

Bill Regulation for Electricity and Water (B.R.E.W.)



Figure 1: Room for simulating environment for Prototype

and electricity and, at the same time, cut down on utility bills by allowing the user to monitor, manage and restrict energy and water usage.

The B.R.E.W. home system consists of three sub-systems: the Central Controlling Unit (CCU), Electricity Management Unit (EMU), and Water Management Unit (WMU). Under EMU, there is a sub-unit,

Lighting Regulator Unit (LRU). All sub-systems operate

independently. Communication between sub-systems is only required when user initiates changes in settings to be made to any sub-systems or requests for information on current usage or system status.



Figure 2: Display console of resource usages and switches of electrical appliances

The CCU provides the main platform for communication between all sub-systems. The EMU and WMU keep track of electricity and water usage respectively, and send alert signals through buzzer as well as status LED lights when daily quota has been reached. The LRU monitors the brightness level in the house and prevents excessive lighting by disallowing user to switch on more lights once the room is deemed bright enough. The system also includes a Graphical User Interface which allows user to set the amount of water and electricity he/she wishes to consume and his/her preferred indoor brightness level.

In the daily updating of water and electricity quota, an over-drafting system is employed and it updates the quota based on amounts that have been consumed in the previous day. When the daily electricity usage exceeds the quota by a certain amount, designated appliances will be automatically shut down.