Viva la Revolution!

AIUS Forum

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When Charles Darwin visited Sydney in 1836 aboard the Beagle he wrote in his diary:

“...the whole population, poor and rich, are bent on acquiring wealth ... the number of large houses and other buildings just finished is truly surprising......”

From “Sydney/Purgatorio,” by Craig San Roque
And so it began from the earliest days that Australia’s middle-classes grew into a nation of conspicuous consumers. Perth was however a little slow in this regard and census data shows that for many decades the average working-class home in Perth was small and comprised only four rooms.
If nothing is done to curtail house size, our children will inherit a city full of big houses they don’t need, on land they can’t afford, and a likely consequence is future generations will choose to leave Perth.
Some basic house design principles demonstrating why project home designs are very poor in terms of natural light and circulation.

Project homes are designed as big square houses when they should be long and narrow to avoid having to artificially light their interiors.
This montage shows a 1910 house and a 1940s house side by side with today’s project homes.

The change in scale is obvious but also notice the size and number of garage doors. It would seem that we are so in love with our cars that we like to have them with us in the house.
On the left is one of the popular multi-level project homes built in Perth in the 1970s. Notice how small this 150 square metre house appears against the 300 square metre current two storey homes.

This 1970s project home is on three levels and housed a family of four with ease. It is simply incomprehensible to me why today's families feel they need to double the house size. Surely it is simply consumerism gone mad.
This picture tells it all. On the left is a two storey house built in the 1970s and on the right is a present day two storey. The absurd increase in bulk and mass is so obvious.

The point I am making here is that the amount of raw material used to construct houses of this volume and the amount of energy required to run the air conditioning and the artificial lighting needed to light the interior - just for 2.5 people is totally irresponsible.
This is an AV Jennings home designed by the company for the family market in Australia during the 1960s and 70s. It was the biggest in their range at 150 square metres. Notice how efficient the plan is and how well it works.

AV Jennings were one of the biggest builders of project homes at the time. And their houses can be found all through Perth and the rest of Australia.
The AV Jennings flag ship house had two little brothers about 130 square metres and 100 square metres each. These were the real middle-class houses because most Australians could not afford the large 150 square metre version.

These houses have been the family homes for four people for many years with the only addition sometimes occurring in the form of a rumpus room.
Now these are two common examples of today’s single storey project homes. They are not only huge, at around 300 square metres, but they are badly planned and are very inefficient in terms of spatial usage.

The project home builders have been able to refine their construction costs to produce a very cost effective product, however the design is very inefficient in spatial terms and at least 30% could be trimmed from the floor area through better design.

They design today’s houses as a big box for ease and efficiency of construction, which of course is reflected in the low cost per square metre. However the result is many internal rooms with very low levels of natural light.
To further make the point about just how large today’s houses are, I have shown here, at the same scale, the AV Jennings houses and an example of today’s project home.

The parts in yellow are the living spaces. The comparison says it all.
In this plan I have superimposed the large AV Jennings house over one of today’s houses. You can see that the largest of the Jennings houses fits several times into a plan of today’s house.
This is the diagram that perturbs me the most.

The house in green is the most common Jennings house and you can see how many will fit inside today’s project home. The Jennings house was designed for four people to live comfortably.

So in terms of housing efficiency there could be twice the number of people living in the same footprint occupied by a single house today!!!
<table>
<thead>
<tr>
<th></th>
<th>Home today</th>
<th>Jennings Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross area minus garage</td>
<td>270 m²</td>
<td>159 m²</td>
</tr>
<tr>
<td>Perimeter walls</td>
<td>132 m</td>
<td>60 m</td>
</tr>
<tr>
<td>Note square plan is more</td>
<td>(Ratio of 2.0 times</td>
<td>(Ratio of 2.6 times</td>
</tr>
<tr>
<td>efficient in terms of</td>
<td>enclosed area)</td>
<td>enclosed area)</td>
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<tr>
<td>enclosure material</td>
<td></td>
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</tr>
<tr>
<td>Volume</td>
<td>78 m³</td>
<td>57 m³</td>
</tr>
<tr>
<td></td>
<td>(31 courses)</td>
<td>(28 courses)</td>
</tr>
<tr>
<td>Roof area</td>
<td>287 m²</td>
<td>170 m²</td>
</tr>
<tr>
<td>Length of windows</td>
<td>30 m</td>
<td>24 m</td>
</tr>
<tr>
<td>Note more glazing required in</td>
<td>(22% of perimeter)</td>
<td>(15% of perimeter)</td>
</tr>
<tr>
<td>larger square plan form</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passage area</td>
<td>24 m²</td>
<td>15 m²</td>
</tr>
<tr>
<td></td>
<td>(9% of total area)</td>
<td>(9% of total area)</td>
</tr>
<tr>
<td>Number of Internal doors</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Length of internal walls</td>
<td>86 m</td>
<td>62 m</td>
</tr>
<tr>
<td>House width</td>
<td>15 m</td>
<td>8 m</td>
</tr>
<tr>
<td>Living area</td>
<td>132 m²</td>
<td>60 m²</td>
</tr>
<tr>
<td></td>
<td>(48% of total area)</td>
<td>(37% of total area)</td>
</tr>
<tr>
<td>Bedroom area</td>
<td>53 m²</td>
<td>45 m²</td>
</tr>
<tr>
<td></td>
<td>(19% of total area)</td>
<td>(28% of total area)</td>
</tr>
</tbody>
</table>
It takes skill to design small houses that are pleasant to live in yet compact.

