NSW GOVERNMENT

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Design for Wellbeing

How we design for and measure wellbeing in the built environment.

2023

Georgina Blix

Contents

Georgina Blix was awarded the Byera Hadley Travelling Scholarship in 2023.
Cover image: Little Island, New York
Photo by: Georgina Blix

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London Southbank Centre, You Belong Here Public Art programme inspired by artist Tavares Strachan

Introduction

This research is focused on how housing and our neighbourhoods impact personal and community wellbeing. It looks at mixed use areas of a thriving community where housing, business and community spaces bring together a wide range of ages, backgrounds and strengths. It aims to understand what is considered when we design for wellbeing at this scale, and how are countries across the world measuring wellbeing.

This report is pitched as a practical guide to start considering wellbeing in architecture. It has been written for anyone who is part of creating the built environment. Developer, planner, council, architect, researcher or member of the public; we all have a role to play in considering wellbeing of our community.

Typing 'wellbeing+ architecture' into Google can be a daunting task revealing a murky world of spas and lip service. This guide will help to make wellbeing in architecture more accessible, and more grounded in evidence and data. I also hope this work helps to break down the silos of thinking and research to help create fluid intelligence, and more systems based connections in this area of work. It will provide insight into the spectrum of research available, the current wellbeing regulatory context and help to identify some of the missing holes in our knowledge.

Wellbeing is a complex construct, unique to every person and collective. Whilst I would love to provide one definitive and simple framework that could apply to every situation, this research scholarship has shown me that may not be possible or even desirable. Instead, this research will provide practical insight on the best design processes that support wellbeing. It will provide inspirational case studies on projects that have focused on wellbeing and propose a more wholistic design framework for clients and architects to apply to their projects. This work will contribute to a rich ecosystem of research in this area, help us to avoid wellbeing washing and hopefully inspire even greater sharing of information across the world to tackle our common housing challenges.

Now is the time to jump on board, and find ways to contribute to create communities that positively impact wellbeing. Everyone has a part to play.

I am immensely grateful to the Board of Architects for the opportunity to travel across the world building a rich and supportive network of designers, thinkers and researchers working in this area. Through this research, I was struck by how many people working on this topic were genuinely passionate about making a better world by having a go, thinking with empathy and connecting to others. It is not every day that you are given the chance to delve into your passion area, find your tribe and feel excited to share your research. Byera has given me this chance, and I am so grateful.

Georgina Blix

Executive Summary

Have you ever described your precinct or development as thriving or vibrant? What do you mean by that? How do you define it, and what evidence do you have that things are working well in your community, and that design has played a part?

Where and how we live touches on some of society's biggest wellbeing challenges; loneliness, sense of belonging and connection to community. The OECD makes a compelling argument for the role of housing in wellbeing stating: "Housing provides space for socialising, studying, caring and working… Where people live has a foundational role in their quality of life, impacting the availability of jobs, health and education services, through to access to clean air, green space and recreational facilities."[1] Many cities like Sydney, Vancouver or London are facing a housing crisis including issues of housing insecurity, challenges with affordability, poor quality housing, and a chronic lack of social housing.[2]

It is also clear that the urban neighbourhoods that exist around housing have a clear role to play in wellbeing. Most of the community scaled wellbeing frameworks examined explore the relationship between walkability, neighbourhood trust and connection, access to open space, sense of safety and levels of community spirit or democratic participation. As we increase density, design plays a more important role in combating the perceived or actual sense of social disconnect, anxiety and lack of social trust. Social researcher Dr Hugh Mackay makes the case that the community scale is most important for overall wellbeing stating "We are suffering an epidemic of anxiety. Humans are social animals, we belong together and we need communities and neighbourhoods to nurture us. Our mental health depends upon being part of an engaged local neighbourhood. When that is not happening, it's inevitable that we pay a high mental and emotional price."[3]

The field of wellbeing research is relatively new in Australia and world wide. In July 2023, Australia released the federal governments first national wellbeing framework, one of a number of governments world-wide

responding to international calls to measure our progress in terms of wellbeing, not just GDP. In architecture, now more than ever is the time to engage with this topic and actively engage with world leading research and measures for wellbeing. With data, we can make informed decisions and help to advocate for the real social impact of our work. Design can contribute to the solutions.

Design for wellbeing as outlined in this research is both a process, and a design outcome. Our understanding of the design factors that influence wellbeing have come so much further than just universal design, daylight and nature. As Dr Kelly Watson notes, wellbeing outcomes in the built environment are more than health, comfort and happiness[4]. There is a need to look beyond our industry to draw from the latest in sociology, psychology and social sciences to find more robust definitions of wellbeing.

For the purpose of this research 26 interviews were conducted with a wide range of people across 10 cities in 6 different countries. Interviews were conducted with architects, academics, social value practitioners, and businesses focused on wellbeing definitions or measures. The industry around this topic, whilst fairly young is an interesting mix of everyone from neuroscientists to government policy makers to medical researchers. It is an exciting cross disciplinary research area focused on finding an evidence based correlation between the impact of the built environment and the design of housing on health and wellbeing for individuals and communities.

As we continue to design more housing, now is the time to consider best practice research into wellbeing. Every development has the opportunity to act as an intervention that can change a community. We invite everyone involved in design for our communities to consider how the development process, design priorities and the final social value outcomes of a project can champion the latest wellbeing science.

Common Stories

The Community   The Architect   The Developer   Government   Researchers

When design for wellbeing is working...

"This new building is different. I know my neighbours now. I feel connected to this community."

The Community

"I know my work can have a positive impact. It's empowering and meaningful."

The Architect

"Development is more than numbers, its about a legacy."

The Developer

"Wellbeing brings us together for a common goal. I can make policy to support that."

Government

"Clients are interested in the evidence and data we can create. The demand is there."

Researchers

When design for wellbeing is not working...

"Didn't I just give feedback for that development down the road? No one is listening."

The Community

"I'm engaged years before there is anyone moving in. Who do I consult for wellbeing priorities?"

The Architect

"I'm happy to challenge the status quo but I need the evidence to know this actually will impact wellbeing."

The Developer

"These silos of funding under health, education and development make it impossible to impact wellbeing."

Government

"No one is willing to pay for the research. But we need to start somewhere."

Researchers

Image Credit: Studio Alternativi

How this research can help you

About the author & acknowledgements

Tate Modern Garden, London

- **Developers and housing providers** can use this research to understand the impact of their developments in terms of wellbeing, the legislative context, and the risks associated with poor execution and wellbeing washing. It will also provide some insight to role wellbeing will play in procurement assessment, finance options and design priorities in the future.

- **Clients** can learn how to communicate their wellbeing priorities through their decision chain to ensure key wellbeing priorities are protected by everyone through the life of the building from designer to facilities manager and the cleaning staff.

- **Local government** can use this research to understand international examples of how planning policy can influence and incentivise wellbeing in housing.

- **Architects** can use this research to understand a more robust wellbeing framework, and advocate for design processes that support wellbeing. It can inspire your design teams to set a wellbeing vision, consult with the public, and consider ways to create evidence for the design elements that actual work.

- **Researchers** can use this resource to advocate for more funding of their work, understand the gaps in current research and inspire more collaborations between social value researchers, bioethicists, architects and their clients to truely measure the impact of development.

- **Architectural Schools** can use this research to advocate for forming long term relationships with the faculties of social impact, positive psychology and health medicine.

- **The public** can use this research to understand how they can set their own wellbeing priorities, and to provide meaningful feedback to any development that will actually impact their wellbeing.

Georgina Blix is the Director of Blix Architecture, a studio created in 2021 to focus on design for wellbeing. This architectural practice focuses on the design for wellbeing across urban design, affordable housing, education and mixed use developments. With a background in positive psychology, this practice aims to cross pollinate between the fields of psychology and architecture.

I am passionate about grounding practice in academic research, but also using architecture to test and experiment ideas in the real world. There are many terms for this type of work and research. Some of the best terms found in this research include: Pracademic (which for me means a practising architect with an academic research background), a pollinator, bridge builder, boundary spanner, mobiliser or translator.

Axamer Lizum, Austria, ECPP 2024 Conference

9

Commercial Drive, Vancouver

1

What is 'wellbeing' in the built environment?

Topics:

- Definitions of wellbeing
- A framework for wellbeing research
- People in this field
- Wellbeing washing
- Social value verse wellbeing

Wellbeing is...

The social value of architecture is in fostering 💜😊emotions, whether through connections with 🌱🌷🏞️🐦 or offering opportunities for an 🏃🧘🚴 lifestyle and in providing the 👩‍🌾 to pursue autonomy.

The Happy Homes Toolkit by Pollard Thomas Edwards

you can't put a *price* on people's lives.

DAVE. CAUGHT ON CAMERA

HEAR MY STORY →

Manchester Kampus Development by HBD and Capital and Centric, designed by Mecanoo

Wellbeing is a construct.

Wellbeing is a construct made up of individual and measurable elements that allow a single person or a community to flourish.[5]

The study of wellbeing, often referred to as positive psychology, is not just the study of being 'happy' but is about turning our minds to understand what is happening when things are going well. When communities flourish, what is happening? What political or policy context enables communities to do well?

Wellbeing is importantly more than the absence of 'ill health'. Whilst ensuring a building doesn't have mould is vital for health, it may not be enough for us to work and live at our best, for us to flourish. This research will consider both the positive and negative impacts of development on both mental and physical wellbeing for the individual and the community.

Wellbeing is influenced by where we live.

Understanding the influence of the built environment on wellbeing is complex web of psychology, behaviours, place, context and the environment. Its a lens to help us assess design and its positive or negative impact on wellbeing.

To date, wellbeing in architecture has been focused on buildings like hospitals with a specific health mandate, or workplaces where we spend a significant part of our lives.

For this research, the focus is on housing and communities. Whilst workplaces often bring together people of a similar education or professional interest, housing and the wider community can bring together a broader cross section of society. As we live in more dense and mixed-use communities, how can we bring everyone along in a positive society? Or as David Baker Architects ask "How can this building anchor, repair, or support this neighbourhood?".[7]

Whilst personal health outcomes can be influenced by everything from DNA to culture, the built environment does have a role to play and early research is suggesting that the neighbourhood can "have the potential to increase social interaction, the integration of diverse people, social support, civic pride, social resilience, and social and political involvement."[8] And the benefits are not just to individuals, but also for stronger communities

that can be resilient against man made or natural disasters.[9] Design for wellbeing in housing places 'human dignity at the center of design'[10] and understands that how we 'live in relationship to people and place shapes the broader character, health, and resilience of a city.'[11]

With a focus on equity and diversity this research includes not only traditional market models of housing, but also housing for vulnerable or disadvantaged communities. Designing to support flourishing communities in these typologies has both unique design requirements but also some useful lessons for all.

Finally as well as housing, this research will also look at the collective spaces that bring people together in the public realm. No single building can provide all of our wellbeing needs, but the complex ways we bring people together in 'third spaces'[12] such as public squares, parks, streets, and community facilities has a good chance.

"Our increased understanding of the built environment's effect on human health and well-being engenders an obligation for architects, developers, bioethicists, and community officials to act intentionally when creating the spaces in which we work, live, and play."[6]

Design for wellbeing is not...

It is not about wellness.

In our industry of built spaces, design for wellbeing is not interested in 'wellness'.
This concept, separate to the science of wellbeing is usually related to health retreats or spas. Whilst restoration is one part of wellbeing, it's commercialisation under 'wellness' doesn't equitably apply to large parts of society. Wellbeing is more complex that the individualistic benefits of a massage or yoga session. Whilst individual wellbeing, often improved through interventions like meditation are important, there is a growing acceptance that our focus for wellbeing needs to have a larger impact at the community and society scale.

It is not a tick-a-box exercise.

Wellbeing is too complex to be a tick-a-box exercise that allows us to provide one answer to help all projects.
Wellbeing is inherent subjective and unique to each individual and community. Diversity and inclusion underpin our complex, multicultural societies. Whilst we may learn what works in one community, there is no guarantee that solution will work with a different age group, nationality or political context. Research into wellbeing will continue to gain more evidence and data for what works. In the meantime we can prioritise design practices that reduce reliance on assumptions, and instead uses data and consultation to be contextual and responsive to place.

It is not only about nature and daylight.

This research should help our industry to move further than the wellbeing benefits of nature and daylight in our buildings.
The ways we can support individual and community wellbeing through design is rich and complex. We hope this work inspires a wide range of design ideas, ways to engage with the community and ways to measure wellbeing.

It does not add more cost.

This research is not able to cover all topics.

Toronto Humber Bay Arch Bridge

Design for wellbeing does not mean adding cost. In many cases this research reveals the design decision require thought, not money.
In some cases improved wellbeing outcomes can offer significant cost savings through either reduced health costs, improved efficiencies in health care (see the NORC research project) or the provision of social value.

This research focuses on how design of the built environment relates to physical and mental wellbeing of communities. Under the limitations of this particular research grant funding and time this focus on wellbeing has not been able to extend to many important areas of research like modern slavery, third world poverty and serious mental illness like depression and anxiety. Furthermore this research grant has been limited to English speaking countries, generally all considered well-developed and affluent. Whilst it includes some Indigenous frameworks, it also lacks further research in this area. We recognise this bias and hope to extend this research further in the future.

This research is in no way medical advice. We are all constantly moving along on a spectrum of wellbeing from ill health to flourishing. If anything in this research causes concerns or you would like some support please reach out to your mental health provider, or Beyond Blue.

Understanding wellbeing research

Research into wellbeing and it's correlation to the built environment can be understood as a study into the elements of wellbeing, the elements of a place, and the measures that indicate place is influencing wellbeing. All of these elements are influenced by the context in which we live and design.
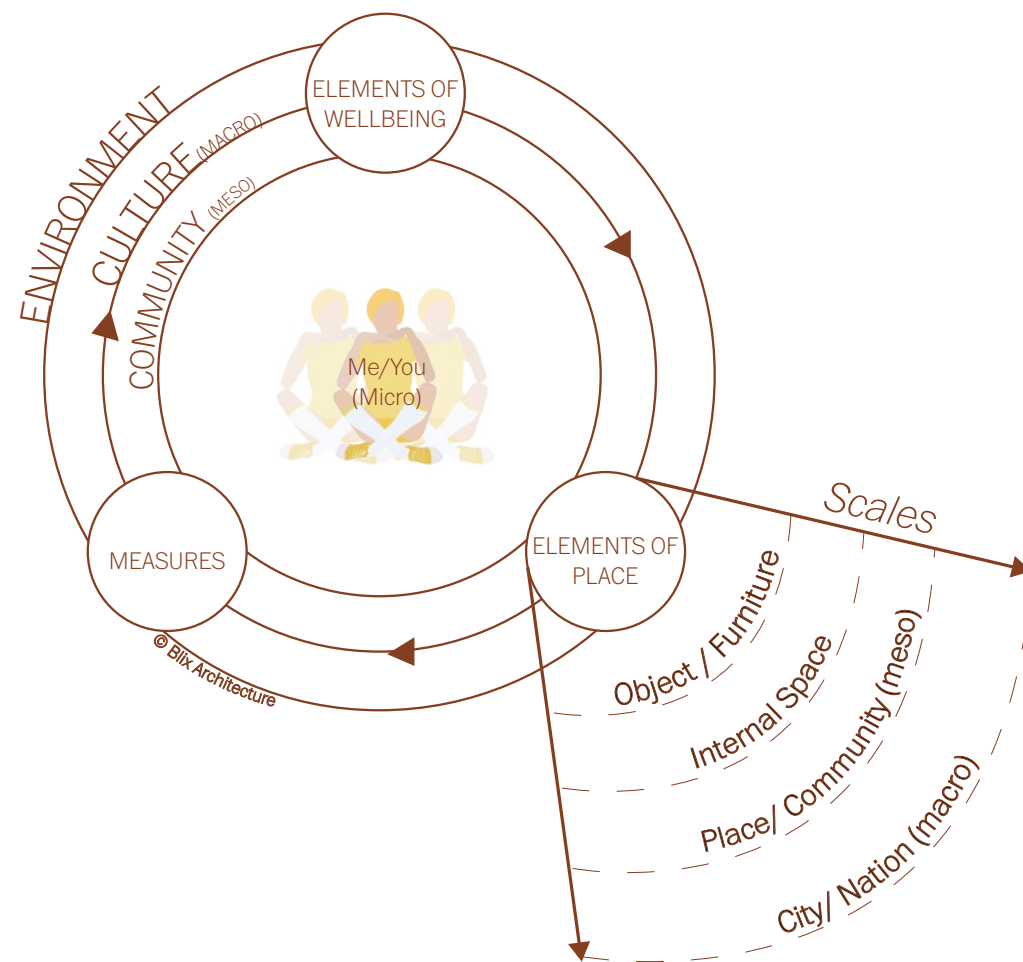
Wellbeing is inherently subjective. Western value systems may be focused on the individual, but increasingly we are studying the collective neighbourhood. For Indigenous cultures this key focus may be more oriented to the family, wider community or the wellbeing of the environment as the centre of all health.

Element of Wellbeing are the components that contribute to personal or community wellbeing. Examples include: relationships or sense of safety. Design can influence these elements creating an emotional, behavioural or physical response.

"Place is space that holds meaning"[13]. Meaning in a place can be acquired through experience, time and design. Study in this area is interested in the design elements of place that influence liveability, or impact feelings of wellbeing. These can be found at every scale of design from the furniture to the design of a city. The larger the scale, the more systems and networks can influence both design and wellbeing. The OECD calls out that the quality of the built environment is largely determined by place-specific assets, and that disparities in local areas wellbeing can in turn impact national wellbeing-outcomes[14]. For example,"in the UK, stark inequalities in life expectancies between neighbourhoods highlight just how much place matters, with strong evidence showing that the poorer the area, the poorer the long-term health outcomes."[15]

Measures that can articulate a change in wellbeing include data such as:

• Objective Data (Physical heart rate)
• Subjective Data (Self reported subjective responses).

Measures provide us with evidence for our design decisions. However rather than leading the design process, they should help us to find evidence for the changes in wellbeing that were intentionally targeted. The challenge is in finding and isolating the correlation between the change in wellbeing, and the design elements that contributed to that change. Dr Jamie Anderson believes that it's on researchers to provide stronger evidence for what works. Most often, studies of the built environment are 'post occupancy evaluation' snapshots; think data like, "These people walking in the park say they are happy." He argues that it's paramount to move beyond that and find stronger ways to demonstrate causality, providing enough evidence to make statements like, "These people are happy *because* they are walking in the park."[16]

All of these factors are influenced by **context (macrosystem)** including the unique group or network of people, cultural values and the environment.

(Diagram adapted from Bronfenbrenner's Ecological Systems Theory.)

The ecosystem of people in this field...

Wellbeing washing

wellbeing ecosystem ©Blix Architecture

WORLD HEALTH ORGANISATION

OECD BETTER
LIFE INDEX

NATIONAL
WELLBEING
FRAMEWORKS

BIOETHICS

POLICY

STATE BASED
FRAMEWORKS

CULTURAL
NEUROSCIENCE

LOCAL
COMMUNITY
RESILIENCE
PLANS

SALUTOGENIC
DESIGN

UN SUSTAINABLE
DEVELOPMENT
GOALS

THINKERS

BUILT
ENVIRONMENT

EPIGENETICS

SOCIAL VALUE

POSITIVE
PSYCHOLOGY

SUSTAINABILITY

NEURO AND
COGNITIVE SCIENCE

NEUROAESTHETICS

This research has revealed a rich ecosystem of researchers, thinkers and participants involved in design for wellbeing. Often bridging from other fields of expertise, these areas of research are increasingly looking at the built environment. **Some of these fields include:**

Cultural Neuroscience - the study on how culture shapes the brain.

Salutogenic Design - evidence based design strategies that promote health outcomes, traditionally applied to healthcare design but now referred to more broadly in architecture.

Positive Psychology - the study of human flourishing and wellbeing.

Epigenetics - the study of how environments influence our genes and how genes are expressed, particularly when we are young.[17]

Bioethics - the multi-disciplinary study of, and response, to the moral and ethical questions that arise in medical development.[18] Important as we start to consider the ethics of wellbeing in design and policy.

