

# Energy Usage Profiling System

## Case Study

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Display energy usage information in an easy to understand format in your web browser

### Project Summary:

IVT's Energy Usage Profiling System integrates with existing building management systems and crunches the numbers to make it easier to access and understand the overwhelming volume of information they can generate.

### Project Challenge:

Many buildings are now fitted with "smart" power meters that can record and report the consumption of electricity in the building. With ever increasing energy prices and greater awareness of the environmental impact of unnecessary resource usage it's critical that businesses optimise the performance of their buildings.

However, building management systems typically store energy data in a very simplistic form and make it available as inscrutable spreadsheets rather than easy-to-read reports and visualisations.

The Energy Usage Profiling System displays that information in an easy to understand format using graphs and other visual representations of energy consumption at any set time of the day.

### Actions:

Development of a web application with the following functionality:

- Realtime access to information
- Display of complex information in graphical reports

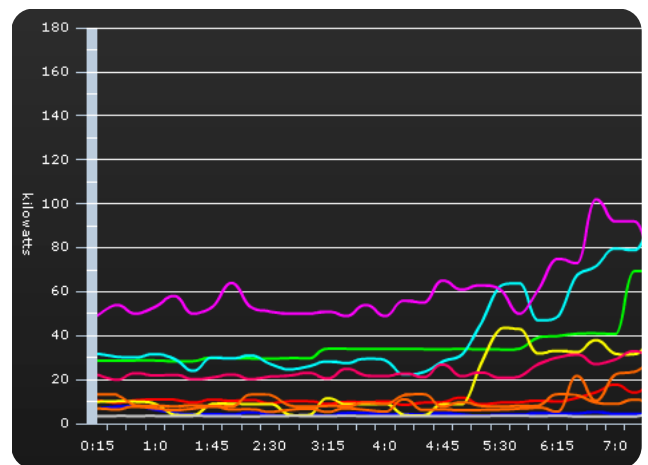
### Outcomes:

Users have Realtime online access to information rather than summary spreadsheets at the end of the month. Graphical reports rather than tables of numbers.

Energy consumption rates can be viewed for any hour of the day, and are also represented in a thermo graphic overlay of the building.

### Technology Used:

The Energy Usage Profiling System was created using Adobe Flex, PHP and MySQL.



### Adobe Flex:

Adobe Flex is a software development kit released by Adobe Systems for the development and deployment of cross-platform rich Internet applications based on the Adobe Flash platform. Rich Internet applications (RIAs) are web applications that have some of the characteristics of desktop applications.

Flex is a highly productive, free open-source framework for building and maintaining expressive web applications that deploy consistently on all major browsers, desktops, and operating systems.

The advantage of Flex is that it doesn't rely on page reloads, can have animations, interactive graphs and handles large datasets.

### PHP:

PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

### MySQL:

MySQL is a relational database management system (RDBMS). The program runs as a server providing multi-user access to a number of databases.

## Extension and Application:

The Energy Usage Profiling System has application for any organisation with awareness of the environmental impact of unnecessary resource usage, and who are aiming to optimise the performance and minimise the ongoing cost of their buildings.

System can be applied to other data sources such as weather, water, gas and the calculation of carbon emission.

## Screenshots:

