BIM Driven Takeoff, Estimating, Scheduling, and More
AEC-ST/EcoBuild – Session S-109 – 10-Dec-08

Tocoman
- Over 17 years experience in quantity and cost management
- Offices in Finland, Sweden, Dubai and Singapore
- Experience
  - BIM development started 6 years ago
  - Over 400 projects done
  - Over 200 users in 6 countries

Digital Alchemy
- http://DigitalAlchemyPro.com
- Office in Seattle – team size = 4
- BIM Products and Services
- North American Distributor for Tocoman, Solibri, and Eurostep
- Working with several organizations to transition to BIM based solutions (including GSA, NBS, CSI, ICC, Jacobs, …)
- Team has BIM experience back to 1984
- Autodesk, Visio, Microsoft mgmt roles since 1993
- Technical Director for IAIA
  - Led the creation of IFC and development through first 3 releases

Examples of BIM Projects
- Coffee Factory in Helsinki Finland
- Hospital in Lund Sweden
- Tennis Center in Helsinki Finland
- Bridge in Northern Finland
- Hotel in Tampere Finland
- Sports Arena in Malmö Sweden
- Business Park in Dubai
- Foundation, South Carolina, USA
- Concrete Factory in Russia
More Information Using BIMs

- Building models promote informed decision making
  - More information available
  - Improved information quality (accuracy, consistency, detail)
  - Project risks are reduced

Tocoman’s Philosophy

- Customers want to have open solutions
  - Select which applications they use
- Designers will make the building models
  - Contractor’s own model is temporary solution
- Requirements for designer’s models need to be minimized
  - Requires flexible quantity take-off tools
- Quantities will be produced centrally and used by multiple parties
  - Might be calculated 7-8 times today
- Up-to-date quantities will be available for all project members

How to Utilize BIM?

- There is no single way to utilize BIM
- Methods are dependent on...
  - What building models are available
  - The contents of each building model
  - Target processes that will use the quantities
    - Estimating
    - Scheduling
    - Procurement

Technical Overview

- Estimating
  - Microsoft Excel
  - CostWorks
  - Timberline
- Scheduling
  - Microsoft Project
  - Primavera
  - Vico Control
- Construction Mgmt
  - Autodesk Navisworks
  - Microsoft Excel
  - Express Server

Demo – Step 1

Importing assemblies from Timberline

Autodesk Revit
Tocoman (Internet)
Sage Timberline

Demo – Step 2

Quantity take-off from building model

Autodesk Revit
Tocoman (Internet)
Sage Timberline
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Demo – Step 3
Creating a cost estimate (bid)

Autodesk Revit ➔ Tocoman (Internet) ➔ Sage Timberline

Demo – Step 4
Changes to the building design

Autodesk Revit ➔ Tocoman (Internet) ➔ Sage Timberline

Demo – Step 5
Analyzing cost changes (change orders)

Autodesk Revit ➔ Tocoman (Internet) ➔ Sage Timberline

Benefits
- Faster quantity take-off
- Improved accuracy
- Transparent process
- Automated management of change orders
- Re-using quantities in multiple tasks
  - Scheduling
  - Procurement
  - Construction Management
- Works with existing applications
- No need to make contractor’s model

Integration with 3rd Party Tools

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Software

Build on Information

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Application Suite USA

Process

Design → Quantity Take-off → Construction Planning

- Autodesk Revit
- Autodesk ADT
- Graphisoft ArchiCAD
- Tekla Structures
- Progman MagiCAD

Build on information

Estimating

(Software)

Scheduling

(Primavera or MS)

Procurement

(Timberline)

Tocoman in North America

- Tocoman Distributor = Digital Alchemy
- www.DigitalAlchemyPro.com
- Applications have been localized for the US market by a local expert
- Development partner with: Autodesk, Graphisoft, Timberline, and Primavera
- Authorized reseller of RS Means databases
- First projects completed - Accu-Crete (Washington DC)
  - Utilizing ADT models for:
    - Cost estimating
    - Construction estimating

QUESTIONS?

AEC-ST Conference- Washington, DC

Tomi Tutti – Director of Products – Tocoman
Richard See - Managing Director – Digital Alchemy