

## The background

Weatherall, Green & Smith has a total of 150 staff, and the practice is a member of Weatherall International. The move to AutoCAD 14 with AEC 5.1 was made in 1997, with an AutoCAD Lite workstation added in 1998. All UK offices are fully networked, with central services located in London and Leeds. This Case Study focuses particularly on the service provided to major clients in the retail sector. The service comprises site search and procurement, together with new-build or shell fit-out design of premises.

## The approach

The move to AutoCAD 14 was made to provide compatibility with systems in use by clients. It was clear to Weatherall, Green & Smith that communication with client's developers, and potentially with contractors, would be best enabled by adopting market-leading software. The process developed rapidly by working closely with a single client.

The 'traditional' design process typically comprised:

- Site identification
- Drawings of shell form provided by developer
- Layout drawings produced, including M&E
- Drawing extracts faxed to client
- Amendments made by client and returned by fax
- Drawings amended and step 4 repeated
- Final drawings issued to client by post

The process was based on hand-drafting drawings up to A0 size, with copying carried out by external agencies. The introduction into the practice of AutoCAD 14 with AEC 5.1 coincided with the introduction of email. This has led to a transformation of the process which now comprises:

- Site identification
- Shell drawings received on disk or by email from developer
- Client layout added with the aid of AEC 5.1 standard items
- M&E 'layers' added to AutoCAD layout
- Drawing files emailed to client
- Client amends using AutoCAD Lite
- Client returns amended files by email
- Final drawings issued in both electronic and plotted paper forms

A spin-off benefit of the AutoCAD development was the upgrading of the practice's Barbour Index Microfile information service to the CD-ROM-based Barbour Construction Expert which is now used to support specification writing.

The delivery of completed documents by email is also increasing. Email communication with clients, contractors and other consultants is increasing dramatically, but concerns remain over security and authentication, particularly related to unauthorised amendments to complex drawings. The practice provides clients with weekly 'email schedules' showing all transmissions of drawing files sent and received by email. This provides a useful audit trail to exchanges of information that may occur several times a day on one project.

In the words of Ben Hunter, a surveyor at Weatherall, Green & Smith: 'We could not go back – client expectations have changed and our own expectations in terms of speed and quality of service have changed with them.'

## Benefits achieved

**Time and cost reductions for the practice** – an average of 50% reduction in the overall time required between site identification and final drawings. Within this overall timescale, a significant time saving has been achieved in the production of internal layout designs. A typical two-day manual production time has been reduced to a half-day of CAD effort.

Cost and time reductions include:

- Elimination of copying agency costs;
- Reduction of paper, postage and fax costs;
- Reduced document storage costs;
- Dramatic reductions in drawing production times;
- Reduction in overall process time

**Time, cost and quality improvements for clients** – benefits include:

- Higher quality of design input with consistently high quality output;
- Quicker response to design changes;
- Faster occupation of premises due to shorter design phase;
- Savings on paper and fax use, and in document storage.

**Closer, long-term relationships with clients** through integration with clients' own electronic processes.

The major business benefit to Weatherall, Green & Smith, and the one that provides a competitive edge, is their ability to develop a closer working relationship with a client by using compatible CAD software and email communication to provide a service that integrates with the client's own processes and demands.

## Key Lessons

- ✦ Introduce weekly schedules of emails sent to, and received from, a client. This procedure provides an audit trail of communications for both parties, eliminating the possibility of doubt in an area of communication which often causes concern.
- ✦ Install local Zip drive backup facilities at the CAD workstation to eliminate heavy network traffic normally created when backing up very large CAD files to a network drive.

## Further information

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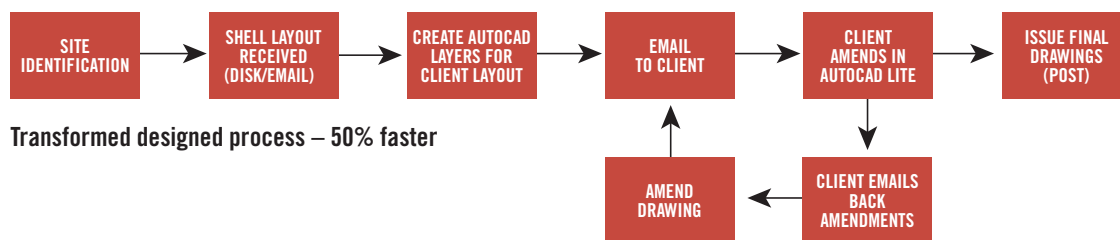
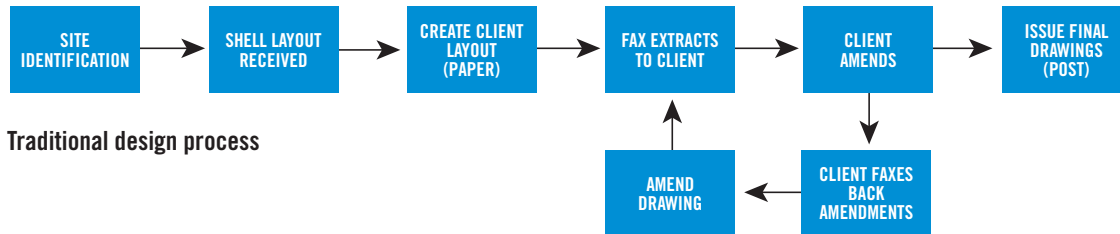
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## Case Study IT019



## CAD and electronic communication in surveying: Weatherall, Green & Smith

### The achievement

Weatherall, Green & Smith, a multi-disciplinary practice of surveyors, transformed a traditional process of design production based on manually-drafted, paper-based design output transmitted by fax and post, into a virtually paper-free electronic process using AutoCAD and email.

This case study demonstrates to architects and surveyors the significant benefits of using CAD and email as a fast response service to clients, resulting in higher quality design output. It also illustrates the potential for longer-term business benefits by integrating design with the client's business development process. For clients it demonstrates the business benefits of a faster-response design service, simultaneously providing higher-quality design output than traditional processes.

### Key benefits

- ★ Increased speed of drawing production.
- ★ Increased quality of final drawing output following several iterations of consultant/client amendments.
- ★ Increased speed of communication between consultant and client, using email to transmit AutoCAD files which can immediately be viewed and amended by both parties.
- ★ Reduced costs of photocopying and faxing.
- ★ Reduced document-storage requirement for both consultant and client.
- ★ Creation of closer consultancy/client relationship through integration of design process into client's own development process.