

Facing

Newsletter of Beacon Pathway August 2013



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Study tour a success

Denise Bijoux and Nick Collins are back from leading the study tour of successful medium density developments in Victoria BC, Seattle and Portland.

The 15 participants represented a range of central and local government, housing developers, group builders and others with an interest in housing development (MBIE, Auckland Council, GJ Gardner, Legacy Corporation, Ngai Tahu, Auckland Council, Boffa Miskell and Grimshaw & Co).

The schedule was a busy one which took in a wide range of housing developments and neighbourhoods illustrating a range of innovative housing solutions to increasing density of existing neighbourhoods, adaptive re-use of commercial and other buildings, and new developments which ranged from small cohousing developments, to much larger mixed use and mixed housing developments.



People a highlight

We were extremely fortunate to have a number of informative guides – architects, developers, builders and planners, who took the time to show us around their developments and enabled us to appreciate first-hand the opportunities, challenges and rewards in housing and neighbourhood development

These included

- Frank D’Amboriso, architect of Selkirk, Seattle
- Bruce Brown (GBD Architects) who led the redesign of the Brewery Blocks in Portland
- Tom Phillips, developer of High Point, a brownfields redevelopment in Seattle,
- Dennis Hayes (CEO Bullitt Foundation) who gave us a guided tour of the Bullitt Centre, the most recent Living Building Challenge building



- Jim Diers who showed us around his home town, Seattle

In Victoria and Seattle we met with city, state and federal officials responsible for housing policy and delivery providing first hand insight into demographics, trends and policy instruments.

By contrast in Portland we were hosted by a firm of urban planners who had invited architects and city / state officials to discuss local housing.

Highlights from Victoria BC

- The Dockside Green development includes affordable housing which is indistinguishable from market rate housing. It includes: onsite sewage and biomass plants; water and roof gardens; huge bike storage; recycling; a small workshop area, and a lively calendar of community events. The development of Dockside has stalled with global financial crisis, but with a growth in demand for housing it is anticipated that development will recommence shortly.



- West Hills is a masterplanned community on 209 hectares in the City of Langford and was designed through a design charette process which ensured a commitment to excellence in environmental design.
- Camas Gardens is a LEED Gold building housing people at risk of homelessness in 44 self-contained single person and one bedroom units. It includes: shared spaces; site densification from 14 units; covered bike storage; maximised natural light; recycled materials; low-flow fixtures; energy efficient systems; and recycling stations are provided.

Highlights from Seattle

- High Point is a masterplanned new community with over 1600 housing units, half market and half rental – developer sold sites off to builders to fund affordable housing developments, which were in turn part funded through IRS tax credits. The planning process asked residents what they wanted and what it would look like. The response was largely traditional; however, the result is about twice the density of surrounding neighbourhood. High Point includes a LEED gold community building, with geothermal heating and solar PV.
- ID Village Square is a mixed-use complex with a public library community centre and gym, retail space, health clinic, parking garage and 57 affordable rental apartments for families.
- Hiawatha Lofts is a 61 unit live/work building on the southern fringe of Seattle, a block from the light rail line amongst other higher density new-build developments. Here there are commercial tenants on the ground floor to help pay the mortgage, an expansive exterior courtyard and large community room that hosts performances, lectures and parties
- Croft Place Townhomes is an affordable housing complex designed around co-housing principles. It includes 1,2, 3 and 4 bedroom apartment homes plus a community building that includes a shared laundry, technology centre and an afterschool youth programme.



Highlights from Portland

- Sabin Green links four buildings using a co-housing model. There are two new homes constructed as a main house with an accessory dwelling unit under separate ownership. They were designed to create a communal outdoor gathering place with a community teahouse made of natural materials, to be shared with two renovated homes on the adjacent lot (one a former garage). Add in a bike shed, swings and a gate in every fence and you can see how these buildings are not only working together, but are also working to build a sense of connection within and beyond their lot.





Message from the CEO

I am writing this with the study tour fresh on my mind. What a fantastic trip we have had and I believe all the participants would agree that we have gained enormous value from what we have seen. I'm looking forward to sharing more of that with you

as we reflect on what we have learned.

