GRAPHISOFT ARCHICAD and COBie 2

How to Prepare your ARCHICAD 19 Project for COBie 2 Documentation



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GRAPHISOFT ARCHICAD and COBie 2

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Introduction

COBie is the abbreviation of Construction Operations Building Information Exchange, a specification used in the handover of Facility Management information. It is a spreadsheet data format for the delivery of a subset of building model information, rather than geometric model information.

Although GRAPHISOFT ARCHICAD cannot export COBie spreadsheets directly, ARCHICAD's BIM-quality models and IFC data exchange capabilities produces data output that is easily converted into COBie documentation, with the help of free or commercial conversion programs.

What is the relationship between IFC and COBie?

The COBie spreadsheet is a mapping of the Basic FM Handover View Definition, which is a subset (so-called "Model View Definition"; MVD) of the current IFC 2x3 scheme. Basic FM Handover View Definition was developed by buildingSMART to exchange facility management information among building models. ARCHICAD's IFC 2x3 interface and database support the IFC data and model export requirements of the Basic FM Handover View Definition, so most of the values of the COBie spreadsheet cells are extracted from IFC models exported by ARCHICAD according to the Basic FM Handover MVD settings.

Hint For more information about the relationship between IFC 2x3 Basic FM Handover MVD and COBie, visit the buildingSMART website by clicking <u>here</u>.

This paper provides practical information on which data to add to an ARCHICAD project and how to export it as an IFC model, to obtain a format suitable for producing a COBie 2 spreadsheet. (The current version of COBie is 2.4.) The final chapter consists of a sample workflow using a free IFC \rightarrow COBie conversion tool recommended by buildingSMART.

- **Hint** For detailed documentation about ARCHICAD's IFC capabilities, read the ARCHICAD Help documentation or read the <u>IFC2x3 Reference Guide</u>.
- **Note** This documentation was written based on the currently available COBie IFC mapping rule called "Responsibility Matrix version 17" (published 30th April 2013).

ARCHICAD Model Preparation for COBie 2

The Basic FM Handover View Definition used by COBie 2 queries the following IFC data types from an architectural model and/or its elements:

- Owner History data
- IFC Attributes
- IFC Properties (standard IFC 2x3 and custom COBie 2-required properties)
- IFC Classification Reference data
- IFC Type Product entities
- IFC Zone assignments
- IFC System assignments
- Base quantities
- Space containment relation
- Space boundary relation

All of these data types are available in ARCHICAD as native ARCHICAD data. It is worth using ARCHICAD's predefined COBie scheme: this filters the IFC standard database to show, throughout the user interface, only those data fields required by COBie. Thus, both at the element level (in *Element Settings* dialog boxes) and at the project hierarchy level (in *IFC Manager*), you will display and fill out only the data fields that are relevant for COBie. This predefined scheme also defines the Category definitions for each entity type.



Figure 1 COBie scheme-driven data management

So, to display the COBie 2-required and relevant IFC data in IFC data management dialogs, load one of the proper "COBie 2 -xml" scheme template files into the ARCHICAD project with the *IFC Scheme Setup* command (*Import*, *File > File Special > IFC 2x3*).

Note The reason there are multiple COBie 2 scheme files is that the Category definitions required by COBie use different classification standards in different countries. For example, the U.S. uses the OmniClass standard to categorize Facility, Space and Type, while the UK uses Uniclass. (In the case of Uniclass 1.4, a given Category may use multiple classification tables.) Obviously, you should fill out only one Classification Reference data (since COBie requires one data) – the one which best expresses the Category definition required by COBie for the specific element.



Figure 2 COBie-required properties loaded as a scheme template (IFC Scheme Setup)

In the IFC data management dialog boxes, click the *Show only Scheme items* icon is to filter the full IFC database to show only the loaded COBie scheme data. If this icon is activated, all data that are not part of the scheme definition are hidden on the interface: this helps you to fill out only the data relevant for COBie. For example, data inherited from ARCHICAD that are not part of the COBie scheme (such as "Structural Function", "Position", "Renovation Status") will be hidden. The same is true of application-specific, custom IFC data which were added earlier to the project as a result of model exchange with other applications (e.g. structural or MEP), but which are irrelevant for COBie.

The following chapters summarize the data (required from a design application) to be provided in ARCHICAD for use by the COBie 2 spreadsheet.

	COBie2 spreadsheet.xml		X 🗉 🗆	
	A	В	с	Ξ
1	Title	COBie2		
2	Version	2		
3	Release	4		
4	Status	IFC2x3		
5	Region	en-US		
6	Purpose		This spreadsheet supports the exchange of building, system and product information through the life of the project.	
7	Outline		Individual worksheets are organized by project phase as shown below	
8		-		
9	All Phases	Sheet	Contents	
10		Contact	People and Companies	
11				=
12	Early Design Worksheets	Sheet	Contents	
13		Facility	Project, Site, and Facility	
14		Floor	Vertical levels and exterior areas	
15		Space	Spaces	
16		Zone	Sets of spaces sharing a specific attribute	
17		Туре	Types of equipment, products, and materials	
18				
19	Detailed Design Worksheets	Sheet	Contents	
20		Component	Individually named or schedule items	
21		System	Sets of components providing a service	
22		Assembly	Constituents for Types, Components and others	
23		Connection	Logical connections between components	
24		Impact	Economic, Environmental and Social Impacts at various stages in the life cycle	
25				
26	Construction Worksheets	Sheet	Contents	
27			Note: submittals and approvals added on Documents	
28			Note: manufacturer and model added on Type	
29			Note: serial and tag added on Component	
30				
31	Operations and Maintenance Worksheets	Sheet	Contents	
32		Spare	Onsite and replacement parts	
33		Resource	Required materials, tools, and training	
34		Job	PM, Safety, and other job plans	
35			Note: warranty information added on Type	÷
36	Instruction Contact Facility	/ Floor / S	pace \angle Zone \angle Type \angle Component \angle System \angle Assembly \measuredangle Connection \measuredangle Spare \measuredangle Resource \measuredangle Job \measuredangle 10 \cdots 1 ,	::

Figure 3 The worksheets of the COBie 2 spreadsheet

Key to tables displayed in the following sections of this document:

COBie2 data

COBie 2 data taken directly from data that was input in ARCHICAD. In other words, the ARCHICAD and IFC data types corresponding to these COBie data must be set or created in the ARCHICAD model.

