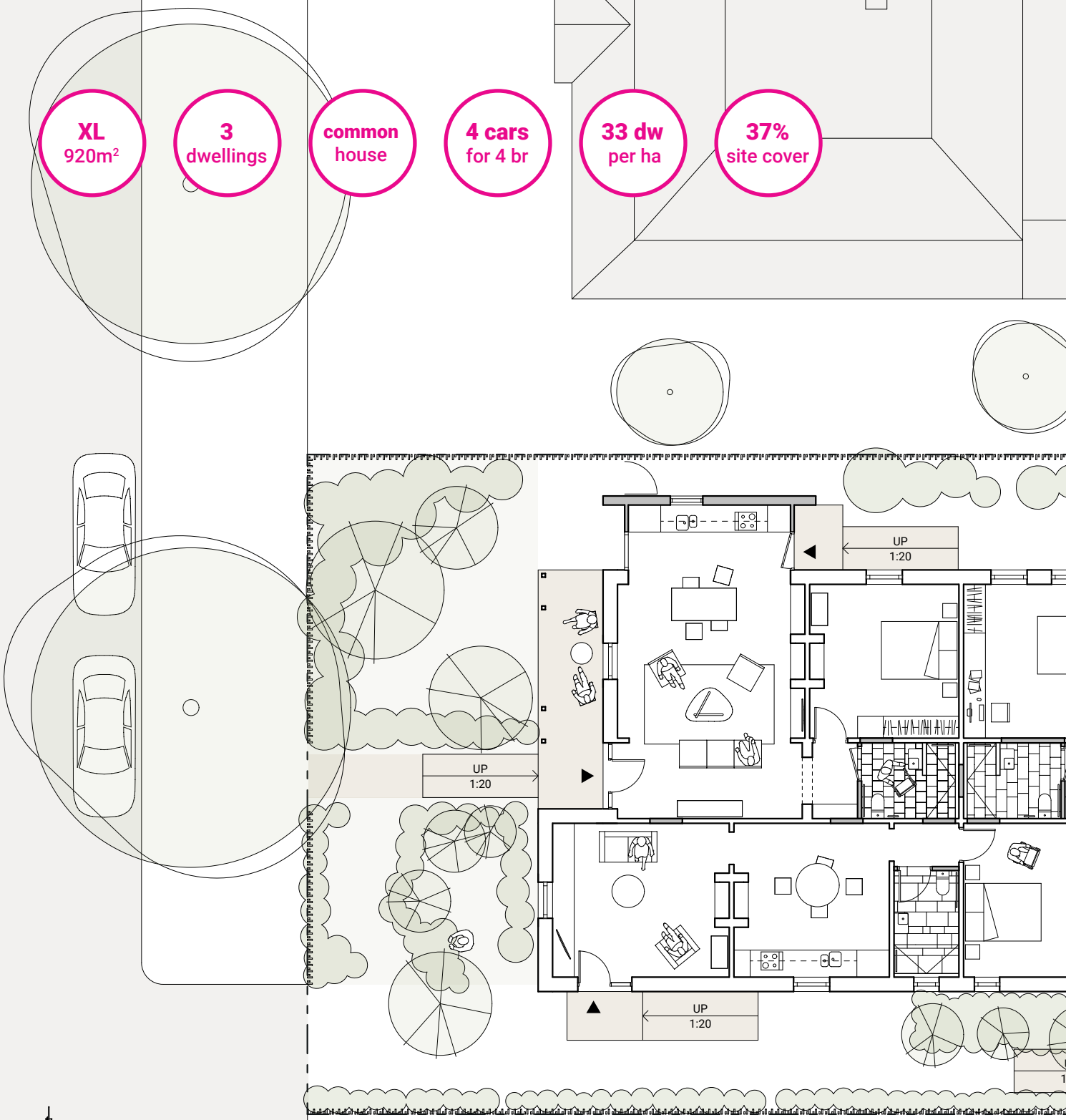
3
dwellings

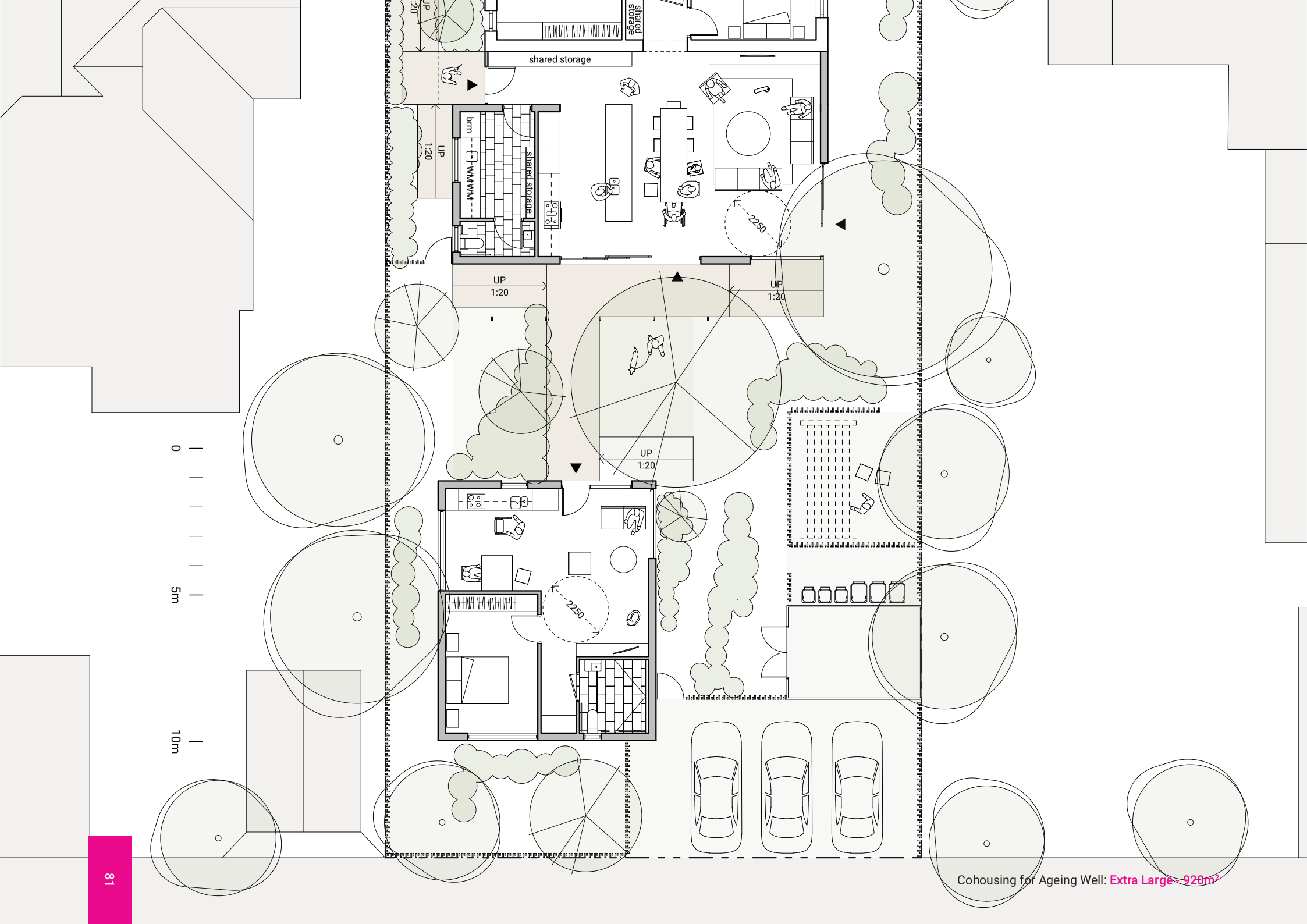
common
house

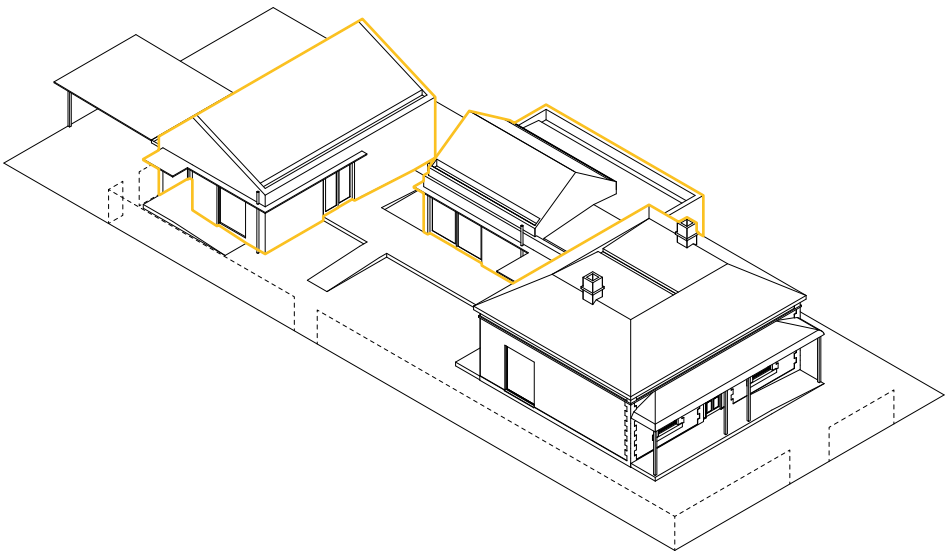
4 cars
for 4 br

33 dw
per ha

37%
site cover




shared storage
shared storage
shared storage
brm
WM WM
UP
1:20
2250
UP
1:20
UP
1:20
UP
1:20
2250
0
5m
10m



Part 4:
Visualising Cohousing

the garden as a fulcrum around which the housing is sited

Next steps

Although obstacles currently prohibit the housing presented by this research to be realised immediately, none of them are considered 'trump cards' that cannot be overcome. Each has potential answers in existing models that can be tailored to navigate the statutory, financial and operational issues of this small-scale single allotment model.

To progress infill housing such as that demonstrated by this Cohousing for Ageing Well project, corollary research outside of the scope of this project is recommended in the following areas:

- **Titling and Land Management Agreement research**
  to determine how appropriate titling and accompanying LMAs might assist in delivering the aspirations of the model while de-risking the opportunities for its misappropriation into undesired uses;
