Happy Home

Learnings from the row house typology

Henning Larsen — RAMBØLL — Happiness Research Institute

Colophon

Contributors

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Why focus on happiness?

"Happiness is the meaning and the purpose of life, the whole aim and end of human existence." Aristotle

There are many ways in which we can define happiness. The ancient Greek philosopher Aristotle, said that happiness is the ultimate goal of human existence. It can either be derived from pleasure or one that seeks virtue and meaning. Many studies in the field of happiness research show that this is still true today.

"Happiness, not money or prestige, should be regarded as the ultimate currency—the currency by which we take measure of our lives." Tal Ben Shachar, 2007

Happiness plays an important role in our lives. The state of what we are feeling generally impacts how we perceive satisfaction or contentment, our recollection of emotions, or how we communicate and build relationships with others. Individual happiness has a variety of positive societal consequences.

The degree to which one can feel happy varies depending on various factors, such as developing deeper connections and making certain choices. Choosing work that is in line with your values can provide meaning and fulfilment.[1]

Happiness promotes productivity and success at work by increasing creativity and improving physical and mental health. According to a recent Oxford Business School study, happy employees are 13% more productive.[2] Happiness has been linked to increased resilience in terms of managing stress and setbacks, as well as engaging in healthy behaviours that lead to better coping skills and health immunity. Scientific studies also reveal a connection between physical health and happiness, with benefits such as a stronger immune system, greater resilience in the face of stress, a stronger heart, and faster recovery from illness or surgery. There is even research that suggests that happiness may help us live longer lives.[3]

Happiness

"The experience of joy, contentment, or positive wellbeing, combined with a sense that one's life is good, meaningful, and worthwhile."

Life quality

"Good mental states, including all of the various evaluations, positive and negative that people make of their lives and the affective reactions of people to their experiences."

1 Psychology Today (no date). How to Find Happiness.

2 Jan-Emmanuel De Neve (Saïd Business School, University of Oxford) George Ward (MIT) and Clement Bellet (Erasmus University Rotterdam), 2019

3 6 Benefits of Happiness According to the Research (positivepsychology.com)

Why focus on happiness?

Over the last ten years, there has been an increase in public interest in happiness. The Organisation for Economic Co-operation and Development (OECD), for example, has encouraged its member countries to use happiness as a policy development indicator. It has emerged as a new indicator of progress that employs Gross National Happiness (GNH) as a parameter (an alternative to measuring GDP) and was introduced by Bhutan's king in the 1970s as a measure of economic and moral progress. Nordic countries, in particular, have attracted international attention in recent years for their high levels of happiness, consistently ranking first in various happiness indices.[4] However, there are growing concerns about mental health wellbeing, the effects of climate change, and biodiversity loss, all of which appear to contribute to issues such as loneliness, stress, and poor mental health.

Thus, the goal of the "Happy Homes" research is to raise awareness about how physical design affects an individual. Whether we're talking about happiness or quality of life, both terms encompass a wide range of experiences and emotions, such as joy, a positive outlook on life, and a sense of purpose.

Happiness

“The experience of joy, contentment, or positive wellbeing, combined with a sense that one’s life is good, meaningful, and worthwhile.”

Life quality

“Good mental states, including all of the various evaluations, positive and negative that people make of their lives and the affective reactions of people to their experiences.”

4 The Happiness Research Institute, 2021. Towards A Wellbeing Economy

Happiness by design

This project is based on an established body of knowledge that our built environment has a direct impact on our mental health. Our surroundings shape us, and we shape them. Our immediate surroundings, such as our home and neighbourhood, have an impact on how we act and feel.

According to a Realdania study, Danish residents are more likely to believe that their living environment affects their quality of life.[5] Another study conducted by The Happiness Research Institute, found that how happy we are with our homes proves to be much more important, accounting for about 15% of our overall happiness.[6]

Our homes are expressions of ourselves.[7] Our homes are intertwined with a slew of other emotions that influence various aspects of our lives. It enables us to provide a sense of safety, authenticity, and control over ourselves. Existing research indicates that creating a living environment that makes residents feel active, inspired, and excited improves their life satisfaction and happiness. The availability of green spaces increases the likelihood of feeling active. Being a part of a community increases your chances of happiness.
The aim of this project has been to investigate and identify key drivers and tools for designing for happiness at the individual and community levels, in order to contribute to the development of a stronger body of evidence for designing for happiness.

Henning Larsen Architects, Ramboll Management, Ramboll UK, and The Happiness Research Institute collaborated on this project in response to a growing demand for knowledge on how to design for social sustainability. The goal of the partnership is to contribute to the systematic development and dissemination of knowledge on social sustainability in the built environment. This is not only relevant to ongoing home and city construction and design, but it is becoming increasingly urgent as the climate crisis forces us to radically rethink our physical infrastructure.

This project is the first in a series of investigations into how to create a good physical framework for quality of life. Despite its limited scope and resources, this publication focuses on the social aspects of sustainability, providing a set of evidence-based drivers, recommendations, and a toolbox outlining which qualities and elements in a home and neighbourhood can increase happiness (among healthy average residents, not residents with mental or physical challenges).

5 Psychology Today (no date). How to Find Happiness.
6 Jan-Emmanuel De Neve (Saïd Business School, University of Oxford) George Ward (MIT) and Clement Bellet (Erasmus University Rotterdam), 2019

7 Happiness Research Institute and Kingfisher, 2019. The Good Home Report.

Happiness by design

Is a Happy Home sustainable?
"Environmentally friendly architecture has a specific focus on the environment. You can easily make something that has good energy efficiency, but which does not deliver much social value. If you make an environmentally friendly house, which is boring and no one bothers to live in, then you have managed your resources really badly." [8]

Creating homes and neighbourhoods that do not take happiness and well-being into account has unintended consequences, such as using more energy or emitting more carbon. Ignoring the need to connect with nature, for example, may result in a shrinking of the 20-minute neighbourhood, increased car journeys, and an increased number of unhealthy people who require medical treatments, all of which consume more carbon and contribute to climate change. We must consider that people, not buildings, emit carbon dioxide (CO2) and that changing perspectives in this way will lead to solutions that have a greater impact on climate change and biodiversity. Therefore, we believe that one of the long-term goals of new housing developments should be to create places for well-being, well-functioning communities, and a liveable environment for daily life.

To create a truly sustainable environment, we must design spaces that allow both people and nature to thrive — we must view sustainability holistically. This research project is largely focused on the social aspect of sustainability, particularly on how people and communities survive and flourish. However, social sustainability is inextricably linked to environmental and economic sustainability. Investing resources and energy to build new or retrofit residential buildings and areas, for example, only makes sense if the residents are happy to live there and if structures and housing are affordable to all citizens. The built environment sector is recognising the importance of happiness and well-being, through the development of certifications such as DGNB Heart, The Well Building Standard, and Health and Well-being Framework. However, these certification models frequently place a greater emphasis on basic physical needs, such as indoor climate, rather than the psychological needs for well-being and community., which inspired this report.

The five drivers and a set of recommendations are presented at the end of this report, followed by a toolbox that will serve as a guide for implementing the social aspects of sustainability in residential areas.

8 Peter Andreas Sattrup, Danish Association of Architectural Firms (Børsen 2019)

Happy people
...live longer
...more healthy
...more productive
...more engaged
...more social

= Sustainable Society

Learning from the Row House

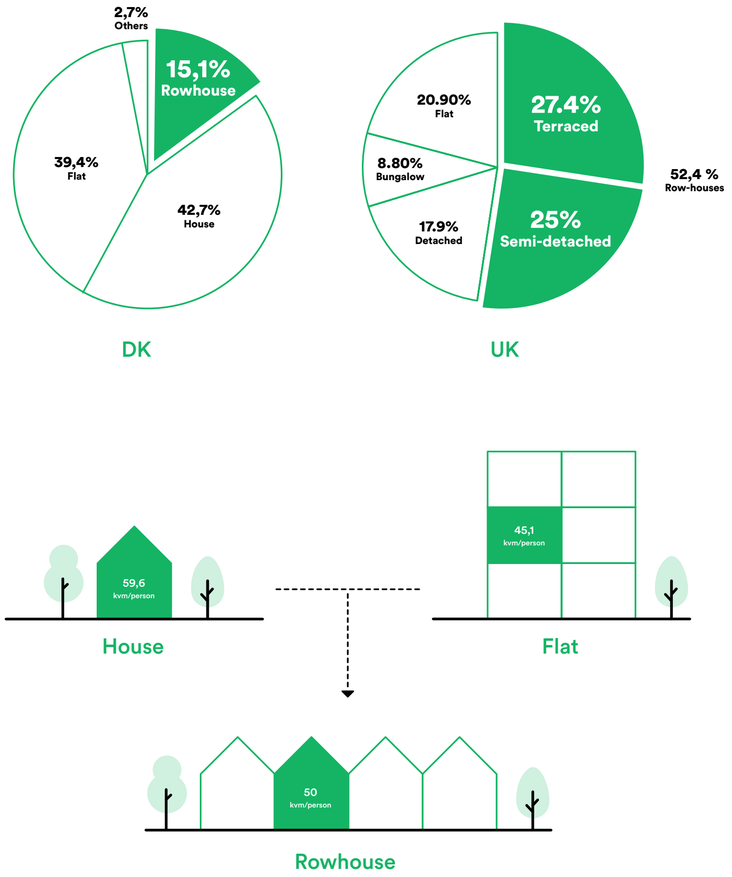
In the last five to ten years, there has been a growing demand for row-houses in Denmark, which is a rather ubiquitous and familiar typology in cities across the UK. In this study, we will use the term **‘row-house’** defined as both semi-detached and terraced single-family homes.

Row-houses appeal to developers because they are simple to construct, small, and easy to sell. From the perspective of the users, a row-house is a smaller version of a single-family house. The row-house typology offers a variety of benefits, including a small garden, the ability to interact with neighbours on a daily basis, and often a good location.

It wasn't until the late 17th century, when the row-house concept was introduced in the city of London. This typology was introduced a few years later in Denmark as worker-houses, such as Kartoffelraekkerne (1873-89). Row-house architecture is now common in both countries, particularly with families and those who lived during the golden age. Row-houses make up 15.1% of all housing in Denmark and 52% of housing in the UK, from Georgian townhouses to Victorian terraces and post-war semi-detached suburbs.

It has also become popular across European cities and surrounding areas, where it is being constructed in greater numbers due to its cost-efficient architectural design. Private and public developers have experimented with several variations in larger buildings, frequently combining them with other typologies, including residential blocks and towers.

The row-house typology was chosen as a case study due to its widespread use, the fact that it originated in the UK, and the fact that Denmark, one of the happiest nations in the world, makes extensive use of it. The structural elements of the row-house typology that support a greater sense of well-being will be examined in the following chapters, where we believe this information will be useful guidance for architects, planners, and developers.



Our case studies

The research project investigated five different aspects of row-houses in Denmark and the United Kingdom. We worked hard to achieve diversity by looking at the development's size, demographics of residents, and architectural expression. Three of the case studies are from Greater Copenhagen – private housing in Copenhagen's historic Kartoffelraekkerne, social housing in Vindinge Nord, and private co-housing in Magelse; and the other two are from Birmingham – private ownership and rental in Port Loop and the Bourneville Village Trust.

