HFBS

Health Facility Briefing System

HFBS for Revit

More information: **hfbsinfo.com**

Contents

HFBS
Health Facility Briefing System

HFBS
Health Facility Briefing System

Chapter 1 - Getting Started

Overview

HFBS for Revit 2015, 2016, 2017, 2018 & 2019 is designed to increase productivity by linking the Health Facility Briefing System Database directly into Revit. It serves as a drafting, design and asset management program allowing Planners and Architects to link a brief created in HFBS to a project in Revit right down to room items.
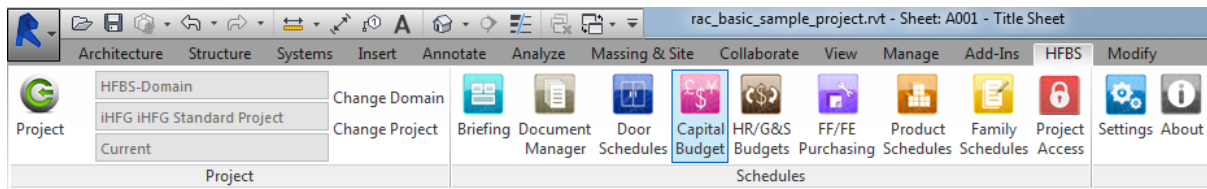
Figure 1 *HFBS* ribbon – The HFBS ribbon under the HFBS ribbon tab.

HFBS for Revit 2015, 2016, 2017, 2018 & 2019 expands the Revit parameter fields to track compliance with the HFBS briefing system and provides a highly functional user interface that can be directly accessed inside Revit.

Please read the *software license agreement* located in the appendix before using HFBS for Revit.

By using HFBS for Revit, you are agreeing to be bound by the terms of this agreement.

System Requirements

System requirements for the application are the same as those required to run Revit 2015, 2016, 2017, 2018 & 2019. These can be found on the Autodesk website or below, please check the Autodesk website for any updates. HFBS for Revit requires Autodesk Revit 2015, 2016, 2017, 2018 or 2019 to be installed on your system before it can be installed.

HFBS for Revit Requirements:

- Autodesk Revit 2015, 2016, 2017, 2018 or 2019 64 bit installed.
- .Net framework 4.5 installed (for Autodesk Revit 2015 or 2016).
- .Net framework 4.5.2 installed (for Autodesk Revit 2017 or 2018).
- .Net framework 4.7 installed (for Autodesk Revit 2019).
- Internet connection.
- Write access to the desired deployment location.
- Internet Protocol (IP) installed.
- Read/Write access to the HFBS for Revit 2015, 2016, 2017, 2018 & 2019 support files.

System requirements for Autodesk Revit 2015

System requirements for Autodesk Revit 2016

System requirements for Autodesk Revit 2017

System requirements for Autodesk Revit 2018

System requirements for Autodesk Revit 2019

HFBS
Health Facility Briefing System

Autodesk Minimum Requirements for Revit 2015 and Revit 2016

Minimum: Entry-Level Configuration	
Operating System	**Microsoft® Windows® 7 SP1 64-bit:** Windows 7 Enterprise, Ultimate, Professional, or Home Premium **Microsoft® Windows® 8 64-bit:** Windows 8 Enterprise, Pro, or Windows 8 **Microsoft® Windows® 8.1 64-bit:** Windows 8.1 Enterprise, Pro, or Windows 8.1
CPU Type	Single- or Multi-Core Intel® Pentium®, Xeon®, or i-Series processor or AMD® equivalent with SSE2 technology. Highest affordable CPU speed rating recommended. Autodesk® Revit® software products will use multiple cores for many tasks, using up to 16 cores for near-photorealistic rendering operations.
Memory	4 GB RAM Usually sufficient for a typical editing session for a single model up to approximately 100 MB on disk. This estimate is based on internal testing and customer reports. Individual models will vary in their use of computer resources and performance characteristics. Models created in previous versions of Revit software products may require more available memory for the one-time upgrade process.
Video Display	1,280 x 1,024 with true color DPI Display Setting: 150% or less
Video Adapter	**Basic Graphics:** Display adapter capable of 24-bit color **Advanced Graphics:** DirectX® 11 capable graphics card with Shader Model 3 as recommended by Autodesk.
Disk Space	5 GB free disk space
Media	Download or installation from DVD9 or USB key
Pointing Device	MS-Mouse or 3Dconnexion® compliant device
Browser	Microsoft® Internet Explorer® 7.0 (or later)
Connectivity	Internet connection for license registration and prerequisite component download

HFBS
Health Facility Briefing System

Minimum: Entry-Level Configuration	
Operating System	**Microsoft® Windows® 7 SP1 64-bit:** Enterprise, Ultimate, Professional, or Home Premium **Microsoft® Windows® 8.1 64-bit:** Enterprise, Pro, or Windows 8.1 **Microsoft® Windows® 10 64-bit:** Enterprise, or Pro
CPU Type	Single- or Multi-Core Intel® Pentium®, Xeon®, or i-Series processor or AMD® equivalent with SSE2 technology. Highest affordable CPU speed rating recommended. Autodesk® Revit® software products will use multiple cores for many tasks, using up to 16 cores for near-photorealistic rendering operations.
Memory	4 GB RAM Usually sufficient for a typical editing session for a single model up to approximately 100 MB on disk. This estimate is based on internal testing and customer reports. Individual models will vary in their use of computer resources and performance characteristics. Models created in previous versions of Revit software products may require more available memory for the one-time upgrade process.
Video Display	1,280 x 1,024 with true color DPI Display Setting: 150% or less
Video Adapter	**Basic Graphics:** Display adapter capable of 24-bit color **Advanced Graphics:** DirectX® 11 capable graphics card with Shader Model 3 as recommended by Autodesk.
Disk Space	5 GB free disk space
Media	Download or installation from DVD9 or USB key
Pointing Device	MS-Mouse or 3Dconnexion® compliant device
Browser	Microsoft® Internet Explorer® 7.0 (or later)
Connectivity	Internet connection for license registration and prerequisite component download

HFBS
Health Facility Briefing System

Installation Procedures

Before Installing HFBS for Revit

HFBS for Revit requires Autodesk Revit 2015, 2016, 2017, 2018 or 2019 to be installed on your system before it can be installed.

If you have not already installed Revit, please go to the Autodesk Revit website and download then install an appropriate Revit version.

