

Ageing In Place in An In Place Housing Stock

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Ageing in Place: Older People's Repairs
and Maintenance

Older People's Repairs & Maintenance Research

- Designed to contribute to older people's capacity to repair and maintain the houses in which they live and thereby age safely and comfortably within their communities.
- Will provide robust evidence on the:
 - prevalence of poor house condition among older people's dwellings
 - dynamics of repair and maintenance among older people
 - range of opportunities to assist older people to age in place.

Repairs & Maintenance Research

- Case study based
 - Interviews with older people and service providers
 - Service mapping
 - House condition surveying
- National survey of older people
 - House condition
 - Renovations, repairs and maintenance
 - Housing history
 - Housing intentions
- Research team:
 - CRESA - led by Kay Saville-Smith
 - Waikato University - led by Elsie Ho
 - Public Policy and Research - Bev James
 - Auckland University - led by Robin Kearns and Denise Bijoux
 - BRANZ/Victoria University - Nigel Isaacs
- Supporting Groups
 - Building Research Ltd
 - Department of Building and Housing
 - CHRANZ
 - BEACON

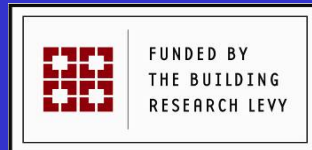
Ageing in Place is Affected by

- The performance of the existing housing stock
- The suitability of the future housing stock
- HEEP provides an insight into both