Across these five case studies, we conducted semi-structured face-to-face interviews with residents. Men and women, young and old, singles and families, renters and owners, in newly built and centuries-old homes. Furthermore, we have held exploratory workshops with key stakeholders from the row-house communities.

Kartoffelrækkerne, Østerbro

1873-89
480 homes
Private ownership

Architect:
Architec Frederik Christian Bøttger

Vindinge Nord, Roskilde

2021
48 homes
Social housing

Architect:
Vankunsten

Mageløse, Værløse

2019
29 homes
Co-housing

Architect:
Henning Larsen Architect

Port Loop, Birmingham

2019 - 2023
1000 homes
Private ownership or rental

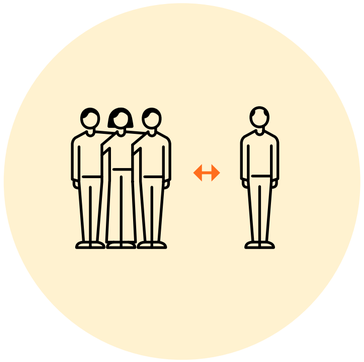
Architect:
Glenn Howells Architects
Shedkm Grant Associates

Bournville Village Trust, Birmingham

1900
800 homes
Private ownership or rental

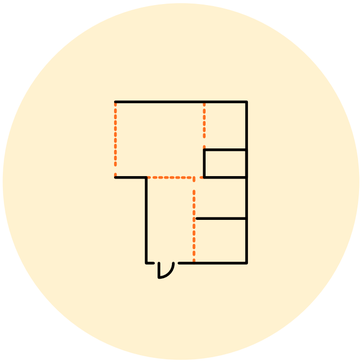
Architect:
Willliam Alexander Harvey

Five Drivers



Driver 1

Balancing the private and the communal



Driver 2:

Personalising the physical layout

Driver 3

Sensing nature

Driver 4

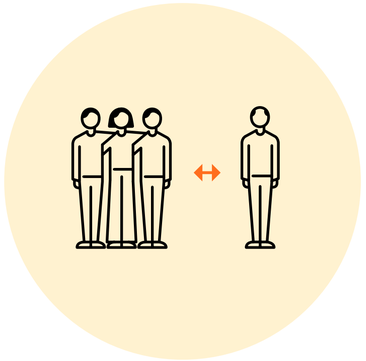
Experiencing local identity

Driver 5

Engaging in the decision-making process

The key drivers of happiness in the home have been drawn upon from the five case studies in Greater Copenhagen and Birmingham. These were based on the results of the interviews, both within the home and in the neighbourhood, that had a positive impact on the residents' well-being.

The five key drivers provide a framework for designing interventions to achieve happiness in homes and neighbourhoods. These look into how key features can be considered and implemented when designing row-houses or retrofitting existing communities. Because of cultural or contextual differences, not all recommendations will be applicable in every location, but they do provide a starting point for implementation.

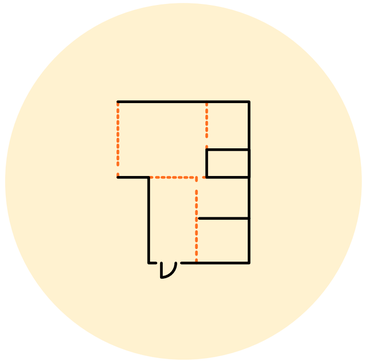


Driver 1

Balancing the private and the communal

The ability to maintain privacy while connecting with the local community has a significant impact on well-being. Within our home, it is important to balance our interaction (i.e. parents interacting with children) but also be able to get pockets of privacy in between (i.e. parents able to enjoy their downtime in the living room). Respondents in the case studies emphasised the importance of being able to control their interactions with their neighbours and the larger community.

Row-houses are frequently used to create a dense and compact residential area. Because of the physical density of the houses, neighbours are brought closer together. However, it also implies that you may frequently hear or see each other, and in some instances, even run into each other daily.

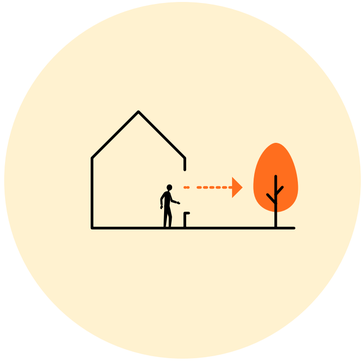


Driver 2

Personalising the physical layout

The ability to change the physical design of our home and neighbourhood is critical to happiness. It fosters a sense of belonging and ensures that the physical surroundings correspond to the preferences and needs of the residents in a given life situation. Changes could range from changing the colour of the walls to influencing the design and use of shared facilities in the surrounding area.

One of the key features of a single-family home is the residents' ability to customise the spatial layout according to their specific needs and desires. The row-house typology, as an urban compact version of the single-family-house, is an example of an adapted and reinvented typology. Furthermore, the row-house typology is typically not a large dwelling. Thus, it is critical that the way the rooms and spaces are used is optimised for its residents.



Driver 3

Sensing nature

Our happiness is driven by our ability to connect with nature. Respondents in all case studies mentioned that being able to see, smell, listen to, and easily access nature improved their quality of life. This supports the theory of biophilia (the innate attraction to life and growth processes), which implies that nature provides us with a sense of purpose, calmness, and feelings of happiness.

The row-house typology includes a private garden and sometimes two green spaces - one at the back and one at the front. The garden serves as both an outdoor space and a scenic view from the windows. The front garden also serves as a buffer between the private residence and the public street. While the backyard functions as a buffer zone between a house and its neighbours.

Driver 4

Experiencing local identity

Our home and neighbourhood are important parts of our identity. Our happiness is dependent on our sense of belonging to a place - a home and a neighbourhood. Placemaking, shared activities, and storytelling about the place, which may draw on landmarks, architecture, as well as the shared history, values, or cultural heritage of the place, can all help to strengthen this sense of belonging and identity.

Row-houses are constructed in clusters or streets of houses that share similar architectural expression, history, and story. The cluster has a distinct layout that clearly separates private and public areas where neighbours can interact. Over time, these physical and social narratives crystallise the neighbourhood's local identity.

Driver 5

Engaging in the decision-making process

Our ability to influence and shape the environment in which we live has a positive impact on our happiness. Participating in community and working together to solve problems, whether through formal or informal channels, strengthens community and our sense of well-being. Engagement can include being involved prior to and during the construction phase, as well as in the development and activities of the area after it has been built. Residents can also be the drivers or co-creators of the processes through engagement.

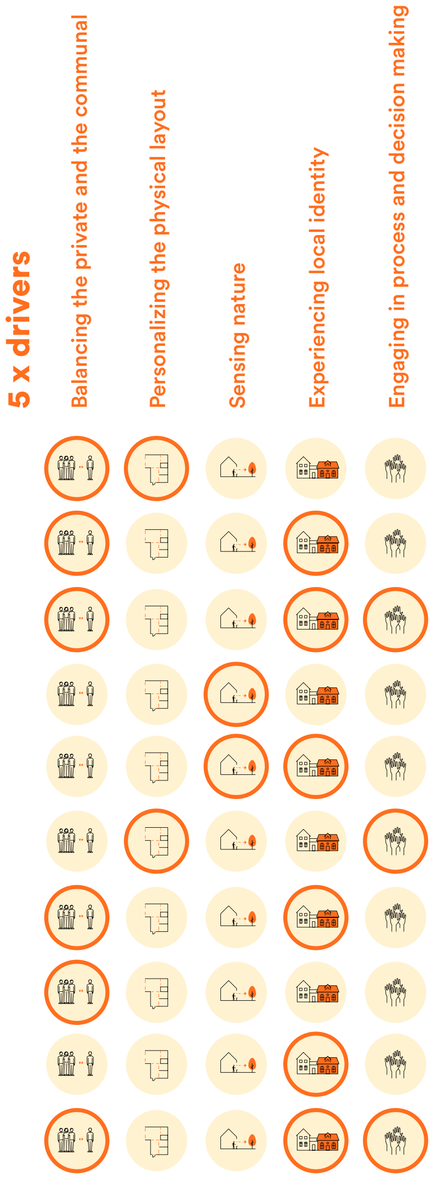
Residents can be involved in decision-making both before and after the construction of the row-house neighbourhood. Involving residents in decisions about their homes and neighbourhoods is also a good way to strengthen social ties and foster a sense of community. Once these residences are built, community participation can be beneficial by establishing community-based organisations such as street groups, as well as giving residents influence and responsibilities in the area's maintenance and development (physically or socially).

Kartoffelrækkerne, Østerbro

Set of recommendations

From case study analysis to recommendations

The five happiness drivers guided the development of ten spatial and policy recommendations for public and private developers, architects, and communities to help them design happier homes and neighbourhoods. The findings from the five case studies were used to develop the recommendations. It consists of a (1) recommendation summary and (2) learning from case studies that have influenced this recommendation, specifically from the resident's perspective.



10 x recommendations

1 Creating spaces for privacy

2 Creating semi-private spaces to serve as a link between the private and the public

3 Create possibilities to belong to smaller and larger communities at the same time

4 Bring nature indoors

5 Making green spaces more accessible

6 Maintaining adaptability

7 Creating a shared identity through history, culture or lifestyle

8 Using noise to promote cohesion rather than conflict

9 Making urban facilities easily accessible

10 Balancing accessibility and safety

1: Creating space for privacy

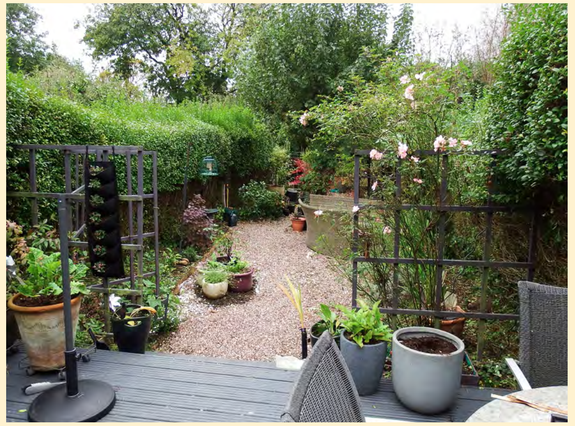
We all need moments of privacy. We must be able to retreat to silence and solitude occasionally, away from our neighbours and other family members. Even residents in our co-housing case study desired private spaces where they could disconnect from their community. The case study analysis revealed that people alternate between interacting with neighbours and family members and being alone in their homes. Therefore, it is recommended to design homes in which people can enjoy varying degrees of privacy. Individual privacy can be obtained through spaces such as the bedroom or a home office, while the household's privacy is provided by the living areas and the back garden. This privacy must be ensured through both spatial elements such as walls, hedges, and views in and out, as well as sound.

Learning from cases

Bournville

The height of the hedges provides complete privacy between the two back gardens, and the use of a hedge rather than a fence adds to the sense of a natural environment.

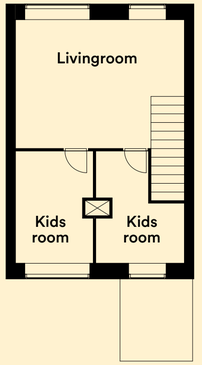
'I like how private the back garden is with the hedges, if I want to talk to my neighbours i go to the front'



Vindinge Nord

The distinction between public and private space includes very private space. The bedroom, where the father can be alone and away from family and neighbours.

