



Patrick Naininger of TDSL. TDSL believes the TDOC system offers the most robust, reliable and cost effective document control system available today

For want of a nail...

The following account of a failure of document control at a shopping centre car park may read like a multi-storey fairy tale - but was all too real! David Chadwick sorts reality from fantasy with the help of TDOC

A pile was installed in the wrong position, because an existing high voltage power cable was shown as being in the wrong place. As a result the foundations had to be altered - and so too did the surrounding steelwork. The piling subcontractor found the cable and placed the pile out of position. He failed to notify the main contractor immediately, but did so in accordance with his contract by weekly completion of as built drawings.

The substructure subcontractor knew of this as he was providing support to the piling subcontractor under the substructure contract and, being reasonable, raised an RFI. In answer he was told to build in accordance with the drawings issued to him - he had only been issued with "Txx" revisions (which due to the revision numbering system implied that these were tender drawings only).

He was shortly afterward issued with a "Cxx" revision at Status "Construction (C)", intended for construction, but "Construction (C)" indicates that the document had failed its co-ordination review. It showed the original, now erroneous, position of the pile and thus an "impossible to build to" foundation layout.

So the substructure subcontractor, on the unrecorded verbal instruction of the main contractor, went "looking" on the portal for suitable drawings and found a proposed solution to the problem from the consulting engineer. He downloaded the drawing from the portal, printed it and went to work, completing the foundation. Meanwhile the drawing was revised due to complications with the steelwork, part of which had already been fabricated.

The revised foundation drawing was issued to the substructure subcontractor who ignored it as the work had already been completed, although he did raise an RFI notifying the main contractor (to which he never received a reply). The RFI subsequently "disappeared from view" on

the portal, that is its visibility to others was restricted. The steelwork which had been manufactured to a set of drawings (excluding the foundation drawings), which had been issued to the Steelwork Subcontractor with a status of "Construction (A)", was then delivered to the site.

Unsurprisingly it did not fit perfectly, and the stanchion was then 'cranked' to fit the revised position of the foundation. It was thus erected in a 'stressed' condition. The rest of the meccano set was installed and had to be 'pulled' to fit. Then the concrete deck was laid.

After the car park was completed, the stresses tended to 'relieve' themselves, triggered by vibration (viz being driven on), and by getting hot and cold due to variations in ambient temperature, and so some of the beams warped, causing the concrete deck to crack.

The car park is currently closed, and awaits probable demolition and reconstruction. But that's not the end of the story; now the lawyers have to decide who is going to pay for this.

THE CAUSES

It should NOT be possible to issue a tender drawing for construction once the contract has been let. A status of "For Construction, BUT IMPOSSIBLE TO BUILD" should not even exist, which is what coordination failure means. Failing to keep subcontractors in synch with each other seems to demonstrate a lack of common sense.

In summary, the software used for exercising the document control process was badly set up. But the software itself should NOT allow such idiocy in the first place. The software should have the competence to link documents in such a manner that a change in one triggers a review of the use of others. This in itself is not very easy to solve. It should be remembered that document controllers

are aren't poker players!

Failing to adhere to ISO9001 exacerbated the problem. If it is impossible to issue a works instruction (which is what a drawing issued for construction is) then work must be suspended until such time as it is, i.e. until the problem has been properly sorted out. In any event there will be a contract claim.

TDOC

This charming tale was relayed to me by TDOC, a company with extensive experience in the technical documentation market. They have their own document management system, which we have written about in an earlier issue, and are just releasing Version 5. The story is told not to damn the company concerned. Our job isn't to name and shame but rather to illustrate the dangers of attempting to implement a technical document management system without fully understanding what you are trying to achieve, and what the critical issues are.

UNDERSTANDING STAGE, REASON FOR ISSUE, AND STATUS

A Technical Document is a document which may be revised by its originator, describing work to be undertaken by someone else (so it is a "Work Instruction"). When it is revised and given a new (revision) reference it has two main states: Its Stage - what the originator thinks of his document and where he thinks it has got to in its life cycle, and Its Status - how an organisation views the 'usability' of the document. Status must be YOUR status, not anyone else's - and it MUST be applied at revision level but inherited at document level. Otherwise ISO9001's Incoming Inspection rule is broken.

The document is 'Issued' - despatched from one organisation to another - for a particular purpose (tendering, construction or information) and there should be a mechanism to verify that this procedure was completed, and it should be Approved, or Rejected. Following receipt, each party MUST keep their own document register rather than relying on someone else's, recording the document (title, number, and revision etc), the

reason why it was received (Issue Reason) and the status that it has been accorded after review. Before review it is "in quarantine" without status. This requirement is also enshrined in ISO9001. It is irresponsible to use a document which you know is inadequate or flawed in some way. This concept is also enshrined in every engineering construction contract.

