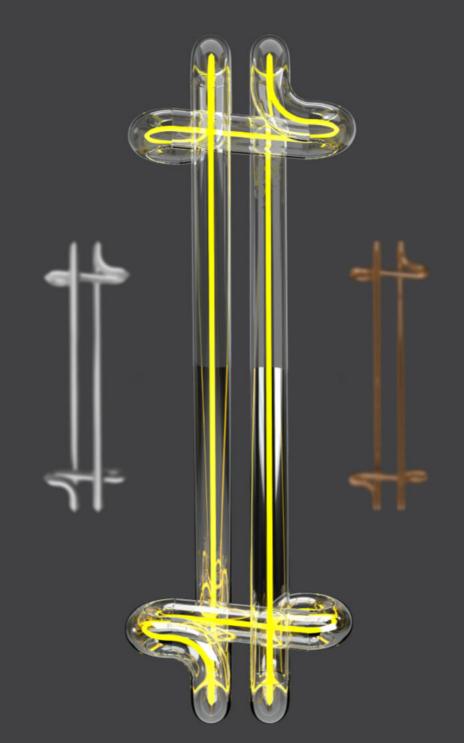
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The 11th International Arts and Design Symposium 2023

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Association of Siamese Architects under the Royal Patronage (ASA) together with the Faculty of Digital Arts, College of Design and the Faculty of Architecture Rangsit University.













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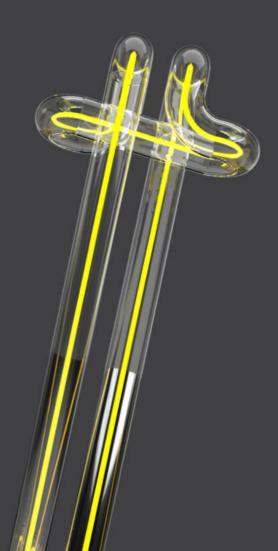
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Box house

Assist. Prof.Mr.Thanunchai Limpakom

Introduction:

This house was designed for mix generation users; from baby boomer, gen X, and gen Z living together. They had different requirements or needs on both physical and mental. Their requirements and needs changed from time to time. The living spacewould pass from generation to generation; therefore, flexibility must be the key. Beyond that, universal design, living healthy, and convenience must also be consideration. Designer had considered the aspect seriously and came up with ideas. Proposed idea or concept mentioned before were "to be in woods", "to live well and safe", "to be flexible and convenient" and "to be energy concern". The design proposalwere used techniques of open plan, proper room size and height, having good natural light and ventilation, and surrounded by trees or plants. Beside stairs, home elevators had been added to the house for supporting all ages. Materials and interior criteria were low or non-toxic component, easy to maintenance or clean, less joints or niches, However, designer prepared the area for adding regular engineering system such as air-conditioning, solar system etc. After purposing and discussing about the design several time, owners were delightful with the design and look forward to build it as soon as possible.

Objectives:

- 1. To design a house for 4 people; Mother 80 years old, her son 54 year old, her daughter-in.law 50 year old, her daughter 45 year old and her nephew 14 year old girl and a building for keeping Gundam, Gunpla and other figure about 900 pieces.
- 2. To purpose a design that is flexible and suitable for all generations.
- 3. To purpose a design that is energy saving.



Methodology:

Method is divided into 3 simple steps

- 1. Purpose the keys concept as described in 4 phrases. They were "to be in woods", "to live well and safe", "to be flexible and convenient" and "to be energy concern".
- 2. Develop the architectural design based on the concepts.
- 3. Adjust the design followed their comments until their satisfaction and reasonableness for all conditions concerned.
- 4. Propose architectural style that is neutral and suit for everyone.

