

Bentley Building Dataset Extension

Topics

- Dataset Overview
 - Purpose of BIM
 - Outputs from BIM
 - Inputs into BIM
- Dataset Customization
 - Project Datasets
 - Company Datasets
 - Special-purpose Dataset Extensions

Dataset Overview

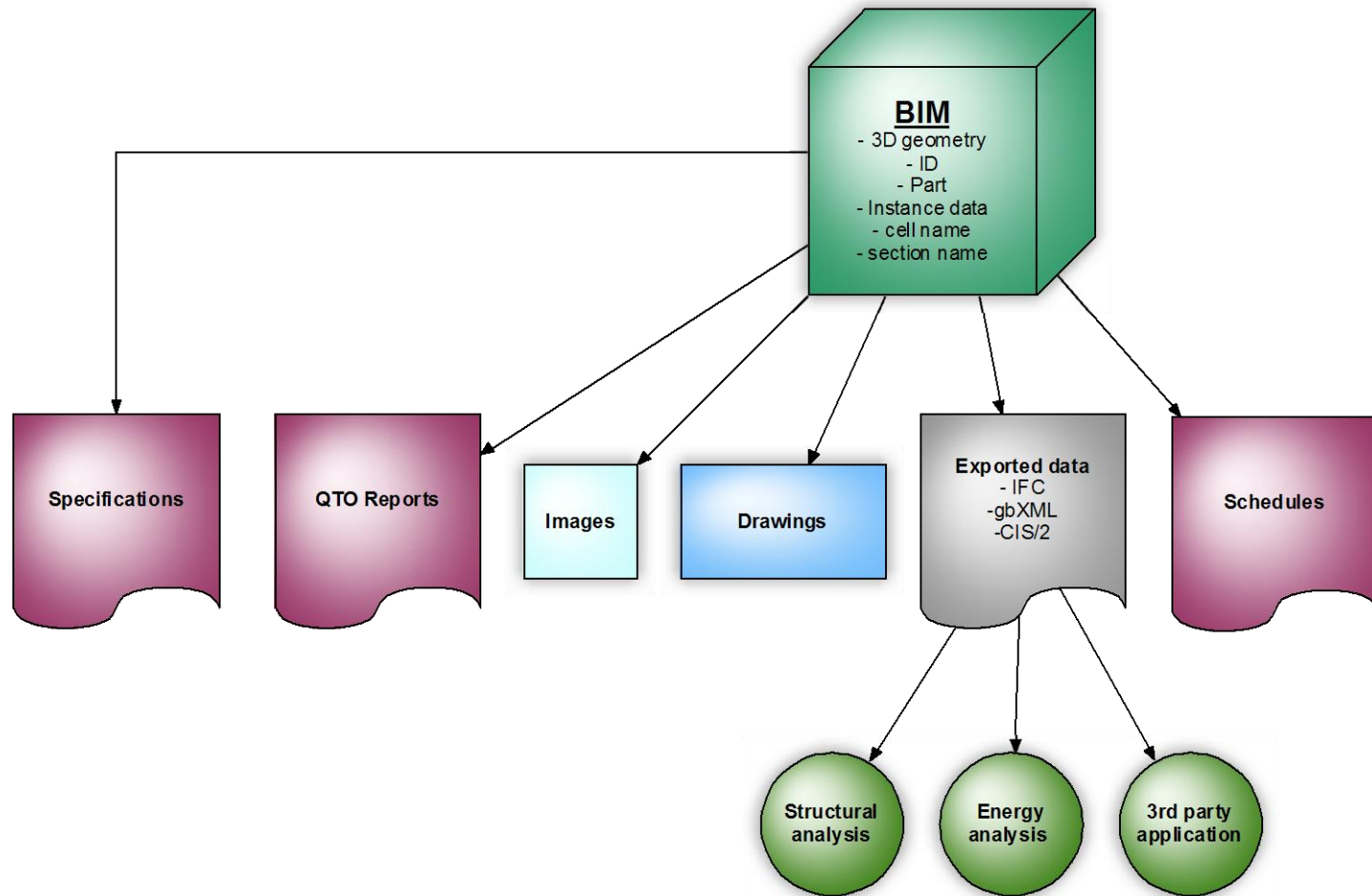
Purpose of BIM (1 of 2)

- modelling of buildings and information
- design
conceptual design, design development, design, as builds, ...
- creation/generation of drawings
floor plans, sections, elevations, details, ...
- generation of quantity takeoff reports and schedules
- design visualization and creation of images and animations

Purpose of BIM_(2 of 2)

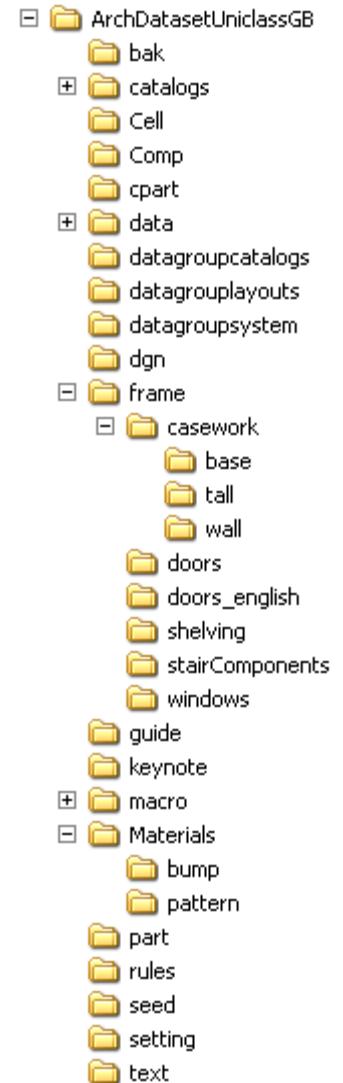
- coordination with other disciplines
- interoperability with analysis applications
energy, structural, costs, ...
- clash detection/interference management
- schedule simulation
- fabrication
- ...

Outputs from BIM/Deliverables

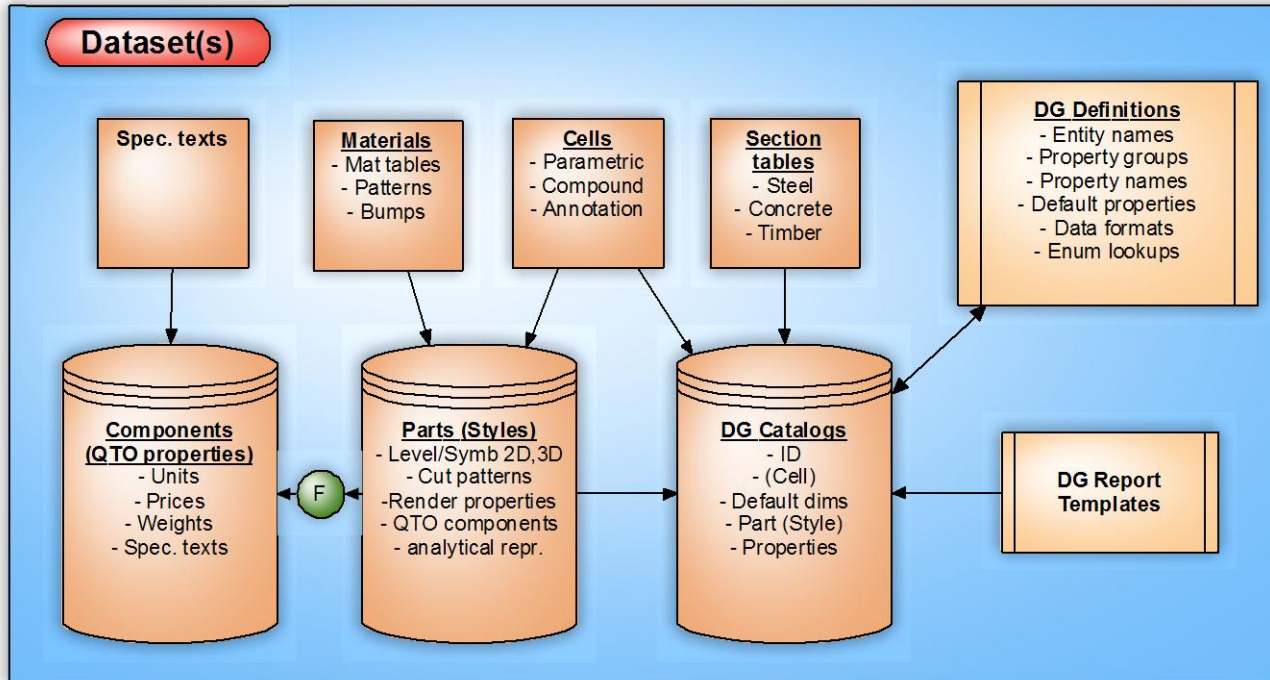


Inputs into BIM

- **content**
parts, compound parts, components, parametric and non-parametric cell, DataGroup catalogs, section tables, annotation and other symbols, palettes, materials, ...
- **DataGroup definitions (schema)**
property names, data formats, lists values (enumerations), display names, ...
- **settings and seed files,**
schedule templates, macros, ...



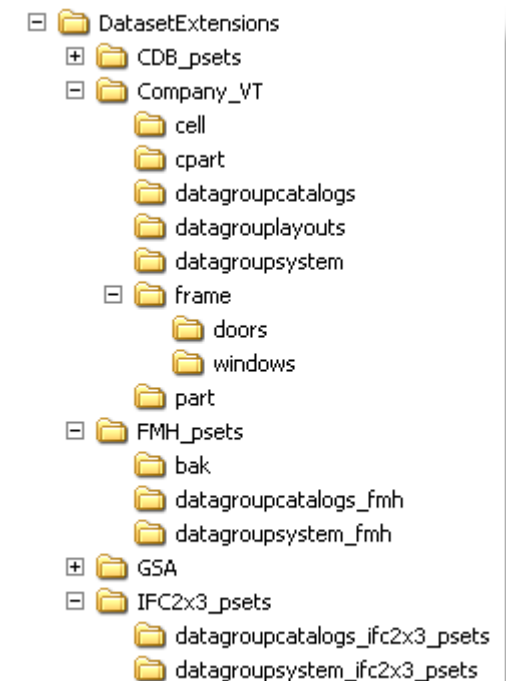
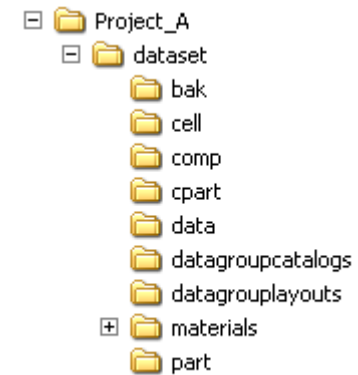
Inputs into BIM



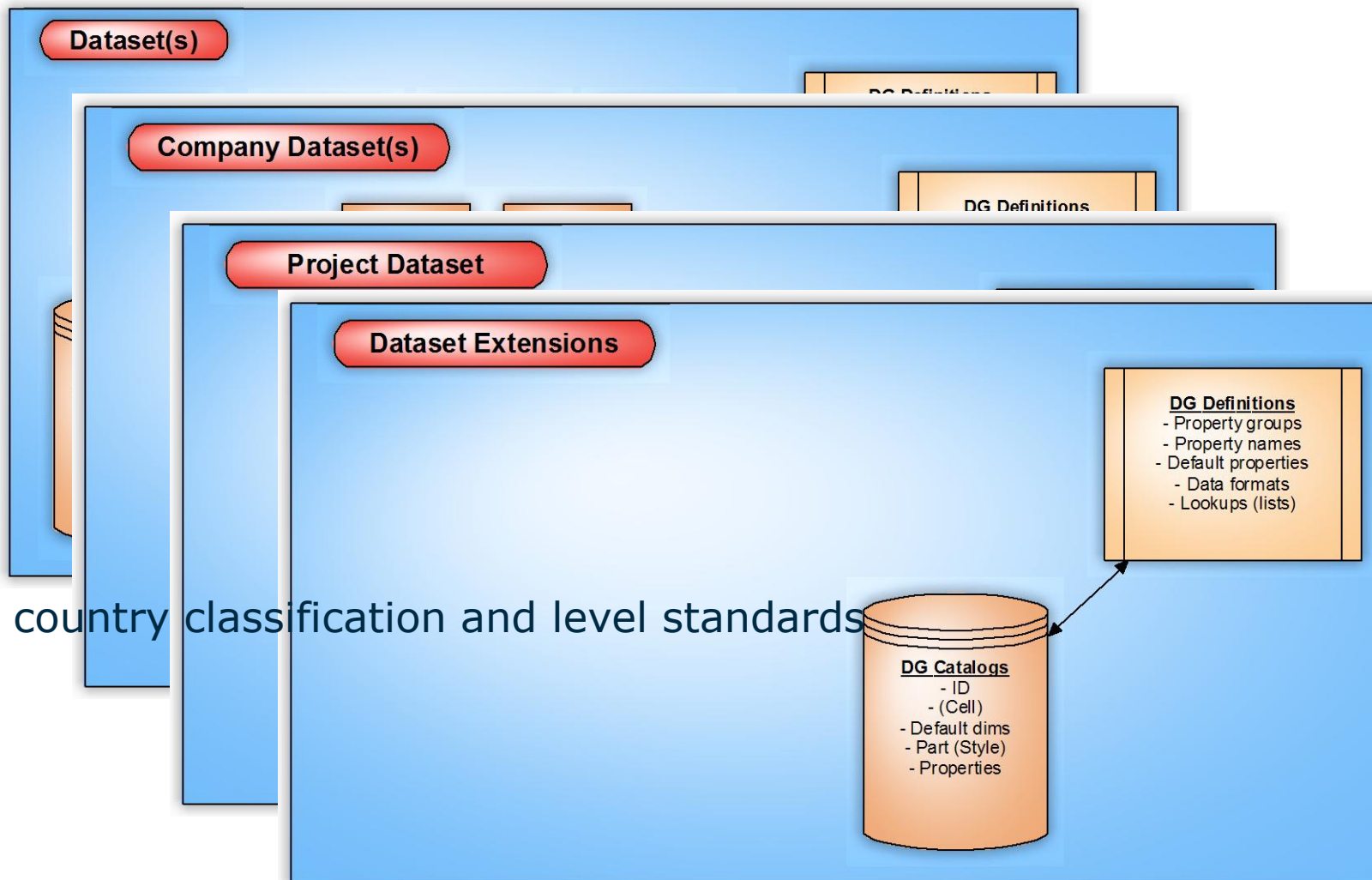
- [-] ArchDatasetUniclassGB
 - [-] bak
 - [+] catalogs
 - [-] Cell
 - [-] Comp
 - [-] cpart
 - [+] data
 - [-] datagroupcatalogs
 - [-] datagrouplayouts
 - [-] datagroupsystem
 - [-] dgn
 - [-] frame
 - [-] casework
 - [-] base
 - [-] tall
 - [-] wall
 - [-] doors
 - [-] doors_english
 - [-] shelving
 - [-] stairComponents
 - [-] windows
 - [-] guide
 - [-] keynote
 - [+] macro
 - [-] Materials
 - [-] bump
 - [-] pattern
 - [-] part
 - [-] rules
 - [-] seed
 - [-] setting
 - [-] text