Neuroaesthetics - the interdisciplinary study that combined neuroscience, psychology and the arts (like architecture) to understand how art, beauty or specific architectural features affect people.[19]

Cognitive Science - the study of the mind, intelligence, including perception, problem solving and emotional experience.[20]

Like any industry starting to consider wellbeing there are inherent risks we need to consider. Wellbeing research is fluid and moving fast. Underlying ethics and values need to be protected. That includes values for democracy, diversity, accuracy and leadership.

Similar to 'greenwashing', wellbeing washing relates to companies that report on wellbeing without meaningful policies, culture or practices to support their claims. "This is a growing concern akin to 'greenwashing,' where organisations make deceptive claims about their social impact, thereby eroding public trust."[21] For design projects we are increasingly seeing developers claim benefits of improved walkability, sustainability and social connection, but often there is little evidence to validate these claims. "...Built space interventions that claim to improve social connection and health should be based on evidence that they do so."[22] In the UK where social value reporting is further developed, there is more scrutiny now on 'value washing', in particular 'holding organisations to account at the completion of projects.'[23]

Part of the challenge is to not rely on measures that have little relationship to actual impact. For example the money spent on a project, or anticipated wellbeing 'value' may not relate to the actual reality once the project is built. Good post occupancy data is needed to create accurate impact measures.

Other concerns include over claiming on potential wellbeing value, inaccurate calculations, or lack of transparency in measures or financial proxies that only professional consultants can understand that make accountability difficult.

Rainbow Park, Vancouver designed by
DIALOG

Social value verse wellbeing

"Are we focusing too much on measuring social value, rather than creating lasting change?"[24]

A common question through these interviews has been to understand if there is a difference between the term 'social value' and 'wellbeing'. According to Flora Samuel, there is. And the main difference comes down to how wellbeing is measured. Under the UK Government, Flora argues 'social value' has focused on the monetised translation of positive impacts. Money being the language of decision making in politics, business and budgets.

Dr Kelly Watson notes one of the challenges of this focus is the reliance on experts to makes the assessment and translation, particularly for social return on investment. In addition there is the use of hidden calculations or proxies, and a methodology rarely agreed upon between experts. Flora Samuel made the point this narrow application of 'social value', usually only measured at the beginning of the project as a forecasting tool is open to skewing measures to suit private interests, and a lack of genuine connection to community through the collection of data or measures. As discussed in this report, there is a lack of post occupancy evaluation data to see if these estimates are accurate or delivered.

So whilst the translation of wellbeing to monetary value is useful in some contexts, it is not always ethical or wanted in some communities. Whilst perhaps not the intention of this term, 'social value' is usually associated with money and not the wholistic topic of wellbeing.

It is also important to consider that when we discuss wellbeing or social value, it is more than the positive impact generated through the process of construction. Social value in the construction phase for example may include: youth employment, indigenous employment, supply chains, environmental impacts or construction

methodologies[25]. Whilst they are part of the wellbeing outcomes, social impact or wellbeing measurement will also be interested in the people who live in the development and their health and wellbeing, including sense of community, belonging, loneliness, health outcomes and place attachment. These factors will be influenced for decades after the building is finished.

So if you are involved with 'social value' make sure your definition is broad enough to consider all aspects of wellbeing, at all stages of the built form, and can consider techniques to measure wellbeing beyond just an economic translation.

See **Key Definitions** for more on social value.

Innsbruck, Austria

2
Frameworks, policies and research

388 Fulton, San Francisco by
David Baker Architects

Topics:

- Equity, diversity, affordability
- Elements of wellbeing
- Wellbeing frameworks
- Research project examples
- Planning policy examples
- Rating tools
- Australian policy context
- How wellbeing relates to Better Placed

Founding Principles ~~Dimensions~~ Themes

Underlying any wellbeing framework is a key assumption that wellbeing should be for everyone. Many of the government wellbeing frameworks including the draft NSW State Wellbeing Budget considers the founding principles of equity, diversity and affordability. Other frameworks like the Australian National 'Measuring What Matters' Framework include the cross cutting dimensions of inclusion, fairness and equity.

Mackie Mayor Food Hall, Manchester

Equity:

Equity is the concept that all members of society should have equal access to community resources, opportunities and wellbeing.[27]

The risk with considering wellbeing as a whole community is that we can mask differences in outcomes for different groups in society.[28] "It is well known that certain groups, or people who live in certain locations, tend to be marginalised and vulnerable, or worse off, in society generally."[29]

Most Government frameworks for measuring wellbeing will consider equity by ensuring it is possible to break down data to consider vulnerable groups and specific areas.

"Where equity thrives, so does social cohesion, resilience and respect."[26]

Diversity:

Diversity encompasses dimensions of race, ethnicity, gender, sexual orientation, socio-economic status, work experience, educational background, marital or parental status, income, age, physical abilities, geographical location, religious beliefs, political beliefs or other ideologies.[30]

When put into practice it does include 'active identification and removal of the barriers and creation of entry points' for a wide range of people's experiences, opinions, abilities, backgrounds and expertise is included in the process.[31] In architectural terms that may include removal of the subtle barriers that welcome different people into a building, or design concepts that consider a wide range of lived experience.

It will also include consideration universal design or inclusive design principles that promote the creation of spaces that are safe, comfortable, accessible and dignified for a wide range of disabilities. More recently this concept has broadened from physical disability to neurodiversity and gender equity. The base tenant is that there is a dignified personal choice to best meet a wide range of individual needs.

"Research shows that diversity leads to greater problem solving and creativity— we are better when we are diverse."[32]

Affordability:

A common theme through this research, particularly in housing, was that of affordability. Wellbeing for an individual is impacted by economic stress, housing unaffordability and the rising cost of living which was being experienced by most of the first world cities visited such as Sydney, Auckland, New York, London, Vancouver and Toronto. Financial stress can reduce choices and time. Time for healthy living choices like nutrition and exercise, to meet neighbours, to engage in activities that create social cohesion and restoration in our daily lives. Happy Cities for example states their research "…begins from the premise that affordable, secure housing choices are a crucial foundation for social wellbeing."[33] They make the point that "…**secure, affordable, and stable tenure in a safe home is an essential foundation for wellbeing**. Without a home that meets these core needs, it is much harder for people to nurture supportive relationships with neighbours and build a sense of belonging in a community."[34]

Any one of these themes on equity, diversity and affordability is a deep well of research for wellbeing. Some of the most interesting examples for housing and the public realm include:

- In New Zealand Dr. Karamia Müller of Māpihi - Māori and Pacific Housing Research Centre was examining a broad range of factors that influence wellbeing outcomes in housing for Māori and Pacific Islanders. Topics include transport equity, view equity (the ideas that views of mountains are cultural important but often unaffordable for these communities), housing affordability and intergenerational design in housing.
- The Just City Index[35] looks specifically at what would happen if we put the values of equality, inclusion or equity first. Their work includes values and indicators for how the city, neighbourhood or public realm can design and plan with urban justice at its core.

The elements of wellbeing

The following graphic is a working framework on the elements that can influence wellbeing (created with a conceptual focus on design of the built environment). These elements can apply to an individual or a group of people.

ELEMENTS OF WELLBEING

Me: "Is design for wellbeing just common sense?"

Flora: "Sure, but common sense has gone out the window..."[36]

PERMAH
towards flourishing
elements of wellbeing

Wellbeing Core Concepts

Foundational Needs
Healthy buildings
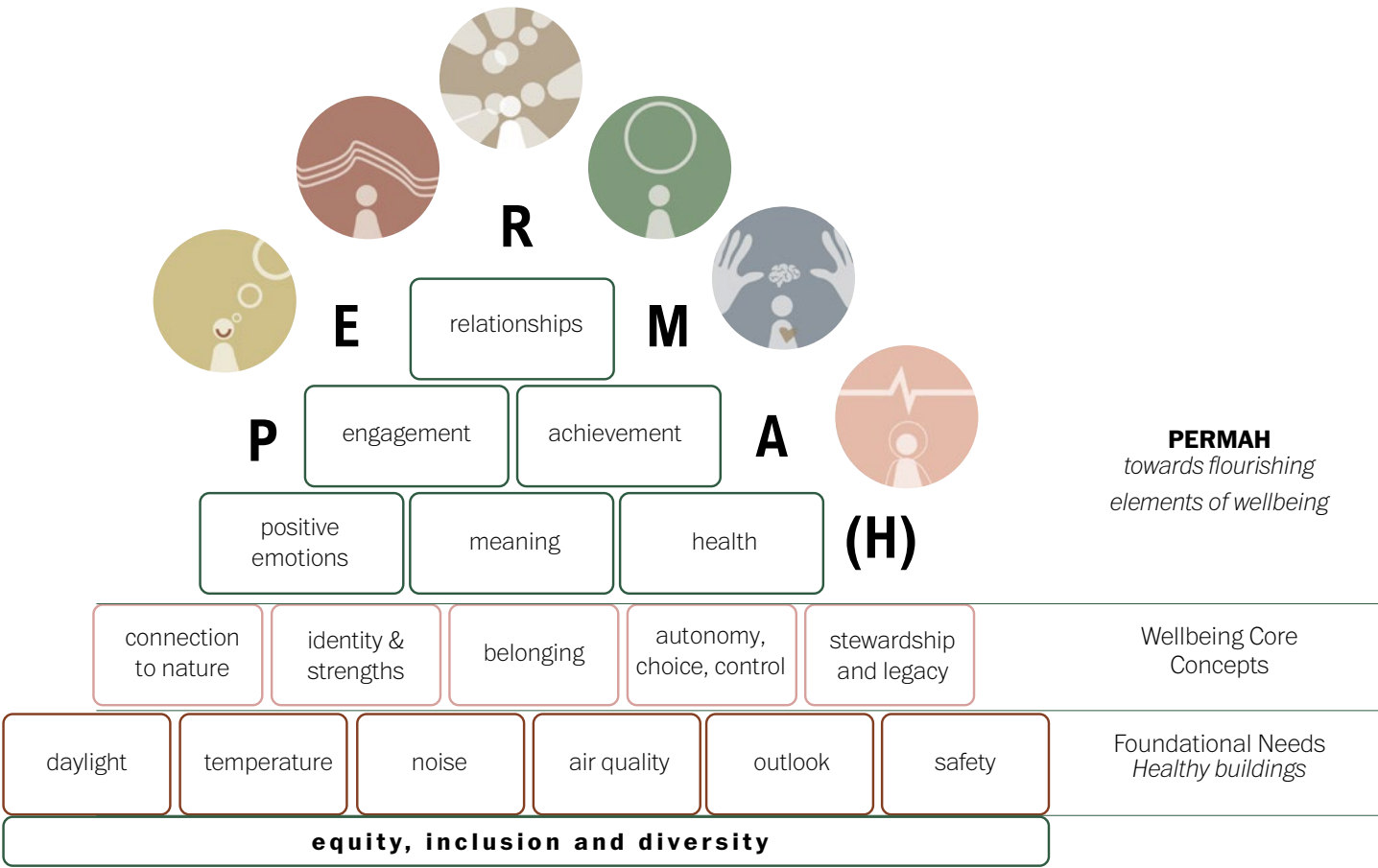
© Blix Architecture

Wellbeing Design Framework©

This framework is designed like a building with a bedrock of minimum needs and multiple levels of wellbeing elements that can influenced by design and architecture.

- The bedrock of this diagram is equity, inclusion and diversity.
- The foundation of any building is a healthy internal environment.
- Above that foundation we have core wellbeing concepts that will enhance the wellbeing of the greatest number of people. Many of these elements from positive psychology are core human needs that should be addressed in any space.
- At the top we have the PERMA(H) framework of elements developed by Martin Seligman[37]. These elements according to Seligman are the key measurable elements of wellbeing.

Despite the fact wellbeing is highly subjective and contextual, there are universal elements of wellbeing that apply to the common human experience. How these elements are prioritised or realised in a design will vary greatly.

Whilst these terms may be seem as vague, this in intentional. Other international wellbeing frameworks (see the following pages) provide a list of questions rather than answers, again recognising that there is no tick-a-box list of design features for wellbeing. Natasha's Place Quality Index aims to act as "springboards for cross-industry discussion rather than offering design as the single solution to multi-faceted and deeply complex

problems."[38]

Even creating this framework has seen my practice and research buy into our current industry obsession with definitions and measures for wellbeing. It was a sobering realisation from this research tour that perhaps this focus offers little value. In Canada, the US and the UK multiple people interviewed echoed the same sentiment that one singularly agreed definition and measure of wellbeing (or diagram) is not possible or even desirable. It is too complex and contextual.

So I suggest that whilst this graphic could be useful to start a conversation, it is also limited. Flora Samuel points out that classification is both ethical and political, temporal, a power construct that needs constant review.[39]

At a minimum this framework helps our industry to understand that wellbeing is more than providing air and light. We invite you to continue to challenge and review this framework. In the meantime use it to inspire great conversation with your community and the people on your next project.

The following pages will examine how other countries have sought to define and classify research on wellbeing in the built environment.

3 insights into wellbeing frameworks

Wellbeing frameworks have been created across the world to help define wellbeing, and outline the wellbeing considerations for housing and community design. They have been created for all different scales, from assessing the internal performance of a room, to an understanding of what works at the neighbourhood or national scale. The following key insights are drawn from the many international examples.

1. **The definition of wellbeing changes depending on the scale of the framework.**

Most frameworks drew on literature from science, psychology and other wellbeing research to identify a range of elements that influence wellbeing and could be considered for the design process and outcomes.

The elements used or the hierarchy of elements often shifted when considering the particular needs of a community or group of people. For example the Māpihi framework for Māori culture places family and community at the heart of wellbeing (not the individual). In that context, elements of land, affordability and improved housing quality are all focused on stronger family and community outcomes.

It is also important to note different frameworks have been created for all different scales of influence. Wellbeing frameworks at a national level will look at factors like economics and employment, which whilst part of the picture, may not be relevant for a single building.

2. **Most of these frameworks focus on a design process that supports wellbeing.**

Due to the subjective nature of wellbeing, many frameworks such as the Dialog Community Wellbeing Framework or Natasha Reid's Place Index were created as set of provocations and open ended questions to start a rich discussion. They ask community, rather than assume community priorities. And they do this in a language that is understandable to the broader public.

With this focus on consultation, the frameworks create a design **process** that supports wellbeing. Community engagement, participation, ability to influence their community (agency and voice) combined with tools for ongoing maintenance for high quality spaces often had just as much impact as the design itself.

Many frameworks then outlined a process to measure these impacts through surveys, interviews or mapping techniques. Finally some frameworks take the step to outline social value with monetary metrics.

3. **These frameworks rarely provided design guidelines for wellbeing.**

This means most frameworks did not prescribe the look or feel of a design to 'ensure' wellbeing outcomes or provide design standards. All of them avoided design for wellbeing as a 'tick-a-box' exercise. This is for good reasons. For one, it is clear that wellbeing is highly subjective to a community, context and culture. What works in one place will not universally work in another. Furthermore, as DIALOG[40] identified, design cannot guarantee an outcome. This determinism where an architect states "I provided a community room, therefore community will form" can be derailed by so many factors such as programming, perceived sense of agency over the space, relevance to the community, or maintenance.

The next few pages outline some key international examples of wellbeing frameworks.

Wellbeing framework examples

Scale: Cultural Group
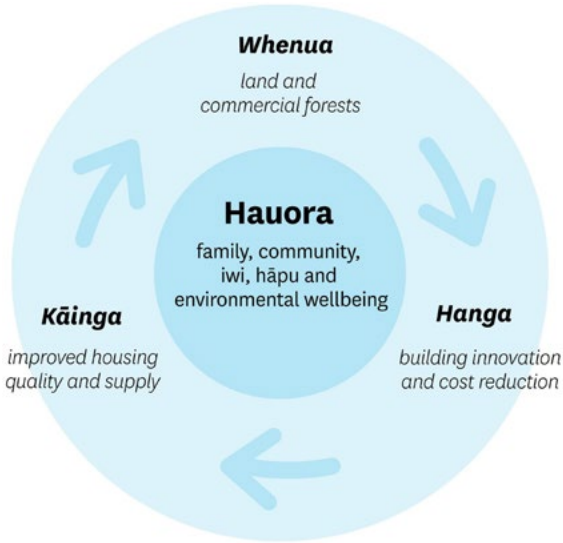
Māpihi – the Māori and Pacific Housing Research Centre, Auckland, New Zealand

Interviewed: Dr. Karamia Müller, Co-Director

Intended Use by: Anyone interested in providing or understanding Māori and Pacific whānau housing.

Indigenous concepts of wellbeing differ from Western perspectives. This framework places the community at the heart of Māori and Pacific whānau healthy, sustainable and affordable housing. Dr. Karamia Müller provided an insightful interview. She outlined one example where she asked a developer how they considered multi-generational design. The developer replied that his project was 'not affordable housing.' This western perspective demonstrates the underlying assumption that culturally sensitive design is considered only relevant to affordable housing. Multi-generational living is in reality, a key factor in many cultures, and an important aspect of community wellbeing, diversity and inclusion. Multi-generational design also improves the ability to stay in an apartment or house for longer as life circumstances change (family growing, visiting relatives or aging in place), strengthening social connections and community trust over a longer period of time.

Scale: Neighbourhood

Quality of Life Framework, London, UK

Intended Use by: Developers, Designers, Policy Makers, Researchers, Communities

The Quality of Life Foundation is a UK charity "committed to improving people's quality of life by changing the way the housing industry and government acquires, plans, designs, builds and manages homes and neighbourhoods"[41]. They provide research and best practice guides including a 'Quality of Life Framework' which provides an evidence based framework for housing and the neighbourhood with 6 key themes (see above). It is a useful tool for architects but also for communities to help define their own definitions of wellbeing.

In May 2022 they also issued the findings of their preliminary research on these themes[42]. This evidence helps build the link between housing, the neighbourhood and wellbeing outcomes.

Wellbeing framework examples

Research projects examples

Scale: Community

Scale: Place

Scale: Building (typology)

Scale: Building

Community Wellbeing Framework by DIALOG and The Conference Board of Canada, Toronto, Canada, 2018

Interviewed: Antonio Gómez-Palacio, Lara Pinchbeck

Intended Use by: Architects and design teams

This particular framework has been developed to be used by architects, urban planners, landscape architects, interior designers and engineers with a focus on the physical environment and its link to community wellbeing. The Framework is set up as a series of questions or provocations to be used a 'design-thinking methodology'[43] rather than a certification or post occupancy evaluation system. The framework is structured around 5 domains, and offers a wholistic, design-focused approach to community wellbeing. The aim is to use this tool with the community or client to "facilitate decision-making around design options; and enable the ongoing life of a project to continue to contribute to the wellbeing of the community."[44] Antonio discussed the future iterations of the tool will focus on neurodiversity, how to tie in mechanical sensor for objective measurements, and how to improve the language to be even more accessible.

Place Quality Framework by Natasha Reid, London, UK

Interviewed: Natasha Reid
Intended Use by: DArchitects, designers, developers, and the assessment teams eg Council

Natasha Reid identified that raising expectations in the planning permission system could have the biggest impact for improved wellbeing through built environment design. Drawing from environmental psychology, neuroscience and anthropology, this place-focused tool is based on three key themes. Each theme is explored through a series of questions that group the expectations by baseline, good practice and leading practice. As the project scale increases in size and complexity there is an expectation that higher levels of 'leading practice' concepts are integrated into the project to impact quality of life. There is a particular focus on understanding the needs of a community to inform the decisions made, a focus on ensuring the benefits are equitably shared across community. This tool has been formally adopted by the first London borough in 2023; Brent Council, an area with high growth with around 340,000 residents. There is a public health evaluation team currently studying the impact of this type of tool on wellbeing outcomes and systemic change, with results due in late 2025.

