Bringing it all together

You can create a single federated model to handle design, construction and Facilities Management using Sitedesk, says David Chadwick

It seemed like a good idea at the time - accumulating all building information up to the point of handover, and placing it in a common data environment, a spreadsheet, that can be used by the building operator to inform his engineers the steps required to maintain the structure. The thinking behind it was that maintenance engineers might not understand CAD, but they can easily find their way round a spreadsheet.

It's not just a simple spreadsheet, either, as it comes with links to every scrap of information the engineers require, 2D and 3D geometry, component information, maintenance manuals, standards and protocols - and even the name of the supplier if you need a spare. You all know what I am talking about, and it may be heretical to describe COBie in such terms, but I will leave it for now, and refer to it again at the end of this article.

That is because there are other ways of ensuring that Facilities Managers have the right sort of information they need to 'operate' a building, taking advantage of recent advances in computing which weren't so advanced when the above was mooted. Or rather the tools were available but the mindset wasn't.

Now that BIM has burst the banks and we are all talking to each other, we can contemplate areas of collaboration that were, until recently, unthinkable. That is exemplified with Sitedesk, a Software as a Service (SaaS) solution which provides a BIM compliant and collaborative working environment for construction and engineering projects, that not only provides a Common Data Environment for all aspects of construction, but combines Operations and Management (O&M) within the same, single platform.

The O&M system is being put together whilst the project progresses, ensuring information accuracy throughout, eliminating data transfer issues and, most importantly, requiring input from the building operators from the very start of the project. An architect will be told right at the start of the Design and Build phase what information he would need to pass on regarding the boiler he is about to specify for the central heating system.

Is that of importance? Well yes, as it was explained to me by Rob Umphray and Michael McCullen at Sitedesk. Instead of populating a COBie spreadsheet with a lot of extraneous information, I could cut it down to the basics; what and where it is, its specs, operating conditions, and a couple more details. Once assimilated, that information would be refined over ensuing projects, benefitting both parties.

SITEDESK

Aiming to facilitate collaboration between all project members and clients, Sitedesk had to be simple to use with minimal training required to become fully competent. Its simplicity actually belies the size and complexity of projects it can handle. Large complex models can be imported from native files, IFC, or through a Revit add-in - using the software's ability to import data from multiple applications as a useful conduit. It uses the latest SQL and NOSQL technologies to handle large files and tabular data.

Projects are simple to set up and to populate with 3D models, using smart synchronisation to ensure the latest version is being used and associated documents updated. The federated building model comprises separate models for HVAC, electricals, plumbing and so on, which use simple colour coding to switch on or off or isolate for viewing purposes. Users can click on any element or component and view its specifications in detail, or select 2D plans and floorplans - with a further window to run a few measurements within rooms and other spaces. The building model can also be sliced vertically, horizontally or at an angle to create movable viewing planes, and to create views that can be saved for illustration purposes.

When navigating the building, tags, added to the model by the architect, depict the current location of the viewer - or alternatively, a scaled 'Google' avatar can be placed inside the building to check the human scale of the building.

The simplicity with which this can be achieved is replicated in the quick and easy way with which digital documents can be added to elements, systems and spaces and can be used to create digital workflows - such as RFIs, inspection forms, quality management, service documentation, soft landing/handover performance recording and so on - with a rules based auto filing system to ensure it is kept in the right place.

Other content can be added such as video, audio and product specifications, and the digital form creator allows users to remove paper documentation from other projects and to use embedded photographs in forms, which can be exported as PDFs with embedded detail.

