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Medium Density Housing Assessment Tools: Summary Report

Verney Ryan and Bill Smith

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Beacon Pathway, funded by the Building Research Levy

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About This Report

Title

Medium Density Housing Assessment Tools: Summary Report

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Abstract

This report summarises the research process, medium density housing outcome framework, tool development and case study testing undertaken as part of this Building Research Levy and MBIE funded project

Reference

Ryan, V. and Smith, B. (2018). Medium Density Housing Assessment Tools: Summary Report. Report MDH/4.2 by Beacon Pathway.

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1 Executive summary

This research project, funded by the Building Research Levy and the Ministry for Business, Innovation and Employment, addresses the Levy Prospectus question:

> *"How is success of MDH measured at the individual development and neighbourhood level?"*

Further to that question, two further sub-questions arise:

1) *What evaluation method is best suited for New Zealand to assess, measure and target best practice in medium density communities?*
2) *What overseas tools are relevant to New Zealand, and what should be developed or adapted here that would provide a means to measure progress on key outcomes sought by government and industry in medium density communities?*

Key audiences for a medium density housing assessment tool include residents (homeowners and tenants), designers and developers (particularly, inexperienced developers), and communities. A New Zealand-oriented medium density housing assessment tool(s) can provide feedback that assists developers, designers, government, and industry to plan, design, and build future developments which are liveable, adaptable, sustainable, and healthy for residents, as well as being more acceptable to surrounding neighbours.

A review of nine existing approaches to medium density guidance and assessment highlighted a gap: understanding what residents and community members need and want from medium density housing. This suggested an approach to assessment that addresses not just the quality of design but also its outcomes in terms of functionality, sustainability, liveability, as well as opportunities to contribute to wider community development.

The research looked at how good quality medium density housing might be defined in New Zealand and the elements that make it up. It defined the core outcomes which New Zealand would want to see in its future medium density developments. These core outcome principles (below) were identified through a review of relevant national and international literature dealing with medium density housing, as well as by collating the principles underlying several popular assessment tools in use both here and overseas.

1) **Character, context and identity** - To develop a site and buildings that integrate with or relate to existing building form and style in the surrounding neighbourhood
2) **Choice** - The development provides for and enables occupancy by a diverse range of residents that can benefit from and support a thriving local economy with the understanding that high levels of diversity and optimum residential density make the development viable in terms of marketability and cost per unit
3) **Connectivity** - Connecting infrastructure enables safe, universal access using active, mobility, shared and private modes of transport within and through the site to identified key destinations

4) **Liveability** - Providing quality facilities and facilitating positive interactions between residents and the wider community
5) **Sustainability** - Efficient and cost-effective resource use through design, behaviour and technological advancement

The outcome principles were developed into an assessment framework, which provides a structure for the tools to assess developments against the desired outcomes. Each core outcome principle is divided into areas, each of which has its own outcome-focused principle – it is at this level that the tools assess each development.

The framework forms the basis for the development of assessment tools. Each outcome has an associated set of assessment questions which are answered through a combination of approaches.

- A site review
- A developer's interview
- A residents'/occupants' survey

Taken together, these two tools give an integrated picture to developers, enabling them to consider what works and doesn't work in their design, and where improvements might be made either to the existing development or in future developments. It enables comparison of what the developer believes they have achieved, with an independent site review and with residents' views of what has been successful.

These tools were applied and tested on two comprehensive developments to assess how the underlying framework and the main components of the tool worked alongside each other. The two developments were:

- Hypatia Apartments in Grafton, Auckland developed by Ockham Residential.
- Brickworks apartments in Hobsonville Point (overseen by Homes, Land, Community HLC).

From the research case studies, the team reached the following conclusions

- A range of case studies are required to test the tools. In particular, they also need to be tested on poor or underperforming developments to ensure the tools successfully identify areas for improvement, and on older properties where the residents will be less likely to be influenced by their appreciation of the development they have bought into (halo effect).
- The independent site review is a valuable addition to interpret the differences between developer and resident scores, and to provide an independent voice.
- Continual evolution of both surveys is important to meet a changing industry and cultural context.
- Feedback from the Technical Advisory Group concluded that the main areas of assessment for medium density housing are covered by the framework.
- Refinements to both surveys' language could still be made to clarify some issues and improve the comparability of others.
- The tools are designed to highlight to a developer where they could do better as opposed to highlighting where they have done badly.

- Category areas are not weighted; each topic area covered in the framework represents an equally important aspect of a well-performing medium density development.
- Use of Not Applicable scores may need to be refined to ensure that questions are comparable between developer and resident surveys, and particularly to ensure there are responses for sections only asked of either the developer or the residents.
- The project team are confident that the responses from both developers and residents indicated an honest reflection of their views. The averaging of the residents' responses appeared to closely align to the project team's independent review of the case study developments.
- There is an opportunity for a summary of recommendations to be provided as part of future reports to the developer, including specific actions that would narrow these gaps. This is a particular benefit of using an independent reviewer who can draw together various elements of the assessments.
- There is potential to add links for further information and associated best practice to the developer's survey particularly if the developer's survey was further developed as a self-assessment learning tool.
- The issue of how to promote the tools amongst developers that were most likely to benefit from it (e.g. smaller scale developers that have little or no attachment to their past developments as they move on to the next one) needs to be addressed during the tools' ongoing development.

The team recommended the following next steps:

1) Further tool development:
   a) Refine the comparability of the two surveys, and address consistency in the use of 'Not applicable' answers.
   b) Look how the tools could be used as a stand-alone, self-assessment guide, and as more formal advice for developers. Consider how using independent reviews and a more formal site review could assist this.
   c) Build a library of better practice examples including opportunities to highlight specific outcomes encouraged by other guidance (e.g. the Auckland Design Manual).

2) Undertake further case studies to refine the tool against a range of variables including geographic, site size, house typology, and different levels of performance/quality, and government and assisted housing.

3) Get further feedback from stakeholders in the MDH industry to ensure the tools are useful and adaptable, and how they can be effectively promoted (including how they could be targeted at developers that would most benefit from it).

2 Introduction

There is growing agreement that medium density housing development is part of the answer to New Zealand's housing affordability and housing supply issues. However, there is less agreement on what constitutes good quality medium density. Exemplars of best practice (noted from experience and anecdotal evidence) suggest that there is considerable potential to improve design, sustainability and functionality of medium density housing.

This research project looks at how good quality medium density housing might be defined in New Zealand and the elements that make it up. This research has defined the core outcomes which New Zealand would want to see in its future medium density developments. Based around these outcomes, a framework has been developed against which medium density housing can be assessed.

The research has resulted in two assessment tools, one focused on developer input and one focused on residents' experience. Taken together, these two tools give an integrated picture to developers, enabling them to consider what works and doesn't work in their design, and where improvements might be made either to the existing development or in future developments. It enables comparison of what the developer believes they have achieved, with an independent site review and with residents' views what has been successful.

The framework and tools can provide developers, designers, government, and industry with feedback that assists them to plan, design, and build future developments which are liveable, adaptable, sustainable, and healthy for residents, as well as being acceptable to surrounding neighbours.

2.1 Issues and context

Medium density housing (MDH) is a rapidly growing typology, particularly in the larger metropolitan areas of Auckland, and in growing urban centres such as Christchurch, Tauranga, and Wellington. MDH (and higher density housing) is estimated to account for as much as 60% of consents by dwelling unit, and is seen as a key part of the solution to solving New Zealand's housing shortage and affordability problems.

However, higher density development is often poorly understood and resisted by the community. It has something of a chequered history in New Zealand where, traditionally, people have aspired to live in detached houses on quarter acre blocks of land. Community resistance reflects fears that allowing this type of development may adversely impact house prices and neighbourhood feel. This has been compounded by the poor quality of many medium density developments,

particularly in Auckland. In addition to weathertightness problems, there have been reports of issues with other clauses of the Building Code including fire, acoustics and structure[1].

The Auckland Regional Growth Strategy in 2005 noted that:

> *"Intensified housing is associated with poor quality design and low amenity ... poor quality construction; concern about long-term maintenance; poor layout; insufficient space; and lack of integration with surroundings"*

There is considerable activity underway amongst central and local government, research organisations, providers of affordable housing, and developers to understand what the market needs and the barriers are to delivering MDH that meets these needs. These parties would also benefit from a framework to evaluate whether the MDH being delivered, both now and in the future, is successfully meeting regulatory requirements as well as the needs and expectations of occupants and owners.

Whilst previous work has been done in New Zealand and overseas to identify best practice in MDH design, a gap exists in New Zealand in the way we currently understand medium density housing with regards to resident and neighbourhood aspects.

There is an identified need to assess not just the quality of design but also its outcomes, in terms of functionality, sustainability, liveability, and also opportunities to contribute to community development. In some instances, tools and guidance have been developed to assess these wider community aspects, but this is usually at a master planned scale for larger developments (e.g. the UK's BREEAM Communities tool, or the US's Living Communities Challenge, which assess large scale communities of hundreds of houses in mixed use settings). The research suggests that there is a gap in current tools and assessments of medium density: the voice of the individual, as a potential resident or as a community member, is largely absent.

Closer to home, the desire to engage more readily with local residents is highlighted in a recent CHRANZ (2011) report which noted that:

> *"Published guidelines aimed at encouraging more intensive residential development focus on design and quality issues. They tend to be design- rather than demand-centric, and cover the arrangement and aesthetics of development and the design of housing rather than reflecting housing needs and expectations. Hence, guidelines to medium density housing used in New Zealand and elsewhere tend to focus on type of structure and building form, reflecting the input and perhaps even the preferences of designers rather than residents. They present a professional rather than market-oriented view of*

[1] For instance, recent research from BRANZ (Duncan and Brunsdon, 2017) identifies that Building Code issues with MDH relate mostly to clauses G6 Airborne and impact sound, E2 External moisture, and C Protection from fire.

the qualities that contribute to desirable – or acceptable – dwellings of different densities"

Given more work needs to be done to make medium density housing more acceptable to potential residents and local neighbourhoods, a resident or people centred approach to the assessment of MDH may improve the acceptability of higher density development in the future. It will enable the design of dwellings and communities that align to residents' and community needs while also incorporating existing best practice relating to more sustainable and efficient design.

2.2 Potential users for MDH assessment tools

The MDH framework and assessment tools, developed in this project, can be used to assess medium density housing developments as well as gain a better understanding of the needs of surrounding communities and neighbourhoods. The approach can be used to:

- guide designs
- assess both proposed and built developments
- support consultation and community participation
- inform design reviews.

Three main users have been identified who may benefit from the MDH assessment tools:

- **Developers and designers**. These include developers who are aiming to continually improve their practices, and less experienced developers who are perhaps less knowledgeable of wider urban design and placemaking concepts and practices
- **Residents (homeowners and tenants)** who want to understand the principles that underpin their developments before making choices about whether a particular building or neighbourhood might be right for them
- **Communities** that want to understand how a new development complements and enhances their neighbourhood

A potential additional audience is local council representatives aiming to consistently improve housing quality while offering a diverse mix of affordable medium density dwellings.

The benefits use of the assessment tool will bring to each audience is listed in Table 1 below.

