

Architecture, Engineering and Construction Seminar Session

📅 Wednesday 23 May 2018 📍 Theatre 1 🕒 9.30 - 11.30



Across the AEC sector new technologies utilising reality capture techniques enabled by laser scanners and drones are bringing change. Closer validation of construction progress, driven by Digital Engineering and the transformative BIM process are at the heart. The concept of Virtual Design and Construction is helping an industry challenged by cost overruns, to embrace new technology, share information and gain increased productivity.

Seminar Session Programme

9:30

Continuous As-built – the truth about Construction Validation



Andrew Evans, Product Manager, Topcon

Nick Salmons, Principal Laser Scanning Surveyor, Balfour Beatty Major Projects



In 2015 near real-time construction validation was possible. The hard facts though, were that the procedure's complexity required specialist survey and scanning teams and was only of interest to projects totally committed to the philosophy of Digital Engineering. Balfour Beatty are one of those companies leading that digital charge. In 2018 they now have access to a solution for near-real-time construction validation utilising a combination of hardware and software, enabling site engineers and not specialist survey and scanning crews to complete day-to-day validation tasks in a third of the time previously required. Huge time and cost savings result. Costly mistakes and project hold-ups are avoided.

9:50

Mobile Mapping, a 21st Century tool for the construction industry



Mark Reid, VP Product Management, GeoSlam

The recent collapse of Carillion and profit warnings of rival Capita, must act as a wake-up call to the construction industry. For too long, cost and project overruns have been considered a necessary but unavoidable evil. This must change. The Government's Digital Built Britain programme, unveiled last year, focuses on the transformative power of BIM and how fully embracing digital construction leads to more efficient working practices, greater collaboration, and ultimately, more projects delivered on time and on budget. The beating heart of a project is the 3D BIM model – one which is current, built in an open data format, accessible and understandable by all project stakeholders. Mark Reid will be showing the role handheld, mobile mapping plays.

10:10

Urban Virtual Design Construction – the beginning of VDC and integrating project delivery



Peter Bo Olsen, Technical Director, MT Højgaard

MT Højgaard published a paper in November 2017 about their digital practices with Urban Virtual Design and Construction (VDC) as part of the early involvement of competencies from the general contractor, other relevant parties and part of the good start of Virtual Design and Construction (VDC) and Integrated Project Delivery (IPD). The white paper provides an introduction to Urban VDC as an effective start-up on digital project collaboration, contributing to subsequent cooperation in the form of Virtual Design and Construction (VDC), and Integrated Project Delivery (IPD). Urban Virtual Design and Construction (VDC) as exemplified by Bellahøj in the municipality of Copenhagen.

10:30 **Every 3D detail matters; Big point clouds tamed**



Steven Ramsey, HDS Technical Manager, Leica Geosystems

High Definition Surveying (HDS), also known as 3D Laser Scanning or Reality Capture, is now a mature technology. However, as technologies have evolved to capture faster and more data bottlenecks in processing, deliverable extraction and sharing occur. Steven Ramsey from Leica Geosystems will share how innovations in software are keeping ahead of the curve to handle increasingly bigger data challenges. He will focus on how, by embracing next generation software, users can increase their productivity, be commercially profitable and offer a sustainable competitive-edge. Accessibility of sharing deliverables will be explored with a modern, intuitive user experience.

10:50 **Use of Unmanned Aerial Vehicle (UAV) Technology to aid terrestrial scanning for Reality Capture & BIM**



Keith Wakeley, Drone Survey Instructor, Drone Pilot Academy

Capturing reality using terrestrial laser scanning is now part of the BIM workflow. Huge quantities of data can be captured quickly. Access to roofs, difficult to reach areas or dangerous structures however, present a hurdle to capturing the full picture. UAV technology, together with photogrammetric software and increased computing power, enables us to capture this missing data quickly and safely with usable deliverables. With pre-planning and an integrated workflow we are able to combine data of facades with photogrammetry derived point cloud data of the upper elevations and roof to produce a coherent, accurate point cloud model of the external envelope of buildings for feeding into the BIM workflow.

Related Seminar Presentations



Talks in **other seminar sessions** that include content relevant to Architecture, Engineering and Construction:

