



Tasmanian Housing Strategy

Energy ROI Pty Ltd Submission

R1 19/10/2022

The following document addresses the Tasmanian Government's request for input to the Tasmanian Housing Strategy. Energy ROI is an organization dedicated to reducing the long-term costs and the environmental impact associated with energy utilization within Tasmania.

Upon review of the Government's presented material, there is a clear inverse correlation between population growth in Tasmania and housing affordability. Even if our population would stop expanding, there is undoubtedly a need for more affordable and efficient housing in Tasmania.

Energy ROI, as an organization that specializes in energy auditing of buildings and commercial industries, is well aware that homes at the lower end of the affordability scale are mostly constructed with scant regard for the long-term operating costs, which typically falls upon the shoulders of those who rent them, in other words those who can afford high running costs the least.

Subsequently, for any future builds, the most basic step for improving lifetime affordability of housing would be to improve the building code to better reflect the climatic conditions that exist in Tasmania. As an example, the cities of London, England and Hobart have near identical climatic conditions, however the building code insulation requirements in Hobart are almost half of the insulation values in London, meaning that throughout the life of the structure, the building will consume almost double the amount of energy for the occupant to stay climatically safe and comfortable.

Pressure must be resisted from the construction sector to always build the cheapest possible structural solution, as a small amount additionally spent upfront can make significant energy, cost and emissions savings across the life of the structure. Additionally, it must be conveyed that adding insulation also increases local employment and material production. Products like glass wool insulation are predominantly sourced from recycled glass and industrial products and are made in Australia. Better still, building products like hempcrete are grown and processed in Tasmania. The additional labour associated with these installations means employment for local Tasmanians. Conversely, building an inefficient house means the need for purchasing larger heat pumps, hot water systems and solar panels, none of which are produced in Tasmania. To make a bad situation worse, most of the heating or cooling sources for houses typically only have a 15 year operational life, meaning that they will need to be replaced multiple times across the life of the structure. Insulation typically only needs to be added once, then continues to provide savings for the rest of the life of the structure.

From a geographical perspective, we need to stop looking to new "land releases" to make locations available in order to create affordable housing choices. Land releases insufficiently consider the habitat

Duncan Livingston
Thomas Mills



destruction associated with the construction of new housing in our prevalent low-density, greenfield model. They typically occur in semi-rural or forested regions, which apart from the carbon and biodiversity loss, places those that eventually inhabit these regions at a significant disadvantage with respect to the distance from employment and services. Low density sprawl makes it difficult to justify the extension of public transit, public green spaces, the development of dedicated bicycle infrastructure or even the ability to attract services to the region due to the low throughput for the given client radius. It creates a vehicle dependant culture, which keeps those requiring low-income housing either in or near poverty status, especially during times of global turmoil and oil price fluctuations.

As a society, what we need to be improving is the poorly insulated existing housing stock, through the addition of wall insulation (pumped infill, phenolic foam board or hempcrete), energy recovery ventilators (essential for houses using heat pumps to prevent mould build-up) and the removal of all gas and resistive element heating (for space heating and water heating). We need to focus at creating homes encompassing a much longer operating life horizon, taking into account the energy consumption and associated operating costs and emissions over the life of the structure. We need to look at European affordable housing models, where the focus is on building 2-4 storey structures that have a high enough density to justify building them within existing city boundaries, have shared green spaces to assist in social cohesion and the provision of recreational and exercise facilities. Such buildings often have shared walls in the form of townhouse or complex development, significantly reducing the energy loss and subsequent heating costs.

Planning of any future housing stock needs to look to the future, not to the past. We need to realize that because of global overpopulation and carbon emissions, we have created a natural environment that is more extreme than what prior building codes were designed around. With the high likelihood that carbon pricing of some type will be implemented within the next decade, which will continue to cause increased energy pricing until renewables are the predominate source. Subsequently, for those reliant upon low income or social housing, we should be looking at the following attributes:

- More efficient land use through minimum density requirements with a 3-storey minimum (one subterranean for parking/basement storage), using elevated house block/submerged road techniques where possible to prevent flash flooding of structures during the climate change induced severe weather conditions. Such houses also typically improve the volumetric efficiency and subsequent energy costs.
- Accessibility requirements for the easy as-required retrofit of domestic elevator systems.
- A significant increase in the minimum shared greenspace requirements with provisions for community gardens, and no loopholes for developers.
- A requirement that all roof structures be optimized for solar installations, with provisions for future battery installations.
- The mandating of electric vehicle and bicycle charging infrastructure in homes, including those living in apartments.



- Minimum bicycle priority street requirements for all neighbourhoods and the development of dedicated bicycle/pedestrian thoroughfares between neighbourhoods.
- Sparing use of glass in structures on southern (for heat loss) and western (for summer heat gain) building faces, due to its lack of insulating efficiency.
- The outlawing of LPG or Propane in all new structures or renovations for cooking, space heating or water heating purposes.
- The implementation of hempcrete or similar locally grown insulation and structural products.
- The mandating of energy recovery ventilation in all new structures or existing structures equipped with heat pumps.
- The mandating of water heating heat pumps equipped with natural refrigerants and minimum coefficient of performance of 5.0.
- A plan to phase out HFC refrigerants from all residential heating and cooling equipment.
- An increase in thermal efficiency of all new buildings to that of leading European regions with similar climates.
- The mandating of wall and ceiling insulation in all existing rental properties and the inclusion of wall insulation in any future homeowner incentive programs.

As a society we need to help people out of the energy poverty cycle and be factoring in the true social costs when assessing building choices. Breaking this poverty cycle will only be achieved through the restoration and construction of energy-efficient, higher density, quality housing combined with adequate green shared spaces. It cannot be achieved through the installation of more of the same low-density sprawl that is consuming the countryside and destroying the natural beauty that once made Tasmania unique.

Further details on any of the above material can be obtained by contacting Energy ROI directly.