Table 1: Audiences for the tools, and the benefits of using them

Potential audience	Benefits for audience of using the tools
Residents – future homeowners and tenants	■ Educates and informs on current neighbourhood and suitability for residents' current life stage ■ Provides reassurance of quality and independent feedback on possible concerns e.g. safety, security, public private interface, onsite amenities, parking and potential to personalise the property and transform it over time.
Residents – existing homeowners and tenants	■ Provide feedback on the property post occupancy ■ Establishes the building/complex as a quality development
Designers and developers pre build	■ Provides context of local area / local community ■ Helps understand the existing neighbourhood / community – can identify where the development might add to or benefit the community, or improve the local environment ■ Identifies local amenities, key destinations and transport options ■ Helps determine residents that would and could live there
Designers and developers post build	■ Post occupancy resident feedback assists with future developments and helps establish quality of developer ■ Maintains design standards with direct reference to residents' needs and wants. ■ Additional certification associated with the use of the tool helps build the reputation of the developer
Investors	■ Understanding of neighbourhood and potential residents who might live there ■ Confirms quality of the development and its marketability
Communities – resident living in surrounding areas	■ Provides assurance of quality development ■ Helps communities determine how any new development will integrate with the existing character and context of the area and identifies potential areas for how the new development can support / enhance an existing community ■ Educates and informs, which increases acceptance of medium density

3 Research process

3.1 Research question

The project addresses the question highlighted under the 2016 Levy Prospectus Programme 1: Giving industry the tools to deliver medium density housing that meets the needs of New Zealanders, which asks

> *"How is success of MDH measured at the individual development and neighbourhood level?"*

Further to that question, two further sub-questions arise:

1) *What evaluation method is best suited for New Zealand to assess, measure and target best practice in medium density communities?*
2) *What overseas tools are relevant to New Zealand, and what should be developed or adapted here that would provide a means to measure progress on key outcomes sought by government and industry in medium density communities?*

The research addresses a gap in present knowledge and practices relating to the assessment of medium density housing. Whilst previous work has been done in New Zealand and internationally to deliver design guidance of best practice, this will be the first time that a framework has been delivered to specifically assess community and neighbourhood aspects in medium density settings.

This research examines existing ways to evaluate medium density housing in reference to specific desired community, design, and performance outcomes at the individual occupant level, building level, and neighbourhood level. It is focused on identifying the right measures for the New Zealand context, and developing a tool or tools to assess New Zealand medium density housing developments.

3.2 The Technical Advisory Group

A Technical Advisory (TARGET) Group was formed to keep the project focussed and grounded in the context of medium density housing in New Zealand, and to ensure that the needs of the design and building industry, the residents, and the wider community were being met.

The Technical Advisory Group provided the following high-level inputs to the work programme:

- Guiding the strategic direction of the project so that it remains relevant to the sector and the community
- Providing expert information and advice where appropriate (e.g. specific design advice)
- Providing access to feedback on building developments from residents and the wider community
- Ensuring that the developing framework and prototype tools are integrated into current work programmes (e.g. BRANZ and MBIE's MDH programmes).

- Advising on trends, activities and thinking in the sector to ensure the programme focusses on the right priorities, compliments other work in the sector, and adds value.
- Providing relevant stakeholder views to help ensure that any prototype tool(s) are well received, understood and accepted by the groups and individuals who may use them.

The Technical Advisory Group included representation from the following industry, government, local government and research organisations:

- Auckland Council
- Beacon Pathway
- Boffa Miskell
- BRANZ
- Fletcher Living
- Generation Zero
- HLC (Homes, Land, Communities - formally known as Hobsonville Land Company)
- Housing New Zealand Corporation
- Jasmax
- Ministry of Business, Innovation and Employment (MBIE)
- Ockham Residential

3.3 Research methodology

The project was undertaken in six phases:

1) **Discovery**: Setting the foundations for the project (desktop review and setting up advisory group)
2) **Framework development**: Evolving an evaluative framework to assess medium density and community aspects of developments in NZ
3) **Tool synthesis and best tool evaluation**: A range of tools (identified in Phase one) have been evaluated against a set of agreed criteria developed in consultation with the advisory group.
4) **Development of assessment tools**: A prototype tool (or tools) was developed based on the foundations of the framework and the tool synthesis phase.
5) **Testing the assessment tools in case studies**: The prototype assessment tools were applied and tested against two medium density housing developments.
6) **Final reporting**: The results of the previous five phases were collated and analysed to highlight lessons learned, recommendations for improvement, and recommendations for further development.

3.3.1 Discovery phase

The Discovery phase of this project[2] commenced with a review of key national and international literature relating to medium density housing and assessment tools, and an assessment of the types of medium density tools and guidance available in New Zealand and overseas.

The review revealed three broad themes explored in the majority of existing tools:

- Building form and urban design - Technical in nature, with a design focus targeting building specifics (e.g. building materials and design characteristics), landscaping, and urban form
- Residential dwelling specifications - Both technical and non-technical specifications relating to dwelling design, e.g. acoustic control, lighting, delineation of public and private space, position of on-site parking, and design and use of amenities
- Community development - Qualitative appraisals relating to neighbourhood interaction, accessibility to key destinations, sense of place and community resilience

The review highlighted a gap in current understanding of medium density housing relating to the needs and wants of residents and community members. This suggested an approach to assessment that addresses not just the quality of design but also its outcomes in terms of functionality, sustainability, liveability, as well as opportunities to contribute to wider community development.

The review confirmed that significant attention is placed on the technical aspects of building MDH with somewhat less emphasis on the factors that make MDH more *acceptable* to potential residents and the neighbourhoods where they are situated. This suggests that assessment processes could be developed to include residential and community outcomes (in terms of functionality, sustainability, liveability and so forth) while also identifying opportunities to contribute to wider community development.

By taking a more people centred approach and focusing on outcomes, the design of MDH can better understand and more directly align with residents' and community needs and also incorporate best practice in sustainable and efficient design. An early draft of outcome-focused principles was developed with an eye to maintaining a resident focus.

Early consultation with the Technical Advisory Group identified that any resulting guidance and assessment tool should be accessible for a wide audience including residents (homeowners and tenants), designers and developers (particularly inexperienced developers), as well as the wider community. As a result, the assessment guidance should have the following eight characteristics:

- Simple and easy to implement
- Measurable and objective
- Straightforward (and inexpensive) to use
- Robust and reliable
- Simple and accessible language
- Not overly prescriptive
- Marketable with simple accreditation
- Involve a feedback loop and a mechanism for continual evolution

[2] ***This phase is described in detail in Ryan, V. and Smith, B. (2016). Medium Density Housing Assessment Tools: Discovery Phase Working Paper. Report MDH/1 by Beacon Pathway.***

3.3.2 Framework development phase and Tool synthesis/evaluation phase

The Framework Development Phase was undertaken at the same time as the Tool Synthesis and Best Tool Evaluation phase[3]. This parallel approach allowed the team to explore each principle whilst simultaneously researching an associated set of assessment questions that might be useful in a final tool.

The Framework Development Phase included a detailed review of nine existing approaches to medium density guidance and assessment in order to determine:

- Alignment with the draft core outcome principles
- Identification of any additional outcomes, principles or associated components
- Approaches that exemplify any of the identified characteristics for 'good' guidance
- Approaches to assessing, scoring or ranking outcomes that meet these characteristics and are effective in engaging both residents, and developers

The guidance and assessment tools that were reviewed were:

1) MfE's 'Medium-density Housing Case Study Assessment Methodology' (2012)
2) The UK's Building for Life Programme and Built for Life tool (2012)
3) The MfE's Urban Design Protocol '7 C's':
4) Te Aranga Māori Urban Design Principles
5) Beacon Pathway's Neighbourhood Sustainability Framework (2008–2016)
6) Housing New Zealand Corporation's 'Simple guide to urban design & development' (2015)
7) 'Medium Density Housing Guide', Kapiti Coast District Council
8) 'Good Solutions Guide for Medium Density Housing', North Shore City (2001)
9) Homestar (Version 3)

The review led to the refinement of the draft core outcome principles and enabled the drafting of an assessment framework. The team also considered how the framework's outcomes could be directly assessed, both by residents, and by developers; and methodologies that could combine their scores to provide specific guidance for improved MDH design.

The framework development was an iterative progression, refined through a process that considered multiple elements simultaneously, including:

- Determining appropriate topics for assessment under each outcome principle
- Thinking about how these topics may be turned into questions for residents and corresponding questions for developers (requiring a balance of technical robustness to make the assessment meaningful whilst also keeping the language and approach appropriate to enable understanding for residents and/or less experienced developers)
- Exploring methods for completing the assessments (including approaches to direct surveying of residents and developers, as well as conducting desk top and site-based reviews)

[3] *These phases are described in detail in Ryan, V. and Smith, B. (2017). Medium Density Housing Assessment Tools: Framework Development Working Paper. Report MDH/2 by Beacon Pathway.*

- Drafting methods for scoring responses (considering meaningful approaches to scoring or ranking answers that result in effective guidance to developers without deterring further engagement in good practice).

The developing assessment framework was explored during a workshop session with the Technical Advisory Group which reviewed the content and provided invaluable feedback on how the core outcome principles (and their corresponding topics for assessment) might be received by developers and residents.

The input from the Advisory Group enabled final drafting of the framework, thereby providing a solid foundation for the drafting of assessment questions for testing during the next phases and piloting of the tool(s) in case study applications.

3.3.3 Development of assessment tools

The development of assessment tools took into account a number of issues raised during the previous phases, and in discussions with the Technical Advisory Group. In particular, the team recognised the need for any new tool to inform and perhaps to educate developers. Therefore, it was important that the assessment tools balanced the need for scoring outcomes with the provision of guidance when scores show there is room for improvement. More particularly, it is vital that participants are not put off by a tool that provides a 'pass' or 'fail.' Rather, it was better to provide either direct or implicit guidance towards better practice as the assessment is undertaken. This point was reinforced to the project team during the Technical Advisory Group meeting when discussing the developing framework.

Another consideration was how best to relate any new tool to other overlapping assessment methodologies including CPTED[4], IPTED[5], Lifemark and Homestar. The chosen approach was that, overall, it should be relatively simple to conduct an assessment without the technical expertise or length of time required to complete Homestar ratings or CPTED/IPTED reviews. Where key elements aligned with tools such as Homestar and Lifemark, they will be included as indicators of better practice; and, furthermore, that these tools themselves would be referred to as part of any guidance, should the derived scores in this MDH assessment be lower than optimal.

Taking account of the target audiences, the need to balance assessment and guidance, and to align with other tools, there were three key elements in considering how any new MDH assessment tool would be delivered in practice:

1) **Target audience engagement**
   It was considered important to provide a tool that enables a wide audience to understand and reflect on some of the key pros and cons that a new MDH development might have for the neighbourhood, community, and wider environment. That said, it was also vital that any tool specifically engages residents and developers in the assessment process in order to determine

[4] ***Crime Prevention Through Environmental Design***
[5] ***Injury Prevention Through Environmental Design***

if developers' aspirations or plans for a site are delivered on the ground to residents (and proved through post-occupancy surveying). As a result, it was important that this new assessment methodology included a residents' survey which can be closely aligned with an assessment of the site itself - completed either by smaller developers (who are self-assessing in order to determine areas for improvement) or through independent observation of larger sites that may wish to gain some accreditation or recognition of good practice that a new MDH tool might provide. Given the range and type of topics covered in the core principles and outcomes, the assessment was deemed to require a mixture of desktop evaluation as well as direct observation.