COBie2 data COBie 2 data that are automatically extracted from the ARCHICAD model, project settings and their IFC export. In other words, these COBie data are set automatically in ARCHICAD; no extra data definition is required from the ARCHICAD user.

Contact

The COBie 2 **Contact** worksheet summarizes the person and organization data of the project / model designer.

Contact COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Email	Contact E-mail	File > Info > Proiect Info
CreatedBy	Contact E-mail	(File > Info > Project Info)
CreatedOn	the creation date of the IFC file	
Category	Contact Role	File > Info > Project Info
Company	Contact Company	File > Info > Project Info
Phone	Contact Phone Number	File > Info > Project Info
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: 'IfcPersonAndOrganization'	
ExtIdentifier	Contact E-mail	(File > Info > Project Info)
Department	Contact Department	File > Info > Project Info
OrganizationCode	Contact Company Code	File > Info > Project Info
GivenName	Contact Full Name > Given Name	File > Info > Project Info
FamilyName	Contact Full Name > Family Name	File > Info > Project Info
Street	Contact Full Address > Address	File > Info > Project Info
PostalBox	Contact Full Address > Postal Box	File > Info > Project Info
Town	Contact Full Address > City	File > Info > Project Info
StateRegion	Contact Full Address > State/Province	File > Info > Project Info
PostalCode	Contact Full Address > Postcode/ZIP	File > Info > Project Info
Country	Contact Full Address > Country	File > Info > Project Info

Figure 4 Mapping between ARCHICAD model data and the COBie 2 Contact worksheet data

ARCHICAD project data must be assigned to correspond with the COBie 2 items marked in green. All "Contact" data can be entered in ARCHICAD's *Project Info* (*File > Info*) dialog box.

				<u></u>	Contact Full Name	? ×
		Project Info		Prefix Title:		
	PROJECT DETAILS STE DETAILS BUILDING DETAILS CONTACT DETAILS CONTACT DETAILS Contact Full Name Contact Department CAD Technician Full Name Contact Company Contact Company Contact Company Code	Category' 'Department' 'Company' 'OrganizationCode'	Rer	Given Name: Middle Name(s): Family Name: Suffix Title: Name Order:	GivenName' FamilyName' Given Name First Cance	el OK
Þ	Contact Full Address Contact E-mail Contact Phone Number Contact Fax Contact Web Contact Web Contact Custom CLIENT DETAILS	'Email' 'Phone'		Address: Postal Box:	Contact Full Address	? ×
		Cancel	Impo Expo	City: State/Province: Postcode/ZIP: country:	Town' 'StateRegion' 'PostalCode' 'Country' Cance	el OK

Figure 5 Contact data in ARCHICAD (Project Info)

Facility

The COBie 2 **Facility** worksheet summarizes the Facility (IfcBuilding), the Project (IfcProject) and the Site (IfcSite) data.

Facility	Archi(AD (IEC) data manual to COPie data	ArchiCAD command	
COBie2 worksheet data	Archicad (IFC) data mapped to coble data	Archical command	
Name	Building Name	File > Info > Project Info	
CreatedBy	Contact E-mail	(File > Info > Project Info)	
CreatedOn	the <i>creation date</i> of the IFC file		
Category	Classification Reference data assigned to IfcBuilding	File > File Special > IFC 2x3 > IFC Manager	
ProjectName	Project Name	File > Info > Project Info	
SiteName	Site Name	File > Info > Project Info	
Linear Units	Export Options > IFC model units > Options > Length Unit	File > File Special > IFC 2x3 > IFC Translation Setup	
AreaUnits	Export Options > IFC model units > Options > Area Unit	File > File Special > IFC 2x3 > IFC Translation Setup	
VolumeUnits	Export Options > IFC model units > Options > Volume Unit	File > File Special > IFC 2x3 > IFC Translation Setup	
CurrencyUnit	Export Options > IFC model units > Options > Currency Unit	File > File Special > IFC 2x3 > IFC Translation Setup	
AreaMeasurement	text: 'ArchiCAD BIM Base Quantities'		
ExternalSystem	text: 'ArchiCAD-64'		
ExternalProjectObject	text: ' <i>IfcProject</i> '		
ExternalProjectIdentifier	Globalid Attribute of the IfcProject	(File > File Special > IFC 2x3 > IFC Manager)	
ExternalSiteObject	text: ' <i>lfcSite</i> '		
ExternalSiteIdentifier	Globalid Attribute of the IfcSite	(File > File Special > IFC 2x3 > IFC Manager)	
ExternalFacilityObject	text: ' <i>IfcBuilding</i> '		
ExternalFacilityIdentifier	Globalid Attribute of the IfcBuilding	(File > File Special > IFC 2x3 > IFC Manager)	
Description	Building Description	File > Info > Project Info	
ProjectDescription	Project Description	File > Info > Project Info	
SiteDescription	Site Description	File > Info > Project Info	
Phase	Project Status	File > Info > Project Info	

Figure 6 Mapping between ARCHICAD model and the COBie 2 Facility worksheet data

All major Facility data can be defined in the Project Info dialog (*File > Info*). These data can also be managed in the *IFC Manager* as the main Attributes of the IfcProject, IfcSite and IfcBuilding entities.

7	PROJECT DETAILS		~	Add
	Project Name	'ProjectName'		
	Project Description	'ProjectDescription'		Remove
	Project ID			
	Project Code			
	Project Number			
	Project Status	'Phase'		
	Keywords			
	Notes			
	Project Custom			
~	SITE DETAILS			
	Site Name	'SiteName'		
	Site Description	'SiteDescription'		
	Site ID			
	Site Full Address			
	Site Gross Perimeter			
	Site Gross Area			
	Site Custom			
~	BUILDING DETAILS			
	Building Name	'Name'		
	Building Description	'Description'		
	Building ID			
	Building Custom			Import
	CONTACT DETAILS			import
	CLIENT DETAILS			

Figure 7 Facility data in ARCHICAD (*Project Info*)

To set the Facility "Category", provide the proper Classification Reference value in the *IFC Manager*. COBie requires IfcBuilding classification by OmniClass table 11, entitled "Construction Entities by Function" (in US) or by the Uniclass system (in UK). Both systems are available as built-in classification rules in ARCHICAD under the *Apply Predefined Rule* option in the *IFC Manager*.

