Don't Forget the Infrastructure, InfraWorks, and Digital Masterplanning Developments

Speaker Ian Philpott – URS

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The aim of this roundtable is to discuss the common issues with masterplanning mixed use developments and how Infraworks could be used to address them. Do any of these statements sound familiar when working on the early stages of project? I've only been given the masterplan as a pdf and now I need to do the outline design of roads and drainage. There isn't enough room to accommodate sustainable urban drainage (SUDS) features. What's the potential impact on buildings from a given flood event? Once we have established the key problem areas we will discuss how we can harness the power of the visualisation capabilities available within Infraworks to demonstrate to our clients potential issues and possible solutions to those problems. We will then discuss the problems we have had when trying to create development models in Infraworks and how these can be overcome.

Learning Objectives

At the end of this class, you will be able to:

- Share real world project experiences from other participants with their teams once back in the office
- Understand how we can use Infraworks to provide clarity, continuity and agility of project data through project lifecycle.
- Improve workflows with techniques found successful by others.
- Improve integration of the needs of infrastructure at the masterplan stage.

About the Speaker

Ian Philpott graduated from Oxford Brookes University in 1996 with a Bachelor's degree in Civil Engineering. Since graduation, Ian has worked for both contractors and consultants on a wide variety of infrastructure-related projects. He now specialises in 3D modelling of complex infrastructure projects and championing the use of 3D modelling and Building Information Modelling (BIM) processes throughout a team based in 5 U.K. office locations. Ian also chairs URS Corporation's U.K. and Ireland AutoCAD Civil 3D Steering Group, which is responsible for developing the standards, templates, and workflows for the use of AutoCAD Civil 3D software. Ian has just completed Phase 1 of a £1.1 billion mixed-use development in which he used AutoCAD Civil 3D software and Navisworks project review software to coordinate the design of the highways, infrastructure, drainage, utilities, and external building interfaces. He has now moved on to a major urban-regeneration project, where he is responsible for project-wide BIM processes and model coordination across various disciplines.

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Background

A good masterplan is fundamental to a good development project. But how well does a typical masterplan consider the requirements and needs of the infrastructure? Is there adequate spatial provision for roads and swept paths, visibility, drainage, utilities, pedestrians and cyclists? In my experience the answer to these questions is no, and there is insufficient spatial provision for infrastructure.

So how do we better communicate and incorporate the needs of infrastructure in to the masterplanning process? Is a digital masterplan using Infraworks an answer? In order to answer these questions fully we need to look at the challenges we currently face with processes and technology. This roundtable session aims to highlight some of these issues and look at how we can use Infraworks to communicate more effectively the needs of Infrastructure in the masterplanning process.

Introduction

I really want to get everyone to get there thinking caps on before attending this roundtable. The aim of this handout is to outline the questions we will aim to address during the discussions so as to allow everyone to participate and gain maximum benefit from the class discussions.

Everyone attending this class will have different experiences dealing with masterplanning, based on the discipline in which they work, type of developments they most commonly work on and experience in the field. We want to draw on those experiences to better answer the class objectives and give everyone attending a better appreciation of the drivers from each discipline in terms of development masterplanning. After the session I will produce another document with the findings of the session and circulate this via the class page on the AU website.

Below are the class objectives and the questions for everyone to think about in advance of the session to facilitate an active discussion and help us answer the class objections

Share real world project experiences from other participants with their teams once back in the office

Key Question 1 - *What are the key interface areas between different disciplines where better integration would improve the masterplan concept?*

Understand how we can use Infraworks to provide clarity, continuity and agility of project data through project lifecycle.

Key Question 2 - *How can the Infraworks functionality be used to address the problems identified in key question 1 and how can Infraworks provide continuity of this data through the project lifecycle?*

Improve workflows with techniques found successful by others.

Key Question 3 - *What issues have you encountered with digital masterplannig workflows, particularly in relation to integration of buildings, roads, utilities and constraints data in to the masterplan and how have you overcome them?*

Improve integration of the needs of infrastructure at the masterplan stage.

Key Question4 - *What are the key areas of infrastructure that are often forgotten during the masterplanning process and how where better integration of the masterplan elements would produce a better design solution?*