

# Trait's take on...

## Flexible architecture as a change catalyst

By Angela Ocker

This month we look at heritage and what it truly means. In essence, heritage defines something that is handed down to future generations. Given this, some thought it made sense to look at design in present society, posing questions such as, "what will we hand down to the next generation? How has the design world evolved and developed? Can other people learn from our triumphs and failures?" One of the most interesting design progressions that we will leave for generations to come is that of flexible architecture. Contrary to popular belief, this has actually been around for many centuries, so maybe it was passed down to us and we have merely reinvented and revived it. A forerunner in the field of flexible architecture is Robert Kroenenburg whose book 'Flexible Architecture' is well worth a read.

Flexible design looks into people's inherent quality of being dynamic in nature and their need to manipulate objects and to function within a broad spectrum of environments. Flexible buildings and homes, therefore, respond to this need for changing surroundings. The architecture adapts, transforms, moves and interacts with the end user. This makes the design both cross-disciplinary and multi-functional, and is highly appropriate for the diversity that this new ideology represents.

It is this constant need for change and



progression that directly affects the way in which buildings are now being designed and constructed, compounded by our knowledge that there is a finite limit on natural resources and they must be used sparingly. This is achievable through flexible architecture as the

buildings currently being constructed are adaptable to change and therefore last longer and are far greener. The buildings are able to make full use of technological advancements, making them more economically and ecologically viable. These buildings are designed in such a way to respond to various functions, a change in use and the end users' specific requirements. This ensures that future change is accommodated for within the fixed building's actual construction materials.

The transformation of a space already exists in everyday life, for example, the moving of furniture or closing of blinds, which allows for the ambience and space to be transformed; this is the most basic form of flexible architecture. But, truly transformable architecture stretches far beyond



these minimal changes. It requires dramatic alteration to allow the entire environment to transform. For example, a transformable building alters the physical structure by changing the way in which the building is perceived or used.

Due to modern technological advancements, we have progressed in the automation within building structures, meaning that the building is more able to react and interact accordingly with its inhabitants. This incorporation within buildings – known as intelligent building systems – is becoming more common in current society where we are moving toward a greener and more efficient future.

Interactive buildings aim at cooperating with their inhabitants to provide the best possible conditions.



Intelligent building systems are incorporated into the following areas:

1. environmental comfort
2. safety
3. security
4. privacy
5. sanitation
6. communication
7. entertainment
8. ambience
9. energy use and efficiency.

Such systems require a sensor that identifies that something is happening and an actuator that carries out the appropriate action in response. Therefore, the building is able to read the inhabitants' movements and act in accordance with them, allowing the building to react and interact with its human inhabitants. A truly flexible design.

Interactive architecture allows for a change in appearance, climate and form as well as allowing inhabitants to engage with their surroundings and be more proactive in affecting the space they inhabit. The main aim of such architecture is to produce more efficient and sustainable buildings for generations to come, bringing us back to our original mandate for a need for flexible architecture.

1. Joinery which served a function and special purpose to define rooms.
2. The domestic development adopted a two phase criteria – a need for flexibility within the development process and the layout. Creating spaces that can be re-shaped and have a different function when the second phase is completed had to be considered.



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