NORCs - Toronto, Canada[45], 2024

Interviewed: Howard Abrams, Emma Clayton Jones, Dr Paula Rochon

This project is a unique 6 year research collaboration between the NORC Innovation Centre (UHN) and the Women's Age Lab (Women's College Hospital) with the City of Toronto and City of Barrie looking at naturally occurring retirement communities (NORCs) in Ontario. In these buildings over 30% of the residents are older adults (over 65), mostly women, naturally clustering together. This research will explore how to best provide efficient health care and wellbeing outcomes to these existing communities. They are studying the effects of different programmes that help to promote social connection, physical activity and nutrition. And finally they are finding ways to harness the natural inter-generational connections that can occur in these buildings as a way to tackle loneliness that is affecting all age groups. This project is unique in having Dr Paula Roch from the Women's Age Lab leading a team of researchers on the objective health outcomes of this project, for both the older female residents and the health care providers and caregivers. This unique study is scalable and its findings will be transferable to many countries.
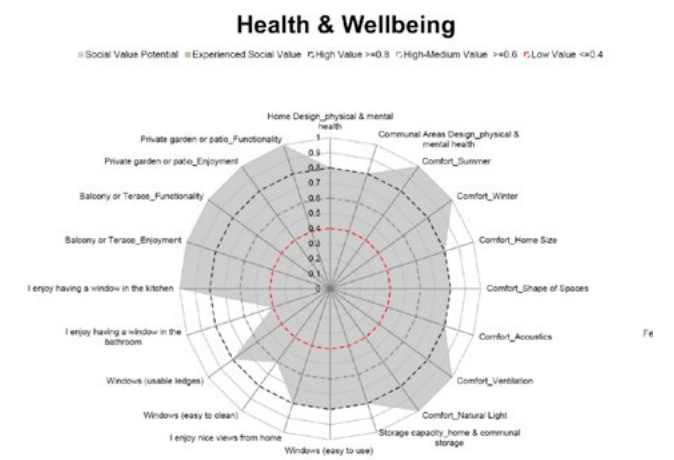
The Happy Homes Toolkit by Pollard Thomas Edwards - London, 2024[46]

Interviewed: Gloria Vargas Palma

The Happy Homes Toolkit Project (HHT) is a two-year research project currently underway that explores how homes can be designed to ensure long-term benefits to residents' quality of life. This is a unique research project focusing on the scale of the 'home' and understanding more fully what contributes to wellbeing in the design of an apartment. Through interviews and visits to residents' homes, Pollard Thomas Edwards (PTE) is building a data bank, in collaboration with a Knowledge Transfer Partnership (KTP) with the University of Reading and Cambridge University, to show how spaces stimulate positive emotions in those who inhabit them. Not only have they used consultation with industry experts, architects and researchers, they have also consulted with community to define wellbeing, create the toolkit and then find out the answers. The extensive database they are creating will help create a baseline for data, and then create a toolkit, ideally with BIM plugins to allow architects to understand the social value 'potential' of the design, then measure the actual experienced social value once finished.

Research project examples

Scale: Building

Happy Cities and Hey Neighbour Collective - Vancouver, 2024

Interviewed: Madeleine Hebert and Michelle Hoar

Happy Cities and Hey Neighbour Collective along with SFU have been part of a three year 'Building Social Connection'[47] project in 2023/24, working with planners from five municipalities and one First Nation to create research and design policies to support social wellbeing in multi-unit housing. It is an amazingly robust and thorough research project linking policy, evidence, community feedback and design guidelines.

The newly released toolkit "seeks to rebuild social connection back into our lives through the design of the homes we live in, with a focus on multi-unit housing."[48] They make the point that whilst many policies require communal space, there is very little design guidance on what actually promotes social connection or creating welcoming spaces. The result is often spaces that lack comfort, functionality or flexibility meaning they are rarely achieving their intent.

Because residents, property managers, landlords, and local governments all have a role to play in fostering socially connected multi-unit housing communities, Hey Neighbour Collective has also created guides for how each of these players can support creating these types of communities.[49]

In New South Wales, Australia the Apartment Design Guide (ADG)[50] is a unique policy providing mandatory design guidance on multi-residential buildings, including minimum area requirements for social spaces like communal outdoor open space. This design toolbox goes further to include clear guidance on how indoor or outdoor amenities could be used (shared laundries, music rooms, bookable guest suites, co-working spaces, bookable meeting rooms, tool libraries, pet areas and sport equipment storage), where they should be located, and how to design it in a way that invites people to use and activate it. They are developing a more robust set of design criteria that can make these spaces more successful.

The result was a set of 10 evidence-based principles for boosting social wellbeing in multi-family housing:
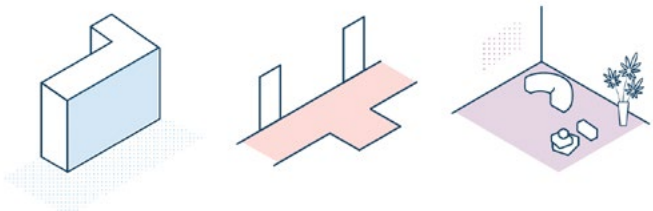
Social building edges	P. 30	Social circulation	P. 38	Social amenities	P. 48
Transition zones	P. 32	Lobbies	P. 40	Indoor amenities	P. 50
Building entrances	P. 34	Corridors	P. 42	Outdoor amenities	P. 54
Publicly accessible spaces	P. 36	Nooks	P. 44	Bicycle spaces	P. 58
		Stairs	P. 46		

Wellbeing planning policy example

Scale: Building

Active Design Guidelines, **City North Vancouver - 2015**[51]

A number of groups in Vancouver and New York referenced local examples of active design guides as the precursor for further wellbeing policies.

These guidelines are generally council endorsed guidelines, with the objective to support daily physical activity and social interaction in buildings, particularly in high density buildings. In the case of North Vancouver, "the Active Design Guidelines are used in the review of all rezoning applications for new developments with greater than 10 residential units and/or greater than 1,000 m² of commercial, industrial or institutional floor area and are intended to be consulted early in the design development process."[52]

Interestingly the design guide provides developers with incentives such as GFA exclusions for key design features that support active use or social connection, such as staircases designed in a way that are accessible, visible from the entry with signage to encourage use, and glazing at each level. These incentives were aimed to help ensure these spaces for social connection didn't increase the cost of housing.

In 2024, Happy Cities, Hey Neighbour Collective and Simon Fraser University assessed the impact of these guidelines on the 14 buildings.[53] They reported generally positive feedback from developers, architects and residents with key findings such as:

- Innovative built projects
- Praise for the flexibility of the design approaches
- Praise from developers for the incentives
- And overall residents reported an appreciation of the shared, communal spaces provided they were "designed to be comfortable, convenient, and easily accessible."[54]
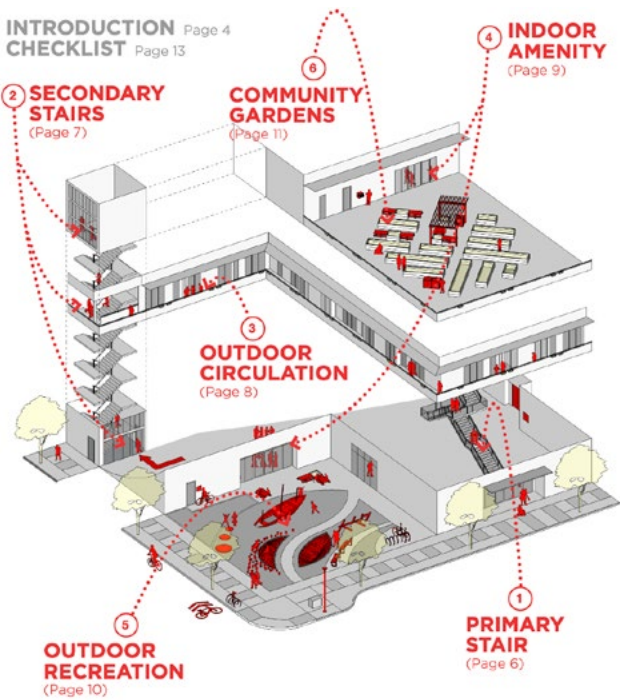
Driftwood Village by Cornerstone Architecture

Wellbeing rating tools

Accreditation or rating tools are valuable for creating third party, independent measures for wellbeing, and creating a more wholistic framework for developers and clients to understand wellbeing. Their leadership has helped to galvanise design for wellbeing as a credible industry particularly in the design of workplaces.

There are ten concepts in WELL v2:

AIR   WATER   NOURISHMENT   LIGHT   MOVEMENT

THERMAL COMFORT   SOUND   MATERIALS   MIND   COMMUNITY

Name: Fitwel[55]

Interviewed: Zachary Flora
Scale: Real estate owners or companies with a portfolio of buildings
Intended Use by: Designers and clients

Fitwel was originally born out of academic research with the U.S. Centers for Disease Control (CDC). With this background, many of the 40 available design strategies are focused on active movement (walking, cycle, public transport), healthy food options, internal environmental performance, emergency preparedness and overall tenant satisfaction.

This tool provides design guidance through 40 different strategies that clients can pick between to gain a unique score card for either existing or new buildings. The goal is to consider built form improvements over time, so that wellbeing design considerations feels achievable as a journey.

This 'pick your own adventure' system can be more flexible, responsive to community feedback, and allows people to find solutions that would work in their context and budget. Zachery Flora, like Flora Samuel felt design for wellbeing is not just common sense, and rather it required a dedicated focus on people and their experience of space. Just providing space for wellbeing is not enough. For example use of a stairwell for active movement can be radically reduced by poor cleaning or the sense that is was a poor second choice.

He noted that external accreditation often holds value for the community, who appreciate the third part accreditation for the process.

Name: WELL Building Standard[56]

Interviewed: Whitney Gray, Matthew Maycock, Minjia Yang
Scale: Building or company portfolio of buildings
Intended Use by: **Designers and clients**

The International WELL Building Institute (IWBI) has created a WELL Building Standard (WELL) that aims to help buildings and organisations consider intentional spaces for health and wellbeing. Created mainly for the workplace, there is again a key focus on internal environmental performance. WELL @ scale will help companies with large portfolios of buildings to consider wellbeing and alignment with company wide ESD strategies. Alignment to larger government policies like the UN SDGs will also be a key focus moving forward.

It is worth noting that whilst WELL provides the accreditation process, independent assessors (trained in the tool) to do the assessments. This is another way to avoid wellbeing washing. For this reason, IWBI are not able to collect and collate data for broader industry findings, however they also noted this is something that might make participants reluctant to take part in the surveys. They also noted, often companies were reluctant to share correlating wellbeing data like productivity or absenteeism data or to ask more sensitive questions like those regarding staff loneliness. So whilst having health insurance tied to the employer has allowed for a rich workplace tool in wellbeing to develop in the US, it is also limited by this context.

Whitney Gray made the observation that in broader architectural industry the real challenge now is not to create one off research case studies, but how to make wellbeing scalable or replicable. How can we harness digital tools like GIS to spatially analyse the building and its context in terms of health and wellbeing? In reality companies, particularly with large building portfolios need a tool that is accessible and replicable.

Society, Barbirolli Square, Manchester

Wellbeing policy in Australia for housing

The following page provides a high level overview of the different government policies regarding wellbeing.

International

International frameworks such as the OECD 'Measuring Wellbeing beyond the GDP'[57] and the UN Sustainable Development Goals (SDG)[58] have firmed placed measurement of wellbeing part of the political landscape. This includes UN SDGs for 'Good Health and Well-being' as well as 'Sustainable Cities and Communities'. Not to mention a number of environmental climate focused goals and one for gender equity, all of which has a place in the built environment.

International frameworks like these have a role in setting a high level agenda and areas of focus for government reporting. This has led to the development of national wellbeing frameworks, and budgets to help track progress with 'quality, accessible, timely and disaggregate data'[59]. Some clients and companies will want to align their activities to the UN sustainable development goals.

The OECD review of the built environment specifically calls out the domains of housing, transport, urban design/landuse and technical infrastructure.[60] Often these larger frameworks have a critical role in articulating the lack of equity and affordability in the built environment and the impact of that deprivation on wellbeing. For example it outlines the importance of access to public transport, the role of water and sewerage, and the basic requirements of affordable, uncrowded housing.

National

National governments have since started to consider the OECD and UN requirements by creating national wellbeing frameworks that measure progress on wellbeing along with GDP. New Zealand was first in 2019, and since then countries such as Scotland, Wales, Finland and Iceland have already begun to move well-being to the centre of their policy-making.

 Australia released its first National Wellbeing Framework, 'Measuring What Matters'[61] in 2023. The policy is intended to inform government decision making including policy development and evaluation. As creators of the built environment, we expect to start to see this framework influence the types of projects government invests in, and the evaluation of their value and success. This first attempt to define a flourishing community can also provide built environment creators with insights to what makes a better place. Key areas include sense of belonging, safety, social connections, and creative and cultural engagement.

 At a national level, Wales is of particular interest, where not only have they created indicators to measure progress, but have also enshrined the work in legislation creating the Well-being of Future Generations (Wales) Act 2015 which requires Welsh ministers to set national indicators to assess progress towards achieving the 7 wellbeing goals.[62] That in turns helps to fund projects like Flora Samuel's work on the Isle of Anglesey[63], which is working out how to operationalise and measure wellbeing at the place scale.

It is also interesting in Australia to have the National WHS Legislation - Psychosocial hazards legislation which requires business to consider safe work places from risks including psychosocial hazards. This places mental and physical wellbeing at the core of safe business, including the design of workplaces. We are one of the only countries in the world to have legislation such as this.

State

Zooming in - State Governments in Australia have started to consider how their own wellbeing frameworks can inform treasury spending and prioritise projects. Definitions of wellbeing can vary at this level based on the community consultation process. For example the ACT wellbeing framework[64] includes the aspect of 'time' (time for quality of life, work/life balance, unpaid care or time commuting). This is not in the NSW draft framework, released in 2024.

Ideally these frameworks are able to spatially map their wellbeing indicators to understand areas of inequity. Key areas for the built environment, similar to the national framework include:

- People being supported to make the best decision for the health and able to lead active lifestyles.
- Vocational education delivers the skills that people and business needs.
- Safe communities.
- Communities that are prepared for and resilient to disasters and emergencies.
- Creative and cultural sectors are sustainable and growing.
- Communities are diverse, engaged and cohesive.
- People, businesses and communities are connected through safe and reliable public transport with access to digital services.
- A secure and sustainable transition to a circular economy and Net zero.
- Natural resources are used productively and sustainably.
- The environment and our heritage is protected, enhanced and enjoyed.
- Communities and businesses reduce emissions and adapt to the impacts of climate change.

Local

At a local level there are a number of interesting plans working at the community scale that may consider more localised issues for wellbeing including:

- Flood and disaster resilience plans

- Local and affordable health food options (production and supply)

- Community engagement plans for community participation and agency

- Local heritage and community identity including contribution to cultural events

Ideally data collected at the local government level is more granular, and specific to the demographic and locality.

City of Sydney Community Wellbeing Indicators 2024

How does wellbeing relate to the GANSW 'Better Placed' Policy?

Good design is described by Better Placed[65] as both a process and an outcome. It is the same for wellbeing. And good design has an impact on wellbeing.

The NSW Government Architect's Better Placed document makes a case for how good design is related to 'appealing, liveable and successful' places for our communities. It highlights the connection between health and the built environment and the role of places in not only addressing chronic health concerns, but also creating flourishing, safe, comfortable and vibrant places for people

Each of the Better Placed objectives can relate to distinct bodies of research into wellbeing.

There are some new areas of wellbeing research we could consider feeding back into Better Places objectives including:

- A stronger emphasis on connection to nature and its positive impact on health and wellbeing.
- Experiences of flow or engagement in the built environment.
- A stronger focus on the direct health impacts from connected, active, nutritious places.
- Inclusion of spaces that celebrate achievement, volunteering, all ages education, and play. This will link more strongly to the new national wellbeing framework.
- The role of places that support: creativity, humour, joy, curiosity, gratitude, hope and spirituality in forming flourishing communities.
- A stronger focus on the practices of consultation and co-design which are vital for autonomy, democratic participation and community wellbeing.
- A stronger look at what diversity means in design including topics like inter-generational design, cultural design and neurodiversity.

Yerba Buena Centre for Arts, San Francisco

Seven distinct objectives have been created to define the key considerations in the design of the built environment. Achieving these objectives will ensure our cities and towns, our public realm, our landscapes, our buildings and our public domain will be healthy, responsive, integrated, equitable, and resilient.

OBJECTIVE 1. **Better fit** contextual, local and of its place	OBJECTIVE 2. **Better performance** sustainable, adaptable and durable	OBJECTIVE 3. **Better for community** inclusive, connected and diverse	OBJECTIVE 4. **Better for people** safe, comfortable and liveable	OBJECTIVE 5. **Better working** functional, efficient and fit for purpose	OBJECTIVE 6. **Better value** creating and adding value	OBJECTIVE 7. **Better look and feel** engaging, inviting and attractive
Good design in the built environment is informed and derived from its location, context and social setting. It is place-based and relevant to and resonant with local character, heritage and communal aspirations. It also contributes to evolving and future character and setting.	Environmental sustainability and responsiveness is essential to meet the highest performance standards for living and working. Sustainability is no longer an optional extra, but a fundamental aspect of functional, whole of life design.	The design of the built environment must seek to address growing economic and social disparity and inequity, by creating inclusive, welcoming and equitable environments. Incorporating diverse uses, housing types and economic frameworks will support engaging places and resilient communities.	The built environment must be designed for people with a focus on safety, comfort and the basic requirement of using public space. The many aspects of human comfort which affect the usability of a place must be addressed to support good places for people.	Having a considered, tailored response to the program or requirements of a building or place, allows for efficiency and usability with the potential to adapt to change. Buildings and spaces which work well for their proposed use will remain valuable and well-utilised.	Good design generates ongoing value for people and communities and minimises costs over time. Creating shared value of place in the built environment raises standards and quality of life for users, as well as adding return on investment for industry.	The built environment should be welcoming and aesthetically pleasing, encouraging communities to use and enjoy local places. The feel of a place, and how we use and relate to our environments is dependent upon the aesthetic quality of our places, spaces and buildings. The visual environment should contribute to its surroundings and promote positive engagement.
• Belonging. • Place attachment. • Sense of ownership. • Expressions of place and culture. • Connection to nature.	• The interrelated nature of human wellbeing and sustainability. • The sense of meaning derived from sustainability goals.	• Design for inclusivity, connection and diversity for all people. • Inter-generational design. • Equity and affordability.	• Safety for all. • Perceptions of comfort. • Internal environmental performance. • Inclusive design for all people particularly in public spaces.	• The role of autonomy and control in public spaces and internal environments.	• How we measure social value over time.	• Positive emotional responses to places. • The role of quality and maintenance and its impact on wellbeing.

Key areas of wellbeing research

3

Housing design for wellbeing

Five88, San Francisco by David Baker Architects

Topics:

- Loneliness
- Designing housing for connection
- Case studies: Co-housing
                The Porch
                Social Spaces
                Entrances
- Social and affordable housing
- Design for trauma
- Case study: Homeless Housing

Case study:
Belonging and the rise of loneliness

In 2023 the US Surgeon General identified social isolation and loneliness as "profound threats to our health and well-being..."[66] The health risks of loneliness, both physical and mental, exceed obesity and are comparable to those of smoking.[67] And the challenge is extensive. Pre-covid approximately half of U.S. adults reported experiencing measurable levels of loneliness.[68] This is felt more acutely for teenagers and older adults. Of the older generation, women are more lonely. "Older women are more likely than older men to live alone, and 40% of those who live alone are lonely."[69] The statistics in Australia are similar, prompting the New South Wales (NSW) government in Australia to open a parliamentary inquiry in August 2024 to "examine the extent of loneliness and social isolation in NSW, including how it is measured and opportunities for improved data capture."[70]

So what can we do? Housing and the design of our neighbourhoods has a critical role to play. The NSW Wellbeing Budget Foundation Paper recognises that the quality of our social connections and natural environment strongly influence our propensity for loneliness.[71] "As well as places to connect with our close friends and family, we need urban environments that foster a greater number of 'weak ties', people you see regularly and trust enough to say hello to. Places that help people connect on a daily basis with their neighbours and colleagues or the local shopkeeper, café owner or concierge are an effective way to increase meaningful relationships."[72]

A key area of focus is the value of social connection through our neighbours. 'Our neighbours are our closest source of social support and connection."[73] Neighbours are the first to greet you on your morning walk or to be there in a crisis such as a fire, extreme weather or illness. Over time, this can develop in to social drinks, sharing meals or sharing childcare.[74] These types of interaction contribute to a sense of belonging and can be factors for building resilience when things go wrong. These interactions are also often multi-generational and more diverse than perhaps a workplace may be (where you meet people with similar education and interests).