HEEP

A heap of extraordinary data created
by BRANZ

Funded by

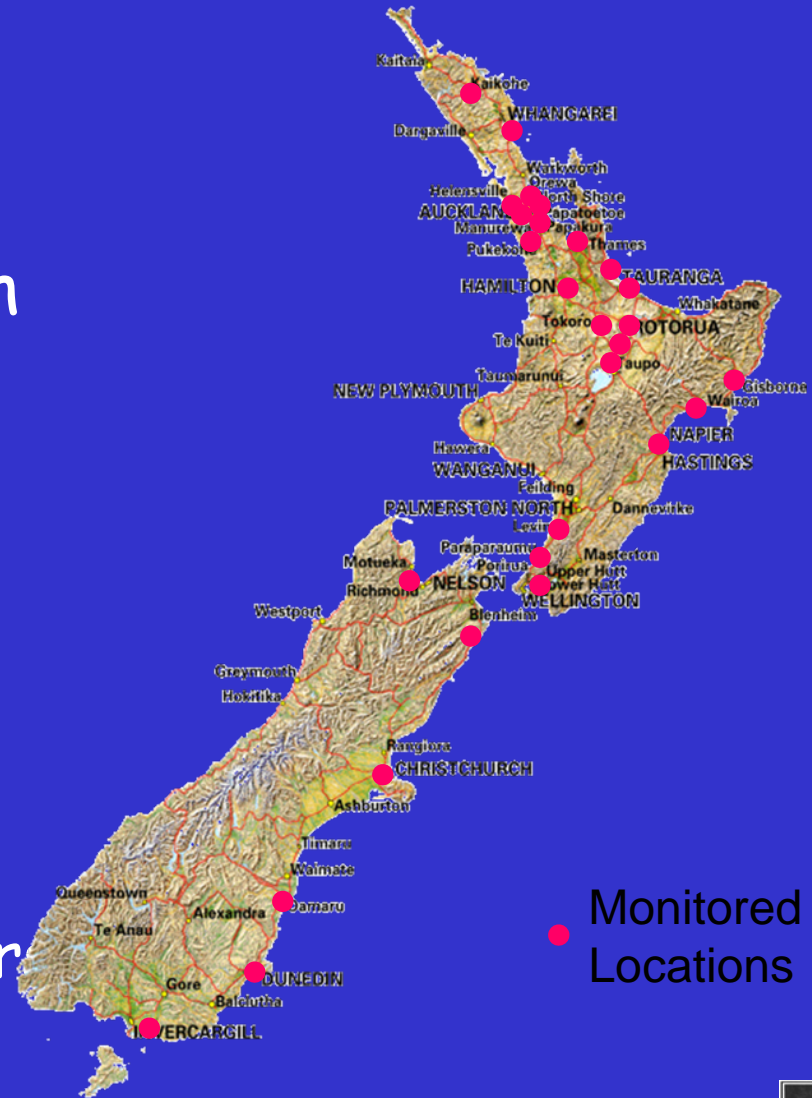


Centre for Research, Evaluation and Social Assessment



HEEP

- Multi-year research
- Multi-disciplinary
- Measures
 - Fuel and energy use
 - Temperatures
 - Household characteristics
 - Household behaviour



Our Existing Stock is Cold

- Mean Winter evening living room $17.8^{\circ} C$
- 18% of houses $>20^{\circ} C$ living room mean
- 9% of houses $>21^{\circ} C$ living room mean
- 22% of houses $<16^{\circ} C$ living room mean
- Bedrooms overnight average
 - Pre-1978 houses $13.2^{\circ} C$
 - Post-1978 houses $14.5^{\circ} C$

Does it Matter?

- Temperatures lower than 16° C impair respiratory function
- Temperatures lower than 12° C generate cardiovascular strain
- Condensation, damp, mould associated with low temperatures.
- Damp and mould associated with toxic reactions, allergies, inflammatory diseases, gastroenteritis and infections
- Low temperatures associated with social exclusion and reduced household interaction

Lowest Incomes Over-represented in Coldest Homes

| Household Income Quintile | % Living rooms Mean Winter Evening $<16^{\circ}\text{C}$ | % Living rooms Mean Winter Evening $>16^{\circ}\text{C}$ |
|---------------------------|--|--|
| Quintile 1 (Lowest) | 32.4% | 18.1% |
| Quintile 2 | 25.7% | 22.9% |
| Quintile 3 | 9.5% | 19.6% |
| Quintile 4 | 17.6% | 22.9% |
| Quintile 5 (Highest) | 14.9% | 16.6% |
| Total | 100% | 100% |

Winter Energy Expenditure

| Household Income Quintile | % Households Expending <10% Monthly Income | % Households Expending >10% Monthly Income |
|---------------------------|--|--|
| Quintile 1 (Lowest) | 72% | 28% |
| Quintile 2 | 97% | 3% |
| Quintile 3 | 100% | 0% |
| Quintile 4 | 100% | 0% |
| Quintile 5 (Highest) | 100% | 0% |

Mean Living Room Winter Evening
Temperature of Households Spending
Less than 10% of Monthly Income is

1.3° C Higher than

Mean Living Room Winter Evening
Temperature of Households Spending
More than 10% of Monthly Income

Vulnerable to Cold

- Coldest households
 - One-person households
 - Tenants
 - Urban areas
 - Users of:
 - Open fire (wood or coal)
 - Portable Electric
 - Portable LPG
 - Fixed electric
- People most vulnerable to cold:
 - Very young
 - Frail
 - Disabled
 - Those at home

Households and Warmth

- Users of:

- Gas 18.0 ± 0.5

- Heat pump (elect) 18.0 ± 0.4

- Central gas 18.3 ± 0.7

- Enclosed solid fuel (wood) 18.9 ± 0.2

Its not simply about income

- Higher income people can live in poorly performing dwellings
- Poor people can live in quality housing
- Housing quality matters - post 1978 houses are warmer than pre-1978 houses
- Fuel use and appliances matter - wood burners

Low income households
manage fuel poverty by
significantly under-heating

Older people are especially vulnerable to:

- Cold
- Older houses
- Low incomes
- Cultural practices around under consumption
- Lack of knowledge about potential house performance

New housing stock may exacerbate rather than resolve problems

- Positives:
 - Better insulated
 - Usually more efficient space heating
 - Sometimes better orientation
- Negatives
 - Too big for comfort
 - Costly housing
- Risk - Moving into higher dependency living than needed

