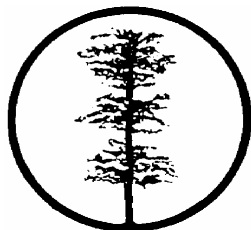


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11 September 2008

Mr Colin Jensen
Director General
Department of Infrastructure and Planning
Building Codes Queensland
PO Box 15009 CITY EAST QLD 4002
Australia

By email: sustainablehousing@dip.qld.gov.au

Dear Colin,

Improving sustainable housing in Queensland discussion paper

We attach our submission in response to the discussion paper.

The Department is to be congratulated on a detailed and well presented Discussion Paper. It is a step in the right direction and any criticism is restricted to the issue that it does not go far enough. In particular, more urgent action needs to be taken in relation to upgrading of existing buildings.

Should you have any queries about any part of this submission please do not hesitate to contact us.

Yours faithfully
Environmental Defenders Office (Qld) Inc. and
Environmental Defender's Office of Northern Queensland (Inc.)

Jo-Anne Bragg
Principal Solicitor
EDO Qld

Adam Millar
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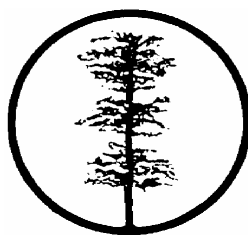
Sustainable Housing

Joint Stakeholder Submission of:

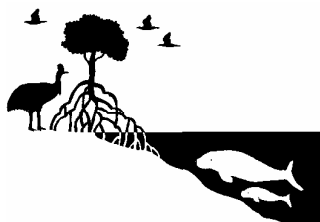
the Environmental Defenders Office (Qld) Inc;

the Environmental Defenders Office of Northern Queensland Inc;

August 2008



Environmental Defenders Office (Qld) Inc



Environmental Defenders Office of Northern Qld Inc

The EDO Qld is a non-profit community legal centre specialising in public interest planning and environmental law. The primary goal of the EDO Qld is to protect and enhance the environment in the public interest through use of the law by and on behalf of the community. The EDO Qld implements this primary goal by:

- Providing free legal advice, assistance and information to the Queensland community through its employed solicitors and a team of volunteers;
- Educating the community on planning and environmental laws; and
- Providing advisory support to individuals and groups in the development of Queensland's planning and environmental laws.

The EDO Qld along with the Environmental Defenders Office of Northern Queensland Inc. (EDONQ) are the only bodies providing free legal advice and services to the public in matters of planning and environmental law in Queensland.

Improving Sustainable Housing in Queensland

Introduction & Executive Summary

This submission in relation to the Department of Infrastructure and Planning's Green Paper has been prepared on behalf of the Environmental Defenders Office of Queensland and the Environmental Defenders Office of Northern Queensland.

The Department is to be congratulated on a detailed and well presented Discussion Paper. It is a step in the right direction and any criticism is restricted to the issue that it does not go far enough. In particular, more urgent action needs to be taken in relation increasing the concentration of housing, to upgrading of existing buildings at appropriate times and the inevitable threat faced by the introduction of carbon trading.

A summary of the main points from the submission are listed below:

Lower embodied energy for home construction materials

- We support permitting shorter expected lifespans for homes in return for cheaper initial costs, lower embodied energy and increased energy efficiency.
- Housing sustainability could be greatly advanced by making use of more appropriate, low embodied energy and energy efficient materials that are either more readily available in, or suitable for, different geographical areas (for example strawbale, rammed earth and mudbrick). This could potentially achieve better energy savings and lower building and running costs.

Increased population density around service hubs

- The Discussion Paper retains the focus on large family homes when over 55% of Australian residents live alone or with only one other person. This highlights the need to keep requirements for units on a par with houses and to think about where our aging population might most sustainably live. Essentially, the aim should be to discourage large houses on big parcels of land and instead encourage increased population densities, concentrated around service hubs.
- Planning in South East Queensland needs to consider the fact that the population continues to increase, and will continue to do so. A focus on sustainable housing also needs to consider the right type of housing for the planned needs of the relevant communities.

