Collaboration

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Over View

- Why Collaborate?
- Basic Principles
  - Coordination of Architectural, Structural and MEP Disciplines
  - Interference and Clash Detection
  - Copy Monitor
- Best Practise
  - Data Leverage
  - External Collaboration
- Getting the advantage over your competitors
  - Wide Area File Systems (WAFS)
  - Additional Collaboration Software
- What to Avoid
- Tips and Tricks

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Why Collaborate?

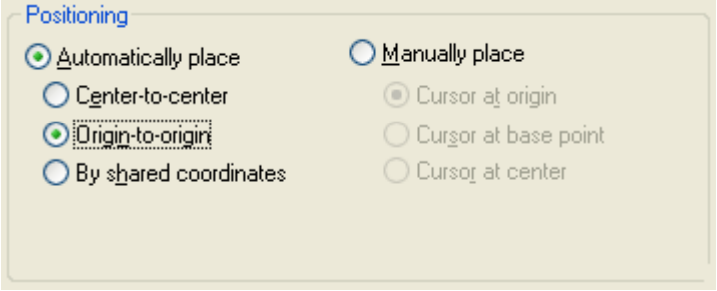
- Increased coordination dramatically reduces the number of RFI's related to poor documentation.
- Minimise design and documentation time by reducing rework between design disciplines.
- Get it right the first time.

Basic Principles – Arch, Struct and MEP coordination

- Set boundaries of responsibility at the outset of your project and agree on your prefered method and frequency of data sharing.

- Divide your model into worksets and linked files that reinforce areas of responsibility and improve model preformance.

- Agree the type of coordinate positioning system to be used on your project i.e.
  Center to Center
  Origin to Origin
  Shared Coordinates



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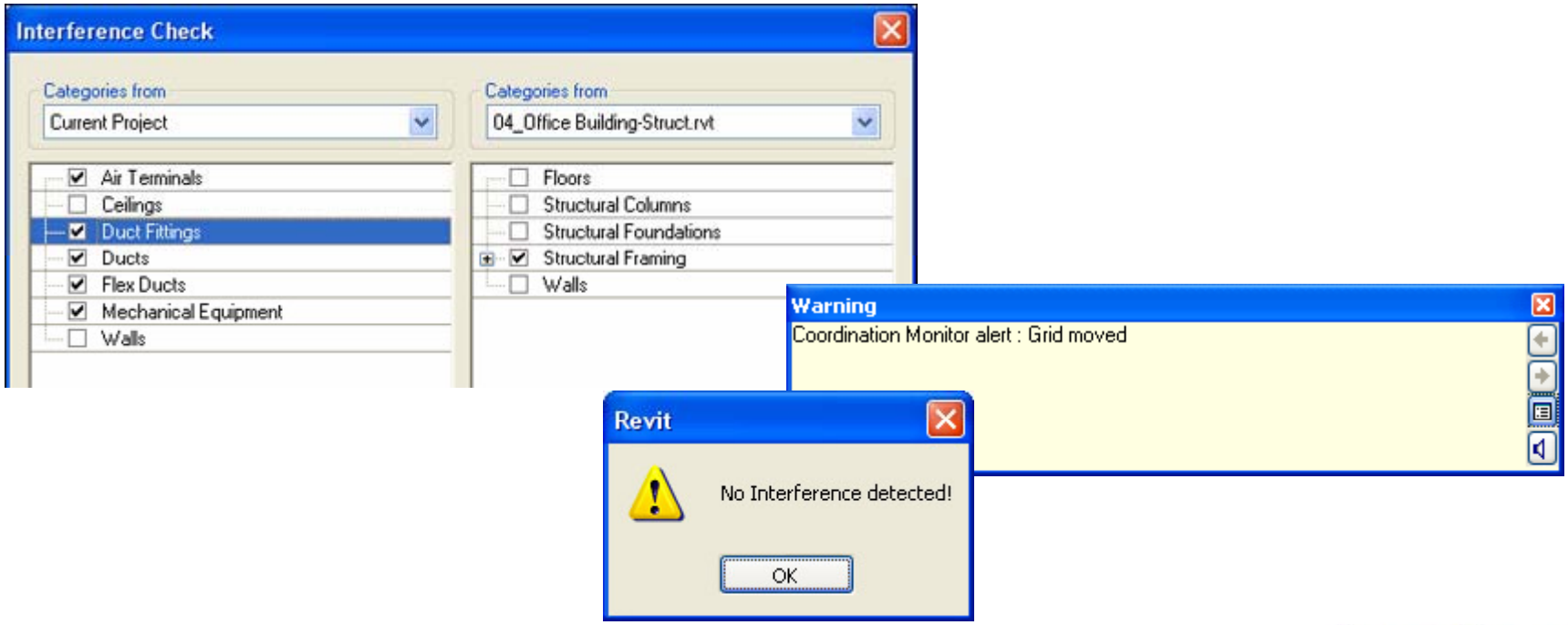
Basic Principles – Interference and Clash Detection

- Use Revit's Interference Check to audit your model against other disciplines for potential design coordination errors.



