Buzz-Spaces

How Buzz-Boards can be used to build and teach intelligent environments (eg smart homes)

What are Intelligent Environments?

Intelligent environments are everyday living and working spaces (eg homes, offices etc), in which the electrical environment (eg climate, security, entertainment etc) is managed through high-tech interfaces such as smart-phones. This is a growing market with many competing semi-proprietary standards causing some market fragmentation and so the *Buzz-Board* solution adopts the approach to work with what are already widely deployed technologies; home broadband and smart-phones (ie IP, WiFi and Bluetooth).

The Buzz-Board Approach to Building Intelligent Environments
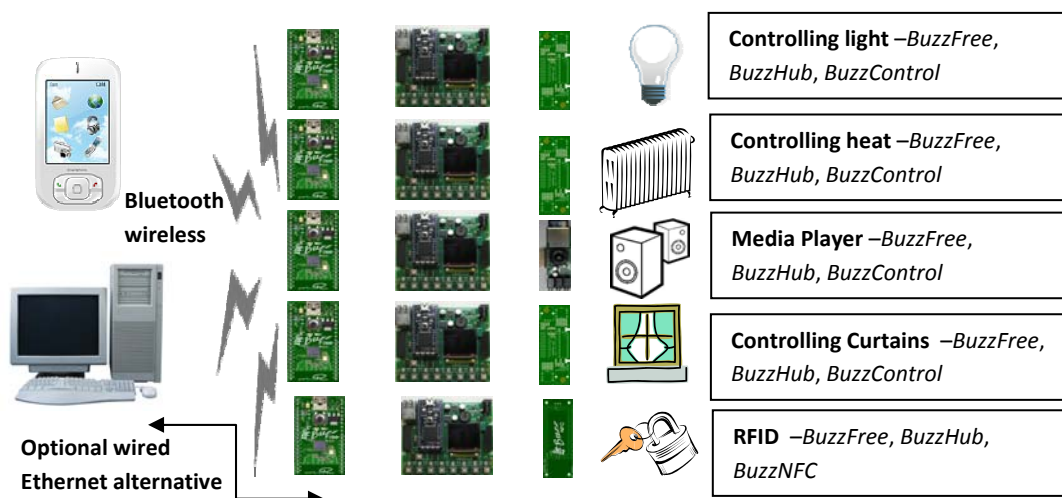
We view all buildings (homes, office, cars etc) as being boxes. The room you are sitting in reading this article is an example, it's just a big box! The difference in intelligent environment is that the boxes are fitted with networked devices that control aspects of the environment such as climate, security, entertainment. The key technology *Buzz-Boards* offer is a small inexpensive device (**Buzz-Free**) that connects the computer based gadgets in an environment that people want to control, to computers or smart-phones to control them.

The **Buzz-Free** Bluetooth (wireless) Input-Output Device

**Using a Buzz-Free Device to create Intelligent Environment (eg Smart-homes)**

Each intelligent environment function that you require to control is connected to either a **Buzz-Free** (Bluetooth) or **Buzz-Hub** (wired IP). Then by using either a mobile device (smart-phone/pad) or computer, they can be controlled. The following gives a simple example of 5 smart-home functions.

Bluetooth wireless

Optional wired Ethernet alternative

Controlling light —*BuzzFree, BuzzHub, BuzzControl*

Controlling heat —*BuzzFree, BuzzHub, BuzzControl*

Media Player —*BuzzFree, BuzzHub, BuzzControl*

Controlling Curtains —*BuzzFree, BuzzHub, BuzzControl*

RFID —*BuzzFree, BuzzHub, BuzzNFC*

By using other *Buzz-Boards*, different smart-home functions can be controlled (eg there are a range of sensor options and other effectors such as **Buzz-IR** that enables appliances with infra-red remote controls to be managed). Thus using Buzz-Boards it's simple to construct a basic smart-home.

