

# TRAVEL REPORT FOR TMC - DIB 3D VIZ Sig

## BE CONFERENCE 2006

May 21-25, 2006 Charlotte Convention Center, Charlotte, NC USA

### 0.1 Introduction

- This was my fifth International Bentley Conference as representative for Bentleyuser.dk 3D VIZ Sig. The following report contains notes on the sessions attended, as well as some of the general sessions, and social events. This year, as in the past I have tried to make an effort to represent the interests of our group as well as possible. The majority of sessions attended, were limited to the Building Vertical, and MicroStation platforms, with emphasis on 3D and visualisation. In addition to the notes below, I have included links (when possible) provided by the session speaker that further describe in detail the session attended.

### 0.2 General

- This year, Bentley decided to split the BE conference into 2 conferences, one conference in USA, and one in Europe. This was an attempt to get more European Bentley users to attend BE. The 2 conferences were held with a 3 week period, and were essentially identical, with the exception of the BE Award ceremony. As tradition holds, again this year, TMC -DIB could boast a large Danish contingency, with 22 participants covering a wide range of disciplines. The event was held at the Charlotte Convention Center for first time. Charlotte is a medium sized U.S. City situated on the southern east coast. The city was warm and friendly, and could provide good restaurants, and entertainment after convention hours. I found the Convention Center itself to be too small for the event. It was difficult, and sometimes impossible to attend sessions due to lack of space in the function rooms. A lot of time was spent arranging schedules, and 'trading' sessions to attend the most optimal sessions.

Again this year the main topic at BE, was MicroStation XM. Although the program was not released prior to the conference, many users had been using the pre-release versions, so in addition to Bentleys own sessions, there were many user sessions using XM. Seen from a visualisation perspective, there are some exciting features readily available, as well the promise of even more improvements in the "relatively" near future. General keynote sessions are not covered in this report. Keynote speeches were attended Monday, as well as Tuesday morning. A Summary of the speeches can be found on Bentleys Website - [www.bentley.com](http://www.bentley.com) , or [www.microstationconnections.com](http://www.microstationconnections.com)

## 0.3 Sessions

*Note: traditionally the Sunday prior to the week of the conference, Robert Aish holds a n Architectural Research Seminar. This session is usually one of highpoints of the conference, as it demonstrates some of Bentleys newest technologies in real world projects from some of MicroStations super users. The session was unfortunately not held this year.*

### **Sunday, May 21**

#### **• Parametric Cell Studio - Werner Gilles** , Project Manager Bentley Building

This was an all day hands-on workshop . The goal of the session was to introduce the concept of Parametric Cell studio, while working through some predefined examples. Topics covered, included: Background information, 2d Path constraints, named Dimensions and Variables, Door and Window components, and Publishing to Bentley architecture

PC studio is a stand alone program that creates parametric driven cells for MicroStation. PC studio uses Dimension Driven Path technology combined with associative relationships which can be assembled into complex assemblies. Dimensions and variable expressions can then assigned to give full parametric control. PC studio can be best used to create doors, Windows, Curtain Walls, Handrails, etc.

After a cell has been created in PC studio, it can the be exported to fx. Bentley Architecture for placement as a cell within the MicroStation environment, - while still maintaining parametric control.

The program takes some practice to use, as the interface is foreign MicroStation. But with practice, it is possible to create some complex, and usable parametric cells for use in MicroStation. – *course outline, including examples available by request.*

#### **• Welcome Reception –**

Traditional kick-off reception, with food and drink, and musik. This was good opportunity to meet up with Bentley employees, and other Bentley users.

## Monday, May 21

### • **Executive /technical Keynote – Bentley Leadership**

Speakers included:

**Tony Flynn** – Bentley institute

**Gregg Bentley** – General Business update

**Buddy Cleveland** - MS XM distributed enterprise

**Bupindher Sing** – Platform update

**Chris Bober** – live XM examples (element templates)

**Tom Andersen** – Project wise (Start Point)

**Shaun Sewell** – Platform Group mission

**Keith Bentley** – XM technical update

See Bentleys Website for a detailed brief of the keynotes

### • **MicroStation XM Vision**

This was an alternative session due to the fact that 3 other more relevant sessions were closed due to the inadequate size of the allocated room. This session was not much more than a sales presentation of MicroStation XM. It focused on the use of MicroStation professional services. They used terms like: Distributed enterprise, advanced interoperability, maximise performance productivity, and increased quality. The message of the session was, if you employ Bentley Professional Services, they will have your organization up and running in XM within 4 weeks

• **BE Awards Dinner** Again, this year there were three nominees from Denmark, Projects from Carl Bro Group, Cowi A/S, and Rambøll A/S. Each project within its own category, so Danish firms weren't actually competing with each other. There were unfortunately no winners from Denmark this year, but congratulations to those nominated!