Autodesk Revit website: http://www.autodesk.com/products/revit-family/overview

To Install HFBS for Revit

First make sure that any open instances of Revit are closed. Do not run the installer with Revit running.

On a computer with Autodesk Revit 2015, 2016, 2017, 2018 or 2019 installed, either download the appropriate version of HFBS for Revit installer from the HFBS website, or contact HFBS support to obtain an installer.

When running the installer file, you may need to run this as an administrator if you have restricted access to your computer.

HFBS
Health Facility Briefing System

You should then see a window appear as per Figure 2.

Follow the installation prompts to run the installation until it is completed.
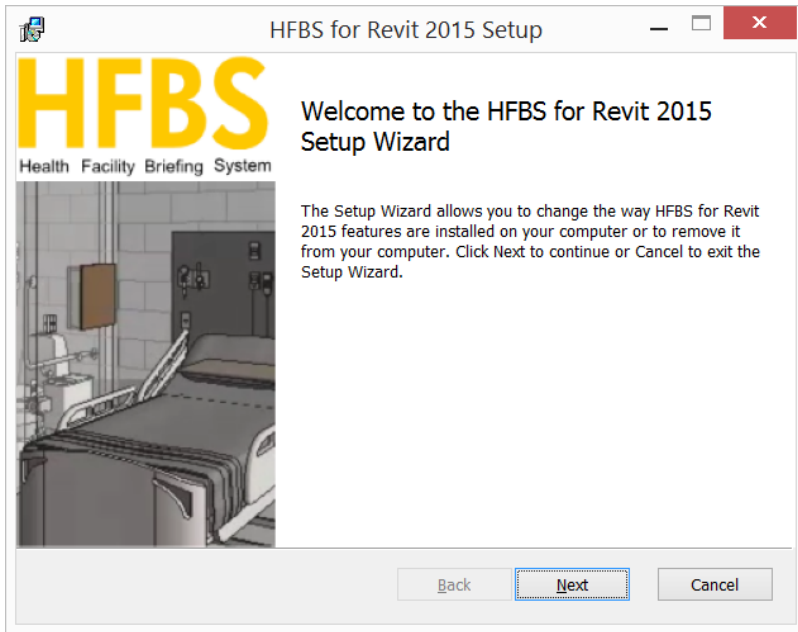
Figure 2 HFBS for Revit installer - The HFBS for Revit 2015 setup wizard.

After installing the HFBS for Revit and opening Revit you will be prompted to enter in a series of file and folder locations on your computer or network drive as per Figure 3.
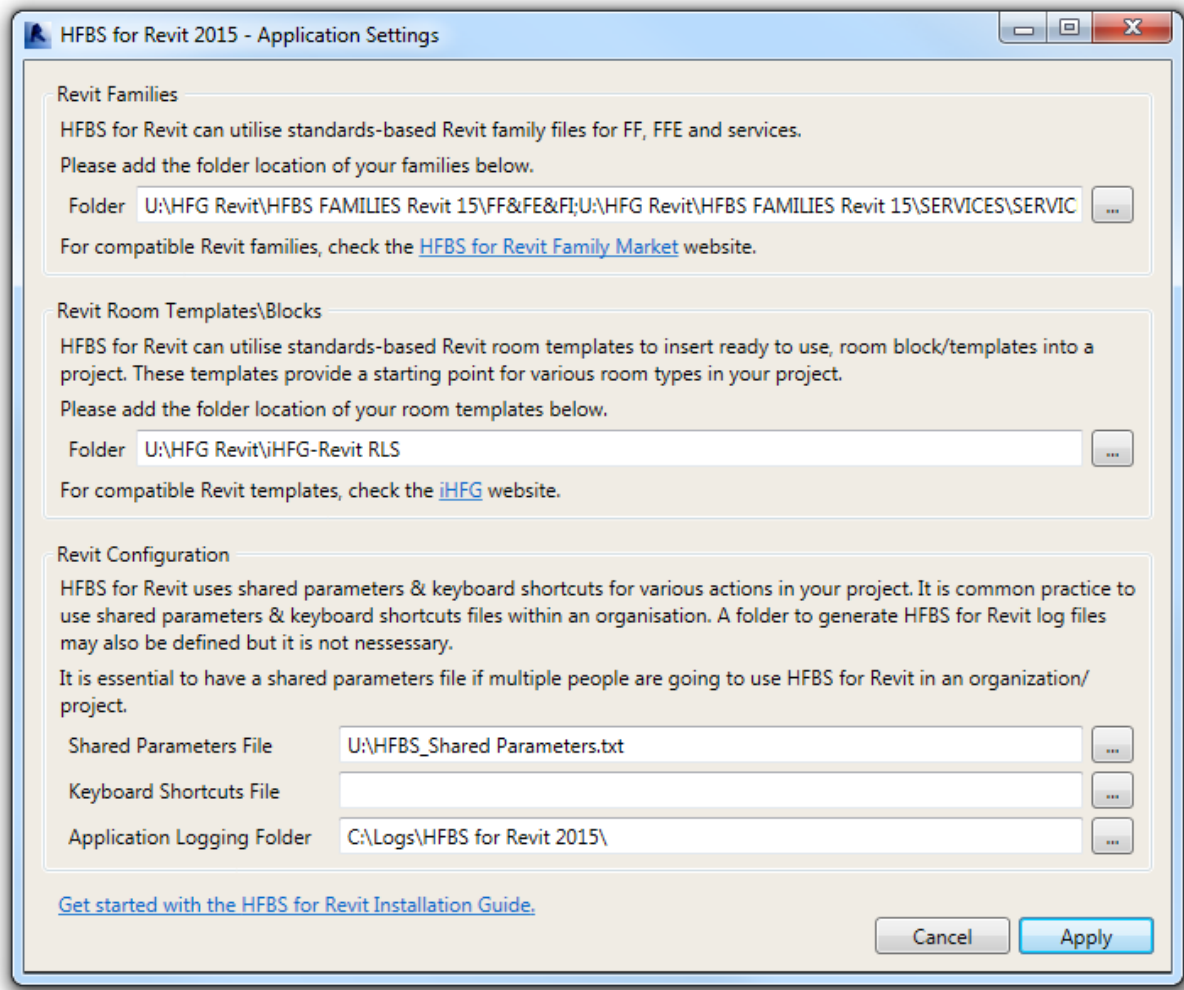
The application settings can also be accessed after they have been created by:

- Select the *HFBS* ribbon tab,
- From the *HFBS* ribbon, select the *Settings* button (see Figure 4).

