

## EDITORIAL NOTES

### **RESOURCE EFFICIENCY AND RESOURCE USE**

---

The issue of resource efficiency and resource use currently gaining prominence issues in the design research area around the world. The sub theme articles focus exclusively on trends and solutions in resource efficiency and resource use in the emerging technology advances. These include ideas and the solutions proposed to improve the efficiency and reduce fuel consumption and to consider the reduction of environmental pollution. For example, a solar thermal system which converts solar irradiation into heat can be an alternative source of energy for industrial process heating application. Energy efficiency helps control the rising energy cost, reduce environmental carbon footprint and increase the value and competitiveness building. Furthermore, a trigeneration or combine heating, cooling and power (CHCP) is a simultaneous generation of electricity and useful heating and cooling of the combustion of fuel or solar heat collector and efficient use of fuel.

Meanwhile, the investigation by the researcher on thermal environmental and human responses shows the concern of acceptable indoor and outdoor air quality that affected during activity and quality of sleep. Task/ambient Air Condition (TAC) system able to optimize the thermal environmental control of indoor air quality and energy efficiency. Moreover, human response between air-conditioned

closed space and a semi-open space improves the predictive mean vote (PMV) model to be applied in a transient environment to predict thermal sensation.

The main objective of sustainable design is to reduce or completely avoid, depletion of critical resources like energy, water and raw materials. The dominant development paths are linked to specific physical or recycle material profiles in terms of alternative material resources. The reused of expanded polystyrene (EPS) as an alternative material for bicycle frame construction is a significant step in minimizing environmental threats. Currently, 8-10% of carbon dioxide (CO<sub>2</sub>) emissions are generated by the cement industry. The researcher identified that green concrete can help towards the promotion of sustainable built environment and has the ability to minimize waste and encourage sustainability. Moreover, the articles also discussed on sanitation system for indigenous timber houses problems that would lead to the development of an affordable waste management system as well as improvement of water quality surrounding area while maintaining the social and cultural value of the indigenous people.

Guest Co-Editor,  
Khairul Aidil Azlin Abd Rahman