## Tuesday, May 22

• **Building Keynote Brad Workman**, Bentley Building

Generally the emphasis was on XM

There following was outlined:

The definition of BIM – the cycle of *design- build- operate*.

Bentley applications for building

BIM in conceptual design – the introduction of Sketch Up import and export

Sketch Up cells in MicroStation – drag and drop from 3D Warehouse

Improved XM functions:

Ease of use

New menus

Hyperlink navigation

Drag and Drop

Heads up display  
Improved Data sets  
Acquisition of RAM & STAAD – analytical software  
Generative Components – more mainstream/ user friendly  
Project Wise Start Point – a type of mini Project Wise  
Bentley Navigator.  
3D printing – highlighted with an example from Rambøll

### **Bentley Architecture - Steve Stevens, Bentley Building**

Bentley Architecture V8 XM 8.5.3 due to be released in June. Some of the new functions include:

DataGroup annotation  
Ceiling Grids – SPACES  
Floor Manager – alternative to ACS levels  
New User interface  
Editable tool commands- easy to customize  
Project Explorer- easy quick access to data  
Improved right click functions  
Editable handles with select tool

Coming Soon:

Bentley sees parametrics as the next logical development in 3D modelling, and promises much more parametric functionality in the future.

### **• Creating Materials in MS V8 XM Joe Granville, Bentley**

Joe Granville is one of Bentleys leading visualisation experts. This was a hands on session highlighting the new functionality of materials, and the material editor in XM. Some of the functions introduced at this session have been previously available through the VIZ enhancements for MS V8 8.5

The session consisted of a series of short excersises. The new functions in XM include:  
The ability to save materials directly in the dgn file. This makes life a lot easier when sending, moving, or copying files. The material editor dialog has also been slightly renovated, but still looks much like the editor from V8. One difference however, is the ability to independently scale pattern maps, and bump maps for a material. Also we now will have the ability to assign materials from level manager. This also is a good tool to quickly see which levels have materials assigned to them. RPC cells have also been improved in XM, with improved dynamics in render modes.

An AVI file of the course is available at  
[ftp.bentley.com/pub/outgoing/be.materialsworkshop.zip](ftp://ftp.bentley.com/pub/outgoing/be.materialsworkshop.zip)

• **Get Moving – Animation Update for in MS V8 XM** **Joe Granville**, Bentley

This was probably the most exciting session for visualisation. The Animation editor has gone through a major rebuilding, and rethinking....much needed! Again, this session was based on a series of excersises, designed to show the functionality of the new editor.

The new animation producer now uses an animation tree view, that can quickly be changed to a timeline, velocity graph, or storyboard panel. The animation settings can be easily adjusted here, graphically! The animation preview tool, or 'scrubber' is an immediate way to look at the results of the animation before recording, simply by sliding the scrubber back and forth over the area in question. Time based animation is also possible, helping to define speed of actors etc. The define actor path tool has also been enhanced. Also, target scripting options for defining an object as well as a target, is now possible. Solar study animation is also been incorporated into the new animation producer, allowing for more functionality here as well.

The animation producer in general is much more robust, and intuitive, and will make animating in MicroStation much easier in the future.

An AVI file of the course is available at  
[ftp.bentley.com/pub/outgoing/be.animationworkshop.zip](ftp://ftp.bentley.com/pub/outgoing/be.animationworkshop.zip)

**Wednesday, May 23**

• **Bentley Architecture for advanced users** **Werner Giles**, Bentley Building

This hands on session highlighted some of the new updates in Bentley architecture for the XM release. Emphasis was placed on setting up the Datagroup system as well as defining catalogues. Topics covered included:

**New user interface** The user interface can be best described as Microsoft like. Tools and commands are based on a tab interface, similar to Microsoft Outlook.