'There is something about the fact that you can look in from both ends. It is the way we have made the house – we just didn´t know anything. When you go in you kind of think: wow – we are kind of monitored from both sides.'



2: Creating semi-private spaces to serve as a link between the private and the public

Several respondents mentioned the semi-private space as a place where they can connect, strike up conversations, or build friendships with neighbours. This semi-private space is typically the front garden or yard. The use of this semi-private space is influenced by culture. It can be a space where they can strike up a conservation with neighbours for some residents, and it can also function as a buffer zone between their home and the public street where they may converse with other people who live nearby. There is a significant difference between this zone and the back garden, which most residents regard as a place of privacy.

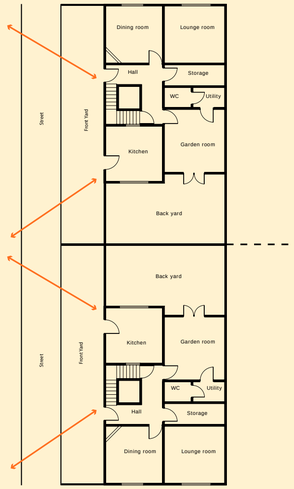
The learnings from the case studies taught us that the physical design of this zone can influence the social dynamics in the semi-private area. Placement of the kitchen near the front door and overlooking the front garden, for example, can activate this semi-private zone, allowing for interactions with neighbours. While placing the living room near the semi-private zone will not have the same effect and may have an impact on the privacy of residents. As a result, it is recommended to plan which semi-private areas are active and which are private, and to arrange the house's interior functions accordingly.

Learning from cases

Bournville

Keep their gardens open with low hedges or fences to foster a sense of neighbourliness.

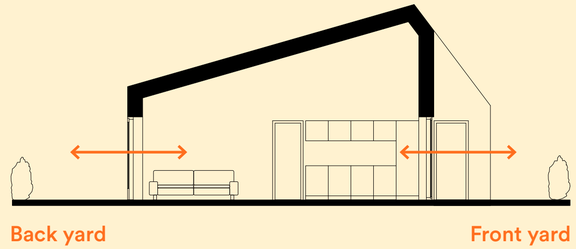
'The front garden is more public and back the is more private. I disagree in using a fence or hedge at the front, the openness increases security'



Mageløse

Placing the kitchen and entrance near the front yard encourages social interaction.

'The front garden is more public and back the is more private. I disagree in using a fence or hedge at the front, the openness increases security'



3: Creating possibilities to belong to smaller and larger communities at the same time

Experiencing social dynamics in public spaces improves one's sense of belonging to a community. However, there is a limit to how many meaningful relationships we can maintain as human beings. The experience of Henning Larsen Architects with residential developments shows that grouping units into a number between 15 and 45 is ideal. Robin Dunbar also states that 15 is the magic number for building connections. A group of 15 people who are good friends or good neighbours is a good size for feeling trust, safety, and comfort. While a group of 50 people for friends our neighbours bring to strengthen our connections, one that is less constrained and obligated and can thus tolerate social diversity.

Our recommendation is to be able to belong to both at the same time. Being a part of a smaller group of neighbours who live next door or on the same street allows residents to form a common identity and make decisions about their shared spaces, whether a common room, an outdoor meeting place, or the street. Furthermore, living in proximity with other neighbours increases the likelihood of forming relationships. We tend to form relationships with those who live nearby and with whom we frequently cross paths.

Learning from cases

Port Loop

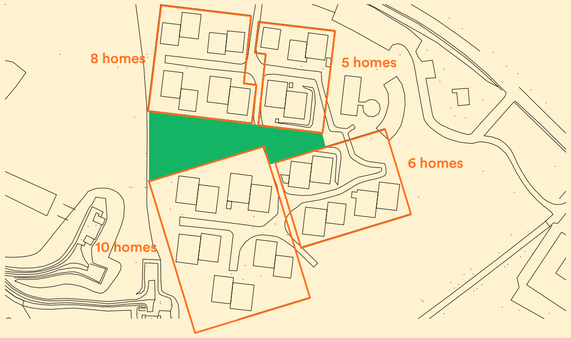
The presence of an enclosed courtyard allows for spontaneous contact with neighbours, both adults and children, and promotes safety.

'I consider my neighbours to be the people within the same building block who share the communal garden. With them I have various whatsapp groups for parents, people with cats etc.'

Mageløse

Dividing co-housing into smaller groups allows for closer relationships with neighbours.

'It is convenience, but also a mental barrier. There has been a split here in four sections with six or seven families in each. It is really amusing. We don´t have the brain capacity to include so many people.'



3: Creating possibilities to belong to smaller and larger communities at the same time

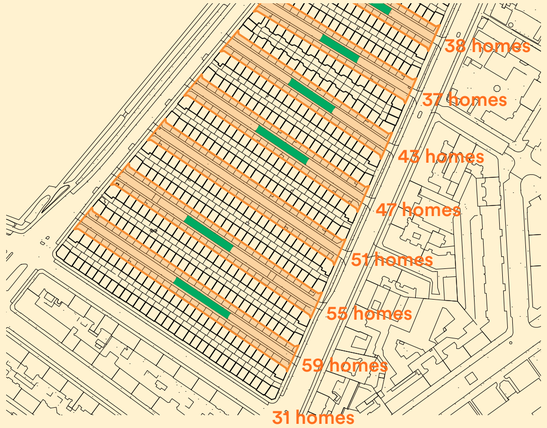
Because there is a greater chance of finding neighbours with a similar interest in the larger community, residents can participate in diverse social activities such as summer parties, yoga lessons, or evening lectures. These clusters can also be planned spatially in terms of the layout of streets, blocks, and public spaces. Smaller groups of homes sharing a common space can then be linked to a public space or neighbourhood facilities. These urban forms are commonly found in row-house communities.

Learning from cases

Bournville

The neighbourhood offers the opportunity to be a part of larger, less obligated communities.

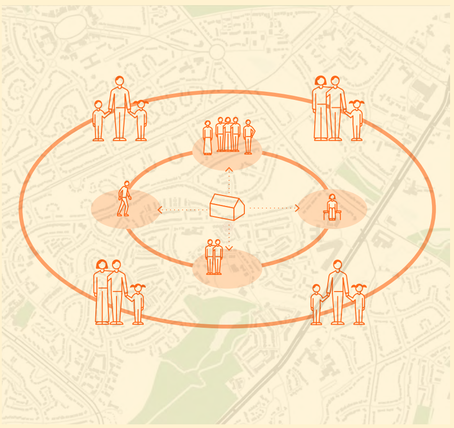
'When we lived in the same street – we were friends. But then they moved just a few streets away and then relationship slowly dissolved.'



Kartoffelrækkerne

Each street has a distinct social identity. The car-free zones in the streets serve as a gathering place for local adults and children.

'I have a good support network with my neighbours, would leave spare keys, do alarm checks and parcel storage but also am part of wider community groups and events; cricket club quizes, village class, bowling green, bar in cricket pavilion, bonfire nights'



4: Bring nature indoors

The ability to sense nature from the comfort of one's own home is critical for the rowhouse resident's well-being. This not only creates positive feelings, but it also contributes to residents' satisfaction with their home.

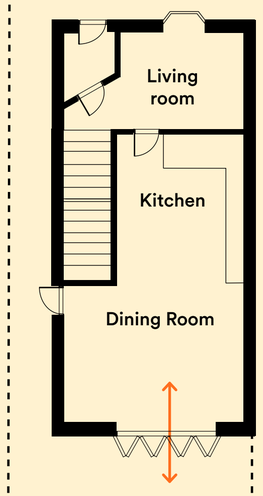
It is advised to bring nature into the home for a multisensory experience. Green views to the private garden or surrounding green areas, the experience of sunlight moving through the house, views to the sky, the sound of birds singing, or allowing fresh air into the room can all bring nature inside. The spatial orientation of living spaces adjacent to a private garden can play an important role in connecting people to nature by allowing them to open doors or windows. The orientation of the home is also important in allowing this experience, considering sunlight paths and which rooms are used at what time of day.

Learning from cases

Bournville

Bifold doors help connect indoor and outdoor spaces.

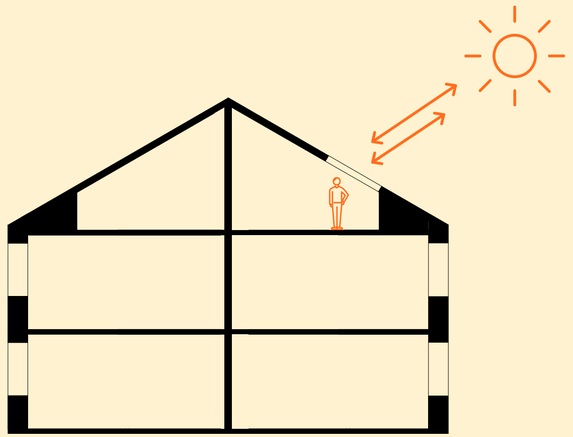
'The bi-fold doors between the extensions and the garden can be fully opened, blurring the inside and outside'



Kartoffelrækkerne

Because of its density, the top floor of the row house receives more sunlight and has an open view of the sky.

'My shopping need has completely disappeared after I moved here. You don´t get those stimuli all the time – of needs you actually don´t have. It is awesome to have a bit of garden. Something to nurture. It provides a bit of calm and and bit of joy.'



5: Making green spaces more accessible

The ability to sense the larger scale of nature between houses or in nearby green areas is critical to the resident's well-being. The case study revealed that people value knowing that they can rehabilitate in natural settings that are easily accessible by foot. This can take the form of a forest, a lake, a field, or a park.

Traveling to wilder natural places may not be a daily activity, so creating a natural experience in between homes is also important. As such, it is recommended to do both: locate the development near a green or blue area and incorporate natural elements into the public space.

Learning from cases

Bournville

Bournville Village provided a contrast to Birmingham's industrial heart and was one of the first industrial villages; Weoley Hill, as an extension, is an example of the UK's garden city movement.

'Green was a key thing in Cadbury's ethos, we have parkways, greenways and cutthroughs alongside more formal green spaces (Rowheath, Bourneville Green), you are surrounded by green'

Vindinge Nord

The cluster's density is perceived positively if there is a view and access to a larger green area nearby.

'We use the streets [kartoffelrækkerne] a lot as a zone between the city and the neighbourhood. "A walk in the "rows" in the evening.'

6: Maintaining adaptability

Adaptability means that homes can grow with your needs. A home that is adaptable is likely to increase the length of stay, allowing for the development of deeper relationships with neighbours. Adaptable elements in public spaces can also foster community and neighbourly relationships. The ability to change physical settings fosters a sense of ownership and pride in the home.

Based on what we learned from the case studies, homes should be designed to be flexible, allowing residents to easily make changes as their life circumstances change. Beyond the home, nearby public spaces are recommended to be defined as an area that residents can adjust to over time. This flexibility is intended to ensure that the space is activated for regular gatherings of residents, as well as to assign residents common responsibilities and tasks that will necessitate collaboration among them.