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Basic Principles – Copy Monitor

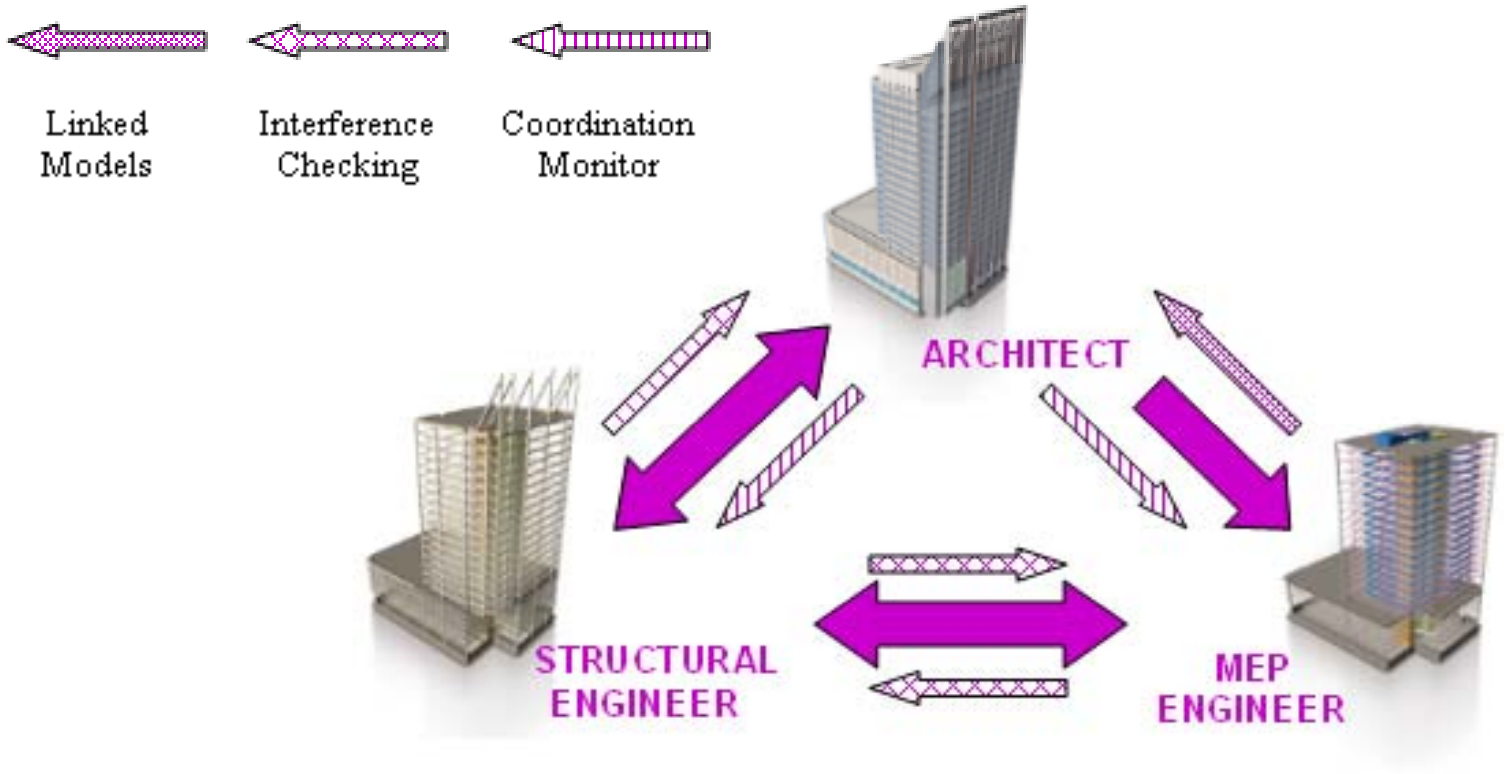
- Use Revit's Coordination Monitor to set up real-time monitoring of Key model elements i.e. grid lines, levels and the main structural frame.

