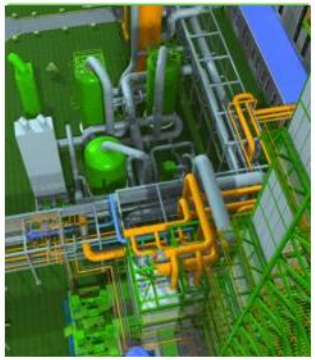
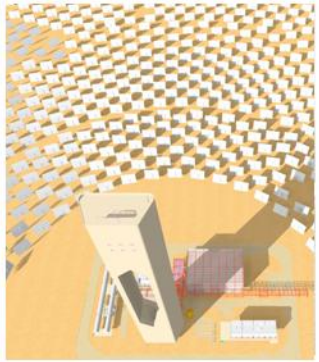
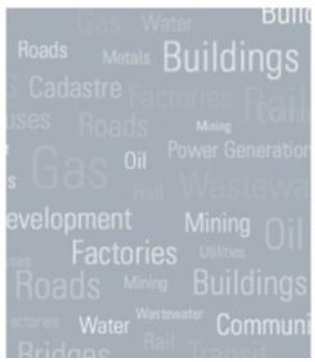




IFC

Integrating Building Information Modeling

Bentley
Sustaining Infrastructure

Volker Thein, Dipl.- Ing. Arch.
Product Director Bentley Building

Agenda

- IFC - the ‘glue’ of BIMs
- Bentley’s support of IFC, including IFC2x3 psets
  - export
  - import
  - open/reference
- Limitations of IFC
- Benefits of IFC

IFC (Industry Foundation Classes)

- Information Model schema for exchange
- semantic information
  - geom
-
-
  - interoperability, IAI)
  - ment and maintenance
  - process maps, exchange requirements, MVD
  - implementer support (ISG), certification, …

prerequisite for improving Integrated Project Delivery using BIM methods

IFC - Objectives

- Coordination View
  - **cross-discipline coordination** of building information models
- Add-on Views
  e.g. QTO, COBie2, FM Handover, CDB-2010, ATC-75, …
  - **interoperability** across IFC-compliant BIM applications
  - **re-use of data** for analyses and other downstream tasks

IFC2x3 specification

export IFC

extend workspace with IFC2x3 property sets

IFC2x3 Property Sets

- >300 object property sets, names and formats defined by buildingSMART

IFC2x3 Property Set Definition Reference

PropertySet Definition:

PropertySet Name	Pset_DoorCommon
Applicable Entities	IfcDoor
Applicable Type Value	
Definition	Definition from IAI: Properties common to the definition of all occurrences of IfcDoor.

Property Definitions:

Name	Property Type	Data Type	Definition
Reference	IfcPropertySingleValue	IfcIdentifier	Reference ID for this specified type in this project (e.g. type 'A-1')
FireRating	IfcPropertySingleValue	IfcLabel	Fire rating for this object. It is given according to the national fire safety classification.
AcousticRating	IfcPropertySingleValue	IfcLabel	Acoustic rating for this object. It is giving according to the national building code. It indicates the sound transmission resistance of this object by an index ration (instead of providing full sound absorbtion values).
SecurityRating	IfcPropertySingleValue	IfcLabel	Index based rating system indicating security level. It is giving according to the national building code.
IsExternal	IfcPropertySingleValue	IfcBoolean	Indication whether the element is designed for use in the exterior (TRUE) or not (FALSE). If (TRUE) it is an external element and faces the outside of the building.
Infiltration	IfcPropertySingleValue	IfcVolumetricFlowRateMeasure / VOLUMETRICFLOWRATEUNIT	Infiltration flowrate of outside air for the filler object based on the area of the filler object at a pressure level of 50 Pascals. It shall be used, if the length of all joints is unknown.
ThermalTransmittance	IfcPropertySingleValue	IfcThermalTransmittanceMeasure / THERMALTRANSMITTANCEUNIT	Thermal transmittance coefficient (U-Value) of a material. It applies to the total door construction.
GlazingAreaFraction	IfcPropertySingleValue	IfcPositiveRatioMeasure	Fraction of the glazing area relative to the total area of the filling element. It shall be used, if the glazing area is not given separately for all panels within the filling element.
HandicapAccessible	IfcPropertySingleValue	IfcBoolean	Indication that this object is designed to be accessible by the handicapped. It is giving according to the requirements of the national building code.
FireExit	IfcPropertySingleValue	IfcBoolean	Indication whether this object is designed to serve as an exit in the case of fire (TRUE) or not (FALSE). Here it defines an exit door in accordance to the national building code.
SelfClosing	IfcPropertySingleValue	IfcBoolean	Indication whether this object is designed to close automatically after use (TRUE) or not (FALSE).
SmokeStop	IfcPropertySingleValue	IfcBoolean	Indication whether the object is designed to provide a smoke stop (TRUE) or not (FALSE).

IFC2x3 Property Sets

- >300 object property sets, names and formats defined by buildingSMART
- delivered as 'IFC2x3_pset_DatasetExtension.zip'
  - IFC2x3 specific DataGroup files
  - quick reference guide
- download from SELECTservices under 'Enhancements and Updates'
- added to project dataset or dataset extension
- non-common properties supported via DataGroup edits

IFC2x3_pset_DatasetExtension

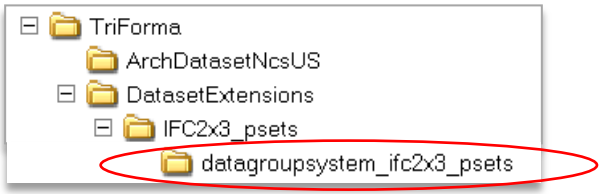
- IFC2x3 pset folders added to DataGroup system:
  - either to project dataset (for individual projects)

  - configuration variable to be added to pcf-file:

```
#------------------------------------------------------------------------
# Add search path to support the IFC2x3 property sets
#------------------------------------------------------------------------
DG_PATH > $(PROJ_DATASET)datagroupsystem_ifc2x3_psets/
```

IFC2x3_pset_DatasetExtension

- IFC2x3 pset folders added to DataGroup system:
  - or dataset-independent folder (for selected projects)

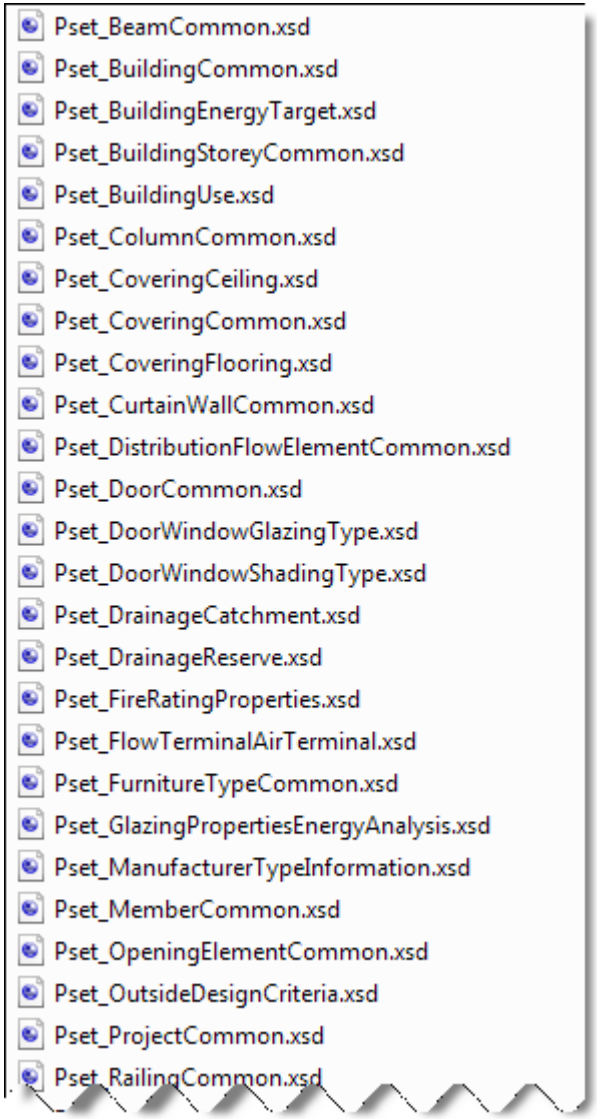


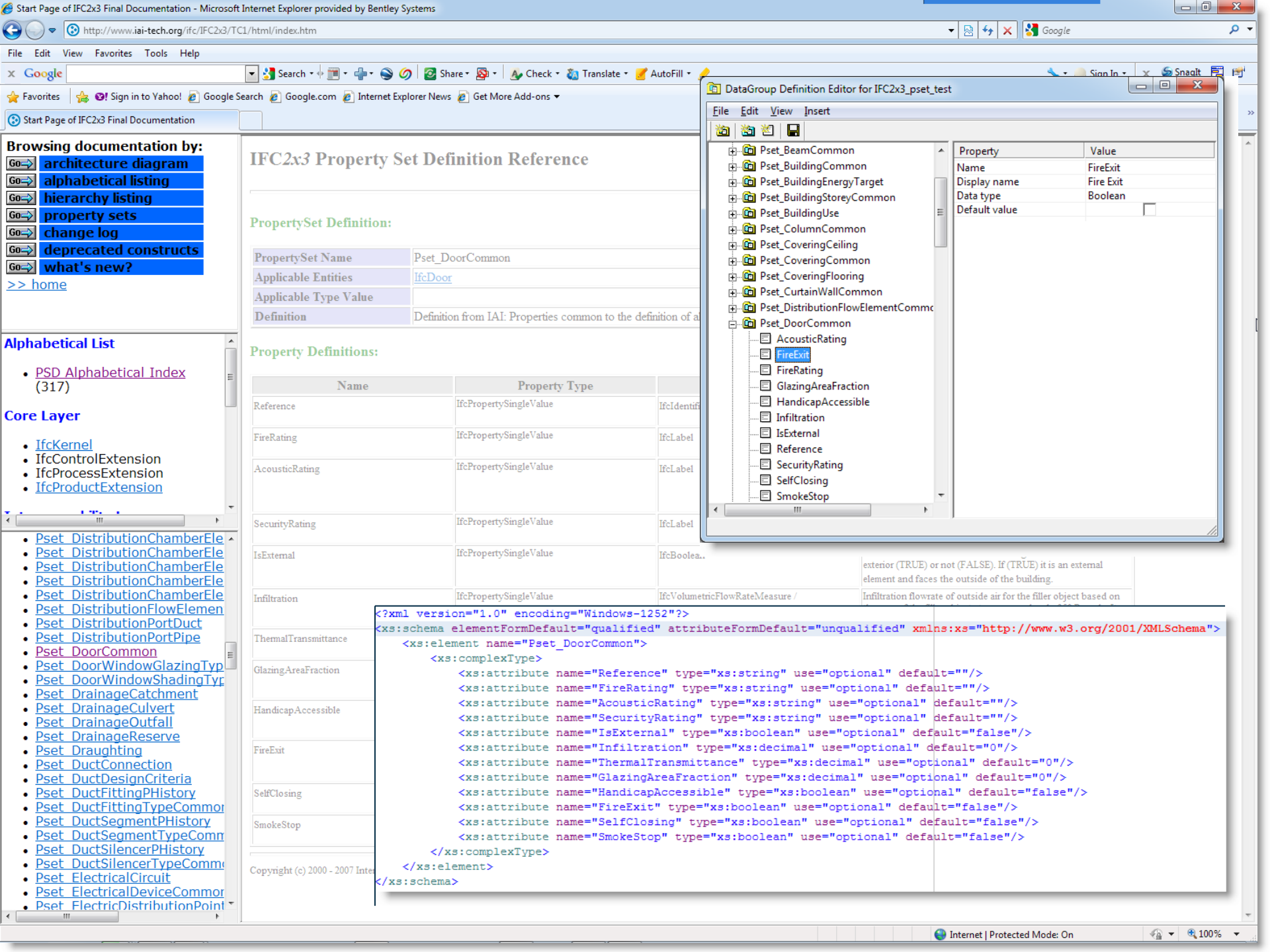
  - configuration variables to be added to each pcf-file:

```
#------------------------------------------------------------------------
# Add search paths to support the IFC2x3 property sets
#------------------------------------------------------------------------
IFC_PSETS   = $(TF_DATASETS)DatasetExtensions/IFC2x3_psets/
DG_PATH     = $(IFC_PSETS)datagroupsystem_ifc2x3_psets/
```