Teaching Your Students

So how is it possible to teach students to build an intelligent environment? There are three main options; first you could build a small smart-home in your institution, and let the students work in it (but this would limit the number of concurrent student users); second you could loan them a small kit of *Buzz-boards* to experiment with in their own home (a nice idea but there is no supervised learning) or you could use the **Buzz-Box** which is, essentially, a desktop intelligent environment (an individual miniature smart-home for each student). Using this, students can develop intelligent environment technology in the lab, and (optionally) deploy it in a real living space.
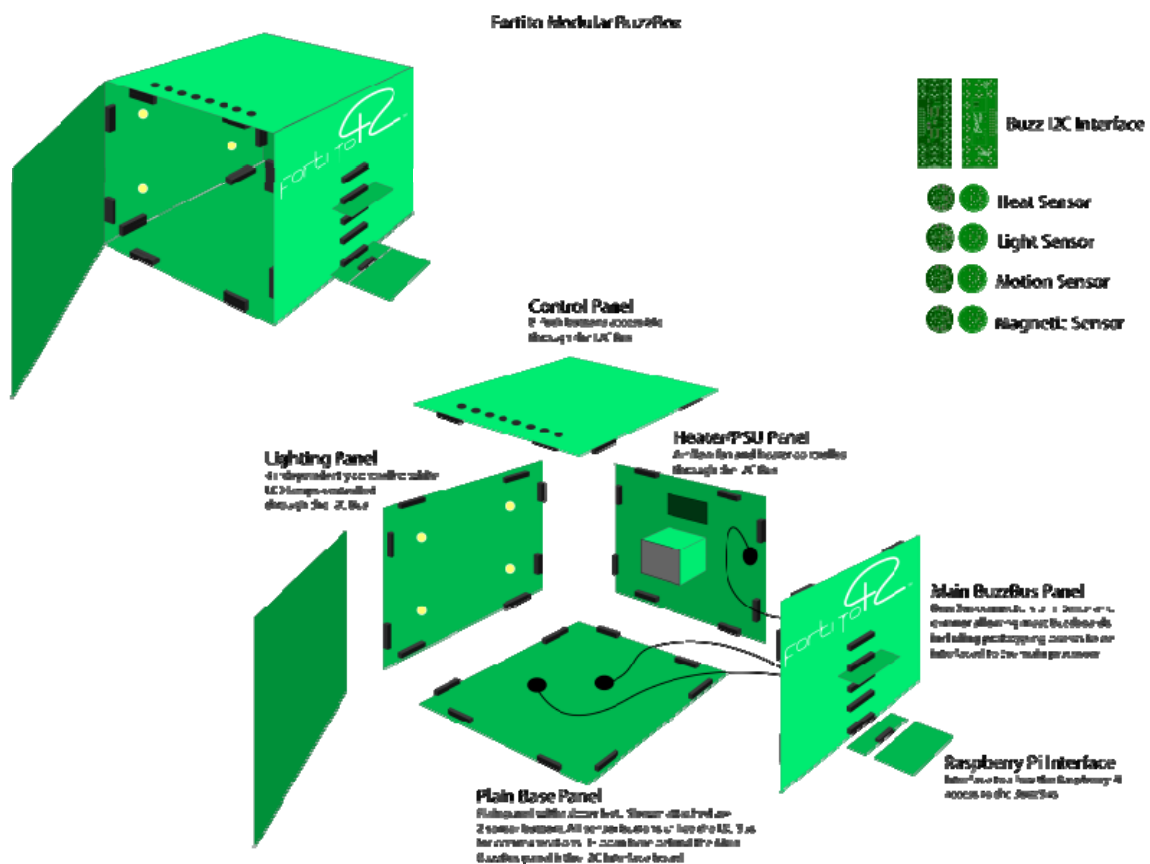
The **Buzz-Box** system is illustrated above. It consists of a set of identical 'plug-together' panels (25x25cm or 10x10 inches) that enable boxes of various sizes to be constructed. An innovative feature of these panels is that they are electronic circuit boards which can be customised with sensors, effectors and processors as desired (one common smart-home configuration is depicted).

Thus our approach builds on the philosophy of *living environments being boxes of different sizes*; from desktop to reading buildings.

For more information and prices, visit the Buzz-Board website at: **www.FortiTo.com**