Flexible Housing for an aging population

- Creating desirable and energy-efficient buildings for people to resize into as their needs change while allowing them to remain in their existing community would benefit all. This entails encouraging the relocation of persons into smaller dwellings after their children have left home, thus increasing the availability of bigger houses in the suburbs. Rather than simply building new, large, inefficient homes further away from service hubs, more socially suitable dwellings with better access, lower cleaning and gardening maintenance costs could be built for those who no longer support families.

Sustainability measures must apply to extensions and renovations

- Climate change cannot be addressed, lifestyles improved and energy savings made, with only a quarter of the population taking part through reducing their domestic energy consumption (Retrofitting). Building sustainability measures should apply to all extensions or renovations and to the whole house where more than 50% is being renovated.

Other ideas

- Other simple measures that would encourage sustainable housing that should also be pursued include:
 - Building design features that support recycling should be encouraged, if not required. For example, sufficient space for recycling bins,
 - The unavailability of town gas should not mean a home owner does not need to install an efficient hot water system on replacement. The State government should rebate the difference between the cost of connecting to town gas and the next cheapest solution available to the home owner.
 - Remove the means test on certain rebates because early adopters are more likely to be those on higher incomes. Market forces will drive prices down only after sufficient people have taken up the product.
 - Homes should be designed to support tele-commuting and home based work to reduce transport costs and infrastructure demands caused by commuting.
 - The Discussion Paper details projected savings but does not allow for increases in costs due to carbon pricing. Savings are likely to even greater after 2012 with the introduction of a carbon trading scheme.

Protect vegetation

- It is counter intuitive to allow developers to remove mature vegetation and plant non-native, water intensive gardens. Building and planning laws should prevent the removal of mature vegetation in housing estates by making them part of the assessment of energy efficiency.

Reducing energy and water inefficiency

- The immediate and complete ban of all products that do not meet prescribed standards of water-efficiency and energy-efficiency is strongly supported.
- While a flexible 5 star code for electrical appliances should be welcomed, there is simply no excuse to permit any site orientation other than the most energy efficient.
- Rebates for new efficient appliances where the old ones are decommissioned would encourage great savings for the individual and the reduce grid demands.
- Private swimming pools are massive consumers of water and power. Ownership should be subject to the most stringent requirements including mandatory solar panels.
- Ceiling fans should be mandatory in all new homes, even ones with air-conditioning.

Main Submission

1. Need

Queensland's own Environmental Protection Agency, through its Climate Change website ¹, repeats and adopts the undoubted scientific advice from the Intergovernmental Panel on Climate Change. '*Climate change is here. It is here now. We are causing it.*' ²

The Federal Government's *Garnaut Climate Change Review* ³ makes it clear that on a purely financial front, the costs of adapting to and mitigating the impacts of anticipated climate change will be lower the sooner we start.

Queensland is the Smart State. To achieve the three limbs of ecological sustainability ⁴ in a 'Smart' way it is necessary (at the very least) not to make the situation any worse by allowing current energy inefficient and unsustainable building practices to continue.

2. Cost

The cost case for action on carbon emissions on global, Federal and State levels are obvious, ⁵ as is the need for affordable housing. What has been ignored until now in that debate are the 'Total Cost of Ownership' issues and the recovery times for 'going green'. Costs are relatively low. Recovery times are therefore short. Any increase in housing affordability problems could be offset by a scheme such as the Federal Government's green loans. It's a 'win-win situation'.

¹ <http://www.climatechange.qld.gov.au/about/index.html> accessed 1 August 2008

² <http://www.ipcc.ch/ipccreports/ar4-syr.htm> accessed 1 August 2008

³ <http://www.garnautreview.org.au>

⁴ As defined in the *Intergrated Planning Act 1997*

"1.3.3 Meaning of ecological sustainability

Ecological sustainability is a balance that integrates—

(a) protection of ecological processes and natural systems at local, regional, State and wider levels; and

(b) economic development; and

(c) maintenance of the cultural, economic, physical and social wellbeing of people and communities."