IFC2x3_pset_DatasetExtension

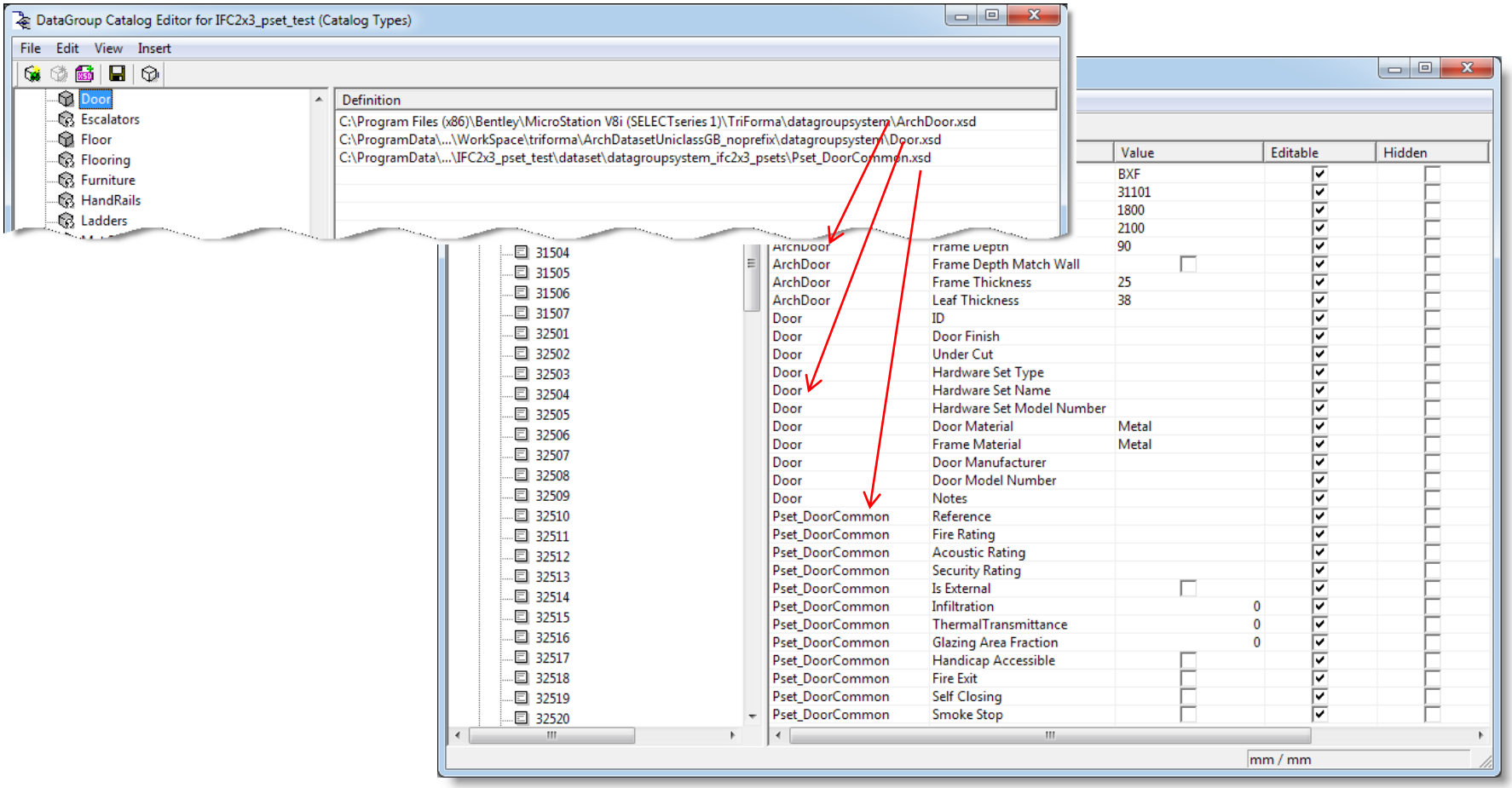
- DataGroup definition files added to Building workspace




Start Page of IFC2x3 Final Documentation - Microsoft Internet Explorer provided by Bentley Systems
http://www.iai-tech.org/ifc/IFC2x3/TC1/html/index.htm
File Edit View Favorites Tools Help
Start Page of IFC2x3 Final Documentation
Browsing documentation by:
Go architecture diagram
Go alphabetical listing
Go hierarchy listing
Go property sets
Go change log
Go deprecated constructs
Go what's new?
>> home
Alphabetical List
PSD Alphabetical Index (317)
Core Layer
IfcKernel
IfcControlExtension
IfcProcessExtension
IfcProductExtension
Pset_DistributionChamberEle
Pset_DistributionChamberEle
Pset_DistributionChamberEle
Pset_DistributionChamberEle
Pset_DistributionChamberEle
Pset_DistributionFlowElemen
Pset_DistributionPortDuct
Pset_DistributionPortPipe
Pset_DoorCommon
Pset_DoorWindowGlazingTyp
Pset_DoorWindowShadingTyp
Pset_DrainageCatchment
Pset_DrainageCulvert
Pset_DrainageOutfall
Pset_DrainageReserve
Pset_Draughting
Pset_DuctConnection
Pset_DuctDesignCriteria
Pset_DuctFittingPHistory
Pset_DuctFittingTypeCommor
Pset_DuctSegmentPHistory
Pset_DuctSegmentTypeComm
Pset_DuctSilencerPHistory
Pset_DuctSilencerTypeComm
Pset_ElectricalCircuit
Pset_ElectricalDeviceCommor
Pset_ElectricDistributionPoint
IFC2x3 Property Set Definition Reference
PropertySet Definition:
PropertySet Name Pset_DoorCommon
Applicable Entities IfcDoor
Applicable Type Value
Definition Definition from IAI: Properties common to the definition of a
Property Definitions:
Name
Property Type
Reference IfcPropertySingleValue
FireRating IfcPropertySingleValue IfcLabel
AcousticRating IfcPropertySingleValue IfcLabel
SecurityRating IfcPropertySingleValue IfcLabel
IsExternal IfcPropertySingleValue IfcBoolea..
exterior (TRUE) or not (FALSE). If (TRUE) it is an external element and faces the outside of the building.
Infiltration IfcPropertySingleValue IfcVolumetricFlowRateMeasure /
Infiltration flowrate of outside air for the filler object based on
ThermalTransmittance
GlazingAreaFraction
HandicapAccessible
FireExit
SelfClosing
SmokeStop
Copyright (c) 2000 - 2007 Inte
DataGroup Definition Editor for IFC2x3_pset_test
File Edit View Insert
Pset_BeamCommon
Pset_BuildingCommon
Pset_BuildingEnergyTarget
Pset_BuildingStoreyCommon
Pset_BuildingUse
Pset_ColumnCommon
Pset_CoveringCeiling
Pset_CoveringCommon
Pset_CoveringFlooring
Pset_CurtainWallCommon
Pset_DistributionFlowElementCommc
Pset_DoorCommon
AcousticRating
FireExit
FireRating
GlazingAreaFraction
HandicapAccessible
Infiltration
IsExternal
Reference
SecurityRating
SelfClosing
SmokeStop
Property Value
Name FireExit
Display name Fire Exit
Data type Boolean
Default value
<?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>
Internet | Protected Mode: On
100%

IFC2x3_pset_DatasetExtension

- IFC2x3 pset DataGroup definitions



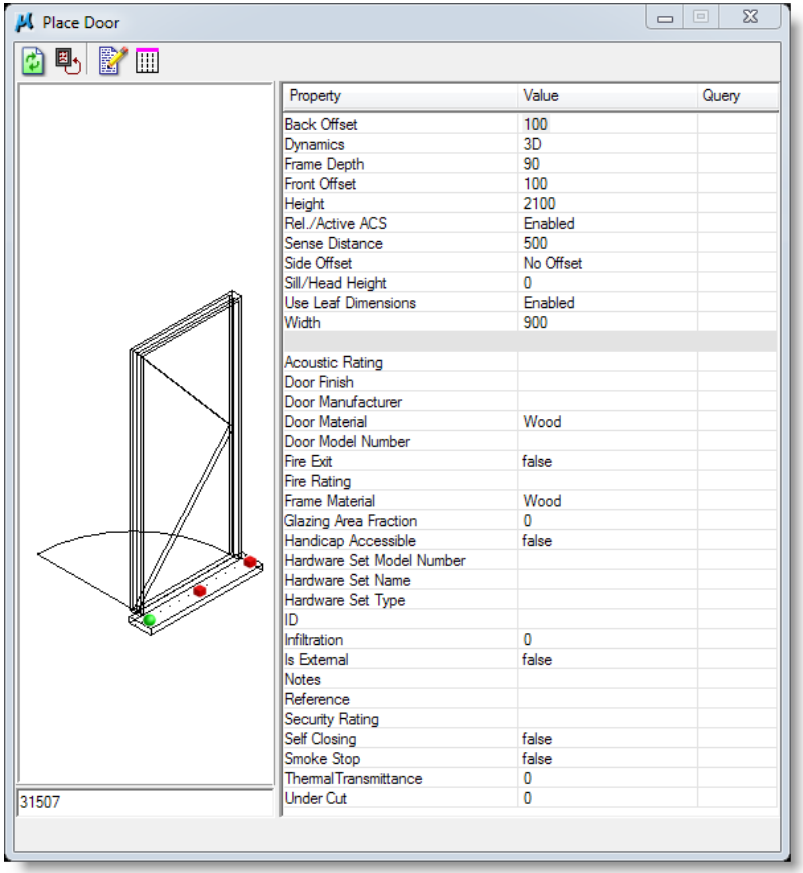
IFC2x3_pset_DatasetExtension

- IFC2x3 pset DataGroup definitions
  - attachments in ifc_pset_catalogtypeexts.xml
  - only Pset_XxxxxCommon activated

```
</CustomCatalogTypes>
<!-- ================================================================================================================
Note: all property sets (InstanceDataDefinitions) except the 'common' ones, are commented out, i.e. will not be used.
To attach an InstanceDataDefinition, do one of the following:
- use the DataGroup Catalog Editor (Catalog Types) tool, or
- uncomment the line(s) by deleting the comment-characters before and after the line as necessary
Caution: syntax errors corrupt the DataGroup system; backup files before editing!
================================================================================================================ -->
<CatalogTypeExtensions>
    <CatalogTypeExtension type="Concrete Beam">
        <InstanceDataDefinition defType="USER" definition="Pset_BeamCommon"/>
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_ReinforcementBarPitchOfBeam"/> -->
    </CatalogTypeExtension>
    <CatalogTypeExtension type="Steel Beam">
        <InstanceDataDefinition defType="USER" definition="Pset_BeamCommon"/>
    </CatalogTypeExtension>
    <CatalogTypeExtension type="BaseCasework">
        <InstanceDataDefinition defType="USER" definition="Pset_FurnitureTypeCommon"/>
    </CatalogTypeExtension>
    <CatalogTypeExtension type="Building">
        <InstanceDataDefinition defType="USER" definition="Pset_BuildingCommon"/>
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_BuildingUse"/> -->
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_BuildingEnergyTarget"/> -->
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_OutsideDesignCriteria"/> -->
    </CatalogTypeExtension>
    <CatalogTypeExtension type="Ceiling">
        <InstanceDataDefinition defType="USER" definition="Pset_CoveringCommon"/>
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_CoveringCeiling"/> -->
    </CatalogTypeExtension>
    <CatalogTypeExtension type="Concrete Column">
        <InstanceDataDefinition defType="USER" definition="Pset_ColumnCommon"/>
        <!-- <InstanceDataDefinition defType="USER" definition="Pset_ReinforcementBarPitchOfColumn"/> -->
```

Bentley Architecture Placement Tools

- IFC2x3_pset properties listed with Bentley Architecture properties

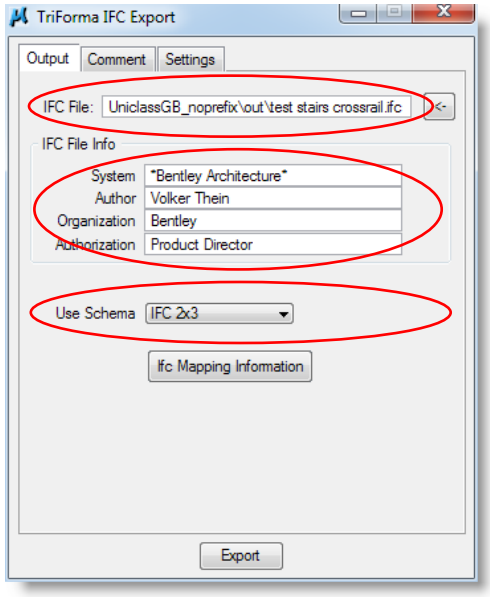


Export IFC

Settings and Options

IFC Export – Output tab

- IFC File
  - default: ‘setting’ folder in dataset, or
  - folder specified in config. var. TFDIR_IFC
- IFC File Info
  - System
  - Autor
  - Organization
  - Authorization
- Use Schema
  - IFC2x, IFC2x2, or IFC2x3
  - config. var. IFC_VERSION



IFC Configuration Variables

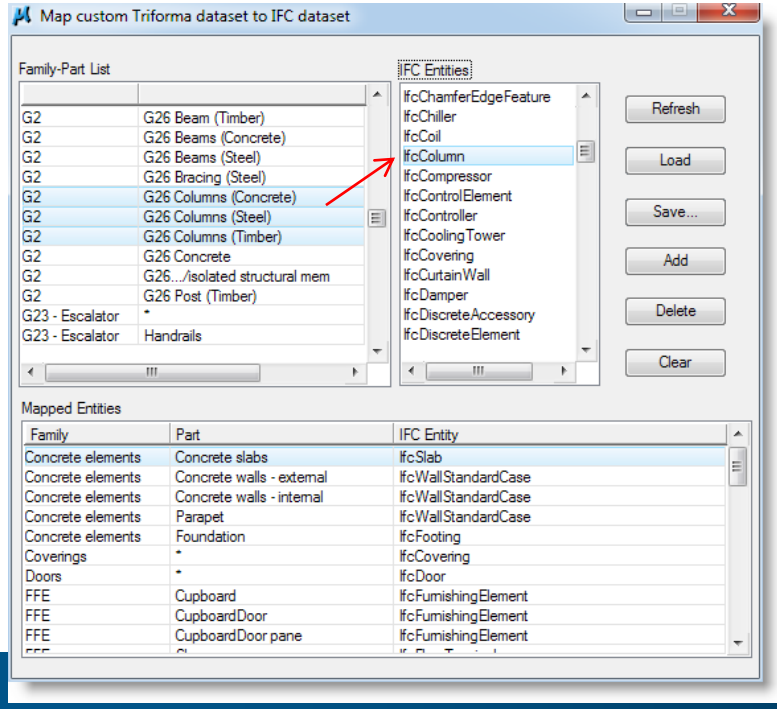
Configuration Variable	Value	Use
TFDIR_IFC	Dir	Specifies the default directory for IFC files for import and export Note: IFC module will not load if this configuration variable is not defined
IFC_PART_MAPPING	File	Specifies the file name and directory path that maps Parts to IfcEntities Default 'ifcmapping.set' in directory specified by TFDIR_SETTING
IFC_PROPERTY_OVERRIDES	Dir	Specifies the directory for ifcimportdgoverrides.set and ifcdgoverrides.set Default directory specified by TFDIR_SETTING
IFC_NO_PROXIES	0 or 1	if '0', elements not mapped to an IfcEntity will be exported as IfcBuildingElementProxy If '1' elements not mapped to an IfcEntity will not be exported Default '0'
IFC_VERSION	2x, 2x2, or 2x3	Specifies the default IFC schema for export Default '2x3'
TFIFC_UNIQUE_NAMES	0 or 1	if '0', duplicate asset and spatial object names will be exported without change if '1', duplicate asset and spatial object names will be made unique according to COBie2 requirement Default '0'
TFIFC_PREF_IMP_MaterialForPartfamilyList TFIFC_PREF_IMP_PartFamilySymbology TFIFC_PREF_IMP_IfcOverride TFIFC_PREF_IMP_IgnoreStorey	0,1 or any	If '0', setting on the 'Settings' tab of IFC Import is off If '1', setting on the 'Settings' tab of IFC Import is on If any other value (or not defined), setting on the 'Settings' tab is as set previously Default 'not defined'
IFC_CRASH_RECOVERY	0 or 1	If '0', IFC Export does not create a temporary file, so IFC export cannot resume If '1', a temporary IFC file with intermediate result is created; IFC Export can resume from the model where the IFC export failed and append further IFC export data to the file Default '0'

