

Submission to Panel on Housing, Legislative Council.

Short and medium-term measures to alleviate the housing difficulties of residents of sub-divided units

For presentation on 3 July 2017.

### Introduction

Firstly, short term shall mean measures that can be taken, and become effective within 3 months, and the benefits arising are capable of lasting up to five years. Whilst, medium term shall means measures which does not take longer than six months to become effective, and are capable of lasting more than five years, with some maintenance of the facilities created.

In this submission, the target beneficiaries are those residing in Kowloon areas – such as Kwun Tong extending to Shamshuipo, Mongkok, and on to Tsuen Wan.

### Short term measures

As stated above, these accommodation are targeted for completion within three months. The proposed solution is living accommodation created from standard steel containers, 20 footer, which can be moved and stacked by mobile lorry cranes or small cranes. Generally, suppliers/manufacturers of such container offices are able to supply basic furnished container offices within one month, upon ordering. These office containers thus supplied, comes with two good-size windows and one door. They already have electric sockets, electric lightings, pre-openings / spaces for air-conditioning, fuse boxes and wiring in PVC ducts. If simple facilities such as shower tray and sink unit are added, with plumbing; it should not create additional time for these containers to be made. Therefore, I believe once a design for a few types of container accommodation units are done, the manufacture of them will only take one month, or slightly longer. If cooking is from electric stoves, then gas supply will not become an issue.

Since site constraints will probably dictates that windows has to be located differently for each accommodation unit. Therefore, five to six standard designs can be done, and these modules are then used in creating a complete housing solution for any site found.

The ideal areas for locating these container homes are under existing elevated highways. However, any vacant space will most probably be appropriate, or better. Connecting essential services, such as electricity and water supplies will be the major challenges. Since the likely sites are located in existing urban areas, electricity supply should not be a problem – as long as CLP can co-operate and carry out timely

connections, especially the laying of new cables where needed. Similar difficulties are expected with water supply connections, but the controlling party is the Government, which heads WSD. Therefore, Government's efforts can make all the difference in having permanent water supply within three months. Otherwise, temporary water supply can be used to accelerate early use of the accommodation. Foul drainage will also be required, but where possible, local septic tanks will be adopted for sewage treatments. Sludge can be removed periodically. Alternatively, a proper sewage drain can be constructed and connected to the main sewage system at a later stage.

After a site is found, I expect the accommodation layout can be finalized in a week, using the afore-mentioned six standard modules. Order for all standard containers can be initiated as soon as the total numbers can be determined. The exact mix, and number of each module may be confirmed after the first week, when the accommodation layout is finalized. This should mean negotiations with CLP / WSD can start after a week, for both total power/water demands and in-coming services locations. As soon as in-coming services locations are fixed, design of underground services can start, and that should not take longer than one week.

By the third week, site work on underground services can commence. That means, the project team has only two weeks to clear the site and mobilize any plant that are needed.

Depending on the site condition and the accommodation layout, a foundation maybe required. Generally, a raft foundation constructed from reinforced concrete should be able to support container units up to six stacked high. It is normal to see containers stacked eight high onto bare ground that has not been prepared, or compacted at all.

For short term accommodation measures, we shall adopt six storey high as the maximum, for various reasons. The main ones are structural (which can be overcome, as illustrated later on), and that inhabitants will not wish to walk more than five flights of stairs.

If two weeks is used on clearing the site and preparing it, then another month for foundation (up to six storey high containers), and finally, one and a half month to install, erect up to six storey of these accommodation modules, we are looking at two months to carry out actual work. Allowance of one month for stoppages due to weather/rain and other unforeseen difficulties, should still give completion of such a building project within three months.

However, since most sites within the urban areas will likely only allow for containers stacked three high, therefore, the time frame for completion can easily be reduced to under two months for a typical project.

### Medium term measures

The accommodation proposed is very similar to those in the “Short term”, but here the modules are based on larger 40 footer steel containers, but with options where some modules can be without walls – like a steel frame. Depending on the site and the maximum height of the accommodation allowed for that site, many different structural load bearing configurations can be considered. For example, the lower floors may still consist of standard steel containers while the higher floors will only have them along the perimeter, or for the external wall. Again, also depending on the maximum building height allowed, these accommodations can reach fifteen storey high. The maximum height of any accommodation is restrained by the ground condition, as only raft foundation will be considered. Installation of pile foundation can create future problems for proper traditional foundations, such as large diameter bored piles.

Unlike short term accommodation, where permanent water, electricity supply and drainage connections may take on alternative solutions, any large scale accommodation, with significant larger requirements for building services will prohibit such alternatives. Therefore, although we are only doubling the storey – from maximum of eight to fifteen – the problems are exponentially bigger!

If I take an example of a large site which allows for erecting a fifteen storey high container accommodation; the kind of time frame for completing such a building may be as follows.

0.5 months to clear site

From 0.5 to 2 months to carry out foundation – using a period of 1.5 months.

1 month to design the accommodation

From 1 to 3.5 months for off-site manufacture of container modules and prefabricated members – using a period of 2.5 months.

From 2 to 5 months to erect the accommodation – using 3 months.

Here there is still one month float time allowed for rain or other unforeseen delays!

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