

Ageing In Place in An In Place Housing Stock

Kay Saville-Smith
Programme Leader

Ageing in Place: Older People's Repairs and
Maintenance

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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° C
- 18% of houses >20° C living room mean
- 9% of houses >21° C living room mean
- 22% of houses <16° C living room mean
- Bedrooms overnight average
 - Pre-1978 houses 13.2° C
 - Post-1978 houses 14.5° 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 \pm 0.5


- Heat pump (elect) 18.0 \pm 0.4

- Central gas 18.3 \pm 0.7

- Enclosed solid fuel (wood) 18.9 \pm 0.2

It's 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