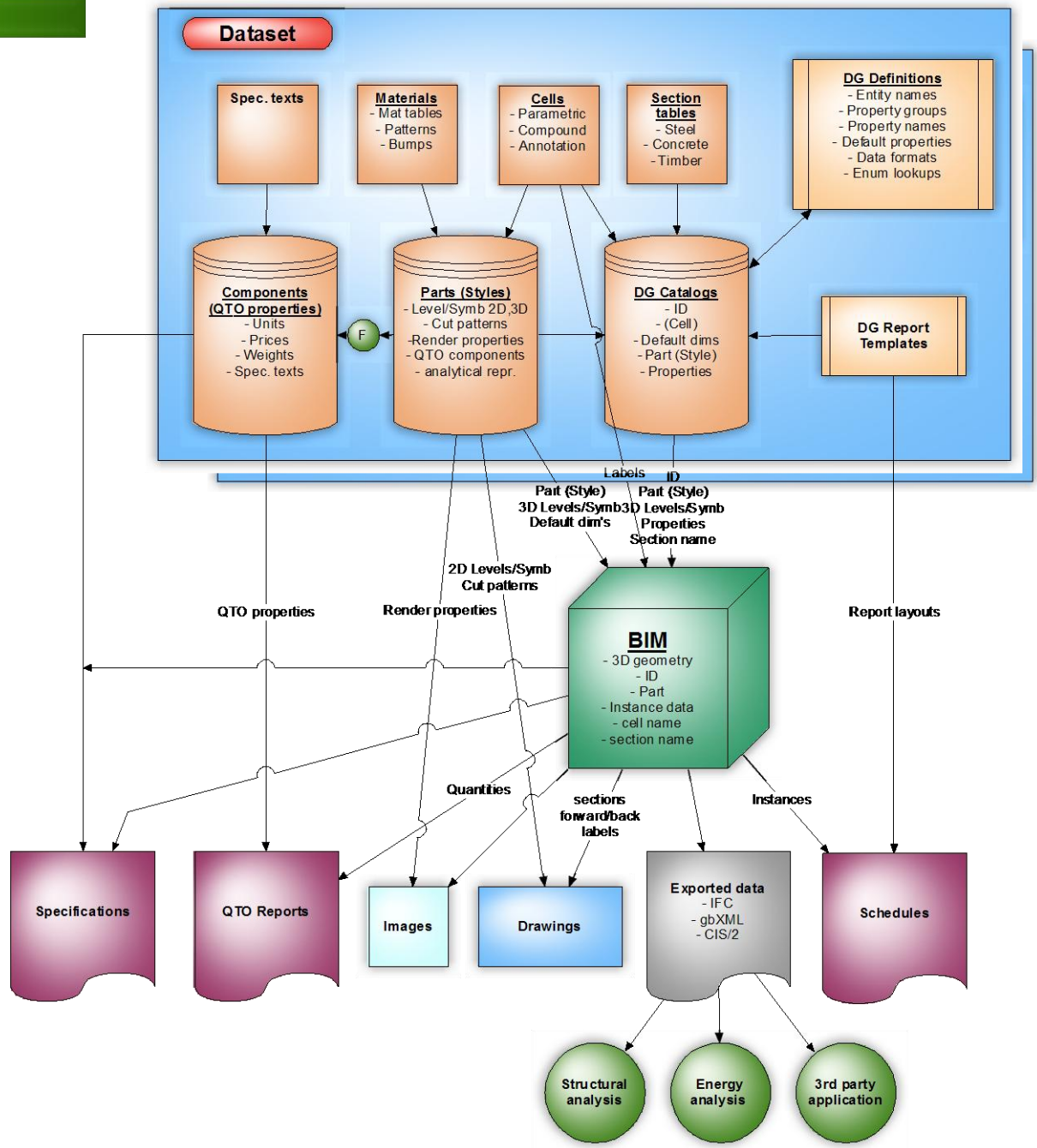
Inputs into BIM

- optional dataset extensions
 - project datasets
 - company datasets
 - special-purpose datasets



Inputs into BIM





Do not edit
delivered dataset
files!

Dataset Customization

- Project
- Company
- Special-purpose

Project Datasets

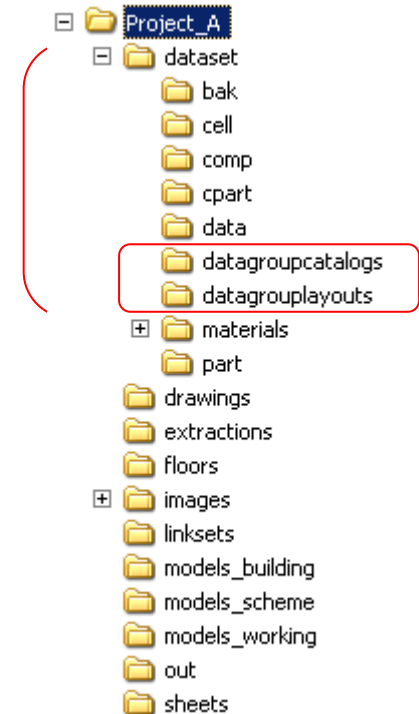
Project Datasets

- installed in ProjectTemplate
- additional folders
- configuration variables in pcf-file

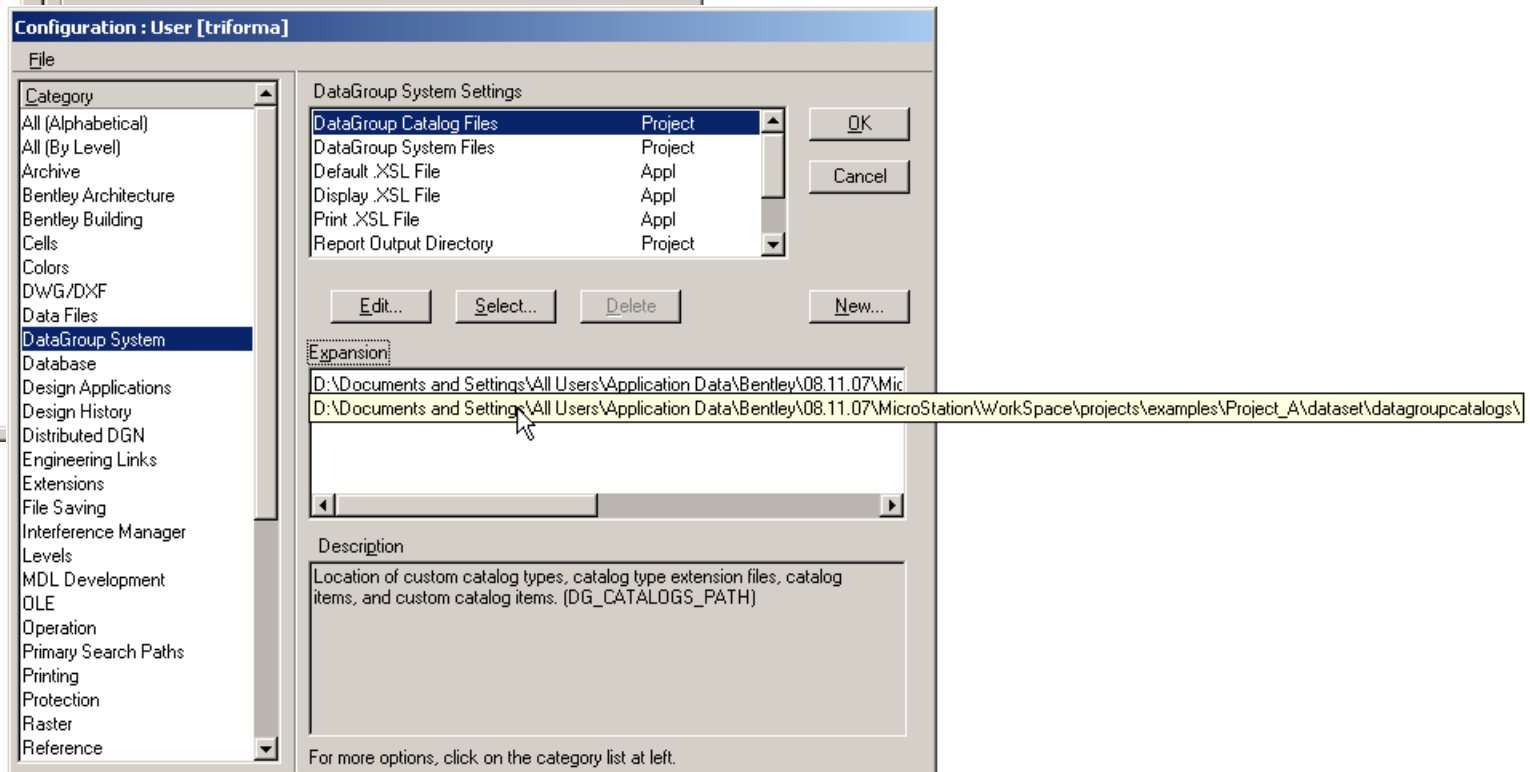
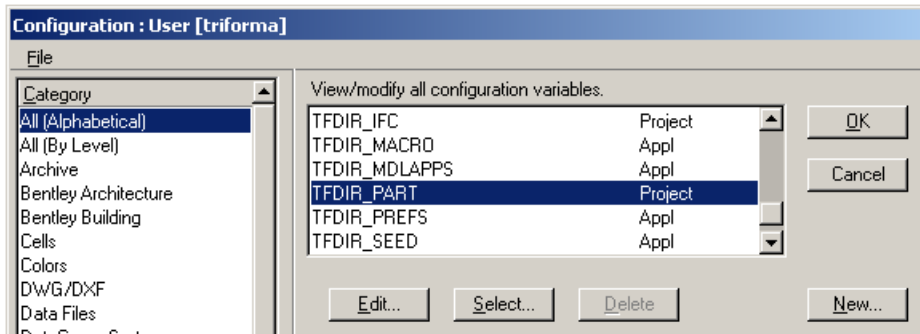
```
#-----  
# Append search path for project-level dataset portions  
#-----
```

```
PROJ_DATASET = $(_USTN_PROJECTDATA)dataset/
```

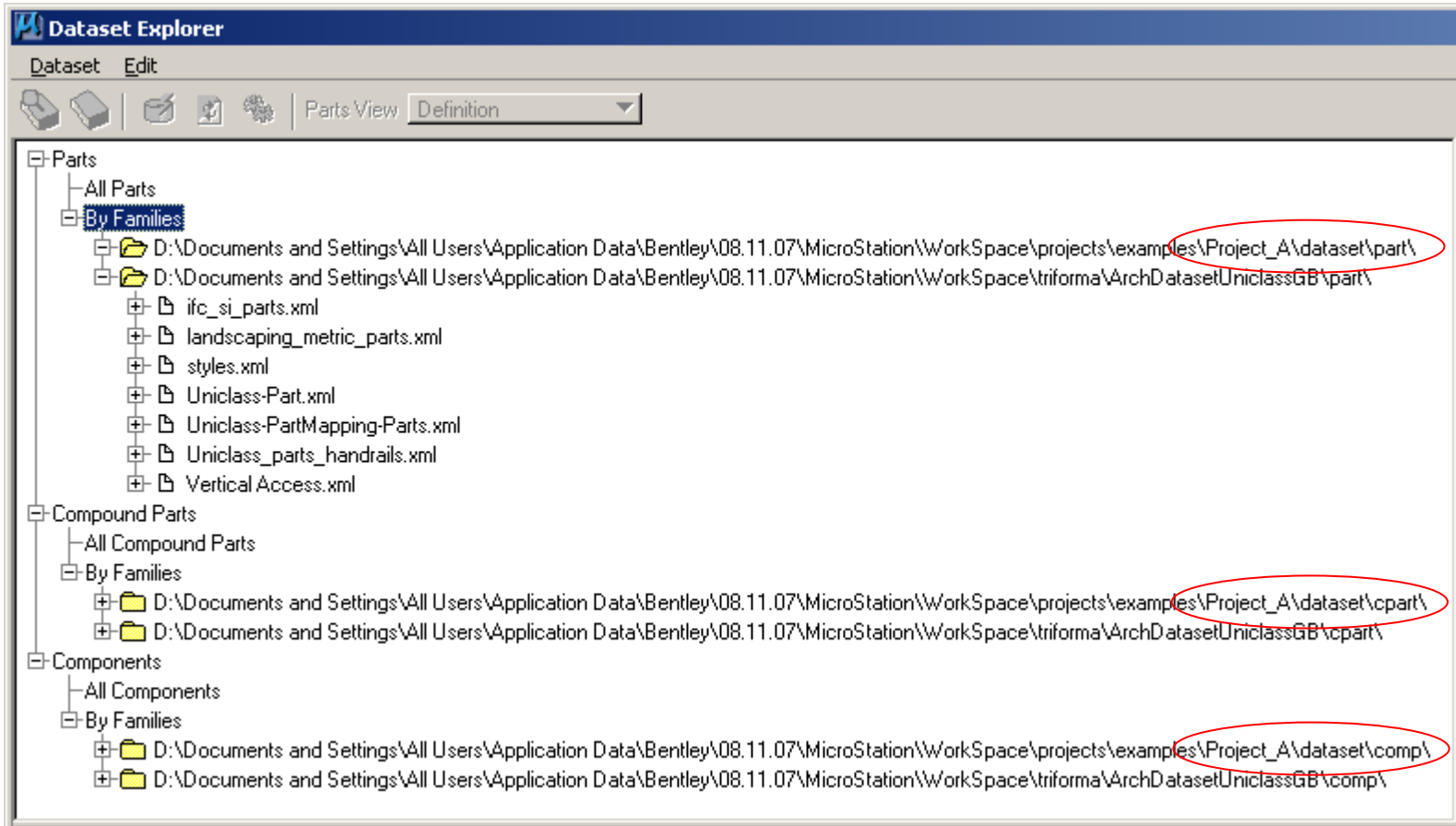
```
TFDIR_PART < $(PROJ_DATASET)part/  
TFDIR_CELL < $(PROJ_DATASET)cell/  
TFDIR_COMP < $(PROJ_DATASET)comp/  
TFDIR_CPART < $(PROJ_DATASET)cpart/  
MS_CELLLIST < $(PROJ_DATASET)cell/*.*  
MS_MATERIAL < $(PROJ_DATASET)materials/  
MS_BACKUP < $(PROJ_DATASET)bak/  
MS_PATTERN < $(PROJ_DATASET)materials/pattern/  
MS_BUMP < $(PROJ_DATASET)materials/bump/  
DG_CATALOGS_PATH > $(PROJ_DATASET)datagroupcatalogs/  
DG_SCHEDULE_LAYOUT_PATH < $(PROJ_DATASET)datagrouplayouts/
```