- **Property value and construction cost modelling**
  to identify potential financial opportunities and constraints relative to private- and organisational- versus developer-driven models;
- **Funding and financial modelling**
  to assess existing and potential lender models that could be applied to the model, including funding streams for those approaching or already in retirement;
- **National Construction Code assessment**
  to determine building code requirements related to issues such as fire separation, fire ratings and acoustic separation;
- **Scenario development and testing**
  to expand the understanding of potential user groups (for example, an older person sharing a site with a young adult) and complementary infrastructural initiatives that might assist functionality and site layout success (such as vehicle sharing and local community transport initiatives)
- **Policy authoring**
  to build on the recommendations of the project group's draft SA Planning and Design Code public consultation submission and to shift the model into a form of defined and permitted development;
- **Design guide authoring**
  to develop and transition this report's design principles into a document that supports both proponents and approval authorities;
- **The development of a Residents' Charter template**
  to assist proponents in developing their own bespoke governance structures for how their individual development will function.[22]

Ultimately, the truest test of the efficacy of this model to provide a viable alternative infill typology for areas needing increased and more diverse housing whilst retaining neighbourhood character, is to build a prototype. Only then, when the neighbourhood and social impact can be measured after a period of establishment and use, will it become evident where any challenges and further opportunities lie. It may be that in order to best test the model and garner widespread community and government support, such prototyping is best handled by a not-for-profit organisation such as a Community Housing Provider with a track record of creating and running multi-unit housing.

Until then, the images that follow can help describe the potential of this low-scale medium-density housing model to provide some of the housing we need in the suburban settings we seek to foster.

