



With the deadline passed for central government contracts worth over £50 million to be using BIM

on a three-month or one, two or three year basis. This reduces the upfront cost. There are various options to migrate from perpetual licences to the new licence rental system.

Woolven also introduced users to Cadline's 'Journey plan'. This is intended to help users in particular disciplines to implement BIM. As an aside, he also said that Cadline has noticed a trend towards more work being done in-house with less out-sourcing.

**BIM in 90 mins** PAS1192 is the document that defines the BIM process in Britain. It gives structure by specifying key documents, roles and responsibilities. Early on in the evolution of BIM, the Royal Institute of British Architects (RIBA) drafted a BIM 'Plan of Works', which has been adopted by the AEC industry as a de facto standard for implementing BIM. The Cadline team took us through all the six stages of the Plan of Works.

## Conference brings BIM alive

Cadline's Autodesk user conference took place in the heart of the City of London in June.

**Richard Groom** reports that BIM was the hot topic this year.

level 2, this year's conference concentrated on helping delegates to get to grips with the nuts and bolts of BIM.

**BIM for newbies** For early birds there was a pre-conference session on 'BIM leadership', which was aimed at anyone 'new to BIM or confused about what they should be doing next'. There were a lot of us! **James Philip** put 3D modelling in the centre of BIM and explained how federated modelling is the means by which different disciplines contribute their expertise and retain ownership, whilst enabling collaboration. This integrated approach means design can proceed concurrently, with plenty of tools to detect and resolve design difficulties before construction commences.

**Licensing** Following the pre-conference session, **Scott Woolven** welcomed delegates and gave an update on the situation regarding Autodesk licences. He began with a warning from Autodesk that renewals have to be received by Autodesk before the current licence expires or users will have to buy a new licence. Licences can be renewed up to 90 days before expiry of the old licence so the advice is to order with plenty of time to process the orders.

From 31st July 2016 Autodesk will remove all remaining perpetual licences and all 'suites' will be withdrawn from sale. From 1st August, three software 'collections' will be introduced – architecture engineering & construction; product design; media & entertainment. These can be rented

The task was a hotel development at Glastonbury. Stage One: preparation involved downloading OS Model Builder data for Infracore 360. For stage two a building was sketched using Autodesk's answer to SketchUp – Formit360 and then transferred to Infracore360, a conceptual design tool that enables outline design work for the site and for road access on a DTM with map or imagery background. It is a quick way to work up options, which can be used as the basis for consultation. When the outline design is ready it can be exported as an IMX format file and then read into Autodesk Civil3D. At this point the file might be saved to a Common Data Environment on Autodesk's Vault. From here on, audit tracing is automatic.

At that point everyone took a breather. When we returned from coffee the project was at RIBA stage 3, the developed design phase. The IMX file was read into Civil 3D and then the site grid set up by clicking on two points to define the origin and orientation. No discussion about scale in this section but the coordinates appeared and were expressed in metres in the Civil 3D software. When the model was transferred to Revit, the coordinates maintain their intelligence and were automatically shown in Revit as millimetres to align the building model.

Swiftly on to step 4: technical design, where we were shown how to combine the federated models using BIM360 GLUE, which enables any partner in the project to view any model and make mark-ups. It can also detect clashes between different models to



**... the coordinates appeared as the national grid expressed in millimetres.**



# Autodesk user conference



## Delegates learning all things BIM.

see if, for example, elements in the structural model clash with those in the MEP model. It is at this point that component manufacturers can get involved. The example we were given was a fanlight window. The idea is that the manufacturer can see the fanlight as depicted in REVIT, then use Autodesk Inventor to design the window and then export to Autodesk360 as a new component. The interface between BIM as used for design and for shop drawings used by trades is at last, it seems, being addressed.

And so on to stage 5 – construction. Here, the team used Navisworks tools to produce contract

documents and then simulate construction and produce animations for site project meetings. BIM360 is then used to allocate construction tasks and track them by monitoring in real time.

Stage 6 is project handover and close out, including hand-over of as-built models and commissioning documentation. Another neglected area has been building operations but Autodesk now has software to do that too. A mobile phone app can be used to set maintenance tasks, create job cards and monitor the work.

**Bringing it together** In short, Cadline were able to demonstrate how a project is handled throughout its lifecycle. It was certainly a brave live demo but gave delegates a valuable overview of the whole BIM process.

The afternoon was taken up with workshop master classes in three streams: Building, Infrastructure and General Design.

Overall, like last year's, this event was time very well spent and free of charge, to boot.

Cadline invited delegates to participate in a free Discovery review to see how, as an Autodesk Platinum Partner with offices across the UK and Holland, they can help guide individual clients on to a successful road to BIM adoption.

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