IFC Manager				
	All Selected: 1 Editable: 1			TS V
□	Name	Value	Type	Apply Predefined Rules
Stellame'	IFC Type	IfcBuilding		
2. Story				Select Rule:
- 1. Story	GlobalId	00tMo7QcxqWdIGvc4s	IfcGlob	OmniClass 👻
0. Ground Floor	✓ Name	🖙 'Name'	IfcLabe	Table 11 - Construction Entities by Function
	Description	Description'	IfcText	Development
	ObjectType		IfcLabe	Description:
	LongName		IfcLabe	Assigns a functional classification to IFC Building, IFC Site and ArchiCAD
	CompositionType	C ELEMENT	IfcElem	Stories based on this OmniClass (edition 2012) specification.
	ElevationOfRefHeight		IfcLeng	For example: use this rule to comply with
	ElevationOfTerrain		IfcLeng	for IfcBuilding and IfcBuildingStorey entities.
				- 'FM Handover' MVD (COBie), which requires such classification for 🛛 👻
	OCCS - Construction Entities by Fund	ction 11-13 11 17 Courthouse	IfcClas	Select the required item:
				⊕-11-11 00 00 Assembly Facility
				11-12 00 00 Education Facility
				🖃 11-13 00 00 Public Service Facility 📰
				⊡ 11-13 11 00 Government Facility
				11-13 11 17 Courthouse
				11-13 11 21 Legislative Facility
				H-11-13 11 33 Detention Center
	•			search:
	New Property / Classification	Apply Predefined Rule		court
				Search result:
				OmniClass Number OmniClass Title
				11-13 11 17 Courthouse
				11-15 21 11 11 Indoor Basketball Court
				11-15 21 11 Indoor Team Court Sports Facility
				4 b
				Cancel Apply

Figure 8 COBie Facility Category set by the proper OmniClass or Uniclass classification system (IFC Manager)

The COBie-required unit systems of the Facility can be set at *Export Options*. There is a predefined settings package (so-called "IFC Translation Setup" in ARCHICAD) which contains export options optimized for the COBie-required IFC export. It is called "COBie 2 Export" IFC Translator (see chapter <u>COBie 2-enabled IFC Model Export</u>).

Note By default, ARCHICAD assigns identical "GlobalId" Attributes to IfcProject (Project), IfcSite (Site), IfcBuilding (Facility), and IfcBuildingStorey (Floor). More precisely: the "GlobalIds" will be identical, provided that the respective ID fields, defined at ARCHICAD's *Project Info* dialog box (*File > Info*) contain identical keywords (or no value at all). However, you can alter these keywords in the *Project Info* dialog box to control whether the spatial entities have identical or different "GlobalIds".

Suppose you have two separate buildings (stored in two different ARCHICAD projects). You want both projects and both sites to share the same "GlobalId"; yet you want the various buildings on each site to have different "GlobalIds".

To achieve this, enter the same keyword in the "Project ID" and "Site ID" fields of both projects. Enter different keywords for the "Building ID" fields.

IfcBuildingStorey (Floor) entities have no corresponding ID field in the *Project Info* dialog box. The "GlobalIds" of IfcBuildingStorey entities are derived from their "Building ID". If two buildings in two different ARCHICAD projects have the same "Building ID", then all stories of those buildings which have the same Story number ("No.") will have the same "GlobalId".



Figure 9 Multi-building definition in ARCHICAD (Project Info)

Floor

The COBie 2 Floor worksheet summarizes data of the building stories (IfcBuildingStorey).

Floor COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Name	Name	Design > Story Settings
CreatedBy	Contact E-mail	(File > Info > Project Info)
CreatedOn	the <i>creation date</i> of the IFC file	
Category	Classification Reference data assigned to an IfcBuildingStorey	File > File Special > IFC 2x3 > IFC Manager
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: ' <i>IfcBuildingStorey</i> '	
ExtIdentifier	Globalid Attribute of an IfcBuildingStorey	(File > File Special > IFC 2x3 > IFC Manager)
Description	Description Attribute of an IfcBuildingStorey	File > File Special > IFC 2x3 > IFC Manager
Elevation	Elevation	Design > Story Settings
Height	Height	Design > Story Settings

Figure 10 Mapping between ARCHICAD model and the COBie 2 Floor worksheet data

The "Floors" are interpreted as Stories in the ARCHICAD project. The story names (COBie "Name"), the elevation (COBie "Elevation") and the height (COBie "Height") can be defined in the *Story Settings* dialog (*Design > Story Settings*).



Figure 11 Story settings define the major COBie Floor data in ARCHICAD

To set the Floor "Category", choose the proper "Floor Type" Classification Reference data in the *IFC Manager*. Just choose the "COBie Floor and Zone Categories" (Floor Types) predefined rule with the *Apply Predefined Rule* tool. The "Description" attribute of an ARCHICAD Story (IfcBuildingStorey) can also be set via the *IFC Manager*.



Figure 12 Floor Type definition in the IFC Manager

Space

The COBie 2 **Space** worksheet summarizes data of the Spaces (IfcSpace) of the project.

Space COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Name	<i>No</i> (Number)	Zone > Settings Dialog > Name and Positioning
CreatedBy	Contact E-mail	(File > Info > Project Info)
CreatedOn	the creation date of the IFC file	
Category	Classification Reference data assigned to an IfcSpace	Zone > Settings Dialog > Tags and Categories , or
		File > File Special > IFC 2x3 > IFC Manager
FloorName	Name of the ArchiCAD Zone's Home Story	(Design > Story Settings)
Description	Name	Zone > Settings Dialog > Name and Positioning
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: ' <i>IfcSpace</i> '	
ExtIdentifier	GlobalId Attribute of an ArchiCAD Zone	(File > File Special > IFC 2x3 > IFC Manager)
RoomTag	COBie_Space Property Set: RoomTag	Zone > Settings Dialog > Tags and Categories , or
		File > File Special > IFC 2x3 > IFC Manager
UsableHeight	Zone Height	Zone > Settings Dialog > Name and Positioning
GrossArea	GrossFloorArea IFC base quantity	
NetArea	NetFloorArea IFC base quantity	

Figure 13 Mapping between ARCHICAD model and the COBie 2 Space worksheet data

The "Spaces" are interpreted as Zones (IfcSpaces) in the ARCHICAD project. Thus, the COBie 2-required data can be set in ARCHICAD Zone Settings. IFC data can be set using the *Manage IFC Properties* option (*Tags and Categories* tab).

Note Each COBie Space (ARCHICAD Zone) has to have a unique COBie "Name", that is, a unique ARCHICAD Zone number ("No").