Figure 4 *HFBS* ribbon - The *HFBS* ribbon tab and *Settings* button in the *HFBS* ribbon.

The form fields in Figure 3 should link to the following files and folders on your local computer or network drives, you will need to configure these as per your own setup of these folder locations.

The description that follows will guide you through this process:

- **Revit Families**

  HFBS for Revit can utilise existing Revit .rfa family files if the files are named appropriately as per HFBS furniture fitting (FF) & fixture equipment (FE) codes.

  Compatible Revit family files are available at the HFBS for Revit Market website for download: http://healthdesign.com.au/RevitMarket.

  Once you have downloaded the files, place them in a windows folder location on your computer or network and add the folder path into this form field e.g.: *c:\hfbs-for-revit*.

- **Revit Room Templates\Blocks**

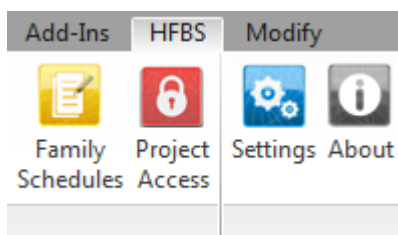 HFBS for Revit can utilise existing Revit .rvt room template files if the files are named appropriately as per the iHFG guideline naming conventions.

  Compatible Revit room template files are available at the iHFG website for download: http://healthdesign.com.au/ihfg/Guidelines/Index/iHFG.

  Once you have downloaded the files, place them in a windows folder location on your computer or network and add the folder path into this form field e.g.: *c:\hfbs-for-revit.*

- **Revit Configuration**
  - **Shared Parameters File:**

    HFBS for Revit requires a series of shared parameters to be added to either the existing shared parameters file or as a new file. HFBS for Revit will look for a shared parameters file in this location e.g. *C:\Revit Shared Parameters\HFBS_Shared Parameters.txt*.

    Please review these shared parameters & either add them into your centralised shared parameters file or add this file to your HFBS for Revit settings.

    In Revit, shared parameters are parameter definitions that can be used in multiple families or projects.

    For more information on shared parameters in Revit please consult the Revit help documentation here: http://help.autodesk.com/view/RVT/2015/ENU/?guid=GUID-E7D12B71-C50D-46D8-886B-8E0C2B285988

HFBS
Health Facility Briefing System

- o **Keyboard Shortcuts File:**

  HFBS for Revit allows you to optionally configure a keyboard shortcuts file to be used in conjunction with the application.

  In Revit you can improve productivity by using predefined keyboard shortcuts or adding your own key combinations.

  One tool can have multiple keyboard shortcuts assigned to it. Some keys are reserved and cannot be assigned to Revit tools.

  For more information on keyboard shortcuts in Revit please consult the Revit help documentation here: http://help.autodesk.com/view/RVT/2015/ENU/?guid=GUID-39D549F2-75EE-4C06-8B6A-3DADE1FBEF59

- o **Application Logging Folder:**

  HFBS for Revit can save application log entries to this folder, where the log entries are detailed.

  This is useful in case of an error, as HFBS support can then analyse these files to determine the cause of an error.

  The application logs can be placed anywhere on your computer where you have read & write access e.g.: *C:\Revit Logs*.

  Application logs follow the following naming convention *HFBSforRevit20??.yyyy-MM-dd*.

  E.g. *HFBSforRevit2015.2015-01-01.log*.

Note: A default error log file is created by HFBS for Revit in *the C:\Program Files\Health Projects International\HFBS for Revit 20**\Logs* folder. This contains all error-level entries that have occurred in the application.

HFBS
Health Facility Briefing System

Quick Start Guide

1. Opening a HFBS Project

Important note: You must open a Revit project, to begin using HFBS for Revit. You can only do this after installing HFBS for Revit and configuring the application settings as per the instructions in section *Installation Procedures*.

HFBS projects must be created in HFBS (Health Facility Briefing System) or QSOA (where QSOA is the light version of the HFBS Briefing Module) before they can be opened in HFBS for Revit.

To create a project in the HFBS, first browse to HFBS and create your first project in the HFBS Briefing Module or QSOA: http://hfbs.healthdesign.com.au/index.html.

For more help on this, check out the getting started with HFBS page here: http://www.hfbsinfo.com/getstarted/.

To create a new project, users can:

- Create a new project in Revit then associate the project with a HFBS project, or
- Open an existing project in Revit then apply the same process.

To create or open an existing HFBS project, you then need to sign in to HFBS for Revit.

1. Open Revit.

2. Open a Revit project.

3. Select the *HFBS* ribbon tab.

4. From the *HFBS* ribbon, select the *Project* button (see Figure 5).

   If the user has not signed in, a dialog will appear for you to sign in into your HFBS account (see Figure 6).
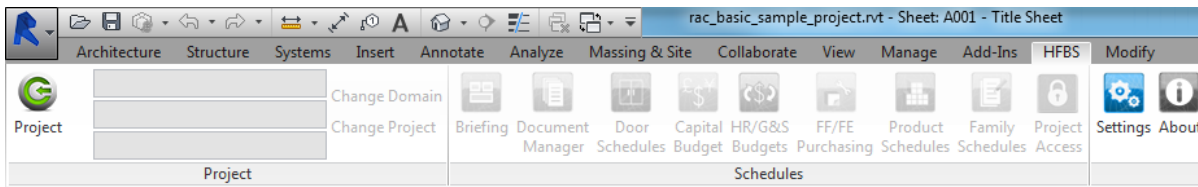

Figure 5 *HFBS* ribbon - Open a project using the *Project* button.

5. Sign in to HFBS using your HFBS account, or select the *Get HFBS Account* button to signup to HFBS.
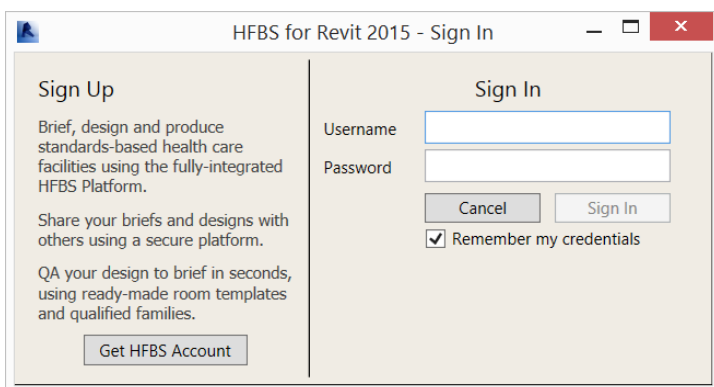

Figure 6 HFBS for Revit - Sign in to HFBS using a valid account, or select the *Get HFBS Account* button.

