

## **BIOPHILIC REGENERATION**

Biophilic Regeneration is a project that attempts to revitalize an abandoned structure in a sprawling city, Sydney, Australia. By injecting nature elements into the building, it is expected the building will gain another life and provide the users healthier natural environment. The project consists of two stages, the system that can support the existence of nature into the building, and the strategy to convert the old structure by applying the system.

### **1<sup>ST</sup> STAGE: NATURE AND MATERIAL SYSTEM**

The material selected to realize the system is timber, a renewable material that has strong natural performance. The use of timber material is not to follow the trends, but to promote the use of sustainable material by using it in a more effective and innovative way, so it can be balanced with its growth. The innovation process started with experiment and resulted in a skin system that can integrate both performance and aesthetic properties of timber. The experiment involves two type of industrialized timber: plywood and solid wood. Alternatively, engineered timber can also be used for more complex building type. The system also allows other natural elements such light and sounds to be manipulated in the building, so that it can meet the expected performance.

### **2<sup>ND</sup> STAGE: BIOPHILIC REVITALIZATION OF ABANDONED STRUCTURE**

The second stage of the project focuses on how the skin system can be applied onto the old structure. The idea is to convert an abandoned tram shed into a green house and community spaces. Several ideas to bring nature back into an abandoned structure has been successfully applied in the other part of the world, such as rails to trails idea that is applied in High line New York. The skin system also allows indoor climate control inside the building to accommodate various programs, especially in terms of controlling light, heat, and acoustic. Other type of mechanical and natural control system will also be required, such as fans, which are integrated in the building design.

### **THE URGE TO PROVIDE URBAN AGRICULTURE IN SYDNEY**

In the meantime, high population growth in Sydney raises the demands in food production. The urban sprawl phenomenon has taken over the agricultural land into buildings and cities, leaving food production in crisis. Another issue is the lack of man power in agricultural industry. Even though some survey shows people's interest in farming activities is increasing, people still prefer to live in the city. Farmer has been occupation in high demand for several years. In the past few years, local citizens also have shown great interest in gardening activities in their own backyards. By bringing more farming activity into the city, there might be more people willing to work as farmers. Converting the tram shed into a green house is one strategy to tackle this issue.

In conclusion, the intent of Biophilic Regeneration is to achieve sustainability through an experimentation, which transforms already available materials and modern structures into an innovative product or building that can solve human needs. The idea also promotes a well-balanced and healthier environment by bringing warmth and nature elements into the building. Without disregarding the development of concrete and steel structures of modern buildings, the innovation process of biophilic strategy and material experimentation is expected to influence architecture and construction industry towards a new era.