On the right is a plan of a traditional Jennings small house – under 100 square metres. On the left is a small house from today at 115 square metres.

I have ‘modernised’ the Jennings plan to reflect today’s desire for open planned houses. You can see how efficient the Jennings plan is.

Imagine for example sitting and having a meal in the project home of today. The room is completely internalised and would be very unpleasant.
This is Subi-Centro. It is arguably an example of the most inappropriate use of an inner city renewal area because all it provides is the opportunity for a few people to build huge inner city houses.

The area shown is 4 hectares. In this area are 120 houses for a population of around 270 people or 67 people per hectare.

The houses in this area are all around 350 to 400 square metres. Each of these houses could have been four 2 bedroom units which would have housed 8 people. So, this area could have housed 960 people or 240 people per hectare.
Other houses in Subi-Centro are even larger. This one, for example has a footprint of 250 square metres. This is a two storey house so it will be 500 square metres.

The site is only around 300 square metres. You could build five 2 bedroom apartments in 500 square metres so you have to ask, is it appropriate to be building a huge house for just 2-3 people in an inner city location when you could have built units to house 10 people.
One of the big environmental problems associated with building houses as large as these is that the sites they occupy have no open space to allow rain water to be absorbed by the natural ground. Rainwater can only be collected in the street’s storm water system which cannot be used for Consumption. The reason such large houses exist is that there is no plot ratio limitations of single dwellings.
You can see here, in this air photo of dwellings in inner London, where population densities are far higher than they are in Perth, they do not build from boundary to boundary as they do in Subi-Centro. There is an abundance of open space behind each street frontage so this provides area for rain water absorption and a more pleasant environment for the residents.
Here are three areas of Perth’s northern suburbs. Each of these houses covers almost the entire lot area. There are no plot ratio controls for Perth housing, which is a major planning flaw, however single dwellings are not supposed to cover more than about 50% of each site.

These are all very big houses mostly over 300 square metres each.

It is clear from these images that Local Governments do not enforce the required open space requirements with the result that these large houses cover almost the entire site.
There was a great reluctance by the building industry to build these houses so the department had to guarantee to purchase them back if they did not sell. They sold in record time demonstrating there is a strong demand for small single bedroom houses.

Source: Talk by Grahame Searle, AIUS, 18 November 2010
Large project homes are now being built in greater numbers on inner city lots. This is an image of a small older house in Doubleview.
This is the house now replacing the older one. The house now covers the entire site.
And here we see the Subi-Centro approach all over again. This is the redeveloped land where Churchlands ECU used to be sited. Super sized houses being occupied by a few people each.

When will Government agencies learn that these rare inner city sites should be developed to house far higher numbers of people.
This diagram shows that the great majority of Perth households consist of two people. The question therefore is ‘why is there not a higher level of diversity of project homes catering for smaller households?’

- **68%**: Up to two people (ie: singles & couples or single with one child)
- **22%**: Three people (ie: single with 2 children or couple with one child)
- **10%**: Others

Source: Department of Housing, WA
Even in the Pilbara the housing industry pushes the traditional 4 x 2 in the full knowledge that most housing is required for singles or couples.

The houses are so inappropriate for the climate they rely on huge air conditioning systems to make them comfortable.

This is how the buildings should be designed for this region.
What can be done

• Reintroduce a plot ratio limit for single dwellings

• Future urban renewal projects like Subi-Centro and Perry Lakes should be developed for multi-housing (apartments)

• Local governments should shift from their reluctance to approve single bedroom dwellings

• Governments should conduct a continuing public information campaign educating the public to become conscious of house size as an important environmental issue (similar to water-wise campaigns)