



An IT Infrastructure for Long Term Research & Development at the CRC for Construction Innovation

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Programs

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Platform Director:
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Deputy Platform
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Inputs

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Why Long Term?

- CRCs have 7 year life
 - Possibility of extension
- Reviews at 2, 5 and 7 year intervals
- Need to move appropriate deliverables towards commercialisation

Why an IT Infrastructure?

- Working on various ICT domain projects
 - Estimation & viewing
 - Structural
 - Code Checking
 - Environmental analysis
 - Virtual worlds & early design
 - Parametric design at early stage
 - Synthesis
 - architectural, environmental, bldg services, structural

Why an IT Infrastructure?

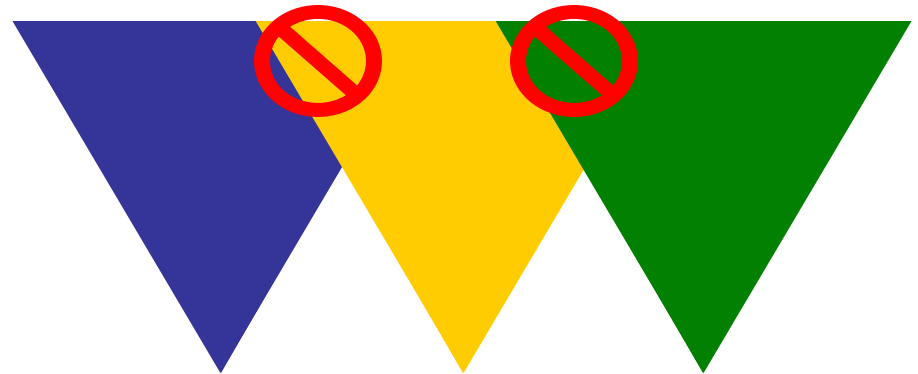
- Need to reduce redundancy in effort
 - More “bang for the buck”
- Allow incremental development across project teams
- Allow development across “versions” of projects
- Provide unifying mechanism

Providing Unifying Mechanism

- We want this:

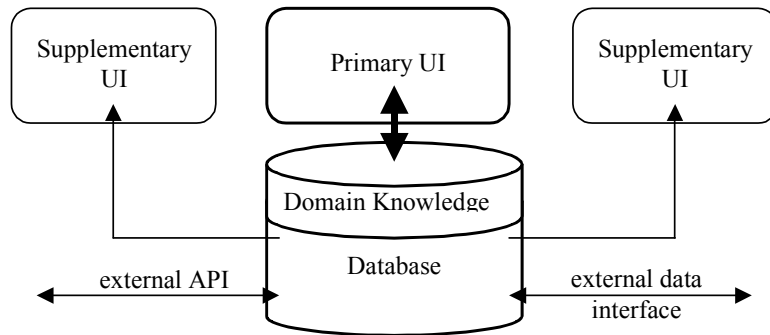


- Not this:

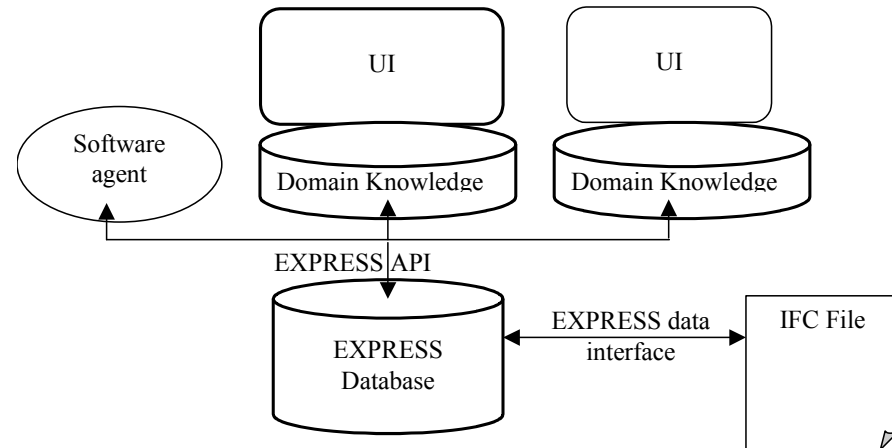


Single User Architectures

“Standard” single user



CRC-CI single user



Existing Interface – Estimating & Viewer

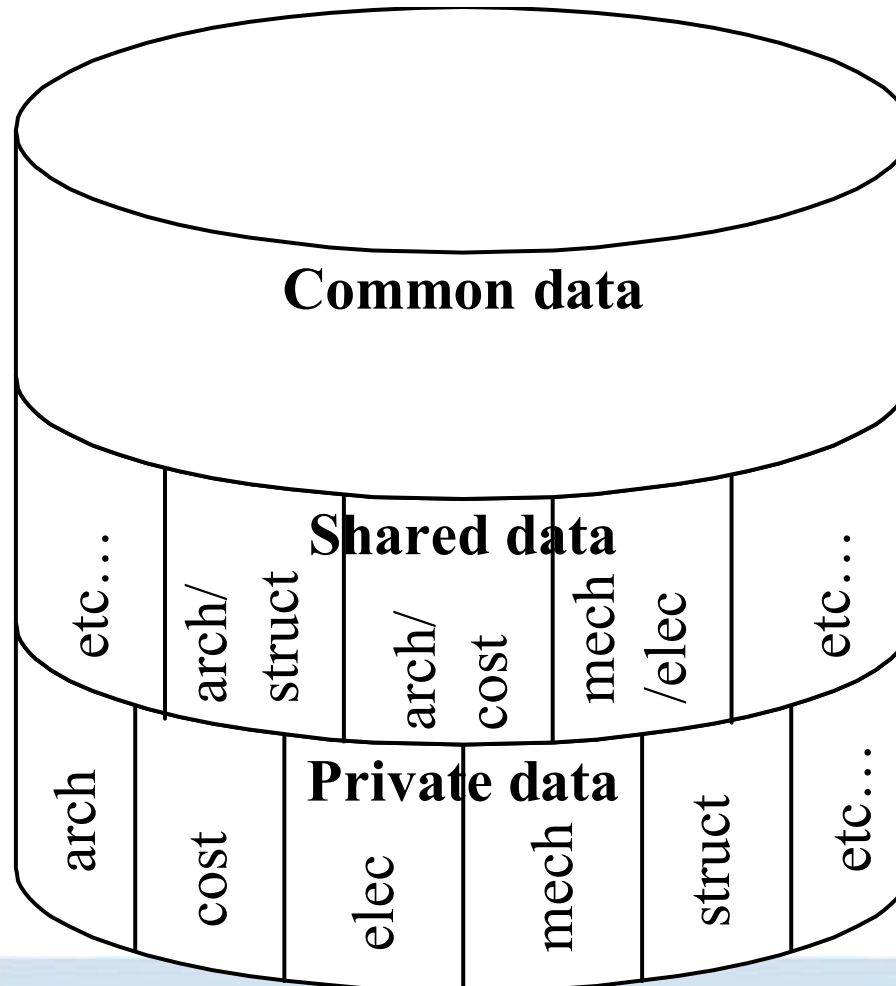
The screenshot displays the 'Project Quantity and Cost Estimation' software interface. The main window is divided into several sections:

- Table:** A table with columns for Description, Units, Quantity, Unit Rate, and Cost. It lists various construction items such as 'Ground beam placed between excavated face and formwork' and 'Slab on ground up to 200mm thick and attached thickenings, ground beams, etc.'.
- Left Sidebar:** A list of construction items, including 'Concrete' and 'Formwork' categories.
- Right Sidebar:** A control panel with sections for 'EDM database', 'Repository', 'Model', 'Sites', 'Predefined Views', and 'Objects'. It includes dropdown menus and checkboxes for filtering the 3D view.
- 3D View:** A 3D rendering of a construction site with various elements highlighted in different colors (yellow, green, blue).
- Bottom Panel:** A taskbar showing the Windows Start button and several open applications, including 'Project...', 'Micro...', and 'CRC IF...'. The system clock shows 11:47 AM.