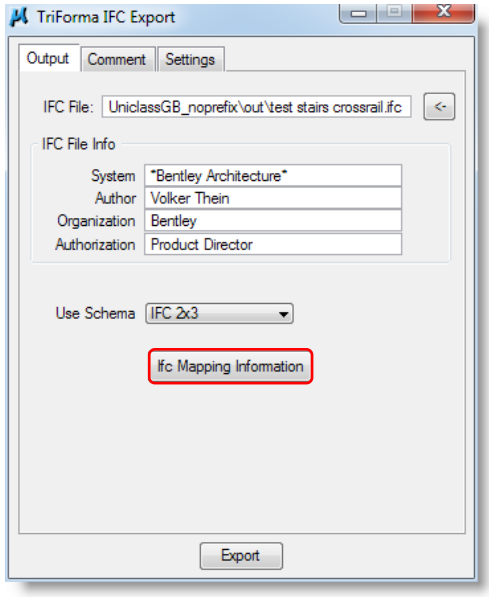
IFC Configuration Variables

IFC_DONT_FIT_VIEWS	0 or 1	If '0', all views are fit after IFC import If '1' views are not fit after IFC import Default '0'
TFIFC_NO_DATAGROUP	0 or 1	If '0', DataGroup data is imported and exported as IfcPropertySets If '1', DataGroup data is not imported or exported Default '0'
TFIFC_PREFS	Dir	Specifies the directory for the tfifcprefs.rsc file. Default directory specified by TFDIR_PREFS; if not defined directory specified by _USTN_HOMEPREFS
IFC_DONT_USE_DGGUID	0 or 1	If '0', DataGroup GUIDs are used as IfcGUIDs for IfcPropertySets on export If '1', the IfcGUIds are created 'on the fly' Default '0'
IFC_ZIP_EXTRACT_DIR	Dir	Specifies the extraction directory of zipped ifc-files on import If not defined, directory specified by MS_TMP is used
TFIFC_NOVERTICAL	0 or 1	If '0', IFC functionality can only be used with a Bentley Building application If '1', IFC functionality can be used without a Bentley Building applications Default '0'
IFC_DISABLE_TYPE_PSETS	0, 1 or 2	If '0', DataGroup catalog property values are exported as shared Type/Style properties If '1', DataGroup catalog property values are not exported as shared Type/Style properties If '2', DataGroup catalog property values are exported as shared Type properties, except for doors and window Styles. Note: LiningProperties and PanelProperties are always used Default: 0

IFC Export – Output tab

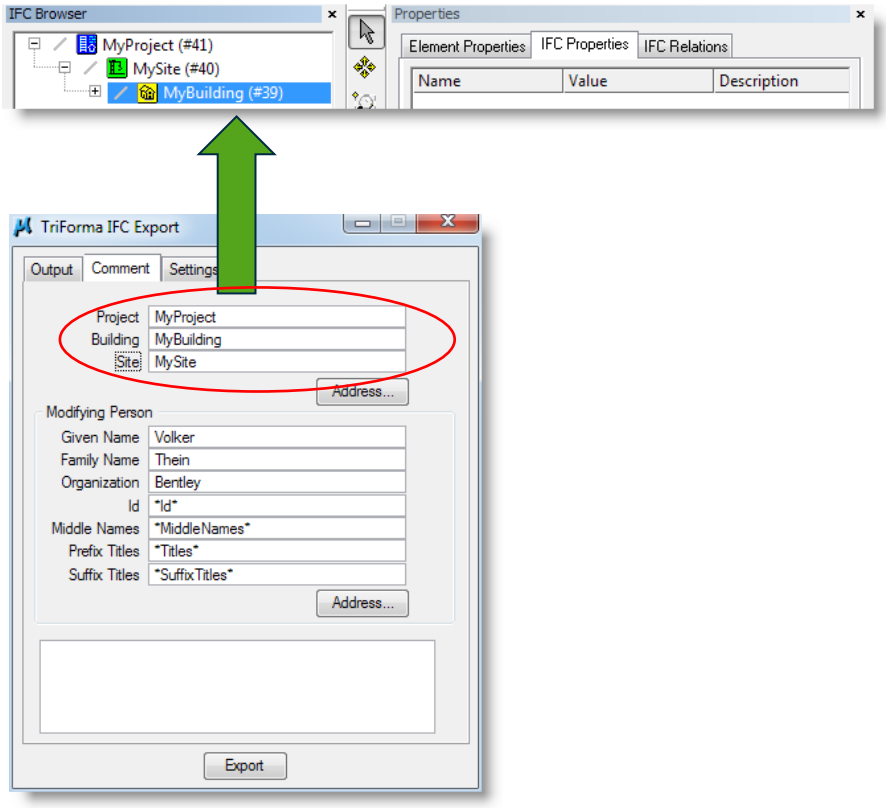
- IFC Mapping Information
  - Family/Part(s) mapped to corresponding Ifc Entity
  - also open via keyin ‘ifcmap’
  - <path>\file name via config. var. IFC_PART_MAPPING





IFC Export – Comment tab

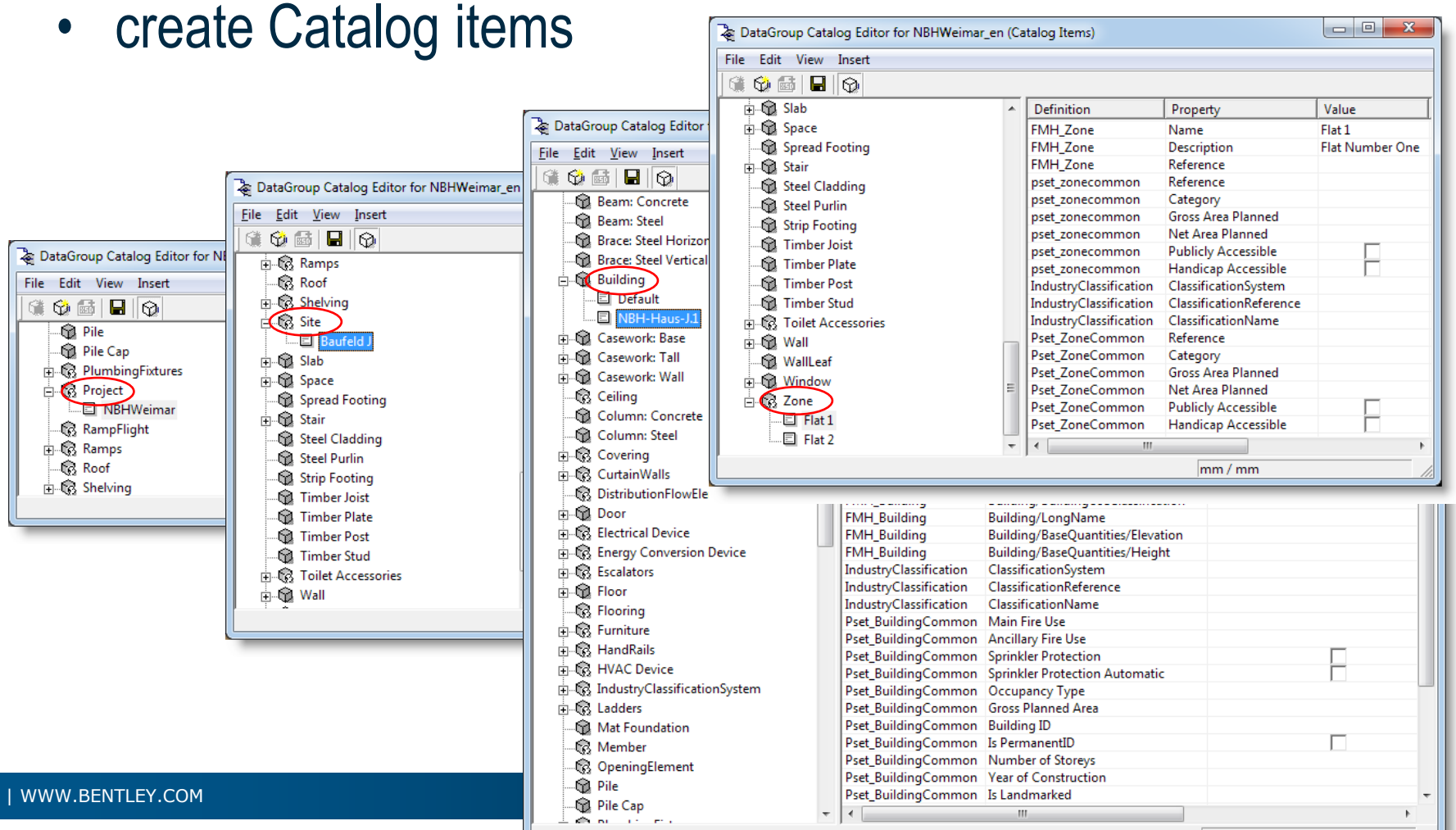
- Project
- Building
- Site
- Modifying Person