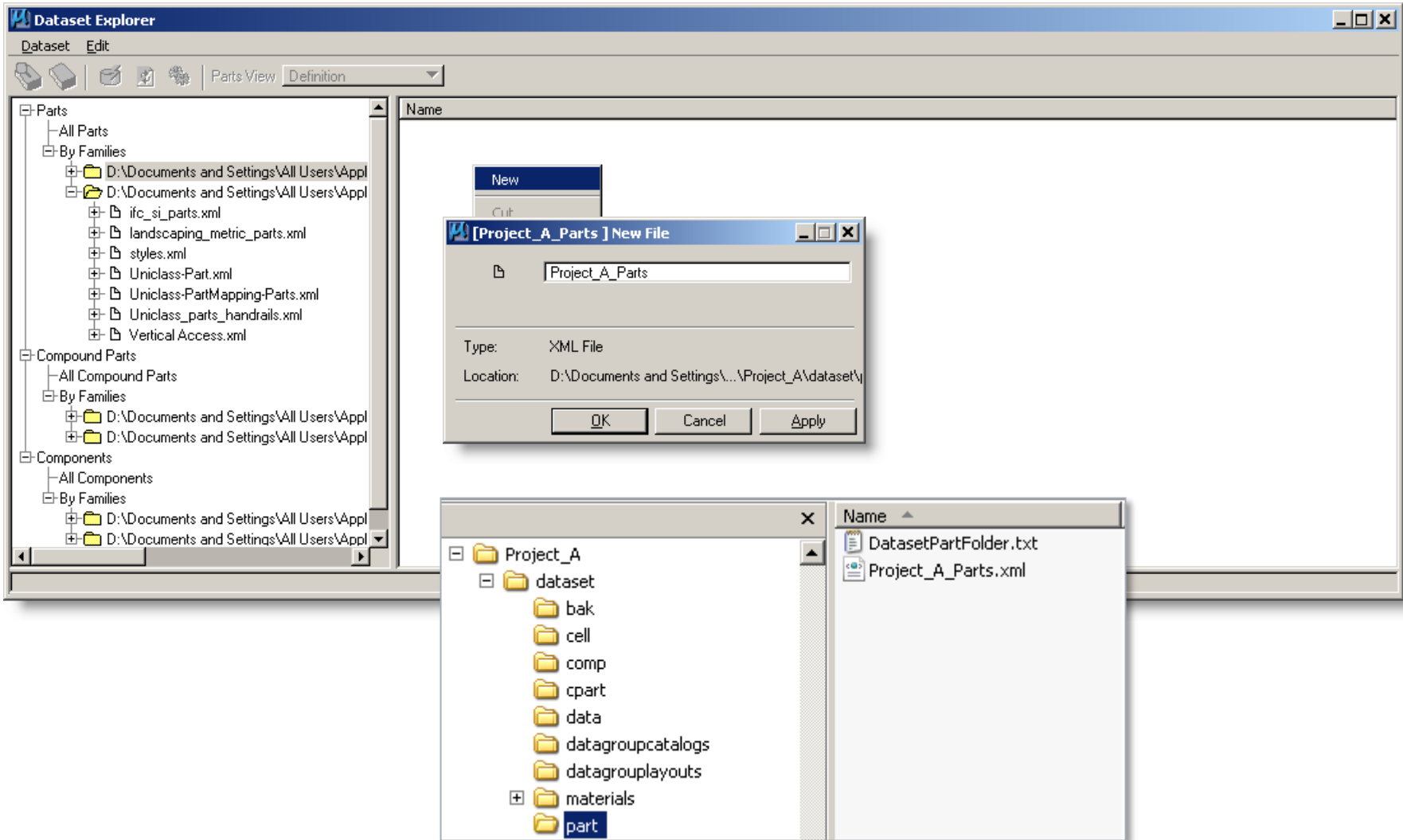
Configuration Variables



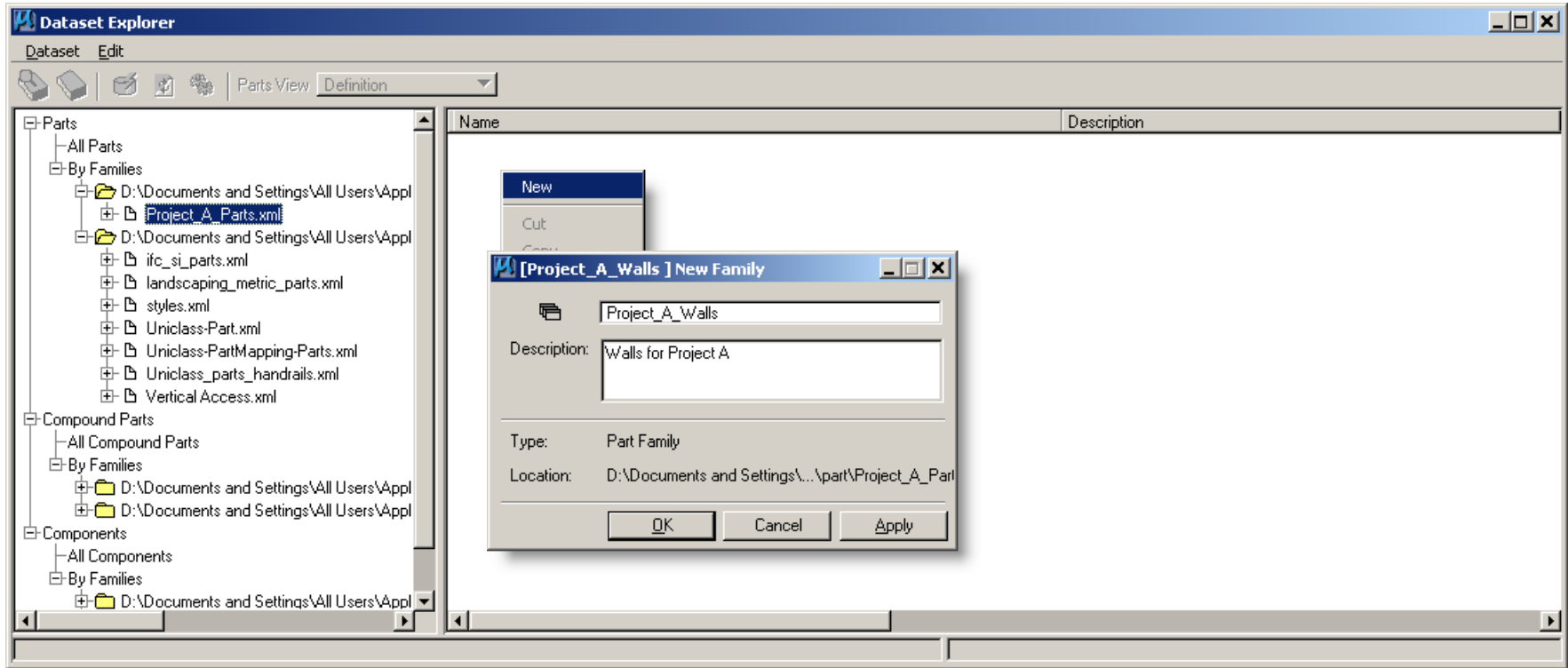
Project: Families & Parts



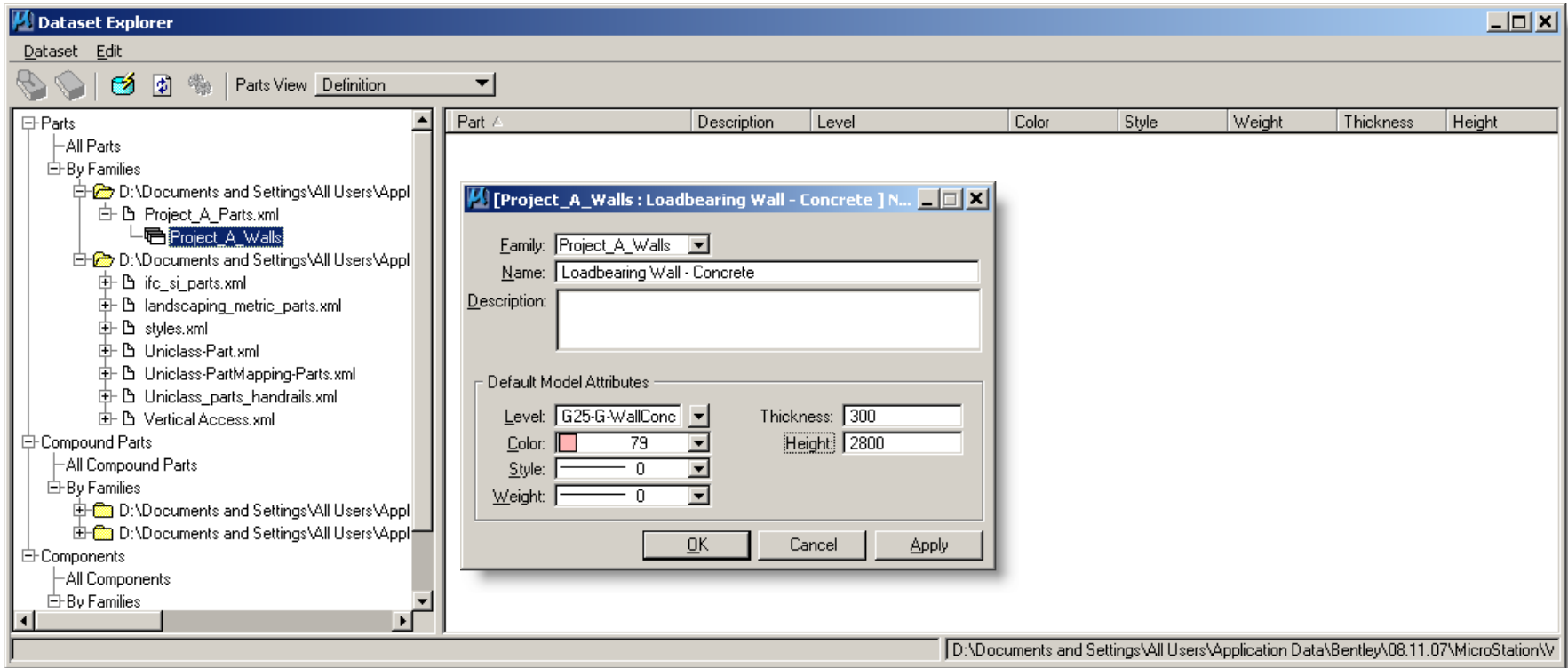
Add Part File



Add Part Family



Add Part



Add Part

The screenshot shows the Dataset Explorer application window. The left pane displays a tree view of parts organized by families. The right pane shows a table of part properties for the selected 'Loadbearing Wall - Concrete' part.

Dataset Explorer
Dataset Edit

Parts View Definition Model: Section: F/R View:

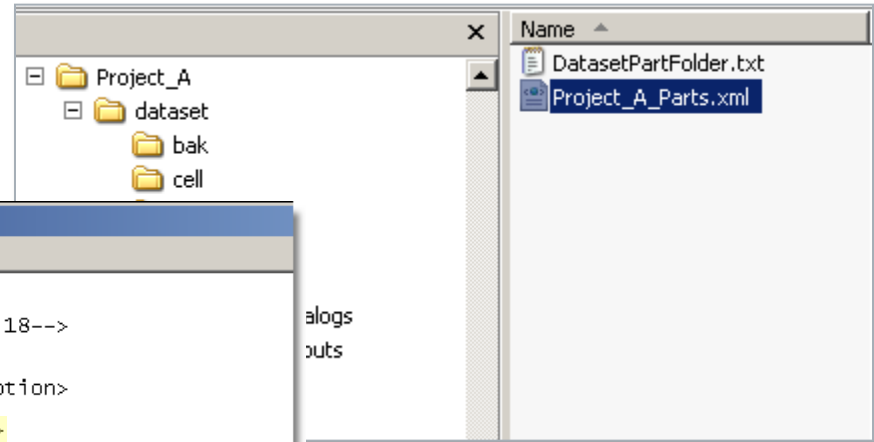
Tree View:

- All Parts
 - By Families
 - D:\Documents and Settings\All Users\Appl
 - Project_A_Parts.xml
 - Project_A_Walls
 - D:\Documents and Settings\All Users\Appl
 - ifc_si_parts.xml
 - landscaping_metric_parts.xml
 - styles.xml
 - Uniclass-Part.xml
 - F
 - F1
 - F2
 - F3
 - F4
 - F6
 - F7
 - F8
 - F9
 - G1
 - G2
 - G3

Table:

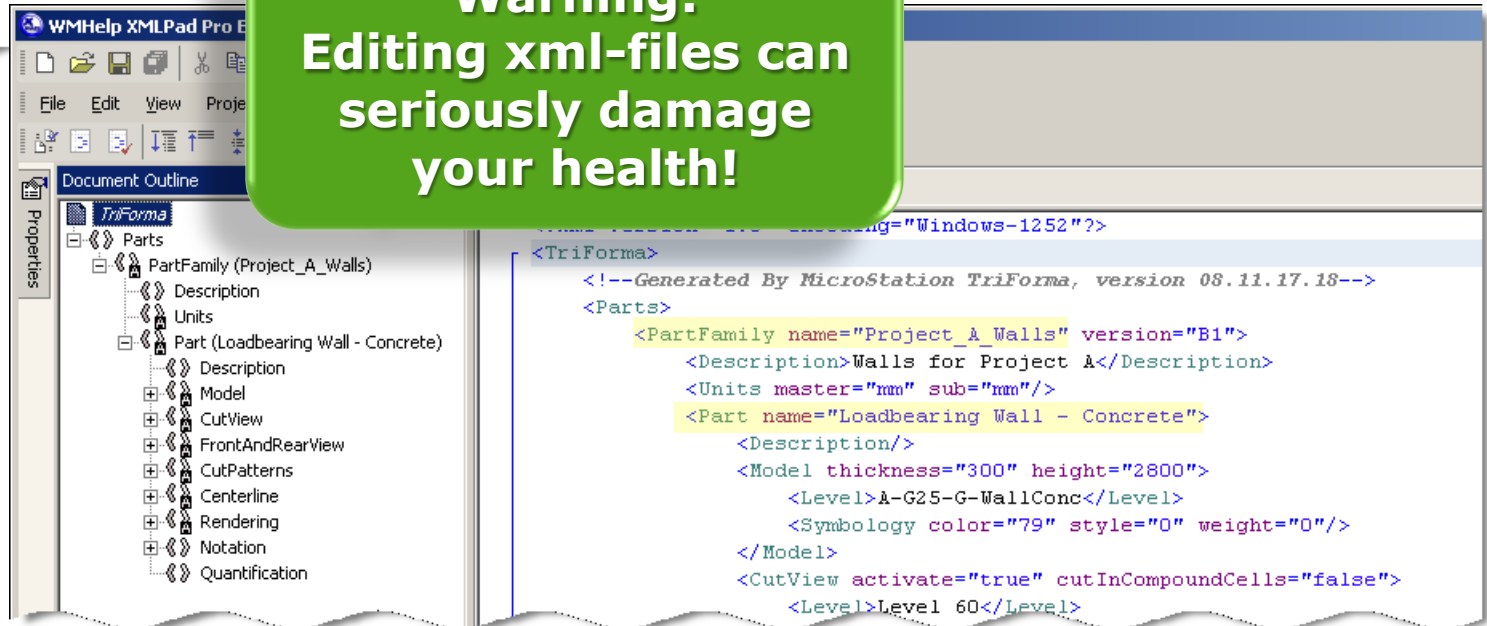
Part	Description	Level	Color	Style	Weight	Thickness	Height
Loadbearing Wall - Concrete		A-G25-G-WallConc	79	0	0	300	2800

Add Part



```
Project_A_Parts.xml - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="windows-1252"?>
<TriForma>
  <!--Generated By MicroStation TriForma, version 08.11.17.18-->
  <Parts>
    <PartFamily name="Project_A_walls" version="B1">
      <Description>walls for Project A</Description>
      <Units master="mm" sub="mm"/>
      <Part name="Loadbearing Wall - Concrete">
        <Description/>
        <Model thickness="300" height="2800">
          <Level>A-G25-G-wallConc</Level>
          <Symbology color="79" style="0" weight="0"/>
        </Model>
        <Cutview activate="true" cutInCompoundCells="false">
          <Level>Level 60</Level>
          <Symbology color="0" style="0" weight="0"/>
        </Cutview>
      </PartFamily>
    </Parts>
  </TriForma>
```

**Warning:
Editing xml-files can
seriously damage
your health!**



Copy Part

The screenshot shows the Bentley Dataset Explorer interface. On the left, a tree view shows a hierarchy of parts under 'Uniclass-Part.xml'. The main area displays a table of parts with columns: Part, Description, Level, Color, Style, Weight, Thickness, and Height. A context menu is open over the table, with 'Copy' selected. The table data is as follows:

Part	Description	Level	Color	Style	Weight	Thickness	Height
G21 Foundations	Foundations	A-G21-G-Fndn	By Level	0	0	450	600
G22 Floors	Floors	A-G22-G-Flor	By Level	0	0	300	300
G23 Balustrade	Balustrades to...	A-G23-G-Bstr	By Level	0	0	50	1100
G23 Ramps	Ramps	A-G23-G-Ramp	By Level	0	0	200	200
G23 Stairs	Stairs	A-G23-G-Strs	By Level	0	0	200	1500
G24 Roofs	Roofs	A-G24-G-Roof	By Level	0	0	200	200
G25 Walls	Walls	A-G25-G-Wall	By Level	0	0	100	3000
G25 Walls (Block)	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 75mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	75	3000
G25 Wa	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	90	3000
G25 Wa	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Wa	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	140	3000
G25 Wa	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	190	3000
G25 Wa	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	215	3000
G25 Wa	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Wa	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	65	3000
G25 Wa	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Wa	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	215	3000
G25 Wa	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Wa	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	100	3000
G25 Wa	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Wa	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	300	3000

Paste Part

The screenshot shows the Bentley Dataset Explorer interface. On the left, a tree view displays a hierarchy of parts under 'All Parts' and 'By Families'. The 'Project_A_Walls' folder is expanded, showing a list of parts from F to G3. A context menu is open over the table, with 'Paste' highlighted. The table below shows the details of the selected part.