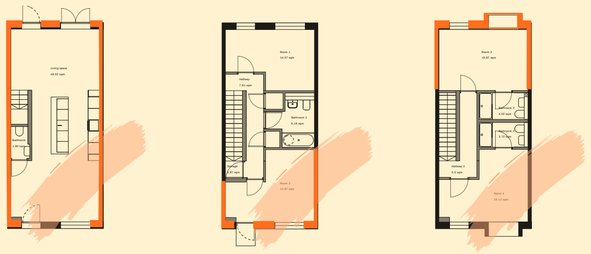
This dialogue is beneficial to both social relations among neighbours and residents' sense of attachment and belonging. It is critical that residents, regardless of tenure type, can adapt. Renters must be able to make changes in their homes and contribute to the adaptation of their shared spaces with their neighbours to foster a sense of belonging.

Learning from cases

Port Loop

Properties are purchased before they are built, so residents have the freedom to select internal layouts and finishes that suit their lifestyle.

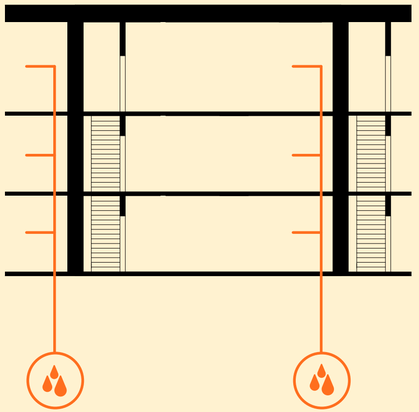
'Even though layout options were offered they were still pretty bland in terms of colouring so I worked with a designer to add colour to the house.'



Kartoffelrækkerne

The possibility of connecting to water, electricity, and ventilation allows residents to relocate the kitchen in the house.

'It is built in a way so we can live here as long as possible. There are no doorsteps inside and large bathrooms so you can get around with a walker.'



7: Creating a shared identity through history, culture or lifestyle

Whether it is a neighbourhood with a proud heritage, such as Bournville Village Trust or Kartoffelraekkerne, or a neighbourhood with a unique feature, such as the water tower in Magelse, the case studies revealed that living in a place with a strong identity increased residents' sense of belonging. The ability to live in a neighbourhood that establishes certain expectations, such as neighbourliness or maintenance, can also help residents develop a sense of identity.

Heritage architecture or heritage foundation principles add authenticity to this sense of identity, but this is also possible to develop in new developments. The findings from contemporary case studies demonstrated that co-creation is one method for fostering a new culture and thus building a shared identity in new places. The reuse of a heritage buildings or industrial structures is a spatial strategy to create a focal point for new community developments.

Learning from cases

Bournville

Many people are drawn to the Bourneville Village Trust because of George Cadbury's Quaker legacy.

'Cadbury was forward thinking, emphasised caring for workers and providing them with green space. It's a life giving legacy.'

Mageløse

The historical landmark on the site is used to establish a sense of place.

'The tower. It is a bit useless – but it is cool. It is cool to have a tower. Like an awesome Lego fortress. I don´t care at all about the history or the architecture.'

8: Using noise to promote cohesion rather than conflict

As earlier mentioned, privacy is essential for residents' well-being, and one of the most important ways to facilitate this is by providing quiet areas in the private space. The layout of the home, as well as sound insulation between dwellings, is critical to facilitating this. However, complete silence may not be the best thing for your health.

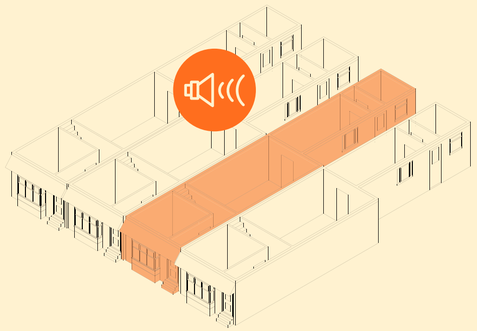
Results from the case studies have shown that positive sensory experiences can enhance residents' enjoyment of a space. The noise helped increase the enjoyment of private spaces in the home. Part of this may be fostering expectations around noise among residents, such as being considerate when playing music or throwing a party. The orientation of private rooms and the opening of windows to allow natural sounds, such as birds chirping, water droplets, or breeze through leaves, to enter the home and be experienced.

Learning from cases

Bournville

Living in a terraced house comes with trade-offs, one of which is noise from neighbours, especially in older properties.

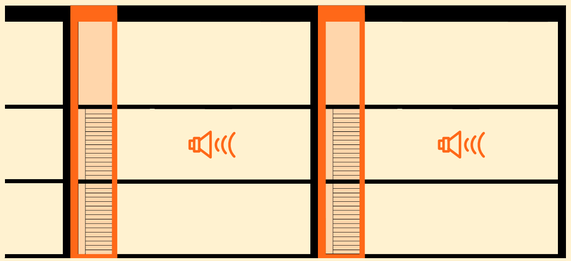
'I dislike a terrace because I have neighbours on both sides, I believe noise accounts for unhappiness. I use the extension more which is not connected to neighbours. But I do enjoy pleasant sounds from my neighbours e.g. beautifully played piano'



Kartoffelrækkerne

Placing the stairs against the wall between the units helps to create a sound barrier between them.

'I don´t have control over it. My mood completely changes if the noise ruins my perception of my place. "This is my castle" god damnit! I try to be zen about it – but I don´t think it is fair that you have to wear a head set for four years. It is a big source of stress for a lot of people. I am just a normal person with normal senses.'



Sound barrier

9: Making urban facilities easily accessible

Having easy access to frequently used facilities allows residents to live a more efficient and sustainable day-to-day life because more trips are made by foot or bicycle rather than cars. Local shops and services that are within walking distance from a point of residence increase the likelihood of neighbours crossing paths and bumping into each other, thereby increasing the possibility of forming and strengthening social ties. Along with shops and services, sports facilities and community spaces for classes and groups are also important, serving as informal spaces for building relationships.

The case studies demonstrate that, while the home environment is important in deciding where to live, the location and neighbourhood are also important factors in why residents choose to live and remain in specific areas. It is critical to consider how to get the most out of existing facilities. Can a library, for example, serve as a co-working space instead of constructing a new one?

Learning from cases

Bournville

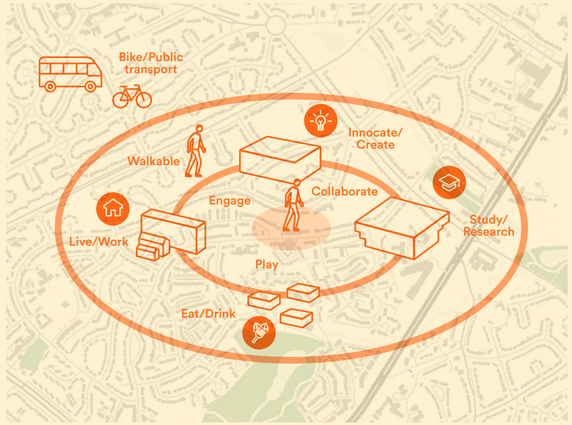
The neighbourhood has been designed to be walkable and to have services nearby.

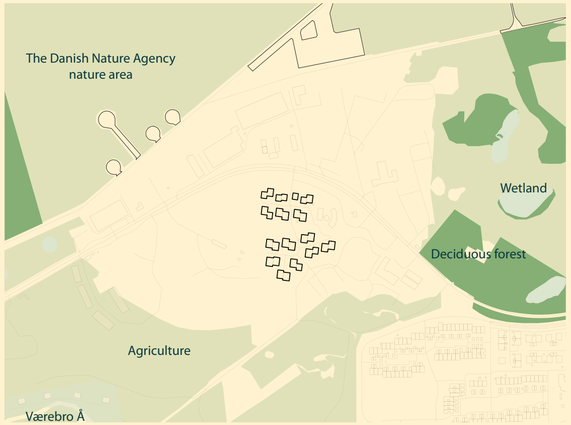
'I see Bournville Village green as part of my neighbourhood, it takes 40 mins to walk there but it is such a pleasant walk to get there'

Mageløse

The location criteria were to be near the local train station and to establish a nursery in the surrounding area.

'We are very home based. With a big alarming cross around Emmerys (baker). We are there a lot. Bread, coffee and yadada.'





10: Balancing accessibility and safety

Our homes and neighbourhoods are places for people to live and enjoy themselves. There must be a balance between allowing people access to private cars and vehicles, especially those with limited mobility. One option is that, instead of cars driving up to people's houses, parking is available a little further away, allowing people to walk the last stretch so children can play safely in car-free zones directly outside the home. Parking further away from people's homes reduces street noise and creates areas with higher likelihood of interacting with neighbours.

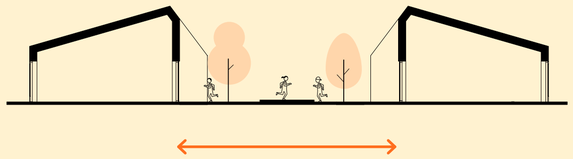
A spatial recommendation is to keep cars in a centralised garage in a neighbourhood that encourages people to walk to in less than five minutes. This can have several positive consequences such as reducing the number of parked cars on an open street to help mitigate the urban heat island effect; and it also frees up street space for greening, biodiversity, and long-term surface water management.

Learning from cases

Mageløse

Many residents want a car-free zone to allow children to play safely in the streets.

‘Something that really matters a lot is that we have made it car free. The only thing driving here are prams. It matters a lot for the feeling of connectednesss – and the sense of security and safety for the kids.’



Mageløse

A car-free zone can be beneficial to those in need of mobility assistance.

‘This car free thing, we are not certain that we will grow old here. It is pretty far from the parking lot to here if you have trouble walking. My husband has bad knees.’

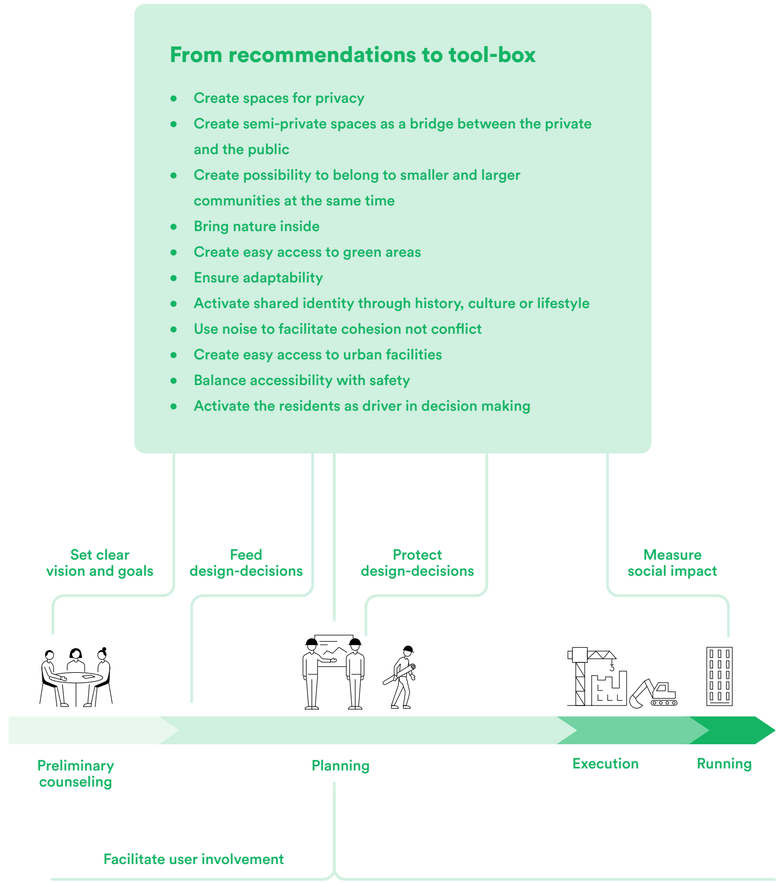
Toolbox

How can developers, planners and architects implement the findings in the design?