6. Select a domain from the list of available domains.
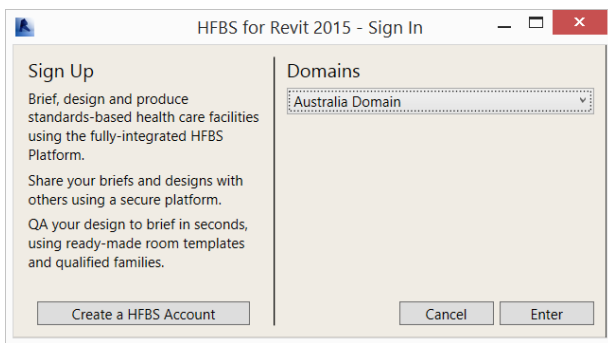
Figure 7 HFBS for Revit - Select a domain.

7. Select a project & milestone.
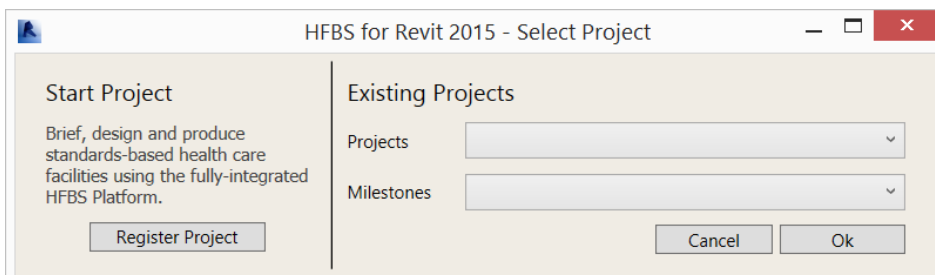
Figure 8 HFBS for Revit - Select a project & milestone.

8. The *Project Manager* window will now open & you can begin to use the application with the open Revit project.

Once a user has signed in, from then on, selecting the *Project* button in the *HFBS* ribbon will always load the *Project Manager* window.

If you wish to create a new project select the *Register Project* button & this will open the HFBS Briefing Module with a dialog for you to enter in the details of your new project.

After you have finished, select *OK* and then create your new project brief as you would normally (see Figure 9).

Figure 9 HFBS - Register Project Dialog

2. The Project Manager Window

1. Once you have opened a project in HFBS for Revit, you will be prompted to synchronize your Revit project with the HFBS project you have opened (see Figure 10).

HFBS for Revit 2015 - Synchronize Project

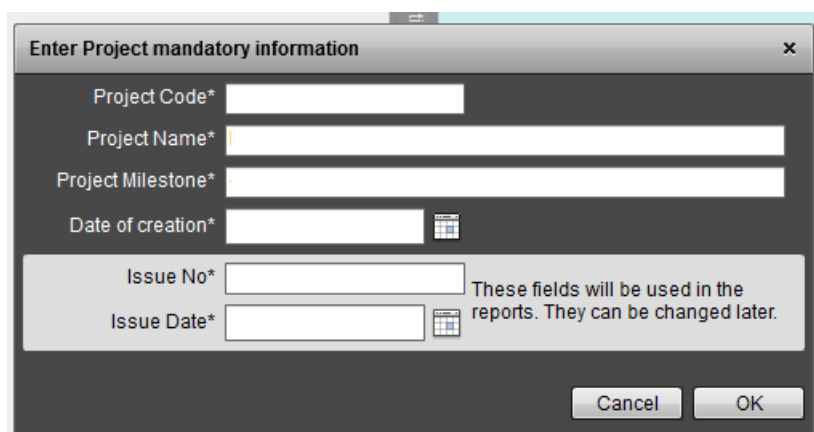Do you want to synchronize the opened document with the HFBS project?

OK   Cancel
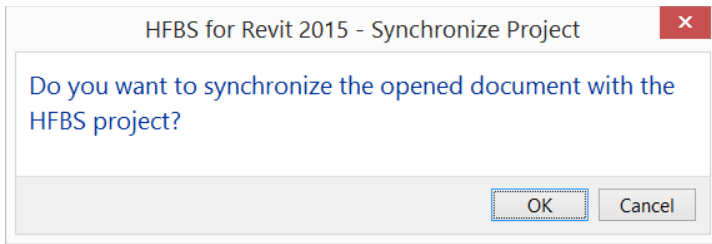
Figure 10 HFBS for Revit - Synchronizing the HFBS project with the Revit project.

This menu item synchronizes all HFBS departments, HFBS rooms and HFBS room items.

2. You will be asked "Do you want to synchronize the opened document with the HFBS project?" and upon selecting *OK*, existing links will be detected between the HFBS project and the open Revit project.

    Changes will be reflected in the HFBS project and updated in the open Revit project.

    In the background, HFBS for Revit searches for specific HFBS shared parameters, then matches the values contained in these HFBS shared parameters between the HFBS project and the open Revit project.

    This can be a time-consuming process, depending on the amount of linked HFBS entries and the number of elements in the open Revit project.

3. After the synchronization operation has completed, the contents of the HFBS project will appear in the *Project Manager* window.

    This window shows HFBS departments, HFBS rooms and HFBS room items in a hierarchical order.