Part	Description	Level	Color	Style	Weight	Thickness	Height
Loadbearing Wall - Concrete		A-G25-G-WallConc	79	0	0	300	2800

Paste Part

The screenshot shows the 'Dataset Explorer' window with a tree view on the left and a table on the right. The tree view shows a hierarchy of parts, including 'Project_A_Walls' and 'Uniclass-Part.xml' with sub-items F1 through F9 and G1 through G3. The table on the right lists two parts: 'G25 Walls (Concrete)' and 'Loadbearing Wall - Concrete', with columns for Part, Description, Level, Color, Style, Weight, Thickness, and Height.

Part	Description	Level	Color	Style	Weight	Thickness	Height
G25 Walls (Concrete)	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
Loadbearing Wall - Concrete		A-G25-G-WallConc	79	0	0	300	2800

Dataset Explorer

Dataset Edit

Parts View Definition Model: Section: F/R View:

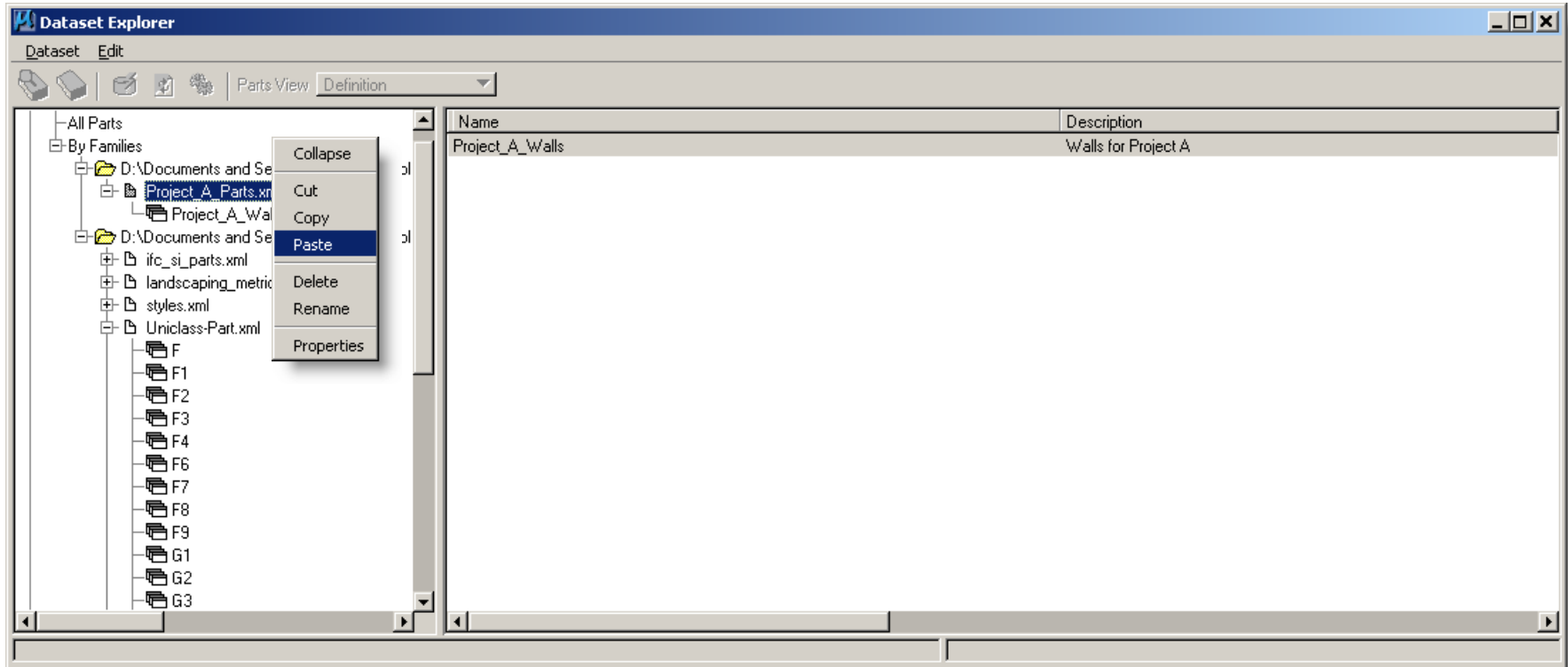
All Parts

- By Families
 - D:\Documents and Settings\All Users\Appl
 - Project_A_Parts.xml
 - Project_A_Walls
 - D:\Documents and Settings\All Users\Appl
 - ifc_si_parts.xml
 - landscaping_metric_parts.xml
 - styles.xml
 - Uniclass-Part.xml
 - F
 - F1
 - F2
 - F3
 - F4
 - F6
 - F7
 - F8
 - F9
 - G1
 - G2
 - G3

Context Menu: Cut, Copy, Paste, Delete, Rename, Properties

Part	Description	Level	Color	Style	Weight	Thickness	Height
G21 Foundations	Foundations	A-G21-G-Fndn	By Level	0	0	450	600
G22 Floors	Floors	A-G22-G-Flor	By Level	0	0	300	300
G23 Balustrade	Balustrades to...	A-G23-G-Bstr	By Level	0	0	50	1100
G23 Ramps	Ramps	A-G23-G-Ramp	By Level	0	0	200	200
G23 Stairs	Stairs	A-G23-G-Strs	By Level	0	0	200	1500
G24 Roofs	Roofs	A-G24-G-Roof	By Level	0	0	200	200
G25 Walls	Walls	A-G25-G-Wall	By Level	0	0	100	3000
G25 Walls (Block)	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 75mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	75	3000
G25 Walls (Block) 90mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	90	3000
G25 Walls (Block) 100mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 140mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	140	3000
G25 Walls (Block) 190mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	190	3000
G25 Walls (Block) 215mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	215	3000
G25 Walls (Brick)	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 65mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	65	3000
G25 Walls (Brick) 102.5mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 215mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	215	3000
G25 Walls (Concrete)	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 100mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	100	3000
G25 Walls (Concrete) 200mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 300mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	300	3000

Paste Family



Paste Family

Dataset Explorer

Dataset Edit

Parts View Definition Model: Section: F/R View:

Part	Description	Level	Color	Style	Weight	Thickness	Height
G21 Foundations	Foundations	A-G21-G-Fndn	By Level	0	0	450	600
G22 Floors	Floors	A-G22-G-Flor	By Level	0	0	300	300
G23 Balustrade	Balustrades to...	A-G23-G-Bstr	By Level	0	0	50	1100
G23 Ramps	Ramps	A-G23-G-Ramp	By Level	0	0	200	200
G23 Stairs	Stairs	A-G23-G-Strs	By Level	0	0	200	1500
G24 Roofs	Roofs	A-G24-G-Roof	By Level	0	0	200	200
G25 Walls	Walls	A-G25-G-Wall	By Level	0	0	100	3000
G25 Walls (Block)	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 75mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	75	3000
G25 Walls (Block) 90mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	90	3000
G25 Walls (Block) 100mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 140mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	140	3000
G25 Walls (Block) 190mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	190	3000
G25 Walls (Block) 215mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	215	3000
G25 Walls (Brick)	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 65mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	65	3000
G25 Walls (Brick) 102.5mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 215mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	215	3000
G25 Walls (Concrete)	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 100mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	100	3000
G25 Walls (Concrete) 200mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 300mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	300	3000

D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\W

TFDATASET_SHOWDUPLICATEFAMILY=1

The image shows two overlapping windows from a Bentley software application. The background window is the 'Message Center', which displays a list of system messages. A yellow warning icon is next to the message 'Duplicate families have been found!'. Below this, a 'Message Details' pane shows the text: 'Family, D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\projects\examples\Project_A\dataset\part\Project_A is a duplicate family and will be ignored. Found family D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\projects\examples\Project_A\dataset\part\Project_A'. The foreground window is the 'Configuration : User [triforma]' dialog. It features a 'File' tree on the left with 'TFDIR' selected. The main area shows a list of configuration variables, with 'TFDATASET_SHOWDUPLICATEFAMILIE' selected. The 'Description' field for this variable reads: 'Enables Parts & Family concatenation, first part defined is the one that will be used. (TFDATASET_SHOWDUPLICATEFAMILIES)'. Buttons for 'OK', 'Cancel', 'Edit...', 'Select...', 'Delete', and 'New...' are visible.

Message Center

ACSPPLANES loaded.
ICONLOCK loaded.
Loading assembly library.
Loading TriForma Part Assigned Materials
Reading: ...ArchDatasetUniclassGB\data\uk-uniclass.xml
DIMLIB loaded.
Loading TriForma Part Assigned Materials
⚠ Duplicate families have been found!
Reading: ...setting\Uniclass-Storage_Setting.xml
Reading: ...setting\Uniclass-Doors\Windows_Setting.xml

Message Details

Family, D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\projects\examples\Project_A\dataset\part\Project_A is a duplicate family and will be ignored. Found family D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\projects\examples\Project_A\dataset\part\Project_A

Configuration : User [triforma]

File

Category

- All (Alphabetical)
- All (By Level)
- Archive
- Bentley Architecture
- Bentley Building
- Cells
- Colors
- DWG/DXF
- Data Files
- DataGroup System
- Database
- Design Applications
- Design History
- Distributed DGN
- Engineering Links
- Extensions
- File Saving
- Interference Manager
- Levels
- MDL Development
- OLE
- Operation
- Primary Search Paths
- Printing
- Protection
- Raster
- Reference

View/modify all configuration variables.

TFCELL_EXTENSION	Appl
TFDATASET_COMP_NOAUTOLOAD	Appl
TFDATASET_CPART_NOAUTOLOAD	Appl
TFDATASET_SHOWDUPLICATEFAMILIE	Appl
TFDIR	Appl
TFDIR_ASSEMBLIES	Appl

OK Cancel

Edit... Select... Delete New...

Expansion

1

Description

Enables Parts & Family concatenation, first part defined is the one that will be used. (TFDATASET_SHOWDUPLICATEFAMILIES)

For more options, click on the category list at left.

TFDATASET_SHOWDUPLICATEFAMILY=1

The screenshot shows the Dataset Explorer window with the following data table:

Part	Description	Level	Color	Style	Weight	Thickness	Height
G21 Foundations	Foundations	A-G21-G-Fndn	By Level	0	0	450	600
G22 Floors	Floors	A-G22-G-Fldr	By Level	0	0	300	300
G23 Balustrade	Balustrades to...	A-G23-G-Bstr	By Level	0	0	50	1100
G23 Ramps	Ramps	A-G23-G-Ramp	By Level	0	0	200	200
G23 Stairs	Stairs	A-G23-G-Strs	By Level	0	0	200	1500
G24 Roofs	Roofs	A-G24-G-Roof	By Level	0	0	200	200
G25 Walls	Walls	A-G25-G-Wall	By Level	0	0	100	3000
G25 Walls (Block)	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 75mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	75	3000
G25 Walls (Block) 90mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	90	3000
G25 Walls (Block) 100mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	100	3000
G25 Walls (Block) 140mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	140	3000
G25 Walls (Block) 190mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	190	3000
G25 Walls (Block) 215mm	Walls (Block)	A-G25-G-WallBlck	By Level	0	0	215	3000
G25 Walls (Brick)	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 65mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	65	3000
G25 Walls (Brick) 102.5mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	103	3000
G25 Walls (Brick) 215mm	Walls (Brick)	A-G25-G-WallBrck	By Level	0	0	215	3000
G25 Walls (Concrete)	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 100mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	100	3000
G25 Walls (Concrete) 200mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G25 Walls (Concrete) 300mm	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	300	3000

TFDATASET_SHOWDUPLICATEFAMILY=1

Dataset Explorer

Dataset Edit

Parts View Definition

Part	Description	Level	Color	Style	Weight	Thickness	Height
G25 Walls	Walls	A-G25-G-Wall	By Level	0	0	100	3000
G25 Walls (Block)	Walls (Block)	A-G25-G-WallBlock	By Level	0	0	100	3000
G25 Walls (Brick)	Walls (Brick)	A-G25-G-WallBrick	By Level	0	0	103	3000
G25 Walls (Concrete)	Walls (Concrete)	A-G25-G-WallConc	By Level	0	0	200	3000
G251 External walls	External walls	A-G251-G-WallExtl	By Level	0	0	140	3000
G252 External Walls (Concrete)	External walls ...	A-G251-G-WallExtl	By Level	0	0	200	3000
G252 Internal Walls (Concrete)	Internal walls ...	A-G252-G-WallIntl	By Level	0	0	100	3000
G252 Internal walls and partitions	Internal walls	A-G252-G-WallIntl	By Level	0	0	100	3000

Dataset Explorer

Dataset Edit

Parts View Definition

Model: Section: F/R View:

Part	Description	Level	Color	Style	Weight	Thickness	Height
G21 Foundations	Foundations	A-G21-G-Fndn	By Level	0	0	450	600
G22 Floors	Floors	A-G22-G-Flor	By Level	0	0	300	300
G23 Balustrade	Balustrades to...	A-G23-G-Bstr	By Level	0	0	50	1100
G23 Ramps	Ramps	A-G23-G-Ramp	By Level	0	0	200	200
G23 Stairs	Stairs	A-G23-G-Strs	By Level	0	0	200	1500
G24 Roofs	Roofs	A-G24-G-Roof	By Level	0	0	200	200

