CV6061-R-P - Don’t Forget the Infrastructure, InfraWorks, and Digital Masterplanning Developments

Ian Philpott

Development Infrastructure Engineer

Twitter: @Ian_Philpott

Class summary

- Techniques for using Autodesk Infraworks as a tool for masterplanning development projects, focusing on how it can be used to drive the needs of infrastructure.

Key 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

- 18yrs Experience with both Consultants and Contractors
- Joined Scott Wilson in 2001, which was bought by URS and now part of AECOM.
- Specialises in the design and 3D modelling of complex development infrastructure projects
- Actively involved in fee earning projects day to day
- Chair of URS' Civil3D Steering Group within EMI Region
- Passionate about BIM processes

Introduction

- Frustrated with the current process
- Lack of engagement on infrastructure needs
- Often seen as the “bad guys”
- Masterplans are all to often paper based
- Infrastructure is not visual enough
- Poor workflows

Which disciplines do we have in the room?

Ground Rules

- Everyone's opinion is valid
- Don’t interput or talk over people
- We don’t all have to agree

The Questions

Question 1

What are the key interface areas between different disciplines where better integration would improve the masterplan concept?

Question 1 – Ian's Pointers

- Use of topography
- Gravity drainage constraints
- Roads and vehicle tracking
- Roads and visibility
- Space for utilities
- Setting floor levels
- Incorporation of SUDS
- Earthworks considerations

Question 1 - Conclusions

- Summary of Class Discussions – Added 10/12/2014
  - Production of digital information for submission to approving authorities from the models
  - Lack of vision in the masterplan relating to stormwater management needs

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?

Question 2 – Ian's Pointers

- Analysis themes
- Watershed analysis
- Junction adjustment based on vehicle
- Civil3D integration
- Platform grading in Infraworks

Question 2 - Conclusions

- Summary of Class Discussions – Added 10/12/2014
  - 7 people in class, 1 user, 1 @ proof of concept stage, others not using in production
  - Infraworks not all there for use as masterplanning tool
    - Having issues with exporting correct file types to import in to Infraworks. Trying all till one works. To variable behaviour
    - No cul-de-sac design or initial utility planning tools
    - Not found away to set catchment permeability for surface water

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?

Question 3 - Pointers

- Poor interoperability between Revit and Civil3D – Still working on it
- Drainage integration – Sewers for Adoption 7 requirements at building frontage
- Earthworks balance

Question 3 - Conclusions

- Summary of Class Discussions – Added 10/12/2014
  - Earthworks and remediation layout and scheduling
  - Site drainage both pipe and overland flow
  - Drainage easements
- All these have an impact and cost and programme whether direct to developer or indirect through loss of developable land or indirect through lower prices due to private easements to be maintained by owner. These need to be considered at masterplan stage

Question 4

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

Question 4 - Pointers

- SUDS
- Turning heads
- Levels management between buildings
- Overland flow management

Question 4 - Conclusions

- Summary of Class Discussions - – Added 10/12/2014
  - Building interaction with surrounding environment
  - Snow dump space
  - Flooding 100 yr + 2ft (US) and 100 yr plus climate change (UK) to set floor levels
    - Proof required – Output from model
    - Danger to life, need to be accurate.

Summary

Summary – Added 10/12/2014

- The class feel that Infraworks is not yet full ready for use as a masterplanning tool
- Better integration is required for 2 way data between Civil3D, Revit and Infraworks
- Civil3D needs to move to a more object based environment like Infraworks and Revit
- Better Infraworks tools for storm water / flooding, utilities design and earthworks needed

Thank you for participating. Enjoy the last day of AU

ian.philpott@urs.com
@ian_philpott

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time

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