



Life in a box with shipping containers

BY JOHN KENNEDY

In man's quest for affordable or different housing where does the humble shipping container sit amongst the list of potential options?



I've heard about bushfire victims in Victoria recently adopting a shipping container as an emergency refuge for short term accommodation and there appears to be some acceptance of them as a solution by councils and building regulators under the circumstances. I've also seen them in place on remote or isolated rural properties where they afford weekend or roughing-it type shelter, I imagine illegally or without permits or the local council's permission.

But as a long term liveable solution, gaining the requisite building approvals under the Australian Building Regulations seems to present a challenge. Notwithstanding, the standard '40 foot' (12m) containers are frequently pressed into service as offices or equipment stores on building and project sites.

I'd read in the UK monthly magazine *Grand Designs* (which is an offshoot of the television program of identical name which is shown on ABC Television) about a project known as *Container City™*, which was built in 2001 at Trinity Buoy Wharf in the London Docklands.

Opposite page: In London's Docklands the Container City™ at Trinity Buoy Wharf is a four storey structure which offers high density living on a confined site with a combination of living and working accommodation.

Projects underway on the adjacent site show the original shipping containers being reshaped to provide commercial and residential structures. Even the site office shows how a container can be altered to suit another use.

The article noted that that the project, created over five months, actually took only four days to erect and was originally three stories high, providing twelve work studios or about 1460m² of commercial accommodation. Because of strong demand another level or a fourth storey was added later to provide additional living and working spaces.

It was also pointed out that the construction system devised and developed by a company called Urban Space Management 'is an innovative modular system that creates affordable accommodation for a range of uses.' Moreover containers are extremely strong structurally and readily available. In fact the *Container City* website divides the completed container building projects into commercial, residential, educational and gallery projects and lists about twenty five completed ones within the UK. It further adds that containers are environmentally friendly as well as very cost effective with over 80 percent of a building able to be created from 'recycled' material.

At the time of the erection in 2001, The Guardian newspaper of London was moved to comment that 'recycling old shipping containers is both a green and affordable solution to Britain's housing crisis.' They can be sourced second-hand, having already served a usually long life in sea freight and other modes of transport and storage.

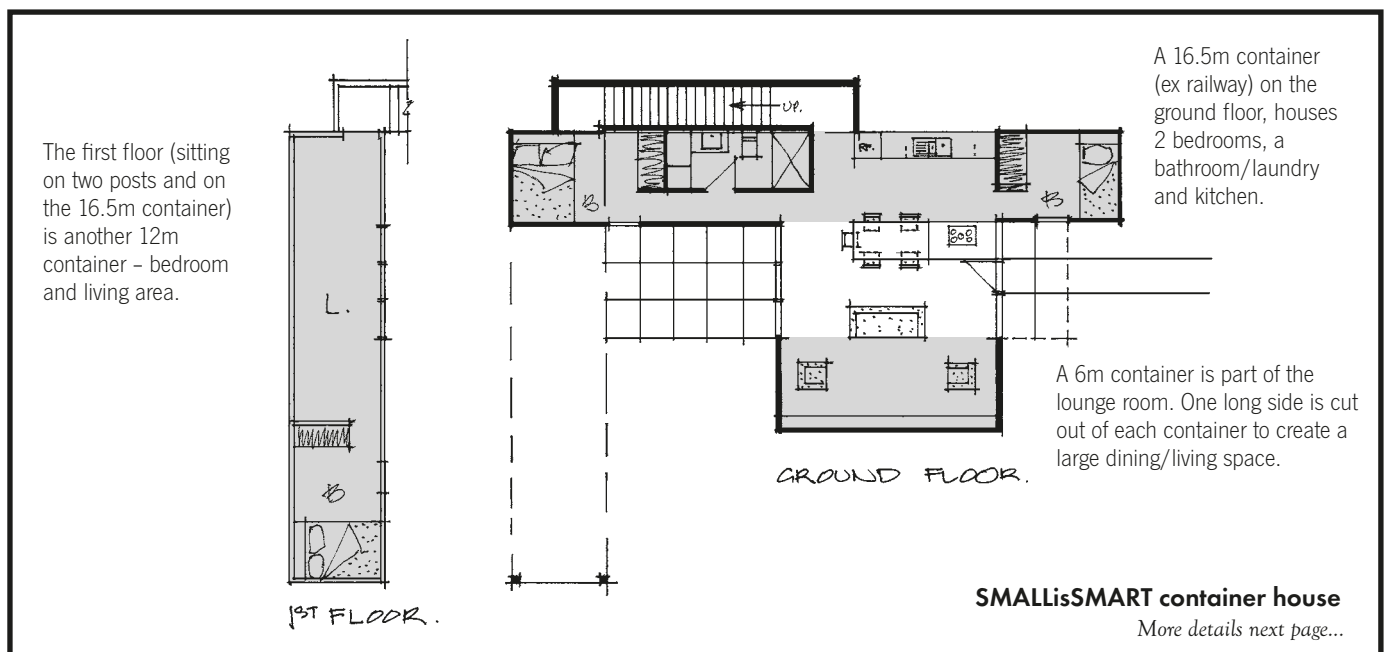
Urban Space Management added that 'Container Cities' do not have to