G25 Walls
 G25 Walls (Block)
 G25 Walls (Block) 75mm
 G25 Walls (Block) 90mm
 G25 Walls (Block) 100mm
 G25 Walls (Block) 140mm
 G25 Walls (Block) 190mm
 G25 Walls (Block) 215mm
 G25 Walls (Brick)
 G25 Walls (Brick) 65mm
 G25 Walls (Brick) 102.5mm
 G25 Walls (Brick) 215mm
 G25 Walls (Concrete)
 G25 Walls (Concrete) 100mm
 G25 Walls (Concrete) 200mm
 G25 Walls (Concrete) 300mm

G21 Foundations
 G22 Floors
 G23 Balustrade
 G23 Ramps
 G23 Stairs
 G24 Roofs
 G25 Walls
 G25 Walls (Block)
 G25 Walls (Block) 100mm
 G25 Walls (Block) 140mm
 G25 Walls (Block) 190mm
 G25 Walls (Block) 215mm

Part: G25 Walls (Block) 100mm
 Description: Walls (Block)
 Level: A-G25-G-WallBlock
 Color: By Level
 Style: 0
 Weight: 0
 Thickness: 100
 Height: 3000

D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\W

TFDATASET_SHOWDUPLICATEFAMILY=0

The screenshot displays the MicroStation software interface. On the left, the 'Configuration : User [triforma]' window shows configuration variables: TFCELL_EXTENSION (Appl) and TFDATASET_COMP_NOAUTOLOAD (Appl). Below it, the 'Dataset Explorer' shows a tree view of parts, with 'G3' highlighted. On the right, the 'triforma.ucf - Notepad' window shows the user configuration file content:

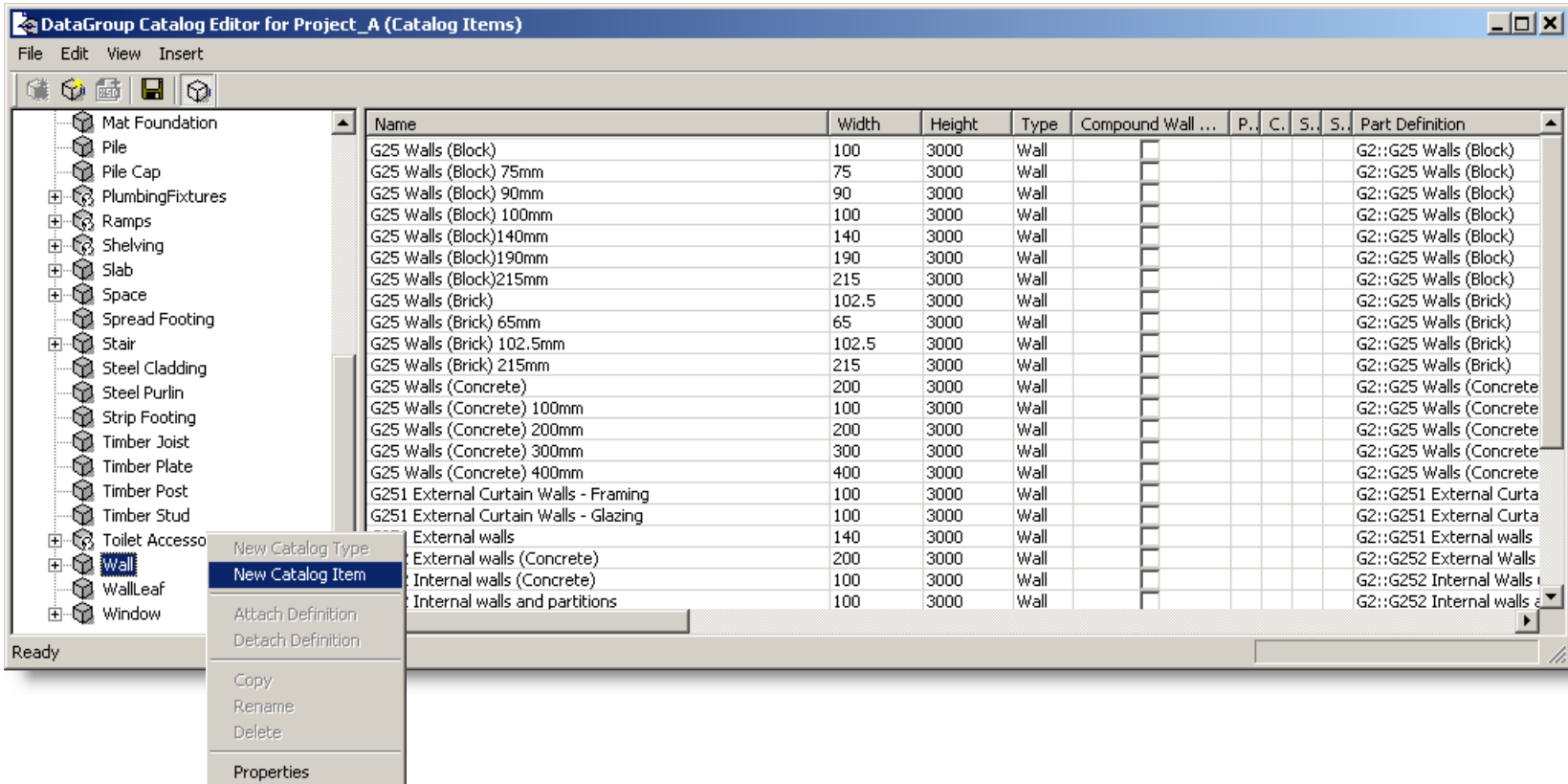
```
#-----  
#  
# triforma.ucf - user configuration file for using example workspaces.  
#  
# $RCSfile: triforma.ucf,v $  
# $Revision: 1.46 $  
# $Date: 2004/04/22 17:33:10 $  
#  
# $Copyright: (c) 2004 Bentley systems, Incorporated. All rights reserved. $  
#-----  
_USTN_USERDESCR = TriForma version of Examples workspace  
_USTN_PROJECT      = $( _USTN_PROJECTSROOT )examples/  
  
_USTN_PROJECTNAME = Project_A  
TF_NOCOMPATIBILITYWARNING = 08.11.17.18  
# TFDATASET_SHOWDUPLICATEFAMILIES = 0
```

Below the Notepad window, a 'View' dialog box is open, showing a list of parts and their descriptions:

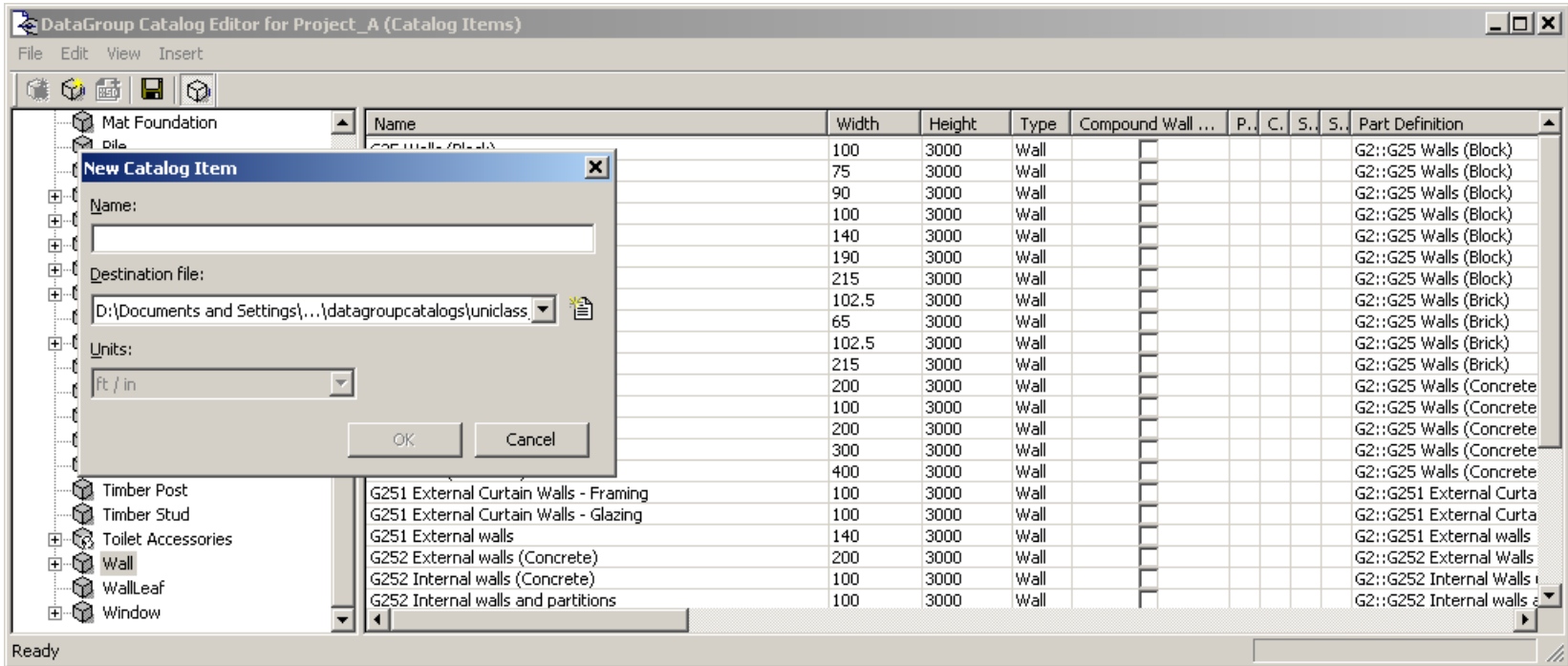
Part	Description
G25 Walls	Walls
G25 Walls (Block)	Walls (Block)
G25 Walls (Brick)	Walls (Brick)
G25 Walls (Concrete)	Walls (Concrete)
G251 External walls	External walls
G252 External Walls (Concrete)	External walls (concrete)
G252 Internal Walls (Concrete)	Internal walls (concrete)
G252 Internal walls and partitions	Internal walls