Knowing your neighbours to reduce loneliness also takes time. For this reason, research in housing on 'ageing in place', intergenerational design that adapts to changing family sizes and security of tenure all become critical. Our Australian segregated housing models where adult seniors over 65 years old live in often isolated communities is also contributing to the challenge. " By fostering environments where multiple generations live in close proximity and share common spaces, these housing models encourage the exchange of skills, knowledge, and experiences, benefiting both the young and the old."[75]

What types of interactions do we suggest with neighbours? Happy Cities asked people about the "types of activities they participate in together with neighbours. The majority (70%) indicated that they have conversations with neighbours. The next most commonly selected responses were taking care of neighbours' pets or plants (22%), sharing food or meals (15%), and sharing household items (11%). Another 20% indicated that they do not participate in any activities with neighbours; however, in open-ended responses, 54% wrote that they are interested in interacting more with neighbours."[76]

Corey Keyes, a key sociologist in the field of positive psychology has made the point that this focus on loneliness could be construed as another 'wack-a-mole' government focus[77]. So it should be noted that design for loneliness is only part of the picture. Studying loneliness alone, again a negative state, will not be enough to understand the how to lift society from depression, to languishing, to flourishing.

But it is a start!

Social connection can be supported and realised through innovation in both design process and outcomes in built form.[78]
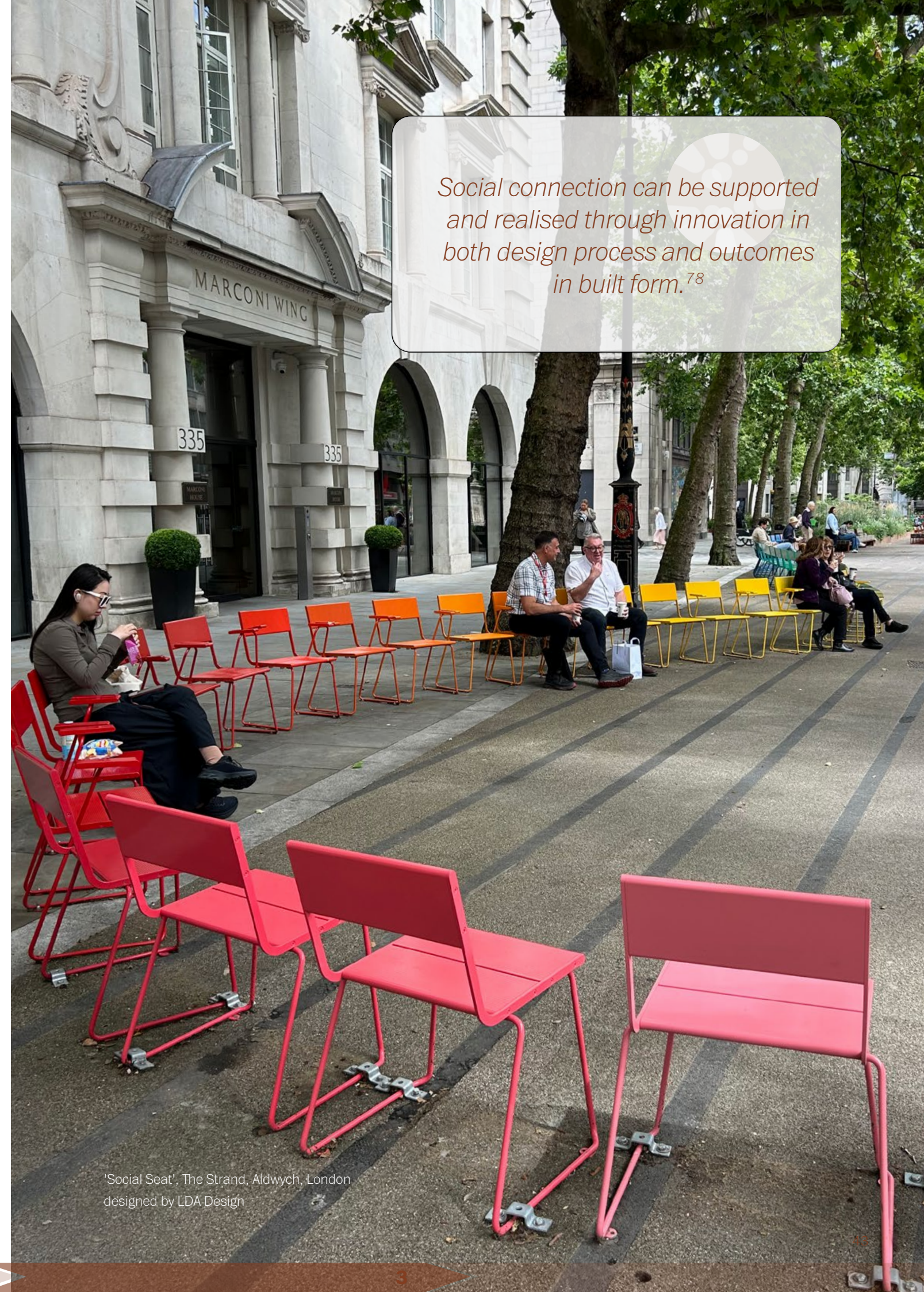
'Social Seat', The Strand, Aldwych, London designed by LDA Design

Designing housing for connection

The spaces most commonly associated with strong social connection include parks and green spaces, community facilities, cafes and housing.[79] But even these typologies need quality, human-focused design to promote high levels of use.

Happy Cities from Vancouver would say that these spaces need to be well located, designed to be a 'social icebreaker' for social interaction, regularly activated, inclusive for everyone, be able to change with the community needs and invite people in with carefully designed transitions.[80]

In housing there are a number of innovative models being researched with an intentional focus on social connection. There are also a number of design guides focused on the elements of housing design that can influence social connection. Beyond the design, management and maintenance is critical to protect spaces that are easily accessible to all, and well maintained. It will also be critical to ensure planning and design policies such as fire codes start to consider the impact they have on innovative solutions. For example, personalised entry ways with pot or door mats which create a sense of individuality can be prohibited by fire codes.[81]

Some of the innovative housing models that focus on social inclusion include:

- "Cohousing, defined as a small intentional community of private homes clustered around a shared space. It is a purpose-built option that brings community into the home."[82]

- Home Share - Intergenerational share home options that may bring older adults who want to age-in-place together with students together such as 'Canada Homeshare.'

- NORCS - "Enhanced NORCs are an innovative resident-coordinated housing model. These are generally apartment buildings with 30% or more older adults where programming has been brought in to engage residents.[83] See page 31 for more information on this project.

"Surely there are people who just don't want to talk to their neighbours?" (Audience Member Vancouver)

Of course, but they are fewer than you think. If you ask people about their best living experience, they will often describe a place where they knew their neighbours and felt part of a community. It's about having a choice. Going to the communal room for Friday night drinks might not be for you, but you might be OK with a hello at the lifts.

Casual encounters (1)
Repeated encounters (2)
Doing things together (3)
Forming friendships (4)
Mutual support (5)

Increasing social connectedness, belonging, and resilience Source: Happy Cities

Common Stories

Status Quo...

"We included a flexible (empty) community room for neighbours to socialise and a playground for children. These are the vital social space for social cohesion. No we haven't been back to see if anyone uses it." Architect

The building manager took over and put a lock on the community room to protect the chairs.

Management and maintenance have serious ongoing roles for the success of social spaces in a housing development. It takes an ongoing role for the community and management to protect the social values of a development.

The playground swings haven't been fixed in years and there are no seats for parents.

PNG People Credit: Studio Alternativi

Something better...

"We co-designed (with residents) an ecosystem of spaces for neighbours to interact. Some spaces are small, some large, and if any single one fails, there are options. We are measuring the success of each space over time."

Architect

Stair cases are moved external with seating areas for neighbourly chats.

The childcare has a playground opened to community after hours.

Communal areas include small shared balconies near the lifts for 6-8 apartments to take over.

The community room is open to all residents with a swipe pass and co located with a shared laundry, outdoor drying lines and community garden beds.

The open space has an all ages ninja course for balance and exercise and there is a biannual residents competition.

Case study: Co-housing Vancouver Design for Connection

THEMES: | relationships | health | connection to nature | identity & strengths | autonomy, choice, control | stewardship and legacy |

MA+HG Architects in Vancouver are an architectural practice focused on "design solutions that explore alternative ways of home ownership and dwelling"[84] including, co-designed, co-housing, micro-apartments and multi-family residential buildings. They provided a tour of Tomo House[85] on Main, a 'co-housing lite' project in Vancouver developed by Tomo Spaces with Lanefab and Happy Cities. This three storey 'missing middle' project was not necessarily affordable but represented a new more connected way of mutually supportive living between neighbours who choose to live there. It included interesting inter-generational design options like a separate studio apartment that could internally connect to a 2 bed apartment, perfect for teenagers or grandparents.

The project was co-designed by owners utilising the design guidance of Happy Cities that included research such as 'Overall, our research finds that 12 units is an effective size for fostering social connections and a sense of community in cohousing."[86] The project has been studied by Happy Cities with a post occupancy study that included interviews, surveys, and on-site observations with residents before move in and approximately three and six months after. Key wellbeing findings included:

Six months after move in...

88% have four or more people in their life they can confide in
...representing a 26% increase compared to before move in.

100% feel lonely never or rarely
...representing a 69% increase compared to before move in.

"I feel welcome in my neighbourhood and feel like I belong here."

63% agree or strongly agree ...compared to 56% before move in.

Policy idea: Municipalities can offer density bonuses or floor area exclusions for widened, social and active walkways or circulation spaces, such as the City of North Vancouver has done with its Active Design Guidelines.

The development includes 12 units, a communal kitchen/ living/dining room known as "Common House", street stoops, and oversized exterior walkways (1.67m wide) for informal neighbourhood interactions and personal touches. The basement included bicycle parking, shared laundry and a shared tool/work space.

An interesting apartment layout option to support inter generational living.

Case study DBA: The Porch

THEMES: [relationships] [identity & strengths] [autonomy, choice, control]

Credit: DBA

Many of the David Baker Architect projects championed the porch or stoop in their multi-residential projects. "Porch culture, (and) stoops create opportunities for brief, incidental social encounters. In doing so, they extend residents' sense of ownership and care out toward the surrounding neighbourhood."[87] They also offer moments to express personal identity back into the community and provide a subtle demarcation of the transition from communal to private space.

David Baker Architects have created the resource '9 Ways to make housing for people'[88] which includes a highly practical and visual diary of their projects. It explores how they have considered wellbeing and social connection across their vast catalogue of social and affordable housing projects. I was fortunate to visit 11 of their projects in San Francisco.

Credit: Mariko Reed

Case study DBA: Social spaces

THEMES: [relationships] [meaning] [achievement] [positive emotions]

855 Brannan, San Francisco by David Baker Architects where the gym overlooks a unique communal forest courtyard

"Things like views, gathering places, and garden spaces aren't luxuries—they're the basics on which real communities depend."[89]

DBA has used their post occupancy surveys to understand the success of the social spaces in their residential projects. One key insight they provided is that they often found community rooms with a door were locked by building management in order to control and protect the space or furniture. This removed the sense of community ownership on the space, and reduced informal use of the space. DBA instead started to design community 'nooks' connected to the main entrance, but unable to be fully locked. This experience was also echoed by Happy Cities and Hey Neighbour Collective. Community spaces can be connected to outdoor courtyards, or overlooked by internal gyms offering a sense of passive surveillance.

Co locating or clustering a few community spaces can help to activate and encourage more informal social connections.

In Bayview Hill Gardens they co located a communal or shared laundry space with computer room/sharework space and residents lounge to ensure there was a range of activations.

Bayview Hill Gardens
Credit: Bruce Damonte
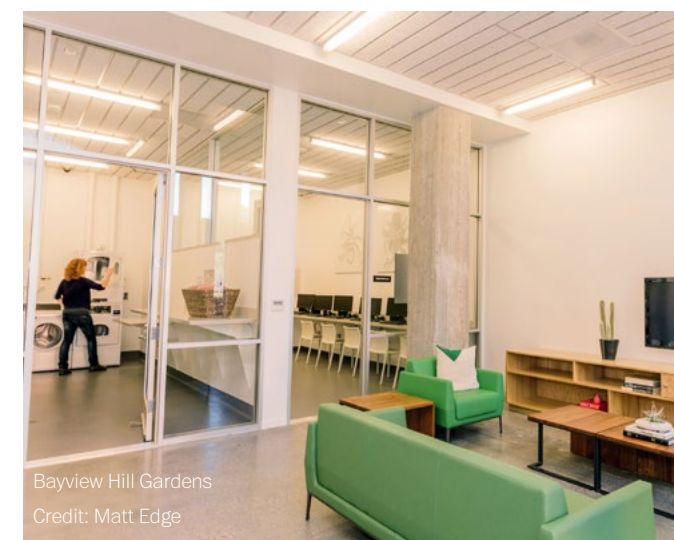
Bayview Hill Gardens
Credit: Matt Edge

Lakeside Senior Apartments
Credit: Mariko Reed

Case Study DBA: Entrances

THEMES: | autonomy, choice, control | safety | connection to nature |

Each of the projects visited showed a sensitive and unique entry for each building. I particularly appreciated the transparent security screens that created a transition from the street to communal open space before the front door. DBA noted that from post occupancy evaluation, residents appreciated highly visible security measures such as the heavy security gate which helped them feel safe. This is carefully complemented with high levels of transparency and clear site lines that made approach and entry feel very safe.

"A gracious and inviting front door sets an expectation for inclusiveness and encourages people to treat the building and its residents with respect."[90]

855 Brannan, San Francisco
by David Baker Architects
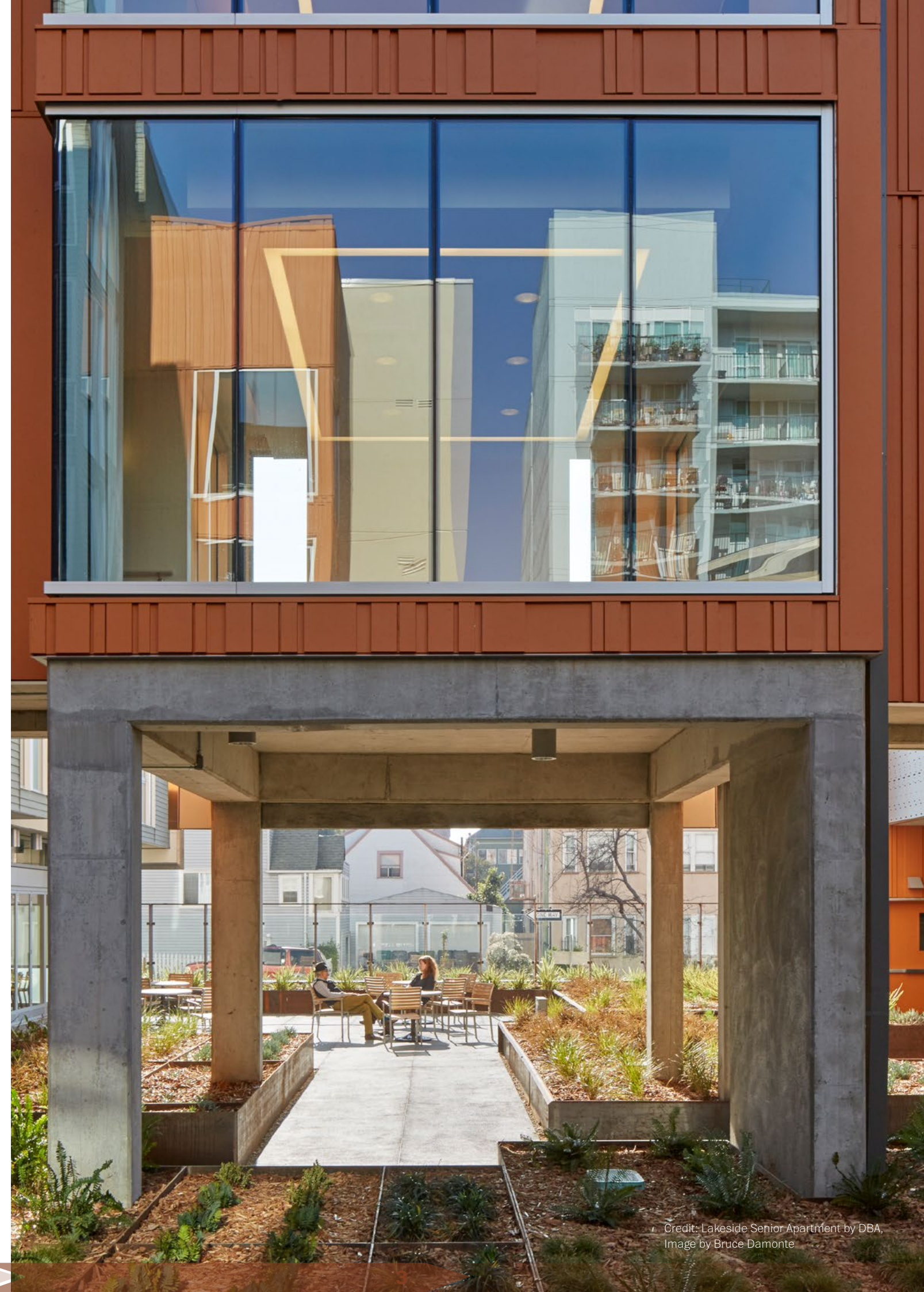
Credit: Lakeside Senior Apartment by DBA.
Image by Bruce Damonte

Affordable and Social Housing

Trauma Informed Design: Shopworks Architecture, Denver

Across the cities of Sydney, Auckland, Vancouver, Toronto, London, Manchester and New York, affordable housing was a commonly discussed theme. In places like Vancouver, a wide range of policies were being implemented to address overall affordability including wide scale up zoning to increase housing supply (hopefully), policy to reduce vacant homes, incentives to creating secondary dwellings (eg basement or backyard units) and reduction of short term holiday rentals[91].

Whilst all housing is still grappling with loneliness and sense of connection, social and affordable housing generally needs to address many more complex physical and mental health challenges including experiences of trauma, Post Traumatic Stress Disorder (PTSD), addiction, violence, disability or age related challenges[92]. In NSW in 2022 the siloed departments of Health and Department of Communities and Justice made an agreement to work together more closely understand the interrelated nature of housing and wellbeing particularly in the areas of social housing and homelessness.[93] Some of the key priorities

include adopting a trauma-informed approach, placing the person at the centre of services and including people with lived experience in the consultation process.

Finding ways to support basic needs of safety, autonomy and control whilst also elevating a sense of hope, connection and optimism will be a common housing challenge across the world. Projects in Australia like those by Nightingale have demonstrated a commitment to environmentally and socially sustainable, high quality affordable housing. It was inspiring to see many other exceptional international projects in San Francisco and Denver.

Figure 3.1: Affordable Housing Continuum in the NSW Context

Source: Greater Sydney Regional Plan, Greater Sydney Commission (Figure 19, page 69), 2018

Shopworks Architecture in Denver work on a wide range of housing projects including homeless and crisis housing, social housing, tiny home villages and affordable housing. With the aim to go beyond 'do no harm' they recognise that housing has the potential to be a first responder. They have developed a design language and guidelines for trauma-informed housing, and also conducted post occupancy evaluations of their projects. They have created open source and free guidelines for both the design process and the design elements that create safe, inclusive and trauma-informed spaces that calm the neuro responses and create positive experiences.[95]

With their extensive experience and portfolio of built projects, Shopworks Architecture demonstrate the iterative value of creating a design approach, testing the built form and assessing the outcomes since 2017. Their Trauma-Informed Design (TID) approach has now been adopted as a requirement in the state's housing financing requirements for social and affordable housing in Denver. They just completed two, 2-year grant funded research studies, one of which assesses health and wellbeing outcomes in both TID and non-TID housing settings using surveys, interviews, administrative data, and police data.

Trauma-informed care, which originated in the health care industry recognises the physical and mental health impacts of trauma. Trauma-informed design aims to promote wellbeing and healing with spaces that support safety, love and belonging, identity, self esteem and self actualisation[96]. For Shopworks Architecture that involves creating an atmosphere of dignity with spaces that offer safety, comfort, connection, and choice. In the future Shopworks Architecture would like to see a shift away from trauma-informed design to 'dignified design', where the focus moves from the trauma to a more positively framed dignity mindset.

The following pages outline some of their built projects and how the four core principles of Safety, Comfort, Connection and Choice are considered at every scale of the project. Safety underpins each and every one of their thoughtful design ideas.