One of the stand-out features of the trip has been the people we met. These folk provided our group with a good understanding of the context within which housing is supplied in these cities.

There are so many parallels between these cities and New Zealand. All three cities are expensive housing markets where market models have successfully delivered to the middle and top end of the market but where delivering affordable housing is a real need. All three cities are struggling to cater for growth in housing demand. All three cities face challenges with an ageing local population, Asian migration and young families struggling to enter the housing market. All three areas are seismically challenged and are particularly nervous after following the Canterbury quakes and aftermath.

Where New Zealand differs markedly is that Victoria, Portland and Seattle have been active for over 30 years in the non-market / non-state provision of affordable and supportive housing both to buy and to rent. Increased densities in these cities have come through a number of parties working successfully in partnership. This includes local government, developers, state agencies, not-for-profits and various funders. A primary aim is to make it easier for developers and builders to meet housing demand for affordable ownership and lower cost rental apartments.

Policies have been introduced to increase density of existing and new neighbourhoods in ways that foster increased quality of life and

local liveability. On offer are a range of initiatives which include secondary suites in larger dwellings, laneway homes, garden suites and incentivising developers to seismically retrofit heritage buildings while providing additional residential units.

Similarly there are innovative funding mechanisms where developers, alongside not-for-profits, can access council housing funds (who use targeted rate type mechanisms to grow housing fund reserves) which provide leverage to access federal funding (through IRS tax credits) and market funds.

I was amazed at the history of neighbourhood activism and participation, where individuals and groups have demanded better performance from city government.

We visited several examples where neighbourhood groups recognised the need for affordable housing and developed entities to deliver neighbourhood housing developments.

I had the opportunity to visit a Latino community which, in the 1980's / 90's, occupied an unused school, finally negotiating to buy it and now developing it into affordable housing.

Nick Collins



Build Back Smarter

A second house upgrade is complete. Halswell 1, an IAG repair, has had additional under floor and wall insulation installed, together with a vapour barrier, solar water heating, and window replacement upgraded to double glazing.

Post-upgrade interviews with the homeowner, PMO and builder are underway and should result in a second case study for communications and to provide evidence for a future roll-out

Four more upgrades are underway including an insulation trial of two new wall retrofit products, one from InsulPro and one from Tasman Insulation.

Upgrades in these houses will include:

- Mt Pleasant 1
 - Part insulation
 - Vapour barrier
 - Rainwater tank
 - Ventilation
 - Efficient shower
 - Downlight replacement
- Spreydon 1
 - Full insulation
 - Ventilation
 - Vapour barrier
 - Water efficiency
 - Rainwater tank
 - Lighting
- Redcliffs 1
 - Heat pump hot water
 - Full Insulation
 - Vapour barrier
- Somerfield 1
 - Insulation
 - Woodburner
 - Wetback/hwc
 - Heat transfer
 - Rainwater tank
 - Lighting
 - Double glaze 2 windows

Halswell 1 – Sandra LOVES her new drier home!

Halswell homeowner Sandra and her three children are finding their house not only warmer but much much drier after it was upgraded during their earthquake repairs. With one child with a serious heart condition and another with respiratory problems, that's a big bonus for the family's health.



Sandra's three-bedroom home was damaged during the February earthquakes with the brick veneer and foundations moving, extensive liquefaction, damage to outside paved areas and cosmetic damage inside. During the time between the earthquakes and repairs starting, the liquefaction led to mould and damp spreading through the house, and particularly into the south western bedroom.

Their Hawkins project manager suggested including their home in Beacon Pathway's Build Back Smarter project and it is the second house in the trial to be completed.

The family had:

- walls and floors insulated
- windows replaced with high performance double glazing and thermally broken frames
- extract ventilation improved in bathroom and kitchen
- a solar hot water system installed.

“Last year we had to set the heat pump on 25 degrees and it would never heat up the room. My bedroom was like an icebox and the walls of the kids’ bedrooms were wet. I couldn’t have the beds against the walls because of the mould. Since moving back in, we’ve been running the heat pump at 19 degrees and it is really warm. We haven’t needed to run the dehumidifiers or electric blankets, and I can’t feel the moisture on the walls now” said Sandra.