Add Catalog Items

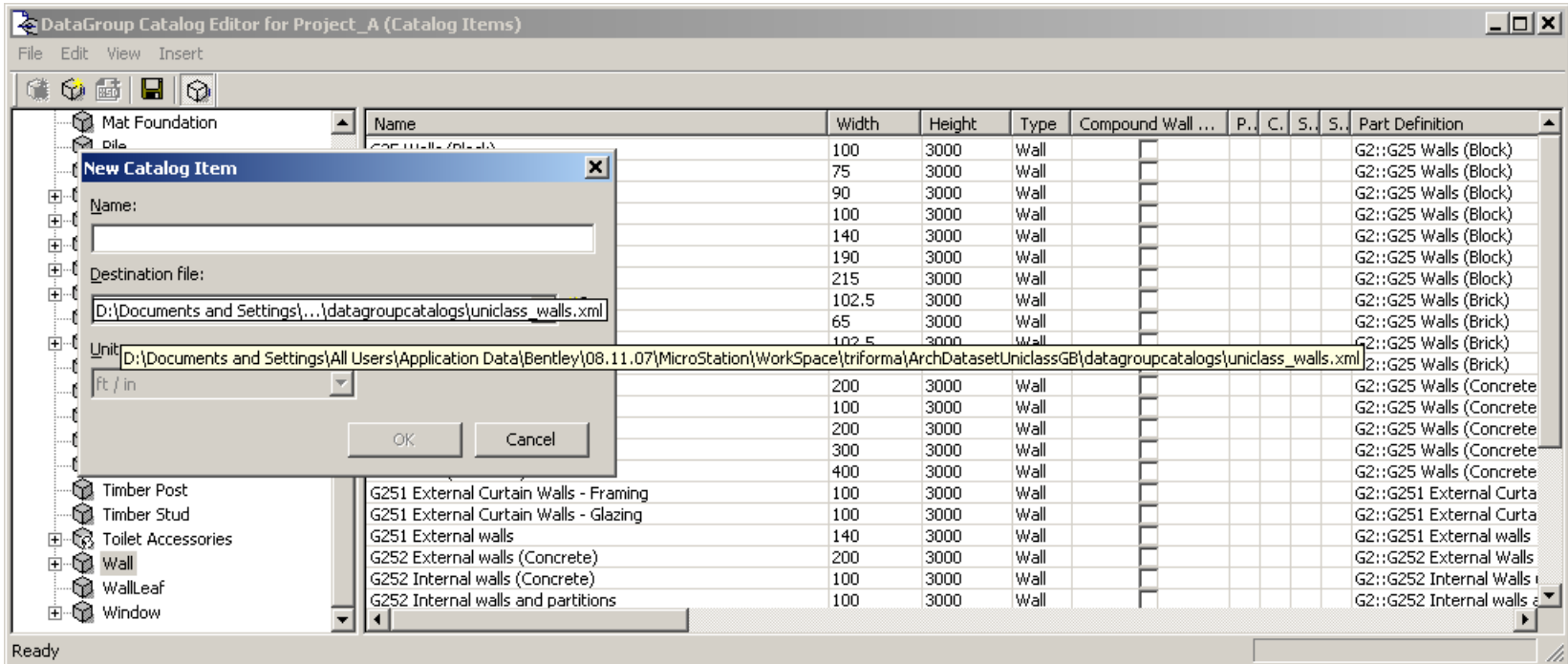
Add Catalog Item



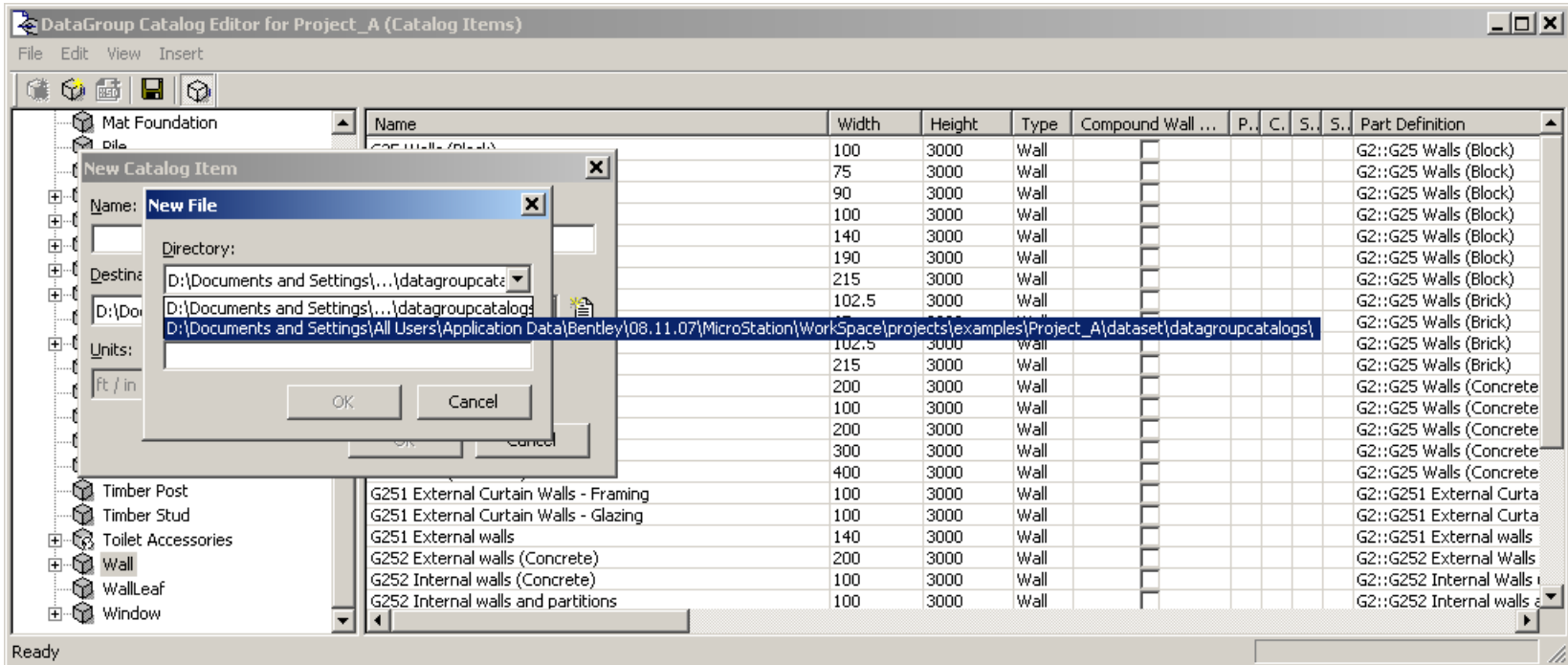
Add Catalog Item



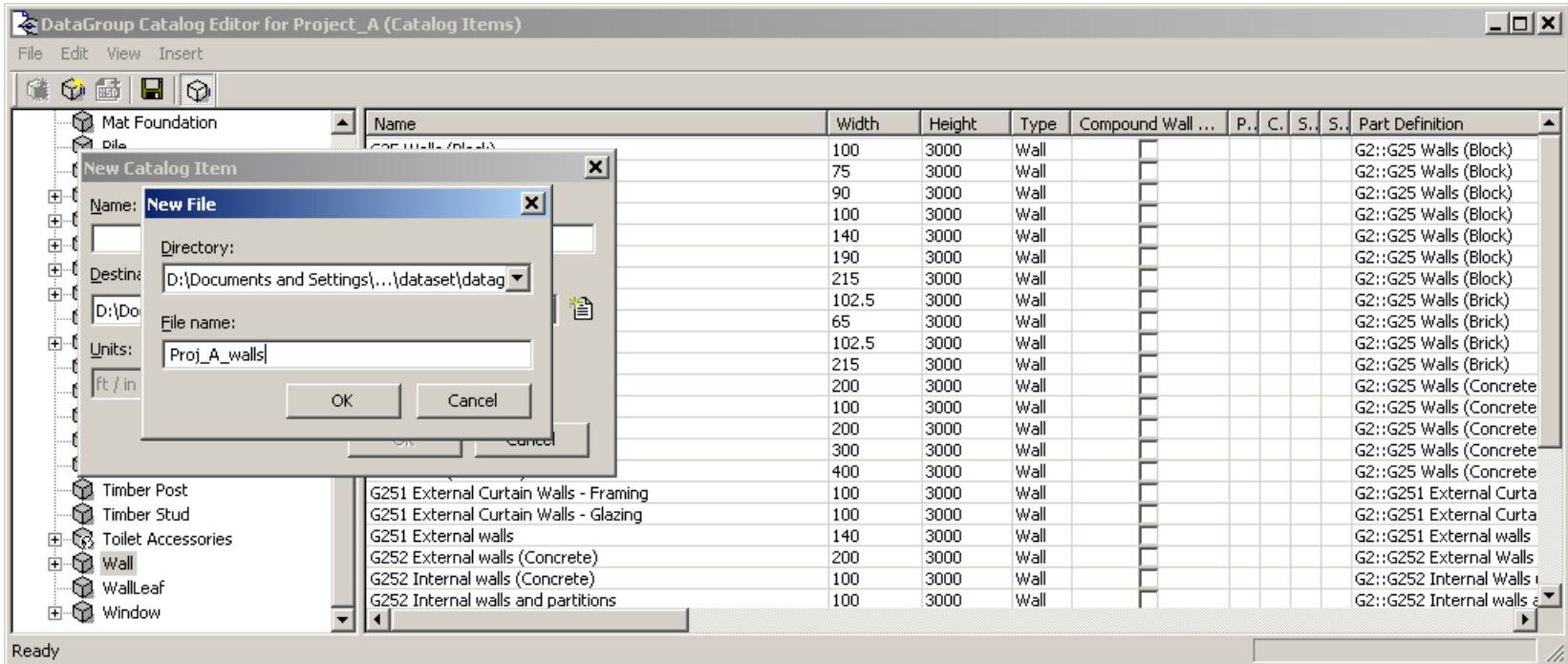
Add Catalog Item



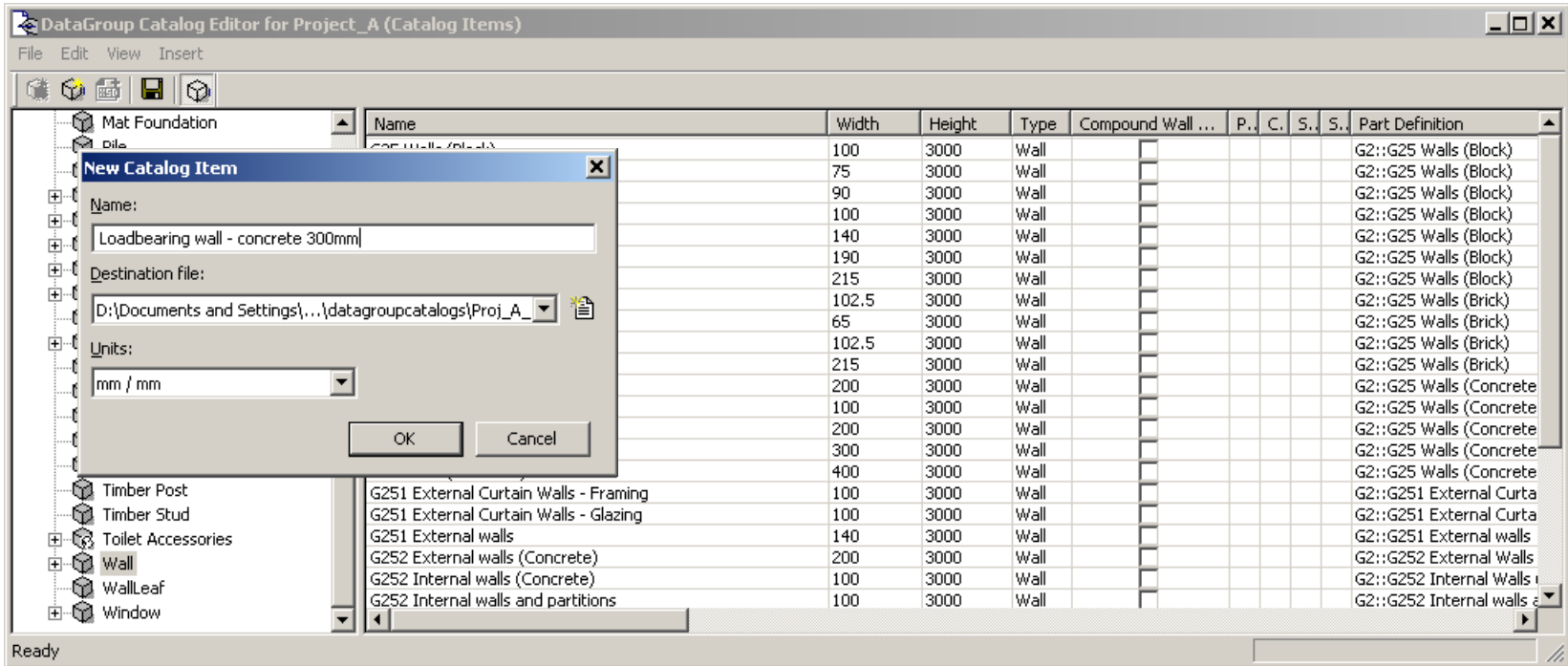
Add Catalog Item



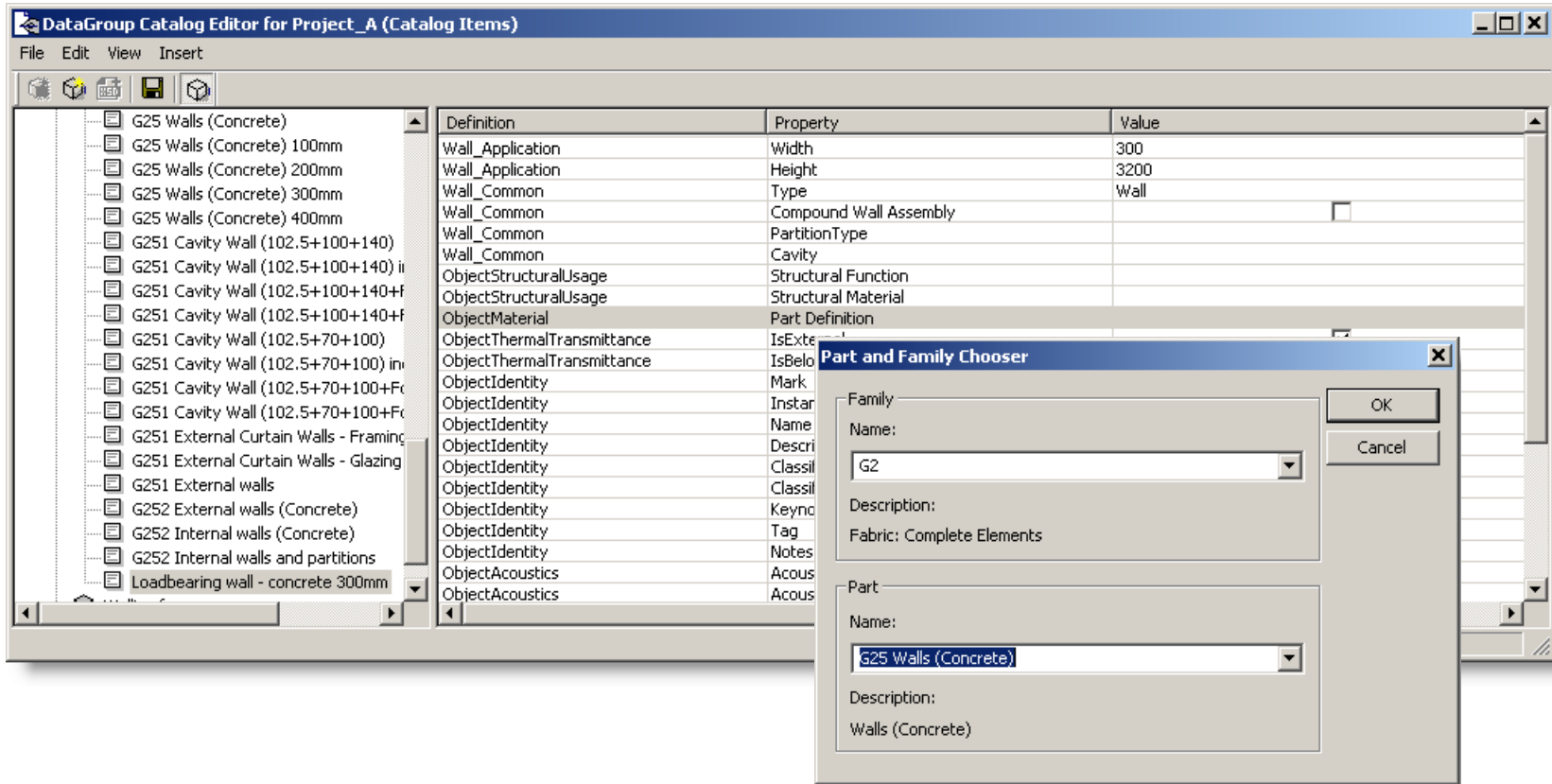
Add Catalog Item



Add Catalog Item



Add Catalog Item



Add Catalog Item

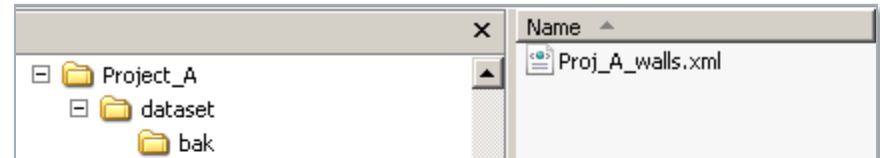
DataGroup Catalog Editor for Project_A (Catalog Items)

File Edit View Insert

Definition	Property	Value
Wall_Application	Width	300
Wall_Application	Height	3200
Wall_Common	Type	Wall
Wall_Common	Compound Wall Assembly	<input type="checkbox"/>
Wall_Common	PartitionType	
Wall_Common	Cavity	
ObjectStructuralUsage	Structural Function	
ObjectStructuralUsage	Structural Material	RC Concrete
ObjectMaterial	Part Definition	G2::G25 Walls (Concrete)
ObjectThermalTransmittance	IsExternal	<input checked="" type="checkbox"/>
ObjectThermalTransmittance	IsBelowGrade	<input type="checkbox"/>
ObjectIdentity	Mark	
ObjectIdentity	Instance Mark	
ObjectIdentity	Name (Alternate)	
ObjectIdentity	Description	Loadbearing concrete wall
ObjectIdentity	Classification Description	
ObjectIdentity	Classification Code	
ObjectIdentity	Keynote	
ObjectIdentity	Tag	
ObjectIdentity	Notes	
ObjectAcoustics	Acoustical Rating (STC)	
ObjectAcoustics	Acoustical Test Reference No.	

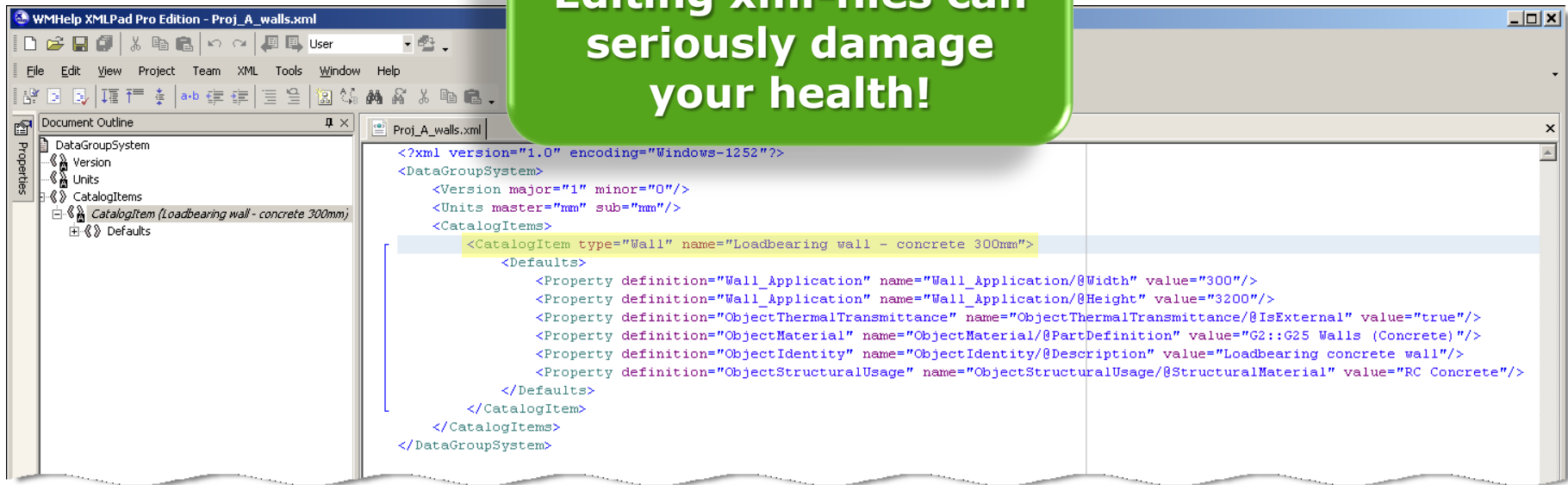
mm / mm

Add Catalog Item



```
Proj_A_walls.xml - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="windows-1252"?>
<DataGroupSystem>
  <Version major="1" minor="0"/>
  <Units master="mm" sub="mm"/>
  <CatalogItems>
    <CatalogItem type="wall" name="Loadbearing wall - concrete 300mm">
      <Defaults>
        <Property definition="wall_Application" name="wall_Application/@width" value="300"/>
        <Property definition="wall_Application" name="wall_Application/@Height" value="3200"/>
        <Property definition="ObjectThermalTransmittance" name="ObjectThermalTransmittance/@IsExternal" value="true"/>
        <Property definition="ObjectMaterial" name="ObjectMaterial/@PartDefinition" value="G2::G25 walls (Concrete)"/>
        <Property definition="ObjectIdentity" name="ObjectIdentity/@Description" value="Loadbearing concrete wall"/>
        <Property definition="ObjectStructuralUsage" name="ObjectStructuralUsage/@StructuralMaterial" value="RC concrete"/>
      </Defaults>
    </CatalogItem>
  </CatalogItems>
</DataGroupSystem>
```

**Warning:
Editing xml-files can
seriously damage
your health!**



Add Catalog Item

- can't create duplicate DataGroup items

A catalog item with the name you entered already exists. Please enter a unique name.

