Day 3: TWN Conference 2017

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CIMS –Carleton University

University Research Centre. Located in University campus but Funded through contracts and government grants. Affiliated with Azrieli School of Architecture and Urbanism. Established 2002.

2009 – sensor technology integrated into the first experimental building. BIM pilot.

Bata shoe company had its headquarters in Canada. Factory designed in Czech in the 1920s. CIMS remodeled the factory and the town owned by Bata. Digital modeling.
Main themes:

- Digitalisation
- Building Information Modelling
- Digitally Assisted Fabrication
- Digitally Assisted Story-telling
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Since 2013 Partnership with PWGSC to scan and record existing conditions in The Parliament. Now also extending to restoration, including crafts and fabrication.

Research project – modeling the existing building with all its deformities and irregularities.

Then, modeling the post-demolition building
Then, modeling the retro-fit. Creation of a covered courtyard in West Block.

2015 moved to Centre Block, and The Library.

New technique incorporating the original plans and drawings to model hidden structure. The result is the federated model of layers and skins. Had to invent and define new structural component types to describe the heritage and unique construction. Huge level of detail of surface character. Photography overlaid on point cloud data modeling and secondary source data

Verification resulted in had-modelling some elements where secondary sources were inaccurate in relation to the built structure.

2016 started on modeling East Block. Also asked to model the topography.
Challenges included bringing together all these different data sources.

Digitally Assisted Story-telling
Started by using the point-cloud data and photogrammetry and photography to create tours, 360 views and detail pop-ups about individual elements and artifacts. Interactive timeline animates the construction and development of Parliament using historic photographs. Taking advantage of all sources to allow people to see and interrogate the knowledge. Resulting in virtual reality tours – kiosk in the visitor centre.
VR built on:

- BIM Autodesk Revit
- Panorama Nodel Ninja and Nikon fish-eye lens photography
- Point-cloud data mapped on to equi-rectangular grids.

Various passive VR scenarios developed as individual stories people could choose to experience.
Developing interactive VR. Bringing together all that's been learned so people can continue to experience the Parliament even when its closed.

Panel Discussion:
Statsbygg – Using digital technology to aid design
New approach – creation of a Construction Centre.
Formerly – digitize traditional process with the focus on the process of building. Now the focus will be on the technology and how it can be used best to meet needs?
RVB -
BIM – Building Information Modeling
BAM – Building Assembly Modeling
BOEM – Building Operation and Exploitation Modeling

- Uniform national data standards
- Professionalize data management
- Information Delivery Specification – development
- Using BIM in the organizational structure

OPW -

Beginning to use BIM to model the dome and create off-site repair structure that would fit and be replaced quickly and perfectly. Working also with Scottish in relation to stone masonry repair.

AURI – Questions:
In Korea – they have developed a topographic model for city-scape where BIM models fit into the city-scape. Is this used in Canada?
In Korea – BEM B.. Element Modifier. Can BIM be used for design?
Commissioner for planning a whole new city of 500,000 people.
Will AI take over much of this work?
In Canada and Norway – building up topography and cityscape
Norway – scanning technology using drones to build up the
BIM can work up option analysis – a tool to enable the design process working between the client and the architect and the engineer, and to visualize the results for the client to understand better.

IO – Questions:
P3 projects – the consortia identify the most technology advanced tools. Allowing the marketplace to determine the most effective direction and tools rather than setting standards. The private sector reacts to major projects. Question the value of building up full BIM datasets for existing buildings, but build the standard dataset for new buildings.
Netherlands – what they need to know is what information is required to allow BIM etc to take place effectively and accurately. What standardization will help and at what level of quality?
Norway – reminder of the BIM declaration which is to do with open standards so that a public body is not locked into a single supplier's methodology.

RVB – Questions:
Is the CIMS software available commercially and is this extent of modeling cost effective? Underlaying softwares are available. Partnership with University Research Institute is a good way to advance knowledge and experiment – Government as an innovator and pioneer.
How does BIM aid the operational effectiveness phase? PSPC is looking now how to understand the operational user / building manager needs and map that to assistance from the BIM system.

Action: This area of development is clearly of importance to many members and should receive more attention in TWN. Opportunity for Gov't pioneering and innovation to be shared in fast changing field.

Indaabin New Social and Outreach Projects – Member Update – Luis

2 new projects:

1. Latin American Public Real Estate Administrators Network (RAPPAL)

10 organisations from:

- Mexico
- Uruguay
- Peru
- Ecuador
- Argentina
- Guatemala
- Panama
- Honduras

Looking to make a link between these organisations. To share – but to allow sharing without the need to travel, which some organisations cannot afford or get authority for.

2. MIMexico Social Movement (My Mexico)

'Building took time; Damaging takes seconds' – initiative to encourage respect for the state buildings and land – to value and look after these buildings and land.

Many commitments – eg Mexico city and surroundings in the metropolitan area.

Sharing with citizens the responsibility to look after public space.

Partnerships with private companies and public institutions

Radio and TV, advertising, newspaper articles, street theatre, street art, conferences in schools, fairs, games in public spaces in towns and cities.

www.mimexico.org.mx

Phase 2 plans using social media to reach the whole country.

Harnessing places as a means for social cohesion and patriotism.

Questions:

Public response? Very good. Lots of interest from TV. People like to assist and sign commitments through the website and in person. Aiming to take this movement to all states of Mexico with help of other provincial governments.