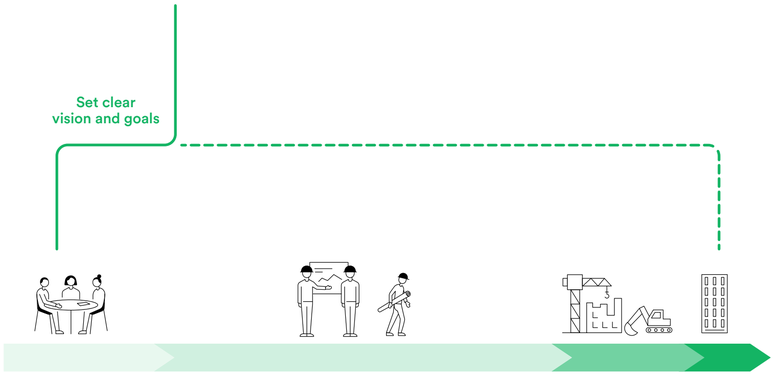
The five drivers and eleven recommendations can be used as a toolbox by developers, planners, and architects to create happier homes and neighbourhoods for all housing typologies. We recommend checking in with the drivers' and recommendations throughout the design process to ensure that all aspects have been considered. Here are some examples of how these can be used to inform the design process at various stages:

- Conceptual design: It can help identify the project's vision and formulate long-term goals, ensuring that it promotes well-being.
- Detailed design: It can be used to evaluate and execute design decisions. They can also serve as a guide for residents' participation.
- After construction: It can aid in the collection of data that can be used as evidence in determining the social value of a development and whether it is designed to promote well-being. Some recommendations can be used to generate questions for quantitative surveys or qualitative interviews with residents.

The following chapter sets out a toolbox consisting of questions across stages of development. Measurable goals can be formed at the conceptual design phase, and a post-evaluation questionnaire can help determine whether the home and neighbourhood were built to achieve a higher level of well-being. It is important to note that this is only an example and that the recommendations are contextual, so both may not be applicable for implementation across every location.



Conceptual design
- setting measurable goals



This page gives an example of how the recommendations can be translated to measurable goals in the conceptual design phase. It is important at this stage to determine what the design process will be and how it can help achieve the goals . Most of the goals can be used to inform all residential typologies, while some will need to be slightly adjusted to fit to other typologies than the row-house. Here is an example for a measurable goal under each recommendation. The percentage given is only an illustration. It needs to be adjusted according to the context and vision.

1. Creating spaces for privacy
Every resident has the option of having privacy in their living room at any time of day or night.

2. Creating semi-private spaces to serve as a link between the private and the public
80% of residents socialise with their neighbours in their front garden at least twice a week (when the weather is suitable).

3. Creating possibilities to belong to smaller and larger communities at the same time
80% of residents know the names of their immediate neighbours (smaller community).

80% of residents participate in a variety of social activities (larger community).

4. Bringing nature indoors
All residents can sense nature in their living room (in form of greenery, view or spectacular day-light).

5. Making green spaces more accessible
All residents have access to a green space within 8-mins of walking.

6. Maintaining adaptability
80% of residents see opportunities to modify the physical layout of their home, while **70%** of residents see possibilities to influence the physical layout of the public space near their home.

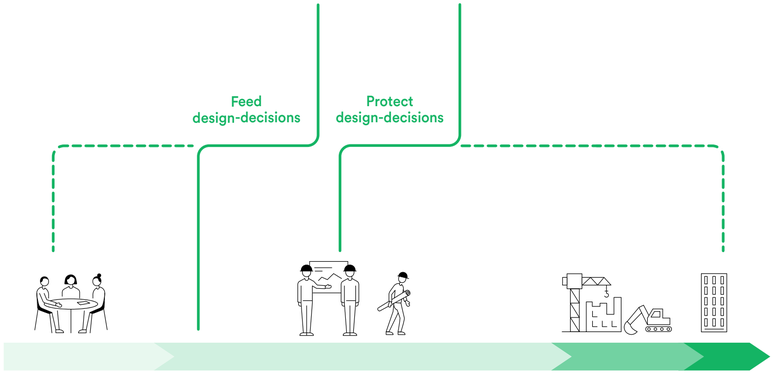
7. Creating a shared identity through history, culture or lifestyle
90% of residents are attached to their neighbourhood.

8. Using noise to promote cohesion rather than conflict
90% of residents do not hear noise from other houses/ dwellings.

9. Making urban facilities easily accessible
The city centre is accessible to **all** residents by a 10-min cycling distance or via public transportation.

10. Balancing accessibility and safety
Every summer, there are several children of different age groups playing in the streets.

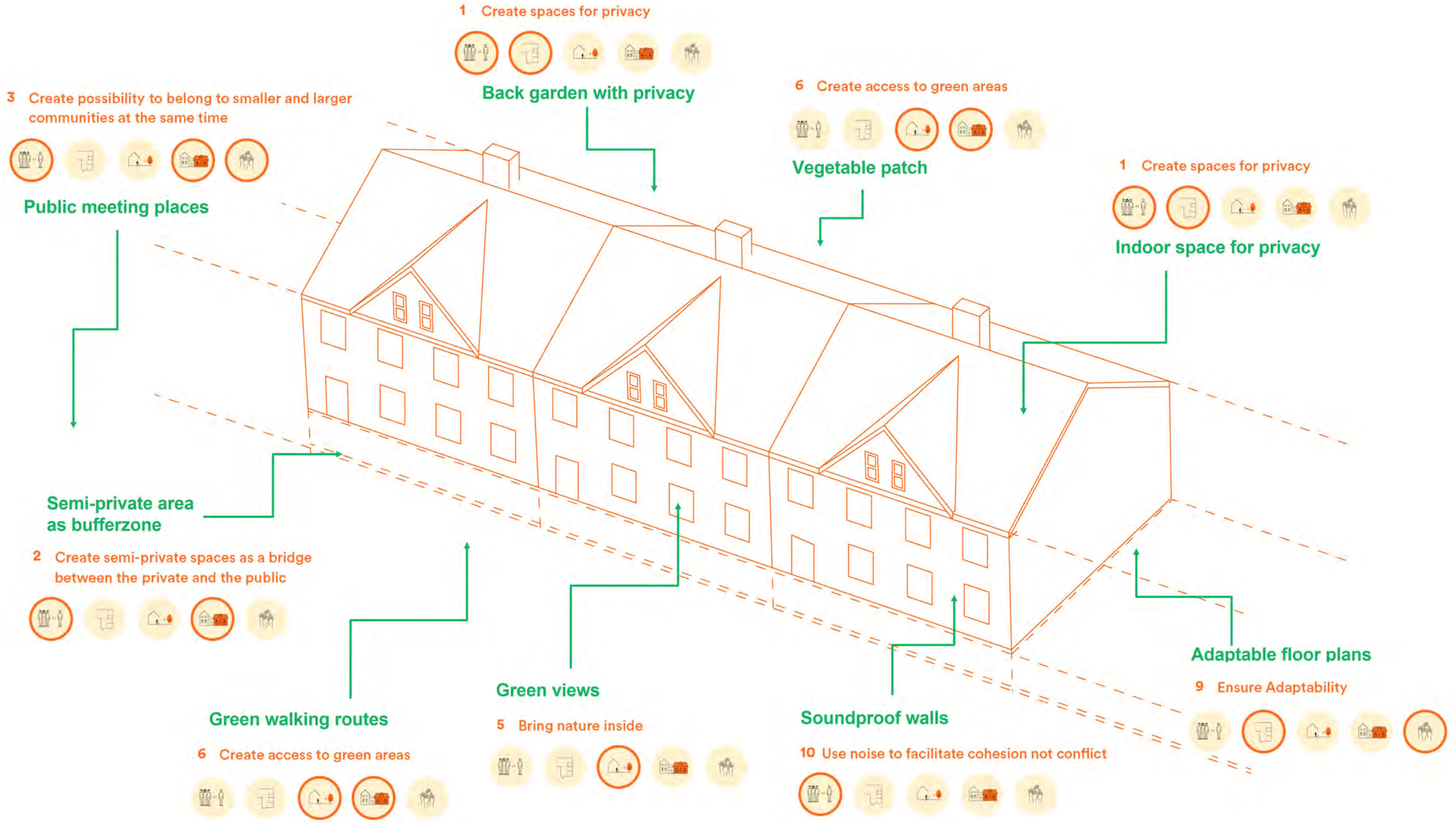
During construction
- feeding and protecting design-decisions



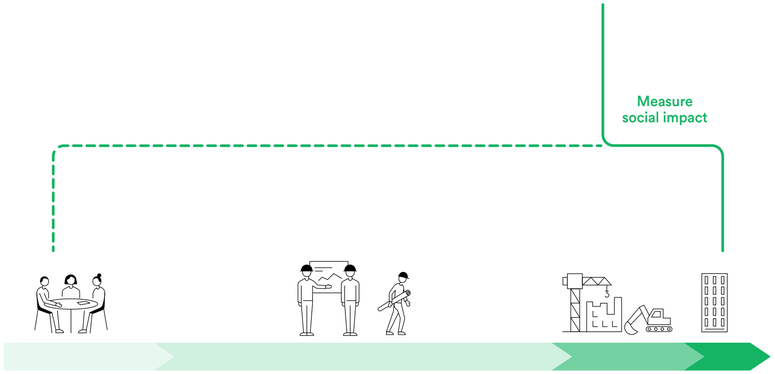
At the beginning of concept design, it is crucial to think about how the measurable goals for the house and the surrounding neighbourhood are incorporated into the design. Opportunities for incorporating the ten tenants can be tailored to each distinct development through workshops with the client, stakeholders, and the design team. For instance, designing a space with views of nature that connect with happiness at its core can also support designing semi-private spaces that acts as a link between the private and the public.

The necessary studies for each design intervention should be identified after the interventions have been chosen to be incorporated into the development. These could, for instance, take the form of research looking at how residents are affected by daylight in both visual and non-visual ways or how the introduction of green spaces extends the neighbourhood by 15 up to 40 minutes.

These studies set performance standards for each design intervention with the intention that they will be used in the detailed design and monitored during the construction phases. It is recommended to identify a happiness custodian who will be responsible in ensuring that design decisions made during a project's design and construction cycle are communicated to residents at project handover.



After construction
- measuring social impact



This page demonstrates how the recommendations can be translated into a questionnaire assessing whether the home and neighbourhood are designed to achieve a higher level of well-being. This questionnaire can be used by developers, municipalities, and architects who want to evaluate and measure the social impact of a development. It is recommended to conduct such evaluations at least one or two years after construction, giving residents some time to adjust to their new living environment.