    Selecting a HFBS room will reveal the HFBS room items that are contained inside the HFBS room, where the HFBS room items will be displayed in a panel at the bottom of the *Project Manager* window (see Figure 11).
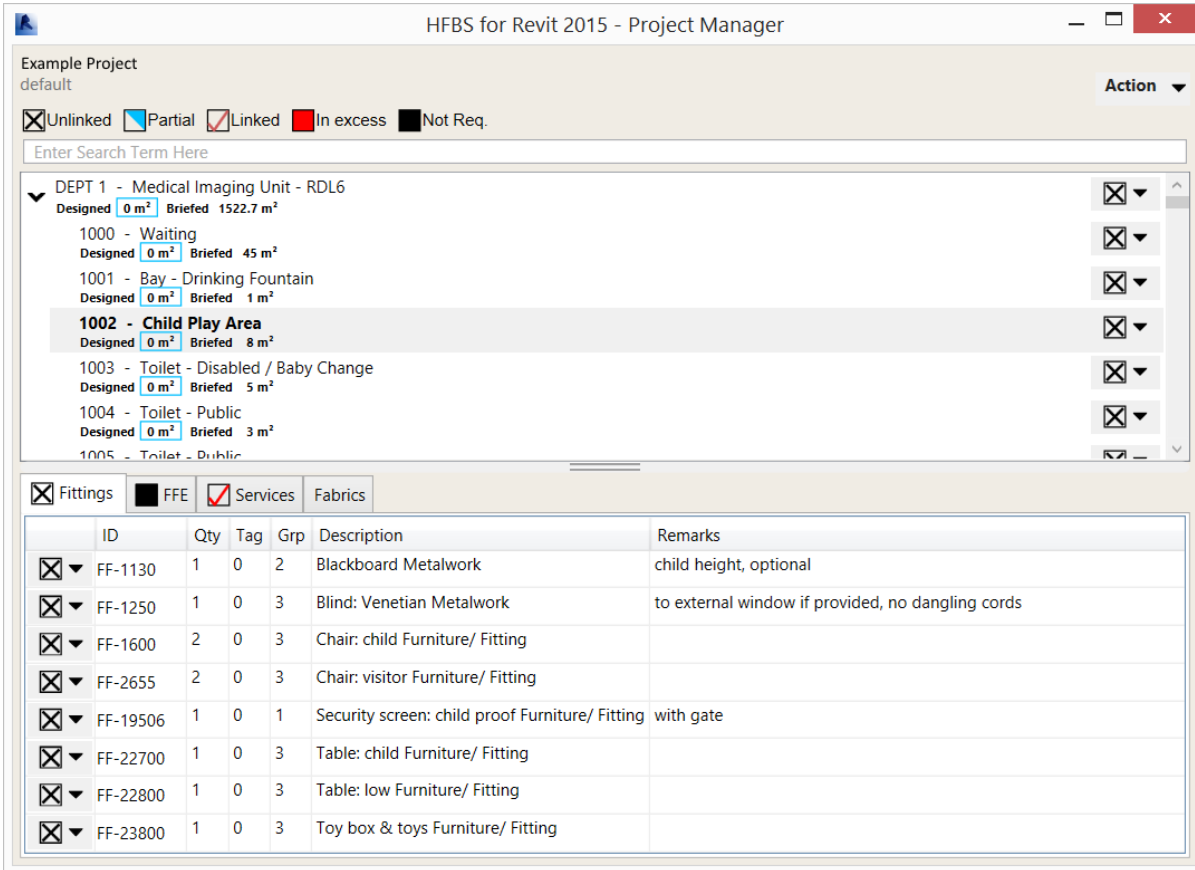

Figure 11 *Project Manager* **window - The** *Project Manager* **window with the top panel displaying HFBS departments and HFBS rooms, and with the bottom panel displaying HFBS room items.**

HFBS
Health Facility Briefing System

Starting a New Project

Users can either:

- Create a new project in Revit then associate the project with the brief, or

- Open an existing Revit project and then apply the same procedure.

Once this is complete you are ready to start linking your HFBS project (i.e. the brief) shown in the *Project Manager* window (see Figure 11) to the open Revit project.

The *Project Manager* window will display the linked status of all HFBS department, HFBS rooms and HFBS room items in the form of an icon.

The key to explain these icons can be found at the top of the *Project Manager* window (see Figure 11).

1. How to Link a HFBS Room

1. From the *Project Manager* window, select a HFBS department.

2. Select a HFBS room. The HFBS room will then be highlighted.

3. Select the menu to the right of the HFBS room, then the *Link Room* menu item.

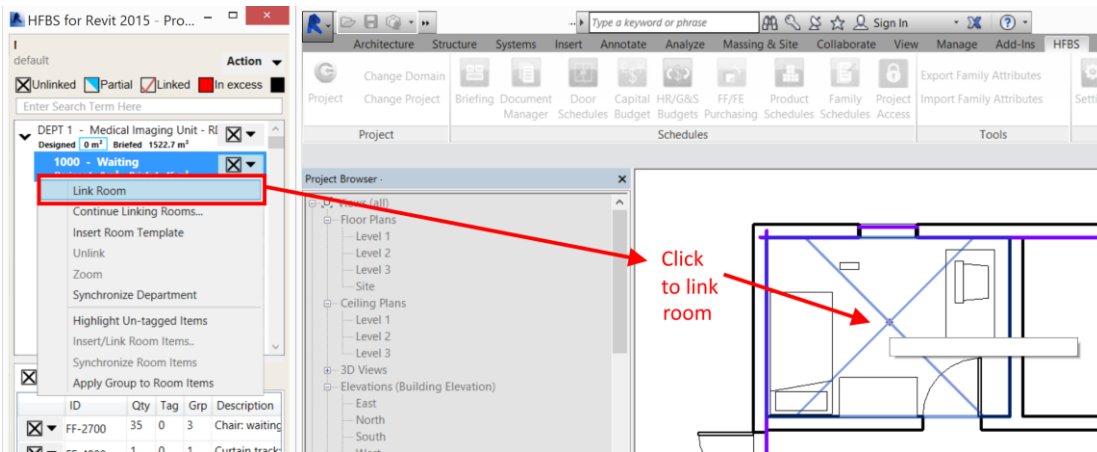4. In the open Revit project, select the Revit room to link to (see Figure 12).

Figure 12 *Project Manager* window - Linking a HFBS room with a Revit room.

5. The icon to the right of the HFBS rom will then appear as a *Partial* link (see Figure 13), this is because the room contains *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics* room items that need to be linked.

   These HFBS room items can be viewed in the bottom panel of the *Project Manager* window and linked using the same process.

