

Numerous BIW customers and project team members have identified both quantitative and qualitative benefits from using BIW to deliver their projects and programmes (individual users are often so enthusiastic they never want to go back to the 'old way of doing things!'). Documenting these experiences, BIW has produced several case studies describing the benefits achieved and the lessons learned from various different projects. Some of the key benefits are summarised in this document, along with remarks from some of the individuals involved.

Tangible savings

Using BIW's collaboration technologies, there is a significant reduction in the printing, reproduction, distribution, storage and retrieval costs associated with the many drawings and documents produced during typical projects.

- UK management and construction consultants Gleeds calculated the cost savings during a typical £5m, 30-week retail construction project. It found that **printing, copying and postage costs could be cut by over £58,000** (more than one per cent of the total project value) by using the BIW collaboration platform.
- Another BIW partner, Kajima Construction Europe, worked on an £8m supermarket project in north Wales in 2000. It **saved over £12,000 in printing and postage costs and over £31,000 in design fees.**

"We looked at a typical 90-day project where we issued a total of four revisions of 25 drawings to an issue list of 13 people. We saved more than £250 on printing, copying and postage, and more than £3500 in employee costs, by replacing traditional methods and using BIW instead."

Specialist sub-contractor, retail project, London

- As construction manager of the Wellcome Trust's London HQ, Mace found there were substantial print savings when BIW was used to support tendering processes; across 32 work packages, it estimated **electronic dissemination saved more than £250,000.**
- Working as one of three framework contractors for United Utilities, KMI Water alone estimated the BIW system has **saved on copying and distribution of some 50,000 drawings** in 18 months up to October 2003.

- Working for a county council, Mace was able to scrap the courier service it previously employed to send information to its client, in favour of electronic transfer of information. Traditional boxes of filed archive material have also been replaced by the BIW system, which also functions as an archive facility

"Future use of the BIW 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 for ten years."

Construction manager, office project, London

Intangible savings

By cutting the scope for errors or miscommunication, reducing mistakes and re-working, and by avoiding unnecessary project delays, the potential savings through use of BIW 's collaboration technologies can be even greater. Gleeds estimated the **cost savings during a typical £5m, 30-week retail construction project would be approximately £300,000** (6% of project value).

"The extranet speeded up the drawing distribution process. Usually, designers allowed 2-3 days after finishing a drawing for printing, copying and distribution; these steps were now accomplished in minutes (we think similar time savings could result in shorter programmes for future projects). Instant simultaneous publication also removed scope for excuses about late or incomplete information or non-arrival of drawings."

Contractor, office project, London

Speeding up project processes will also contribute time savings that can cut project duration and earn bonuses for early hand-over (*Continued over page...*).

For example, BIW can:

- remove delays arising from using post and courier services to distribute documents
- distribute information intelligently (users are not consulted needlessly on issues that lie outside their project remit)
- cut duplication of effort
- cut time users spend searching for the latest project information
- encourage better project discipline, more efficient meetings - and fewer excuses (Crest Nicholson's project director on a 10-year mixed development in Birmingham summed it up: "no more 'it's in the post!'")
- cut time wasted by users working on old information. (A 2003 Autodesk survey of the UK AEC industry found that a startling **16.2 per cent of time was said to be wasted through the use of outdated design data**, ie: more than an hour every working day!)
- reduce drawing review cycles (in its north Wales project, for example, Kajima found that the time taken to review drawings was reduced, from an average of 10 days to just two days - in some cases, complete drawing review cycles were completed in just two hours. On the Wellcome Trust HQ project, Mace reckoned, in some cases, **design review was cut from 15 to 2-3 days**. And KMI Water estimated that average design approval cycles were reduced from 14 days to five days)

"A contractor published a drawing of a mechanical item for comment at 8.30am one day recently. Sixteen people commented on it during the morning. The contractor uploaded a revised drawing at 4pm that afternoon - again for comment. The entire matter was resolved in under two days. If this had been done by printing and posting, it would have taken a week or more. Plus, this way you can see exactly what's going on. There's a full auditable trail and you can't lose anything."

Construction manager, Capital One project, Nottingham

- greater flexibility (anyone with computer and internet access can use the system; no need for specialist hardware or software) and better support for mobile or home-working

- speed up production - and cut out paperwork - of client deliverables, eg: the electronic Health & Safety File (in projects for Sainsbury's, the File was more than 75% complete at project hand-over with the full file ready less than two weeks later)
- Avoiding costly disputes is another benefit. Many disputes arise over issues of late, missing or inaccurate information

A major benefit of using BIW ... for John Bloomfield of architect MacCormac Jamieson Prichard is his ability to access the history of any one document via the reporting tools: "I can track each revision of a file, see who has accessed it and when," he says. "Then I can print reports on the relevant files for the team to take to meetings to chase actions."

Architects' Journal, 20 March 2003

- increase the productivity of document controllers and enhance their role (less paperwork; more training/helpdesk)

With BIW, **who has published what, and when it has been viewed, and by whom, is transparently visible to the whole team**, so nothing can be overlooked. Such openness encourages collaboration and reduces delays; everyone concentrates on delivering information as early as possible. And there is nowhere to hide if information is not provided on schedule. Should disputes arise, the audit trail feature can help identify exactly when particular items of information were created, discussed and amended. The facts can thus be quickly ascertained by all the parties involved, and focus can switch to resolving the problem rather than apportioning blame.

Is it people and processes or the technology?

Airports operator (and BIW client) BAA plc claimed overall three per cent cost savings were achieved due to use of collaboration software and partnering framework deals. Some cost savings were attributed more to the common project team (cutting design team costs, shorter programmes), while others tended to be attributed more to the use of the technology (eg: fewer drawing revisions, faster drawing approvals, reduced design work, greater transparency), while some were solely due to the technology (use of product library for standardisation, electronic Health and Safety File). Overall, 70 per cent of the project savings were attributed to the technology.

study by Rob Howard, Technical University of Denmark, 2002

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