2) Approaches to ranking or scoring

The approach to developing assessment scores was developed by the research team and was informed by the in-depth review of other tools. It was considered vital that any scoring or ranking methodology was well explained, simple to follow, robust, and likely to be replicable (i.e. the same score would likely be given on any specific topic, at any specific site, by different people). Secondly, it was important that any scores provided by residents could be easily compared with associated scores provided through the observation and/or developer's site assessment. For example, residents' questions relating to their feelings of security during the day and night can be compared with site-based scores relating to the extent of passive and active surveillance and lighting.

3) Synthesising data assessments to determine key areas for improvement

Given this parallel approach to assessment, the next consideration was how the residents' and site-based rankings could most effectively be synthesised to provide meaningful guidance to developers, while easily being understood by residents and other interested stakeholders. This process required significant refinement as the outcome principles and their components were developed into specific questions for the resident and site-based instruments. Furthermore, it was considered essential that any resulting synthesis should include clear information, guidance or recommendations for improvement, without conveying a sense of failure that might otherwise reduce further engagement (by the developer). Finally, it was recognised that residents would require at least a summary of results from the assessment so they too remain engaged in any future efforts to improve their neighbourhood.

3.3.4 Testing the assessment tools in case studies

Developments were selected for the case studies[6] that:

- Had a level of 'buy in' or enthusiasm to take part from the developer
- Were within reasonable survey reach to minimise travel and associated costs
- Were more likely to provide results that could be explored within the safety of a trusted relationship (researcher and interested /engaged developer)
- Had parameters that sat comfortably within the range of what the project defines as medium density development

[6] ***This phase is described in detail in Ryan, V. and Smith, B. (2018). Medium Density Housing Assessment Tool: Case Studies. Report MDH/3 by Beacon Pathway.***

- Had aspects that could be tested in the tools (e.g. proximity to amenity, transport, environmental infrastructure etc.)

The final decision was made to examine the following two developments:

1) **Hypatia Apartments** in Grafton, Auckland developed by Ockham Residential. Advantages included a strong relationship with the developer, ease of access to the development, a high level of engagement and interest from the developer and staff in the assessment framework, and significant curiosity regarding their recently settled residents
2) **Brickworks apartments** in Hobsonville Point (overseen by Homes, Land, Community HLC 2017 – formerly Hobsonville Land Company, and a subsidiary of Housing New Zealand Corporation). Advantages included a strong relationship with the developer who had extensive background and understanding of the tools and was interested in surveying residents; as well as familiarity with Hobsonville Point due to prior work undertaken by Beacon Pathway in that area.

The overall assessment process included:

- Signing up the developer with a simple MoU
- A desk-based exercise to gather data and map local information such as transport options and local amenities.
- A walk around site review of the development / apartment complex (where access was provided) as well as the wider neighbourhood to gain a feeling for the area and an understanding of the level of quality, facilities and infrastructure supporting the development.
- A developer's interview with appropriate staff (the main developer and/or appointed design/development staff).
- Collating and analysing the desktop mapping exercise, site visit and developer interview
- Working with the developer and/or body corporate structures to organise the residents' survey, including approach, process and timing. Involving the developer enabled them to fine tune or add additional questions relating to specific aspects of the development that they wanted feedback about (e.g. particular issues, both good and bad, that the developer would like to gather information about).
- Supporting communication for the survey (emails and letters from the development organisation) introduced the residents to the survey. The survey was also incentivised by a $20 Countdown voucher for every household who completed the survey.
- Surveys were distributed in online and hard copy format with a variety of options to fill out and return them.
- The results from the residents' survey were analysed and graphically represented as a summary infographic.
- The results from the developer's interview and site review process were compared to the residents' survey. These were written up in a summary report for the developer.

4 Development of an assessment framework

The use of principles, guidelines and protocols is prevalent throughout the design literature at all scales of household, as well as master and community planning. The presentation of these founding concepts provides a frame of reference and a context that helps describe the outcomes of good design; that is, what good design could/should achieve. Used well, they can also help provide a shared language, understandable to all those that have a stake in the planning and building of high quality medium density housing:

- Developers / designers / planners and builders
- Surrounding community – neighbours and organisations
- Individuals and residents

4.1 The foundation: Core outcome principles

The framework, against which MDH developments are assessed, rests on core outcome principles. These help users and audiences understand what makes medium density successful.

The core outcome principles were identified through a review of relevant national and international literature dealing with medium density housing, as well as by collating the principles underlying several popular assessment tools in use both here and overseas.

There are five core principles and associated outcomes:

Table 2: Core outcome principles underlying the MDH Assessment Tools

Principle	Outcome
Character, context and identity	To develop a site and buildings that integrate with or relate to existing building form and style in the surrounding neighbourhood
Choice	The development provides for and enables occupancy by a diverse range of residents that can benefit from and support a thriving local economy with the understanding that high levels of diversity and optimum residential density make the development viable in terms of marketability and cost per unit
Connectivity	Connecting infrastructure enables safe, universal access using active, mobility, shared and private modes of transport within and through the site to identified key destinations
Liveability	Providing quality facilities and facilitating positive interactions between residents and the wider community
Sustainability	Efficient and cost-effective resource use through design, behaviour and technological advancement

4.2 The assessment framework

The principles were developed into an assessment framework[7] which provides a structure for the tools to assess developments against the desired outcomes. Each core outcome principle is divided into areas, each of which has its own outcome-focused principle – it is at this level that the tools assess each MDH development.

Each outcome is presented against a checklist relating each outcome to an area and scale of influence from the site and buildings, to the people who live there and the wider neighbourhood.

Site	The layout, orientation and wider geological and environmental setting of the development
Building	The design, placement, orientation, and structure of buildings
People	The residents that choose to live there
Neighbourhood	The surrounding neighbourhood, community, and environment directly affected by the development of the site, building construction and new residents

The framework showing the interaction of outcomes and related areas is shown in the tables below. It is important to note that the 'final' framework presented here represents the framework as it stands at the conclusion of this research project. In practice, the developed framework is flexible in its application and designed to be evolved overtime.

[7] ***The framework, and its evolution, is fully presented and discussed in the report 'Ryan, V. and Smith, B. (2017). Medium Density Housing Assessment Tools: Framework Development Working Paper. Report MDH/2 by Beacon Pathway'.***

4.2.1 Character, context and identity

Scale of Influence				*Outcome Focussed Principles*	
Site	**Building**	**People**	**N'hood**	***Aims: To develop a site and buildings that integrate with or relate to existing building form and style in the surrounding neighbourhood with relation to:***	
✔	✔		✔	Physical landscape	The building design integrates with and enhances local geographic features
✔		✔	✔	Environmental landscape	Natural environmental elements are incorporated into the site which takes its cue from the local surroundings (e.g. waterways, bush etc.).
✔	✔	✔	✔	Heritage and culture	The site takes account of local history, honours heritage and culture, and seeks community direction to identify opportunities to create, exhibit or promote features that add to the neighbourhood's wider sense of place
✔	✔	✔	✔	Sense of place	Site design and layout, key features and artistic works have been developed to create a 'sense of place' recognising and aligning with the existing cultural and community context
	✔		✔	Building character	The building design and materials have been chosen to integrate with and enhance the surrounding neighbourhood character using locally sourced and culturally appropriate materials where possible
✔	✔	✔	✔	Street scape	Entranceways and frontages are welcoming and are in context with and enhance the overall character
✔	✔	✔	✔	Identity	The overall design instils a sense of pride amongst residents

4.2.2 Choice

Site	Building	People	N'hood	*Aims: The development provides for and enables occupancy by a diverse range of residents who can benefit from and support a thriving local economy; with the understanding that high levels of diversity and optimum residential density make the development viable in terms of marketability and cost per unit. These aims relate to:*	
	✔	✔	✔	Residential dwelling typology	The provision of dwelling typologies offers an appropriate choice with regards to existing neighbourhood demographics as well as the demographics of targeted residents (including expected age range, work status, household sizes)
	✔	✔	✔	Building adaptability	Building designs exhibit a range of adaptability and floor plan flexibility responding to changing requirements and the potential for mixing use over time
		✔	✔	Tenure	Diverse tenure arrangements provide opportunities for residents to either own or rent in quality accommodation
	✔	✔	✔	Affordability	A range of dwelling options and supporting financial instruments provide residents of varying means with the ability to live in quality accommodation (e.g. starter home / buy to let / financial assistance)
✔		✔	✔	Opportunity	Proximity to local centres provides employment opportunities and other key destinations enable the target residents to work, live and play in their surrounding neighbourhood. In addition, developments with a mix of commercial / residential premises encourage/enable employment opportunities within the site
✔	✔	✔	✔	Population density	The number of dwellings per hectare and the range of sizes on offer to residents are in line with existing and future supporting infrastructure and services.

4.2.3 Connectivity

Site	Building	People	N'hood	*Aims: Connecting infrastructure enables safe, universal access using active, mobility, shared and private modes of transport within and through the site to identified key destinations*	
✔		✔	✔	Key destinations	The identification of likely key destinations appropriate to the target residents determines the feasibility and potential use of various travel options
✔		✔	✔	Accessibility	Determining the extent of current and future accessibility to key destinations based on distance, infrastructure and services that enable safe travel on foot, by cycle, on public transport, by car, or with mobility aids
✔	✔	✔	✔	Transport choice	Proactive measures to encourage active and shared transport including pool vehicles, charging points for electric vehicles and options for telecommuting
✔		✔	✔	Permeability	Permeability within and through the site supports wider neighbourhood connectivity and facilitates access to surrounding destinations
✔		✔	✔	Safety from vehicles	Design considerations reduce physical conflict between cars and other users within the site and at access points
✔	✔	✔	✔	Parking provision and management	Supply of parking for cars and facilities for cycles are appropriate for residents and visitors and are managed and adapted to encourage active and shared modes over time
✔	✔	✔		Access for services	Design enables ease of access and egress for emergency, delivery and service vehicles
✔	✔	✔	✔	Wayfinding	Wayfinding and signage to and around the site facilitates visitor movement, the identification of resident dwellings while ensuring that designs and naming is appropriate to the site's overall identity

4.2.4 *Liveability*

Site	Building	People	N'hood	*Aims: Providing quality facilities and facilitating positive interactions between residents and the wider community*	
	✔	✔		Building quality	The building design and use of materials provide quality homes that are efficient to run and easy to maintain
✔	✔	✔		Technological integration	Utilities are easily accessible enabling the integration of future technologies into buildings
	✔	✔		Personalised dwellings	Dwellings/private spaces can be personalised or modified to account for changing needs over time including appropriate provision of universal designed dwellings
	✔	✔		Storage	Residents are provided with appropriate personal or shared storage space to accommodate their lifestyle requirements
	✔	✔	✔	Noise control	Design and ongoing management reduces noise to acceptable levels between dwellings as well as between dwellings and public spaces
	✔	✔		Privacy	Building design provides adequate, quiet, private space allowing residents a sense of retreat
	✔	✔		Interactive space	Provision and maintenance of high quality internal spaces where people are likely to interact (e.g. laundry, shared rooms or other communal spaces)
✔		✔	✔	Outdoor space	Residents have direct access to well-maintained public outdoor space with facilities that are appropriate to the resident demographic
✔	✔	✔		Security	Provision of security features, lighting, active and passive surveillance provides a safe environment for all residents within their homes and throughout the site at all times
✔	✔	✔		Emergency preparedness	Design considerations and a site-based emergency preparedness plan take account of residents' immediate needs while supporting wider neighbourhood resilience
✔	✔	✔	✔	Engagement	Residents are encouraged to engage with issues affecting site operation and management and interact actively with each other and the surrounding community
✔	✔	✔	✔	Satisfaction	Resident satisfaction with the site, building and wider neighbourhood is regularly monitored to continually improve site management and inform future development