Project – Site – Building – Zone

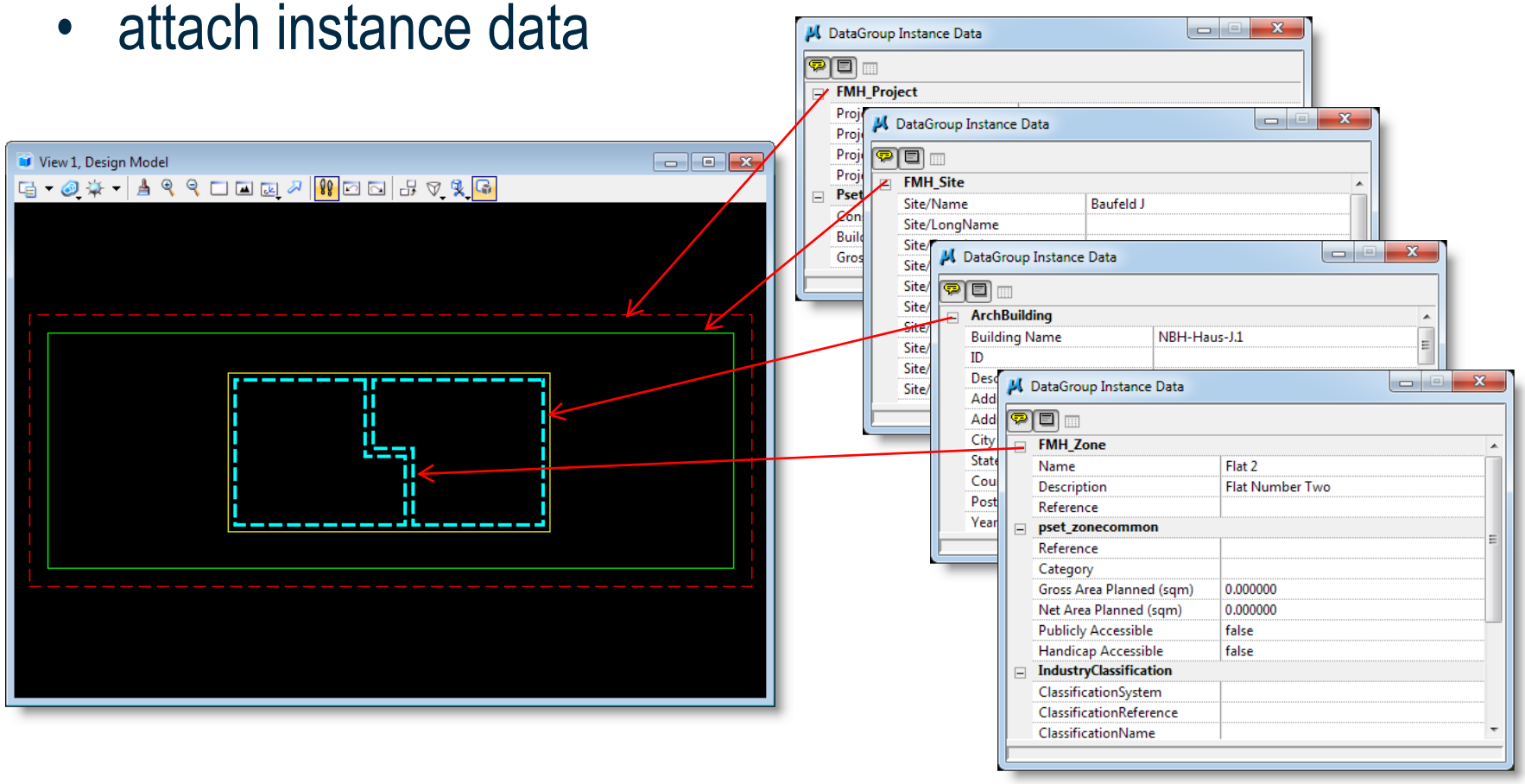
Advanced Option

- create DataGroup types
- create Catalog items



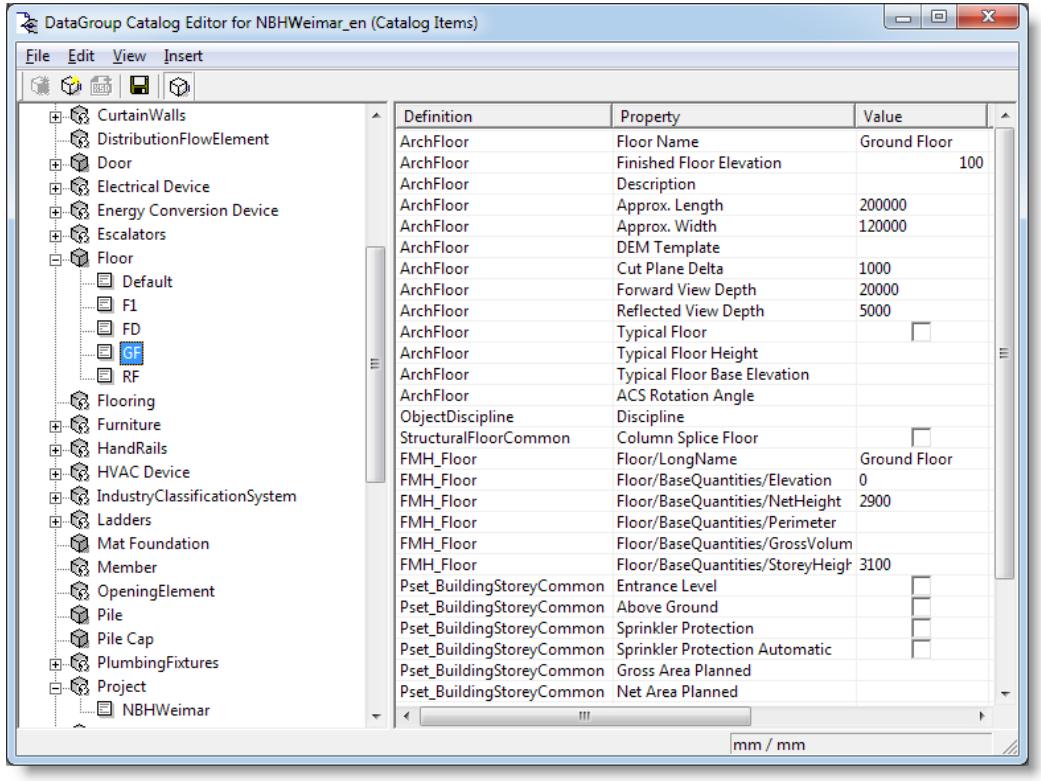
Project – Site – Building - Zone

- place MicroStation shapes into top level model
- attach instance data



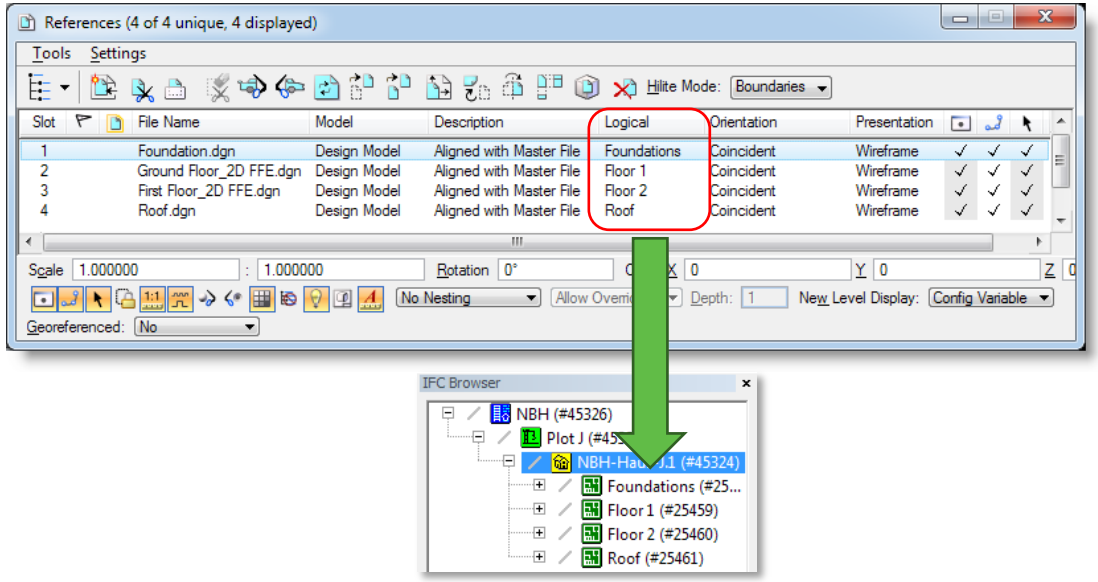
Floors (Building Storeys)

- create a Catalog item for each floor



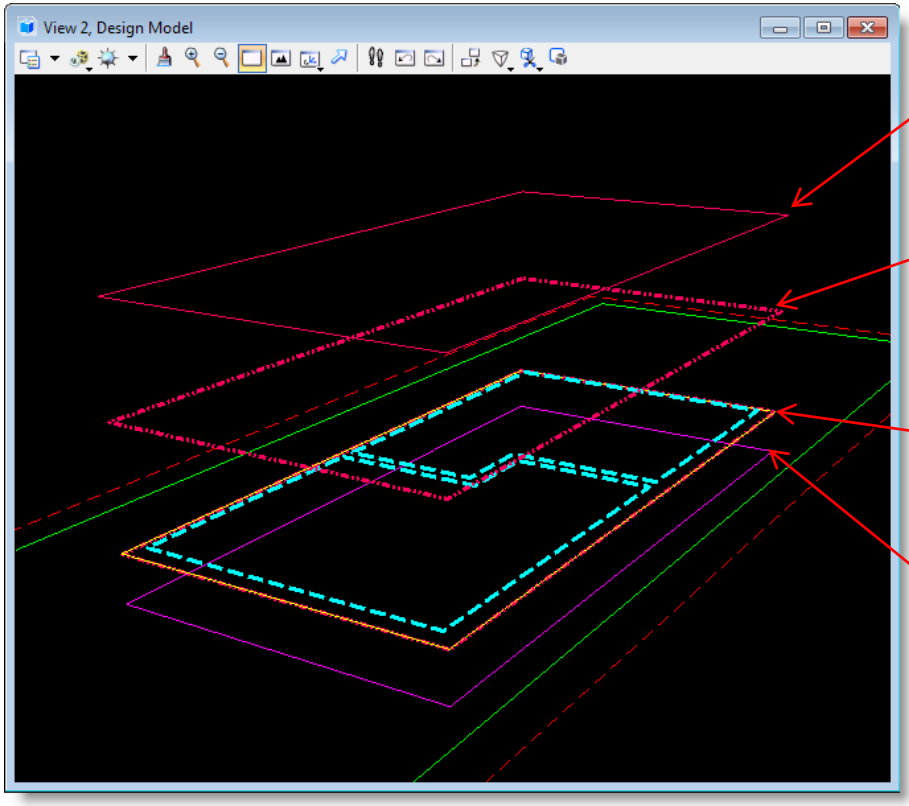
Floors (Building Storeys)

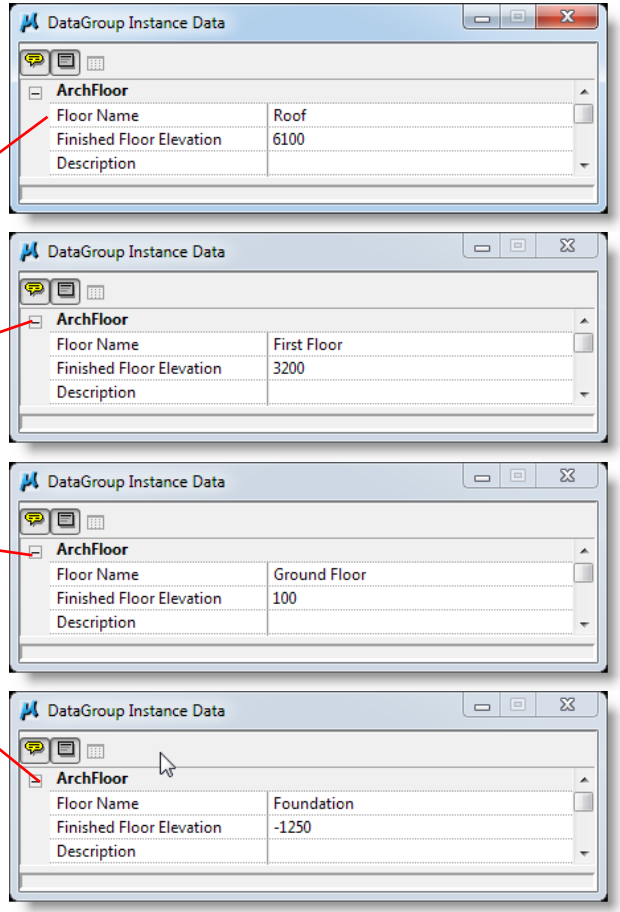
- create one model per floor
- attach as reference(s)
- ‘Logical’ names are exported as ‘IfcBuildingStorey’



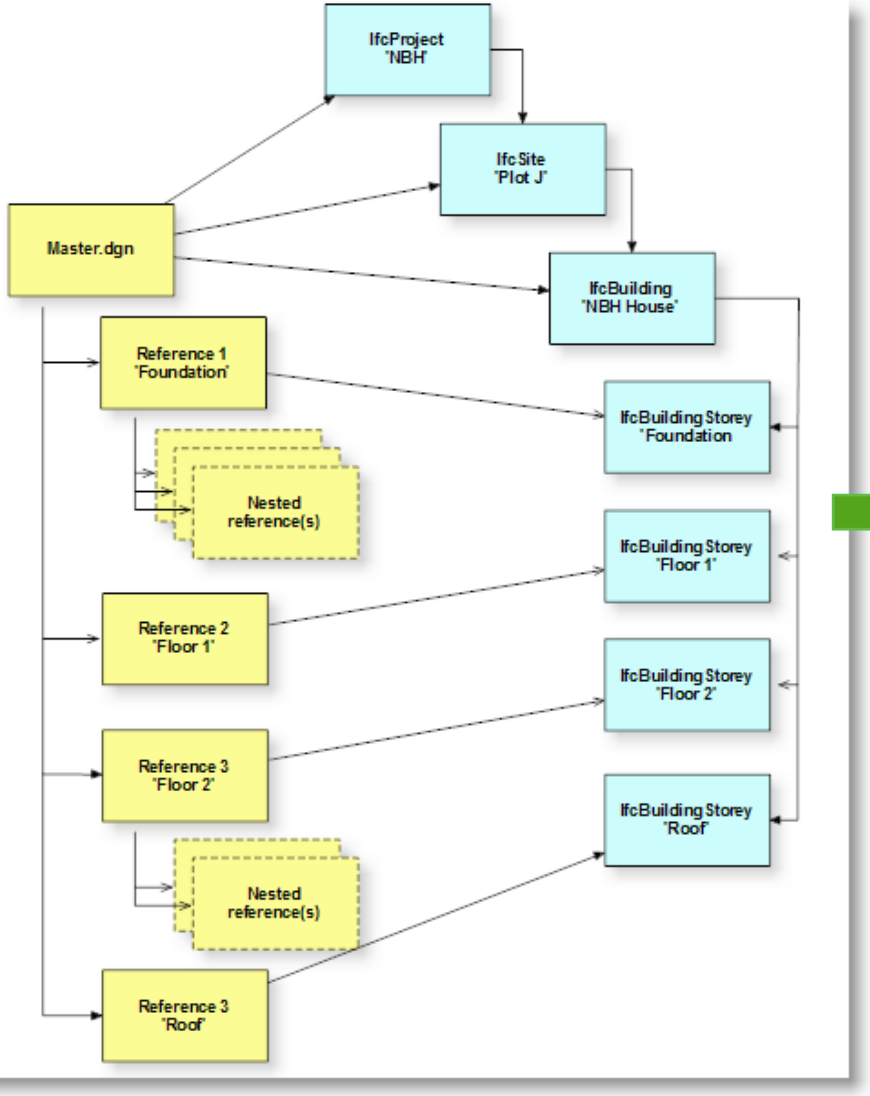
Floor (Building Storeys)

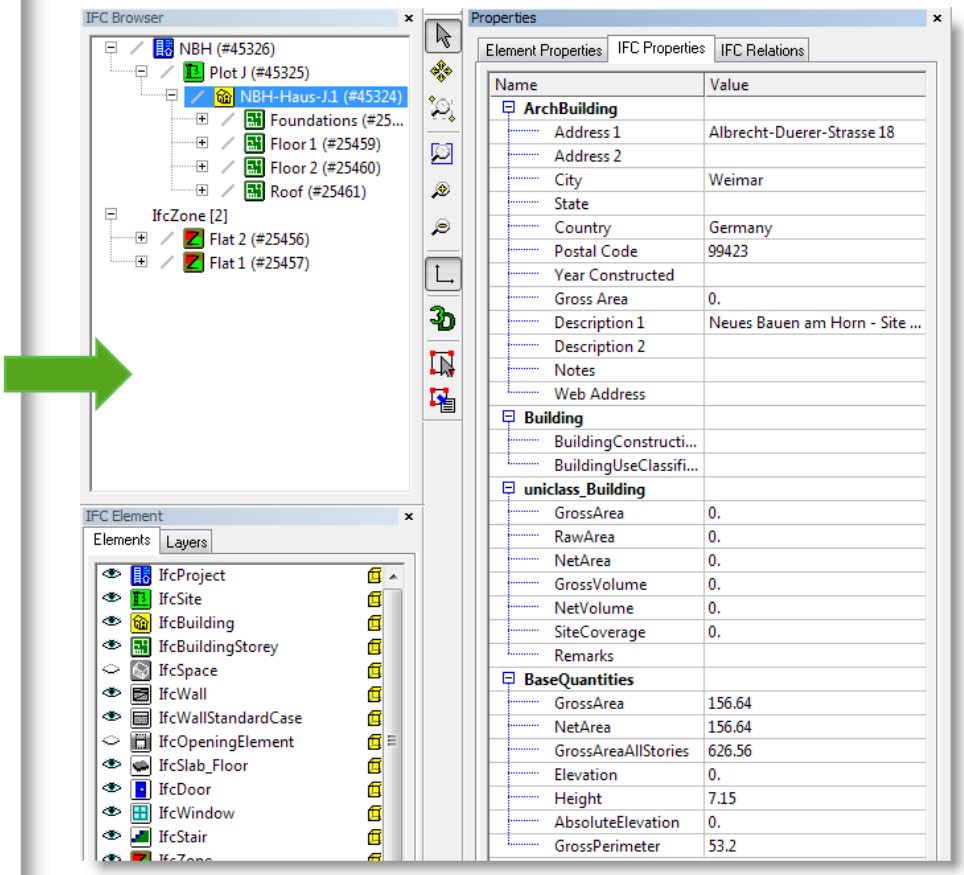
- place MicroStation shapes into referenced floor models
- attach Floor instance data