Before, process design, the 4 phrases were interpreted to architectural design techniques or criteria. They were described below

- "To be in woods" this phrase summarized core idea of biophilia(Kellert, 2015). Therefore, architectlocatedmajor building inaproperplaceandsurround bytrees, plants and waterto make the building most connects to the natural environments.
- "To live well and safe" this idea combined universal design ("Universal Design," 2021) and some of wellbeing approach ("Design for Well-Being," 2021). So the design were focused on universal design, psychological and physical safety, health concerned approach such as no niches, no or very less steps, add space for art pieces, no hazard materials and no blind spots etc. (Sreshthaputra et al., 2021).
- To be flexible and convenient is to design with open plan ("7 Reasons Why to Use an Open Floor Plan in Your Home Design," 2021) which is easy to adjust or replan later to suit the future needs, easy to maintenance and to add house elevators for convenient and suit for users' ages.
- To be energy concerns is to design with good natural light and ventilation using less machines, to use a proper heat prevention means, to design proper room height, and to prepare area for install solar power system.

To design properly, their activities or some important issues were considered in design proposal. Grandma had no specific need but due to her age, architect prepared her area on 1st floor with universal design criteria, large space for future attendant or adjustment, private bathroom, living area and pantry for her convenience and future need. Her son and his wife wanted separate bedrooms, so architect designed 2 bedrooms with studio type functions such as bed area, working area and private bathroom with large closet. On the other hand, his son wanted to have his own living space, so architect provided his room bigger than others. Her daughter and nephew had no specific requirements, except in the interior style, therefore, architect also proposed studio type style with full functions to them. Additionally, architect designed all rooms using movable furniture rather than built-in so, the rooms could be adjusted to suit their future needs effortlessly.

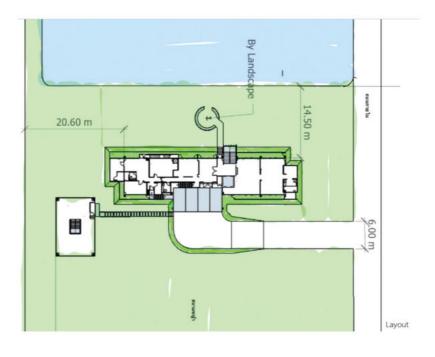
Besides, their private compartments, architect prepared the large open plan living, dinning and pantry area in the middle of 2nd floor as embodiment and party area. All furniture in this area were movable to suit any events occurring.

Due to the mix of their age, architect suggested the house in the simplicity style by very clean aluminum composite box like which they all agreed. The building is located near the big pond facing the south-east and surrounded by garden. So, architect designed the big glass window covered with long canopy to prevent direct sunlight but enjoy very precious view which emphasized the design concept also.



Conclusion:

Owners were satisfied with the design as shown in images above. On the first floor, there were service and maids' areas on the left wing and mothers' quarter on the right wing surrounded by landscape. Mother's quarter was like small house. It consisted of living area, pantry, working area and bedroom with closet and toilet. The area was large enough to add more bed for future attendant. On the second floor was a main floor of the house. There were 4 bedrooms and living and dining area with large pantry. By elevating the living area to second floor could provide connection to nature easily. They could see good view of trees and large pond along with much natural light and ventilation. Family area were 90 m2 with open plan for future adjustment. Each room had about 40-50 m2using loose furniture which conveniently could be adjusted for future needs or added another bed for attendant. On the roof top, there were fitness, buddha room and large area for solar system installation. Interior height was about 2.70 – 3.20 m approximately for easy lighting and A/C system service. The ceilings or room had no niche at all. Each toilet designed with skylight and louvers to receive natural light and ventilation to reduce humid, unpleasant smell, germs accumulation. Furthermore, there were large cabinets in all areas for well organizations rooms. Materials were chosen by consideration on safety, easy to clean or maintenance, less joints, and low VOC. By this concept design, Members of the house could occupy for a long period of time, adjust easily for future needs and pass-through next generation effortlessly. Besides, they could live heathy, happily, and conveniently together. However, they were not familiar with the open plan idea, so at first, they denied. But several discussions, thev changed mindandallowedseveralroomstocontainthe idea. Furthermore, some conceptofwellbeing and biophilia, such as the idea of "natural light" would assist and improve their psychological being and feeling. They concerned with heat in exchange for light, but architect convinced them with the long overhang design and the use of solar protection film or insulated glass.



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