Sandra, who is a single mother, used to have to run two heat pumps in the modest sized home and still found the house very cold and damp with power bills over winter of \$500-\$600.

Although on a low income, Sandra felt that making her home warmer and drier as part of the repairs was critical for her family in order to improve their health. She’d already taken the first step and topped up the insulation in the ceiling, and put in heat pumps to provide efficient heating. As part of the earthquake repairs she decided that upgrading the windows to double glazing at the same time was something she really needed to do.

“I had previously lived in a house with double glazed windows and knew what a difference it would make. Our windows were draughty, many didn’t open and the window sills were rotten. And during summer our lounge was incredibly hot due to the glare from the windows. We managed to borrow the extra money from the bank for the double glazing and I am so glad I did.”

Sandra’s home was upgraded over the first half of this year at the same time as earthquake repairs were carried out, with Beacon Pathway’s Bill King as project manager. The family had to move out for the repairs – and were very happy to move back into a repaired warm and dry home, after having to rent a cold house during the repairs.

“When we first moved back in we’d come from a bitterly cold place – and we couldn’t believe how warm and easy to heat the house was. We

hardly use the second heat pump now – the one in the lounge is heating the whole house.”



The value of building back smarter

Lois Easton has prepared a value case for the Build Back Smarter approach of house performance retrofits to be undertaken as part of earthquake repairs of houses in Canterbury.

There is substantial opportunity to undertake the retrofits:

- There are an estimated 50,000 homes yet to be repaired, many of which have substantial damage.
- 90% of affected homes in Canterbury are expected to need at least insulation retrofits.
- Retrofits at the time of repair represent a once in 30 year opportunity to substantially improve the performance of Canterbury's homes.
- Retrofits are easily able to be accommodated with repairs, without disrupting or slowing the repair process.

The impact of such an approach will be very substantial:

- Improving the health of Canterbury residents – particularly vulnerable citizens (old, young, sick).
- Energy conservation gains – particularly where whole house insulation (ceilings + floors **AND** walls) is undertaken.
- Benefits in terms of both reduced greenhouse gas emissions from energy efficiency – and increased resilience to climate change.
- Resource efficiency benefits – particularly energy and water.
- Improvements in the value of housing assets – through both the reduced maintenance requirements of dry houses and the value

added by performance improvements. Housing represents the major asset of most Canterbury households.

- Reduction in fuel poverty - particularly for households who have moved into fuel poverty as a result of the impact of the earthquakes.
- Employment benefits – particularly in the insulation industry which is now downsizing as a result of Warm Up New Zealand contracts coming to an end.

The pilot Build Back Smarter project, with its 10 case study homes, has identified the key areas where retrofit *at the time of repair* is critical. These are the opportunities to improve house performance which, if not picked up at time of repair, will be lost for the foreseeable future. Key interventions identified are:

- ceiling insulation retrofit to skillion and low pitched roofs where roofing or ceiling linings are being repaired.
- underfloor insulation and ground vapour barrier installation under normally inaccessible suspended floors where foundation repairs are occurring – often these involve lifting the house creating a unique access opportunity to the underfloor.
- wall insulation retrofit where recladding or wall linings are being replaced.
- increasing specification of windows being repaired/replaced (double glazing, advanced glazing such as low emissivity/argon filled, thermally broken aluminium frames).
- cutting hatches to access “hard to insulate” places – these are common in roof extensions and “popped tops”.
- installing externally vented extract ventilation systems in kitchens and bathrooms.
- installing heat transfer systems where ceilings are being repaired.

- replacing downlights with surface mounted fittings.
- relocating or replacing poorly located/sized/performing heating systems such as heat pumps and wood burners – it is worth noting that poorly located and sized heat pumps has been a common feature of Build Back Smarter houses.

This opportunity to intervene in a region's housing stock has substantial societal benefits. However, the capacity of Canterbury residents to be able to take up this once-in-a-generation opportunity is unlikely to be high for either owner occupiers or rental property owners. Therefore, there is a strong rationale for local and central government agencies to play a role in facilitating homeowners to be able to “build back smarter”.

The full value case is available at:

www.beaconpathway.co.nz/existing-homes/article/why_building_back_smarter_is_important

Rolling out the Build Back Smarter approach

The Canterbury Sustainable Homes Working Party is developing a plan for the further roll-out of the approach developed in Build Back Smarter.

Beacon has been asked to undertake the Establishment Phase of the new Build Back Smarter service. The work during establishment includes:

- Developing a business plan to run the BBS Service.
- Securing funding for financial package to support upgrade interventions.
- Updating Beacon's Home Assessment and Priority Plan Tool.
- Developing an approved training programme for contractors to use the tools and supply the BBS Service.

The Beacon Home Assessment and Prioritised Plan (HAPP) Tool is designed to:

- Assess a New Zealand home in relation to energy efficiency (thermal envelope, hot water, heating and lighting), water efficiency, indoor environment quality (incl. dampness) and domestic waste.
- Produce a prioritised tailored upgrade plan for the house to support resident decision-making.

Where did it come from?

The HAPP Tool was first developed and tested through a robust and peer reviewed research process in 2007 – 2008. Trained assessors from community organisations across New Zealand applied the tool to 650 homes in all three climate zones. This enabled the team to optimise the ease of use, consistency of output advice, and effectiveness of the prioritised plan.

The tool was subsequently used by building consent officers and eco design advisors to assess approximately 400 homes in the Retrofit Your Home Programme (Auckland/Waitakere councils). It also underpinned the development of the online version of the Homestar rating tool. The tool was used to assess earthquake damaged homes in the Build Back Smarter project in Canterbury, and was found suitable for use in the wider roll out of the Build Back Smarter concept.

High Performance House at HIVE

The High Performance House with Warmframe™ technology has now been officially open for 3 months. It has been a very busy few months, with over 4800 visitors through the house to the end of July!

The house is open to the public, Wednesday to Sunday 12pm-4pm. Visitors are shown around by Milly Woods.

Testing underway

The thermal performance of Warmframe™ - the composite of Axxis® steel framing and Insulpro insulation - used throughout the house is currently being tested. This involves panels being installed on the walls and ceilings being tested, which measure the rate at which the heat within the house is moving through the walls.

This is being tested during the very cold weather to get a minimum 7 degree difference between the indoor and outdoor temperatures. The house is being kept as far as possible at an even 21-22 degrees.

The data is continuously collected, and at the end of the testing period there should be some good information on how the insulation is performing.



Feedback from visitors

Visitor reaction is quite positive with particular interest from those looking to rebuild on existing sites. Typical comments include:

- Good value for money (mainly people who already have sections, are building a bach, or adding a granny flat)
- Too expensive (younger buyers, people with new builds who are also buying a section)
- To lower costs, some people are happy to lower specs (usually lighting, cladding, kitchen or fewer tiles in bathroom etc...). Others are considering leaving out the PV system / solar water / rainwater collection with a view to adding them later.
- Mostly commonly, visitors like the feel of the house, open plan living, large deck, and layout of the rooms
- There are very mixed reactions to the flat roof, a design decision based on the transport route to the HIVE site.
- A lot of people comment positively on how off site construction is the way of the future; however, covenant restrictions are a problem for some visitors
- Homestar is very attractive to many visitors

Look Book

A Look Book has been published, showcasing suppliers and products used throughout the house. A PDF copy can be downloaded from:

www.beaconpathway.co.nz/new-homes/article/what_is_the_High_Performance_House_at_HIVE

Check out the website and Facebook page for the High Performance House

www.facebook.com/pages/HIVE-High-Performance-House-with-Warmframe-technology/137578143086032

www.warmframe.co.nz

Ngāti Whātua Nga Rima o Kaipara housing project

Beacon has been working with Ngāti Whātua Nga Rima o Kaipara on a wide programme of work to deliver quality housing to meet the current and future needs of the five marae of Ngāti Whātua o Kaipara - Puatahi, Araparera, Kākānui, Rēweti and Haranui.



This programme of work is in response to identified concerns with poor standard of houses, affordability and deferred repairs and maintenance. The area needs both a supply of new housing and an upgrade of existing housing.