Most of the questions can be used in all residential typologies, but some will need to be slightly modified to fit other than row-houses. The questions under each recommendation begin with a simple Yes/No question. This is followed by a deeper understanding of the qualities of the built environment and its placement in the home or neighbourhood. It is recommended that the questionnaire conclude with a section that allows for a qualitative understanding of residents' personal behaviour. The respondent may be asked to select one or more emotional drivers that best describe their feelings about the topic at hand (for example, space for privacy).

List of Emotional Drivers:

confidence / safety / pride / control / active / inspired / self-conscious / vulnerable / exposed / lonely / exhausted

If the list of emotional drivers do not apply, then the respondent may add their own.

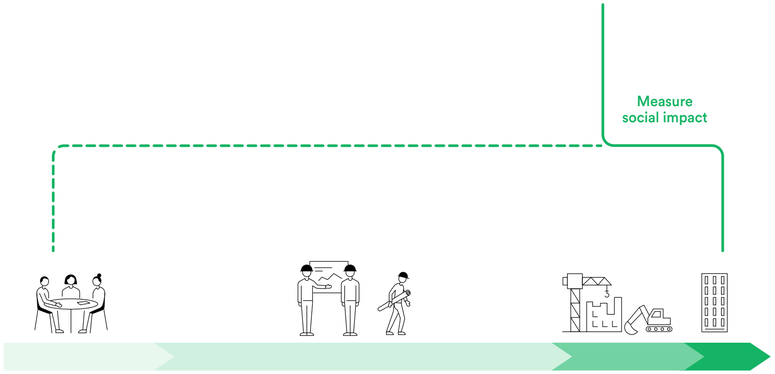
1. Creating spaces for privacy
Do you have the option of privacy in your home? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

2. Creating semi-private spaces to serve as a link between the private and the public
Do you meet with your neighbours in your front or back garden? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

3. Allowing people to be members of both smaller and larger communities at the same time
Larger community: Do you participate in planned and spontaneous activities with your neighbours? How often do you participate? Who are invited in those activities? Where and what physical elements enable it? What emotions does it elicit in those interactions? *(Choose one or more words described in the List of Emotional Drivers)*

Smaller community: How many of your neighbours know your name? How close do they live to your house? What emotions does it elicit in those interactions? *(Choose one or more words described in the List of Emotional Drivers)*

4. Bringing nature indoors
Can you sense nature inside your home? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*



5. Making green spaces more accessible
Do you have easy access to green spaces? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

6. Maintaining adaptability
Home: Can you change the physical layout of your house? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

Neighbourhood: Can you change the physical layout of the public space in your neighbourhood? Where and what physical elements enable it? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

7. Creating a shared identity through history, culture or lifestyle
Do you miss your neighbourhood when you travel? What do you usually miss? What makes your neighbourhood unique - any physical features? What emotions does it elicit in those spaces? *(Choose one or more words described in the List of Emotional Drivers)*

8. Using noise to promote cohesion rather than conflict
When you're at home, do you usually hear your neighbours? Can you cite some examples of the types of sound you hear from them? What is the (technical/physical) reason for the sound? What emotions does it elicit in those instances? *(Choose one or more words described in the List of Emotional Drivers)*

9. Making urban facilities easily accessible
Do you have easy access to urban facilities? How long does it take you to access them? Which facilities do you use daily? How do you feel about the experience of using these facilities? *(Choose one or more words described in the List of Emotional Drivers)*

10. Balancing accessibility and safety
Do children play in your neighbourhood? Where and what physical elements enable it? What emotions does it elicit in those spaces? (Choose one or more words described in the List of Emotional Drivers)

For all - Are you engaged in participating or arranging local activities? What was your influence? Any physical elements? How does it make you feel *(choose one or more emotional drivers)?*

Reflections

A happy home goes hand in hand with a happy neigbourhood

Our research reinforced the importance of thinking beyond the physical boundaries of our home. We often belong to several groups, such as our household, street, and neighbourhood. Our home is the house, street, and neighbourhood in which we live. Our ability to connect these elements impacts our happiness. The concept of a "complete neighbourhood", also known as the 15-minute city, 20-minute neighbourhood, or 30-minute community, has been gaining popularity among planners, policy makers, and communities. This concept provides communities with sustainable and equitable access to meet their daily needs.

Can this concept, however, bring happiness? According to the findings of this study, the answer is yes. Many respondents emphasised the importance of having easy access to daily services such as active modes of transportation, schools, grocery stores, green spaces, sports facilities, and public transportation. Ageing residents and those unable to drive a car spoke about the importance of this for their continued independence. The mainstreaming of remote working and the reduction in time spent commuting have changed the concept of working from home and further emphasised the importance of neighbourhoods.

By understanding that a ‘home’ includes the wider neighbourhood, there is a need to also consider alternative working spaces, such as coffee shops, libraries, and community centres. Putting emphasis on how we can incorporate these types of spaces enables us to connect with the larger community and reinforce our sense of place. A home, like the street, should be considered as part of a larger ecosystem that can contribute to delivering sustainability and happiness.

A happy home is a well-designed home

A multidisciplinary team of designers is responsible for bringing homes and neighbourhoods to life. A 2012 research at Linköping University in Sweden found that engineering students scored much lower than their medical counterparts when assessed for empathy. The study found that, as predicted, each group appeared to play to their stereotypes.

Engineers are frequently perceived as lacking empathy, and this is often accurate. While engineers are innovative problem solvers, the profession is frequently narrowly focused and fails to address how engineering design impacts people's happiness, well-being, and health.

The reason for this may be that the profession is geared to seeing the world through a lens of numbers and right and wrong answers. There could be a good reason for this; getting things wrong can have disastrous consequences. So we comply with regulations, codes of practice, and guidance to protect ourselves and the public. It would seem harder, and less evidence-based, for an engineer to design an environment based on feelings and emotions. This is traditionally the domain of architects, if considered at all in the design of buildings.

When designing a home and a neighbourhood, the regulations that govern design and construction, whilst well-meaning and with good intentions for safety and sustainability, are often counterintuitive and conflict with one another, as they are written in complete silos. There is frequently conflicting regulation regarding insulation, overheating vs. energy conservation, fall protection vs. openable windows for fresh air, and so on. The result of this well-intentioned regulation is that we design and engineer homes that sometimes make people unhappy and do not promote well-being. Engineers don’t traditionally consider the complete ecosystem of the home and how it makes people feel.

This is why we have embarked on this multidisciplinary study to find out what makes people happy in their homes. We have found that by thinking of "complete ecosystems," we can consider how engineers can create environments where people and nature flourish. Creating great daylight may mean more heating in the winter, but it can also help to regulate moods and reduce the probability of developing type 2 diabetes, all of which are more sustainable for society in the long run. If we are happy in our homes and neighbourhoods, we can improve outcomes for everyone.

This can be particularly good if focused on deprived neighbourhoods. Giving a teenager great daylight, air quality, and connection to nature can increase their alertness and productivity, thus improving their academic achievements in school. All of which can improve social mobility and lead to a healthy lifestyle and fewer medical interventions.

To embrace this different perspective, we may need to embrace other skills which may lie outside of the construction industry, such as psychology and human factors. Doing this may be uncomfortable as it often means letting go of the safety blanket of numbers, standards, and guidance. Minimum regulations and codes will meet only the most basic of human needs. Putting people at the centre of the design starts to go some way of "eco system engineering". By understanding that humans and nature are symbiotic with each other, we can design environments where both nature and people can flourish and be happy.

This study is only the beginning of our journey towards a more holistic approach to engineering where people and nature flourish.

Denmark and UK Collaboration

This research endeavour fits within a larger political framework in which there is a growing emphasis on well-being throughout the world. As nations strive to address some of humanity's most pressing issues, such as climate change, poor mental health, and inequality, there is a growing recognition that established models, whether economic or in the way we construct our surroundings, may no longer serve the purpose as effectively as they once did.

It is increasingly evident that traditional metrics, whether economic or design-related, are failing to reflect an emerging set of goals. We require a broader set of indicators to better represent a variety of goals, whether economic, social, or in how we construct for people and the environment to thrive.

Several countries in the western hemisphere, like the United Kingdom and New Zealand, have previously implemented national well-being programmes and well-being budgets. Simultaneously, this notion has reached the Nordic coasts, with Iceland and Finland emerging as global frontrunners.

As such, this research project is being conducted in an effort to examine the indicators influencing the design of our homes and environments. It builds upon an established body of knowledge that shows how the built environment affects our mental health. The impact of our homes on our happiness and wellbeing, however, hasn't been thoroughly studied.

One of the pioneers in this area is the Happiness Institute in Denmark. An international investigation was conducted as part of their "Good Home Report," which examined happiness across Europe, where it showed that our homes have a 15% impact on our happiness.

We felt it was crucial to maintain the global scope of this study. This gave us the opportunity to examine any potential national or cultural differences in what makes our homes happy. Although there are clear cultural differences in how we use space, we discovered that overall happiness factors are the same in the UK and Denmark.

Appendix

Methodology

The project was created in collaboration with three organisations: Rambøll (UK and Denmark), Henning Larsen (part of the Rambøll Group), and The Happiness Research Institute (HRI). The collaboration is based on the HRI's report 'Happy Homes' and Rambøll's employee survey on happiness in the home.

Data gathering and analysis methodology

Phase 1: Undertaking extensive surveys

For the study, five residential areas in Copenhagen and Birmingham were chosen. Residents in each area were asked and granted permission to participate in a 30-60 minute home interview. The survey's questions were organised into three categories: private, semi-private, and public. The questions served as a framework for the interview and allowed interviewees to compare results for each case study.

Phase 2: Identifying the five key elements and engaging stakeholders

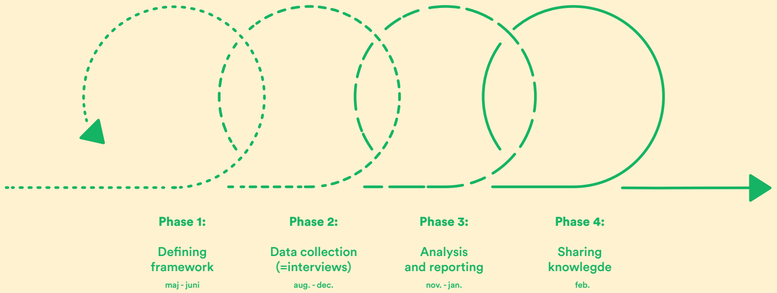
We identified five key elements within the home and neighbourhood that contribute to happiness by analysing the survey results. We solicited feedback from stakeholders in the United Kingdom and Denmark.

Phase 3: Qualitative analysis of the five most important architectural elements

After identifying the five key elements, we investigated what built or policy elements had contributed to these factors, which formed the report's recommendation.