In summary, you MUST have your own register which records your OWN Status, and you MUST ensure that when you issue documents, receipt is acknowledged.

TDOC VERSION 5 RELEASED:

The essence of document control is to ensure that every piece of information that is needed by some person or organisation for whom you or your company are responsible has been given to them at the right time, for the right reason, and with the right status - no more and no less.

It is up to document control to initiate this information schedule and to keep it updated, but it is up to the software to execute what is a hugely boring task effortlessly and reliably. TDOC just makes the configuration easy, and prevents careless misuse. Version 5 introduces new features that help to maintain it so.

SOLVING EMAIL SIZE LIMITS

For instance, the worldwide problem with spam is being solved in a number of ways. One way has been for many ISP's and managed email systems to restrict the size of emails to around 2Mb. TDOC's unique FTP Solution solves the problem by bypassing the email system with a direct FTP upload to a third party server, for an HTTP download. The download link is included within the email covering transmission of the transmittal documents, and transmittal documents may either be on paper or in PDF format sent with an Email, and attachments may be either as Paper or on CD/DVD, Zipped and emailed, or Zipped and FTP'd for download.

The unique, searchable TDOC Browse mechanism has icon rather than text selection, improving screen readability, and browse colours are now user

definable, useful for the differing screen types. In some places, tabs have been replaced with quick entry dialog windows driven from a button; the allocation of groups to a Document; the allocation of a status to a revision; the allocation of keywords to both your own and other's documents at document and at revision level, and so on, preventing keywords used for documents being used for revisions, and vice versa.

ATTACHING DOCUMENTS TO RECORDS

In addition, attachments may now be made for RFI responses and replies as well as Technical Documents at revision level, and General Documents. The mechanism has been extended for Daily Record Diary entries - e.g. photo of an accident - and to Snagging (Inspection of Works) Records.

An "incoming directory" has been added to the TDOC Paths setup screen, defined as the default directory for saving attachments in emails. In addition seven directories may be nominated for Incoming Technical Documents: Own Technical; Documents; Incoming Transmittal Documents: Outgoing Transmittal Documents: Own General Documents: Incoming General Documents, and Snagging and Diary attachments. Warnings are notified to the user if there are any problems.

EDI has been completely overhauled in Version 5, reflecting current trends in document management, and taking advantage of the latest web technology and HTML formats.

EXTENDING THE KEYWORD FACILITY

A keyword mechanism will assist in both locating and collating necessary documents - an increasing problem, not least because of the growing incidence of contract claims, as contractors attempt to work to tighter budgets and contract times. Such a facility can reduce one thousand hours of research work to just a few hundred, or, in real terms, reduce six months of a claims consultant's time to six weeks or so. This will also enable a contract claim to be submitted and settled

earlier with obvious cash flow benefits.

AND THE REST

Over two thousand other minor changes have been made to improve TDOC. Major changes include upgrades to the language and libraries including the embedded Report Engine, and Databrowser. The way in which parameter and control information is stored and accessed internally has been generally improved, speeding things up. Licensing has been upgraded, along with Backup and Restore facilities. In fact every request for a change received in the last four years has been addressed.

TDSL

Patrick Neininger of TDSL is working in partnership with TDOC on the launch of release 5 of this critical document control system. As specialist suppliers to the Architectural, Engineering and Construction community TDOC compliments its existing mix of products and services. The company has worked with a variety of international companies over the years in this arena and can assist any organisation, serious about document control to investigate their current system and help them avoid the issues highlighted in the example and reap additional benefits.

Often overlooked, project document and drawing control means the difference between finishing projects on time and within budget, or not. With margins being squeezed ever tighter, every organisation in the supply chain needs to eliminate the possibility of costly errors and potential litigation by ensuring their document control processes are watertight.

More often than not, investment in plant and on site equipment is seen as a higher priority, and systems that actually reduce cost or protect document integrity get passed over. It is not until after the event, when delays and costly alterations are under way (as in the early example) that the process of backtracking through reams of documentation starts to identify where errors were made in the process. In these cases, valuable resource is wasted looking for drawing revisions, documents, RFIs, emails, minutes of meetings etc. and the irony is that this activity could have been avoided by employing the TDOC system.

TDSL believes the TDOC system offers the most robust, reliable and cost effective document control system available today. Part of its selection criteria was identifying a product that not only reduced errors made in the process but actually increased productivity in the document control area too. Based on the referrals that they have received from existing Blue Chip users of the system, the company is absolutely convinced that version 5 is launching from the firmest possible platform.

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