4.2.5 Sustainability

Site	Building	People	N'hood	*Aims: efficient and cost-effective resource use through design, behaviour and technological advancement*	
✔	✔			Climate adaptability	Design considerations account for extreme weather variations (e.g. temperature, rainfall, wind), changing sea levels / flooding and wild fire where appropriate
	✔			Building materials	Building materials can demonstrate durability and third party eco-labelling or responsible sourcing (e.g. FSC / NZ Environmental choice) while ensuring that any waste is recycled and any contamination is remediated
✔	✔	✔		Solar gain	Building orientation takes account of seasonal variations to minimise heating, cooling and lighting requirements
	✔	✔		Warmth and dryness	Building design maximises thermal efficiency and comfort and effectively controls moisture through insulation, glazing and ventilation
✔	✔	✔		Energy efficiency	Energy management maximises the use of renewable supply, the use of efficient appliances, and reduces the need for energy use where appropriate (e.g. through the provision of outside areas for clothes drying)
✔	✔	✔		Water supply and heating	Water management reduces demand through low flow devices and efficient water heating technologies and optimises supply though rain water harvesting and grey water recycling
✔	✔		✔	Storm water management	Storm water management minimises flooding, run-off and associated pollution
✔	✔	✔		Recycling	Provision and active management of waste, recycling and composting facilities
✔		✔	✔	Native ecology	Proactive approaches monitor air and water quality and encourage residents to enhance biodiversity through the protection of local habitats and waterways
✔		✔		Gardening and food production	Space is provided for outdoor activities (e.g. gardening or growing food) where possible or appropriate
✔	✔	✔	✔	Home user guide	Information is provided to residents on the efficient use of building features, appliances and neighbourhood facilities

5 The assessment tools

The framework forms the basis for the application of assessment tools. Each outcome has an associated set of assessment questions which are answered through a combination of approaches.

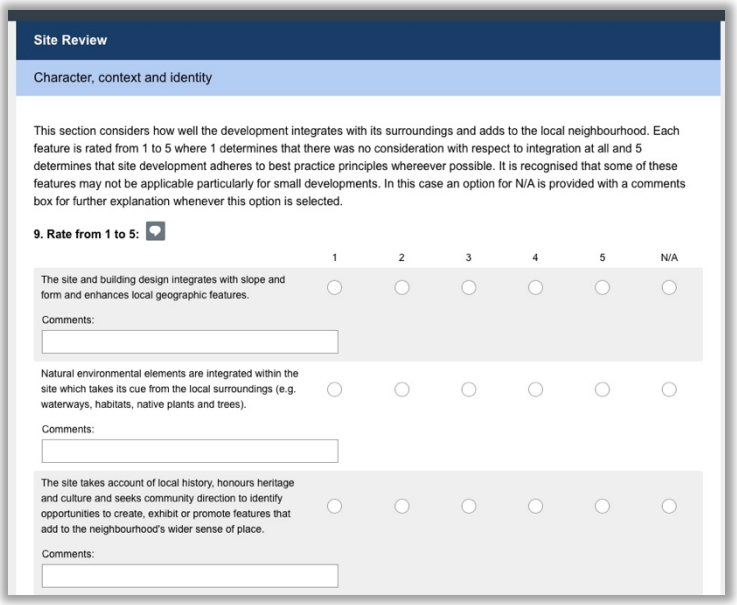
The resulting tools are comprised of two main components:

i. A site review with accompanying developer's interview questions and;
ii. A residents'/occupants' survey (conducted in parallel or shortly after the site review).

Key features of each survey are outlined below:

Developer's Interview Survey

- Interview of up to an hour and a half conducted following a desktop mapping and local site context review session
- Using simple language – accessible and easily understood
- Answers provided in a consistent 1 to 5 scoring framework
- N/A column to cover a range of developments without penalising the developer
- Identifies best practice with potential to link to examples/exemplars


Site Review

Character, context and identity

This section considers how well the development integrates with its surroundings and adds to the local neighbourhood. Each feature is rated from 1 to 5 where 1 determines that there was no consideration with respect to integration at all and 5 determines that site development adheres to best practice principles whereever possible. It is recognised that some of these features may not be applicable particularly for small developments. In this case an option for N/A is provided with a comments box for further explanation whenever this option is selected.

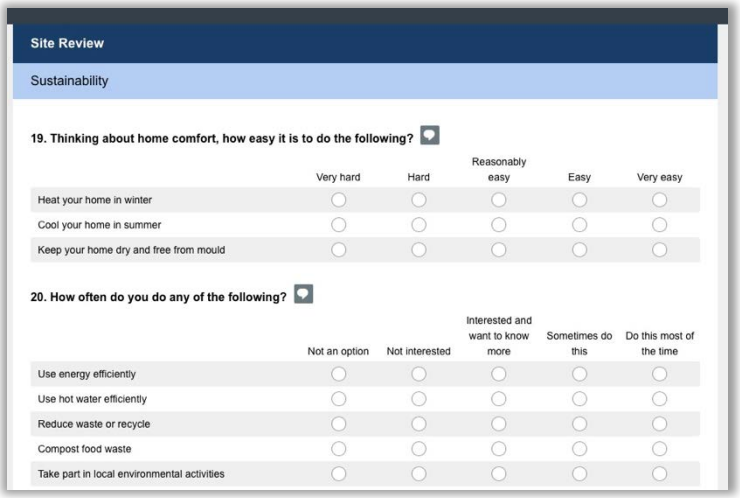
9. Rate from 1 to 5:

	1	2	3	4	5	N/A
The site and building design integrates with slope and form and enhances local geographic features.						
Comments:						
Natural environmental elements are integrated within the site which takes its cue from the local surroundings (e.g. waterways, habitats, native plants and trees).						
Comments:						
The site takes account of local history, honours heritage and culture and seeks community direction to identify opportunities to create, exhibit or promote features that add to the neighbourhood's wider sense of place.						
Comments:						

Figure 1: Example of page from developer's survey

Residents' Survey

- Using simple language – accessible and easily understood
- Answers use a similar 1 to 5 scoring system throughout
- Room for additional qualitative comment boxes
- Designed to be short and not too taxing
- Online or hard copy survey format


Site Review

Sustainability

19. Thinking about home comfort, how easy it is to do the following?

	Very hard	Hard	Reasonably easy	Easy	Very easy
Heat your home in winter					
Cool your home in summer					
Keep your home dry and free from mould					

20. How often do you do any of the following?

	Not an option	Not interested	Interested and want to know more	Sometimes do this	Do this most of the time
Use energy efficiently					
Use hot water efficiently					
Reduce waste or recycle					
Compost food waste					
Take part in local environmental activities					

Figure 2: Example of page from residents' survey

These come together into a report to developers and an infographic for residents. A conceptual overview of how the tools are applied is presented in the diagram below:

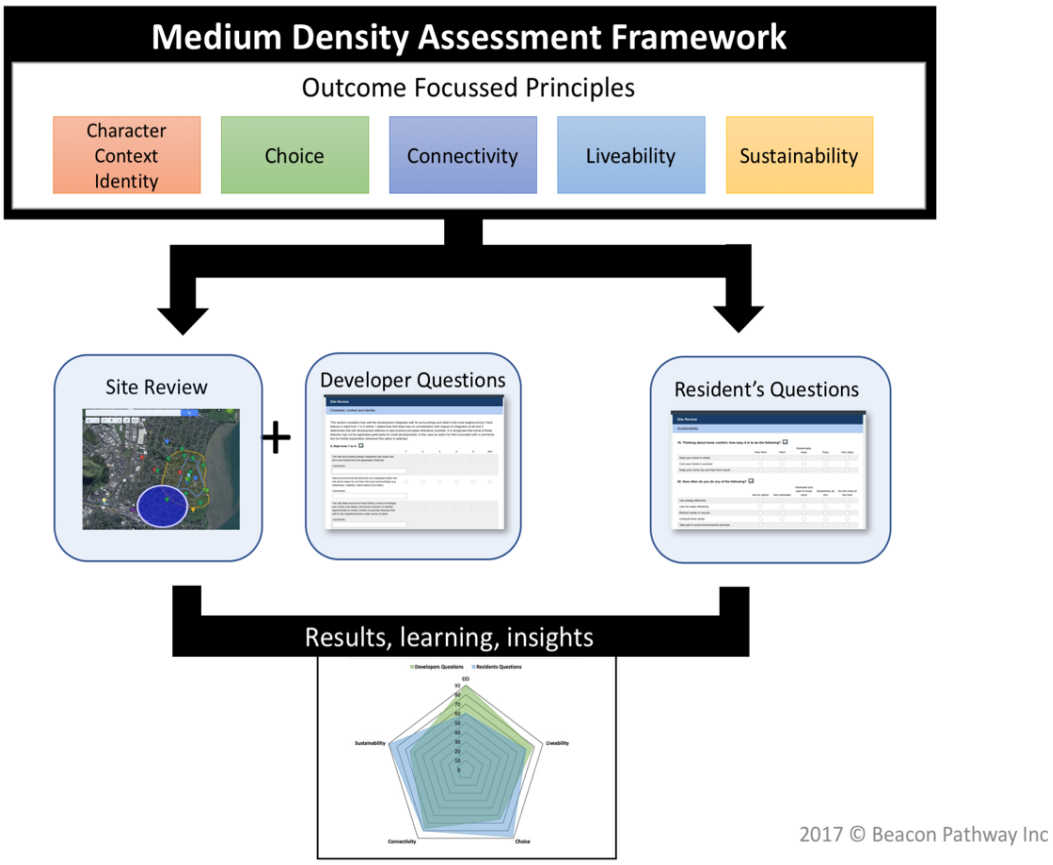


Figure 3: How the tools work together

The tools have been designed to be accessible and easily applied by developers seeking to better understand the context of the neighbourhood development area and to apply principles of best practice in both design and community building. The addition of a post-construction residents' survey enables developers to further appreciate the needs of their occupants and to continually improve approaches to the provision of more liveable and sustainable medium density housing.

6 Case studies

These surveying processes and techniques were applied and tested on the two comprehensive developments to assess how the underlying framework and the main components of the tool worked alongside each other. The two developments were:

- Hypatia Apartments in Grafton, Auckland developed by Ockham Residential.
- Brickworks apartments in Hobsonville Point, overseen by HLC

For each development, a site review, developer's survey, and residents' survey assessed the development in relation to the outcome principles and outcomes of each subcategory. Questions in the developer's survey lined up with questions for residents in the residents' survey. In order to simplify the language used for residents and streamline the survey, technical jargon was removed; with some sub-categories labelled differently and some sub-categories combined. These differences are indicated below:

Section	Developer's review	Residents' survey
1	Character, context and identity	About your neighbourhood
2	Choice	Living in your community
3	Connectivity	Getting around
4	Liveability	Living in your home
5	Sustainability	Sustainability questions included in the 'Living in your home section'

Following data collection on the overall site and residents' demographics, the approach to the remaining topic questions was adapted to each audience:

For developers:

- Interview questions under each Category (and Sub-Category) determined the extent to which a particular outcome had been achieved
- The language for developer questions was more formal than for residents (in terms of urban design and building definition), without being overly technical
- Developer responses were scored from 1 to 5, where 5 indicates that an action has achieved the best possible outcome and 1 indicates that no action has been taken or no outcome has been achieved. A 'Not Applicable' (N/A) option was also included for any elements that are not relevant - either due to the scale of the development or due to particular constraints relating to the site parameters or other aspects.
- A comments section was included for each question in order that responses could be expanded on and the resulting score justified.
- The developer's questions were asked using an interview framework; methodically working through the Categories and Sub-Categories

For residents:

- Questions under each topic determined the residents' perceptions of outcomes and, where relevant, how this has impacted on their choices or behaviours
- The language was less technical and aimed to understand a particular issue from the householder's perspective.
- As a result, residents' questions were set in a conversational style which explored the extent to which they agreed or disagreed, or were satisfied or unsatisfied, that a particular outcome had been met.
- The residents' answers were then weighted numerically, to generate a numerical score for each resident response and an average score for the combined residents' responses to each question. The tallying of adapted average scores for each question allowed an average Category Score to be developed.