M Zone Selection	Settings				? ×			
Favorites				Selecte	d: 1 Editable: 1			
🔻 🗐 Name	e and Positioning							
Category:	2 Office				•			
Name:	'Description'		▶	No: Name	e'			
	Zone Top:							
	2. 3rd Floor (Home +	1)	•	Zene Delvere				
		-200						
Subfloor Thickness:		3358		i Gro (i) Ne	bss t			
100	ŧ <u>₹</u>	0		Zone Stamp A	ngle:			
	Home Story:			Relati	ve 🕨			
	1. 2nd Floor (Current))	-	0.00	,			
		to Project Zero 3758		🔬 🔽 Fix	ed Angle			
→ Th Floor	Plan							
🔹 🕨 📩 Zone	Stamp							
► 📲 Settin	► R [*] ₁ Settings							
Mode	l Calculation							
Listin	a and Labeling							
→ ⊕ Tags	and Categories							
<i>ศ</i> 👁 Model L	Jnit - Zone	Þ		Cancel	ОК			

Figure 14 Space settings in ARCHICAD

To set the Space "Category", select the proper Classification Reference data in the *Zone Settings* dialog (*Tags and Categories > Manage IFC Properties*) or in the *IFC Manager*. COBie requires IfcSpace classification by the OmniClass table 13 called "Space by Function" (in the U.S.) or by the Uniclass system (in UK). Both systems are available as built-in classification rules in ARCHICAD under the *Apply Predefined Rule* option.

M Zone Selection Settings		? ×		Apply Predefined Rules
Favorites	Si	elected: 1 Editable: 1		Select Rule:
				OmniClass 🗸
Image: Imag	ling			Table 13 - Space by Function 🗸
Tope Stamp		Manage IFC Properties		Description
► Settings		Selected: 1 Editable: 1		Description.
🕨 🗼 Model				Assigns a functional classification to ArchiCAD Zones based on this
▶ <u></u> , Area Calculation		Name	Value	
🕨 📄 Listing and Labelin	Ig	IFC Type	IfcSpace	For example: use this rule to comply with 'Concept Design BIM 2010' MVD (GSA) and 'EM Handover' (COBie) MVDs, which require such classification
🔻 🤮 Tags and Categori	es			for IfcSpace entities.
		GlobalId	0k1GCgZO91Qu3NpQx	T
ID	ZON - 001	✓ Name	🗇 'Name'	Select the required item:
✓ Renovation		Description		13-41 00 00 Museum Spaces
Renovation Status	Existing	ObjectType		13-45 00 00 Library Spaces
Show On Renovation Filter	All Relevant Filters	✓ LongName	Description'	13-47 00 00 Spiritual Spaces
IFC Properties		CompositionType	@ ELEMENT	13-49 00 00 Environmentally Controlled Spaces
IFC Type	IfcSpace	InteriorOrExteriorSpace	INTERNAL CONTRACT	13-53 00 00 Laboratory Spaces
GlobalId (Attribute)	0k1GCgZO91Qu3NpQxMPb8A	ElevationWithFlooring		E 13-55 00 00 Commerce Activity Spaces
Name (Attribute)	'Name'			13-55 11 00 Office Spaces
LongName (Attribute)	'Description'	RoomTag	œ∋ n/a	13-55 13 00 Banking Spaces
CompositionType (Attribute)	ELEMENT			13-55 12 00 Irading Spaces
InteriorOrExteriorSpace (A	. INTERNAL	OCCS - Space by Function	13-55 11 00 Office Spaces	Parch
RoomTag (COBie_Space)	n/a			
	Manage IFC Properties			office
				Search result:
🕮 Model Unit - Zone	Cancel		/	OmniClass Number 🔺 OmniClass Title
				13-51 34 19 Biofeedback Treatment Control/Office
		New Property / Classification	Apply Predefined Rule	13-55 11 00 Office Spaces
			Cancel	13-55 11 11 Office Service
			Caricer	€ Þ
				Cancel Apply

Figure 15 Space Category definition

Zone

The COBie 2 **Zone** worksheet summarizes the sets of spaces sharing a specific attribute in the project. In other words, it summarizes the data of the groups (IfcZones) of <u>COBie Spaces</u> (IfcSpaces).

Zone COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Name	Name Attribute of an IFC Zone	File > File Special > IFC 2x3 > IFC Manager
CreatedBy Contact E-mail		(File > Info > Project Info)
CreatedOn	the creation date of the IFC file	
Category	Classification Reference data assigned to an IfcZone	File > File Special > IFC 2x3 > IFC Manager
SpaceNames	No data of the ArchiCAD Zones assigned to an IFC Zone	(Zone > Settings Dialog)
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: ' <i>lfcZone</i> '	
ExtIdentifier	GlobalId Attribute of an IFC Zone	(File > File Special > IFC 2x3 > IFC Manager)
Description	Description Attribute of an IFC Zone	File > File Special > IFC 2x3 > IFC Manager

Figure 16 Mapping between ARCHICAD model and the COBie 2 Zone worksheet data

COBie "Zones" are interpreted as IFC Zone Assignment (IfcZone) entities in the ARCHICAD project. An IfcZone entity is a group of ARCHICAD Zone (IfcSpace) entities. IFC Zone entities with their COBie 2-required data can be defined and managed only in the *IFC Manager*.

A COBie "Zone" (IfcZone) can be defined with the *New* command by applying it to the "IFC Zones" member of the "Assignments" tree. Set the COBie "Name" and the "Description" data at the attributes of the same name.

To set the Zone "Category", choose the proper "Zone Type" Classification Reference data in the *IFC Manager*. Just choose the "COBie Floor and Zone Categories" (Zone Types) predefined rule with the *Apply Predefined Rule* tool.



Figure 17 COBie 2 Zone (IFC Zone) definition in the IFC Manager

To assign several ARCHICAD Zones (IfcSpaces) having the same function (for example circulation zones) to a newly created IFC Zone entity, just drag and drop them to the "New Relation" folder of the IFC Zone entity.



Figure 18 Grouping ARCHICAD Zones in an IFC Zone (IFC Manager)

Note Hotlinked ARCHICAD Zone entities cannot be grouped in IFC Zones. To assign an IFC Zone entity to these Zones, you must first break their Hotlink module connection.

Туре

COBie 2 **Type** worksheet summarizes the types of equipment and products.