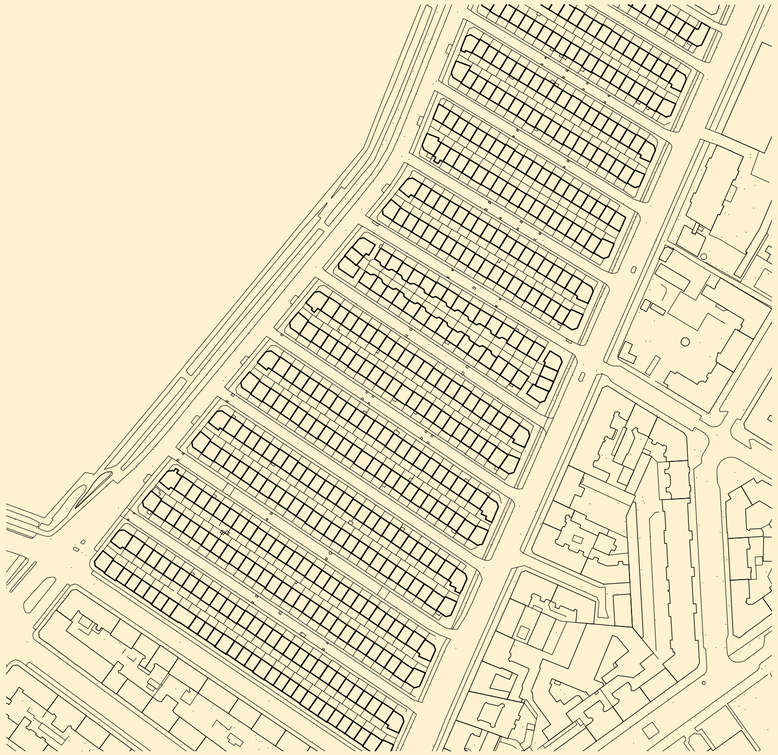
Phase 4: Creating a design manual and promoting how to design for happiness

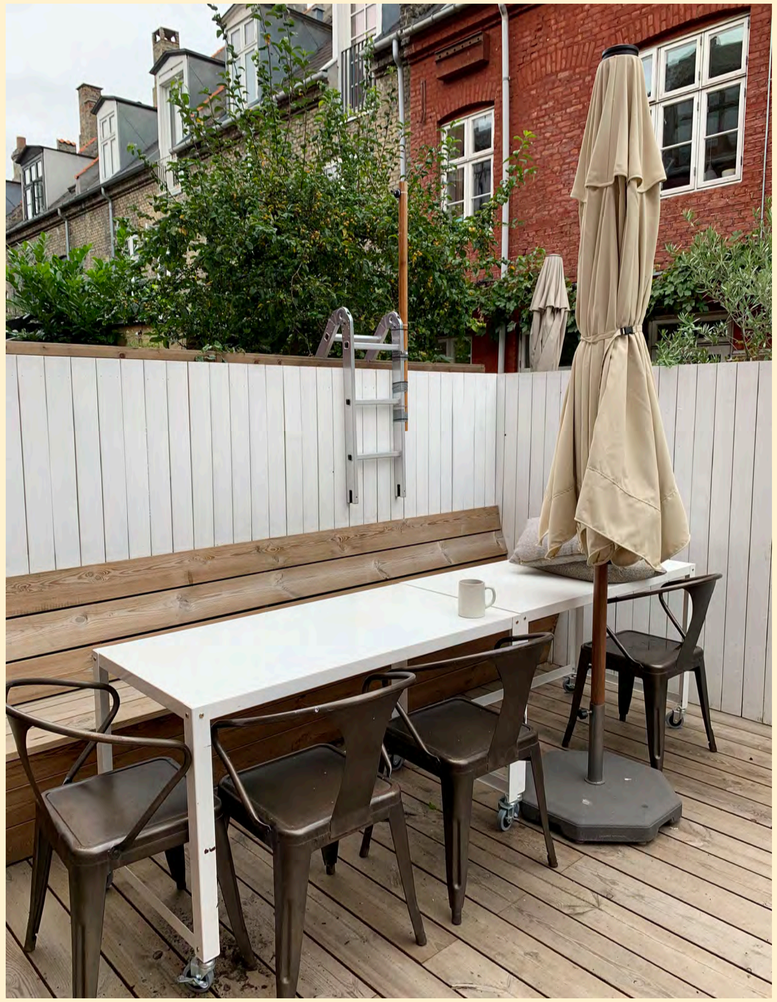
The study's final phase involved translating these recommendations into a toolbox that would allow the principles to be embedded throughout the design process.



Cases

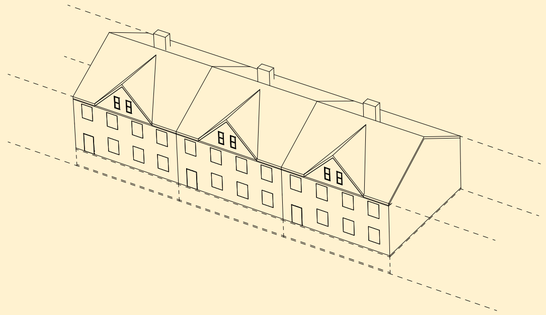
Kartoffelrækkerne, Østerbro

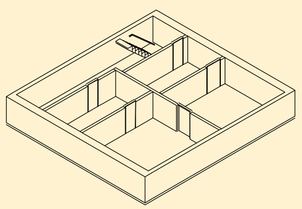




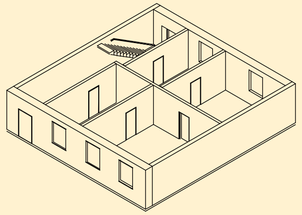
Cases

Kartoffelrækkerne, Østerbro

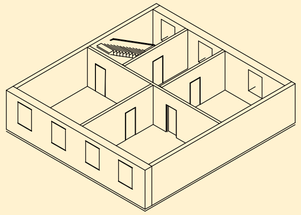




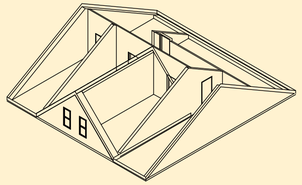
Basement



Ground floor



1st floor



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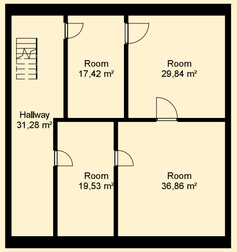
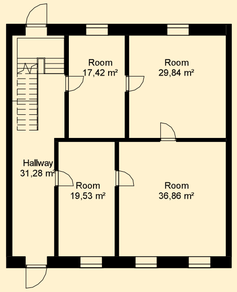
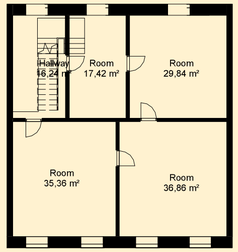
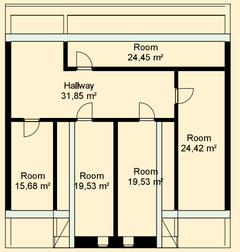