"The difference between trauma informed design and good design is a process and a measured outcome."[94]

Valor on Fax by Shopworks Architecture in Denver explores how to break up corridors to create personalised entrances that express a sense of identity and pride, which also helps with wayfinding.
Image Credits: Matthew Staver Photography

Principle 1: Safety

Feeling safe as people enter new housing or unknown spaces is critical to reduce the trauma or fear response. Safety is also critical for staff. There is a constant design tension in some housing typologies between clear sight lines, creating safe boundaries and allowing people to access staff without feeling surveyed.

Example:
In the project Urban Peak, a youth homeless shelter project in Denver (under construction at the time), Shopworks explored a number of different doors to the staff offices that would encourage open conversation but also create a sense of safety and respect for staff. Their experiments landed on a barn style door with a top and bottom section, that created strong sight lines, but also a subtle demarcation for private staff space.
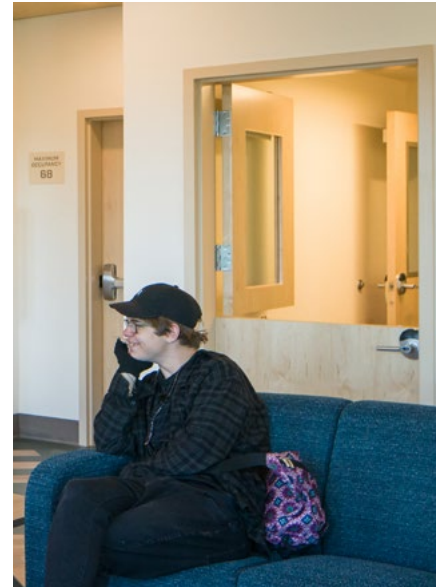
Principle 2+3: Choice and Comfort

With resident experiences of trauma and PTSD, providing a sense of control, choice and comfort in crisis, transitional, social and affordable housing can be valuable, if not critical.

Example:
Shopworks recognised that clothing was a highly valued possession for their residents. In their project Ives (under construction at the time), they designed an over-sized laundry room that allows people to wait in the common lounge with clear site lines to their possessions whilst they were being washed. The oversized tilt up door and additional exits ensured everyone could see multiple exits, feel safe, and be able to choose their proximity to other people in the naturally lit, generously sized space.

Principle 4: Connection

In transitional and crisis housing, a sense of connection and community can support a sense of reduce loneliness and isolation. Shared and communal spaces can create a sense of community pride and empathy for others.

Example:
In the project Warren Residences (affordable, supportive housing for those who have experienced homelessness) was an adaptive re-use of a church property. They provided a communal kitchen and dining space. One small observation for the design team was the importance of designing a good bin spaces, one that sensitively understands the daily politics of this area.

1.

2+3.

4. *Image Credits 1-4: Matthew Staver Photography*

Case study: Youth Homeless Housing

Urban Peak, designed by Shopworks Architecture, is the only non-profit organization in Denver that provides a full convergence of services for youth experiencing homelessness. The 136-bed youth campus affectionately called "The Mothership", is for youth ages 12 through 24 who are experiencing homelessness[97].

Still under construction when we visited, it was a powerful physical representation of Shopworks Architecture's thoughtful and nuanced approach to trauma-informed design. The project was designed with the concept of 'neighbourhoods', each of which had its own kitchen, living room and shared spaces that could change to suit the needs of residents. "The idea is to group together youth with similar life experiences into one neighbourhood, allowing them to connect with and support peers who are likely to be going through similar things."[98] For example these groups may include pregnant and parenting youth, youth in recovery (substance abuse), newcomers or those who have exited foster care.

From the smallest of details like the barn style office door, to master planning of 'neighbourhoods' and the provision of music and arts spaces, this project demonstrates how overlapping TID at all scales creates a rich and powerful experience of dignified housing.

Key plan:

Each neighbourhood had its own living room.

Image Credit: Matthew Staver Photography

Paired rooms included dedicated study areas and individual kitchenette for a sense of autonomy and retreat.

4

A design process that supports wellbeing

Innsbruck bus stop, Austria

Topics:

- The design process
- Measuring wellbeing
- Pre and post occupancy evaluation
- Mapping wellbeing
- An ideal development model
- Where is the industry heading?

Community street garden, Octavia Street, San Francisco

"An inclusive design process can create something that meets the immediate needs of people and can give them agency and power through that process."[99]

Wellbeing in the design process

Architecture has the unique ability to change a place. It can be a catalyst to repair a community, to knit together a neighbourhood or instil a sense of pride in a place[100].

Research from across the globe has universally made the point that in order to benefit from feelings of inclusion, autonomy and sense of belonging, the community needs to be part of the design process. Telling the community what they need, assuming their values or excluding them from the design and management of a place does not support wellbeing.

"Individuals must be able to contribute to an initiative on belonging. This means they must have ways to express agency without elevating one person's needs above the needs of the collective."[101]

The Quality of Life Foundation evidence review[102] makes a compelling argument on the important of a sense of control for personal wellbeing, and the need for more consultation and inclusion the decision making process. In particular, this feedback needs to be allowed to change over time. As neighbours change, so too will the community priorities for wellbeing.

So what is best practice in the design process to support wellbeing? Dr Kelly Watson believes "open source community shared data is best practice."[103] For others it may include a university level research partnership.

Regardless of the many ways you can consult, co-design and engage with a community, we will need incentives and policy to promote best practice. This includes incentives for housing providers to invest the time and funds in this process to do it well.[104] We also ideally need some policy that helps to standardise some wellbeing measures to make data comparable between developments. And we need the insurance process to change[105] to allow mistakes to be identified without liability, or to allocate it properly when something isn't working.

Minimum process - Consult

Consultation can ensure that wellbeing decisions are based on data that is democratically collected. A well documented consultation process can ensure decision are made my a diverse group of inputs, rather than from the top down, and ensures that community inputs are accurately represented.

Better process - Co-Design

Even better than consulting and then using experts to translate this feedback into design, is a co-design process. In this option community sees their values and ideas embedded into the project through an iterative design process. It can instil a sense of pride and optimism, and ensure the design outcomes accurately incorporate community sentiment. Creating a feedback loop with the communities that assist in design research is critical to create those benefits of agency and sense of belonging. Without it you can erode community trust, create 'feedback fatigue' or create the sense of authority controlling the results.

Best practice - Engage

Engagement can be an ongoing process throughout the life cycle of a building from design to decades later. It suggests a longer term investment and dedication to reflecting the values of the community. This could include the use of artists and poets to bring the consultation process alive and be more engaging to the public[106]. Or an ongoing post occupancy survey that accurately measures the role a building is playing in community wellbeing over time, and allows the design to change and adapt over time.

TIME REQUIRED

Measuring wellbeing: Data and Challenges

MEASURES

"Understanding and improving well-being requires a sound evidence base that can inform policymakers and citizens alike where, when, and for whom life is getting better."
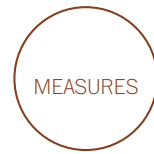
A common theme in discussions across the globe is how we can measure wellbeing.

Understandably, there is a need to create evidence for the design ideas that have measurable, and ideally long-term impact on community health and wellbeing. Data creates a common dialogue for community and clients, and eventually a way to move the industry forward with interventions that actually work.

Evidence-based design, however, is often difficult to realize.[107] And data is not as easy as one may think to collect in ethical, inclusive and accurate ways. Some of the best practice considerations as we aim to measure wellbeing are outlined below.

Subjective data is useful.

Wellbeing, even collected by subjective data measures can be highly accurate, and valuable. Whilst we ideally have a mixture of subjective and objective data, the OECD makes the point "Subjective well-being measures are, however, unique in that they provide a relatively robust empirical source of information on what affects how people feel about their lives, which is an important component of overall well-being. By examining the level of subjective well-being actually achieved as a result of different decisions or approaches, policy-makers and individuals can better understand what matters to people on an empirical (rather than anecdotal) level."[108] Flora Samuel made the point that new technology is constantly being developed to make the collection and collation of quantitative and qualitative data more time and cost efficient.

Examples of objective wellbeing measures that can influence wellbeing may include data on internal environmental conditions, energy production/use, transport useable, walkability, participation numbers in community events or recorded levels of volunteering. Set your wellbeing vision and find the measures that could evidence your approach.

Collect data that actually measures wellbeing.

With a strong history of measuring what is going wrong in community (deaths, disease, ill health), we often don't have the existing measures or census data needed to measure wellbeing.

Even national and state based wellbeing frameworks have fallen prey to shoehorning data that already exists into wellbeing frameworks. Take for example the draft NSW Wellbeing Budget that measures social connection with the metric of "road toll deaths". It is an example of making existing data sets 'fit' into categories, but not actually creating the necessary data to fit a true definition of wellbeing. A community is most definitely impacted negatively by a road accident death, but a community is not 'flourishing' with strong connections just because no one had died by car accident. A better process would be to define the types of social connection that are important to a community and measure them - such as levels of trust in neighbours or institutions, levels of friendship/marriage/partnerships, participation in social groups like sporting activities or levels of volunteering. All of these activities build social cohesion and connection.

When collecting wellbeing data, we need to ensure we measure both positive and negative effects to avoid 'digital misery', a side effect when we only measure and map when things are going wrong.[109]

Collect data more often and map it.

The data we do have, is often collected infrequently. For example the OECD notes "Subjective measures of housing distress are also available, but they are not collected on a regular basis."[110] Census data can be used to create baseline assumptions for wellbeing. However often this data is collected infrequently, and without being mapped, it is hard to break this data down to the community level that may relate to a masterplan, building or neighbourhood.

Data can create invisible people.

Dr Antonella delle Fave makes the argument that data can often create 'invisible people'[111], be it by creating online wellbeing surveys that exclude older people without computer access, or even the research focus on data collection on people who are either languishing or flourishing, with very little time spent on the vast majority that sit somewhere in between. This will be a key consideration for future inclusive wellbeing measures.

Data should help us decided what can have the best impact.

The exciting future of data informed design will help us to decide which design decisions will have the greatest impact on wellbeing. For example when planning a community, would a park or access to a natural bush walk impact wellbeing more? If the data shows a park with planned activities will have more impact is that because of positive sense of belonging, physical activity, or reduction in loneliness? What design elements help each of these elements and reduces barriers to participation, and feels more safe and inclusive to more diverse people. As these answers start to roll in, we need this data to be shared to help future projects.

Who should ask for wellbeing data?

Given the sensitive nature of wellbeing, some organisations such as WELL noted they can be limited by their client's willingness under privacy or data protocols to collect and share data. Staff have reported personal anxiety on answering wellbeing questions from their place of employment, never sure the data will remain anonymous.

Architects are not trained in statistics, survey design, bioethics or health data. Measuring their own projects also has the potential for conflict of interest. Combined with rarely being paid for this service, it may not be best practice for architects to assess wellbeing outcomes in their projects. Rather, we could consider health clinicians who are "uniquely positioned to collect data and ask questions in support of effective partnerships that address the root causes of poor health."[112] Clinicians however are rarely engaged in architectural projects at this point in time.

Someone has to pay.

As clients, governments and designers agree wellbeing is important, someone has to pay for the time to engage the community and measure the results. To often it falls on the architects as the end of the project when fees have run out. According to QOLF review, POE's should be costed into the project from the beginning, not seen as a bolt-on at the end, and should be the responsibility of agencies that are in charge of the long term social and environmental sustainability (such as housing authorities, local authorities and public land owners.)[113]

Queen Street, London

Pre/ Post Occupancy Evaluation

MEASURES

Post occupancy evaluation (POE) is the process of evaluating the design quality and outcomes of a building or community.

Methodology for POEs can include resident surveys, home interviews, resident focus groups, interviews with the project team, street interviews with young people, site surveys, digital surveys and many other techniques that may be relevant to the community being reviewed.[114]

It can be used to measure the wins of a project and the areas for future improvement. "However, post-occupancy evaluation continues to be fragmented, underfunded, and lacking either the incentives or mandates necessary to ensure its widespread use."[115]

Currently most post occupancy evaluation in Australia is completed for a single building, typically 12 months after completion, by the architects who designed the building with a focus on built quality, defects and some internal environmental performance criteria. This limited focus offers the industry little value on the design practices that have true impact on health and wellbeing. Best practice post occupancy evaluation in housing would consider the following considerations.

Create a baseline to demonstrate change:

Collecting data before (or at least in the first month of moving in) and after project completion for a baseline position to demonstrate a change in health or wellbeing outcomes.

Design a wholistic survey:

Be wholistic in your survey to include social evaluation (what users like and expectations), technical evaluation (performance, sustainability), and process evaluation (how effectively the project was delivered). At the most basic level the evaluation process may include a visual assessment a project. Better processes will survey and have in-depth interviews, and the final best practice process will be diagnostic, looking for the casual loops that link design to the wellbeing outcomes.[116]

Methodology does impact the results. "...like all self-reported measures, survey-based measures of subjective well-being, are sensitive to measurement methodology."[117] Happy Cities and Ney Neighbour Collective also explained that different data collection tools can produce different results. Cross correlation of data can be useful to understand how the methodology may affect results.

Consider how to be inclusive:

Consider multi-lingual data collection methods for diverse communities, how to include children in the process, and how to respectfully reflect indigenous cultural input or nuances.

Also consider the wide range of people who use and interact with the building including residents, cleaning staff, building management and strata management. If you want to consult on wellbeing before people have moved in or purchased an apartment, consult with potential owners, people in the community or similar cohorts during the design process.

Start somewhere:

Many architects interviewed like David Baker Architects and Shopworks Architecture were invested in knowing if their strategies worked, and were passionate advocates to collect post occupancy information. They often completed their own POEs or where possible used a research partner. Asking questions is better than learning nothing! Whilst they expressed concern their methodologies may not be highly academic, they practiced ethical collection of data, asked the hard questions, and tried to use that information to improve their next project.

Share your findings:

Our industry cannot afford to be left behind as others develop measures for wellbeing. We need to start collecting data now, and share our findings to help quickly become an industry that can provide measurable solutions to some of the communities most challenging problems.

What is post occupancy evaluation?

Sem Lee - Live word cloud in our Vancouver presentation (77 responses)

Mapping Wellbeing

MEASURES

The role of mapping as a tool for collecting community feedback on wellbeing is an exciting area of development being explored in a number of countries.

Mapping allows for community data on wellbeing to be spatially connected to place. Spatial inequalities can be understood, and in a number of cases, different layers of data can be overlaid to understand the correlation between different factors such as income levels and sense of loneliness. It is visual, democratic, and can be owned and altered by the public.

Flora Samuel believes "that monetisation will be disrupted by the development of intelligent maps that chart change in real time. The ultimate aim is to have a planning system based on value expressed spatially in real time." She believes mapping provides a more nuanced understanding and observation of what is happening for wellbeing.

"I believe that monetisation will be disrupted by the development of intelligent maps that chart change in real time. The ultimate aim is to have a planning system based on value expressed spatially in real time."[118]
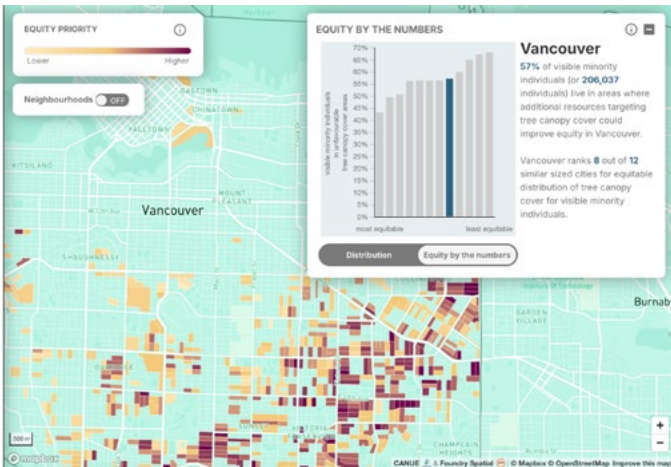
1. Healthy Plan - Equity mapping Canada

Healthy Plan is a mapping tool from the Canadian Urban Environmental Health Research Consortium (CANUE) who are studying the 'multiple environmental factors linked to a wide range of health outcomes.'[119]

"HealthyPlan.City highlights priorities for improving equity, health and well-being for all by showing where vulnerable populations experience lower than average levels of beneficial environmental conditions."[120] It uses Canadian Census data combined with built environment datasets to focus on 129 cities across Canada. Built environment data includes data such as average summer temperature (heat island affect), tree canopy cover, flood susceptibility, transit locations, educational facilities, healthy food outlets, parks and recreation facilities and air and noise pollution. The census data overlays include low-income individuals, vulnerable age groups like children and older adults, one person households, and newly arrived immigrants. In particular they are looking to identify areas where these vulnerable communities correlate with more risks from the built environment. It is a free, open-access, University of Toronto based initiative, helping urban planners, public health professionals and policy makers to target spending in and improvements whilst having good data and baselines to underpin these decisions.

Public Map Platform, Rural Roaming Room, Lle Llais

2. Public Map Platform lead by Professor Flora Samuel, Cambridge University

The Public Map Platform (PMP)[121] is a 2 year pilot, open source, public mapping tool created to help local authorities and their communities understand 'place' and how to makes these places better for people. The project has been based in the Isle of Anglesey in response to the Welsh Government's Future Generations Act, which uniquely is one of the only countries to create a legally binding Act with funding to focus on wellbeing.

The PMP concept has been created to fix a broken system where community feel unheard, and planning decisions are based on hidden data that often 'fails to capture the true essence of social value'[122]. Flora Samuel made the point that a number of local government areas in the UK were buying private datasets on wellbeing, a practice that runs the risk of being influenced by private interests, and lacking transparency to the public. The result is a lack of trust in the place-based decision system.

The approach for PMP is to create a community generated data and map source. Poets or 'bards' have been utilised to encourage artistic responses to help draw out subjective feelings of wellbeing. The community are also acting as social scientists, help to create environmental maps on topics such as air quality, biodiversity and water quality. This data will then be collated with census including economic data. Its an example of both the data collection and the resulting maps being used to improve community wellbeing.

An ideal development model for wellbeing

Everyone has a role to play in improving community wellbeing. On this page we take a look at a theoretical, "ideal" development model that incorporates wellbeing at all levels based on the many discussions conducted in this research.

The best outcomes for wellbeing will come about through innovative partnership and collaborations. Design for wellbeing could be considered like a 'bridging' field of research that reaches between many different industries from architects to planners, sociologist, neuroscientists, ethicists, politicians, artists and medical professionals. To find the evidence link between design and health outcomes, the right partnerships will be needed at all levels. Similarly development is also a team sport that occurs over long periods of time. It involves government, the community, designers and builders. The ideal 'design for wellbeing' projects will need all players involved.