Type COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Name	Name Attribute of an IFC Type Product	File > File Special > IFC 2x3 > IFC Manager
CreatedBy	Contact E-mail	(File > Info > Project Info)
CreatedOn	the creation date of the IFC file	
Category	Classification Reference data assigned to an IFC Type Product	File > File Special > IFC 2x3 > IFC Manager
Description	Description Attribute of an IFC Type Product	File > File Special > IFC 2x3 > IFC Manager
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: the type of an IFC Type Product (e.g. 'IfcFurnishingElementType	(File > File Special > IFC 2x3 > IFC Manager)
ExtIdentifier	GlobalId Attribute of an IFC Type Product	(File > File Special > IFC 2x3 > IFC Manager)
AssetType	COBie_Asset Property Set: AssetType	File > File Special > IFC 2x3 > IFC Manager
ReplacementCost	COBie_EconomicImpactValues Property Set: ReplacementCost	File > File Special > IFC 2x3 > IFC Manager
ExpectedLife	COBie_ServiceLife Property Set: ServiceLifeDuration	File > File Special > IFC 2x3 > IFC Manager
AccessibilityPerformance	COBie_Specification Property Set: AccessibilityPerformance	File > File Special > IFC 2x3 > IFC Manager
CodePerformance	COBie_Specification Property Set: CodePerformance	File > File Special > IFC 2x3 > IFC Manager
Color	COBie_Specification Property Set: Color	File > File Special > IFC 2x3 > IFC Manager
Constituents	COBie_Specification Property Set: Constituents	File > File Special > IFC 2x3 > IFC Manager
Features	COBie_Specification Property Set: Features	File > File Special > IFC 2x3 > IFC Manager
Finish	COBie_Specification Property Set: Finish	File > File Special > IFC 2x3 > IFC Manager
Grade	COBie_Specification Property Set: Grade	File > File Special > IFC 2x3 > IFC Manager
Material	COBie_Specification Property Set: Material	File > File Special > IFC 2x3 > IFC Manager
NominalHeight	COBie_Specification Property Set: NominalHeight	File > File Special > IFC 2x3 > IFC Manager
NominalLength	COBie_Specification Property Set: NominalLength	File > File Special > IFC 2x3 > IFC Manager
NominalWidth	COBie_Specification Property Set: NominalWidth	File > File Special > IFC 2x3 > IFC Manager
Shape	COBie_Specification Property Set: Shape	File > File Special > IFC 2x3 > IFC Manager
Size	COBie_Specification Property Set: Size	File > File Special > IFC 2x3 > IFC Manager
SustainabilityPerformance	COBie_Specification Property Set: SustainabilityPerformance	File > File Special > IFC 2x3 > IFC Manager
WarrantyDescription	COBie_Warranty Property Set: WarrantyDescription	File > File Special > IFC 2x3 > IFC Manager
WarrantyDurationLabor	COBie_Warranty Property Set: WarrantyDurationLabor	File > File Special > IFC 2x3 > IFC Manager
WarrantyDurationParts	COBie_Warranty Property Set: WarrantyDurationParts	File > File Special > IFC 2x3 > IFC Manager
WarrantyGuarantorLabor	COBie_Warranty Property Set: WarrantyGuarantorLabor	File > File Special > IFC 2x3 > IFC Manager
WarrantyGuarantorParts	COBie_Warranty Property Set: WarrantyGuarantorParts	File > File Special > IFC 2x3 > IFC Manager
Manufacturer	Pset_ManufacturerTypeInformation Property Set: Manufacturer	File > File Special > IFC 2x3 > IFC Manager
ModelNumber	Pset_ManufacturerTypeInformation Property Set: ModelLabel	File > File Special > IFC 2x3 > IFC Manager
ModelReference	Pset_ManufacturerTypeInformation Property Set: ModelReference	File > File Special > IFC 2x3 > IFC Manager
DurationUnit	Export Options > IFC model units > Options > Time Unit	File > File Special > IFC 2x3 > IFC Translation Setup
WarrantyDurationUnit	Export Options > IFC model units > Options > Time Unit	File > File Special > IFC 2x3 > IFC Translation Setup

Figure 19 Mapping between ARCHICAD model and the COBie 2 Type worksheet data

COBie "Types" are interpreted as IFC Type Product entities in the ARCHICAD project. IFC Type Products and their COBie 2-requested data can be defined in the *IFC Manager* only. ARCHICAD automatically generates IFC Type Product entities for all ARCHICAD element types. The following table shows naming examples of the automatically generated IFC Type Products.

ArchiCAD element type	IFC Type Product	'Name' Attribute of Type Product derived from
(IFC entity)	(= COBie Type)	
Column (IfcColumn)	IfcColumnType	'Profile/Building Material name' and 'Profile size'
Beam (IfcBeam)	IfcBeamType	'Profile/Building Material name' and 'Profile size'
Wall (IfcWall)	IfcWallType	'Building Material/Composite name' and 'Thickness'
Slab (IfcSlab)	IfcSlabType	'Building Material/Composite name' and 'Thickness'
Curtain Wall (IfcCurtainWall):	IfcCurtainWallType	Text: 'Curtain Wall Type'
- CW Panel (IfcPlate)	- IfcPlateType	Panel Type: 'Main' or 'Distinct' and 'Panel size'
- CW Frame (IfcMember)	- IfcMemberType	Frame Type: 'Boundary', 'Mullion' or 'Transom' and 'Profile size'
Door (IfcDoor)	IfcDoorStyle	'Library Part Name' - 'Building Material/Composite Name' - 'Width' X 'Height'
Window (IfcWindow)	IfcWindowStyle	'Library Part Name' - 'Building Material/Composite Name' - 'Width' X 'Height'
GDL-based Objects	IfcFurnitureType, IfcRailingType, IfcRampFlightType, etc.	'Library Part Name'

Figure 20 Naming rule examples of IFC Type Product entities

In the *IFC Scheme Setup* (*File > File Special > IFC 2x3*) command dialog, you can override the Type naming with mapping rules. For example, the COBie 2 Scheme XML loaded into ARCHICAD gives a complex naming rule for IfcWindowStyle (Window Type) and IfcDoorStyle (Door Type) naming that contains the "Library Part Name", the "Building Material", the "Width" and "Height" parameters and some static texts among the data values.