Tuesday 22

Bridging the gap between BIM and Survey

Andrej Mocicka, Sales & Business Development Manager, LISTECH



Building Information Modelling (BIM) Seminar Session
09.55 | Tue 22 | Auditorium

Emerging immersion in construction

Martin McDonnell, Chairman and Founder, Soluis Group and Sublime



Visualisation / AR / VR Seminar Session
10.10 | Tue 22 | Theatre 1

Survey4BIM: It's all about Space and Time

Andy Evans, Product Manager, Topcon



Building Information Modelling (BIM) Seminar Session
10.45 | Tue 22 | Auditorium

The 4th industrial revolution, where monitoring data meet BIM

Marco Di Mauro, Segment Manager, Leica Geosystems



Building Information Modelling (BIM) Seminar Session
11.35 | Tue 22 | Auditorium

How Digital Built Environment can help to deliver better homes

Paul Surin, Head of Digital Built Environment, Wienerberger



Building Information Modelling (BIM) Seminar Session
12.00 | Tue 22 | Auditorium

Addressing the supply chain: the true ROI of UAV survey services

William Tompkinson, Principal, Insightful Dimensions



UAVs Seminar Session
12.20 | Tue 22 | Theatre 1

Laser scanning - an essential part of the digital construction tool kit

Mark Taylor, Digital Construction Manager, BAM Construction



Laser Scanning Seminar Session
14.05 | Tue 22 | Auditorium

Related Commercial Workshops



Workshops hosted by exhibiting companies

that include content relevant to Architecture, Engineering and Construction:

Tuesday 22

High precision satellite positioning and geomatics solutions

CHC Navigation

Tue 22 | 9:30 - 10:00 | Room B

Airborne laser scanning and the powerful new Galaxy PRIME

Teledyne Optech

Tue 22 | 9:30 - 10:00 | Room C

How do you complete accurate surveys with drones?

Drone Pilot Academy

Tue 22 | 9:30 - 10:00 | Room H

Geotechnical/Structural wireless monitoring product launch

Senceive

Tue 22 | 10:15 - 10:45 | Theatre 2

Vessel-based marine mobile laser scanning

Swathe Services

Tue 22 | 10:15 - 10:45 | Theatre 3

Launch of the Vercator Toolkit for the automatic registration of Point Clouds

Correvate

Tue 22 | 10:15 - 10:45 | Room C

Next generation software cyclone, JetStream and Cloudworx

Leica Geosystems

Tue 22 | 10:15 - 10:45 | Room E

Geotechnical/Structural wireless monitoring product launch

Senceive

Tue 22 | 10:15 - 10:45 | Theatre 2

Underwater tracking and positioning, in inshore and nearshore environments

Sonardyne International

Tue 22 | 11:00 - 11:30 | Theatre 3

Introducing ROBIN MINI +UAV LiDAR system 3D Laser Mapping

Tue 22 | 11:00 - 11:30 | Room H

Remote sensing satellite solutions and services

DFH Satellite Company, CAST

Tue 22 | 11:45 - 12:15 | Room B

Creation of a 3D point cloud from UAV-collected images

Blue Marble Geographics

Tue 22 | 11:45 - 12:15 | Room F

3D mobile mapping technology with dedicated real-time work flows

SITECO Informatica

Tue 22 | 11:45 - 12:15 | Room H

Marine asset integrity and structural monitoring surveys

Bibby HydroMap

Tue 22 | 12:30 - 13:00 | Theatre 3

Handheld 3D scanning and real time data processing

DotProduct

Tue 22 | 12:30 - 13:00 | Room C

N4ce software re-launch with point cloud processing

Applications in CADD

Tue 22 | 12:30 - 13:00 | Room F

Revolutionary new data collection and field software solutions for surveyors

Trimble

Tue 22 | 12:30 - 13:00 | Room E

Visual-ize and Atlas Computers showing GeoMax field to finish and SCC point cloud processing

Visual-ize

Tue 22 | 12:30 - 13:00 | Theatre 2

Key features of UKBuildings detailed UK property database

Verisk

Tue 22 | 13:15 - 13:45 | Room C

Photo capture for accurate 3D site data

Carlson Software

Tue 22 | 13:15 - 13:45 | Room F

Augmented Reality, visualising buried utilities

Select Surveys

Tue 22 | 13:15 - 13:45 | Room B

Mago3D - Brand new web based open source GeoBIM platform

Gaia3D

Tue 22 | 14:00 - 14:30 | Room C

Survey services and data capture

L&M Survey Services

Tue 22 | 14:00 - 14:30 | Room E

How to implement Verity and EdgeWise software into construction workflow

ClearEdge3D

Tue 22 | 14:00 - 14:30 | Room F

Ultra wide band ground penetrating radar - new applications

Catsurveys

Tue 22 | 14:00 - 14:30 | Room H

BIM Solutions for infrastructure design

Sierrasoft

Tue 22 | 15:30 - 16:00 | Room C

The Microdrones MD4 - 1000- The scalable rotary wing UAV

Survey Solutions Scotland

Tue 22 | 15:30 - 16:00 | Room E

Next generation of spatial analytics and predictive simulation software

Urban Hawk

Tue 22 | 15:30 - 16:00 | Room F

Surveying to create BIM data of solid objects

Adtollo

Tue 22 | 14:45 - 15:15 | Room C

LupoScan- Efficient workflows for powerful point cloud analysis

Lupos3D

Tue 22 | 14:45 - 15:15 | Room E

Special applications of ground penetrating radar for drones

Geoscanners

Tue 22 | 14:45 - 15:15 | Room H

Wednesday 23

3D Survey software for processing drone survey and photogrammetry including flood modelling

3DSurvey

Wed 23 | 10:15 - 10:45 | Theatre 3

Updates on SurphSLAM high precision Mobile Mapping solution

Surphaser / MD3D

Wed 23 | 10:15 - 10:45 | Room E

Geophysical Surveys - it's not all GPR!

