D4FC Factsheet 37:
Brighton New England Quarter

Contact details

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General project information

Name of project:	Brighton New England Quarter
Location of project:	Brighton
Type of project:	New build project containing residential, hotel and office space
Cost of project:	£25m

Project team

Client:	Hyde
Designer:	E3 Ltd/Yelo Architects
Contractor:	TBC

Other organisations involved (and their role): Mendick Waring (M&E consultant), Philip Pank Partnership (QS)

Project description

Site J of the New England Quarter (NEQ) is a large mixed use development adjacent to the railway station in the centre of Brighton. Site J comprises of 147 residential units, a hotel, office and retail floor space (including a café) and a public square as outlined below:

- residential: 147 units at a density of 260 dwellings/ha
- hotel: 98 bedrooms
- office space: 3000 m^2
- public square: 1200 m^2
- retail: 240 m^2

The site is very visible in the centre of the city, and project partners are aiming to achieve high standards of sustainability. The residential units are split into two blocks of eight storeys in height with other uses located on the ground floor. All elements of Site J will form part of the assessment for the Technology Strategy Board project.

This is a fantastic opportunity to examine climate change adaptation in an integrated way, considering a range of measures suitable for residential, office, retail, hotel and open space uses.

CIBSE Engineering a sustainable built environment

Technology Strategy Board Driving Innovation

Knowledge Transfer Network – Modern Built Environment

Project timescales and dates

Design and assessment period (pre-planning): December 2011 to October 2012

Construction period (post-consent): January 2013 to July 2014

Operation and monitoring period: July 2014 onwards

Further project details

1 What approach did you take in assessing risks and identifying adaptation measures to mitigate the risks?

- the risk assessment was based on an analysis of the 2080, high emissions scenario weather data (at 90 per cent confidence interval), looking at key factors in relation to a building of this type, and the associated uses. The geography/terrain of the site was also critical in the analysis given the extent of the surrounding buildings and the density of the site. The approach to identification of measures and the options appraisal is based on a collaborative approach between the thermal modellers, the architect and the M&E consultant, to establish a broad spectrum of options and ideas that will be iteratively narrowed following ongoing dialogue with both the client and the QS, who is carrying out a full lifecycle costing exercise on the ideas and design generated.

2 How have you communicated the risks and recommendations with your client? What methods worked well?

- the risks were discussed in detail at project meetings with the client – the risk assessment itself was based on an analysis of the Prometheus weather data. A face to face approach seems the most effective means, combined with strong visual images derived from both the weather data and the thermal modelling. Any communication needs to be coupled with an understanding of the investment/cost and benefit to have a meaningful impact.

3 What tools have you used to assess overheating and flood risks?

- the primary tools used during the project include IES VE with associated modules for dynamic thermal modelling and assessment. We are primarily focusing on the building related, thermal comfort issues, and therefore are focusing on the building materials, design and overall M&E strategy. The weather files used were from the University of Exeter's Prometheus project. In addition, we used SWOT analysis and lifecycle cost assessment to look at the risks and the associated cost benefit analysis of proposed solutions.

4 What has the client agreed to implement as a result of your adaptation work?

- the client is examining the recommended solutions as part of the ongoing development of the scheme. The simpler recommendations – such as exposed concrete

finishes – are simpler to implement and are ultimately straightforward to carry out. The more complex design solutions for natural ventilation – the Cool Box – need further research and development before implementation.

5 What were the major challenges so far in doing this adaptation work?

- the major challenges relate to the ability to provide design solutions that are cost effective in the long term, irrespective of whether there are solid logical arguments for implementation. Despite the fact that changes to the climate are arguably already being felt, investment strategies for construction – both residential and commercial – invariably do not span the 30 to 70 years into the future which recommendations and design solutions may require to warrant implementation. The fact is, if the solution doesn't 'stack up' now, the relatively short sighted nature of commercial decisions, it is unlikely to be progressed.

6 What advice would you give others undertaking adaptation strategies?

- compelling arguments from using climate science and predictions are very important, but to establish this relatively straightforward message in practice, a great deal of research and assessment needs to be carried out on a building by build basis in advance. We believe there are some key features of a design team that need to be in place to get to this point:
  - be highly competent and understand the interrelationships and the impacts of a changing climate
  - be able to explain the concepts clearly
  - make fully informed decisions about the impact of the measures proposed
  - needs to be able to gain consensus on the assumptions used, and agreement on these from the client
- be able to sell the benefits in a compelling manor
- be entirely open about the limitations to any climate change assessment