

MEP

TEAM 095

Members:

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Basic information

- **Name of company: ROW (rehabilitate our wastelands)**

We will create our living units using wastelands in order to fulfill the principle of making the best use of everything to provide accommodation and utilize limited resources in Hong Kong.

- **Motto: Rescuers of tomorrow**

We aim to alleviate the problem of housing shortage in Hong Kong as well as fulfilling the social responsibility of a company. Therefore units are leased or sold at a low price, aiming to assist the needy instead of generating huge profits.

- **Type of product: Living units**

In Hong Kong, housing varies according to income and location. Situated on around 1,108 km² (427 mi²) of land, the region is home to almost 7 million people, making it one of the densest places on Earth. The scarcity of reasonably priced housing alternatives in the city has caused property values to soar and a large number of people to live in substandard conditions. This is known as the Hong Kong housing crisis. Furthermore, despite the strong demand for homes, Hong Kong has one of the most expensive real estate markets in the world, even though there isn't much land available for development. The national housing crisis in Hong Kong has become a critical concern and a threat to the safety of the majority of the population.

- **Service: single-parent / low-income families will be prioritised, they can rent the units at a lower price**

As mentioned above, the main goal of our company is not to generate profits but to provide housing units for people in need. As those families have a generally lower income-earning ability, we will prioritise them when living units are in shortage, and they will rent them at a price 52.4% lower than the market price. By providing prioritised service for particular individuals, we hope to enhance social cohesion and increase the social welfare brought to the community.

ESG

- **Solar panels**

- Half of the housing would be installed with solar panels on the roof of the third level
- Utilize solar panels to generate electricity for self-sufficiency



- **Build with unused shipping containers**

- An environmentally friendly approach to the reuse of unwanted shipping containers that:

1. **Reduces waste**

Instead of being discarded and adding to the growing waste problem, reusing unwanted shipping containers prevents them from becoming waste

2. **Conservation of resources**

Shipping containers are already designed to be weather-resistant



- **Social Problems**

- **Small Living Spaces**

Due to the high cost of housing, many residents are forced to live in small and cramped apartments. The average living space per person in Hong Kong is significantly smaller compared to other major cities, which affects the quality of life and well-being of its residents. As of March 2023, the average living space of public rental housing tenants in Hong Kong was 13.8 square metres per person. In the same year, the proportion of households with living space per person below 5.5 square metres was 0.5 percent.

- **Long Waiting Time for Public Rental Housing**

According to the Housing Authority and Housing Department, as at end-September 2023, there were about 132 000 general applications for PRH, and about 96 600 non-elderly one-person applications under the Quota and Points System.



(subdivided flat in Hong Kong)

The average waiting time for public rental housing (PRH) remained at 5.3 years as of the end of June, with 230,000 applicants waiting in the queue, according to the latest statistics announced on Wednesday by the Housing Authority. Meanwhile, the average waiting time for single elderly applicants also remained unchanged at 3.9 years. Both figures have marked a stop in the decline in the average waiting period since August last year.

The Demographia International Housing Affordability Survey 2015 includes 378 property markets around the globe, generating Median Multiples according to the proportion of average property price to median household income. Results are categorised into 4 levels: Affordable (Below 3 times), Moderately Unaffordable (3.1 to 4 times), Seriously Unaffordable (4.1 to 5 times) and Severely Unaffordable (5.1 times and over). Hong Kong falls into the grading of 'Severely Unaffordable', with the highest recorded index of 17.0 since the report commenced 11 years ago. Second on the list was Vancouver with an index of 10.6, still significantly lower than HK.

Details of Business

- The frame of the container will be designed to look more beautiful and colourful.
- Each unit can accommodate a table, 4 chairs, a television, a small sofa, an open kitchen with 2 rooms and a toilet.

Use of foam material

- A barrier is needed on the inside and outside of the wall, which can be foam, and then a special coating is added.
- The function of foam is to block air that is too hot or cold and maintain indoor humidity. The thickness depends on the need and it is suggested to be thicker than 18mm. Since the humidity in Hong Kong is relatively high.
- Convection systems, ventilation systems, etc. must also be added at the same time.