On completion of this operation, the Revit room will have populated HFBS shared parameters (such as *HFBS_Room_ID*, *HFBS_Room_Tag_Text*, *HFBS_Room_Tag*, *HFBS_Room_Name*, *HFBS_Room_Tag_Same*, *HFBS_Room_Tag_Similar* and *HFBS_Room_Mirrored*) (see Figure 13).
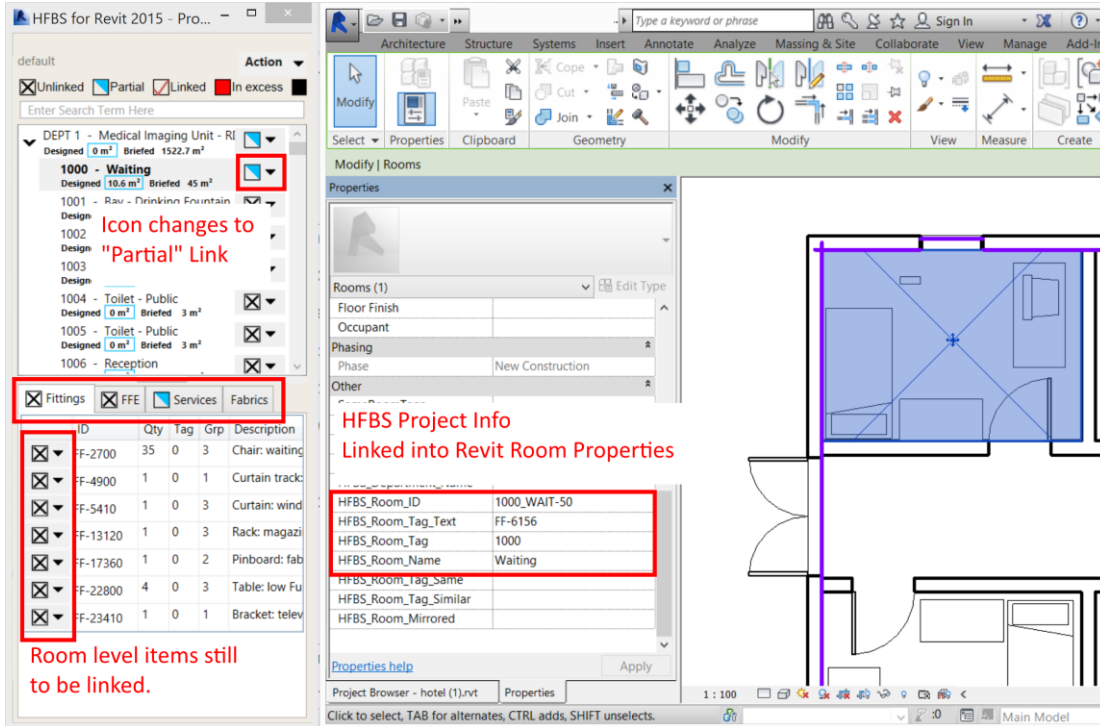
Figure 13 *Project Manager* **window - Linking a HFBS room with the HFBS room icon and the Revit room shared parameters updated.**

2. Inserting a Predefined HFBS Room Template File

The user can also insert predefined room templates that match the briefed room in HFBS by selecting the room menu item *Insert Room Template* (see Figure 14).

Selecting the menu item will start a folder scan of the location of the room template .rvt files configured in the *Application Settings* window.

Compatible Revit room template files are available at the iHFG website for download:
http://healthdesign.com.au/ihfg/Guidelines/Index/iHFG.

Figure 14 *Project Manager* **window - Insert a predefined .rvt template that matches a HFBS room to rapidly create a Revit project.**

3. Other HFBS Room Menu Items/Actions

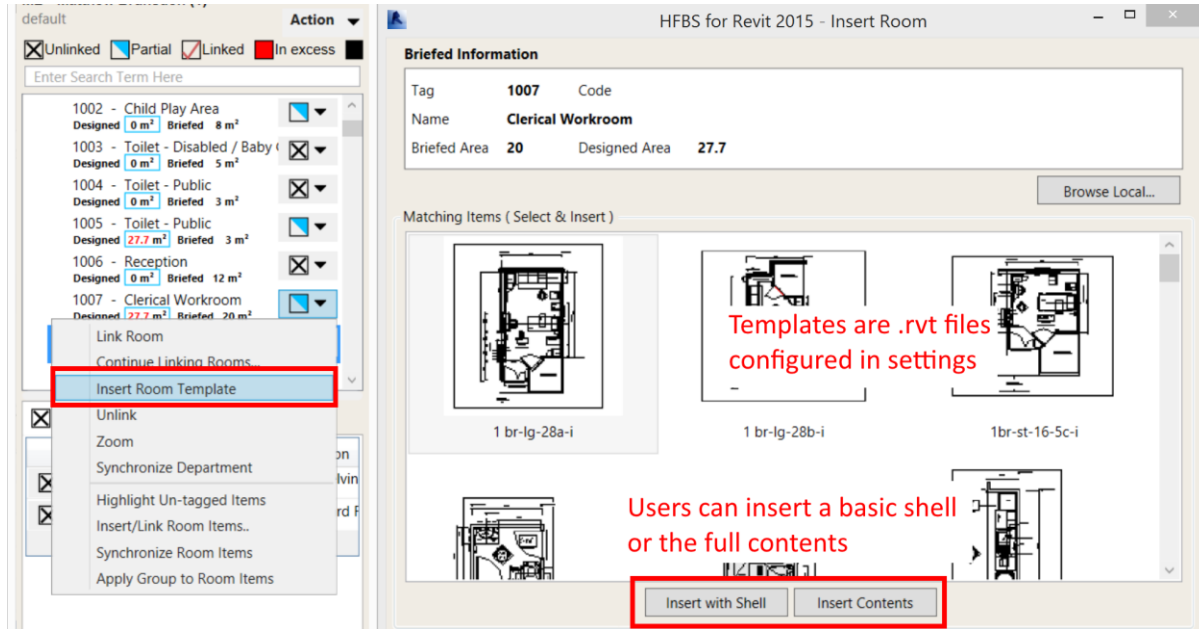Some other options available in the HFBS room menu, but not covered previously (see Figure 14) include:

- **Continue Linking Rooms**

  This menu item will place the cursor in a mode where the user can link multiple rooms without having to return to the *Project Manager* window. The rooms will be linked in ascending room ID order, starting with the room that is selected.

  eg: The user select the *Continue Linking Rooms* menu item on room 1, the user then selects the corresponding room 1 in the open Revit project, then room 2, room 3 and so on.

  To exit this operation (i.e. the cursor mode that is enabled), simply select the escape key, or right click on the open Revit project and select *Cancel*.

- **Unlink**

  This menu item will remove the link between a HFBS room and the corresponding linked Revit room in the open Revit project.

- **Zoom**

  This menu item, for the selected HFBS room, zooms to the linked Revit room for the open Revit project.

- **Synchronise Department**

  This menu item, for the selected HFBS department/room, will refresh all linked Revit rooms and Revit room items.

  Any links that have been made will be refreshed and updated in the *Project Manager* window.

  Any changes that have been made in the HFBS brief will also be updated in the Project Manager window.