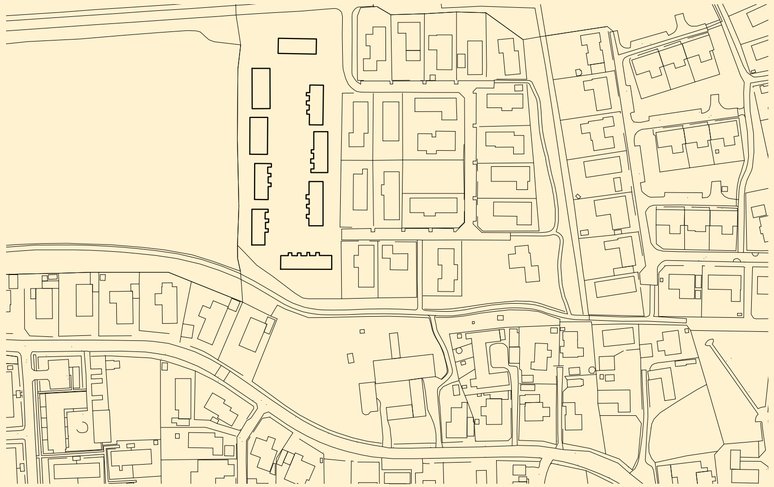






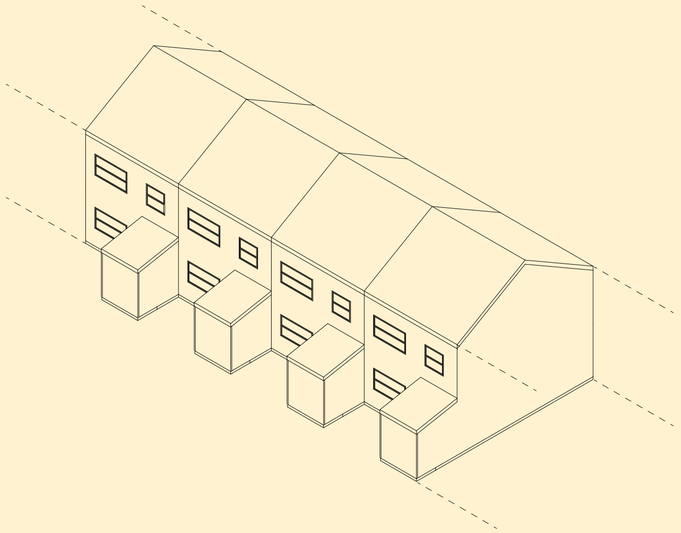
Cases

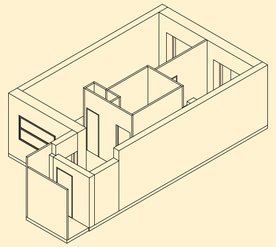
Vindinge Nord, Rosklide

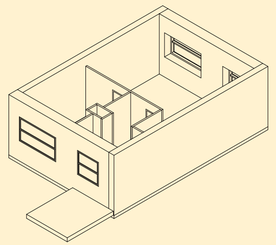


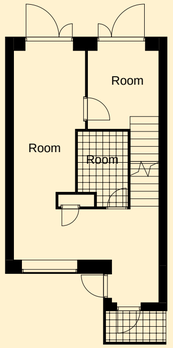
Cases

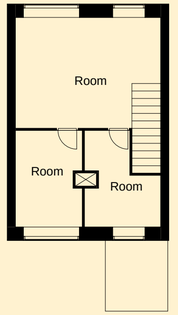
Vindinge Nord, Rosklide

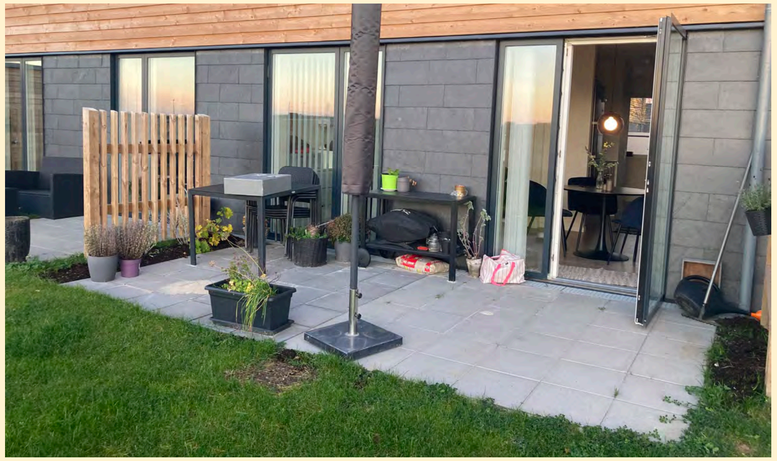










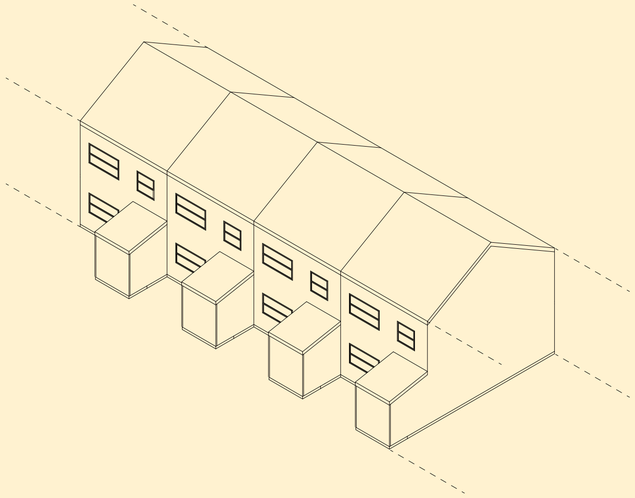


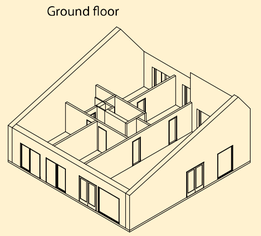
Cases

Mageløse, Verløse

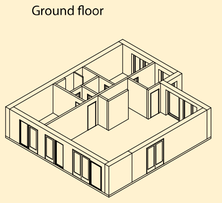
Cases

Mageløse, Verløse

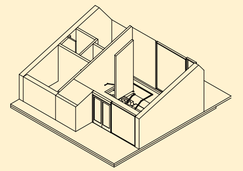




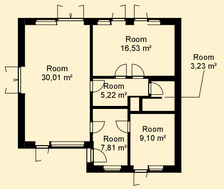
Ground floor

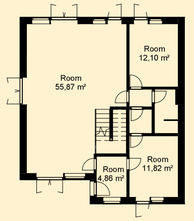


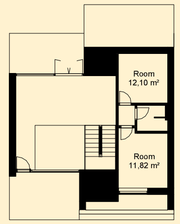
Ground floor



1st floor

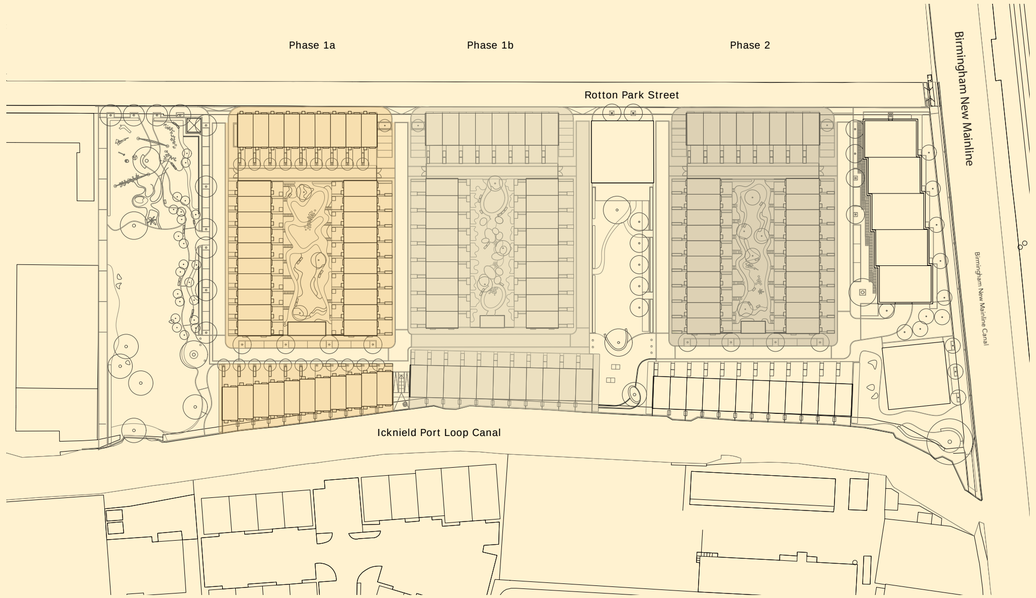






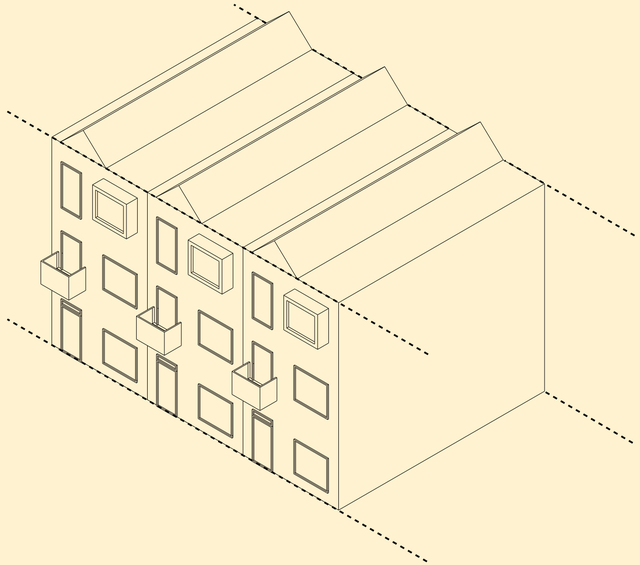
Cases

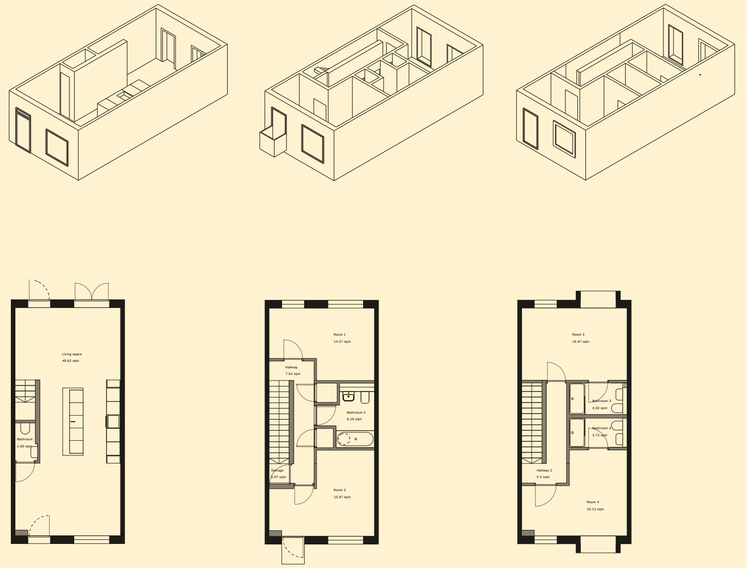
Port Loop, Birmingham



Cases

Port Loop, Birmingham



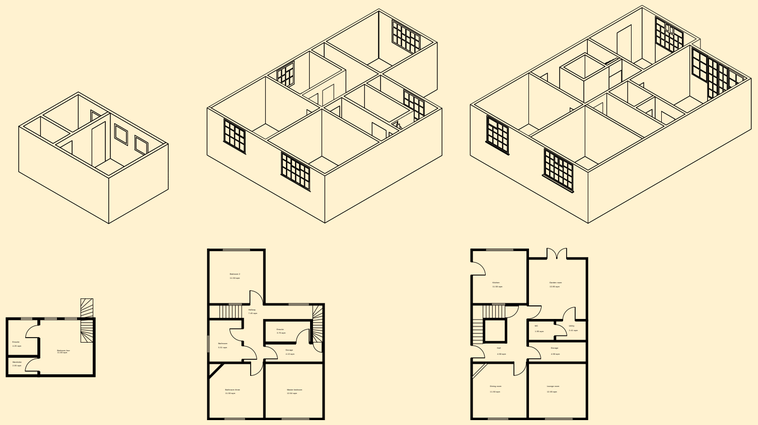


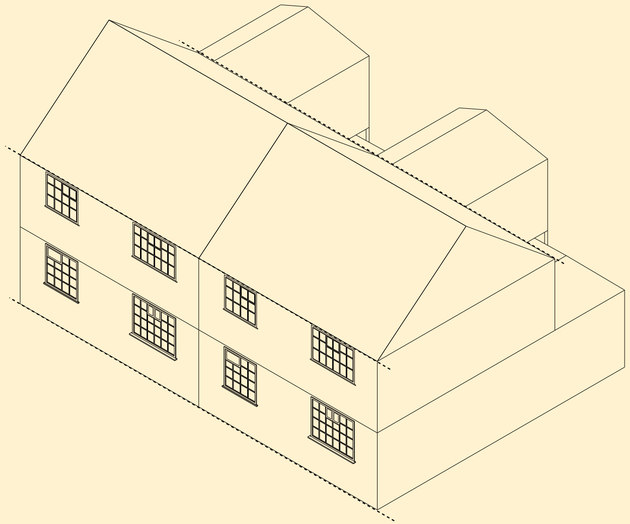
Cases

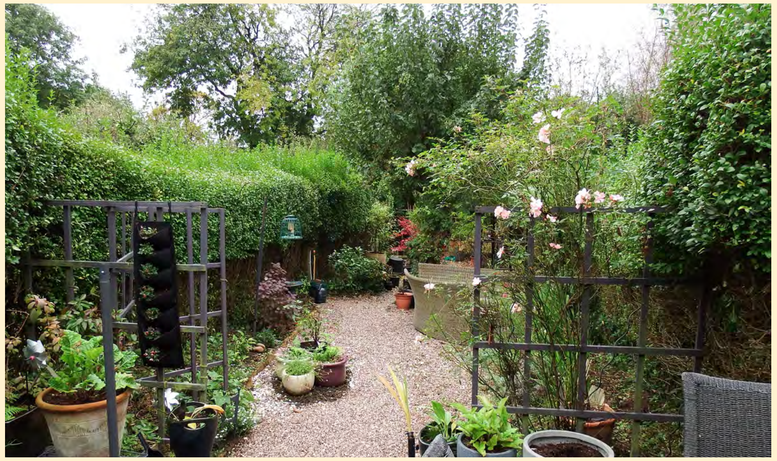
Weoley Hill, Birmingham

Cases

Weoley Hill, Birmingham







About the authors

Henning Larsen Architects

Henning Larsen is one of Denmark's leading architectural firms and has realized projects all over the world. Founded by architect Henning Larsen in 1959, the company is globally recognized for its aesthetic, sustainable and social architecture. Henning Larsen's many iconic projects include everything from standalone buildings to landscapes to large urban development projects.

Rambøll

Ramboll is a global architecture, engineering and consultancy company founded in Denmark in 1945. Across the world, Ramboll combines local experience with a global knowledge base to create sustainable cities and societies. We combine insights with the power to drive positive change for our clients, in the form of ideas that can be realised and implemented.

The Happiness Research Institute

The Happiness Research Institute is an independent think tank exploring why some societies are happier than others. The mission is to inform decision-makers of the causes and effects of human happiness, make subjective well-being part of the public policy debate, and improve overall quality of life for citizens across the world.