- if created 'manually', then error message

Validation Report

February 24, 2010 - 1:39:01PM

System Checks

Status	Description		
!	1 duplicate Catalog Item was found	Help	Details
!	Duplicate Catalog Type: 'Wall', Catalog Item: 'G25 Walls (Block)', was found in file 'D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\triforma\ArchDatasetUniclassGB\datagroupcatalogs\uniclass_walls.xml'		
✓	All required configuration variables exist		Details
✓	All configuration variables are valid		Details

Hiding Catalog Items

- enclose the entire item with `<!--` and `-->`



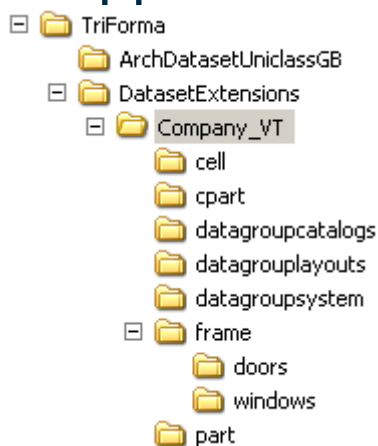
```
uniclass_walls.xml*
<?xml version="1.0" encoding="Windows-1252"?>
<DataGroupSystem>
  <Version major="1" minor="0"/>
  <Units master="mm" sub="mm"/>
  <CatalogItems>
    <!-- <CatalogItem type="Wall" name="G25 Walls (Block)">
      <Defaults>
        <Property definition="ObjectMaterial" name="ObjectMaterial/@PartDefinition" value="G2::G25 Walls (Block)"/>
        <Property definition="ObjectThermalTransmittance" name="ObjectThermalTransmittance/@IsExternal" value="false"/>
        <Property definition="Wall_Application" name="Wall_Application/@Width" value="100"/>
        <Property definition="Wall_Application" name="Wall_Application/@Height" value="3000"/>
        <Property definition="Wall_Common" name="Wall_Common/@IsCompound" value="false"/>
      </Defaults>
    </CatalogItem -->
    <CatalogItem type="Wall" name="G25 Walls (Block) 75mm">
      <Defaults>
        <Property definition="ObjectMaterial" name="ObjectMaterial/@PartDefinition" value="G2::G25 Walls (Block)"/>
        <Property definition="ObjectThermalTransmittance" name="ObjectThermalTransmittance/@IsExternal" value="false"/>
      </Defaults>
    </CatalogItem>
  </CatalogItems>
</DataGroupSystem>
```

Warning:
Editing xml-files can
seriously damage
your health!

Company Datasets

Company Datasets

- add folder 'DatasetExtensions'
- add folder and subfolders
- create configuration variable to folder in PCF-file
- append search paths to subfolders



```
#-----
# Append search paths for company-level dataset portions
#-----
COMP_DATASET = $(TF_DATASETS)DatasetExtensions/Company_VT/

TFDIR_PART < $(COMP_DATASET)part/
TFDIR_CELL < $(COMP_DATASET)cell/
TFDIR_COMP < $(COMP_DATASET)comp/
TFDIR_CPART < $(COMP_DATASET)cpart/
TFDIR_FRAME < $(COMP_DATASET)frame/
ATFDIR_Window < $(COMP_DATASET)frame/windows/
ATFDIR_Door < $(COMP_DATASET)frame/doors/
MS_MATERIAL < $(COMP_DATASET)materials/
MS_PATTERN < $(COMP_DATASET)materials/pattern/
MS_BUMP < $(COMP_DATASET)materials/bump/
DG_CATALOGS_PATH > $(COMP_DATASET)datagroupcatalogs/
DG_SCHEDULE_LAYOUT_PATH < $(COMP_DATASET)datagrouplayouts/
DG_PATH < $(COMP_DATASET)datagroupsystem/
```

Configuration Variables

The image displays three overlapping screenshots of the Bentley Configuration dialog boxes, illustrating the process of configuring variables.

Top Dialog: Configuration : User [triforma]
Category: DataGroup System Settings
DataGroup Catalog Files Project
DataGroup System Files Project

Middle Dialog: Configuration : User [triforma]
View/modify all configuration variables.
TFDIR_IFC Project
TFDIR_MACRO Appl

Bottom Dialog: Configuration : User [triforma]
Bentley Architecture Application Settings
Frame Files for Base Cabinets Appl
Frame Files for Casework Appl
Frame Files for Doors Project
Frame Files for Shelving Appl
Frame Files for Tall Cabinets Appl
Frame Files for Wall Cabinets Appl

Expansion:
D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\MicroStation\WorkSpace\triforma\Dataset\Extensions\Company_VT\frame\doors\
D:\Documents and Settings\All Users\Application Data\Bentley\08.11.07\Mic

Description:
Location of door frame files. By default this variable is based on ATFDIR_FRAME. (ATFDIR_DOOR)

For more options, click on the category list at left.

Company Family & Parts

Dataset Explorer

Dataset Edit

Parts View Definition

Parts

- All Parts
 - By Families
 - D:\Documents and Settings\All Users\Appl
 - Company_VT_Parts.xml
 - Company_VT_Parts
 - D:\Documents and Settings\All Users\Appl
 - Project_A_Parts.xml
 - G2
 - Project_A_Walls
 - D:\Documents and Settings\All Users\Appl
 - ifc_si_parts.xml
 - landscaping_metric_parts.xml
 - styles.xml
 - Uniclass-Part.xml
 - F
 - F1
 - F2
 - F3
 - F4
 - F6
 - F7

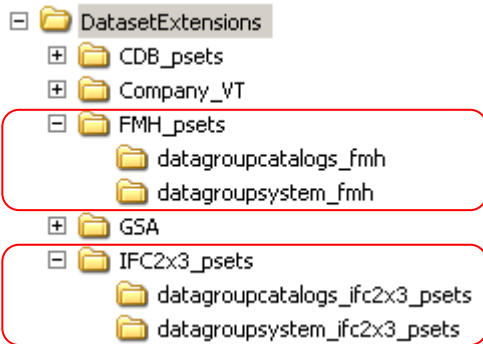
Part	Description	Level	Color	Style	Weight	Thickness	Height
G321 Windows - Awning Alu	Windows - a...	A-G321-G-Wndw	31	0	0	1200	1200
G321 Windows - Awning Wood	Windows - a...	A-G321-G-Wndw	143	0	0	1200	1200
G321 Windows - Glazing Type 1	Windows - gla...	A-G321-G-Wndw	111	0	0	1200	1200
G321 Windows - Glazing Type 2	Windows - gla...	A-G321-G-Wndw	175	0	0	1200	1200
G321 Windows - PVC	Windows - PVC	A-G321-G-Wndw	0	0	0	1200	1200
G321 Windows Metal Type 1	Windows - al...	A-G321-G-Wndw	139	0	0	1200	1200
G321 Windows Metal Type 2	Windows - wa...	A-G321-G-Wndw	60	0	0	1200	1200
G321 Windows Metal Type 3	Windows - shi...	A-G321-G-Wndw	171	0	0	1200	1200
G321 Windows Wood Type 1	Windows - ligh...	A-G321-G-Wndw	143	0	0	1200	1200
G322 Doors	Doors	A-G322-G-Door	By Level	0	0	100	2100
G322 Doors - Glazing	Doors - glazing	A-G322-G-Door	111	0	0	100	2100
G322 Doors - Metal Type 1	Doors - alumi...	A-G322-G-Door	139	0	0	100	2100
G322 Doors - Metal Type 2	Doors - warm ...	A-G322-G-Door	60	0	0	100	2100
G322 Doors - Metal Type 3	Doors - shiny ...	A-G322-G-Door	171	0	0	100	2100
G322 Doors - PVC	Doors - PVC	A-G322-G-Door	0	0	0	100	2100
G322 Doors - Wood Type 1	Doors - light ...	A-G322-G-Door	143	0	0	100	2100
G322 Doors - Wood Type 2	Doors - dark ...	A-G322-G-Door	136	0	0	100	2100

Special-purpose dataset extensions

IFC2x3 psets, IFC MVDs, etc.

Dataset Extensions

- add folders and subfolders (if necessary)
- create configuration variable to folders in PCF-file
- append search paths to subfolders



```
#-----  
# Append search paths to support the IFC 'FM Handover (COBie2)' Model View Definition  
# (folders and files created by unzipping DatasetExtensions_FMHandover.zip  
# in ...\Workspace\Triforma with create folder option on)  
#-----  
FMH_DATASET = $(TF_DATASETS)DatasetExtensions/FMH_psets/  
DG_CATALOGS_PATH > $(FMH_DATASET)datagrouppcatalogs_fmh/  
DG_PATH < $(FMH_DATASET)datagrouppsystem_fmh/  
  
IFC_Psets = $(TF_DATASETS)DatasetExtensions/IFC2x3_psets/  
DG_CATALOGS_PATH > $(IFC_Psets)datagrouppcatalogs_fmh  
DG_PATH < $(IFC_Psets)datagrouppsystem_ifc2x3_psets/
```

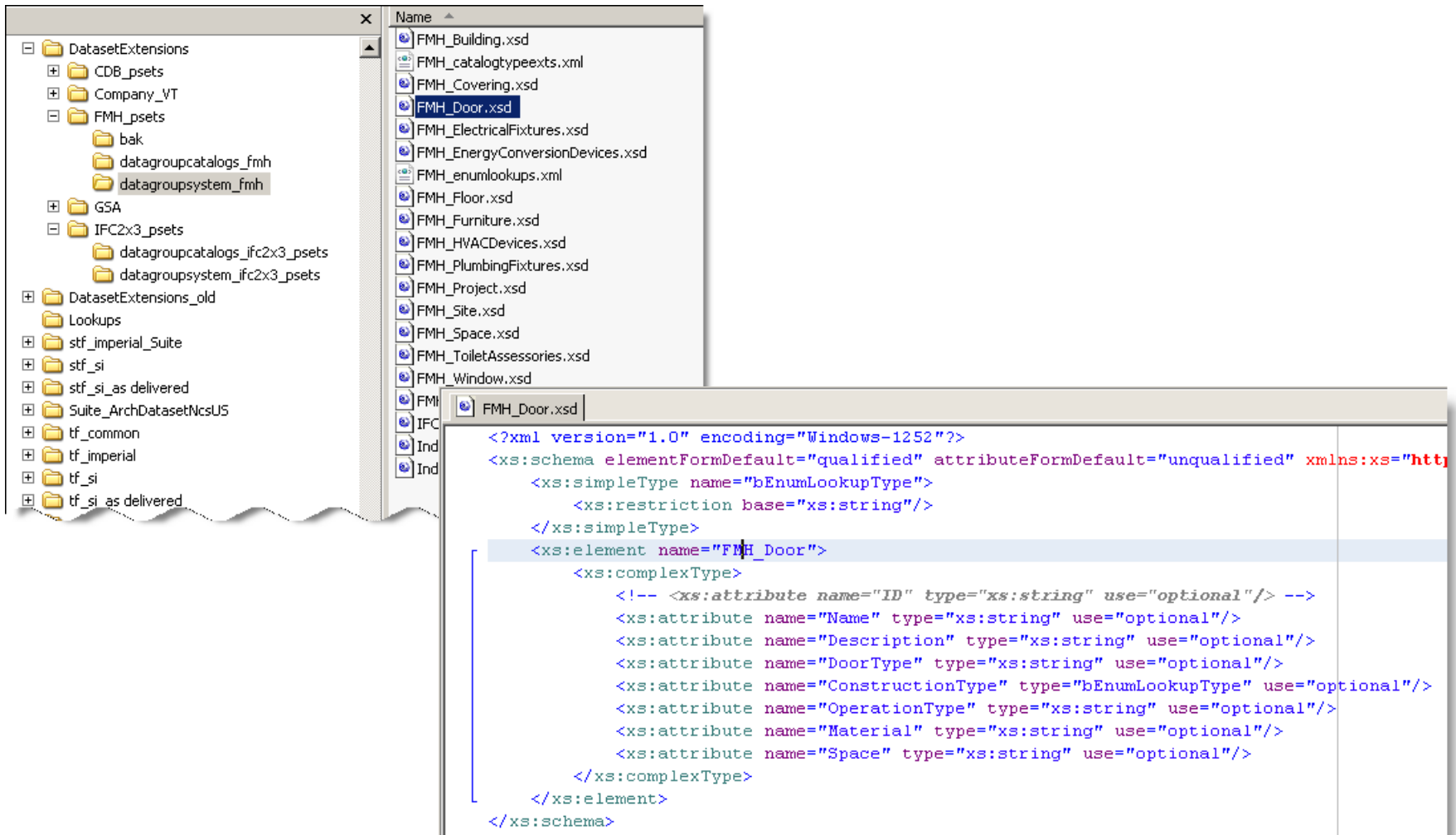


- [-] Catalog Items
 - [-] Beam
 - Beam: Concrete
 - Beam: Steel
 - [-] Brace: Steel Horizontal
 - [-] Brace: Steel Vertical
 - [+] Building
 - [+] Casework: Base
 - [+] Casework: Tall
 - [+] Casework: Wall
 - [-] Ceiling
 - [-] Column
 - Column: Concrete
 - Column: Steel
 - [-] Covering
 - [-] CurtainWalls
 - [+] Door
 - Energy Conversion Device
 - [+] Escalators
 - [+] Floor
 - Flooring
 - [-] Footing
 - [+] Furniture
 - [+] HandRails
 - [-] HVAC Device
 - [+] IndustryClassificationSystem
 - [+] Ladders
 - [-] Mat Foundation
 - [-] Member
 - [-] Opening
 - [-] Pile
 - Pile Cap
 - [+] PlumbingFixtures
 - [-] Project
 - [-] Ramp
 - [+] Ramps
 - [-] Roof
 - [+] Shelving
 - [-] Site
 - [+] Slab
 - [+] Space
 - Spread Footing
 - [+] Stair
 - Stairs
 - [-] Steel Cladding
 - [-] Steel Purlin
 - [-] Strip Footing
 - [-] Timber Joist