look like containers. 'It is a relatively simple matter to completely clad a building externally in a huge variety of materials. Windows, doors and other openings of standard sizes seem to fit them quite readily. Finally the benefits of 'Container Cities' can truly be short or medium term land use projects. Short life cities can simply unbolt and be relocated or stored when land is required for alternative uses. To date this alternative method of construction has successfully created youth centres, classrooms, office space, artist's studios, live/work space, a nursery and retail space.'

When I was in London recently I spent an hour or so trekking through the intricate road network of the London Docklands to find Trinity Buoy Wharf and to take a look at the *Container City*. The photo shows its colourful nature, the ability to utilise a relatively tight space and there was certainly evidence that at least some of the units in this project were being occupied as residential spaces. It is also clear that it delivered relatively high density living per square metre of land area.

On the immediately adjoining site there was evidence of new container building projects being created so I think it is safe to say that container building projects are here to stay.

Unfortunately the limited time I had available did not permit the opportunity to interview anyone associated with the project. ■



PLANS: COURTESY ARCHITECTS FULTON + SALOMON

Sub standard accommodation?

BY HELEN SMITH

People already living in houses converted from shipping containers in Australia – which have been council approved – seem reluctant to be interviewed. When, in July last year, an urban planner put forward the suggestion that container houses be put on public land and in caravan parks as alternative housing options for people on low incomes, the idea was condemned by social welfare groups. Victorian Council of Social Service spokesman David Imber said the plan would lead to urban ghettos and entrench poverty (The Age, 7 July 2008). In October 2006, the Labor Member for Geraldton in WA, Shane Hill, said it is ‘not Australian’ to put people into disused sea containers converted to accommodation for as little as \$20,000 (ABC News online).

Perhaps the intrepid owners of shipping container housing are wary

of being told they live in sub standard accommodation. One thing that may help to change this is the selection of one of Architects Fulton + Solomon’s container houses for the first episode of the Australian version of *Grand Designs*.

Containers in Australia

Architects Fulton + Salomon in Torquay Victoria have designed the SMALLisSMART house using recycled shipping containers. The DIY one-bedroom model starts at \$35,000.

As architects, Geoffrey Fulton and his partner Carla Salomon-Kerkering do not build the homes but they can arrange for them to be fully or partly built. This includes cutting and welding the shipping container, which requires tools not commonly owned. From there, Geoffrey says it’s just a job of ‘very, very simple carpentry. As easy as

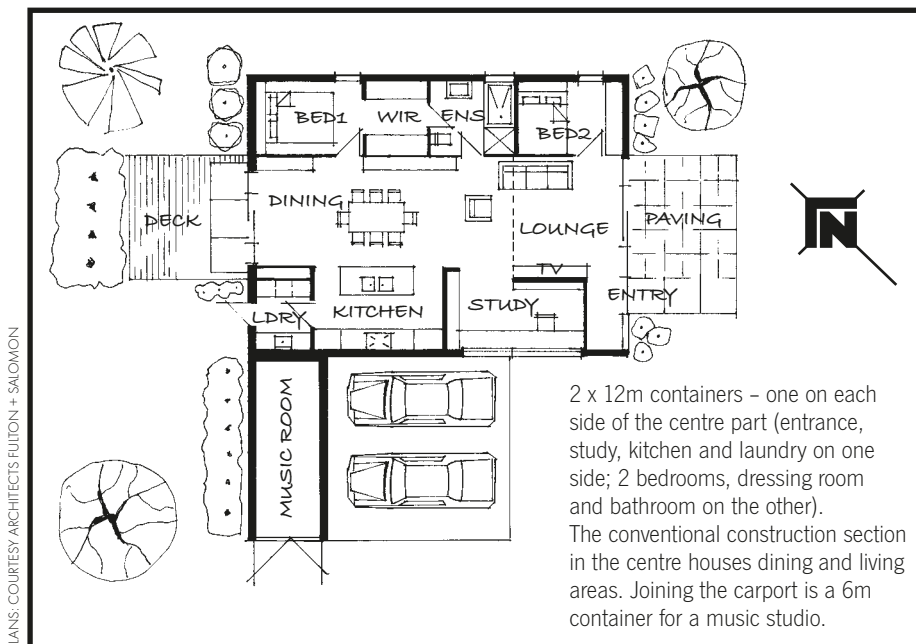
putting together a shelf from *IKEA*.’ A detailed manual, set of drawings and specifications are provided. You can also buy the house fully constructed and furnished and ready to move in.

As with any house, it can be solar powered. Waste grey and black water can be treated by a worm farm with the resulting effluent fertilizer used to feed vegetables on an edible wall. Aside from providing food the shelves also shade the wall in summer so the steel doesn’t heat up and the plants, acting as a live Coolgardie Safe, absorb the heat.

Geoffrey says they have had no problems with councils because the house meets 5 Star energy rating requirements. The only problem he could foresee is if the land is in a subdivision where there is a strict design code. Even then though, he thinks there is a good chance the SMALLisSMART house would comply.

The firm are currently working on making the SMALLisSMART house the first in Australia to be built to *PassivHaus* standards where the house will be able to be heated with a hairdryer! Geoffrey explains this is possible because ‘the container, being airtight, does not suffer from drafts and warm air leakage. As fresh air is needed, the air leaving the container which has already been heated, heats the incoming air through a heat exchanger so that it is only the last 20 percent of the fresh incoming air that has to be heated.’

Geoffrey points out that the heat exchanger is also very important as shipping containers are airtight and problems can arise from mould, condensation and, as the Northern Territory Emergency Response (NTER) staff found out last year, formaldehyde. He advises people to be cautious around



PLANS: COURTESY ARCHITECTS FULTON + SALOMON

these issues when looking at shipping container housing.

At Glaziers Bay in Tasmania, Geoffrey and Carla have created a two storey executive retreat using five 12m and two 6m containers. At Daylesford in Victoria they have designed a 5 bedroom house and arts centre using 12 containers which has a building permit.

Containers in New Zealand

In New Zealand, *Container Housing Solutions* from Kitset Homes NZ, have two plans for container housing and are working on more. The one bedroom 30m² unit costs NZ\$47,100 (~AU\$38,000) while the two bedroom 45m² costs NZ\$74,500 (~AU\$60,000). The containers are supplied with double glazed windows and doors. All the site connections i.e. drainage, water, power are treated the same as for a conventional home.

Director, John Smith, says 'The current insulation is engineered to comply with the requirements for Zone 3 in NZ, which covers the South Island, so it's over insulated for the warmer areas of NZ, Australia and the South Pacific. If we reduced the insulation to a lower specification then obviously the price would reduce as well.'

They are working on a 14 container school job at Akaroa and a five container house in the Southern Alps of New Zealand. The permit for the house is being organised by the architect drawing the plans and at the time of writing this article, was due to be submitted. The clients have asked for the insulation to be increased due to the site location, which is surrounded by snow for the entire winter.

When asked the advantages of using shipping containers as homes, John cited several reasons:

- being modular they can be added to at a later date
- easily transported to site without special over width transport permits
- easily removed from site for relocation at a later date if need be
- fully engineered and retain their structural integrity even with some of the external and internal walls removed
- 12m containers provide twice the floor area of a 6m for only 30% additional cost, so the more 12m containers in the design the cheaper it becomes
- require minimal footings when compared to a conventional home.