- **Highlight Untagged Room Items**

  This menu item, for the selected HFBS room will highlight any Revit room items or Revit families that have not been linked (also known as *tagged*) (see Figure 15)

  Tagging/linking HFBS room items is covered in a later section of this document.
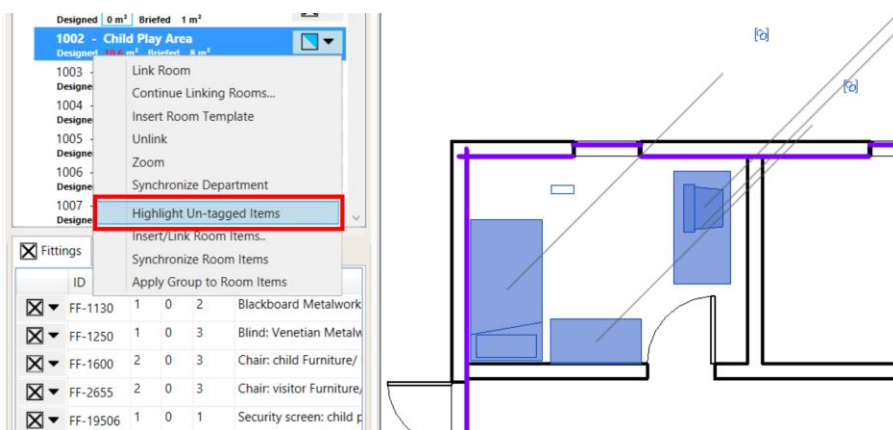

Figure 15 *Project Manager* **window - Highlighting HFBS room items that have not been linked inside a Revit room in an open Revit project. The highlighted Revit room items (that are unlinked) are shown on the right.**

- **Insert/Link Room Items**

  This menu item allows the user to insert predefined family .rfa files that match the HFBS room items for the selected HFBS room.

  Selecting this menu item will start a folder scan of the location of the room family .rfa files configured in the *Application Settings* window.

  Any family files that match the HFBS room items (based on matching IDs and filenames) will be inserted.

  Compatible Revit family files are available at the HFBS for Revit Market website for download: http://healthdesign.com.au/RevitMarket.

- **Synchronise Room Items**

  This menu item is similar to the *Synchronise Department* menu item, however it will only synchronise *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics* room items for the selected HFBS room.

  This a quick way to synchronize at a granular level.

- **Apply Group to Room Items**

  This menu item inserts the HFBS group no. for all linked HFBS room items (in the selected HFBS room), into the corresponding Revit room items in the open Revit project (see Figure 16).
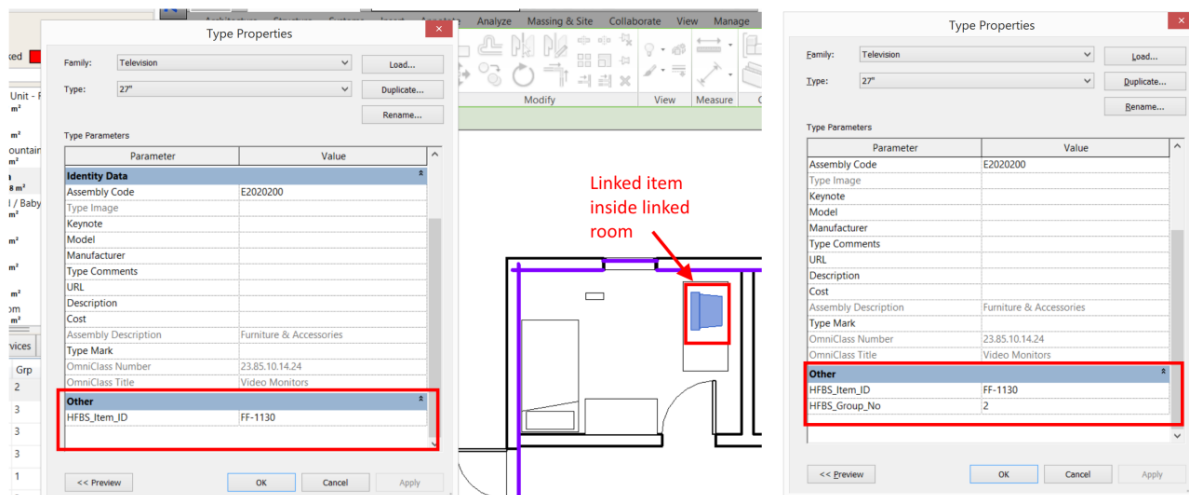

Figure 16 *Project Manager* window - Linked Revit room item's properties before & after the *Apply Group to Room Items* menu item is selected.

4. Linking Existing HFBS Room Items to a Revit Project

After linking a HFBS room to the open Revit project, you can link HFBS room items to the Revit room items located inside the linked Revit room.

1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.

2. In the bottom panel in the *Project Manager* window, locate the HFBS room item by selecting either the *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* or *Fabrics* tab.

   The HFBS room item will be highlighted.

3. Select the menu to the right of the HFBS room item, then the *Link to Existing Item* menu item.

4. In the open Revit project, select the Revit room item you would like to link to.

On completion of this operation, the HFBS room item in the *Project Manager* window will appear with a linked icon next to it, where the linked Revit room item will have populated HFBS shared parameters (such as *HFBS_Item_ID* and/or *HFBS_Item_SubID*) (see Figure 17).

For a given HFBS room item, linking to a Revit room item in the open Revit project occurs in two different ways.

- If the HFBS room item is unique (i.e. there is only **one room item** listed under a given room item *ID*), then selecting a Revit room item, links to the *family type* via the shared parameter *HFBS_Item_ID* only.

- If the HFBS room item is not unique (i.e. there are **multiple room items** listed under a given room item *ID*), then selecting a Revit room item, links to the *family type* via the shared parameter *HFBS_Item_ID* and links to the *family instance* via the read-only shared parameter *HFBS_Item_SubID*.