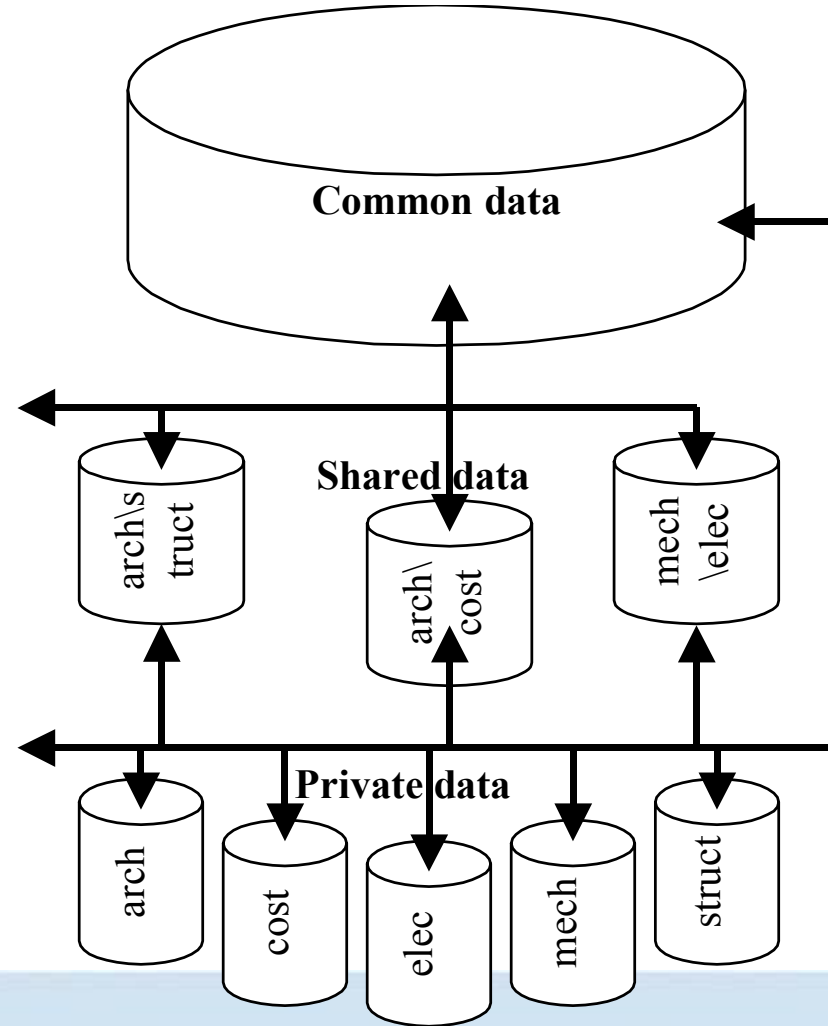
Multi-user Issues

- Privacy of the information & IP
- Level of trust in the database administrator
- Capability of companies within AEC-FM industry to manage shared data and DBs.
- Technical issues are resolvable using current database technology
 - maintaining privacy, access control, etc

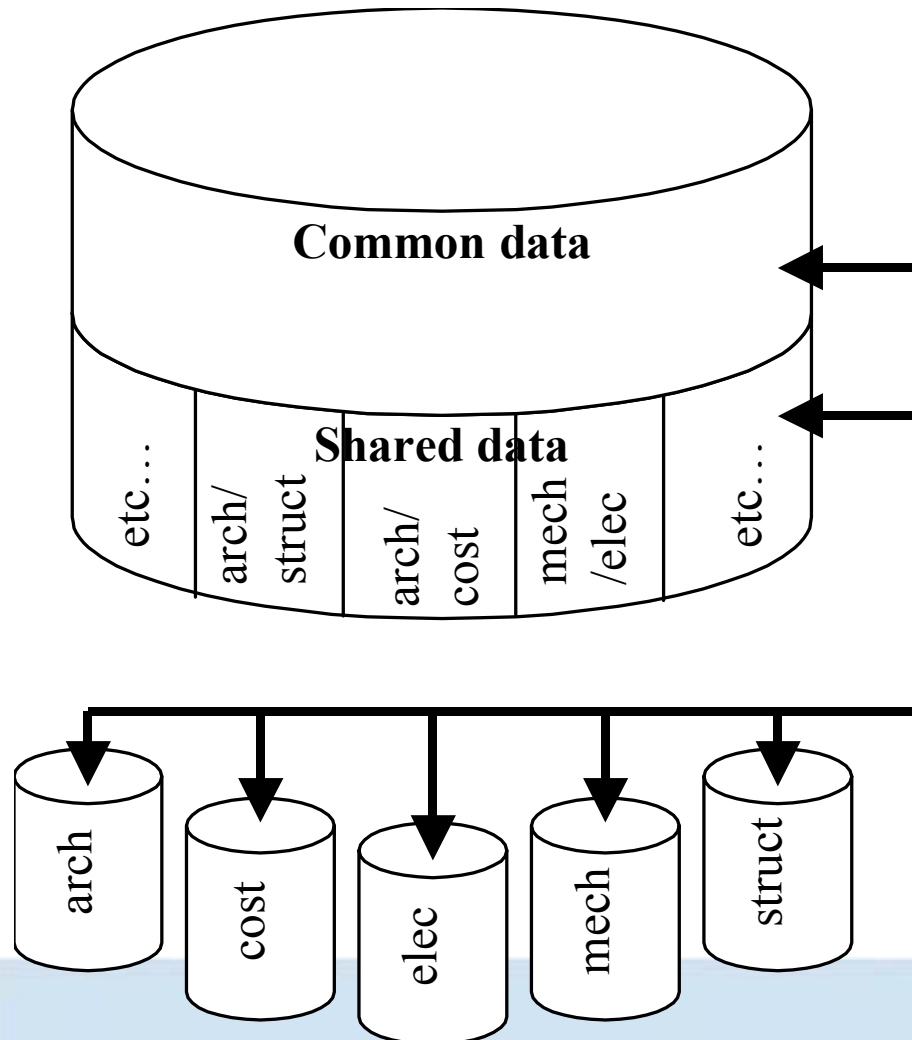
Architectures 1: Common



Architectures 2 :Federated



Architecture 3: Partially Federated



Issues

- Appropriate methods of access control
- Versioning
 - Same project
 - Instances within a project
- Defining "views"
 - different members of the project team
 - which objects
 - which aspects of those objects
 - methods of interaction with the objects

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