M IFC Scheme Setup		? <mark>×</mark>		
Filter Scheme Elements: Type Objects 🗸	Scheme Properties:	 Mapping Rules in Order of Priority: 		
□-Ei (IfcTypeObject) □-Ei (IfcTypeProduct) □-Ei IfcDoorStyle ⊕- ŵ (IfcElementType) □-Ei IfcWindowStyle	Name Type Attributes IfcGloballyUniqueId GlobalId (IfcRoot) IfcCloballyUniqueId Name (IfcRoot) IfcLabel Description (IfcRoot) IfcLabel Tag (IfcTypeProduct) IfcLabel ConstructionType IfcWindowStyleConstruc OperationType IfcWindowStyleOperatio ParameterTakesPr IfcBoolean Sizeable IfcBoolean COBie_Asset Image: Commission of the system of	 Cubrary Part Name> - <building composi<="" li="" material=""> </building>		
Get Current Project Settings Clear All Scheme Settings	New Property / Classification	Add Parameters		
Import Merge Export		Cancel		

Figure 21 Name mapping by the IFC Scheme Setup command



Figure 22 The effect of the scheme-driven WindowStyle mapping (IFC Manager)

Of course, Type names can be modified manually. To modify the predefined name of a Type and/or to manage the COBie-required attributes, properties and classification reference (COBie Category) of a Type, first you have to set IFC Type Product entity to be editable. Apply the *Edit/New Type* command on the selected Type Product item, and manage its properties in its property table (right hand side).



Figure 23 How to make a Type Product entity editable (*IFC Manager*)

If an IFC Type Product is editable, the following functions become available:

- renaming (modification of the "Name" attribute),
- setting COBie attributes and properties,
- setting Type Category, and
- modifying its member content by moving the members into another type.

To set the Type "Category", select the proper Classification Reference data in the *IFC Manager*. COBie requires IFC Type Product classification by the OmniClass table 23 called "Products" (in the U.S.) or by the Uniclass system (in UK). Both systems are available as built-in classification rules in ARCHICAD under the *Apply Predefined Rule* option.

Name Value Type IFC: Type IfC:Window/Ryle Attributes	Il Selected: 1 Editable: 1		₹§ \\	Apply Predefined Rules
IFC Type JICWindowStyle Attributes IFC Scholls/Unice Challed 20x89ht/u002g52q16005xE JICGholls/Unice Mane @D Window 18 - Wood - 0.90 X 1.50 IfcLabel Interpreter IfC text IfC text ApplicableCourrence IfC text Assigns construction product dessets to building elements based on this Omstructum Type @D NOTDEFINED IfC WindowStyle E OperationType @D FALSE IfC boolean Parameter TakesPrecedence @D FALSE IfC boolean COBie_Asset IfC boolean IfC boolean COBie_Seprecification @D n/a Ifcl abel COBie_Seprecification Ifcl abel Ifcl abel Ifcl abel OCOBie_Seprecification Ifcl abel Ifcl abel Ifcl abel OCOBie_Seprecification Ifcl abel Ifcl abel Ifcl abel OD OCOS Iffcl abel Ifcl abel Iffcl abel Iff abel <td< th=""><th>Name</th><th>Value</th><th>Туре</th><th>Select Rule:</th></td<>	Name	Value	Туре	Select Rule:
Attributes Gbbdild 23xr8h4y09fg52q16005uE Ifr63bb3Vchique Description Ifr63bb3Vchique Basine Description Ifr63bb3Vchique Assigns construction product dasses to building elements based on this OmmClass (celtion 2012) specification Operation Type @Description Ifr63bb3Vchique Operation Type @Description Ifr63bb3Vchique Operation Type @Description Ifr63bb3 Operation Type @Description Ifr63bb3 Operation Type @Description Ifr63bb3 Operation Type @Description Ifr63bb3 Collig_Asset Ifr62bb3 Ifr62bb3 SeastType @Description Ifr62bb3 Collig_Secriptication @Description Ifr62bb3 Collig_Secriptication @Description Ifr62bb3 Collig_Secriptication 23-171 31 51 Wood Strapter Hung Windows 23-171 31 51 Wood Strapter Hung Windows Oblig_Secriptication Ifr62bb3 Ifr62bb3 Ifr62bb3 Oblig_Secriptication 23-171 31 51 Wood Strapter Hung Windows Ifr62bb3 Oblig_Secriptication 23-171 31 51 Wood Wondows Ifr62bb3	IFC Type	IfcWindowStyle	A	OmniClass
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□ escription ifcText □ ApplicableOccurrence IfcLabel □ Tag © 83EF1228+F62-40FE-A723-00143235CE0E IfcLabel □ ConstructionType @> NOTDEFINED IfcWindowStyled ○ peradomType @> SINGLE_PANEL IfcWindowStyled ○ peradomType @> FALSE IfcBoolean ○ COBie_Asset IfcBoolean IfcBoolean ○ COBie_ServiceLife @> n/a IfcLabel ○ Windows 23-17 13 15 15 Wood Single Hung Windows 23-17 13 15 19 Wood Triple Windows ○ COSie_ServiceLife	✓ Name	👁 Window 18 - Wood - 0.90 X 1.50	IfcLabel	Description:
□ ApplicableOccurrence If cLabel □ Tag © 885F1228+F782-40FE-A723-00143235CE0E If cLabel □ ConstructionType © 90 NOTDEFINED If cMindowStylef □ OperationType @ 90 NOTDEFINED If cWindowStylef □ Parameter TakesPrecedence @ 90 FALSE If cBoolean □ COBie_ConomicImpactValues If cBoolean If cLabel □ COBie_ServiceLife @ 90 n/a If cLabel □ COBie_ServiceLife @ 90 n/a If cLabel ○ Obie_ServiceLife @ 23-17 13 15 11 Wood Finde Windows ○ Obie_Varranty @ 23-17 13 15 13 Wood Single Hung Windows ○ OCS - Products 23-17 13 15 13 Wood Single Hung Windows ○ OCS - Products 23-17 13 15 13 Wood Awring Windows ○ OCS - Products 23-17 13 15 13 Wood Awring Windows ○ OCS - Products 23-17 13 15 13 Wood Awring Windows ○ OCS - Products 23-17 13 15 13 Wood Awring Windows ○ OCS - Products <td>Description</td> <td></td> <td>IfcText</td> <td>Assigns construction product classes to building elements based on this</td>	Description		IfcText	Assigns construction product classes to building elements based on this
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23-17 13 15 17 Wood Double Hung Windows				23-17 13 15 15 Wood Single Hung Windows
Cancel				23-17 13 15 17 Wood Double Hung Windows
Cancel				
				Cancel Apply

Figure 24 COBie Category definition for Window Type (IfcWindowStyle) entity (IFC Manager)

The COBie-required duration unit can be set in *Export Options*. There is a predefined settings package (so-called "IFC Translation Setup" in ARCHICAD) which contains export options optimized for the COBie-required IFC export. It is called "COBie 2 Export" IFC Translator (see chapter <u>COBie 2-enabled IFC Model Export</u>).