**Floor manager** gives you the ability to define floor planes for multiple buildings. – excellent feature!

**Designing a template for schedules in Excel** a relatively simple way to export data to excel by using predefined templates

**Annotation Cells** example available in course outline

**Compound walls** example available in course outline

**Drawing Extractions.** Examples on the different ways of defining cut planes, and resymbolisation of elements for traditional 2d drawing representation.

The course material was well presented, but the Beta release of Architecture was buggy, and did not perform optimal for the class. A thorough and well presented course material was delivered, covering in depth all of the supporting examples covered. – *course outline, including examples available by request.*

• **Bentley Building for advanced Interference Manager** **Brian Moura**

This was a hands on workshop. I chose this session as the ability to detect interferences in 3D modelling both within our own modelling organization, and cross disciplinary is a natural benefit of BIM. During the detection of interferences, the engine compares the graphic elements of one object (polygons and lines) to the graphic elements of another object within the same model, and in other models. The engine then evaluates the surfaces of each object to determine if they intersect. It is possible to detect different types of interferences, define connection tolerances, local tolerances, and clearance tolerances.

The interference manager uses J space as a programming format, and is a little 'programming heavy' however, we were guided through a series of examples with good results. A good course outline was provided, including examples. – *course outline, including examples available by request.*

**Thursday, May 24**

• **3D PDF - Easy way to impress clients** **CH2M HILL**

I attended this session to see what other users were doing with 3D PDF. CH2M Hill is a large international engineering /construction firm, based in USA. CH2M HILL employs over 18,000 employees worldwide. The presentation gave a long description of plotting and publishing with PDF. The main point of the presentation however was how to choose the PDF print function within the MicroStation print dialog, and checking the **print to 3d** box. There was a series of examples given, as well as some tips on how to navigate in the Acrobat reader environment.

I found the examples not extremely impressive compared to the size and resources of the company.

• **MicroStation rendering update** – **Pete Segal, Joe Granville**, Bentley

This is always a favourite session at BE for those interested in MicroStation Visualisation. The purpose of this session is for Bentley to review the new improvements made for visualisation, and outline what can be expected in the future. Material presented included:

**The new animation producer.** This is probably the biggest improvement for Visualisation. The old animation producer has been due for an overhaul for many years. The new producer introduces a much better, more intuitive interface, together with more advanced functionality. *See animation session on Wednesday*

**Materials** - Big improvements here as well. Materials are now stored locally. This gives you the opportunity to send a dgn file to another user without having to send pattern maps separately. Materials can be attached/assigned in level manager. Also, 3D studio materials are now supported in MicroStation. *See material session on Wednesday*

**Navigator** – Gravity and collision have been added to the navigation function within navigator. *See Navigator session Below*

**Texture Baking** – export of particle trace solution to 3D PDF

**RPC Geometry**- wireframe geometry of rpc cells visible in nonrender modes of MicroStation

**Import 3D Warehouse Data**- Ability to import Sketch Up into MicroStation

Coming soon:

Soft shadows for source lighting, will help when using ray trace direct

MultiLayered materials

Non repeating textures

Directional draping

Video Tracking / Video Matching

Network Rendering – (in process)

Administrative settings will include email notification when image complete, as well as sending the completed image via email.

New preview while rendering.

In general, the Improvements seem very impressive, and will no doubt be a big help to those of us visualising in MicroStation.

• **Navigator V8 XM What's new –Joe Granville** , Bentley

Navigator is a JSpace based program that has been newly integrated into the MicroStation package. It is an object based application, traditionally used in AutoPlant. It gives the opportunity to query objects, embed links, and link to spread sheets, etc. The application is extremely advanced, and can perform many functions, including importing data from applications such as MicroSoft Project, as well as running interference detection management .

I attended the session to see how navigator could be used for visualisation purposes. The introduction of gravity (fixed eye height) and collision work very well. Also the ability to import shadow mapping into Navigator make the program visually attractive for real time walkthroughs.

## **0.4 Conclusion**

It seems that Bentley has held their promise from last year's BE. They have come through with some impressive updates, which I think will be of benefit to those visualising in Micro Station.