

CASE STUDY

Mace and Wellcome Trust: Collaborating at the 'Cornerstone'

Mace's delivery of the Wellcome Trust's new landmark London headquarters building was supported by the use of internet-based collaboration technology from BIW. Careful implementation and a continued focus on training helped the project team capitalise on the benefits of online information exchange, speeding up distribution of drawings and other data, cutting drawing review time and saving an estimated quarter of a million pounds in printing costs.

Key benefits

- Faster distribution of design and construction information
- Faster drawing review and response (in some cases, cut from 15 to 2 or 3 days)
- Print savings from 32 work packages estimated at £250,000
- Better communication (even non-CAD users can view and comment on drawings)
- Reduced need for substantial paper-based archive (with associated storage and administration costs)
- Increased productivity of document control staff
- Re-use of as-built information by client for space-planning purposes

Background

The medical charity, The Wellcome Trust, employed around 600 staff in several separate office buildings in central London. It decided to co-locate all these people in a single purpose-built new development adjacent to its existing headquarters in Euston Road.

Architect Michael Hopkins and Partners was appointed to design the new 28,000m² 'Cornerstone' building, on a site bounded by Euston Road, Gower Street and Gower Place. The new building was to incorporate an entrance to Euston Square Underground station. Along Euston Road the building would reach up to ten storeys, while the Gower Place frontage would be six storeys tall.

Construction, managed by Mace, started in March 2001 and the project was due to be completed in 2004. The project team also included building services engineer Cundall Johnston & Partners (CJP), cost consultant Turner & Townsend and structural engineer WSP. Construction manager Mace had previous experience of using construction collaboration technology (or 'project extranets') on schemes of a similar scale, and demonstrated its preferred system – BIW Information Channel from BIW Technologies – to the client and other team members.

The BIW system was consequently selected for use on the Cornerstone project.

BIW Information Channel - the 'Channel' – is a sophisticated web-based supply chain integration technology, designed specifically to manage individual construction projects or major multi-project programmes of work. Using this, information is made available (from a single, shared central repository, hosted in a secure environment) to authorised Trust staff and to every authorised project team member, with the amount and type of information tailored exactly to fit each user's security profile, role and responsibilities.

The approach

Mace's standard project management system included the nomination of a document controller (in this case, Ted Whiteman) to oversee information exchange between the project participants. After initial training by BIW, Whiteman became the 'project information co-ordinator' for the BIW system, responsible for applying Mace's project protocols (eg: drawing numbering conventions, RFI processes, etc), for training new users and undertaking routine system administration, supported by BIW's helpdesk team.

At the time, collaboration technology was a new experience to many of the project team members, and – with different cultures and operating procedures in place – they often differed in their adoption and use of the system. The architect's staff, for instance, all used Apple Mac computers, and tended to print off all drawings received via the Channel, marking up changes by hand before passing them to a technician for upload to the system; drawing reviews still took around 15 days. On the other hand, users at CJP and WSP soon advanced to marking-up changes themselves via BIW's integrated viewing technology, and drawing reviews could be completed in two or three days.

Distribution of drawings was appreciably faster. Work packages could be issued to trade contractors in a day, compared to the five days taken with traditional paper-based systems ("we could truncate this bit of the process by five days if we always used an extranet"). There were also substantial print savings when the Channel was used to support tendering processes; across 32 packages, Whiteman estimated electronic dissemination saved more than £250,000. The Channel also reduced protests that information was late or unavailable; in many instances, Whiteman was able to show that users had simply not looked properly. Whiteman also estimated that future use of the system would avoid the need to retain a substantial paper-based archive ("a project of this scale would typically generate around 350 archive boxes all of which we need to keep until 2014," he said).

Whiteman stressed the need for training, and as new members were inducted to the team, he was able to use the system's reporting tools to monitor their use of the system and identify potential training needs. For instance:

- prolonged periods of non-use sometimes indicated a problem
- some work package managers appeared reluctant to manage their own drawing files, or to use the RFI or drawing batch processing functionalities effectively
- some cost managers – concerned about the possible visibility of cost information – still tended to prefer paper-based communications (though this resistance gradually reduced as users began to trust the system).

In each case, Whiteman supplied further training and/or amended the project protocols to encourage adoption of electronic data exchange. In the process, his own role changed from being a conventional 'document controller' associated with a single project to being a PIC capable of managing system implementation, training and consultancy support on two or three projects simultaneously.

During project delivery from 2001 to 2004, users logged in over 94,000 times. In total, the system was used to publish almost

24,000 drawings and some 4,600 documents. Upon hand-over, the client also used some of the published as-built information to support space-planning by its furniture suppliers.

Management issues

The Channel was not instigated from the very beginning of the project. Some early conceptual and demolition-related drawings and other information were not stored on the system (this involved some 15 archive boxes of data).

On reflection, Mace's standard project management system needed to be adapted to suit the introduction of extranet technologies to its projects (eg: the BIW system removed the need to maintain hard copy files of A3 drawings).

Whiteman advocated the use of a 'digital sender' to convert large paper-based documents (eg: operation and maintenance manuals – vital for the Health and Safety File) into electronic formats (eg: PDFs).

While the core BIW system requires users to acquire no new hardware or software, there can be system administration issues when users are subject to locked-down computer desktops and a new browser plug-in needs to be deployed.

Key lessons

- **Train the trainers** – effective, team-specific deployment, training and support are vital; it helps to establish local experts in using the system.
- **Focus on the people issues in training** – it's 80% people and processes, only 20% technology (people collaborate, not systems). Keep the training non-technical; instead focus on how the system replicates existing procedures and delivers time, cost and quality benefits to the end-user.
- **Keep the system as transparent as possible**, but show that it can be opaque where needed (eg: for cost data)
- **Consider changing existing processes** – While an electronic system's processes can be adapted to suit an existing project management system, practical experience will often show that it is the established system that should be changed to reflect the speed and efficiency improvements possible using web-based technology

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