Note If you create a new Component in your model after Type definition, you can easily drag and drop the new Component onto an edited Type in the "Type Products" dialog of the *IFC Manager*.

If you have same type Components in two different Hotlinked modules, you can unify them in one common Type (within one COBie Type "ExtIdentifier" (IFC "GlobalId")) only after you break their Hotlink module connection.

Component

The COBie 2 Component worksheet summarizes the individually named items of the project.

Component	AuchiCAD (IEC) data manual to COPie data	ArchiCAD command		
COBie2 worksheet data	Archicad (IFC) data mapped to coble data	Arctical command		
Name	ID	Settings Dialog of an ArchiCAD element		
CreatedBy	Contact E-mail	(File > Info > Project Info)		
CreatedOn	the creation date of the IFC file			
TypeName	Name of the IFC Type Product assigned to an ArchiCAD element	(File > File Special > IFC 2x3 > IFC Manager)		
Space	No data of the ArchiCAD Zones assigned to an ArchiCAD element	(Zone > Settings Dialog)		
Description	Description Attribute of an ArchiCAD element	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
ExtSystem	text: 'ArchiCAD-64'			
ExtObject	text: the entity type of an ArchiCAD element (e.g. ' <i>IfcFurnishingElement</i> ')	(File > File Special > IFC 2x3 > IFC Manager)		
ExtIdentifier	Globalid Attribute of an ArchiCAD element	(File > File Special > IFC 2x3 > IFC Manager)		
AssetIdentifier	COBie_Component Propert Set: AssetIdentifier	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
InstallationDate	COBie_Component Propert Set: InstallationDate	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
TagNumber	COBie_Component Propert Set: TagNumber	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
WarrantyStartDate	COBie_Component Propert Set: WarrantyStartDate	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
BarCode	Pset_ManufacturerOccurrence Property Set: BarCode	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		
SerialNumber	Pset_ManufacturerOccurrence Property Set: SerialNumber	Settings Dialog > Tags and Categories , or		
		File > File Special > IFC 2x3 > IFC Manager		

Figure 25 Mapping between ARCHICAD model and the COBie 2 Component worksheet data

The "Name" data are derived from the ARCHICAD "ID" of the element, so you can set them in the element Settings dialogs. All IFC data can be set using the *Manage IFC Properties* option (*Tags and Categories* tab) of the Settings dialog or in the *IFC Manager*.

Note Each Component has to have a unique COBie "Name" (ARCHICAD "ID"). If you did not assign unique (different) ID's to your ARCHICAD elements, you can do so at any time, for example using the *Element ID Manager* function (*Document > Schedules and Lists*).

The "Space" data describes the ARCHICAD Zone (IfcSpace) assigned to a Component. This data is automatically calculated, if the IFC export uses the *Space containment* and the *IFC Space boundaries* functions (see chapter <u>COBie 2-enabled IFC Model Export</u>).



Figure 26 COBie-required Component data set in the Window Settings dialog

System

The COBie 2 **System** worksheet summarizes the sets of <u>Components</u> providing a service. In other words, it summarizes the data of the systems (IfcSystem) of the project elements.

System COBie2 worksheet data	ArchiCAD (IFC) data mapped to COBie data	ArchiCAD command
Name	Name Attribute of an IFC System	File > File Special > IFC 2x3 > IFC Manager
CreatedBy	Contact E-mail	(File > Info > Project Info)
CreatedOn	the creation date of the IFC file	
Category	Classification Reference data assigned to an IFC System	File > File Special > IFC 2x3 > IFC Manager
ComponentNames	ID of the ArchiCAD elements assigned to an IFC System	(Settings Dialog of an ArchiCAD element)
ExtSystem	text: 'ArchiCAD-64'	
ExtObject	text: ' <i>IfcSystem</i> '	
ExtIdentifier	GlobalId Attribute of an IFC System	(File > File Special > IFC 2x3 > IFC Manager)
Description	Description Attribute of an IFC System	File > File Special > IFC 2x3 > IFC Manager

Figure 27 Mapping between ARCHICAD model and the COBie 2 System worksheet data

COBie "Systems" are interpreted as IFC System Assignment (IfcSystem) entities in the ARCHICAD project. An IfcSystem entity is a group of ARCHICAD elements. IFC System entities with their COBie 2-required data can be defined and managed only in the *IFC Manager*.

A COBie "System" (IfcSystem) can be defined with the *New* command by applying it to the "IFC Systems" member of the "Assignments" tree. Set the COBie "Name" and the "Description" using the attribute fields of the same name.

To set the System "Category", select proper Classification Reference data in the *IFC Manager*. COBie requires IFC System classification by the OmniClass table 21 called "Elements" (in the U.S.) or by the Uniclass system (in UK). Both systems are available as built-in classification rules in ARCHICAD under the *Apply Predefined Rule* option.



Figure 28 COBie 2 System (IFC System) definition in the IFC Manager

To assign ARCHICAD elements having the same function (for example elevators) to a newly created IFC System entity, just drag and drop them to the "New Relation" folder of the IFC System entity.



Figure 29 Grouping ARCHICAD elements in an IFC System (IFC Manager)

Note Hotlinked Components (ARCHICAD elements) cannot be grouped in IFC Systems. To assign an IFC System entity to these elements, you must break their Hotlink module connection.

MEP Systems defined with the <u>GRAPHISOFT MEP Modeler</u> Add-On can be also handled as IfcSystem inside an ARCHICAD project. Just create a new IfcSystem (as mentioned above) and choose the predefined MEP System name from the available list

If an IFC model exported by an MEP application is merged to an ARCHICAD project, you can also manage its MEP systems and their properties in the *IFC Manager*.



Figure 30 Conversion of a MEP Modeler System to an IFC System (IFC Manager)

Document / Attribute / Coordinate / PickLists

Data are extracted automatically from the IFC model exported by ARCHICAD.

Assembly / Connection / Spare / Resource / Job / Impact / Issue

These data types are not requested from a design application by the COBie 2 rules, and they are not available in ARCHICAD projects either. The table contents should be manually filled out in the spreadsheet, if they are required.