All of the above constitutes the sort of information that the FM operators are hoping to dig out of COBie. Sitedesk does have full COBie support and export capabilities, as it must, with documentation and content fully referenced - and the same can be said of the Sitedesk application itself. The Sitedesk cloud platform is also CESG
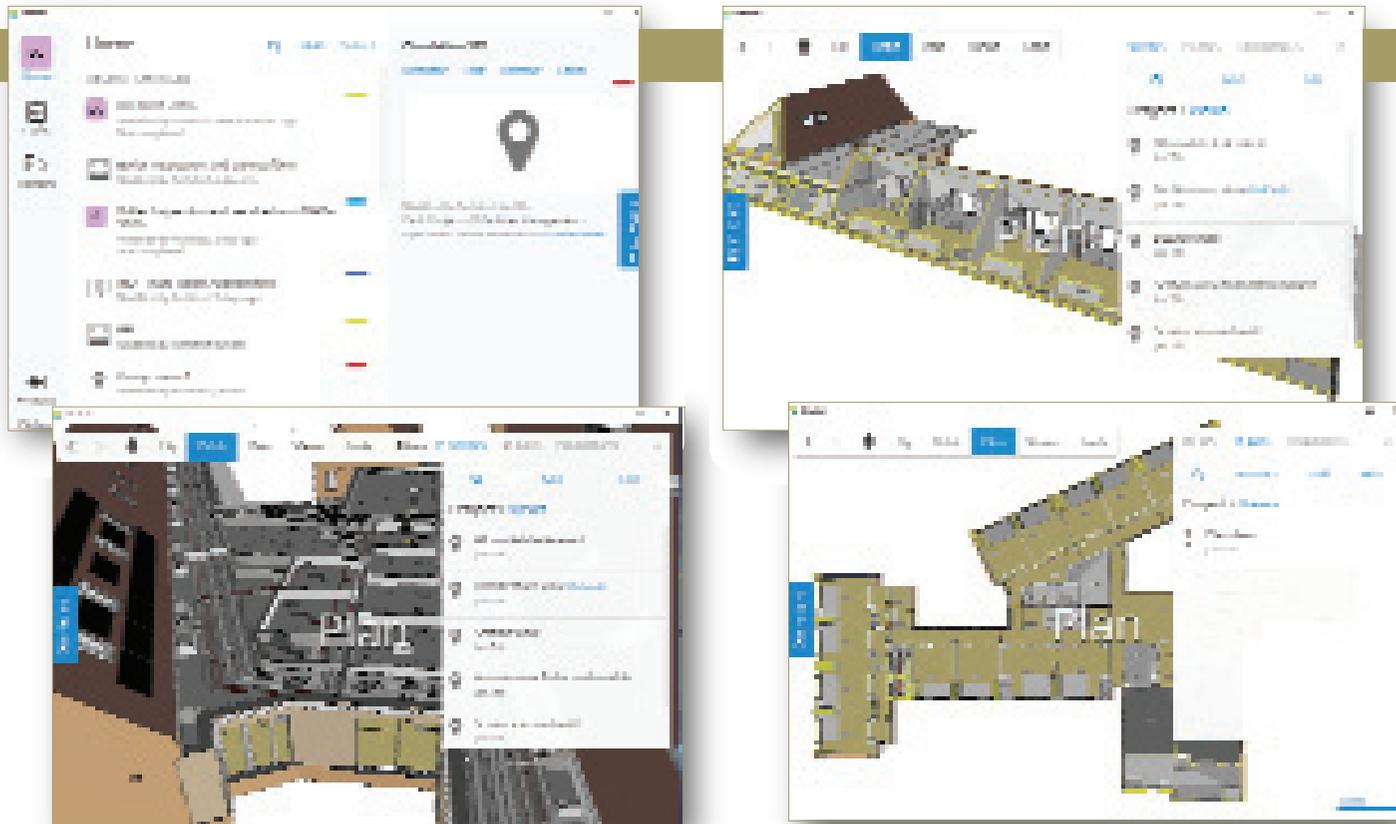
compliant, fulfilling all European data protection requirements as well as PAS1192.

USING SITEDESK

I was provided with a sample Sitedesk project and let loose. It was extraordinary easy to log in and start viewing models, documents and activity. The Home screen provides a list of all activity with the most recent at the top. Everything is archived, providing a full audit trail so that all users can search asset and project data for the whole of the project lifecycle. Such access enables site operators to look at decisions made prior to handover which may have been lost in the disconnect between Design and Build and O&M.

I was able to select any category from the colour coded list, bringing up secondary windows for editing, renaming, adding, looking up element details and other activities depending on the category. I was also able to

switch instantly between the Dashboard and Model Views by clicking on convenient tabs each side of the display.

Adding documents to elements is just as easy. All letters, photos, specifications and maintenance manuals are held in the Sitedesk library. Those that are already attached to elements are indicated in the elements display, and I could click on these to see what they contain. I could also search the Sitedesk library using filenames or free text searches and link those relevant to the element, or upload documents from other applications. I could also review and edit documents with the appropriate permissions,

Searches are quite powerful, allowing searches on labels, types, dates, people or order - people obviously referring to standard project member management, defining responsibilities, permissions, communication between members and the assignation of tasks -

the activities you would expect with such an application.

Tasks? From the Dashboard you can assign a maintenance job to a specific engineer, and specify which element in the model the task relates to and a date when it is to be completed. When the engineer clicks on the task they will be provided with everything they need in the form of model views, documents, manuals and instruction videos.

What more, then, is required? If there are special requirements in a project, the Sitedesk team will spend a day scoping the project to come up with problems that need addressing, on top of the workshop sessions they put on for key stakeholders.

The SaaS costs are very reasonable and are based on user numbers and projects, especially when you consider that customer feedback estimates cite improvements on contractor's profit margins of between 30% and 50%.
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