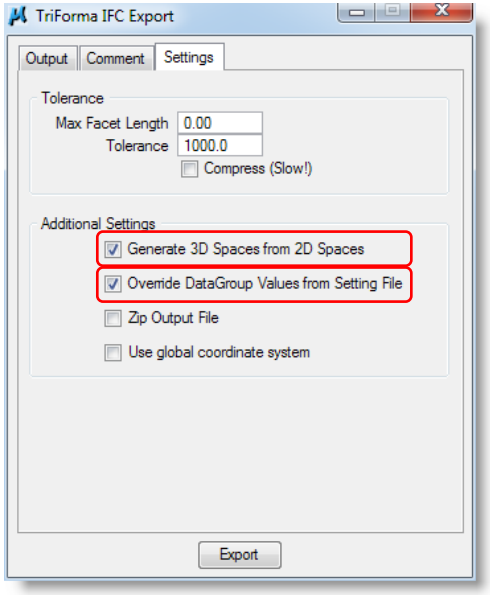
Storey Containment





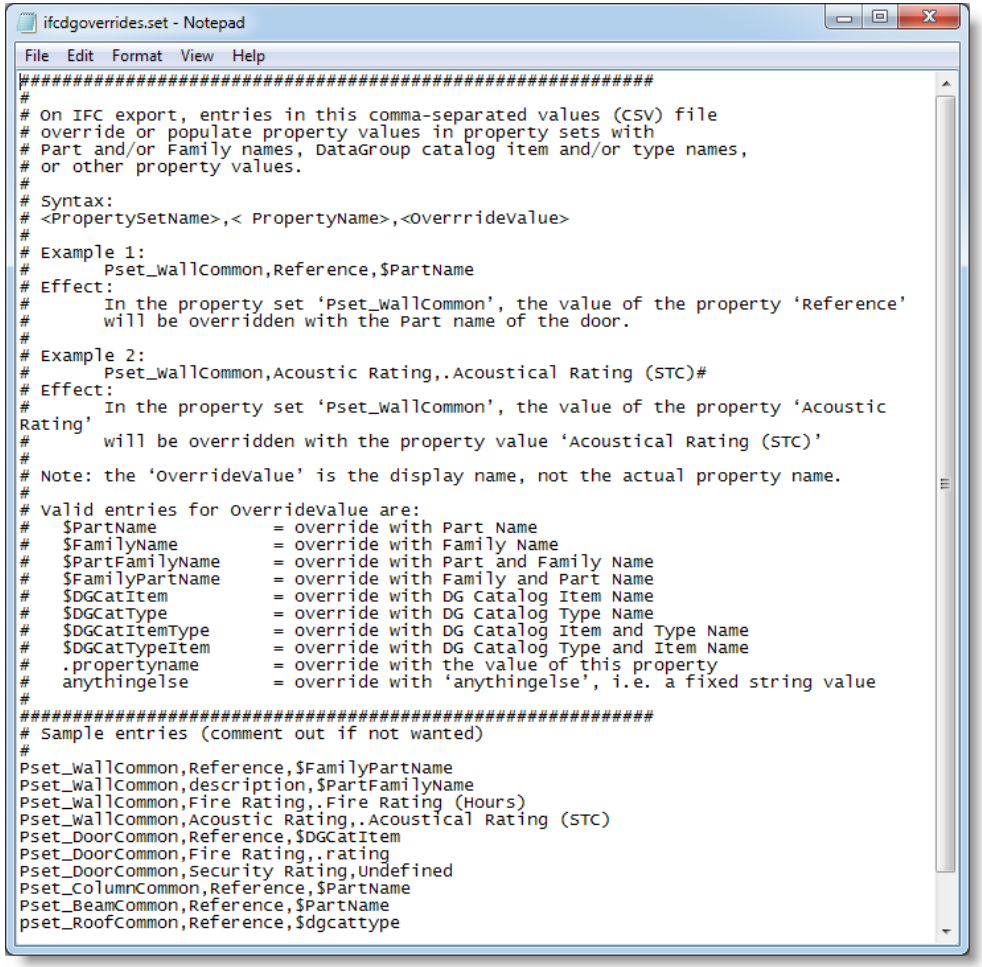
IFC Export - Settings

- Generate 3D Spaces from 2D Spaces using ‘Ceiling Height’ property
- override DataGroup Values from Settings File (optional)



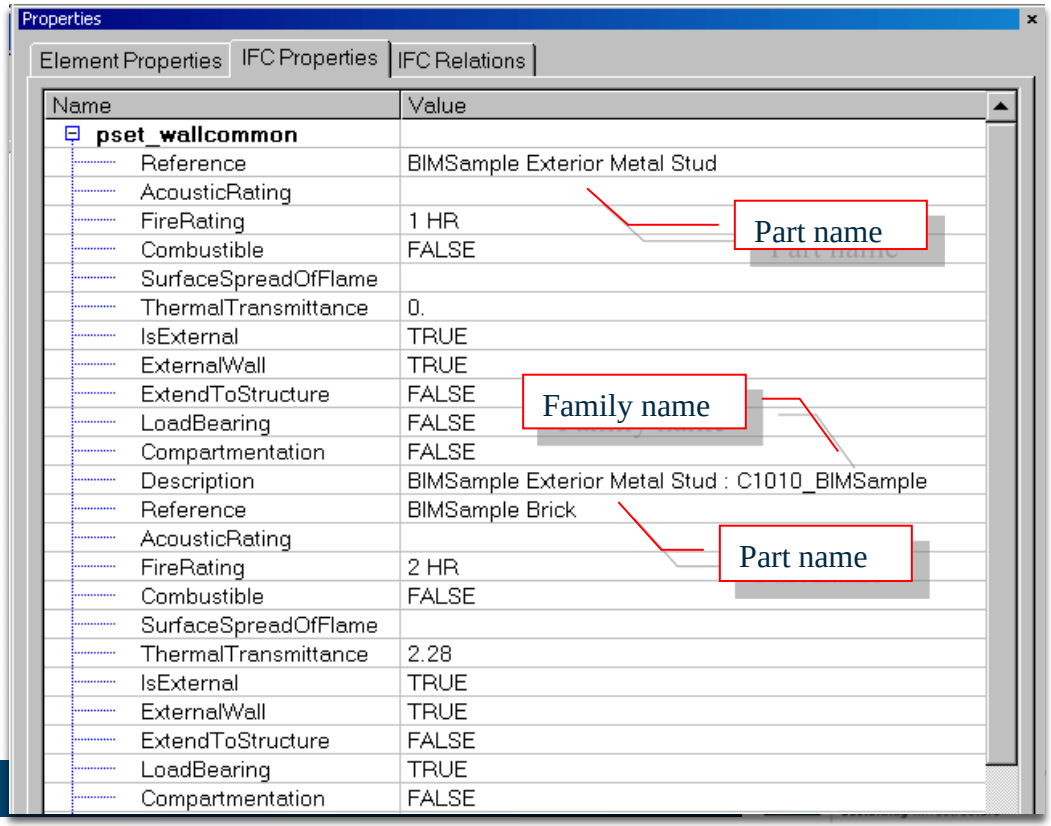
IFC Export - Settings

- ifcdgoverrides.set
  - entries override or populate values in property sets with Part and/or Family names, DataGroup catalog item and/or type names



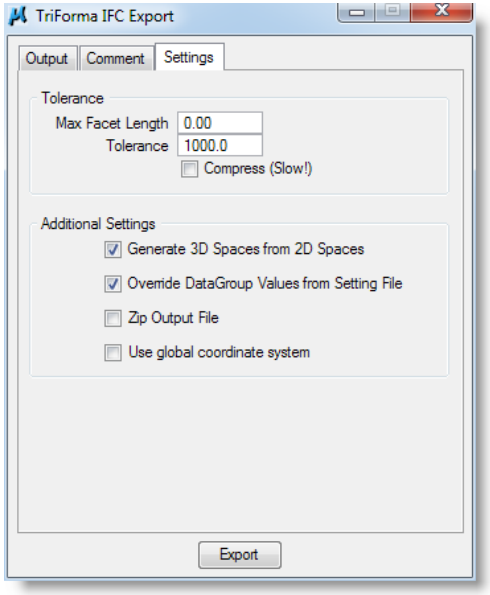
IFC Export - Settings

- e.g.
  - Pset_WallCommon,Reference,$PartName
  - Pset_WallCommon,Description,$PartFamilyName



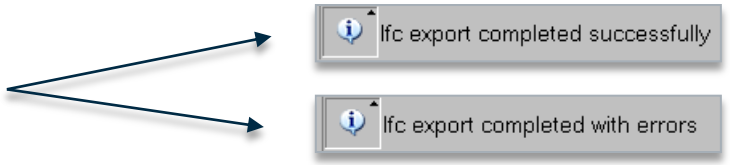
IFC Export

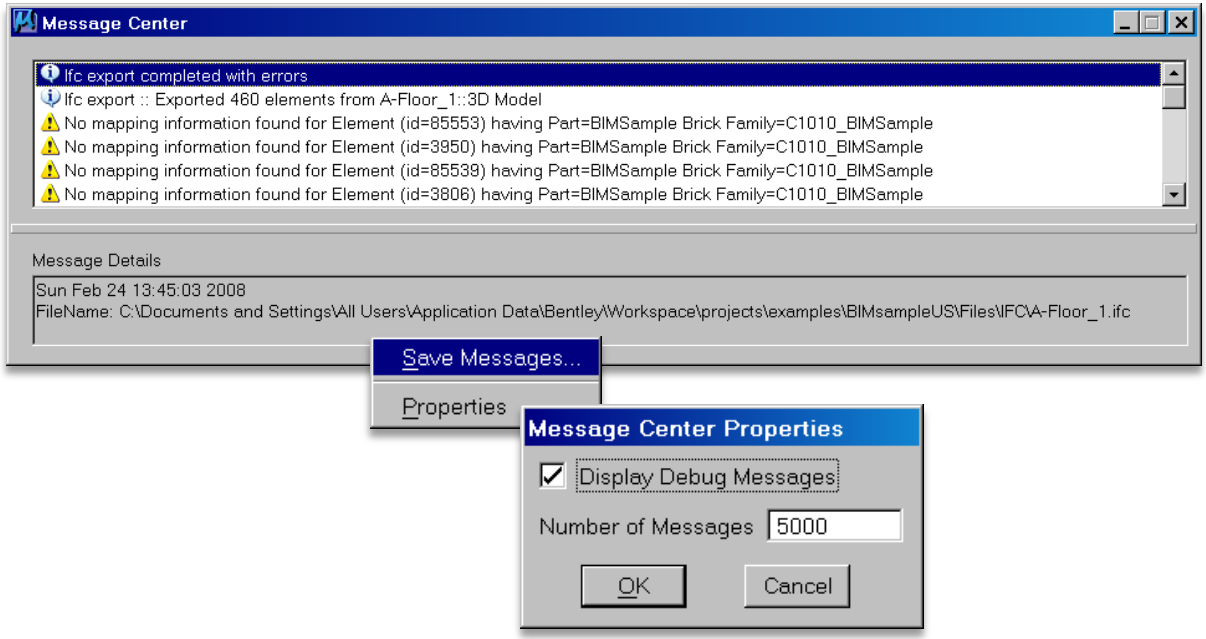
- click Export to start IFC export



IFC Export – Error Log

- IFC export completion





IfcStoreyView V 2.2b - Project.ifc

File Edit View Display Query Extras Window ?

IFC Browser

- NBH (#45326)
  - Plot J (#45325)
    - NBH-Haus-J.1 (#45324)
      - Foundations (#25...
      - Floor 1 (#25459)
      - Floor 2 (#25460)
      - Roof (#25461)
  - IfcZone [2]
    - Flat 2 (#25456)
    - Flat 1 (#25457)

IFC Element

Elements | Layers

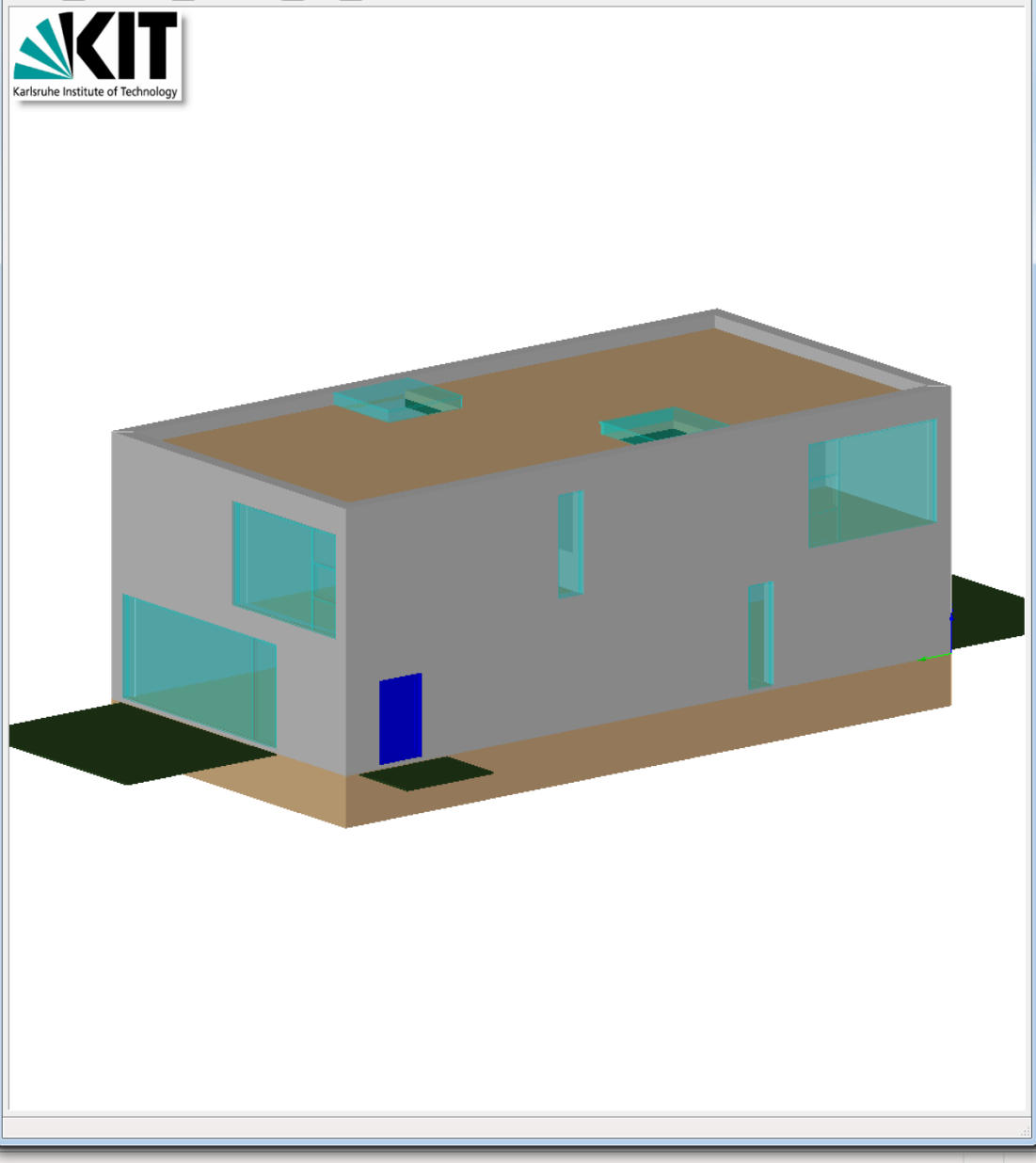
- IfcProject
- IfcSite
- IfcBuilding
- IfcBuildingStorey
- IfcSpace
- IfcWall
- IfcWallStandardCase
- IfcOpeningElement
- IfcSlab_Floor
- IfcDoor
- IfcWindow
- IfcStair
- IfcZone
- IfcCovering
- IfcFurnishingElement
- IfcBuildingElementPart
- IfcFooting
- IfcEnergyConversionDevice
- IfcFlowTerminal