Average scores for residents' responses were developed to provide an indication of their combined perspective of a particular outcome. While the different approach to the developer's review and residents' survey means that the results are not 100% comparable, the results of the Residents' Survey can be placed alongside the developer's review scores to highlight any differences in both groups' perceptions. Exploring these differences can provide valuable insights for users of the tool including:

- Identifying where the residents consider that the developer objectives have been met
- Highlighting areas where residents' expectations may not be met by the developer's intent
- An indication of areas of conflict or convergence
- Context and background to resident's specific feedback and comments.

From this data, a Developer's report and a Residents' infographic were developed. The Developer report shows a comparison of developer and resident responses to each Category area. An extract of the Developer's Report for the two case studies follows. These were provided to developers with the opportunity to discuss the results. The Residents' infographic was distributed by email to residents.

6.2 Case study results – Brickworks

Site name	Brickworks
Site Address:	Hobsonville Point Road, Hobsonville
Date of completion	2015
Developer	Homes Land Community (HLC)
Types of dwelling	Apartments (with some integrated commercial space)
Levels	Up to 5 storeys
Numbers of dwellings	60 apartment dwellings: 1 Bed: 4 2 Beds: 55 3 Beds: 1

6.2.2 Residents of Brickworks

Demographic questions were asked of residents to gain a snapshot of the type of people living in the building and answering the survey. The majority of apartments were housing two people (84%) followed by single person occupancy (13%) and finally 3 person households (3%). The majority of respondents owned their own home (63%) compared to renting from a private landlord (37%).

In terms of income, 23% of residents estimated income in excess of $100,000, 35% reported income of between $70,000 and $100,000, 10% between $50,000 and $70,000, and 3% each between $30,000 and $50,000, and between $10,000 and $30,000. The remaining 26% of respondents did not answer this question.

Of the residents who answered the question about age, the following was recorded for all members of the household:

Age Range	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70+
Percentages	7%	14%	20%	13%	20%	12%	13%	0%

Ethnically the respondents (and those counted in their household) identified primarily as being New Zealand European (40%) followed by Asian (23%), European (18%), African (10%), Middle Eastern (3%), Maori (2%) and Other (3%).

6.2.3 Response rate

A total of 31 residents' surveys were completed online and a further five were completed as paper copies. Compared to the number of apartments in Brickworks this represents a 60% response rate.

6.2.4 *Sample of developer's summary report - Brickworks*

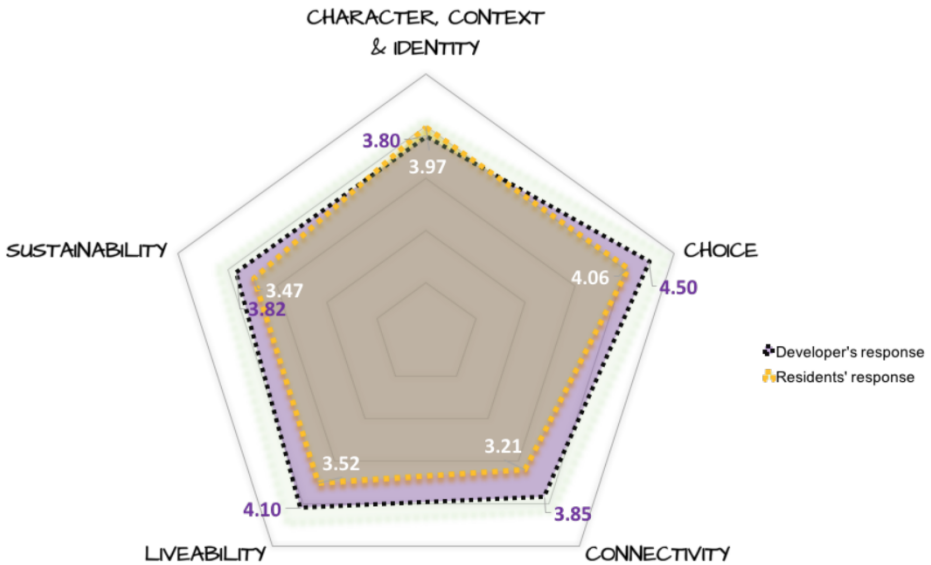
Living at Brickworks

A comparison of resident and developer perspectives

Residents and the developer were asked to rate a range of aspects relating to their site, building, living spaces, and access to key destinations. The residents' average score for each topic has been adapted from their survey responses, while the developer's scores were collected during an interview. Scores are from 1-5 and are presented for the following five sections:

1. Character, context and identity
2. Choice
3. Connectivity
4. Liveability
5. Sustainability

A broad comparison of residents and developer scores for each category can be seen below:



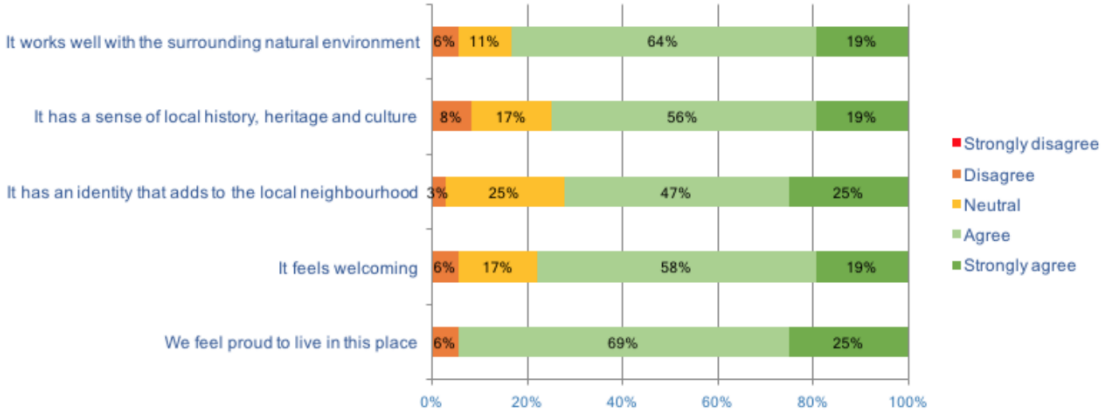
Each of the following sections outline the results in more detail with any additional information that was collected from residents, the developer, or during an independent site review.

Character, context and identity

To develop a site and buildings that integrate with, or relate to, the existing natural and physical environment as well as building form and style in the surrounding neighbourhood

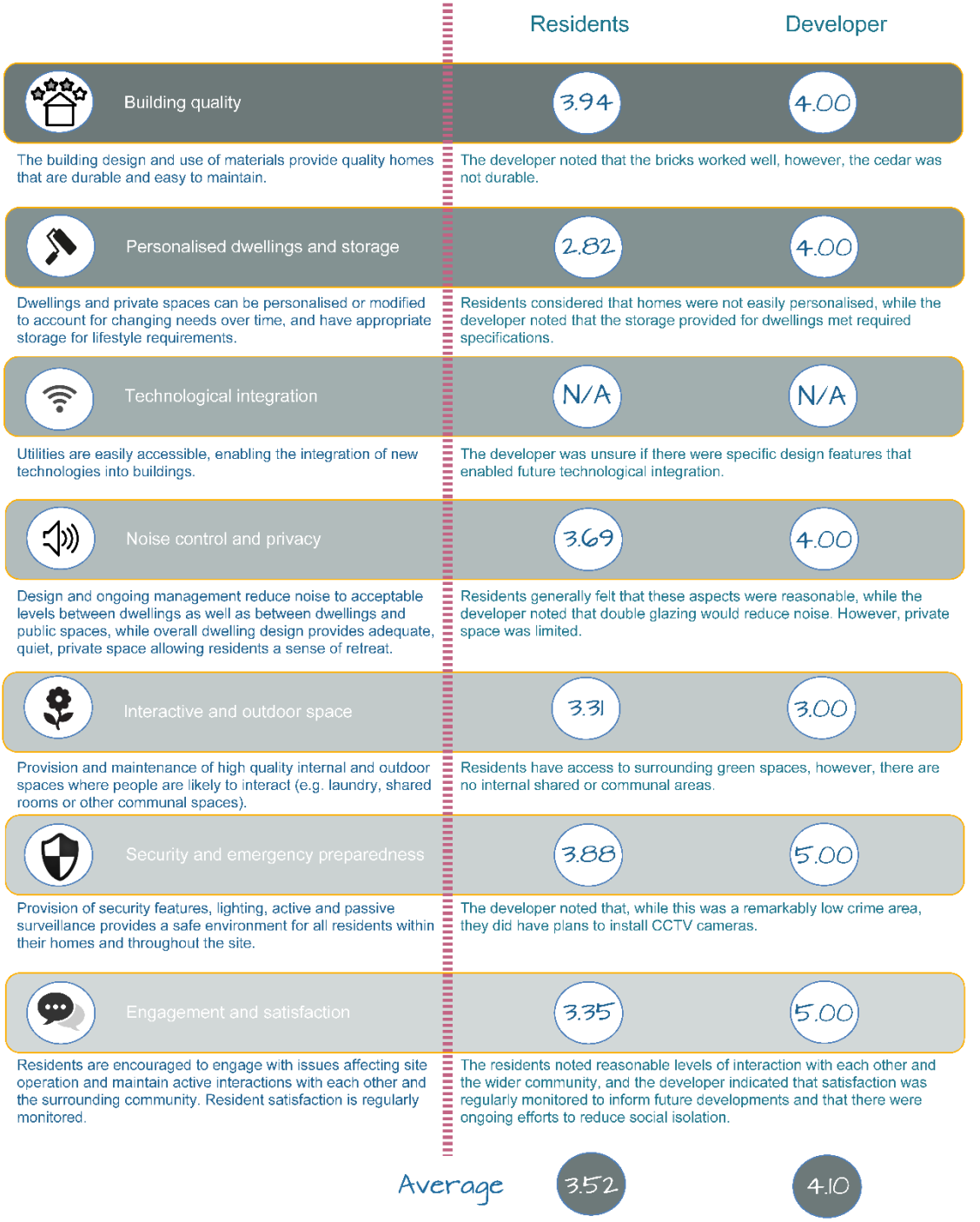
	Residents	Developer
Environment and physical landscape	3.97	4.00
Natural environmental elements are integrated within the site which aligns with slope and form and enhances geographic features.	The residents and the developer broadly agree that the site integrates well with its surroundings. The developer noted that it was critical to control the quality of storm water (through native planting and swales) with advice taken from Mana Whenua.	
Heritage and culture	3.86	4.00
The site takes account of local history, honours heritage and culture, and seeks community direction.	The developer described significant development of local history and culture for the wider precinct.	
Identity and sense of place	4.04	5.00
Site design and layout, key features, and artistic works have been developed to create an identity and 'sense of place'.	The design of Brickworks and its mixed use (with commercial activity) has helped the site become a local landmark within the wider precinct.	
Building character	N/A	4.00
The building design and materials integrate with, and enhance, the surrounding neighbourhood character.	The use of bricks for the exterior did not originally integrate but has since set a precedent for other building designs. The developer noted that the cedar elements have not worn well.	
Streetscape	3.92	2.00
Entranceways and frontages are designed to be welcoming, accessible, and are in context with, and enhance, the overall character.	The developer noted that the entrances were not memorable, were hard to find, and have provided lessons for future designs.	
Average	3.97	3.80