This diagram is a provocation to consider your role in the development process, and how small changes could have a big impact!
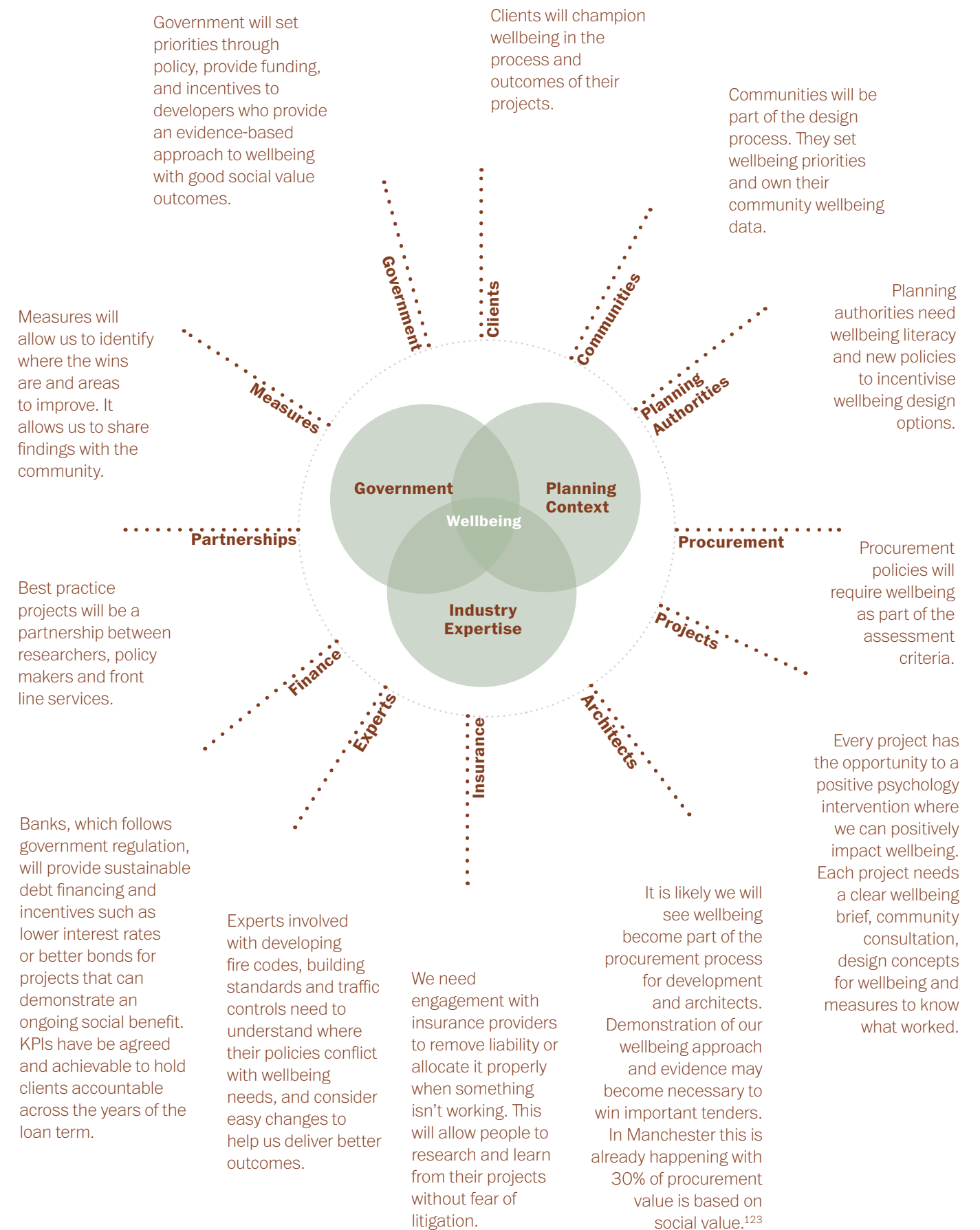
In Australia at this point we are only at the early days of wellbeing policy and green financing. The iterative design loops of experimentation and measured wellbeing outcomes are only just starting to feed into the design process.

An iterative research loop between government, policy, clients and projects will help to:
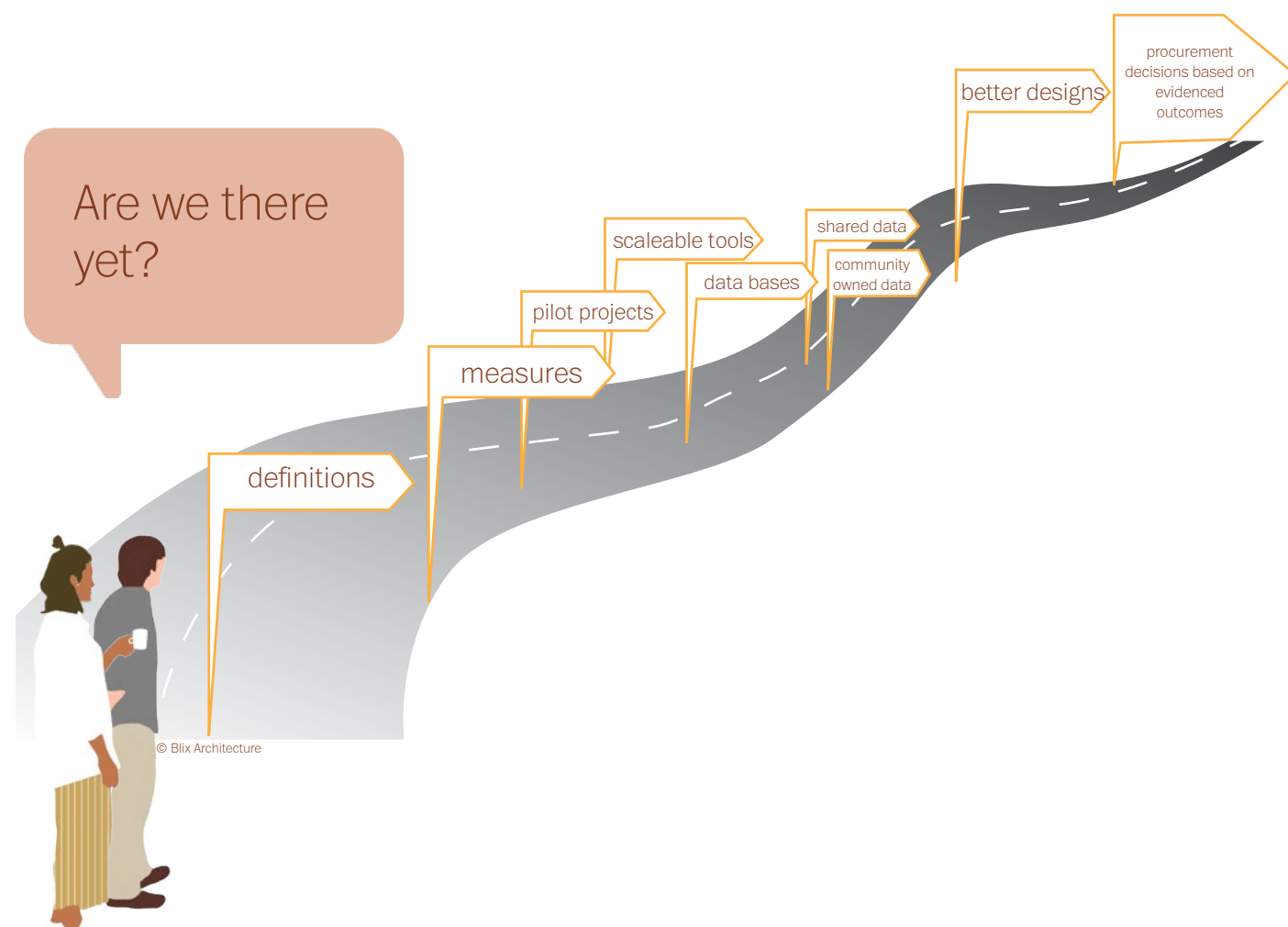
- Inform new government policies and minimum standards.
- Improve the measures used for project financing.
- Improve rating and accreditation systems that provide industry recognition for exemplary projects.
- Demonstrate to the public measurable benefits from community participation and well designed development.
- Help architects and clients to understand what works.

What can you do to influence wellbeing?

Start small, think big.

Government will set priorities through policy, provide funding, and incentives to developers who provide an evidence-based approach to wellbeing with good social value outcomes.

Clients will champion wellbeing in the process and outcomes of their projects.

Communities will be part of the design process. They set wellbeing priorities and own their community wellbeing data.

Planning authorities need wellbeing literacy and new policies to incentivise wellbeing design options.

Measures will allow us to identify where the wins are and areas to improve. It allows us to share findings with the community.

Procurement policies will require wellbeing as part of the assessment criteria.

Best practice projects will be a partnership between researchers, policy makers and front line services.

Every project has the opportunity to a positive psychology intervention where we can positively impact wellbeing. Each project needs a clear wellbeing brief, community consultation, design concepts for wellbeing and measures to know what worked.

Banks, which follows government regulation, will provide sustainable debt financing and incentives such as lower interest rates or better bonds for projects that can demonstrate an ongoing social benefit. KPIs have be agreed and achievable to hold clients accountable across the years of the loan term.

Experts involved with developing fire codes, building standards and traffic controls need to understand where their policies conflict with wellbeing needs, and consider easy changes to help us deliver better outcomes.

We need engagement with insurance providers to remove liability or allocate it properly when something isn't working. This will allow people to research and learn from their projects without fear of litigation.

It is likely we will see wellbeing become part of the procurement process for development and architects. Demonstration of our wellbeing approach and evidence may become necessary to win important tenders. In Manchester this is already happening with 30% of procurement value is based on social value.[123]

SECTION   1   2   3   4

Where is the industry heading?

Are we there yet?

procurement decisions based on evidenced outcomes

better designs

shared data

scaleable tools

community owned data

data bases

pilot projects

measures

definitions

© Blix Architecture

People PNG Credit: Studio Alternativi

New ways of working may be required to create the real cross disciplinary collaboration needed for designing the built environment to support health and wellbeing outcomes.

Development and planning takes years, not to mention significant funding. We need to leverage every project to start creating a patchwork on knowledge on what works for wellbeing.

Some fun thought bubbles include:

- Imagine a social and physical health research team is allocated to each major government project like an airport or Olympic village with the focus to assist design teams with the latest research and to measure project impact. How are we going to help future Olympic projects and airports to know their design interventions improve health and wellbeing? Is that the real legacy? How will we know what to tweak and improve over time in these significant projects without the evidence and data?

- What if every project was required to do a post occupancy study? We could come up with some standardized measures, and leave room for the unique measures needed for the specific project or community. "Factors closely linked with health outcomes should be included in publicly published post occupancy studies."[124]

- We need pilot projects with the guts to measure and share their data. Ideally a mixed use precinct with multiple uses so many different interventions and typologies can be studied. Early adopters should be rewarded (GFA incentive?). It will takes years to develop good data sets. "If developers use validated instruments to collect data, communities could benefit from truly efficacious interventions backed by defensible data. And developers would benefit from offering a new value proposition: community amenities shown to be of actual benefit, which are more likely to win approval from stakeholders interested in public health and well-being."[125]

- What if every planning proposal needed to consider health and wellbeing impacts backed by evidence from validated studies? Where the evidence doesn't exist for new ideas, we support new research based on that development as a case study.

- What if leading developers or housing providers who contribute to externally validated wellbeing research are rewarded with planning incentives such as bonuses for future projects, GFA incentives or concessions on height restrictions?

- What if we had a coordinated industry wide research advisory group that could help clients and designers to know what 'holes' are needed for further research.

- What if local governments have a strong understanding of the social and physical spaces they need to support their community's wellbeing? A new role for community bioethicists trained in ethics, public health, and urban planning could lead this work[126].

- What if community consultation is done before the project even starts. The community can provide a shopping list of wellbeing infrastructure for developers to consider, with items that are more meaningful than traffic light upgrades or new roads. Consultation would continue through the design stages to make one of these identified needs become a reality.

Each of these ideas can help to move our industry closer to a strong ecosystem of design and research to improve wellbeing.


London

Conclusion

Design for wellbeing is such a vast and challenging topic. With no easy answers, it will be an interesting journey to see how to apply this research in a scaleable way that has meaningful impact. This topic requires dedicated focus and research from many people. Like 'sustainability' it will be a critical element for design of buildings and housing in the future. However to have impact, it needs investment. It needs funding, research and commitment from Government to make social value a tangible and key focus for any development.

It is also exciting. The lens of health and wellbeing will manifest uniquely in each and every city, the solutions and design ideas endless. But it is also a lens that once seen through, will be difficult to ignore.

I hope this research will be inspiring, practical and useful as a launching point for the beginner or expert. Again, thank you to the talented and dedicated experts across the globe who generously shared their hopes and vision for this topic. I look forward to exploring this topic through practice and further research with other passionate designers, clients and researchers from across the globe for many years to come.

Which one is designed with wellbeing in mind?

Innsbruck, Austria

Sydney, Australia
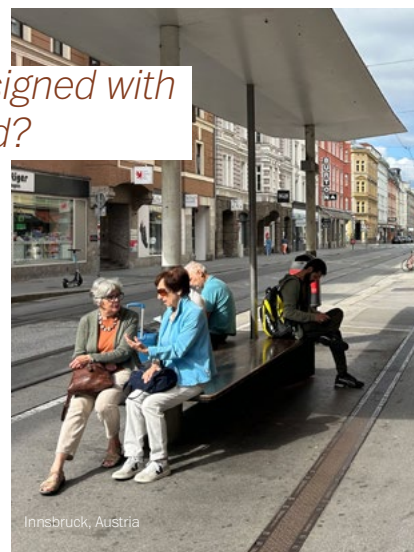
Thank you...

Key Definitions

Cohousing
"Cohousing, defined as a small intentional community of private homes clustered around a shared space. It is a purpose-built option that brings community into the home."[127]

Gender diverse people
"Gender diverse refers to people who identify with a gender or genders outside of the binary of female and male."[128]

Loneliness and Social Isolation:
"Loneliness is essentially the perception of social isolation whereas social isolation is the absence of regular human interaction in one's life."[129]

Neurodiversity
"Neurodiversity is an umbrella term to position neurodevelopmental differences, such as Attention-Deficit/Hyperactive Disorder (ADHD), Autism Spectrum Disorder, Tourette's syndrome, and Dyslexia, as natural variations in human neurology rather than deficits to be fixed. The neurodivergent community (individuals with neurotypes that differ from the neuromajority) have launched a worldwide movement promoting inclusion for all neurotypes in society and a shift away from the medical model of research to a more inclusive strengths-based approach."[130] "It is not about one condition, difficulty or difference."[131]

Social Housing And Affordable Housing
In New South Wales Australia, affordable housing is generally rental housing provided for very low to moderate income households where rent is generally considered affordable at around 30% of a gross household income[132]. The provision of affordable housing can be funded by planning incentives such as floor space incentives. And it is generally discounted to 20-25% below market rent in a similar neighbourhood. In the UK, "affordable housing" is 20% below market rate[133].

This is different to social housing which is "government subsidised, long-term, rental housing for people on very low incomes with a housing need."[134]

Social Value:
See the GBCA/Hassell paper that explores this definition in depth and offers the working definition "Social value is the net positive change in social, environmental and economic wellbeing of those directly and indirectly impacted by an initiative, project, or organisation. In the built environment, social value is created when local needs are understood, the people most impacted are authentically engaged and where buildings, places, and infrastructure improve present and future communities' quality of life, wellbeing and social cohesion."[135]

Trauma informed design
"Trauma-informed design is a framework combining trauma-informed care with the design process."[136] It can be applied to the design of spaces at every scale from the neighbourhood to the home. " The goal is to create physical spaces that promote safety, well-being, and healing. This requires realizing how the physical environment affects identity, worth, and dignity, and how it promotes empowerment."[137]

Universal Design
Centre for Universal Design Australia defines universal design as "a design thinking process that promotes human rights and embraces the concept of inclusion for all. A universal design approach considers the diverse needs and abilities of people throughout the design process."[138] It is not the same as accessibility and has moved beyond physical access to "incorporate all marginalised groups and address sensory, cognitive, social and cultural aspects of everyday life."[139] As a design process it includes "co-design, human-centred design, and user-centred design."[140] Shopworks Architecture identified that universal design is essential in creating safe, comfortable, accessible and dignified spaces. It is particularly vital in housing, where design can celebrate personal choice.

Wellbeing
"A measure of a person's quality of life, that is connected to their sense of happiness, relationships, emotional resilience, life satisfaction and realisation of their personal potential. Health, employment, financial resources, standard of living and sense of community are all contributing factors to wellbeing."[141]

Women
"This research recognises that women are not a homogenous group... Women represent enormous diversity in their cultural background, socio-economic status, where they live, their sexuality, gender, abilities, and age."[142]

39th Avenue Greenway, Denver, designed by DHM Design

Endnotes

1   OECD, ''Built Environment through a Well-being Lens'', (OECD, November 13, 2023),18 https://doi.org/10.1787/1b5bebf4-en.

2   Tiffany Lam et al., "The Quality of Life Framework Evidence Review" (Quality of Life Foundation, May 2022), Accessed December 12, 2024, https://www.qolf.org/wp-content/uploads/QOLF-EvidenceReview_14June-2022.pdf.

3   India Gyle, "2018: Dr Hugh Mackay Shares His Vision for a 'Compassionate, Community-Focused' Future - University of Wollongong – UOW," Uow.edu.au (University of Wollongong, 2018),Accessed November 18, 2024, https://www.uow.edu.au/media/2018/dr-hugh-mackay-shares-his-vision-for-a-compassionate-community-focused-future.php.

4   Kelly J Watson, "Establishing Psychological Wellbeing Metrics for the Built Environment," *Building Services Engineering Research and Technology* 39, no. 2 (January 22, 2018): 232–43, https://doi.org/10.1177/0143624418754497.

5   Martin Seligman, *Flourish: A Visionary New Understanding of Happiness and Well-Being* (New York: Atria Paperback, 2011).

6   David A. Deemer et al., "How Should Organizations Be Held Accountable for Promoting Environments That Foster Social Connection?," AMA Journal of Ethics 25, no. 11 (November 1, 2023): 825–32, https://doi.org/10.1001/amajethics.2023.825.

7   David Baker Architects, *9 Ways to Make Housing for People*, 1st ed. (Oro Editions, 2022).

8   Erin Peavey, "Connecting IRL: How the Built Environment Can Foster Social Health," *HKSinc* (HKS Architects, March 23, 2020), Accessed November 20, 2024, https://www.hksinc.com/wp-content/uploads/2020/03/LonelinessBuiltEnvironment_Peavey-2020_Updated.pdf.

9   Ibid.

10   David Baker Architects, *9 Ways to Make Housing for People*, 1st ed. (Oro Editions, 2022).

11   Ibid.

12   Ray Oldenburg and Karen Christensen, "Third Places, True Citizen Spaces," courier.unesco.org (The UNESCO Courier, March 31, 2023), Accessed November 20, 2024, https://courier.unesco.org/en/articles/third-places-true-citizen-spaces.

13   Danya Hakky, Emily Chmielewski, and Emily Scheffler, "The Subtle Art of Placemaking" (Perkins Eastman Design Research, June 17, 2021).

14   OECD, ''Built Environment through a Well-being Lens'', (OECD, November 13, 2023), 22, https://doi.org/10.1787/1b5bebf4-en.

15   Tiffany Lam et al., "The Quality of Life Framework Evidence Review" (Quality of Life Foundation, May 2022), Accessed December 12, 2024, https://www.qolf.org/wp-content/uploads/QOLF-EvidenceReview_14June-2022.pdf.

16   Brent Cross Town, "'Why We're Introducing a New 'Flourishing' Index," *Brentcrosstown.co.uk* (Brent Cross Town, November 20, 2020), Accessed December 10, 2024, https://brentcrosstown.co.uk/stories/why-were-introducing-a-new-flourishing-index.

17   Center on the Developing Child, *Epigenetics and Child Development: How Children's Experiences Affect Their Genes*, February 19, 2019, Infographic, *Harvard University*, February 19, 2019, Accessed January 8, 2025, https://developingchild.harvard.edu/resources/infographics/what-is-epigenetics-and-how-does-it-relate-to-child-development/.

18   Johns Hopkins Berman Institute of Bioethics, "What Is Bioethics?," Johns Hopkins Berman Institute of Bioethics, accessed November 25, 2024, https://bioethics.jhu.edu/about/what-is-bioethics/.

19   Anjan Chatterjee, Alex Coburn, and Adam Weinberger, "The Neuroaesthetics of Architectural Spaces," *Cognitive Processing* 22, no. 1 (September 1, 2021): 115–20, https://doi.org/10.1007/s10339-021-01043-4.

20   Wikipedia Contributors, "Cognitive Science," Wikipedia (Wikimedia Foundation), accessed October 14, 2024, https://en.wikipedia.org/w/index.php?title=Cognitive_science&oldid=1269349090.

21   Nil Khalifa, "Social Value Pioneers Unite to Combat 'Value Washing' and Promote Authentic Impact," *Impact Reporting* (Impact Reporting, September 4, 2024), accessed January 21, 2025, https://impactreporting.co.uk/social-value-pioneers-unite-to-combat-value-washing-and-promote-authentic-impact/.

22   David A. Deemer et al., "How Should Organizations Be Held Accountable for Promoting Environments That Foster Social Connection?," *AMA Journal of Ethics* 25, no. 11 (November 1, 2023): 825–32, https://doi.org/10.1001/amajethics.2023.825.

23   Green Building Council Australia and Hassell, "Social Value in the Built Environment," February 2024, https://gbca-web.s3.amazonaws.com/media/documents/socialvaluediscussionpaper-gbca-hassell-feb24.pdf.

24   Terri Wills et al., "Social Value: A UK White Paper" (ARUP, August 2023), accessed September 23, 2024, https://www.arup.com/insights/social-value-a-uk-white-paper/.