Use of pipes

- We will use pipes that can be inserted into the wall to block external heat and regulate indoor air. This can reduce the use of traditional window air conditioners and save a lot of energy.
- Barriers are not only used when building container houses. Traditional concrete construction methods are also applicable.

Application guidelines:

- You can apply if your monthly salary is below \$7000. However, if the salary increases to \$12000 which is regarded as stable income, and can afford to rent a flat, they are required to move away.

Collaborate with government:

- The government could subsidize the cost of public infrastructure in these areas in exchange for private sector commitments to certain percentages of the land for subsidized flats.



(An example of the Netherlands)

Sales and marketing strategy

- **Relatively cheaper than renting subdivided flats**

Our target market is low-income families that cannot afford a rental unit. Our proposed housing will be more affordable compared with subdivided flats.

- **Strengths**

As the demand for housing units is relatively high in Hong Kong, we are guaranteed to have a large market for flats. Also, tenants can rent the flats at a relatively low price and it can increase their disposable income.

- **Weaknesses**

The supply of containers is very limited, and not every low-income family will be able to rent a flat. Furthermore, reclamation might not be a feasible approach because it might harm the marine ecosystem.

- **Opportunities**

As the disposable income of those families will be raised, they will engage in more private consumption activities. With more transactions and economic activities in

society, it is evident that the whole economy will improve after the launch of our flats. Eventually, we hope to offer help to most of the single-parent or low-income families in Hong Kong.

- **Threats**

As we have set an upper limit for the income of the families, scams might exist and it is challenging for us to verify their income.

Finance

1. Expenses

- **Location:** Junction of Lin Cheung Road and Jordan Road, Kowloon (6460 square feet): $6,460/8,310 \times 572,800 = \$400,000/\text{year}$

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- **Size of a container:** 40x8x8.5 inches
 - **Number of containers** that can be involved: $6,460/[(2+0.6+1.219+1.219+0.6)(2.24 \times 2+2)] \times 4 \times 3 = 176 \times 4 \times 3 = 2,112$
 - **Cost of buying a container:** $3,000 \times 2,112 = \$6,336,000$
 - **Transportation fee** (\$2,000 for 4 days) → \$3,000
 - **Basic construction cost** (with kitchen, pipes, toilet, paintings, foam, fire alarm expenses etc): $90,000 \times 2,112 = \$190,080,000$
 - **Solar panels** (274x393mm, \$3,000) → $3,000 \times (2,112/3/2) = \$1,056,000$

(Renew all containers per 10 years)

(All expenses for the first year will be supported and financed by the Government on land rent, and NGO on solar panels)

Total expenses (first year of operation):

$400,000 + 6,336,000 + 3,000 + 190,080,000 + 1,056,000 = \$197,875,000$

Rental expenses (per year): \$441145.6/year

Total expenses (exclude cost of buying the land per day):

$6,336,000 + 3,000 + 190,080,000 = \$196,419,000$

1. Revenues

- Electricity income from solar panels → $4 \times (2,112/3/2) = \$1,408$
- Rental income per month (\$42 inches for subdivided house, now \$25 per inches) → $25 \times 40 \times 8 \times 2,112 = \$16,896,000$

Total revenue per month: $1,408 + 16,896,000 = \$16,897,408$

Total revenue per year: $16,897,408 \times 12 = \$202,768,896$

Net profit for the first year: $202,768,896 - 197,875,000 = \$4,893,896$

Risk Management

- The iron shell of container houses is prone to rust and corrosion. If it is not maintained regularly, it will be damaged over time.
- To provide a better living condition, it will be changed every 10 years.
- For fire protection equipment, the Fire Services Department will comply with the Fire Safety Ordinance, Chapter 572
- In order to manage the fire protection facilities, we must install fire hydrants and hose reel systems, manual fire alarm systems, and rescue escape routes.