Properties

Element Properties | IFC Properties | IFC Relations

Name	Value
ArchBuilding	
Address 1	Albrecht-Duerer-Strasse 18
Address 2	
City	Weimar
State	
Country	Germany
Postal Code	99423
Year Constructed	
Gross Area	0.
Description 1	Neues Bauen am Horn - S...
Description 2	
Notes	
Web Address	
Building	
BuildingConstruction...	
BuildingUseClassificat...	
uniclass_Building	
GrossArea	0.
RawArea	0.
NetArea	0.
GrossVolume	0.
NetVolume	0.
SiteCoverage	0.
Remarks	
BaseQuantities	
GrossArea	156.64
NetArea	156.64
GrossAreaAllStories	626.56
Elevation	0.
Height	7.15
AbsoluteElevation	0.
GrossPerimeter	53.2

OpenGL IFCViewer

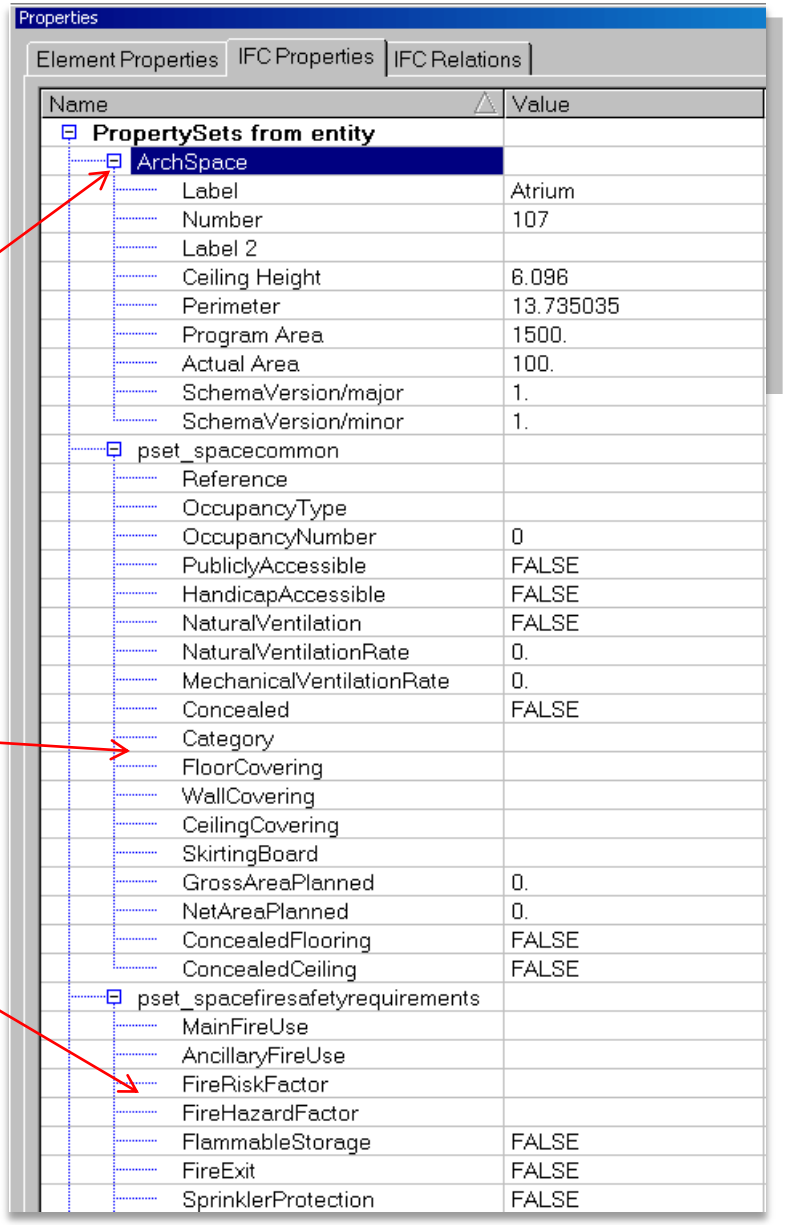


Start

Ready

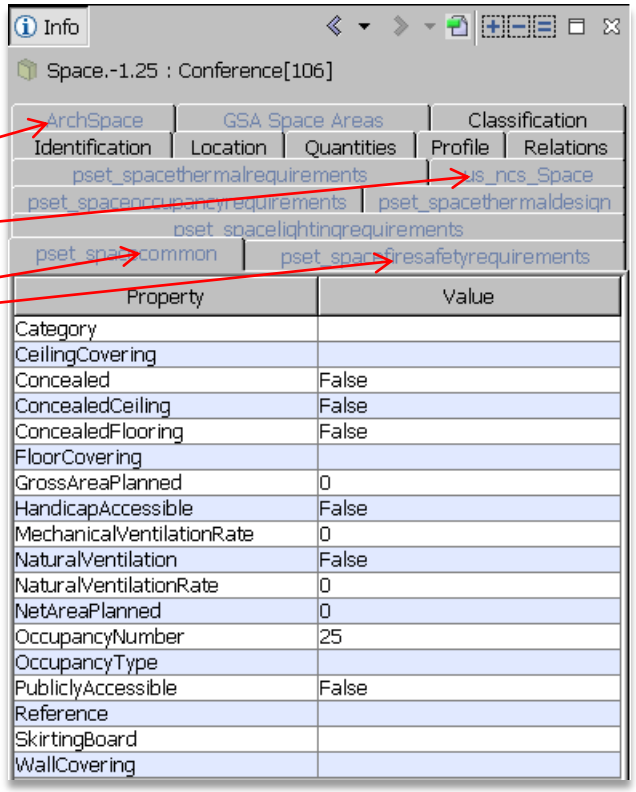
IFC Viewers

- IFC file imported into IfcStoreyView (Karlsruhe Institute of Technology)
  - BA properties
  - IFC2x3 psets



IFC Viewers

- IFC file imported into Solibri Model Viewer (Solibri, Inc.)
  - BA properties
  - IFC2x3 psets

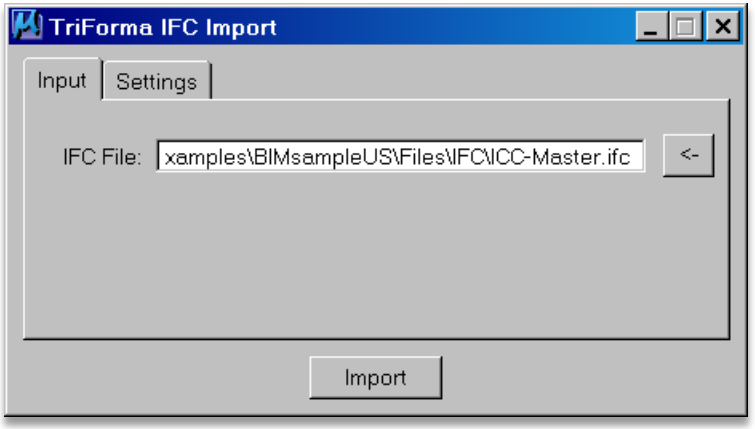


Import IFC

Settings and Options

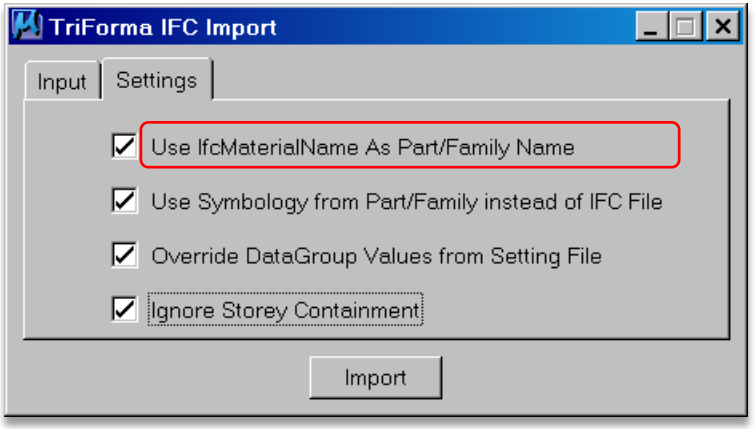
IFC Import - Input

- select IFC file
- default folder defined by config. var. TFDIR_IFC in PCF-file
  e.g. TFDIR_IFC = $(_USTN_PROJECTDATA)out/



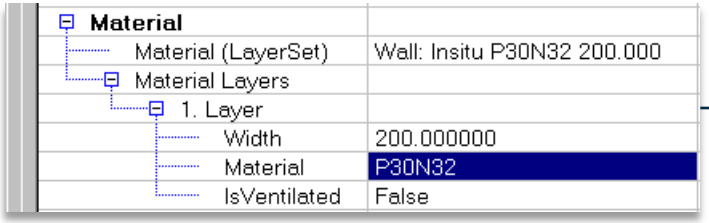
IFC Import - Settings

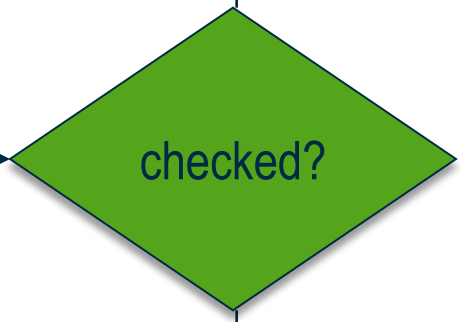
- 'Use IfcMaterialName As Part/Family Name' determines information applied as Part to imported elements:
  - if checked, values of 'Material' property in ifc-file are applied as 'Part' name to imported elements
  - if unchecked, Parts corresponding to the IfcEntity in the 'IFC' family of the Bentley Architecture dataset are applied to imported elements



… then Family ‘IfcWall’ and Part ‘P30N32’ applied to corresponding Bentley Architecture walls

e.g., if Material value for IfcWalls is ‘P30N32’ in the ifc-import file …

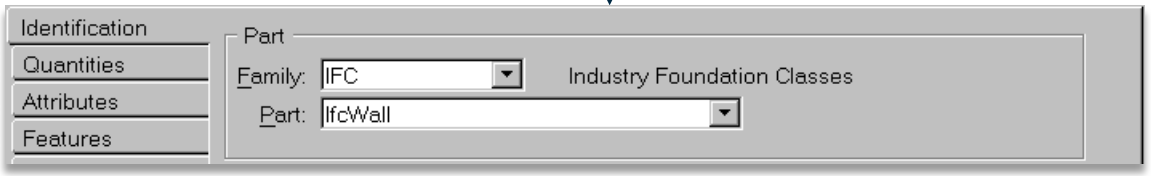




yes

‘Use IfcMaterialName As Part/Family Name’

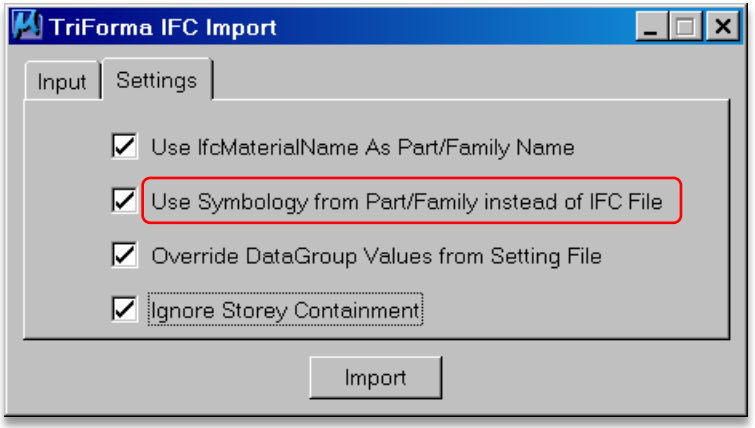
no



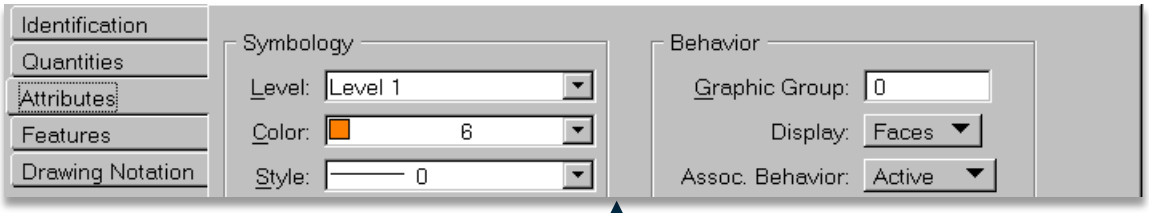
... then Family ‘IFC’ and Part ‘IfcWall’ applied to all walls, regardless of ‘Material’ property in ifc-i file

IFC Import - Settings

- 'Use Symbology from Part/Family instead of IFC File' determines symbology to be applied to imported elements
  - if checked, symbology specified for Part corresponding to IfcEntity in 'IFC' Family of Bentley Architecture dataset is used
  - if unchecked, symbology in ifc-import file is used for imported elements



… symbology specified for Part ‘IfcWall’ in Family ‘IFC’ is used



Part definition in Family ‘IFC’

Part	Description	Level	Color	Style	Weight
IfcWall		Level 1	6	0	0
IfcWallStandardCase		Level 1	6	0	0
IfcWindow		Level 1	5	0	0

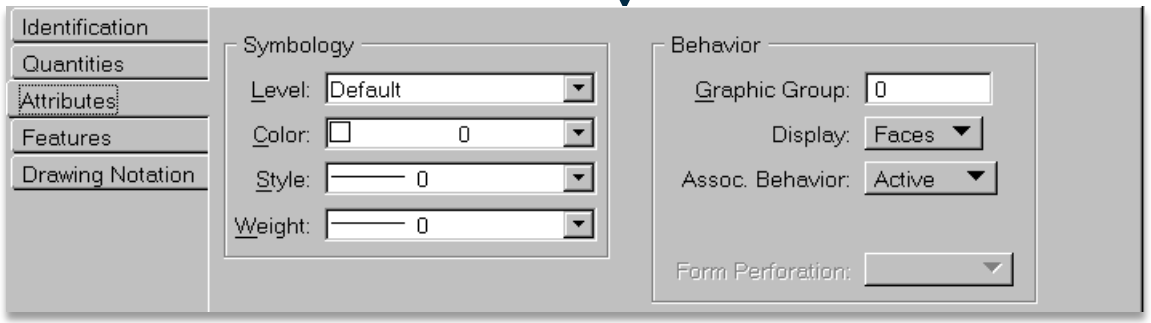
yes

e.g., if imported element is a wall …

checked?

