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Met Office Relocation, UK

Case Study 5

The relocation of the Met Office in the UK was a high profile Public Private Partnership project that had a prerequisite for the highest possible sustainability standards by virtue of the client's business and reputation.

Aspects of Sustainability

This project highlights the following:

Social Aspects

Human Resources
Corporate Community Involvement
Business Ethics
Health and Safety

Environmental Aspects

Energy and Climate
Materials
Ecosystems
Local Impacts

Economic Aspects

Project Selection
Supply Chain
Value Added



Project Introduction

As one of the world's leading providers of meteorological data and information, vital for predicting global weather patterns (e.g. 'global warming'), it was imperative that the Met Office's move should reflect this. The change of location involved the design and construction of a number of buildings with diverse uses, including: seven storey office blocks; a library; conference and training facilities; restaurant; sports hall; an energy centre; plus external features such as weather sensors. The sustainability standards set by Skanska and the client for this project required innovative bespoke designed solutions in the primary areas of energy, water and waste.

Zero Carbon Principle

Efficient energy use

Buildings in the UK are responsible for up to 50% of the nation's total carbon dioxide emissions stemming partly from the inefficient use of energy.

The energy consumption of buildings for heating and cooling purposes – air and water – used a number of designed solutions in this project to maximise the efficiency of the process, reducing carbon dioxide emissions and gaining the associated economic benefits. Heat exchangers were used in the air-handling units while an on site combined heat and power (CHP) plant enabled the efficient and effective production of warm air and water to the buildings. Special solutions were developed for windows and walls, notorious for their heat loss and carbon emissions.

Passive heating system

The energy performance of the buildings was improved also by the use of the passive 'ThermoDeck Ventilation System'. This system uses the passage of the incoming air through the concrete frame of the building to heat and cool the building; the cool night air chills the building in summer whilst the opposite is the case in the winter due to the conductive properties of concrete, effectively acting as a night storage heater.



Smart electrical lighting

The electrical requirements of a building are also a significant factor in energy usage and subsequent carbon emissions. Consequently, motion detection was used for artificial lighting requirements to minimize energy use.

Low carbon transport alternatives

Transport is a significant factor in the production of carbon dioxide. The relocation of the Met Office provided the opportunity to reduce the need to travel by private car, instead providing sustainable alternatives of bus and cycle routes at the site as well as favoured parking spaces for car sharing participants.

Sustainable Water

Water is another vital resource for life on Earth and one that is increasingly costly. The project installed a sustainable urban drainage system (SUDS) which enables rainwater to be harvested and used as 'grey water' in the buildings and in the gardens. The SUDS has been designed to collect the rainwater and channel it into two ponds for final reuse.

Waste Minimization

The use of off site pre fabrication partitions and other products for the buildings was able to reduce the amount of waste created in the construction phase. In addition, excavated material was reused to the maximum by segregating waste whilst temporary concrete works were crushed and reused on site.

Award Winning Project

The Met Office project was awarded the 2004 National Award of the Considerate Contractors Award Scheme having joined the Considerate Construction scheme at the start of the project; the Scheme involves both environmental and social responsibilities. In October 2004 the Project won the Contract Journal Award for the best Private Finance Initiative/Public Private Partnership Project.