More detail on residents' responses to this section is shown below:



Liveability

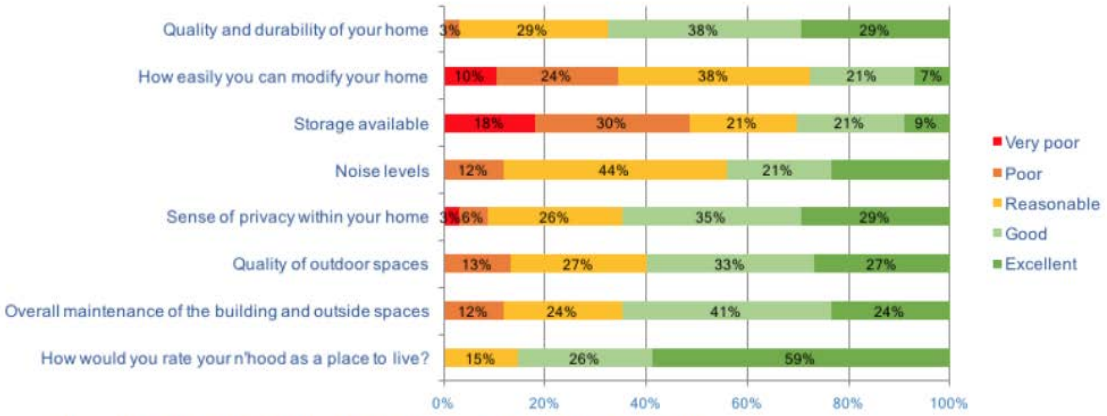
Providing quality facilities and facilitating positive interactions between residents and the wider community



Liveability

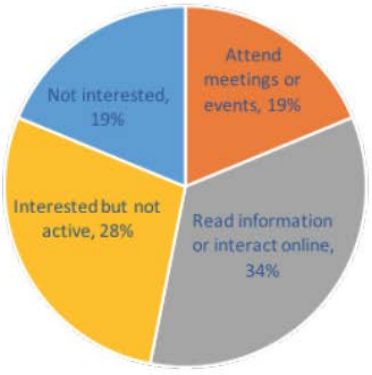
A closer look at residents' responses

Residents were asked to rate aspects of their home and surroundings:



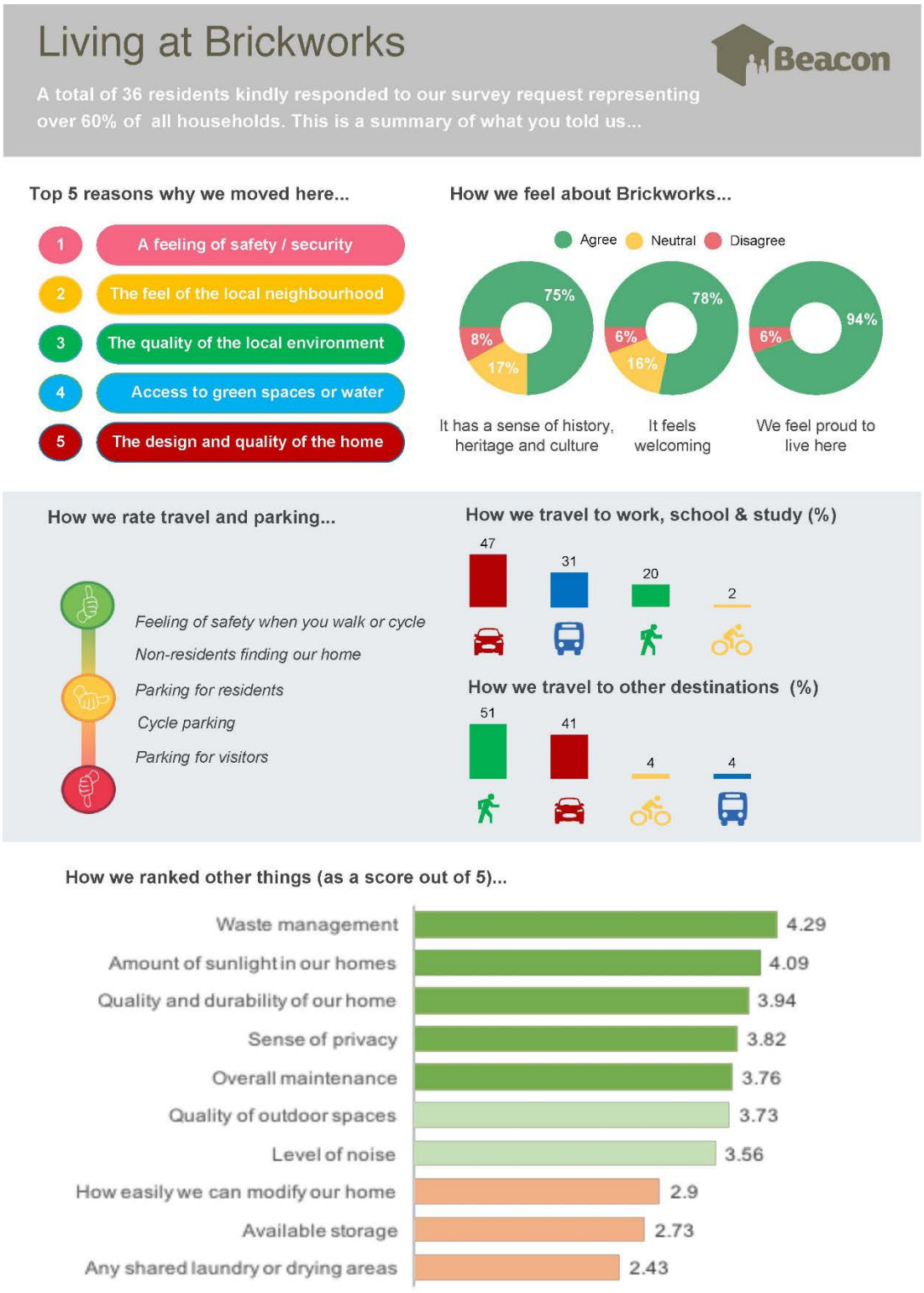
They also gave feedback on their feelings of safety and security:

They were asked what best described their household's involvement with residents' activities and issues



...and what best described their household's relationship with the wider community

6.2.5 *Residents' infographic - Brickworks*



Overall we...

Find it reasonably easy to:	Find it a bit harder to:
Heat our homes and keep them dry and free from mould	Dry our clothes outside and keep our homes cool on hot days

Are more likely to:	Are less likely to:
Reduce or recylce our waste, save energy and water and buy locally grown food	Take part in local environmental activities, grown our own food or compost food waste

Even so around 20% sometimes do these

Brickworks feels like a safe place to live around the clock

24/7

And almost two thirds of residents have an emergency response plan

Just over half of us keep informed about our local community by reading information or attending meetings

25% take part in community events and close to 40% are still getting to know people and places

Things we love...

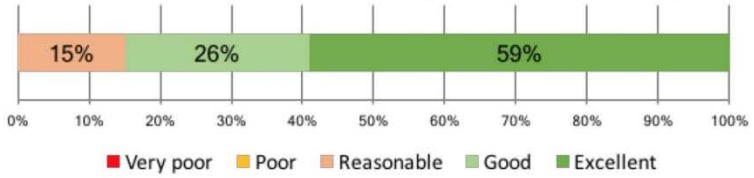
- Feeling of security
- Safety when walking and cycling
- The local environment

Not so much...

- Variety of local shops
- Hard to dry clothes
- Some maintenance issues

Of those that answered the survey:

85% of us rate Brickworks as either a good or an excellent place to live



6.3 Case study results - Hypatia

Site name	Hypatia
Site Address:	Khyber Pass Road, Grafton
Date of completion	2016
Developer	Ockham Residential Ltd
Types of dwelling	Apartments (with additional commercial space on the ground floor)
Levels	2 levels of basement parking and 6 levels of apartments above
Numbers of dwellings	59 apartment dwellings consisting of 57 apartments and 2 commercial grade units (that can be set up as apartments). 1 Bed: 21 / 2 Beds: 31 / 3 Beds: 7

6.3.1 Residents of Hypatia

Demographic questions were asked of residents to gain a snapshot of the type of people living in the building and answering the survey. The majority of apartments were housing two people (63%) followed by single person occupancy (26%) and finally 3 person households (11%). The majority of respondents owned their own home (65%) compared to renting from a private landlord (35%). Respondents lived in a variety of the dwelling stock as follows:

- 1 bed apartment: 26% (compared to Hypatia total building ratio of 36%)
- 2 bed apartment: 67% (compared to Hypatia total building ratio of 53%)
- 3 bed apartment: 7% (compared to Hypatia total building ratio of 12%)

As could be expected from a case study of a single development, the survey reveals some quite different demographic patterns than those for Auckland overall. Perhaps the biggest difference was a high estimated household income, with 63% of residents reporting an estimated income in excess of $100,000 and 22% reporting income of between $70,000 and $100,000. The remaining 15% of respondents (14.81%) did not answer this question.

Of the residents who answered the question about age, the following was recorded for all members of the household:

Age Range	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70+
Percentages	0%	0%	24%	16%	16%	22%	18%	4%

Ethnically the respondents (and those counted in their household) identified primarily as being New Zealand European (49%) followed by Asian (30%), European (11%) and finally Maori (2%) and Pacific (2%).

6.3.2 Response rate

A total of 28 residents' surveys were completed online and a further 2 were completed as paper copies. Compared to the number of apartments in Hypatia, this represents a 53% response rate.

6.3.3 Sample of developer's summary report – Hypatia

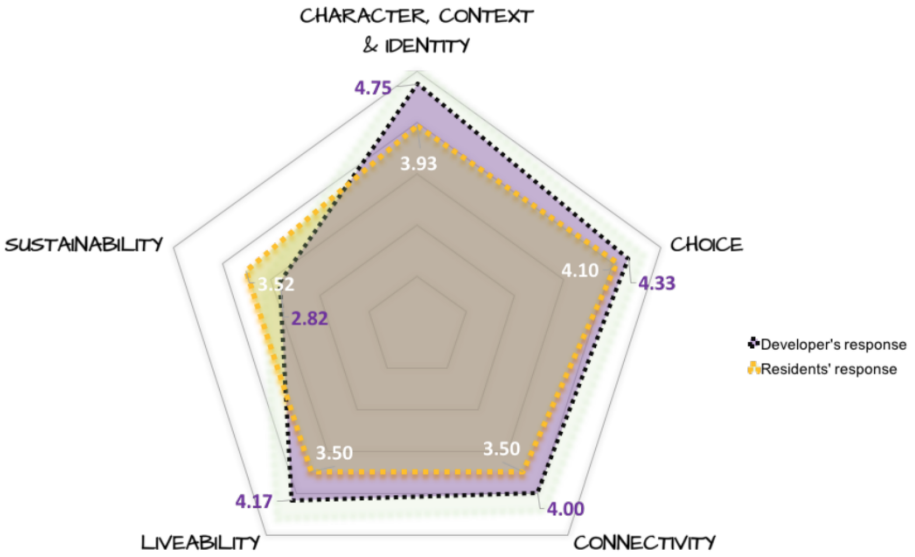
Living at Hypatia

A comparison of resident and developer perspectives

Residents and developer were asked to rate a range of aspects relating to their site, building, living spaces, and access to key destinations. The residents' average score for each topic has been adapted from their survey responses, while the developer's scores were collected during an interview. Scores are from 1-5 and are presented for the following five sections:

1. Character, context and identity
2. Choice
3. Connectivity
4. Liveability
5. Sustainability

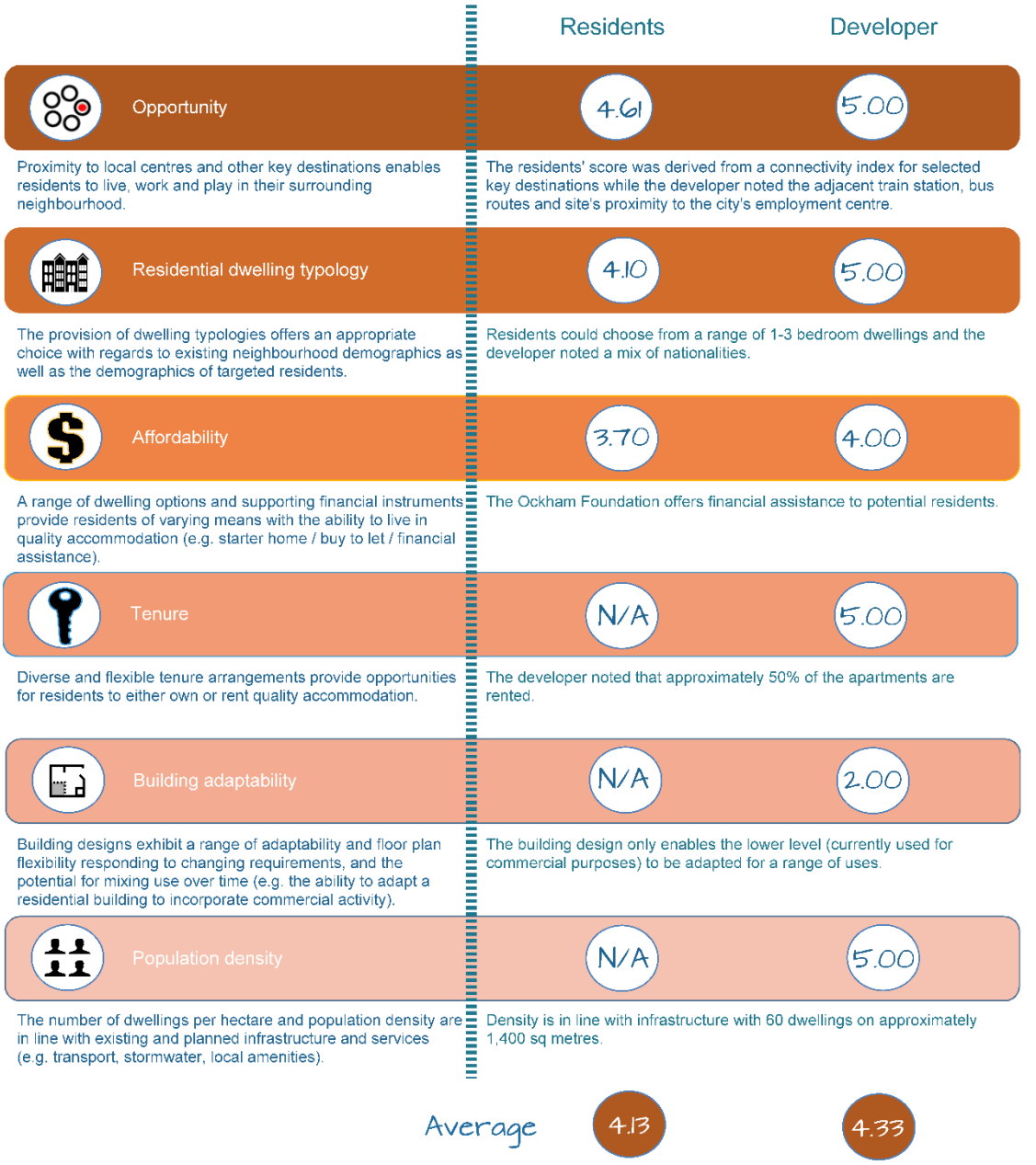
A broad comparison of residents and developer scores for each category can be seen below:



Each of the following sections outline the results in more detail with any additional information that was collected from residents, the developer, or during an independent site review.

Choice

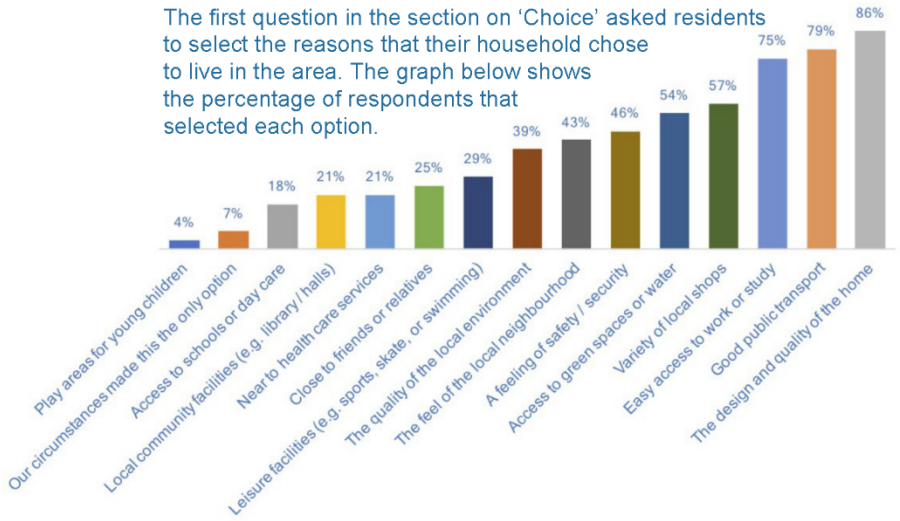
The development provides for, and enables, occupancy by a diverse range of residents who can benefit from, and support, a thriving local economy



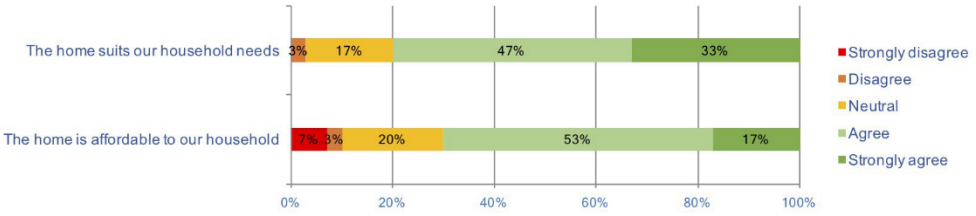
Choice

A more detailed look at residents' responses...

The first question in the section on 'Choice' asked residents to select the reasons that their household chose to live in the area. The graph below shows the percentage of respondents that selected each option.



Additional questions on suitability and affordability were weighted to help to determine residents' average scores:



Residents' comments on the area and why they chose to live here...

Inner city fringe. Close proximity to all activity.

The main reason was that it was centrally located to everything

Good sun, modernity (heat pumps and sound proofing)

Safe – modern – handy to schools, motorway, shops and everything. Great!

I chose to live here because convenience and traffic (Grafton Station)

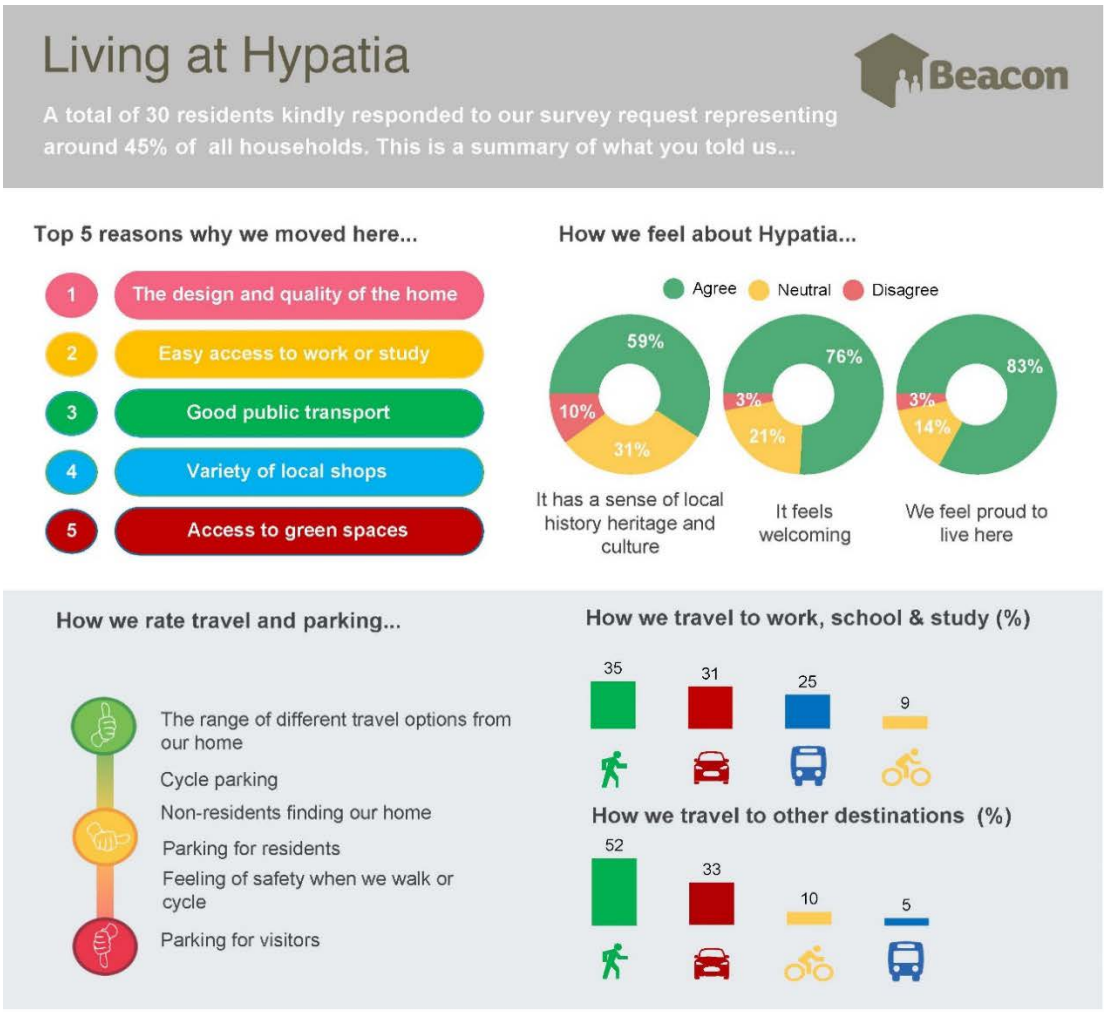
Train below us and handy to domain

Lack of a good local bar - like Gypsy Tea Rooms

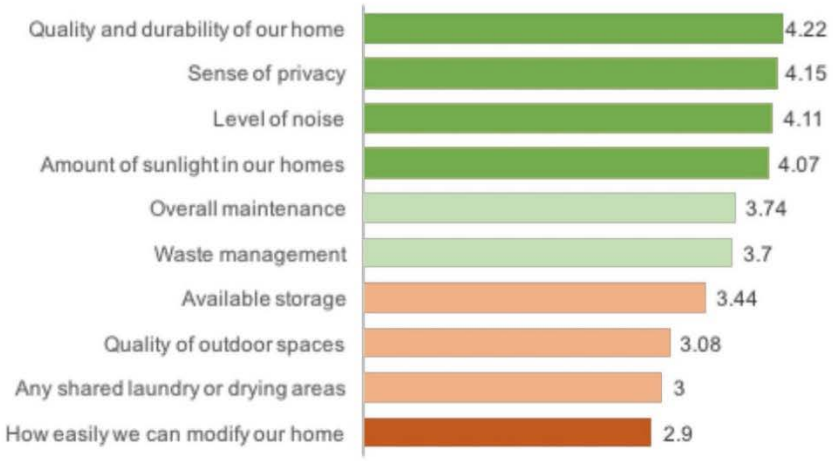
My neighbourhood is kind and nice. As I can't drive, it is easy for me to take the public transportation such as bus and train.