- **Architect > Structural Engineer :** Structural Engineer can leverage the architect's model using **Copy/Monitor** to create copies of building components from the architect's model and monitor it for change.

- **Architect > MEP Engineer :** MEP Engineer can leverage architect's model to position components in context. **Coordination Monitor** is used to leverage the architect's rooms and levels.

- **Structural Engineer > MEP Engineer :** Both parties benefit from interference detection to avoid collisions between structural and MEP systems with **Linked Files**.

Basic Principles – Copy Monitor workflow diagram



Best Practise – Data Leverage

- Link external consultants models directly into your own model.
- Keep Copy Monitor relationships to a minimum depending on the scale of your project i.e. Grids and Levels.
- Create “Smart Families” so you can extract additional data as the design progresses i.e. Create door and window families with parameters for hardware scheduling.

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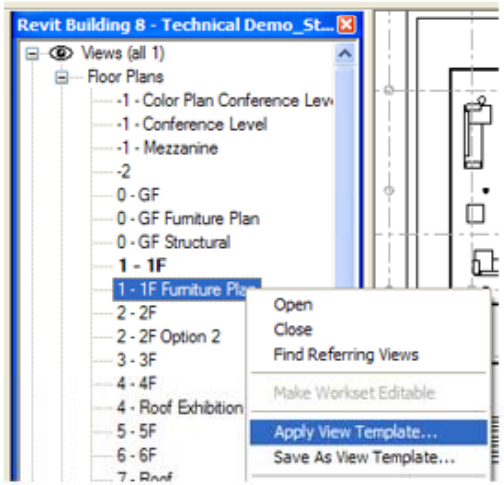
Best Practise – External Collaboration

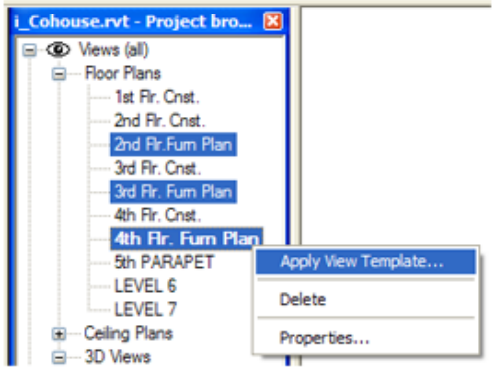
- The design team should be using the same Version and Build of Revit.
- Set up view templates and 3D views to highlight and overlay other disciplines models for fast visual coordination.
- FTP sites and Project Portals to keep your data secure and availible “live” via the internet.

aconex

Autodesk Buzzsaw

BIW technologies





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Getting the advantage over your competitors

- Wide Area File Systems (WAFS), enable a remote workforce to collaborate in real-time on the same model.

riverbed Think fast.

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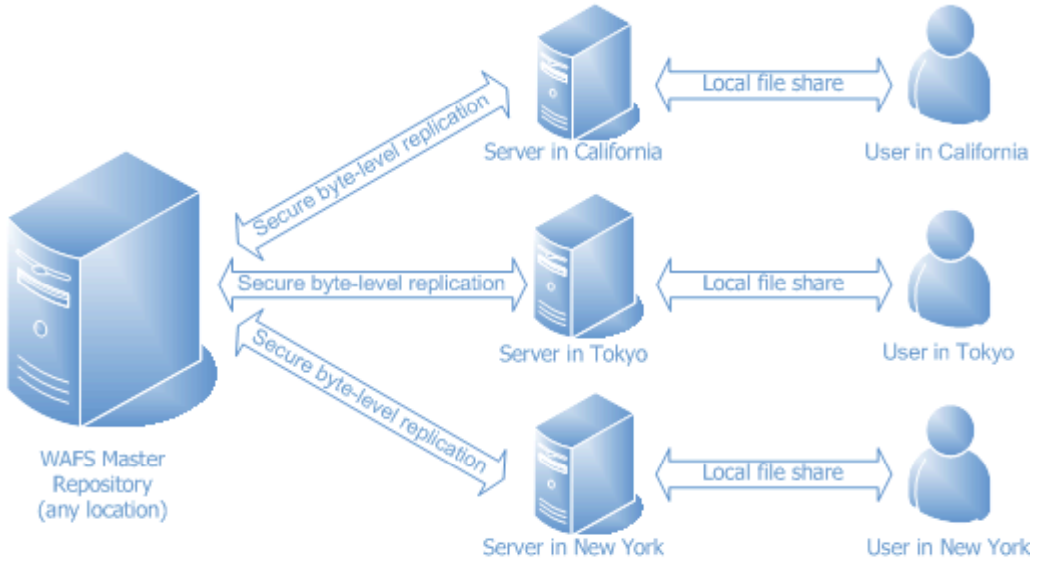
Availl

BlueCoat



- Byte-level differencing is used to replicate data at all locations - only changes are transferred.
- Files are automatically locked at all locations when in use.
- Changes are replicated to all locations in real-time when a user saves.

