D4FC Factsheet 20: Technical Hub @ EBI

Contact details
Name: Giorgia Franco
Company: AECOM
Email: giorgia.franco@aecom.com
Tel: 020 7645 1575

General project information
Name of project: Technical Hub @ EBI
Location of project: Hinxton, near Cambridge
Type of project: New build, providing office and studio space, training suites and communal space
Cost of project: £23m

Project description
The Technical Hub @ EBI will deliver a productive and enjoyable workplace for 225 staff. The requirement is for office space suitable for computational research work, with appropriate internal and external networking and training capacity.

The Hub is part of the Masterplan for the Wellcome Trust Genome Campus near Hinxton in South Cambridgeshire.

In addition to the office accommodation, the Technical Hub will provide a training suite and a bioinformatics translational suite to allow collaborative working between researchers. An extension to the existing Cairn’s Pavilion is also included in the proposed design.

The building was designed to achieve BREEAM Excellent. The M&E strategy included air conditioning and considerable external shading in order to meet Part L 2010 of the Building Regulations requirements.

The River Cam runs along the campus however the Hub building is located outside the river flood zone.

Project timescales and dates
RIBA Stage D: 2011
Construction period (post-consent): TBD
Operation and monitoring period: TBD
Further project details

1. What approach did you take in assessing risks and identifying adaptation measures to mitigate the risks?
   - AECOM’s adaptation methodology was applied to the proposed design. The key climate impacts for the building and its wider context were identified, using background information, UKCP09 and EA flood maps.
   - there was then a considerable amount of work undertaken to develop a methodology that allowed the application of the UKCP09 projections in modelling for overheating and flooding. Once this was established, a series of adaptive measures were compared to the baseline (current) design to develop an understanding of their effectiveness.
   - a limited number of measures were required due to the high quality of the baseline design. The results have been analysed.
   - an adaptation strategy was developed, with recommendations of measures to include in the design and actions to consider in the medium and longer term.

2. How have you communicated the risks and recommendations with your client? What methods worked well?
   - we used a basic ‘risk framework’ to communicate with the client and the design team about climate risks relevant to the building.
   - we have provided interim updates and have presented the final adaptive recommendations to the client and design team upon completion of the modelling and costing work.
   - the risk framework worked well as it is a simple and familiar concept.

3. What tools have you used to assess overheating and flood risks?
   - IES Virtual Environment thermal modelling software.
   - Prometheus weather files (based on UKCP09).
   - in-house modelling tool for assessing flooding (developed by one of our PhD researchers).

4. What has the client agreed to implement as a result of your adaptation work?
   - our assessment and modelling found the building to be well designed and in a favourable location resulting in limited risks associated with climate change.
   - the only ‘hard’ measure recommended for integration in the design was an improvement in the lighting specifications to reduce the very limited potential overheating risk. The client decided not to change the lighting specifications at the present time as the temperature benefit was too small to lose the advantage in ease of supply and maintenance associated with consistent lighting specifications across the whole campus. The client may however choose to upgrade the lighting specifications across the whole campus once the light fittings start needing replacement.
   - the impact of affecting users’ perceptions and behaviour resulting in the acceptance of higher internal temperatures was considered. The modelling showed that considerable energy and carbon savings can be achieved by changing the cooling set point to a higher temperature. The client was interested in this outcome and will consider the implementation of such a change during the operation of the building.

5. What were the major challenges so far in doing this adaptation work?
   - maintaining strong communication with the modellers has been extremely important due to the amount of work involved. Defining ‘where to stop’ is very important as there are many simulation opportunities but it can be difficult to judge their added value.
   - with such a high quality design it has sometimes been difficult to assess the true impact of adaptive measures as the baseline is quite high.
   - keeping active engagement with the design team has been challenging. They were working to their programme that couldn’t be stopped or slowed down to give full consideration to the outcomes of the adaptation work.

6. What advice would you give others undertaking adaptation strategies?
   - ensure that adaptation issues start being considered at early design stage (Stage B ideally).
   - ensure that the design programme includes enough time to allow the adaptation modelling to take place and feed into the process.