Future Stock Trends:

- More stock
- Lower occupancy
 - 1971 - 3.38 average occupancy
 - 2001 - 2.6 average occupancy
 - 2021 - Forecast average occupancy 2.4
- More rooms
- Larger dwellings

Bedrooms and Rooms in Private Occupied Dwellings – 2006 Census

| Number | % of Dwellings – Bedrooms | % of Dwellings – Rooms (Including Bedrooms) |
|---------------|---------------------------|--|
| One | 5.8 | 0.7 |
| Two | 19.8 | 1.8 |
| Three | 46.3 | 5.3 |
| Four | 21.6 | 9.8 |
| Five | 5.0 | 17.4 |
| Six | 1.0 | 25.7 |
| Seven | 0.2 | 16.9 |
| Eight or more | 0.3 | 22.4 |
| <i>Total</i> | <i>100.0</i> | <i>100.0</i> |

| Mar Yr | Number of | | Average Floor Area | |
|--------|-----------|--------|-----------------------------|----------------------------|
| | Houses | Flats | Houses (m ²) | Flats (m ²) |
| 76 | 20,932 | 11,257 | 121 | 83 |
| 80 | 11,687 | 3,510 | 133 | 93 |
| 85 | 15,664 | 6,118 | 133 | 99 |
| 90 | 21,365 | 1,486 | 136 | 88 |
| 95 | 21,619 | 2,062 | 171 | 116 |
| 00 | 21,386 | 4,472 | 177 | 105 |
| 05 | 23,355 | 6,690 | 206 | 94 |
| 08 | 22,422 | 2,811 | 205 | 137 |

Average Floor Area 1976-2008

Estimated Typical Monthly Winter Energy Costs by the Size of HEEP Dwellings

| Floor Area Sq Metres | Mean \$ | Median \$ | Minimum \$ | Maximum \$ |
|--------------------------|---------|-----------|------------|------------|
| 100 sq metres or less | \$107 | \$100 | \$38 | \$250 |
| 101-150 sq metres | \$125 | \$120 | \$40 | \$320 |
| 151-200 sq metres | \$158 | \$150 | \$50 | \$450 |
| 201 or more sq metres | \$183 | \$160 | \$75 | \$400 |

Estimated Typical Monthly Winter Energy Costs by Dwelling/Household Size

| Floor Area Sq Metres | Household Size | | | | | |
|-------------------------|----------------|-----------|------------|-----------|------------------|-----------|
| | 1 person | | 2-3 people | | 4 or more people | |
| | Mean \$ | Median \$ | Mean \$ | Median \$ | Mean \$ | Median \$ |
| 100 or less | \$85 | \$75 | \$97 | \$95 | \$139 | \$130 |
| 101-150 | \$104 | \$105 | \$122 | \$120 | \$139 | \$140 |
| 151-200 | \$150 | \$150 | \$153 | \$150 | \$168 | \$152 |
| 201 or more | No data | No data | \$168 | \$160 | \$250 | \$250 |

Total Annual Energy Consumption by HEEP Dwelling and Household Size

| Sq Metres | Household Size | | | | | |
|-------------|-----------------|-------------------|-----------------|-------------------|------------------|-------------------|
| | 1 person | | 2-3 people | | 4 or more people | |
| | Mean Annual kWh | Median Annual kWh | Mean Annual kWh | Median Annual kWh | Mean Annual kWh | Median Annual kWh |
| 100 or less | 5,900 | 5,700 | 8,700 | 7,600 | 11,400 | 9,800 |
| 101-150 | 7,400 | 7,300 | 11,300 | 9,600 | 13,700 | 12,900 |
| 151-200 | 10,400 | 10,400 | 12,200 | 12,100 | 17,600 | 17,500 |
| 201 or more | - | - | 9,100 | 8,400 | 18,300 | 18,300 |