Another New Zealand company, Atelier Workshop Products, have designed the *PORTA-BACH* primarily as a holiday home. It has a fully enclosed exterior steel shell when folded up. Fold down one of the long walls and it becomes the deck area. According to the website 'six concrete footings form a stable, non-invasive foundation, allowing you to situate the unit on a wide range of ground conditions.' ■

The Owner Builder *hears from time to time about container based building projects including one in Western Australia and apparently another that has been constructed at beachside Torquay in Victoria. If there is anyone out there with practical experience in container building and especially in negotiating what appears to be a permit minefield, please let us know and we'll follow up on the story.*



• Container City™

An innovative modular system.

www.containercity.com

• SMALLisSMART house

Architects Fulton + Salomon

03 52 619 422, <http://fultonsalomon.com>

• Kitset Homes NZ

Container housing solutions, NZ based.

0800 254 8738, www.kitsetgo.co.nz

• Port-a-bach

Portable, secure holiday homes from Atelier Workshop Products (NZ).

04 384 6688, www.port-a-bach.com

• Tyne Container Services

Refurbishes older containers.

1300 728 495, <http://tyne.rtrk.com.au>

• Dwell box

USA-based blog on a container house.

www.dwellbox.com/dwellblog/

• ResPOD Container House

Cost effective, modular and flexible living.

0419 537 351,

www.respod.mgarchitecture.com.au

• Addis Containers

Architecturally designed contemporary houses using containers (NZ).

09 634 8181,

www.containerarchitecture.co.nz

• fabprefab

Web resource of modernist prefab dwellings, including housing containers.

www.fabprefab.com

• Royal Wolf

Shipping container accommodation options for short or long term use.

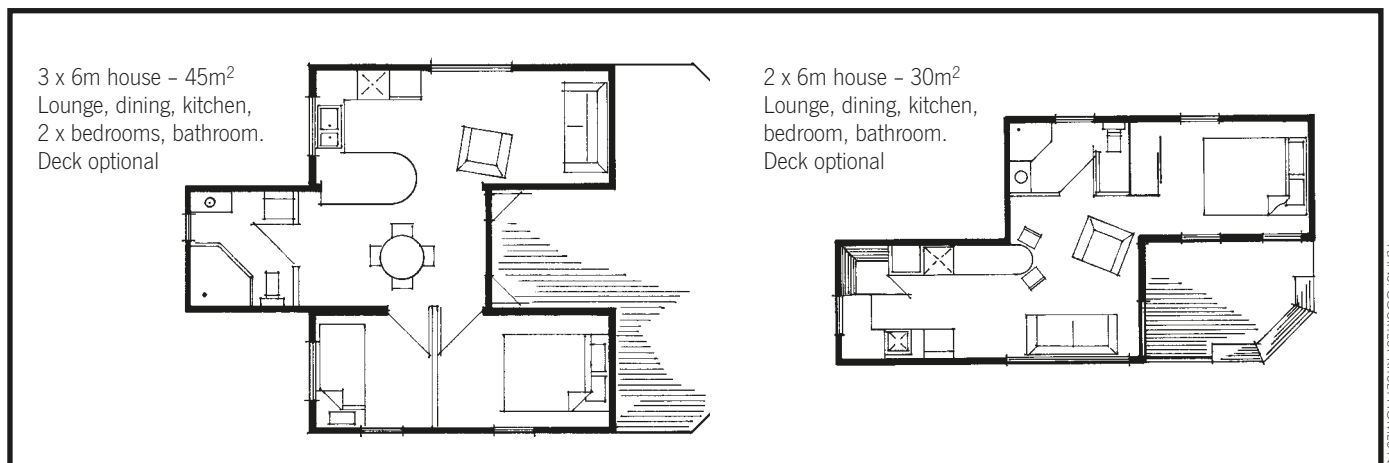
13 96 53, www.royalwolf.com.au

• PORTaccom

Range of accommodation containers.

1300 793 668,

www.portcontainerservices.com.au



PLANS: COURTESY KITSET HOMES NZ