⁵ Garnaut - Supra 3

3. Unquestioned assumptions

Apart from planning and social aspects dealt with later, there are several unquestioned assumptions underlying the Discussion Paper and indeed in thinking about housing in recent decades, that requires re-examined and are listed below.

Design Life

The design life of housing is envisaged by building codes as being very long. This inevitably leads to an increase in production and construction costs, and in particular in embodied energy. Expansions in temporary mine housing and relocatable home parks shows that people find a cheaper alternative in seeking 'temporary' accommodation that is not so rigidly regulated.

One solution to affordability and sustainability is to allow 'design-to-fit' solutions for housing forms that are not 'permanent' in the traditional sense but are an energy-efficient design for their expected use and life. An example might be permitting shorter expected lifespans for housing in return for cheaper initial costs, lower embodied energy and increased energy efficiency.

Alternative Materials

Building codes and other regulatory documents concentrate almost exclusively on well-known building materials – concrete, timber, steel. This leaves anything not specifically addressed as an 'alternative solution' widely viewed with suspicion by regulators, developers, architects, builders, certifiers and engineers. Housing sustainability could be greatly advanced by making use of more appropriate, low embodied energy and energy efficient materials that are either more readily available in, or suitable for, different geographical areas. Bringing strawbale, rammed earth, mudbrick and other construction materials and techniques into the mainstream would allow for more housing options than at present, potentially achieving better energy savings and lower building and running costs.

Living Patterns

The previous decades of suburban sprawl now face their consequence: large, poorly design and sited homes, miles from anywhere with no services, and heavily (if not entirely) reliant on private cars. Enter higher petrol prices and the need to reduce energy consumption in a low carbon future. It is likely, indeed planned, that more people will live in 'in-fill' housing developments and at higher densities in the future.

More Australian households are made up of only one or two persons. By 1996 32.4% of the Australian population lived in two person households and 23% in single person households.

“Since data were collected in the first Australian Census in 1911, there has been a slow but steady increase in the size of Australian dwellings, as demonstrated by the rise in the average number of rooms over the period to 1981. This increase occurred

despite a steady decline in the average number of persons per dwelling (from 4.5 to 3.0 persons) over the same period. These changes have meant that, between 1911 and 1981, the average number of persons per room declined from 0.9 to 0.5 persons. The average size of new homes has continued to increase over the last two decades. Between 1986 and 1999, the average size of new dwellings increased almost 30% (to 185.5 square metres)."⁶

The focus thus needs to turn to the current housing paradigms and away from the unquestioning support of the 4 bedroom house on the suburban block. Building and planning laws should encourage and support a better fit of household size to dwelling size. The Discussion Paper, at least in terms of the physical images used in it, retains the focus on large family homes when over 55% of Australian residents live alone or with only one other person. This highlights the need to keep requirements for units on a par with houses and to think about where our aging population might most sustainably live.

Population growth

Like planning laws and State planning documents, population growth is not only predicted to continue in the South East but is effectively encouraged, by being planned for. Without considering the strain this places on infrastructure (roads, dams, power etc.), it needs to be questioned whether population growth will actually continue at the same (or higher) rate than the current rate. Increasing costs in the South-East and decreasing lifestyle as a result of the population growth will eventually slow southern immigration. This and the change to the demographics might change the rate and type of new housing construction required. A focus on sustainable housing also needs to consider the right type of housing for the planned needs of the relevant communities.

4. Social Aspects

The sustainable use of housing would require a 'best fit' approach to home construction and occupation. Present building and planning laws and the economics of building support the building of larger and larger homes on smaller and smaller lots. The results seem to be unfit families under mortgage stress using lots of energy indoors.

The Discussion Paper mentions the merits of allowing people to remain in their homes longer as they age. While this has obvious social benefits it also contributes to building costs and reduced sustainability as new families must look further from city centres, where the empty-nesters are likely to still live, in order to find their 4 bedroom home with a yard.