Definition	Property	Value	Editable
ArchDoor	Parametric Type	BXF	▼
ArchDoor	Parametric File	31101	▼
ArchDoor	Width	1800	▼
ArchDoor	Height	2100	▼
ArchDoor	Frame Depth	90	▼
ArchDoor	Frame Depth Match Wall	<input type="checkbox"/>	▼
ArchDoor	Frame Thickness	25	▼
ArchDoor	Leaf Thickness	38	▼
FMH_Door	Name		▼
FMH_Door	Description		▼
FMH_Door	Door Type		▼
FMH_Door	ConstructionType		▼
FMH_Door	OperationType		▼
FMH_Door	Material		▼
FMH_Door	Space		▼
IndustryClassification	ClassificationSystem		▼
IndustryClassification	ClassificationReference		▼
IndustryClassification	ClassificationName		▼
pset_doorcommon	Reference		▼
pset_doorcommon	FireRating		▼
pset_doorcommon	AcousticRating		▼
pset_doorcommon	SecurityRating		▼
pset_doorcommon	IsExternal	<input type="checkbox"/>	▼
pset_doorcommon	Infiltration		▼
pset_doorcommon	ThermalTransmittance	0	▼
pset_doorcommon	GlazingAreaFraction	0	▼
pset_doorcommon	HandicapAccessible	<input type="checkbox"/>	▼
pset_doorcommon	FireExit	<input type="checkbox"/>	▼
pset_doorcommon	SelfClosing	<input type="checkbox"/>	▼
pset_doorcommon	SmokeStop	<input type="checkbox"/>	▼
pset_doorwindowglazingtype	GlassLayers	0	▼
pset_doorwindowglazingtype	GlassThickness1	0	▼
pset_doorwindowglazingtype	GlassThickness2	0	▼
pset_doorwindowglazingtype	GlassThickness3	0	▼
pset_doorwindowglazingtype	FillGas		▼
pset_doorwindowglazingtype	GlassColor		▼
pset_doorwindowglazingtype	IsTempered	<input type="checkbox"/>	▼
pset_doorwindowglazingtype	IsLaminated	<input type="checkbox"/>	▼
pset_doorwindowglazingtype	IsCoated	<input type="checkbox"/>	▼
pset_doorwindowglazingtype	IsWired	<input type="checkbox"/>	▼
pset_doorwindowglazingtype	Translucency	0	▼
pset_doorwindowglazingtype	Reflectivity	0	▼
pset_doorwindowglazingtype	BeamRadiationTransmittance	0	▼
pset_doorwindowglazingtype	SolarHeatGainTransmittance	0	▼
pset_doorwindowglazingtype	ThermalTransmittanceSummer	0	▼
pset_doorwindowglazingtype	ThermalTransmittanceWinter	0	▼
pset_doorwindowshadingtype	ExternalShadingCoefficient	0	▼
pset_doorwindowshadingtype	InternalShadingCoefficient	0	▼
pset_doorwindowshadingtype	InsetShadingCoefficient	0	▼
pset_fireratingproperties	FireResistanceRating		▼
pset_fireratingproperties	SurfaceSpreadOfFlame		▼
pset_fireratingproperties	IsCombustible	<input type="checkbox"/>	▼
pset_manufacturetypecommon	ArticleNumber		▼
pset_manufacturetypecommon	ModelReference		▼

Before

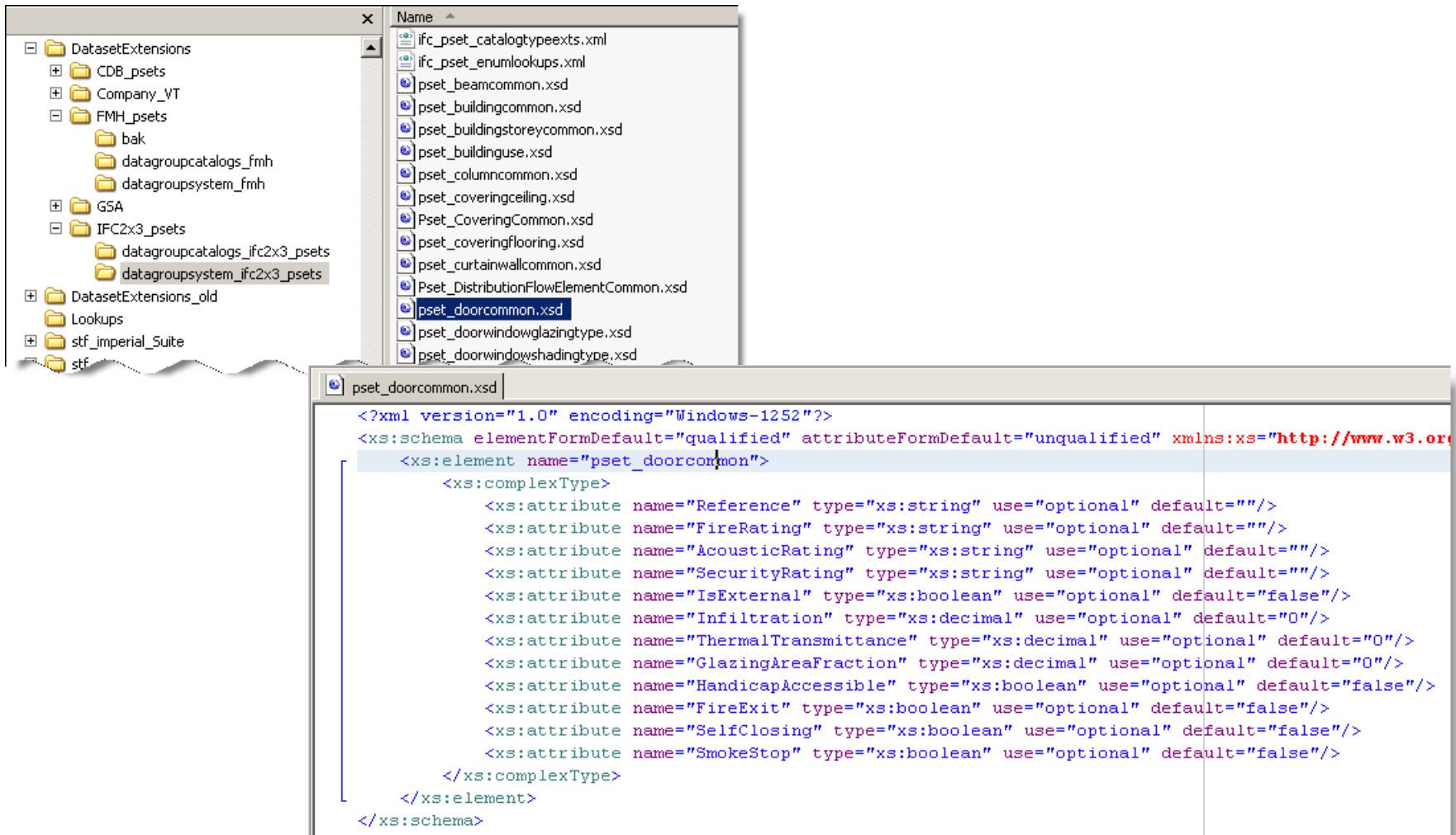
Special-purpose DataGroup Definitions



The screenshot displays a software interface with a file explorer on the left and a code editor on the right. The file explorer shows a directory structure with folders like 'DatasetExtensions', 'CDB_psets', 'Company_VT', 'FMH_psets', 'GSA', and 'IFC2x3_psets'. The code editor shows an XML schema definition for 'FMH_Door.xsd'.

```
<?xml version="1.0" encoding="Windows-1252"?>
<xs:schema elementFormDefault="qualified" attributeFormDefault="unqualified" xmlns:xs="http://www.w3.org/2001/XMLSchema" >
  <xs:simpleType name="bEnumLookupType">
    <xs:restriction base="xs:string"/>
  </xs:simpleType>
  <xs:element name="FMH_Door">
    <xs:complexType>
      <!-- <xs:attribute name="ID" type="xs:string" use="optional"/> -->
      <xs:attribute name="Name" type="xs:string" use="optional"/>
      <xs:attribute name="Description" type="xs:string" use="optional"/>
      <xs:attribute name="DoorType" type="xs:string" use="optional"/>
      <xs:attribute name="ConstructionType" type="bEnumLookupType" use="optional"/>
      <xs:attribute name="OperationType" type="xs:string" use="optional"/>
      <xs:attribute name="Material" type="xs:string" use="optional"/>
      <xs:attribute name="Space" type="xs:string" use="optional"/>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

Special-purpose DataGroup Definitions



The image shows a file explorer window displaying a directory structure of XML and XSD files. The files are organized into folders such as 'DatasetExtensions', 'CDB_psets', 'Company_VT', 'FMH_psets', 'GSA', and 'IFC2x3_psets'. The 'pset_doorcommon.xsd' file is selected, and its content is displayed in a separate window below.

```
<?xml version="1.0" encoding="Windows-1252"?>
<xs:schema elementFormDefault="qualified" attributeFormDefault="unqualified" xmlns:xs="http://www.w3.org/2001/XMLSchema#">
  <xs:element name="pset_doorcommon">
    <xs:complexType>
      <xs:attribute name="Reference" type="xs:string" use="optional" default=""/>
      <xs:attribute name="FireRating" type="xs:string" use="optional" default=""/>
      <xs:attribute name="AcousticRating" type="xs:string" use="optional" default=""/>
      <xs:attribute name="SecurityRating" type="xs:string" use="optional" default=""/>
      <xs:attribute name="IsExternal" type="xs:boolean" use="optional" default="false"/>
      <xs:attribute name="Infiltration" type="xs:decimal" use="optional" default="0"/>
      <xs:attribute name="ThermalTransmittance" type="xs:decimal" use="optional" default="0"/>
      <xs:attribute name="GlazingAreaFraction" type="xs:decimal" use="optional" default="0"/>
      <xs:attribute name="HandicapAccessible" type="xs:boolean" use="optional" default="false"/>
      <xs:attribute name="FireExit" type="xs:boolean" use="optional" default="false"/>
      <xs:attribute name="SelfClosing" type="xs:boolean" use="optional" default="false"/>
      <xs:attribute name="SmokeStop" type="xs:boolean" use="optional" default="false"/>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

Dataset Key Features

- pre-defined geometry, symbology & properties
 - default geometry (width, height, thickness, ...)
 - level and symbology in models
 - level, symbology, material hatching/patterning in drawings
 - rendering properties
 - properties for quantity takeoff and cost calculation
 - specification texts
 - user attributes for schedules
 - schedule templates
- libraries of parametric and non-parametric cells

Dataset Key Benefits

- enforce country, company, project standards
 - naming, level, symbology, hatching, rendering, quantification, ...
- consistency of models, drawings, schedules, renderings
- geometry and attribute edits to single/multiple building elements
- query model by attributes/create selection sets
- facilitate downstream tasks
 - interference detection, schedule simulation, analyses, ...
- interoperability with other applications via IFC export
- capture and preserve standards for reuse on consequent projects

Dataset Overview

Bentley
Sustaining Infrastructure

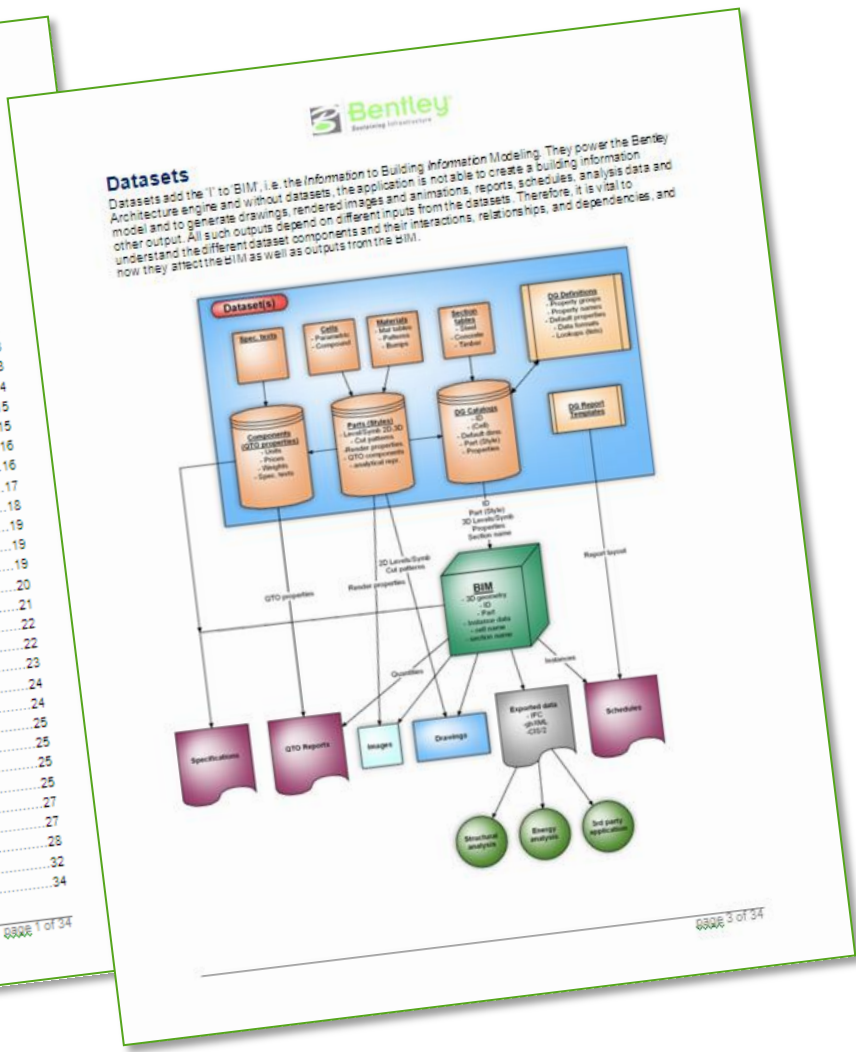
Bentley Architecture Dataset Overview

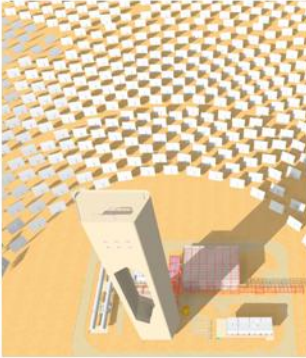
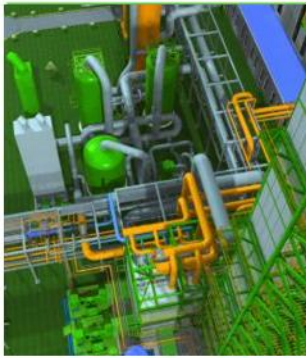
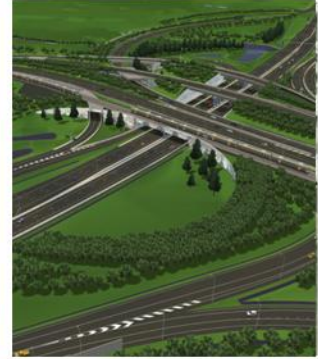
68006-11 Dec 2009 - 11:07 AM

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Tack så mycket