

# GREENER PASTURES

Green and energy consulting expert Nic Chin shares his insights and expertise on measurements for a sustainable living.

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## MEET THE GREEN CONSULTANT

Nic Chin is one of the few among Malaysian experts in the energy and green consulting industry with over seven years of experience in local modelling and simulation engineering. Passionate about optimising energy efficiency on buildings, he has lent his expertise to a variety of projects from government buildings to residential developments.

### 1. What is a green building?

"It is an integrated process that focuses on the relationship between the building environment and the natural environment. Buildings have both negative and positive impacts on the surroundings as well as the people inhabiting it. A green building is built to react according to the occupant instead of the other way round. Some of the key elements that a green building would employ are energy and water efficiency; health and indoor environment quality; smart selection of materials and construction considerations on site."

### 2. How do building rating tools help the sustainable practice in buildings?

"It provides a consistent approach assessment and benchmarking. The objectives are to be met with an effective engagement of stakeholders, with a progress measured through a form of an assessment tool."

### 3. Why do you think that sustainability is essential in the design industry?

"Sustainability implies on meeting the needs of the present without compromising the ability of meeting the future generations' needs. In fact, sustainability is widespread by United Nations - documented in Our Common Future, a report published by the World Commission on Environment and Development in the year 1987. Since then, the term 'sustainability' and such expression as 'green', 'eco' and 'environmentally friendly' have been used to describe all kinds of products and actions that show concern for the earth's resources. Well, having sustainability in mind is important in shaping the future. Sustainable architecture is constructed or renovated to incorporate design techniques,

materials, and technologies that reduce the dependency on fossil fuels. Therefore, it minimises the negative impacts on the environment. The most effective sustainable design would be promoting health and well-being; harvesting its own water and energy needs; adaptable to the site's climate besides evolving to the weather condition. Furthermore, it should operate without polluting the environment and generate no waste."

### 4. What causes people to have second thoughts in building a sustainable home?

"It would be the particular view on employing green products. Many often focus on the short term view of the upfront cost of investment rather than the longer term savings and benefits. They shun it immediately without looking at the measurements of the projected cost of savings from electricity and water consumption. Unfortunately, this is still insufficient for their reassurance. Keep a look out for greenwashing as these mislead consumers in claiming higher saving or extra benefits of their product."

### 5. Are residential owners more aware of the importance of sustainability in recent years?

"Mainly, the government and private sector are more aware of the importance of the sustainable design. However, there is still a lack of awareness amongst residential owners. It is recorded that approximately 44% of the GBI (Green Building Index) certification are certified under the residential unit since 2009. Having implemented green rating tools such as GBI, GreenRE (REHDA) and other NGOs have aid the support. In fact, the government has placed tax incentive on green products."

### 6. Hence, what can you do for an existing home?

"Green retrofit is another solution to improve sustainability for an existing home. It's a kind of upgrade that is wholly or partially occupied with the green strategies that financially benefits the owner. Then, maintenance must be done to sustain these improvements over time. But, it is not quantitative as it may not determine the reimbursement from its overall green practices. A true retrofit requires a clear benchmarked analysis on an integrated multi-component with performance guarantees." ❖

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①  
EAST

WEST



## HIGH RISE RESIDENTIAL

It may not be all in your favour to engage green design strategies into a high rise residential unit, unless it is meant to be at its initial. However, it is still practical to do so. These are some pointers to distinguish the elements for a high rise building.

### 1. BUILDING ORIENTATION

The high rise building is set on an orientation that aligns to the sun path direction.

### 2. DAYLIGHT HARVESTING

The building façade is designed to maximise daylight by harvesting diffused light from the north and south. Hence, it limits exposure to the east and west, minimising solar gains.

### 3. NATURAL VENTILATION

Theoretically, assessing the project is insufficient. It requires the use of computational models of buildings and components for prediction of future behaviour of the wind measured through physical performance indicators (physical tests).

\*Diagrams are for illustration purpose only

## LANDED PROPERTY

Employing green strategies to the design of a landed property would be more versatile compared to a high rise building. As at the end of the day, the articulation of spaces is adjusted to the owners' needs and lifestyle and that benefits to operating ecologically for years to come.

### 1. BUILDING ORIENTATION

Generally, landed houses have site limitation in orientating it to avoid solar gains on the east and west. Preferably, the longer façade should be wheeled away from the sun's prominent glare during sunrise and sunset.

### 2. NATURAL VENTILATION

A passive design benefits a building by achieving an ideal indoor comfort through cross ventilation through the front yard; and stack ventilation through mezzanine windows.



### 3. DAYLIGHT (ARTIFICIAL + NATURAL LIGHT)

A tropical country is perfect for daylight harvesting implementation in houses. Since Malaysia is situated near the equator, there is minimal seasonal variation which changes the availability of daylight daily. It optimises the use of daylight harvesting to reduce light energy. Natural daylight is consistently available from 8am to 6pm.

### 4. EMPLOYING RECYCLABLE MATERIALS

Reduce waste to landfill by using reclaimed wood on doors, staircase and flooring, while an existing door grill is salvaged and redesigned into furniture.

### 5. RAINWATER HARVESTING SYSTEM

Implement gravitational rainwater harvesting for water supply system such as toilet flushing.

### 6. MATERIAL SELECTION

Pre-cast ventilation block is preferred for the front and rear of the house. Specifically, it is placed on the south-east and north-west to provide shade besides sufficient lighting. It also enhances the privacy needed, granting views out from each room.

### 7. GREENERY

Local plant *tristania obovata* and grass covers about 10% of the area to create an indoor garden (reminiscent of a forest) at the kitchen courtyard.

### 8. STORM WATER DESIGN

Stone pebbles and grass minimises impervious surface to reduce storm water runoff.

\*Illustrated as an archetype based on Houz120 - resident of Nic Chin