⁶ Year Book Australia, 2001 – Australian Bureau of Statistics

Creating desirable and efficient buildings for people to resize into as their needs change while allowing them to remain in their existing community would benefit all. Building and planning laws should encourage in-fill housing developments which support each community remaining diverse. Past and present practices see new suburbs age in unison for many years before gradually becoming more diverse.

Rather than simply build new, large, energy efficient homes further away from service hubs, more socially suitable dwellings that had better access, lower cleaning and gardening maintenance costs could be built for grandparents, for example, in their existing suburbs. Less energy is needed to build and operate a smaller home than to build another big one further away from service hubs. Infrastructure costs are also lower for Councils and transport costs lower for the home occupier.

5. WaterWise / EnergyWise

The WaterWise program is a resounding success. The Climate Smart Home Service (why not "EnergyWise"?) is also likely to be. This service should be wide-spread, well promoted and offer as many services as possible, especially providing advice for the individual home owner or tenant, so that they may be best-informed to decide which measure(s) to pursue implement. The service should cover all types of accommodation, not just houses.

6. Retrofitting

According to the figures in the Discussion Paper there are currently 1.6 million existing homes and only 33,000 new homes being built a year. At those rates, by 2026 there will be only 594,000 new homes or one quarter of the then existing housing stock made energy efficient by the changes proposed for new buildings.

Climate change cannot be addressed, lifestyles improved and energy savings made with only a quarter of the population taking part through reducing their domestic energy consumption in the next 18 years.

Existing homes must be required or encouraged to take reasonable opportunities to make sustainability gains.

Obviously, some matters are impractical other than on major renovation but, at the very least, all building sustainability and energy-efficiency measures should apply to all extensions or renovations and to the whole house where more than 50% is being renovated.

Other matters can quite simply be incorporated.

It is astounding that every home in Queensland does not have roof insulation. It is more astounding that they are allowed to be air-conditioned by 1 star imports without adding the insulation. Both of these situations, amongst others, must be addressed if we are serious about pursuing and establishing energy efficient and sustainable housing.

Other measures that can be retrofitted are energy efficient lights and water fixtures. Rebates on more difficult retrofits like wall insulation would also encourage the pursuit and establishment of energy efficient and sustainable housing.

7. Other Suggestions

A number of additional measures are suggested that will positively affect energy consumption in homes:

- While a flexible 5 star code for appliances should be welcomed, there is simply no excuse to permit any site orientation other than the most energy efficient.
- Many Queenslanders own two fridges and at least one is old and inefficient. As a constant contribution to base generation load, the Government should be keen to make this load as low as possible. Rebates for new machines where the old machine is decommissioned, would encourage great savings for the individual and the grid demands.
- Private swimming pools are massive consumers of water and power. Ownership should be subject to the most stringent requirements including mandatory solar panels.
- It is counter intuitive to allow developers to remove mature vegetation and plant non-native, water intensive gardens. Building and planning laws should prevent the removal of mature vegetation in housing estates by making them part of the assessment of energy efficiency.
- The immediate and complete ban from sale of all products that do not meet prescribed standards of water-efficiency and energy-efficiency is strongly supported. This will allow for a phase in of the efficient products in all dwelling types and ages as older fittings fail or are replaced.
- Huge amounts of water and energy are saved from recycling. Building design features that support recycling should be encouraged, if not required. For example, many units do not have sufficient space for enough recycling bins to cope with the valuable recycling contribution that most occupants are prepared to make.
- The unavailability of town gas should not mean a home owner does not need to install an efficient hot water system on replacement. The State government should rebate the difference between the cost of connecting to town gas and the next cheapest solution available to the home owner.

- Remove the means test on rebates because early adopters are more likely to be those on higher incomes. Market forces will drive prices down only after sufficient people have taken up the product.
- Homes should be designed to support tele-commuting and home based work to reduce transport costs and infrastructure demands caused by commuting.
- The Discussion Paper details projected savings but does not allow for increases in costs due to carbon pricing. Savings are likely to even greater after 2012.
- Ceiling fans should be mandatory in all new homes, even ones with air-conditioning.