‘Use Symbology from Part/Family instead of IFC File’

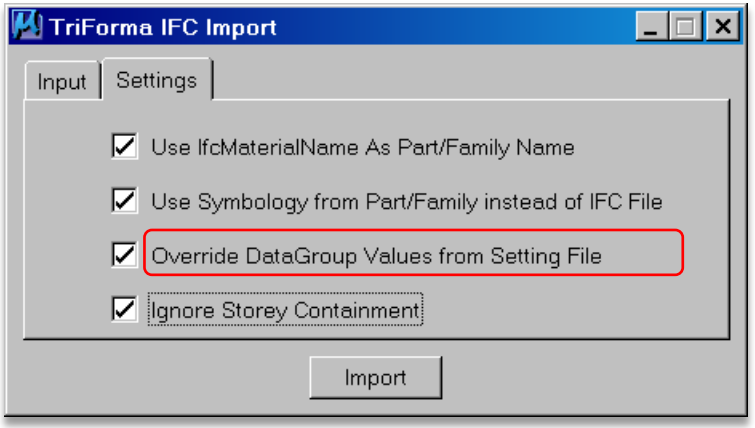
no



… symbology specified in IFC-file is used

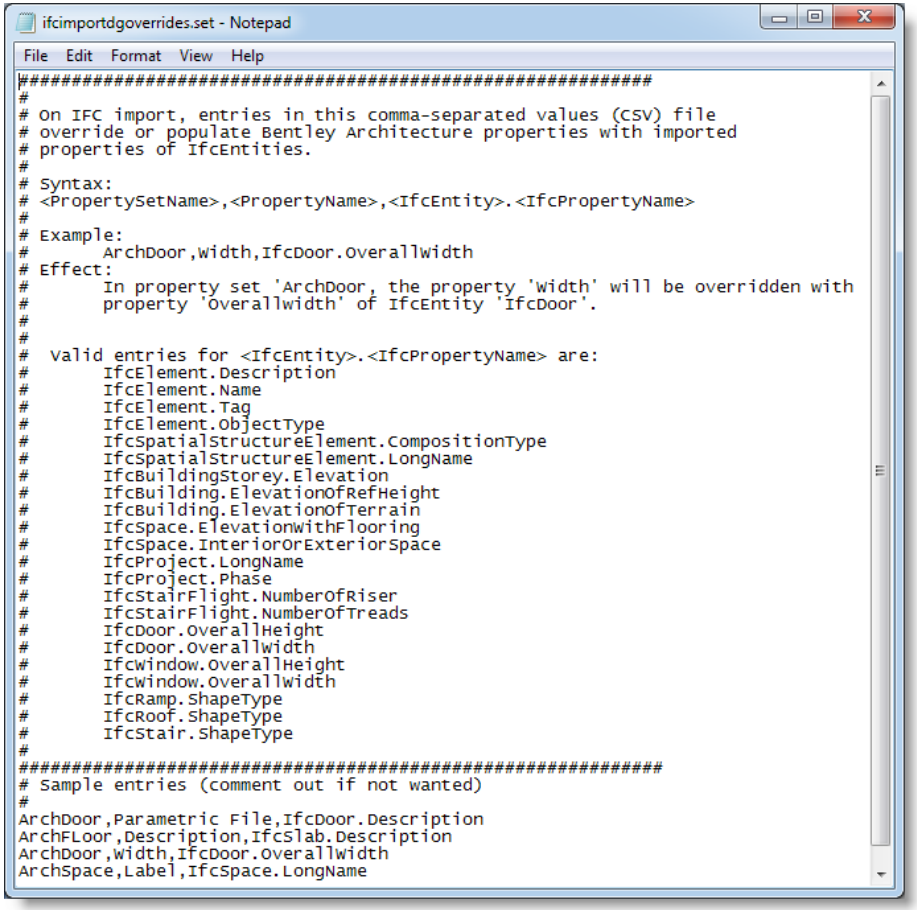
IFC Import - Settings

- ‘Override DataGroup Values from Setting File’
  - If checked, BA properties are overriden or populated with imported properties of Ifc Entities
  - via mapping in file ‘ifcimportdgoverrides.set’



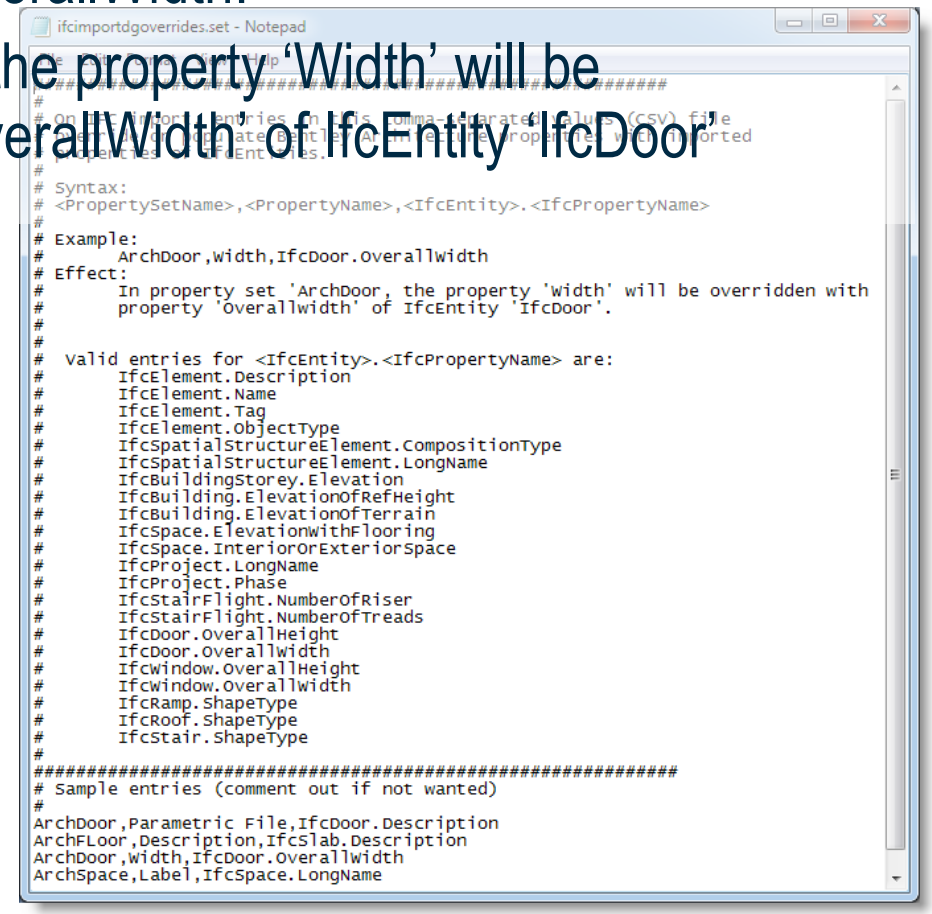
IFC Import - Settings

- ifcimportdgoverrides.set



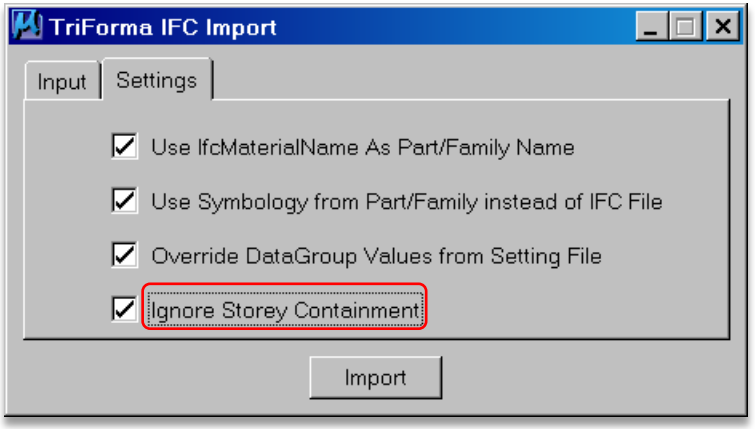
IFC Import - Settings

- e.g.
  - ArchDoor,width,IfcDoor.OverallWidth:
  - in property set ‘ArchDoor, the property ‘Width’ will be overriden with property ‘OverallWidth’ of IfcEntity ‘IfcDoor’



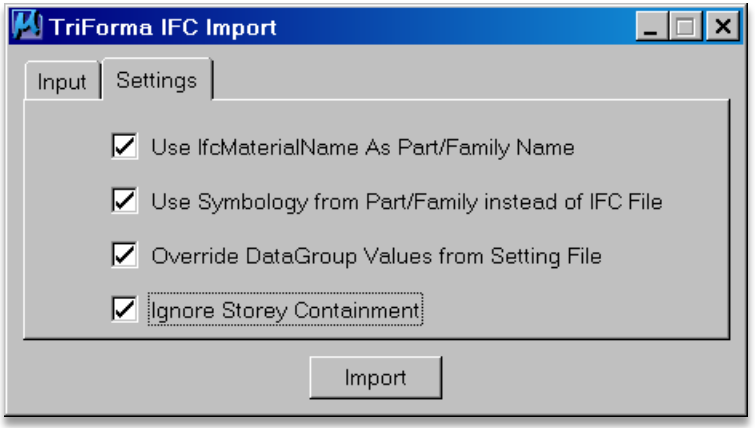
IFC Import - Settings

- 'Ignore Storey Containment'
  - if checked, all data imported into active DGN model, i.e. ignoring Storey Containment info in IFC import file
  - if unchecked,
    - each IfcBuildingStorey in IFC import file written to separate DGN model
    - all DGN models referenced to active DGN model