Phase Site Investigations

Wed 23 | 10:15 - 10:45 | Room F

3D mapping solutions for mobile mapping, UAS mapping, indoor mapping and aerial oblique mapping

Orbit GT

Wed 23 | 10:15 - 10:45 | Room H

Updates in laser scanning technology

FARO Technologies

Wed 23 | 11:00 - 11:30 | Room E

Latest advances in drone surveying integrating UAV technology within current workflow

COPTRZ

Wed 23 | 11:00 - 11:30 | Room F

Reality modelling and the latest innovations in 3D technology

Bentley Systems

Wed 23 | 11:45 - 12:15 | Theatre 3

GeoMax surveying instruments and XPAD software

GeoMax Positioning

Wed 23 | 11:45 - 12:15 | Room B

Geospatial support systems for Smart Cities illustreets

Wed 23 | 11:45 - 12:15 | Room C

Affordable, on-demand high-accuracy GNSS

Trimble

Wed 23 | 11:45 - 12:15 | Room E

Drone Surveys - DIY or hire contractors?

RUAS

Wed 23 | 11:45 - 12:15 | Room F

Ultracam aerial camera and Ultracam software

Vexcel Imaging

Wed 23 | 11:45 - 12:15 | Room H

Advances in 3D Reality Capture making it an everyday technology

Kaarta

Wed 23 | 12:30 - 13:00 | Theatre 3

Geospatial datasets for 3D urban visualisation

SkylineGlobe UK

Wed 23 | 12:30 - 13:00 | Room C

Undet4Revit - Make your Revit point cloud friendly. Learn efficient Scan2BIM workflows.

UNDET Point Cloud Software

Wed 23 | 12:30 - 13:00 | Room E

Delair UX11 - The professional fixed wing UAV for large area mapping

Survey Solutions Scotland

Wed 23 | 12:30 - 13:00 | Room F

Desktop and mobile software solutions

MicroSurvey Software

Wed 23 | 12:30 - 13:00 | Room H

Geotechnical/Structural wireless monitoring product launch

Senceive

Wed 23 | 13:15 - 13:45 | Room B

iSTAR Pulsar - A fully automatic, mobile 360 degree imaging system developed in collaboration with Google for Street View

NCTech

Wed 23 | 13:15 - 13:45 | Room C

Mapping Pegasus Two, redefining picture capture concept

Leica Geosystems

Wed 23 | 13:15 - 13:45 | Room E

Drone captured data, its applications and the law

Drones on Demand

Wed 23 | 13:15 - 13:45 | Room F

Hyperspectral and photogrammetric remote sensing and geospatial services

2Excel geospatial

Wed 23 | 14:00 - 14:30 | Room B

Planning and visualisation web application for geospatial professionals

Maptasks

Wed 23 | 14:00 - 14:30 | Room C

Fast. Flexible. Foolproof. Making indoor mobile mapping simple

GeoSLAM

Wed 23 | 14:00 - 14:30 | Room E

Unmanned Surface Vehicle with single beam Echosounder for topographic/hydro-graphic survey workflow

Seafloor Systems

Wed 23 | 14:00 - 14:30 | Room F

Laser scanning deformation monitoring

ENCARDIO-MONITERRA GROUP

Wed 23 | 14:00 - 14:30 | Room H

2018 release presentation: report editor, stockpile volume computation and much more

3DReshaper

Wed 23 | 14:45 - 15:15 | Theatre 2

Innovative software solutions for the surveying, civil engineering and geospatial industries

LISTECH

Wed 23 | 14:45 - 15:15 | Theatre 3

Vectorisation of data: Fixed point tracking vs. surface scanning systems

Pangea Geosystems

Wed 23 | 14:45 - 15:15 | Room C

Industrial scale mobile mapping that revolutionises AEC, BIM and FM workflows

NavVis

Wed 23 | 14:45 - 15:15 | Room E

UAV and crane photogrammetry in survey and construction

Opti-cal Survey Equipment / Pix4D

Wed 23 | 14:45 - 15:15 | Room F

Using a small robot for stake out and pre-marking is more effective than using a human

TinyMobileRobots

Wed 23 | 15:30 - 16:00 | Room E

Accurate and reliable UAV mapping and inspection in the face of jamming and spoofing

Septentrio

Wed 23 | 15:30 - 16:00 | Room F

Web based 3D point cloud and iOS augmented reality solutions

Critigen

Wed 23 | 15:30 - 16:00 | Room H