22. Many of the issues requiring further research have been successfully managed and demonstrated in established housing models such as community and strata corporations, traditional Cohousing, cooperative housing, community land trusts, baugruppen, and the Nightingale model.

existing houses can be adapted and extended without losing their character

incorporating existing housing into infill developments helps maintain character, scale and landscape

existing housing stock can be retained as suburbs intensify, even in the absence of heritage protections

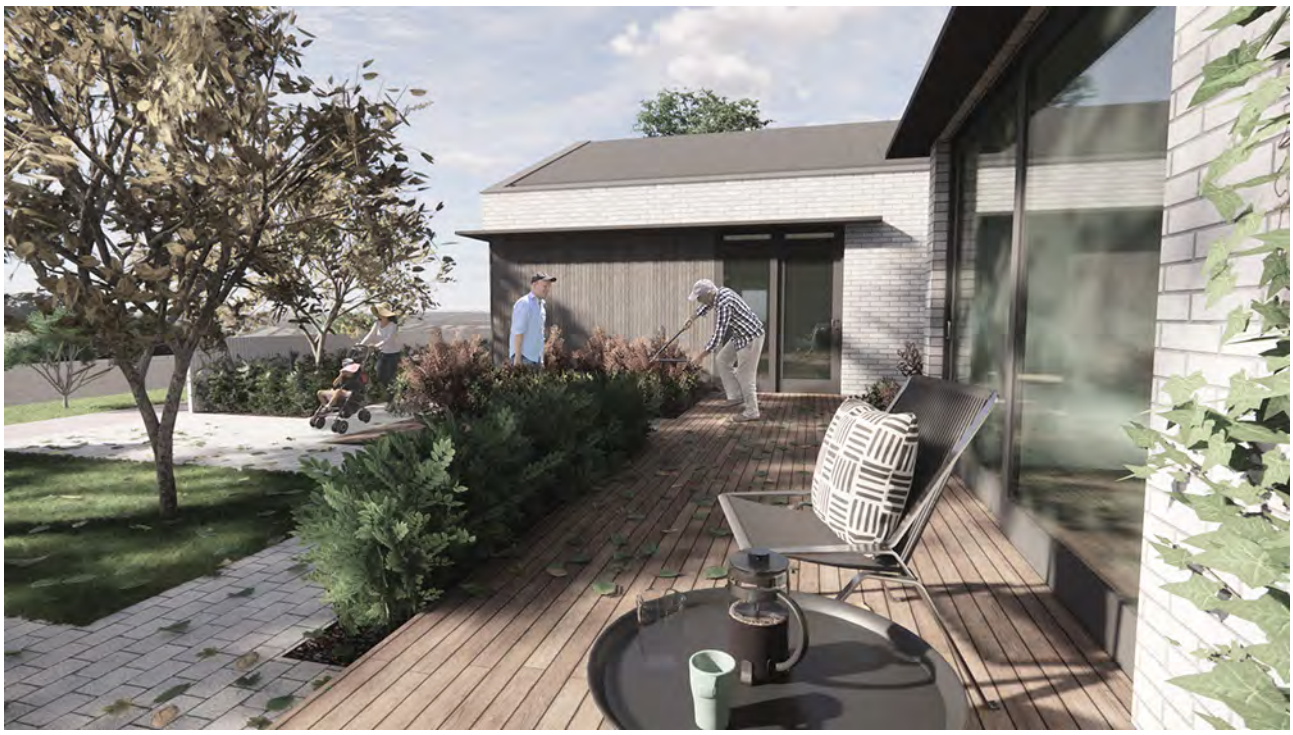
new infill dwellings can be discernible while positively contributing to established contexts

small footprint additions add new housing but not bulk

a whole-of-site design approach fosters mature landscape, increasing amenity for residents and neighbours

strong connections between dwellings can facilitate a community within an allotment

simple, affordable and removable landscape devices can enable a resident group to self-determine access levels



houses designed in a garden setting provide opportunities for engagement

large shared gardens increase the opportunity to live with companion animals, even when downsizing

accessibility can be achieved for older residents while avoiding an institutional feeling

2- and 3-for-1 infill development is possible using the established suburban pattern of alterations and additions

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a collaborative design research project

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