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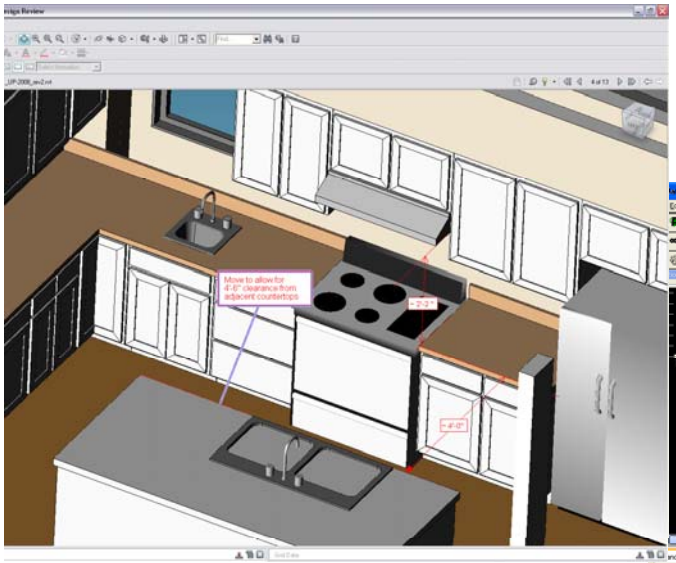
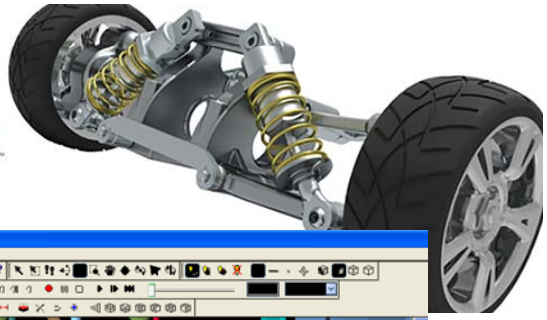
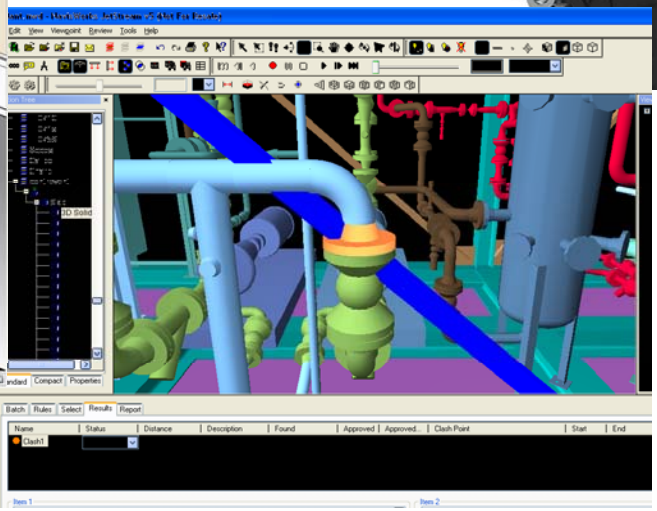
Getting the advantage over your competitors

- Autodesk Navisworks, Design Review, Freewheel.
- iPhones and PDA's for remote collaboration and access to data.







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What to Avoid

- Avoid creating too many unnessercary work sets and linked files.

- Avoid mismatched UNC (uniform naming convention) file paths i.e.
  Location 1 (\\server1\projects\Revit File)
  Location 2 (\\server2\projects\Revit File)

Tips and Tricks

- Use the 3D Section Box to carry out real-time coordination reviews of your model.

- The Microsoft Knowledge Base Article id 829885 - Consolidation Roots in Windows Server 2003, provides a useful fix to UNC file pathing issues when working with WAFS and Revit. http://support.microsoft.com/default.aspx?scid=kb;[LN];829885

Thank you

Questions ?

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