IFC Import

- Click ‘Import’ to start IFC import



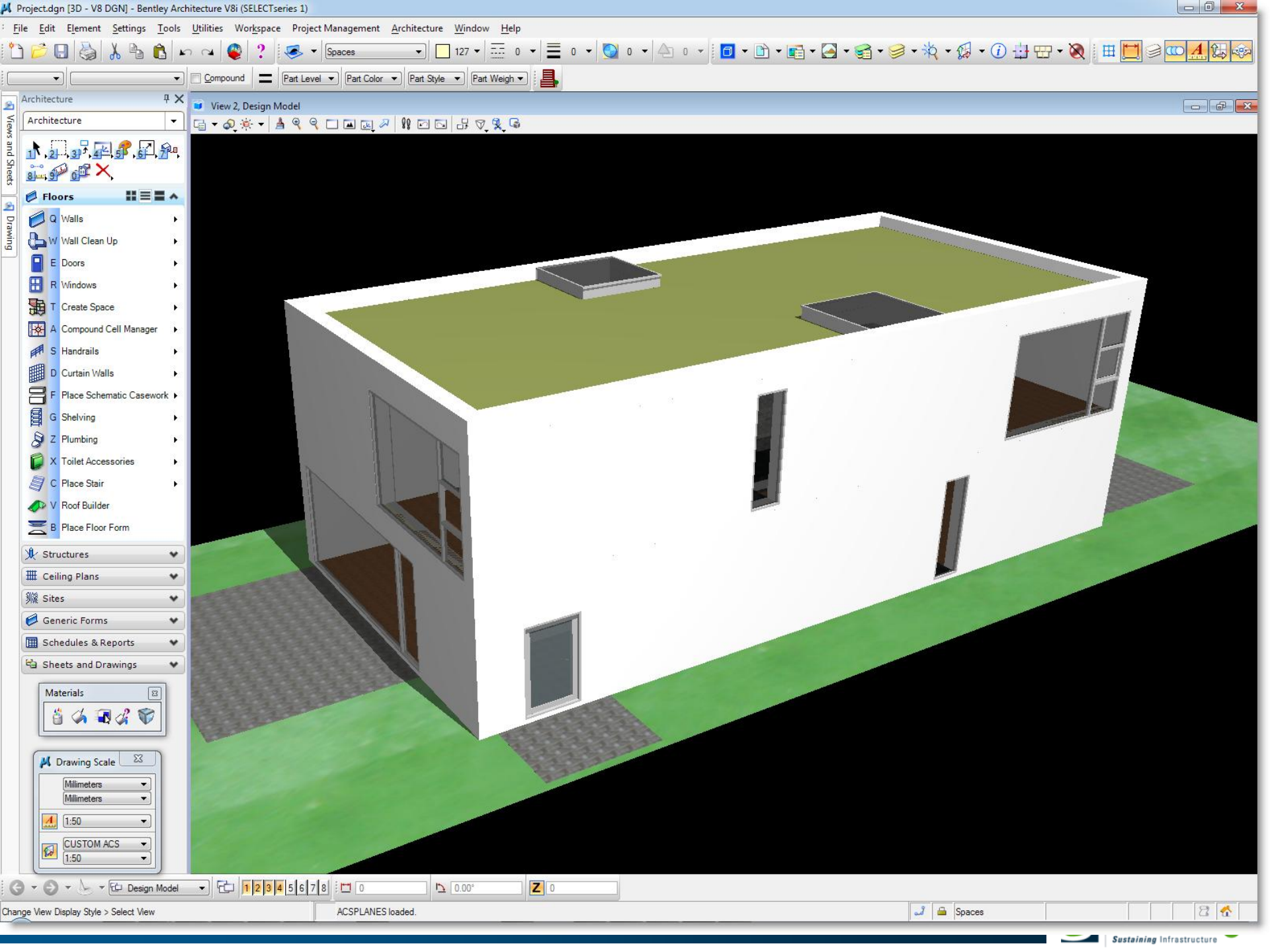
Open IFC

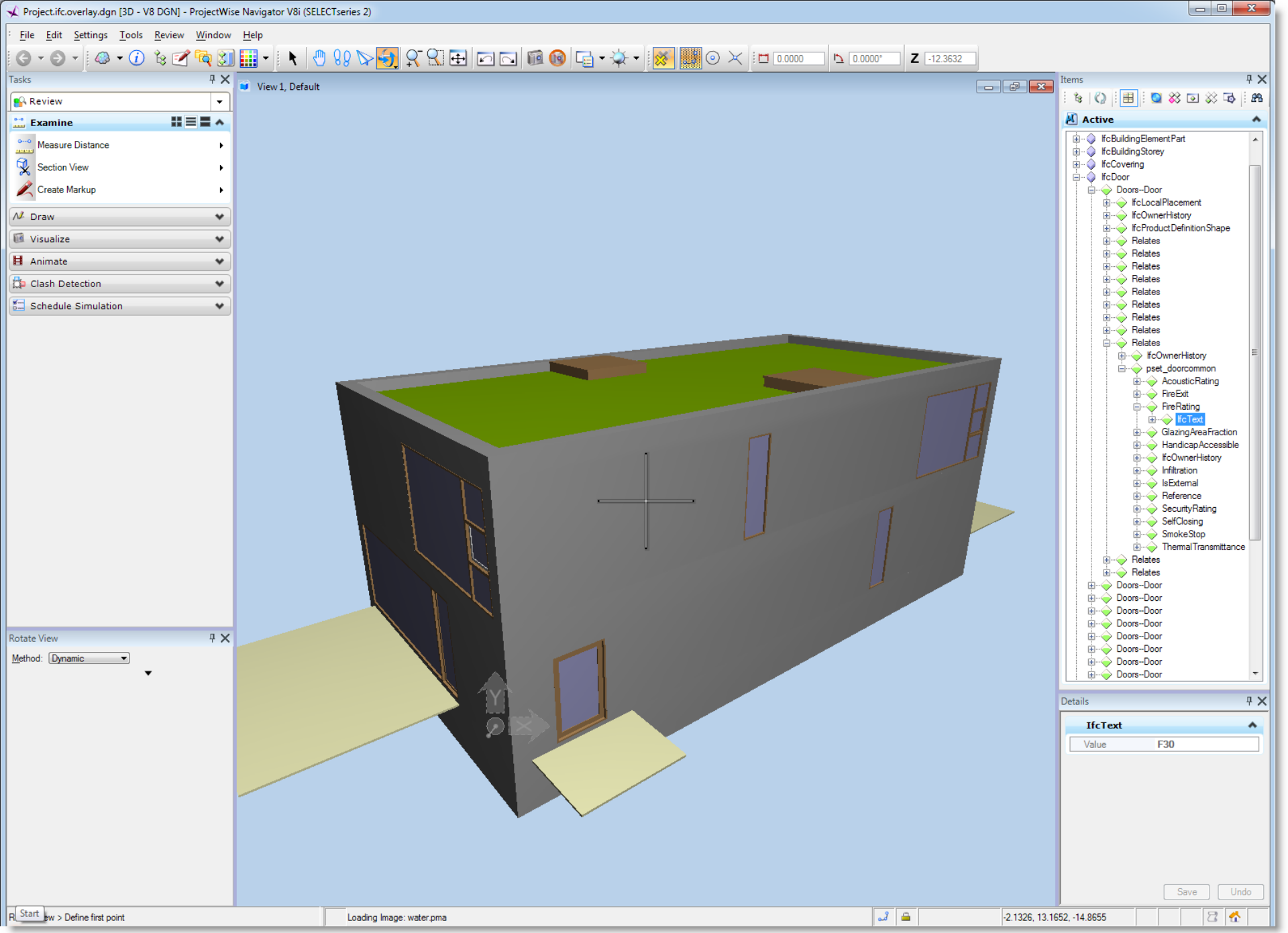
IFC support in ProjectWise i-model Composer, ProjectWise Navigator and MicroStation

- TriForma-based IFC import
  - **interprets** IFC definitions
  - tries to **translate IFC definition**s to Bentley Architecture definitions (which may not always be possible)

IFC support in ProjectWise i-model Composer, ProjectWise Navigator and MicroStation

- ProjectWise i-model Composer (~Dec ’10)
  - creates **loss-less i-models** from IFC files
  - includes **all property data**
  - read-only!
- ProjectWise Navigator (~Dec ’10)
  - **opens IFC files** for viewing, navigation, clash detection, querying, reporting, …
- MicroStation Ss3 (~2Q11)
  - **opens/references IFC** files for viewing, querying, reporting, coordination, …


Project.dgn [3D - V8 DGN] - Bentley Architecture V8i (SELECTseries 1)
File Edit Element Settings Tools Utilities Workspace Project Management Architecture Window Help
Spaces
Compound
Part Level
Part Color
Part Style
Part Weigh
Architecture
Architecture
Floors
Q Walls
W Wall Clean Up
E Doors
R Windows
T Create Space
A Compound Cell Manager
S Handrails
D Curtain Walls
F Place Schematic Casework
G Shelving
Z Plumbing
X Toilet Accessories
C Place Stair
V Roof Builder
B Place Floor Form
Structures
Ceiling Plans
Sites
Generic Forms
Schedules & Reports
Sheets and Drawings
Materials
Drawing Scale
Millimeters
Millimeters
1:50
CUSTOM ACS
1:50
View 2, Design Model
Views and Sheets
Drawing
Design Model
Change View Display Style > Select View
ACSPLANES loaded.
Spaces
Sustaining Infrastructure


Project.ifc.overlay.dgn [3D - V8 DGN] - ProjectWise Navigator V8i (SELECTseries 2)
File Edit Settings Tools Review Window Help
Tasks
Review
Examine
Measure Distance
Section View
Create Markup
Draw
Visualize
Animate
Clash Detection
Schedule Simulation
Rotate View
Method: Dynamic
View 1, Default
Items
Active
IfcBuildingElementPart
IfcBuildingStorey
IfcCovering
IfcDoor
Doors--Door
IfcLocalPlacement
IfcOwnerHistory
IfcProductDefinitionShape
Relates
pset_doorcommon
AcousticRating
FireExit
FireRating
IfcText
GlazingAreaFraction
HandicapAccessible
Infiltration
IsExternal
Reference
SecurityRating
SelfClosing
SmokeStop
ThermalTransmittance
Details
IfcText
Value F30
Save
Undo
Define first point
Loading Image: water.pma
-2.1326, 13.1652, -14.8655

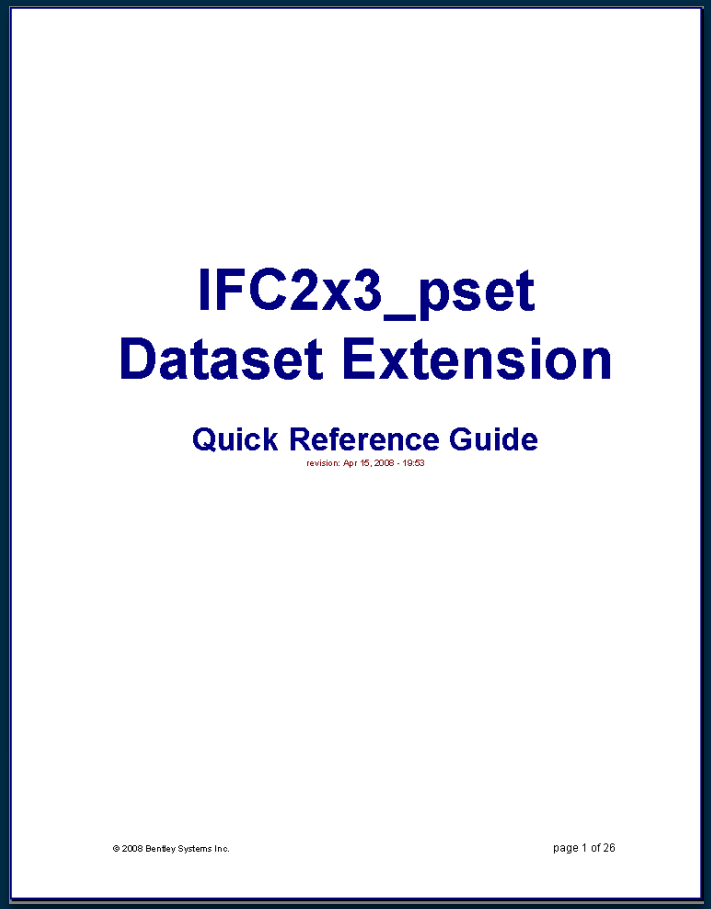
Limitations of IFC

- high-end functionality reduced to level that most applications can support
- proprietary data types not exportable
  IFC only concerned with result, not how produced
- parameters, rules, and constraints of complex entities not supported

  e.g. doors, windows, curtain walls, stairs, railings, …
- therefore, **no 'round tripping'**!!!

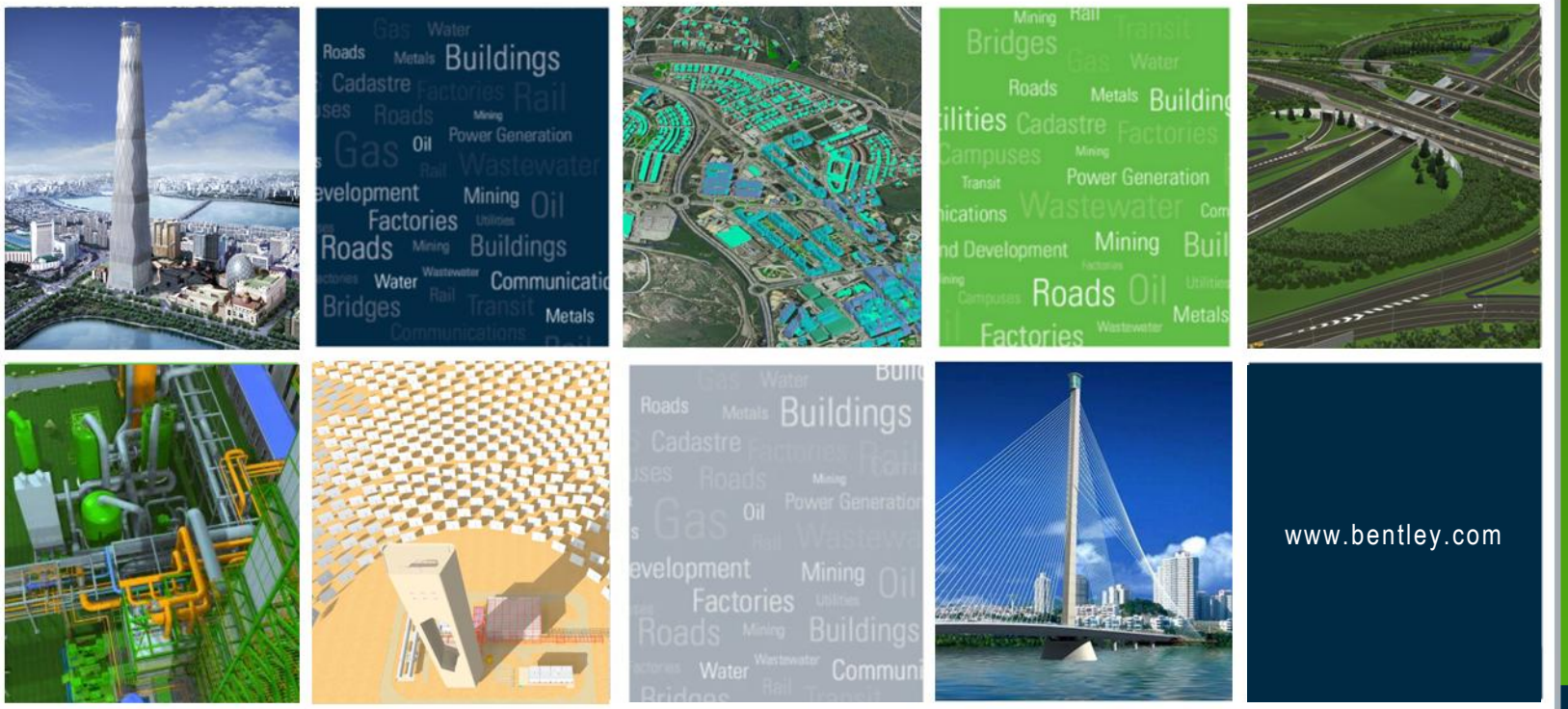
Benefits of IFC

- vendor-neutral BIM data model
  - no 1-to-1 translators required
  - the ‘lingua franca’ for proprietary BIM formats
  - DXF for CAD, IFC for BIM
- improve Integrated Project Delivery using BIM methods
- streamline project workflows and facility lifecycle support
  - better coordination, collaboration, and interoperability of project delivery partners
  - handover of data from design to downstream tasks (cost estimation, analyses, facilities management, …)
- integrate Building Information Modeling



further info:
IFC2x3_pset Dataset Extension - Quick Reference Guide
or email: volker.thein@bentley.com

Bentley
Sustaining Infrastructure



Tack så mycket

Bentley
Sustaining Infrastructure