25   HACT, "Social Value Measurement for the Built Environment" (HACT), accessed November 28, 2024, https://hact.org.uk/how-we-can-help/social-value/built-environment-bank/.

26   Francesca Muskovic, "A Common Language for Social Sustainability" (Property Council of Australia, 2018),24, https://www.propertycouncil.com.au/wp-content/uploads/2018/03/A-Common-Language-for-Social-Sustainability-FINAL.pdf .

27   Ibid., 25

28   NSW Government , "NSW BUDGET 2024-25 Performance and Wellbeing -Consultation Paper" (NSW Government , June 2024). 13, https://www.budget.nsw.gov.au/sites/default/files/2024-06/NSW-Budget-2024-25-Performance-and-Wellbeing-consultation-paper-glossy-accessible.pdf.

29   Richard Parsons et al., "A Wellbeing Budget for NSW Foundation Paper" (NSW Department of Planning and Environment, 2022), 17, https://www.andi.org.au/wp-content/uploads/2022/07/NSW-2022-Wellbeing-Budget-Foundation-Paper-Foundation-paper.pdf.

30   State Government of Victoria, "What Do We Mean by Diversity and Inclusion?," Vic.Gov.Au (State Government of Victoria, March 21, 2023), accessed January, 25, 2025, https://www.vic.gov.au/dpc-diversity-and-inclusion-strategy-2019-2021/what-do-we-mean-diversity-and-inclusion.

31   Mary McCarron et al., "PPI Ignite Network Values and Principles" (Trinity College Dublin , 2023), accessed November 12, 2024, https://ppi-network.ie/wp-content/uploads/2023/10/Framework-for-QI-in-PPI.pdf.

32   Ashley Gallegos and Cecilie Surasky, "Belonging Design Principles | Othering & Belonging Institute," belonging.berkeley.edu, August 7, 2023, accessed August 21, 2024, https://belonging.berkeley.edu/belongingdesignprinciples.

33   Madeleine Hebert et al., "Building Social Connections " (Happy Cities, 2024), 14, https://static1.squarespace.com/static/65c7e5d8ed8ae44c1709ae60/t/66b4eda8e779cf7511d60911/1723133360942/

Building+social+connections+toolkit-pages-073124-compressed.pdf.

34   Ibid .

35   Just City Lab, "Just City Lab," Design For The Just City (Harvard Graduate School of Design), accessed November 12, 2024, https://www.designforthejustcity.org/.

36   Byera Hadley Interview with Flora Samuel, Cambridge, July 2024

37   Seligman, *Flourish: A Visionary New Understanding of Happiness and Well-Being* (New York: Atria Paperback, 2011).

38   Natasha Reid, "Intimate Series: For High Density at a Human Scale," Issuu, October 20, 2016, https://issuu.com/natashareid/docs/161004_intimate_series_final_public.

39   Byera Hadley Interview with Flora Samuel, Cambridge, July 2024

40   Julia Markovich, et al., (2018) "Community Wellbeing: A Framework for the Design Professions", Ottawa: The Conference Board of Canada.

41   Quality of Life Foundation, "Quality of Life Foundation - Quality of Life Foundation | Welcome to the Quality of Life Foundation," qolf.org (Quality of Life Foundation), accessed July 12, 2024, https://www.qolf.org/.

42   Matthew Morgan and Sem Lee, "Review of Post-Occupancy Evaluation for Housing" (Quality of Life Foundation, June 2023), accessed November 28,2024, https://www.qolf.org/wp-content/uploads/Post-occupancy-evaluation-for-housing-review.pdf.

43   Julia Markovich, et al., (2018) "Community Wellbeing: A Framework for the Design Professions", Ottawa: The Conference Board of Canada.

44   Ibid., 1.

45   "NORC Innovation Centre - Creating Possi-

bilities for Aging in Place," NORC Innovation Centre (NORC Innovation Centre), accessed August 2024, https://norcinnovationcentre.ca.

46   "Happy Homes Toolkit" (Happy Homes Project), accessed January 2025, https://www.happy-homestoolkit.co.uk.

47   Madeleine Hebert et al., "Building Social Connections " (Happy Cities, 2024), 11, https://static1.squarespace.com/static/65c7e5d8ed8ae44c1709ae60/t/66b4e-da8e779cf7511d60911/1723133360942/Building+social+connections+toolkit-pages-073124-compressed.pdf.

48   Ibid .

49   "Practice Guides," Hey Neighbour Collective, accessed June 29, 2024, https://www.heyneighbourcollective.ca/practice-guides/.

50   NSW Government , "Apartment Design Guide," Planning. NSW, accessed January 2025, https://www.planning.nsw.gov.au/Policy-and-Legislation/Housing/Apartment-Design-Guide.

51   City of North Vancouver, "Active Design | City of North Vancouver," Cnv.org, accessed December 9, 2024, https://www.cnv.org/Community-Environment/Housing/Active-Design.

52   "Active Design Guidelines" (City of North Vancouver, September 15, 2015),5, https://www.cnv.org/-/media/City-of-North-Vancouver/Documents/Active-Design/Active-Design-Guidelines.pdf.

53   Madeleine Hebert and Michelle Hoar, "Building Social Connections a Study of Active Design Policy in the City of North Vancouver" (Happy Cities and Hey Neighbour Collective, 2024),11, https://static1.squarespace.com/static/65c7e5d8e-d8ae44c1709ae60/t/65f9c7bd4b3c1e4e35e-a6b70/1737583745615/Building-social-connections_North-Vancouver-public-report.pdf.

54   Ibid., 18

55   Fitwel, "Fitwel | World's Leading Healthy Building Certification System," fitwel.org, accessed June 2024, https://www.fitwel.org.

56   "International WELL Building Institute" (International WELL Building Institute (IWBI)), accessed June 2024, https://www.wellcertified.com.

57   "Well-Being and beyond GDP" (OECD), accessed October 2024, https://www.oecd.org/en/topics/well-being-and-beyond-gdp.html.

58   "The 17 Sustainable Development Goals," United Nations, accessed November 2024, https://sdgs.un.org/goals.

59   United Nations, "Transforming Our World: The 2030 Agenda for Sustainable Development" (United Nations, 2015), https://sdgs.un.org/2030agenda.

60   OECD, "Built Environment through a Well-Being Lens" (OECD, November 13, 2023), 18, https://doi.org/10.1787/1b5bebf4-en.

61   "Measuring What Matters Statement ," *Treasury.gov* (Australian Government, July 21, 2023), https://treasury.gov.au/publication/p2023-mwm.

62   Wales Government, "Well-Being of Future Generations (Wales) Act 2015: The Essentials," GOV.WALES (Wales Government, June 23, 2015), https://www.gov.wales/well-being-future-generatiOns-act-essentials-html.

63   "Public Map Platform," Publicmap.org, accessed December 2024, https://publicmap.org/en.

64   ACT Treasury, "ACT Wellbeing Framework," ACT Wellbeing Framework (ACT Treasury), accessed May 2024, https://www.act.gov.au/wellbeing.

65   NSW Government , "Better Placed," Planning (NSW Government), accessed January 2024, https://www.planning.nsw.gov.au/government-architect-nsw/policies-and-frameworks/better-placed.

66   Julianne Holt-Lunstad and Susan Golant, "Our Epidemic of Loneliness and Isolation" (Of-fice

of The U.S. Surgeon General', 2023),5, https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf.

67   Ibid.,4, 26

68   "New Surgeon General Advisory Raises Alarm about the Devastating Impact of the Epidemic of Loneliness and Isolation in the United States" (U.S Department of Health Byand Human Services, 2024), https://public3.pagefreezer.com/browse/HHS.gov/02-01-2024T03:56/https://www.hhs.gov/about/news/2023/05/03/new-surgeon-general-advisory-raises-alarm-about-devastating-impact-epidemic-loneliness-isolation-united-states.html.

69   Zoë Mohan et al., "What's Old Is New Again: Affordable, Community-Based Housing Options for Older Women," *Journal of the American Geriatrics Society*, October 22, 2024, https://doi.org/10.1111/jgs.19230.

70   "Parliamentary Committee to Examine the Prevalence, Causes and Impacts of Loneliness in Nsw for Immediate Release" (Standing Committee on Social Issues, 2024), https://www.parliament.nsw.gov.au/lcdocs/other/20021/Loneliness%20-%20Media%20release.pdf.

71   Ryan Hammoud et al., "Lonely in a Crowd: Investigating the Association between Overcrowding and Loneliness Using Smartphone Technologies," *Scientific Reports* 11, no. 1 (December 20, 2021): 24134, https://doi.org/10.1038/s41598-021-03398-2, quoted in Richard Parsons et al., "A Wellbeing Budget for NSW Foundation Paper" (NSW Department of Planning and Environment, 2022), https://www.andi.org.au/wp-content/uploads/2022/07/NSW-2022-Wellbeing-Budget-Foundation-Paper-Foundation-paper.pdf.

72   "Using Design to Connect Us" (The Lone-

liness Lab, 2020), https://static1.squarespace.com/static/5fb71159fd59316a1cce9500/t/5f-d7aca02b9b2c152d123276/1607970033593/LL_DESIGN_TO_CONNECT_REPORT.pdf.

73   Madeleine Hebert et al., "Building Social Connections " (Happy Cities, 2024),17, https://static1.squarespace.com/static/65c7e5d8ed8ae44c1709ae60/t/66b4e-da8e779cf7511d60911/1723133360942/Building+social+connections+toolkit-pages-073124-compressed.pdf.

74   Ibid., 18

75   Intergenerational Housing Models : Wellbeing Economy Alliance," Weall.org (Wellbeing Economy Alliance , 2022), https://weall.org/resource/intergenerational-housing-models.

76   Madeleine Hebert and Michelle Hoar, "Building Social Connections a Study of Active Design Policy in the City of North Vancouver" (Happy Cities and Hey Neighbour Collective, 2024), 8, https://static1.squarespace.com/static/65c7e5d8e-d8ae44c1709ae60/t/65f9c7bd4b3c1e4e35e-a6b70/1737583745615/Building-social-connections_North-Vancouver-public-report.pdf.

77   Corey Keyes, "'What's Your Why? Positive Psychology Is a Means, so What Is Your End?", EPCC Conference 2024, Innsbruck.

78   Angelique Edmonds, "Supporting Social Value through the Design Process." *Environment*, no. 4 (2021),1, https://www.jstor.org/stable/27091019.

79   Erin Peavey, "Connecting IRL: How the Built Environment Can Foster Social Health," *HKSinc* (HKS Architects, March 23, 2020), https://www.hksinc.com/wp-content/uploads/2020/03/LonelinessBuiltEnvironment_Peavey-2020_Updated.pdf.

80   80.   Madeleine Hebert and Michelle Hoar, "Building Social Connections a Study of Active

Design Policy in the City of North Vancouver" (Happy Cities and Hey Neighbour Collective, 2024), https://static1.squarespace.com/static/65c7e5d8e-d8ae44c1709ae60/t/65f9c7bd4b3c1e4e35e-a6b70/1737583745615/Building-social-connections_North-Vancouver-public-report.pdf.

81   Madeleine Hebert and Michelle Hoar, "Building Social Connections a Study of Active Design Policy in the City of North Vancouver" (Happy Cities and Hey Neighbour Collective, 2024), 70, https://static1.squarespace.com/static/65c7e5d8e-d8ae44c1709ae60/t/65f9c7bd4b3c1e4e35e-a6b70/1737583745615/Building-social-connections_North-Vancouver-public-report.pdf.

82   Ann Forsyth, Jennifer Molinsky, and Har Ye Kan, "Correction To: Improving Housing and Neighborhoods for the Vulnerable: Older People, Small Households, Urban Design, and Planning," *URBAN DESIGN International*, July 2, 2019, 24–186, https://doi.org/10.1057/s41289-019-00093-7 cited in Zoe Mohan,et al "What's Old Is New Again: Affordable, Community-Based Housing Options for Older Women." *Journal of the American Geriatrics Society* ,https://doi.org/10.1111/jgs.19230.

83   "NORC Innovation Centre - Creating Possibilities for Aging in Place," NORC Innovation Centre (NORC Innovation Centre), accessed August 2024, https://norcinnovationcentre.ca.

84   "About Us," MA+HG Architects, 2019, accessed August, 14, 2024, https://mahg.ca/about.

85   "Tomo House on Main ," MA+HG Architects, accessed August 14, 2024, https://mahg.ca/work#/tomo/.

86   "The Happier Missing Middle: Lessons for Building an Urban Cohousing Village," Happy Cities (Happy Cities, June 17, 2024), https://happycities.com/blog/the-happier-missing-middle-les-

sons-for-building-an-urban-cohousing-village.

87   David Baker Architects, *9 Ways to Make Housing for People*, 1st ed. (Oro Editions, 2022).

88   Ibid., 123.

89   Ibid.

90   Ibid., 133.

91   "Housing Vancouver Strategy," Vancouver.ca (City of Vancouver), accessed January 20, 2024, https://vancouver.ca/people-programs/housing-vancouver-strategy.aspx.

92   Ceridwen Owen and James Crane, "Trauma-Informed Design of Supported Housing: A Scoping Review through the Lens of Neuroscience," *International Journal of Environmental Research and Public Health* 19, no. 21 (November 1, 2022):14279, https://doi.org/10.3390/ijerph192114279.

93   "Housing and Mental Health Agreement " (NSW Health, 2022), https://www.health.nsw.gov.au/mentalhealth/Pages/housing-and-mental-health-agreement.aspx.

94   Jennifer Wilson, Shopworks Architecture, Byera Hadley Interview, July 2024

95   (n.d), Trauma-Informed Design. Shopworks Architecture, https://shopworksarc.com/tid/, Accessed May 2024

96   "Trauma Informed Design", (Trauma-informed Design society 2020), accesssed 20 January 2025, https://www.traumainformeddesign.org/about.

97   Urban Peak," Urban Peak, accessed January 18, 2025, https://www.urbanpeak.org/.

98   "June Peak News," Urban Peak, June 15, 2024, https://www.urbanpeak.org/blog/june-peak-news-24#mothership.

99   "Design Economy: The Design Value Framework", (Design Council), accessed 22 August 2024, https://www.designcouncil.org.uk/fileadmin/up-

loads/dc/Tools_and_Frameworks/DC_DE_Design_Value_Framework.pdf.

100   David Baker Architects, *9 Ways to Make Housing for People*, 1st ed. (Oro Editions, 2022).

101   Ashley Gallegos and Cecilie Surasky, "Belonging Design Principles | Othering & Belonging Institute," belonging.berkeley.edu, August 7, 2023, https://belonging.berkeley.edu/belongingdesign-principles.

102   Tiffany Lam et al., "The Quality of Life Framework Evidence Review" (Quality of Life Foundation, May 2022), https://www.qolf.org/wp-content/uploads/QOLF-EvidenceReview_14June-2022.pdf.

103   Dr. Kelly Watson. Byera Hadley Interview July 4, 2024, Manchester

104   Matthew Morgan and Sem Lee, "Review of Post-Occupancy Evaluation for Housing 2 3" (Quality of Life Foundation, June 2023),7, https://www.qolf.org/wp-content/uploads/Post-occupancy-evaluation-for-housing-review.pdf.

105   Sem Lee, Byera Hadley Interview, June 26, 2024, London

106   "Public Map Platform," Publicmap.org, accessed December 2024, https://publicmap.org/en.

107   Samantha Hall et al., "Evidence Based Practice for the Built Environment: Can Systematic Reviews Close the Research - Practice Gap?," *Procedia Engineering* 180 (2017): 912–24, https://doi.org/10.1016/j.proeng.2017.04.341.

108   OECD, *Guidelines on Measuring Subjective Well-Being*, www.ncbi.nlm.nih.gov (OECD Publishing, 2013), https://www.ncbi.nlm.nih.gov/books/NBK189563/.

109   Flora Samuel, Byera Haldey Interview, June 27, 2024, Cambridge.

110   OECD, "Built Environment through a Well-Being Lens" (OECD, November 13, 2023), 27, https://

doi.org/10.1787/1b5bebf4-en.
111   Antonella Delle Fave, "Invisible People: A Missed Opportunity for Knowledge Development" (ECPP Conference, 2024).
112   112.   Robin Hacke and Alyia Gaskins, "How Can Clinicians Catalyze Investments to Improve Community Health?," *AMA Journal of Ethics* 21, no. 3 (March 1, 2019): E262-268, https://doi.org/10.1001/amajethics.2019.262.

113   Matthew Morgan and Sem Lee, "Review of Post-Occupancy Evaluation for Housing" (Quality of Life Foundation, June 2023), https://www.qolf.org/wp-content/uploads/Post-occupancy-evaluation-for-housing-review.pdf.
114   Ibid.
115   Ibid., 3.
116   Michelle Hoar (Hey Neighbour Collective), Byera Hadley Interview, June 12th, 2024, Vancouver
117   OECD, "Guidelines on Measuring Subjective Well-Being.", www.ncbi.nlm.nih.gov (OECD Publishing, 2013), https://www.ncbi.nlm.nih.gov/books/NBK189563/.
118   Flora Samuel, Byera Haldey Interview, June 27, 2024, Cambridge.
119   "Home - CANUE," CANUE - Canadian Urban Environmental Health Research Consortium | understanding urban living and human health, n.d., https://canue.ca.
120   "Healthy Plan City," healthyplan.city, accessed January 12, 2025, https://healthyplan.city/en.
121   "Public Map Platform," Publicmap.org (Cambridge, Cardiff and Wrexham Universities), accessed January 12, 2025, https://publicmap.org/en/about.
122   Ibid.

123   "Social Value Toolkit", Machester City Council, accessed January 20, 2025, https://www.manchester.gov.uk/info/200095/tenders_and_contracts/2612/business_opportunities_and_working_with_us/11.
124   David A. Deemer et al., "How Should Organizations Be Held Accountable for Promoting Environments That Foster Social Connection?," AMA Journal of Ethics 25, no. 11 (November 1, 2023): 825–32, https://doi.org/10.1001/amajethics.2023.825.
125   Ibid.
126   Ibid.
127   Ann Forsyth, Jennifer Molinsky, and Har Ye Kan, "Correction To: Improving Housing and Neighborhoods for the Vulnerable: Older People, Small Households, Urban Design, and Planning," *URBAN DESIGN International,* July 2, 2019, 24–186, https://doi.org/10.1057/s41289-019-00093-7. cited in Zoë Mohan et al., "What's Old Is New Again: Affordable, Community-Based Housing Options for Older Women," *Journal of the American Geriatrics Society*, October 22, 2024, https://doi.org/10.1111/jgs.19230.
128   Gill Matthewson, Tegan Larin, and Nicole Kalms, "YourGround NSW Respects Aboriginal and Torres Strait Islander People and Cultures" (Melbourne: Monash University XYX Lab and NSW State Government, 2024), https://dcj.nsw.gov.au/documents/legal-and-justice/our-commissioners/YourGround_NSW_Monash_University_XYX_Lab_June_2024_rev.pdf.
129   Erin Peavey, "Connecting IRL: How the Built Environment Can Foster Social Health," *HKSinc* (HKS Architects, March 23, 2020), https://www.hksinc.com/wp-content/uploads/2020/03/LonelinessBuiltEnvironment_Peavey-2020_Updated.pdf.
130   "Neurodiversity Project" (University of Mel-

bourne , February 2, 2024), https://www.unimelb.edu.au/neurodiversity.
131   "PAS 6463:2022: Design for the Mind. Neurodiversity and the Built Environment. Guide" (The British Standards Institute, October 11, 2022), https://doi.org/10.3403/30411154.
132   "How Are Affordable Housing Rents Set?," Family & Community Services (NSW Goverment), accessed December 14, 2024, https://www.facs.nsw.gov.au/providers/housing/affordable/about/chapters/how-are-affordable-housing-rents-set.
133   "The Manchester Living Rent," manchester.gov.uk (Manchester City Council), accessed January 15, 2024, https://www.manchester.gov.uk/livingrent.
134   "How Are Affordable Housing Rents Set?," Family & Community Services (NSW Government), accessed December 14, 2024, https://www.facs.nsw.gov.au/providers/housing/affordable/about/chapters/how-are-affordable-housing-rents-set.
135   Green Building Council Australia and Hassell, "Social Value in the Built Environment," February 2024, https://gbca-web.s3.amazonaws.com/media/documents/socialvaluediscussionpaper-gbca-hassell-feb24.pdf.
136   Sam Grabowska et al., "Trauma Informed Design Architectural Principles in the Service of Trauma Informed Design " (Shopworks Architecture, Center for Housing and Homelessness Research at the University of Denver, and Group 14 Engineering., 2021), https://shopworksarc.com/wp-content/uploads/2021/10/Arc-Principles-in-the-Service-of-TID.pdf.
137   "Trauma Informed Design" (Trauma-informed Design society, 2020), https://www.traumainformeddesign.org/about.
138   "Universal Design Position Statement"

(Centre for Universal Design Australia, n.d.), accessed December 15, 2024. https://universaldesignaustralia.net.au/wp-content/uploads/2021/09/Universal-Design-position-statement-Generic-Final-Sept-2021.pdf.
139   Ibid.
140   Ibid.
141   Francesca Muskovic, "A Common Language for Social Sustainability" (Property Council of Australia, 2018),15, https://www.propertycouncil.com.au/wp-content/uploads/2018/03/A-Common-Language-for-Social-Sustainability-FINAL.pdf.
142   Gill Matthewson, Tegan Larin, and Nicole Kalms, "YourGround NSW Respects Aboriginal and Torres Strait Islander People and Cultures" (Melbourne: Monash University XYX Lab and NSW State Government, 2024), https://dcj.nsw.gov.au/documents/legal-and-justice/our-commissioners/YourGround_NSW_Monash_University_XYX_Lab_June_2024_rev.pdf.

