

Case Study IT030

Exchanging CAD drawings with consultants and contractors in the United States and Ireland

The achievement

Christopher Smallwood Architects is a 12-strong architectural practice with a turnover of £800,000, working mostly on historical buildings and country houses in the UK, Ireland, and the United States. They can now exchange drawings electronically with their New York office, structural and mechanical services engineers, and contractors in the U.S. They can also receive site and building survey drawings in digital format. They now use consultants to produce video animation of buildings. They can email video images to clients, who can view them on computer wherever they are located.

Key benefits

- ★ Process improvements through quick turnaround of drawings with benefits to the firm and its clients.
- ★ Improved team effectiveness. Other consultants with the project team use Smallwood's drawings as a base for design work, and Smallwood can use others' surveys of sites or buildings as a base for their own designs.
- ★ Fewer post contract variations as video animations can be emailed to clients enabling them to visualise proposals. Animations are easier to assimilate than drawings.

The background

All the firm's design drawings are prepared in their main London office. They have several projects in New York.

The original objective was to increase the speed of getting information to and from consultants. As they already prepared drawings on computer it seemed logical to send them digitally, and in a form which could be used instantly.

The approach

Initially for CAD drawing exchange they had to identify the extent of compatibility with the recipients of their electronic files. They had to ascertain if they used the same CAD package, the degree of compatibility between different versions, and whether Smallwood had access to the same version. It was also important to agree on a series of conventions for layers and pen types. Encountering initial communication problems between the Internet Service Providers, the consultants and contractors had to find a new ISP and Smallwood had an ISDN line installed to improve speed, essential for this type of file transfer. Many drawings are large files and have to be compressed for transmission. Even now Smallwood find this can present problems.

Smallwood found that careful management of documents, particularly records of revisions to drawings, was of special concern. The control of the layers used for drawings was vital. For contractual drawings they continue to send hardcopies as well as electronic versions.

They have built on their early successes with CAD, and are moving towards providing video animation with considerable benefit to clients. Smallwood can email the animations to clients, whatever their location, for them to visualise the proposals. Animations are easier to assimilate than drawings, so there is a greater understanding of the proposal at an earlier stage. In principle, Smallwood expect this to lead to fewer post contract variations.

Key lessons

- ★ Checking of electronic drawings needs to be managed carefully. Red-lining and filing a printed drawing is more tangible than when done electronically.
- ★ It is easy to change an electronically held drawing, and there may be a temptation to do so without thinking through the full implications. This needs self-discipline.
- ★ Document control and the tracking of changes are more complicated than with printed drawings. Systems need to be established to record revisions.

Further information

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