The project consists of several strands:

- Providing additional housing in the area by moving up to 50 ex-Defence Force houses from Hobsonville to areas of high need and renovating them to a high standard of performance (warmer, drier, healthier, efficient)
- Renovating existing housing to a high standard of performance
- Developing new papakāinga housing to suit the needs of the whānau.
- Demolishing substandard housing once new houses are built
- Providing training and employment opportunities as part of the renovations and new builds

Beacon's role is to assist in the planning and early implementation stages of the project.

Pilot project

The first step is a pilot project to move two ex-Defence Force houses from Hobsonville to a site on Kaipara College land in Helensville, and retrofit them as a demonstration for whānau of warmer, drier, healthier homes which cost less to run. Consents about to be submitted for these houses with a planned shift date of 6-13 September.

These homes will be open to whānau and targeted community to show not only the benefits of good performance but also how this can be achieved.

Funding and support

The Ngāti Whātua Nga Rima o Kaipara project has broad support from a number of organisations:

- The project fits with Auckland Council's Housing Action Plan which supports papakāinga housing. Rodney Local Board has provided funding in 2012/13 with further funding budgeted to support the project over the next two years.
- EECA is providing funding toward the two pilot retrofits.
- Hobsonville Land Company is providing the ex-Defence Force homes and is donating the moving costs.
- Te Puni Kōkiri is providing funding to enable a series of workshops with whānau to plan the future housing programme.

Rental housing fact bank

We are in the process of developing a fact bank to develop a comprehensive and accurate picture of what is known about rental housing.

A version 1 has been developed and we are seeking initial feedback from councils. NZ Green Building Council, central government, district health boards and tenants' agencies.

We hope this will then be a good resource document for organisations with a stake in rental housing to develop smart interventions. In particular we hope it will inform discussions on rental WOFs.

Read the fact bank at:

www.beaconpathway.co.nz/further-research/article/fact_banks

CEN Home Performance Advisor training

Beacon is partnering with Community Energy Network (CEN) and others in a project to design and deliver a National Certification Course for Home Performance Advisors.

CEN has secured \$34,000 from the Tindall Foundation, enabling the project to go ahead.

Combined stakeholder knowledge will produce a structured two day training course and practical exam, for the certification programme pilot. Once established, the training model has been designed to be self-funding through registration fees.

The Beacon Blog

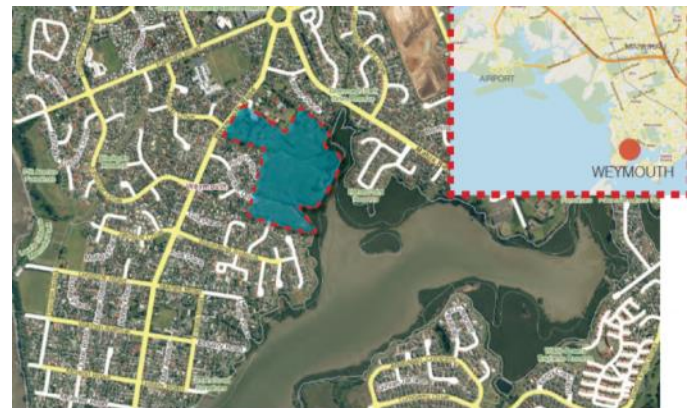
Also check out our new blog:

www.beaconpathway.blogspot.co.nz

Waimahia Housing Development

Beacon was recently asked to do some work in support of a new development on Crown land - the Waimahia Inlet residential development. The Tāmaki Collective - a group representing 13 iwi - is working with the New Zealand Housing Foundation and Tāmaki Makaurau Community Housing in the design of 280 homes at Weymouth, Auckland. The development is currently in the design stage and will be an affordable housing development.

Beacon was asked to comment on masterplan layouts and concept designs, and make recommendations on the sustainable features that should be considered for the new houses to meet Beacon's HSS High Standard of Sustainability®, their costs and benefits.



Check us out on Facebook

We've launched a Beacon Facebook page to coincide with the study tour. Check here to see the photos of the tour and keep up with Beacon's activities

www.facebook.com/beaconpathway