Bibliography

ACT Treasury. "ACT Wellbeing Framework." ACT Wellbeing Framework. ACT Treasury. Accessed May 2024. https://www.act.gov.au/wellbeing.

"Active Design Guidelines." City of North Vancouver, September 15, 2015. https://www.cnv.org/-/media/City-of-North-Vancouver/Documents/Active-Design/Active-Design-Guidelines.pdf.

Brent Cross Town. "'Why We're Introducing a New 'Flourishing' Index." Brentcrosstown.co.uk. Brent Cross Town, November 20, 2020. https://brentcrosstown.co.uk/stories/why-were-introducing-a-new-flourishing-index.

CANUE - Canadian Urban Environmental Health Research Consortium | understanding urban living and human health. "Home - CANUE," n.d. https://canue.ca.

Centre for Thriving Places. "About The Thriving Places Index." Centreforthrivingplaces.org, https://www.centreforthrivingplaces.org/thriving-places-index/about-the-thriving-places-index/.

Center on the Developing Child. Epigenetics and Child Development: How Children's Experiences Affect Their Genes. February 19, 2019. Infographic. Harvard University. https://developingchild.harvard.edu/resources/infographics/what-is-epigenetics-and-how-does-it-relate-to-child-development/.

Chatterjee, Anjan, Alex Coburn, and Adam Weinberger. "The Neuroaesthetics of Architectural Spaces." Cognitive Processing 22, no. 1 (September 1, 2021): 115–20. https://doi.org/10.1007/s10339-021-01043-4.

City of North Vancouver. "Active Design | City of North Vancouver." Cnv.org. Accessed December 9, 2024. https://www.cnv.org/Community-Environment/Housing/Active-Design.

David Baker Architects. 9 Ways to Make Housing for People. 1st ed. Oro Editions, 2022.

Deemer, David A., Erin K. Peavey, Stowe Locke Teti, William J. Hercules, Jocelyn Wong, and Diana C. Anderson. "How Should Organizations Be Held Accountable for Promoting Environments That Foster Social Connection?" AMA Journal of Ethics 25, no. 11 (November 1, 2023): 825–32. https://doi.org/10.1001/amajethics.2023.825.

Delle Fave, Antonella. "Invisible People: A Missed Opportunity for Knowledge Development." Presented at the ECPP Conference, 2024.

"Design Economy: The Design Value Framework'." Design Council. Accessed August 22, 2024. https://www.designcouncil.org.uk/fileadmin/uploads/dc/Tools_and_Frameworks/DC_DE_Design_Value_Framework.pdf.

Edmonds, Angelique. "Supporting Social Value through the Design Process." Environment, no. 4 (2021): 1–12. https://www.jstor.org/stable/27091019.

Family & Community Services. "How Are Affordable Housing Rents Set?" NSW Goverment . Accessed December 14, 2024. https://www.facs.nsw.gov.au/providers/housing/affordable/about/chapters/how-are-affordable-housing-rents-set.

Family & Community Services. "How Are Affordable Housing Rents Set?" NSW Government . Accessed December 14, 2024. https://www.facs.nsw.gov.au/providers/housing/affordable/about/chapters/how-are-affordable-housing-rents-set.

Fitwel. "Fitwel | World's Leading Healthy Building Certification System." fitwel.org. Accessed June 2024. https://www.fitwel.org.

Forsyth, Ann, Jennifer Molinsky, and Har Ye Kan. "Correction To: Improving Housing and Neighborhoods for the Vulnerable: Older People, Small Households, Urban Design, and Planning." URBAN DESIGN International, July 2, 2019, 24–186. https://doi.org/10.1057/s41289-019-00093-7.

Gallegos, Ashley, and Cecilie Surasky. "Belonging Design Principles | Othering & Belonging Institute." belonging.berkeley.edu, August 7, 2023. https://belonging.berkeley.edu/belongingdesignprinciples.

Grabowska, Sam, Chad Jennifer Wilson Holtzinger PhD Rev. Laura Rossbert Rachelle Macur, LEED AP+, C-CSR Daniel Brisson, Jennifer Wilson, Laura Rossbert, and Rachelle Macur. "Trauma Informed Design Architectural Principles in the Service of Trauma Informed Design ." Shopworks Architecture, Center for Housing and Homelessness Research at the University of Denver, and Group 14 Engineering., 2021. https://shopworksarc.com/wp-content/uploads/2021/10/Arc-Principles-in-the-Service-of-TID.pdf.

Green Building Council Australia , and Hassell. "Social Value in the Built Environment," February 2024. https://gbca-web.s3.amazonaws.com/media/documents/socialvaluediscussionpaper-gbca-hassell-feb24.pdf.

Gyle, India. "2018: Dr Hugh Mackay Shares His Vision for a 'Compassionate, Community-Focused' Future - University of Wollongong – UOW." Uow.edu.au. University of Wollongong, 2018. https://www.uow.edu.au/media/2018/dr-hugh-mackay-shares-his-vision-for-a-compassionate-community-focused-future.php.

Hacke, Robin, and Alyia Gaskins. "How Can Clinicians Catalyze Investments to Improve Community Health?" AMA Journal of Ethics 21, no. 3 (March 1, 2019): E262-268. https://doi.org/10.1001/amajethics.2019.262.

HACT. "Social Value Measurement for the Built Environment." HACT. Accessed November 28, 2024. https://hact.org.uk/how-we-can-help/social-value/built-environment-bank/.

Hakky, Danya, Emily Chmielewski, and Emily Scheffler. "The Subtle Art of Placemaking." Perkins Eastman Design Research, June 17, 2021. https://www.perkinseastman.com/white-papers/the-subtle-art-of-placemaking/.

Hall, Samantha, Philip Oldfield, Benjamin J. Mullins, Brett Pollard, and Christian Criado-Perez. "Evidence Based Practice for the Built Environment: Can Systematic Reviews Close the Research - Practice Gap?" Procedia Engineering 180 (2017): 912–24. https://doi.org/10.1016/j.proeng.2017.04.341.

Hammoud, Ryan, Stefania Tognin, Ioannis Bakolis, Daniela Ivanova, Naomi Fitzpatrick, Lucie Burgess, Michael Smythe, Johanna Gibbons, Neil Davidson, and Andrea Mechelli. "Lonely in a Crowd: Investigating the Association between Overcrowding and Loneliness Using Smartphone Technologies." Scientific Reports 11, no. 1 (December 20, 2021): 24134. https://doi.org/10.1038/s41598-021-03398-2.

Happy Cities. "The Happier Missing Middle: Lessons for Building an Urban Cohousing Village." Happy Cities, June 17, 2024. https://happycities.com/blog/the-happier-missing-middle-lessons-for-building-an-urban-cohousing-village.

"Happy Homes Toolkit." Happy Homes Project. Accessed January 2025. https://www.happyhomestoolkit.co.uk.

healthyplan.city. "Healthy Plan City." Accessed January 12, 2025. https://healthyplan.city/en.

Hebert, Madeleine, Emma Avery, Sheree Emmanuel, and Leah Karlberg. "Building Social Connections ." Happy Cities, 2024. https://static1.squarespace.com/static/65c7e5d8ed8ae44c1709ae60/t/66b4eda8e779cf7511d60911/1723133360942/Building+social+connections+toolkit-pages-073124-compressed.pdf.

Hebert, Madeleine, and Michelle Hoar. "Building Social Connections a Study of Active Design Policy in the City of North Vancouver." Happy Cities and Hey Neighbour Collective, 2024. https://static1.squarespace.com/static/65c7e5d8ed8ae44c1709ae60/t/65f9c7bd4b3c1e4e35ea6b70/1737583745615/Building-social-connections_North-Vancouver-public-report.pdf.

Hey Neighbour Collective. "Practice Guides." Accessed June 29, 2024. https://www.heyneighbourcollective.ca/practice-guides/.

Holt-Lunstad, Julianne, and Susan Golant. "Our Epidemic of Loneliness and Isolation." Office of The U.S. Surgeon General', 2023. https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf.

"Housing and Mental Health Agreement ." NSW Health, 2022. https://www.health.nsw.gov.au/mentalhealth/Pages/housing-and-mental-health-agreement.aspx.

"International WELL Building Institute." International WELL Building Institute (IWBI) . Accessed June 2024. https://www.wellcertified.com.

Johns Hopkins Berman Institute of Bioethics. "What Is Bioethics?" Johns Hopkins Berman Institute of Bioethics. Accessed November 25, 2024. https://bioethics.jhu.edu/about/what-is-bioethics/.

Just City Lab. "Just City Lab." Design For The Just City. Harvard Graduate School of Design . Accessed November 12, 2024. https://www.designforthejustcity.org/.

Keyes, Corey. "'What's Your Why? Positive Psychology Is a Means, so What Is Your End?" Presented at the EPCC Conference, 2024.

Khalifa, Nil. "Social Value Pioneers Unite to Combat 'Value Washing' and Promote Authentic Impact." Impact Reporting. Impact Reporting, September 4, 2024. https://impactreporting.co.uk/social-value-pioneers-unite-to-combat-value-washing-and-promote-authentic-impact/.

Lam, Tiffany, Matthew Morgan, Camilla Siggaard Andersen, and Brett Pollard. "The Quality of Life Framework Evidence Review." Quality of Life Foundation, May 2022. https://www.qolf.org/wp-content/uploads/QOLF-EvidenceReview_14June-2022.pdf.

MA+HG Architects. "About Us," 2019. https://mahg.ca/about.

MA+HG Architects. "Tomo House on Main ." Accessed August 14, 2024. https://mahg.ca/work#/tomo/.

manchester.gov.uk. "The Manchester Living Rent." Manchester City Council. Accessed January 15, 2024. https://www.manchester.gov.uk/livingrent.

Markovich, Julia, Monika Slovinec D'Angelo, and Thy Dinh. "Community Wellbeing: A Framework for the Design Professions". Ottawa: The Conference Board of Canada. 2018.

Matthewson, Gill, Tegan Larin, and Nicole Kalms. "YourGround NSW Respects Aboriginal and Torres Strait Islander People and Cultures." Melbourne:

Monash University XYX Lab and NSW State Government, 2024. https://dcj.nsw.gov.au/documents/legal-and-justice/our-commissioners/YourGround_NSW_Monash_University_XYX_Lab_June_2024_rev.pdf.

McCarron, Mary, Philip McCallion, Sarah Bowman, and Michael Foley. "PPI Ignite Network Values and Principles." Trinity College Dublin , 2023. https://ppinetwork.ie/wp-content/uploads/2023/10/Framework-for-QI-in-PPI.pdf.

"Measuring What Matters Statement ." Treasury.gov. Australian Government, July 21, 2023. https://treasury.gov.au/publication/p2023-mwm.

Mohan, Zoë, Mahnaz Khomamizadeh, Joyce M Li, and Paula A Rochon. "What's Old Is New Again: Affordable, Community-Based Housing Options for Older Women." Journal of the American Geriatrics Society, October 22, 2024. https://doi.org/10.1111/jgs.19230.

Morgan, Matthew, and Sem Lee. "Review of Post-Occupancy Evaluation for Housing 2 3." Quality of Life Foundation, June 2023. https://www.qolf.org/wp-content/uploads/Post-occupancy-evaluation-for-housing-review.pdf.

Muskovic, Francesca. "A Common Language for Social Sustainability." Property Council of Australia, 2018. https://www.propertycouncil.com.au/wp-content/uploads/2018/03/A-Common-Language-for-Social-Sustainability-FINAL.pdf.

"Neurodiversity Project." University of Melbourne , February 2, 2024. https://www.unimelb.edu.au/neurodiversity.

"New Surgeon General Advisory Raises Alarm about the Devastating Impact of the Epidemic of Loneliness and Isolation in the United States." U.S Department

of Health and Human Services, 2024. https://public3.pagefreezer.com/browse/HHS.gov/02-01-2024T03:56/https://www.hhs.gov/about/news/2023/05/03/new-surgeon-general-advisory-raises-alarm-about-devastating-impact-epidemic-loneliness-isolation-united-states.html.

NORC Innovation Centre. "NORC Innovation Centre - Creating Possibilities for Aging in Place." NORC Innovation Centre. Accessed August 2024. https://norcinnovationcentre.ca.

NSW Government . "Apartment Design Guide." Planning. NSW. Accessed January 2025. https://www.planning.nsw.gov.au/Policy-and-Legislation/Housing/Apartment-Design-Guide.

NSW Government. "Better Placed." Planning. NSW Government. Accessed January 2024. https://www.planning.nsw.gov.au/government-architect-nsw/policies-and-frameworks/better-placed.

NSW Government. "NSW BUDGET 2024-25 Performance and Wellbeing -Consultation Paper." NSW Government , June 2024. https://www.budget.nsw.gov.au/sites/default/files/2024-06/NSW-Budget-2024-25-Performance-and-Wellbeing-consultation-paper-glossy-accessible.pdf.

OECD "Well-Being and beyond GDP." OECD, Accessed October 2024. https://www.oecd.org/en/topics/well-being-and-beyond-gdp.html.

OECD. "Built Environment through a Well-Being Lens." OECD, November 13, 2023. https://doi.org/10.1787/1b5bebf4-en.

OECD "Guidelines on Measuring Subjective Well-Being". www.ncbi.nlm.nih.gov. OECD Publishing, 2013. https://www.ncbi.nlm.nih.gov/books/NBK189563/.

Oldenburg, Ray, and Karen Christensen. "Third
    Places, True Citizen Spaces." courier.unesco.
    org. The UNESCO Courier, March 31, 2023.
    https://courier.unesco.org/en/articles/
    third-places-true-citizen-spaces.

Owen, Ceridwen, and James Crane. "Trauma-Informed
    Design of Supported Housing: A Scoping Review
    through the Lens of Neuroscience." International
    Journal of Environmental Research and Public
    Health 19, no. 21 (November 1, 2022): 14279.
    https://doi.org/10.3390/ijerph192114279.

"Parliamentary Committee to Examine the Prevalence,
    Causes and Impacts of Loneliness in NSW for
    Immediate Release." Standing Committee on
    Social Issues, 2024. https://www.parliament.nsw.
    gov.au/lcdocs/other/20021/Loneliness%20-%20
    Media%20release.pdf.

Parsons, Richard, Centine Wilbello, Tarini Kalra,
    Steven Weng, Bronagh Brbich, and Kelli Ng. "A
    Wellbeing Budget for NSW Foundation Paper."
    NSW Department of Planning and Environment,
    2022. https://www.andi.org.au/wp-content/
    uploads/2022/07/NSW-2022-Wellbeing-Budget-
    Foundation-Paper-Foundation-paper.pdf.

"PAS 6463:2022: Design for the Mind. Neurodiversity
    and the Built Environment. Guide." The British
    Standards Institute, October 11, 2022. https://doi.
    org/10.3403/30411154.

Peavey, Erin. "Connecting IRL: How the Built
    Environment Can Foster Social Health." HKSinc.
    HKS Architects, March 23, 2020. https://www.
    hksinc.com/wp-content/uploads/2020/03/
    LonelinessBuiltEnvironment_Peavey-2020_
    Updated.pdf.

Publicmap.org. "Public Map Platform." Accessed
    December 2024. https://publicmap.org/en.

Publicmap.org. "Public Map Platform." Cambridge, Cardiff
    and Wrexham Universities. Accessed January 12,
    2025. https://publicmap.org/en/about.

Quality of Life Foundation. "Quality of Life Foundation -
    Quality of Life Foundation | Welcome to the Quality of
    Life Foundation." qolf.org. Quality of Life Foundation.
    Accessed July 12, 2024. https://www.qolf.org/.

Reid, Natasha. "Intimate Series: For High
    Density at a Human Scale." Issuu, October
    20, 2016. https://issuu.com/natashareid/
    docs/161004_intimate_series_final_public.

Seligman, Martin. Flourish: A Visionary New
    Understanding of Happiness and Well-Being. New
    York: Atria Paperback, 2011.

"Social Value in the Built Environment." Gbca.org.
    au. GBCA and HASSELL . Accessed December
    18, 2024. https://new.gbca.org.au/green-star/
    green-star-strategy/social-value/.

State Government of Victoria. "What Do We
    Mean by Diversity and Inclusion?" Vic.
    Gov.Au. State Government of Victoria,
    March 21, 2023. https://www.vic.gov.au/
    dpc-diversity-and-inclusion-strategy-2019-2021/
    what-do-we-mean-diversity-and-inclusion.

"Trauma Informed Design." Trauma-informed Design
    Society, 2020. https://www.traumainformeddesign.
    org/about.

United Nations. "The 17 Sustainable Development
    Goals." Accessed November 2024. https://sdgs.
    un.org/goals.

United Nations. "Transforming Our World: The 2030
    Agenda for Sustainable Development." United
    Nations, 2015. https://sdgs.un.org/2030agenda.

"Universal Design Position Statement." Centre for
    Universal Design Australia, n.d. Accessed December
    15, 2024. https://universaldesignaustralia.
    net.au/wp-content/uploads/2021/09/
    Universal-Design-position-statement-Generic-
    Final-Sept-2021.pdf.

Urban Peak. "Urban Peak." Accessed January 18, 2025.
    https://www.urbanpeak.org/.

"Using Design to Connect Us." The Loneliness
    Lab, 2020. https://static1.squarespace.com/
    static/5fb71159fd59316a1cce9500/t/5fd7a
    ca02b9b2c152d123276/1607970033593/
    LL_DESIGN_TO_CONNECT_REPORT.pdf.

Vancouver.ca. "Housing Vancouver Strategy." City of
    Vancouver. Accessed January 20, 2024. https://
    vancouver.ca/people-programs/housing-vancouver-
    strategy.aspx.

Wales Government. "Well-Being of Future
    Generations (Wales) Act 2015: The
    Essentials." GOV.WALES. Wales Government,
    June 23, 2015. https://www.gov.wales/
    well-being-future-generatiOns-act-essentials-html.

Watson, Kelly J. "Establishing Psychological Wellbeing
    Metrics for the Built Environment." Building
    Services Engineering Research and Technology
    39, no. 2 (January 22, 2018): 232–43. https://doi.
    org/10.1177/0143624418754497.

Weall.org. "Intergenerational Housing Models :
    Wellbeing Economy Alliance." Wellbeing Economy
    Alliance , 2022. https://weall.org/resource/
    intergenerational-housing-models.

What Works Wellbeing. "What Works Wellbeing",
    Accessed 3rd June 2024, https://
    whatworkswellbeing.org/

Wikipedia Contributors. "Cognitive Science." Wikipedia.
    Wikimedia Foundation. Accessed October
    14, 2024. https://en.wikipedia.org/w/index.
    php?title=Cognitive_science&oldid=1269349090.

Wills, Terri, Anne Parkes, Sara Candiracci, and Laetitia
    Lucy. "Social Value: A UK White Paper." ARUP,
    August 2023. https://www.arup.com/insights/
    social-value-a-uk-white-paper/.

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