The neighbourhood is lacking a local corner store

6.3.4 Residents' infographic - Hypatia



How we ranked other things (as a score out of 5)...



Overall we...

Find it very easy to:	Find it a harder to:
Heat and cool our homes, keep them dry and free from mould	Dry our clothes outside

Are more likely to:	Are less likely to:
Reduce or recylce our waste and save energy and save water	Take part in local environmental activities, compost food waste or grow our own food

Even so around 30% sometimes do these

Hypatia feels like a safe place to live around the clock

Over half of residents have an emergency response plan

Over 60% of us keep informed about our local community by reading information or attending meetings

While a few residents take part in community events, over half feel they are still getting to know people and places

Things we love...

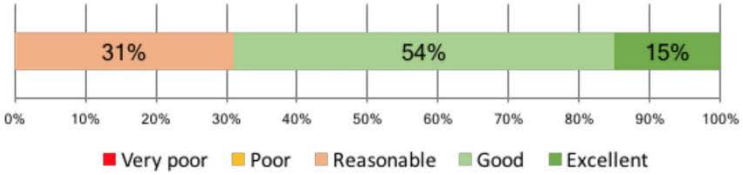
Quality design
How well the home suits our needs
Great access

Not so much...

Problems with the pool
People keeping to themselves
Some maintenance issues

Of those that answered the survey:

69% of us rate Hypatia as either a good or an excellent place to live



7 Discussion and next steps

The following discussion is based on findings from earlier stages of the project as well as being informed from a number of Technical Advisory Group meetings. Most notably, a final review workshop was held to showcase results of the case studies and to seek input on potential future directions for the work. Key issues arising over the course of the research are presented here:

- **A range of case studies are required:** Both case studies, undertaken to test the prototype tools, appear to be good examples of medium density housing. This could limit the understanding of the effectiveness of the tools in highlighting poor or underperforming developments, and the corresponding insights that can be gleaned from examining what 'not to do'. Ideally, the prototype tool would be tested on a range of developments to fully evaluate the tools' ability to distinguish comparative performance and set benchmarks for any ongoing reviews. This would also yield a growing national data-set for comparative purposes which would be of use to a wide variety of medium density stakeholders (e.g. investors, developers, designers, local authorities). More case studies could also address the potential for a halo effect influencing residents' scores, giving a cognitive bias to their appreciation of the development that they have bought into.
- **Independent site review is valuable:** Overall, the results from the developer and residents' surveys in both case study developments appear to be similar, and the project team has questioned whether these similarities and differences are a representative reflection of reality. The conclusion drawn is that this is indeed the case, as they are backed to some extent by the independent site reviews that have been undertaken at each location. This suggests that such site reviews, delivered by a person trained in using the tool, with experience of the underlying concepts, is a valuable addition to the developer interview and residents' survey. The independent review provides an independent voice that interprets the differences between the two sets of assessment scores.
- **The tools will need to continue to evolve to meet a changing industry:** Continual evolution of both surveys will be an important feature of any tool designed to meet a changing industry and cultural context. In the main, the questions appeared to be easily answered, but the lack of response in some areas might be indicative that specific wording could been improved in future. For instance, in some cases, the developer chose 'not applicable' (N/A) during the interview and the project team did not pursue this any further. However, in later discussion, the team felt they could have investigated issues further with developers in order to devise a score that better reflected the situation.
- **The key outcome-focussed principles were included:** Feedback from the Technical Advisory Group concluded that the main areas of assessment for medium density housing are sufficiently covered by the framework (with an understanding that this could be amended as required to reflect improving practice over time.
- **Evaluation of the scoring methodology:** The project team developed a scoring methodology to assess developer's and residents' views side by side against the medium density outcomes framework - the final average weighted score for residents allowed for a comparable score (from 1-5) to sit alongside developer's perceptions. The results from the case studies indicate

that this is a sufficiently robust methodology to compare the two groups' views. However, it is noted that the closer the language can be, across both the residents' and developer surveys, the more comparable their results are. In this case, it is worth remembering that the residents' scores inform tool users of the extent to which a particular outcome *has been achieved* – whereas for developers, the questions aim to measure the *efforts undertaken* to achieve that outcome. Developer's questions are, by their nature, more complex (e.g. asking if 'streetscape and entrances are accessible and welcoming' vs 'does the development feel welcoming' for residents). With that in mind, it is still considered that small refinements to both surveys' language could still be made to both clarify some issues and improve the comparability of others.

- **Scoring aims to encourage improvements:** The framework and prototype tools are designed to highlight to a developer where they could do better as opposed to highlighting where they have done badly. So, a 2 out of 5 score is considered more encouraging than a ranking of 'achieved' or 'failed'. Overall, the tool is about bridging the gap between what the developer believes they have achieved, and what the residents consider has been successful. It is hoped that the identification of this gap encourages the developer to improve.
- **Averaging vs median scoring for residents:** The project team has had extensive discussions about the benefits of averaging the residents' scores or providing a median score for their weighted responses. Overall, it is considered that averaging provides a more nuanced ranking which helps to more clearly distinguish between residents' and developer's responses. A trial of results using medians noted that that the two groups' scores were often too close together to enable further consideration of any specific issues. While there is an argument that outliers may 'skew' averaged results from residents, the project team considered that all responses should be considered as equally valid and that these therefore need to be included in the overall results.
- **Weighting of category areas:** Many green building and community rating tools attempt to weight certain categories based on assessment of the relative importance of each aspect of the tool (e.g. Homestar™, LEED, BREEAM). This was considered in the development of this medium density framework and resulting outcome principle categories. However, the project team is of the view that each topic area covered in the framework represents an important aspect of a well-performing medium density development, themselves derived from equally important 'core' principles. For example, it is not logical to offset liveability against connectivity as these are two different (though interrelated) issues. Any weighting of key areas or sub categories could lead to perverse outcomes or of developers 'cherry picking' higher weighted areas that might be more easily achieved.
- **Not Applicable or NA scores:** One area of the tool which may require further refinement is the use of 'not applicable' by the developer when they feel that a particular category does not apply to the site (e.g. where they felt there were no specific surrounding environmental or physical features that could have been integrated into the development). The project team suggest that the tool needs to be clearer about when 'not applicable' can be selected. Furthermore, if the developer choses N/A as an option, the question arises as to whether the corresponding question should be excluded from the residents' survey. An example of this situation occurred in one of the case studies where residents scored the adequacy of the

laundry facilities when the building did not have any. It may have been better to withdraw this question from the residents' survey tool in that instance. In general, it is felt that a review of the N/A options will be an important refinement of the tool, to ensure that all remaining questions are comparable, and particularly for sections only asked of either the developer or the residents.

- **Honesty of responses:** The project team are confident that the detailed comments provided by both developers and residents, and the balance of their positive and negative responses, indicated an honest reflection of their views. The offer of anonymity may have encouraged this amongst residents, although the majority of people opted to put their names and addresses to the survey. In addition, the independent site review raised issues in the reviewers' minds which were then reflected in the residents' feedback (e.g. the quality of external building materials). In addition, the averaging of the residents' responses appeared to closely align to the project team's independent review of the case study developments.
- **Recommendations for developers:** In its current form, it is considered that the developer's case study report provides implicit recommendations by highlighting the gap between residents' and developer's perspectives. However, there is an opportunity for a summary of recommendations to be provided as part of future reports including specific actions that would narrow these gaps. This is a particular benefit of using an independent reviewer that can draw together various elements of future assessments.
- **Links for further information:** The project team has long considered the potential for adding links for further information and associated best practice to the developer's survey. This would enable developers that are completing the survey on their own to see examples that may clarify higher scores while providing 'built-in' recommendations for how they could improve. This kind of advice could be included if the developer's survey was further developed as a self-assessment learning tool.
- **Targeted use:** An important consideration raised by the Technical Advisory Group addressed the difficulty in promoting the tool amongst developers that were most likely to benefit from it. This included smaller scale developers that have little or no attachment to their past developments as they move on to the next one. This issue needs to be addressed during the tools' ongoing development.

8 Recommended next steps

During the course of applying the framework and assessment tools to the two case studies, the research team compiled a list of recommendations for refinement of the framework and tools, as well as opportunities for further development. These were further informed by a workshop held with members of the Technical Advisory Group. The recommendations for future development are:

1) Further tool development:
   a) Review the survey methodology, language and scoring system to refine the comparability of residents' and developer questions
   b) Ensure consistency in the use of 'Not Applicable (NA)' answers for developers and how these may or may not determine corresponding questions for residents
   c) Clarify the scenarios for the tools' application including:
      i. In its current form as a means of comparing residents' and developer perspectives
      ii. As a potential stand-alone self-assessment guide for developers
      iii. As a means to deliver more formal advice for developers on specific actions they can take
   d) Consider the role of an independent review and a more formalised site review process as part of the above scenarios
   e) Build a library of better practice examples including opportunities to highlight specific outcomes encouraged by other guidance (e.g. the Auckland Design Manual).

2) Undertake further case studies to refine the tool against a range of variables
   a) Geographic and locational differences (e.g. Christchurch, Wellington, Queenstown, Tauranga)
   b) Site size and residential typology
   c) Performance differences including classifications of 'good' and 'poor' developments. This will also help to set benchmarks and identify examples of better practice
   d) Consider cultural and other demographic variables that may have an impact on perceptions
   e) Test the tools' viability for government and assisted housing projects (e.g. Kiwibuild).

3) Undertake further consultation with stakeholders in the MDH industry to:
   a) Gain further feedback on the tools' usefulness and adaptability to specific situations
   b) Identify approaches to determine how the tool could be targeted at developers that would most benefit from it
   c) Determine how best to promote the tool including how its use could be integrated into existing design and development processes
   d) Consider scenarios where the use of the tool may be required by developers.

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