COBie 2-enabled IFC Model Export

The COBie-required IFC model/file can be exported easily by using the export set (so-called "IFC Translator") optimized for the COBie 2 requirements. Just use the *Save as* command (*File* menu) together with the translator called "COBie 2 Export" from either a Floor Plan or a 3D window.



Figure 31 IFC model export optimized for COBie 2 requirements (Save as)

The steps of IFC model export to COBie 2:

- 1. Filter elements for the export (use the following options):
 - Selected elements only (available only if elements have been selected):
 - elements selected in the current view (the view that was open when you issued the *Save as* command) will be exported.
 - Entire project:

entire model (regardless of any selection, and regardless of the shown/hidden status of the elements' layers) will be exported.

Visible elements:

the visible elements in the current view will be exported, regardless of any selection. "Visible" means all elements that are set to be displayed (due to *Layer Settings, Model View Options, Partial Structure Display*, etc.).

Note If you issue the export command from Floor Plan view ("Visible elements (on all stories)"), this choice includes all elements currently displayed on every story of the project.

If you choose "Visible elements", make sure that ARCHICAD Zones are set to be displayed in the current view. For example, if you are saving from the 3D window, make sure that Zones are "on" in the *Filter and Cut Elements in 3D* dialog box (*View > Elements in 3D View*).

2. Choose the "COBie 2 Export" Translator, in which export settings are fine-tuned for the COBie 2 requirements. The meaning of the major export options (*Derived model data to export* options) of the "COBie 2 Export" Translator is the following (check *Data Settings*):

- Space containment:

It exports the relationship between ARCHICAD Zones (IfcSpaces) and their contained Object (Furnishing, MEP Equipment, etc.) and Morph elements. "Contained" means that the midpoint of an Object or Morph is within an ARCHICAD Zone in the 3D space. This option is required for exporting COBie "Space" data of the <u>Component</u> worksheet.

IFC base quantities (size, area and volume):
 It exports elements' base quantities required by COBie 2.

- IFC Space boundaries:

It exports the logical connection between ARCHICAD Zones (IfcSpace) and the building elements that enclose them. This option is also required for exporting COBie "Space" data of the <u>Component</u> worksheet.

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Figure 32 Major export options of the "COBie 2 Export" IFC Translator (*IFC Translation Setup*)

- 3. Set the model units ("IFC model units").
- 4. Define file name.

- 5. Set the file format to .IFC (or .IFCXML depending on the file support of the COBie 2 spreadsheet converter programs). See the <u>How to Create a COBie 2 Spreadsheet</u> chapter.
- 6. Click Save.

How to Create a COBie 2 Spreadsheet

An external application is needed to convert an ARCHICAD IFC file to an XML-type COBie 2 spreadsheet format.

The IFC and COBie 2 spreadsheet formats for the IFC 2x3 Basic FM Handover MVD capture the same information content and can be transformed forth and back across the different formats. COBie from IFC transformations are implemented according to the so-called "COBie Responsibility Matrix" document. This document defines the mapping rules between the IFC file and the COBie spreadsheet and which IFC entity types are allowed to be converted to COBie Component and Type entities ("Type Assets" and "Component Assets" tables).

A number of dedicated tools can be used to execute the transformations, such as the free *COBie Toolkit* application, developed by Engineer Research and Development Center (ERDC). The COBie Toolkit can be downloaded from <u>here</u>.

ERDC COBie Toolkit, developed for the COBie FM Handover project, includes the transformer tool and the configurations to map IFC data to COBie 2. The conversion can be done in two easy steps.



Figure 33 The steps of IFC to COBie conversion (COBie Toolkit)

Hint If you choose the "COBie QC Report - Design Deliverable" export format, the application checks for any missing items in your IFC model. This quality check presents a summary of various checks performed on the COBie data: e.g. at least one Component for each Type, unique names for Types, at least one Floor, etc.

In case of very large IFC models, modify the memory options (by increasing the "Max Heap Size", "Max Perm Size" and "Stack Size") in the COBie Toolkit Starter dialog.

come COBie Toolkit Starter					
MVC	default	Browse			
Max Heap Size	4096m				
Max Perm Size	1024m				
Stack Size	4096k				

Figure 34 An example for memory settings

Based on the COBie Responsibility Matrix ("Type Assets" and "Component Assets" tables), the COBie Toolkit ignores some IFC entity types (e.g. IfcWallType, IfcWall, IfcWallStandardCase) by default. If you

would like to allow all IFC entity type conversion to COBie Types and Components, change the "COBieIDMPlugin" mode to "None" at "Options".

Object IDM Options		x
Selected Object Information Delivery Manual		
COBieIDMPlugin	•	
Ignores entities based on a list of Ifc entity types for COBie/FM Handover MVD.		
Ignored Entities		
IfcBeamType, IfcColumnType, IfcCurtainWallType, IfcCovering, IfcCoveringType,	_	
<pre>IfcMemberType, IfcPlateType, IfcRailingType, IfcRampFlightType, IfcRampType,</pre>		
IfcSlabType, IfcStairFlightType, IfcStairType, IfcWallType,		
IfcDuctFittingType, IfcJunctionBoxType, IfcPipeFittingType,	=	
IfcCableCarrierSegmentType, IfcCableSegmentType, IfcDuctSegmentType,		
IfcPipeSegmentType, IfcFastenerType, IfcSpaceType, IfcAnnotation, IfcBeam,		
IfcBeamStandardCase, IfcColumn, IfcColumnStandardCase, IfcCurtainWall,		
IfcMember, IfcMemberStandardCase, IfcPile, IfcFooting, IfcPlate,	-	
IfcPlateStandardCase, IfcRailing, IfcRamp, IfcRampFlight, IfcRoof, IfcSlab,		
IfcSlabElementedCase, IfcSlabStandardCase, IfcStair, IfcStairFlight, IfcWall,		
IfcWallElementedCase, <u>IfcWallStandardCase</u> , IfcFlowFitting, IfcFlowFittingType,		
IfcFlowSegment, IfcFlowSegmentType, IfcCableCarrierSegment, IfcCableSegment,		
IfcDuctSegment, IfcFipeSegment, IfcElementAssembly, IfcBuildingElementPart,		
IfcFastener, IfcMechanicalFastener, IfcReinforcingBar, IfcReinforcingMesh,	-	
Submit Cancel		

Figure 35 IFC Entity and Type Products ignored in the IFC to COBie conversion by default