   This *SubID* value is automatically generated by HFBS and is not editable by the user.
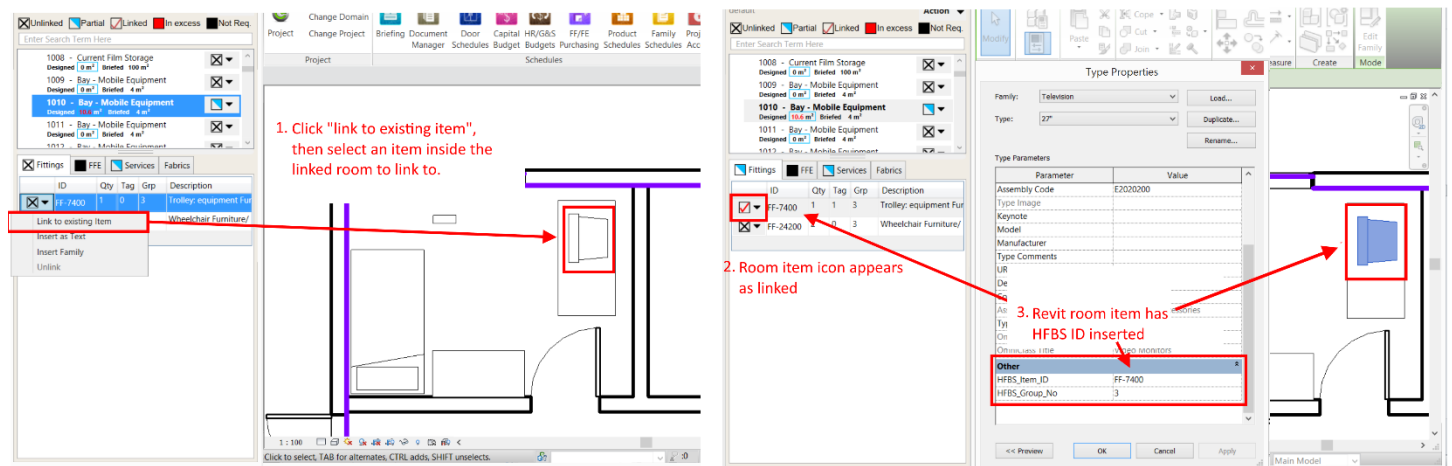

Figure 17 *Project Manager* **window - Linking a HFBS room item to a Revit room item.**

5. Inserting User-Defined/Predefined HFBS Room Items using the *Insert Family* Feature

After linking a HFBS room to the open Revit project, you can insert the .rfa family files that were originally configured in the *Application Settings* window and have these inserted families automatically linked to the HFBS room items in the *Project Manager* window.

1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.
2. In the bottom panel in the *Project Manager* window, locate the HFBS room item by selecting either the FF (furniture fittings), FFE (furniture, fixtures & equipment), Services or Fabrics tab.
   The HFBS room item will be highlighted.
3. Select the menu to the right of the HFBS room item, then the *Insert Family* menu item.
4. This will open a dialog window that presents various HFBS families that match the selected HFBS room item.
5. From the graphical list of families shown, select a single family.
6. Select the *Insert* button.
7. In the open Revit project, a *Place Component* cursor will be shown.
8. Select a location in the selected Revit room to insert the family as a Revit room item.

In the open Revit project, the selected HFBS room item will now be linked to the family (as a Revit room item) (see Figure 18).
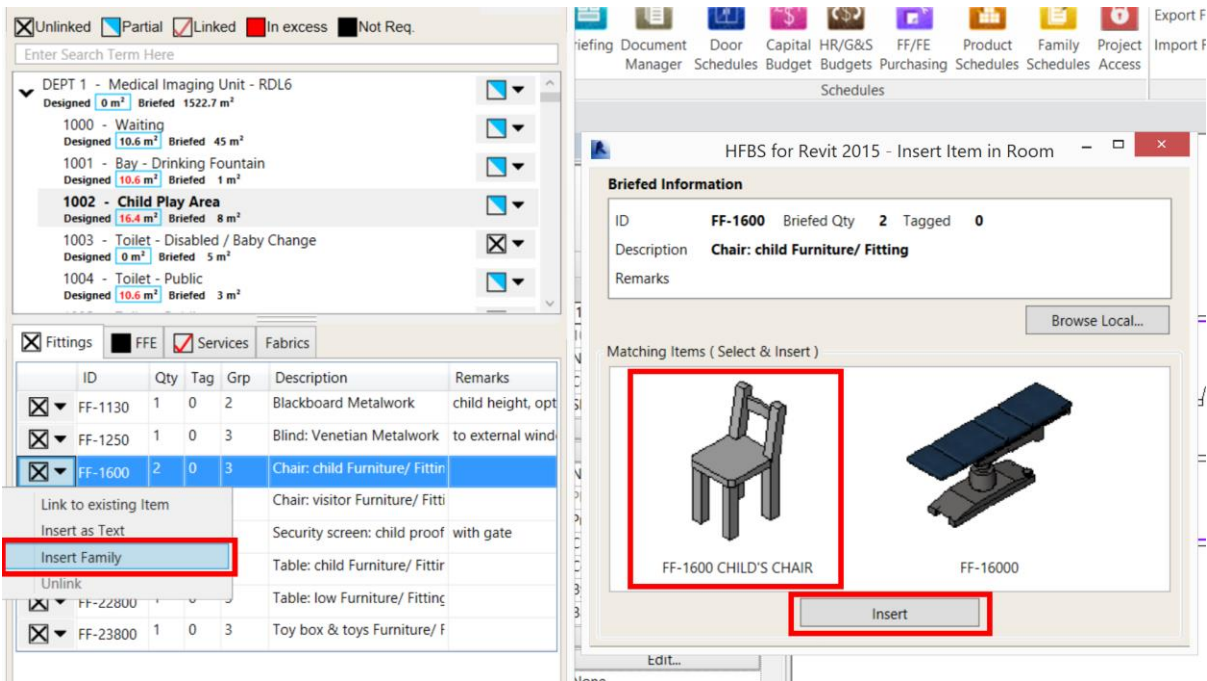

Figure 18 *Project Manager* **window - Inserting an existing family file that corresponds with a HFBS room item**

6. Linking HFBS Room Items using the *Tagged as Text* feature.

After linking a HFBS room to the open Revit project, you can indirectly link a HFBS room item to a Revit room via a *Tagged as Text* shared parameter. It does not physically allocate the HFBS room item to the Revit room though.

1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.

2. In the bottom panel in the *Project Manager* window, locate the HFBS room item by selecting either the *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* or *Fabrics* tab.

    The HFBS room item will be highlighted.

3. Select the menu to the right of the HFBS room item, then the *Insert as Text* menu item.

4. In the open Revit project, select the Revit room you would like to link to.

On completion of this operation, the HFBS room item in the *Project Manager* window will appear with a linked (T) icon next to it, where the linked Revit room will have a populated HFBS shared parameter (*HFBS_Room_Tag_Text*) based on the ID of the HFBS room item. The shared parameter can contain multiple comma-separated ID values (see Figure 20).
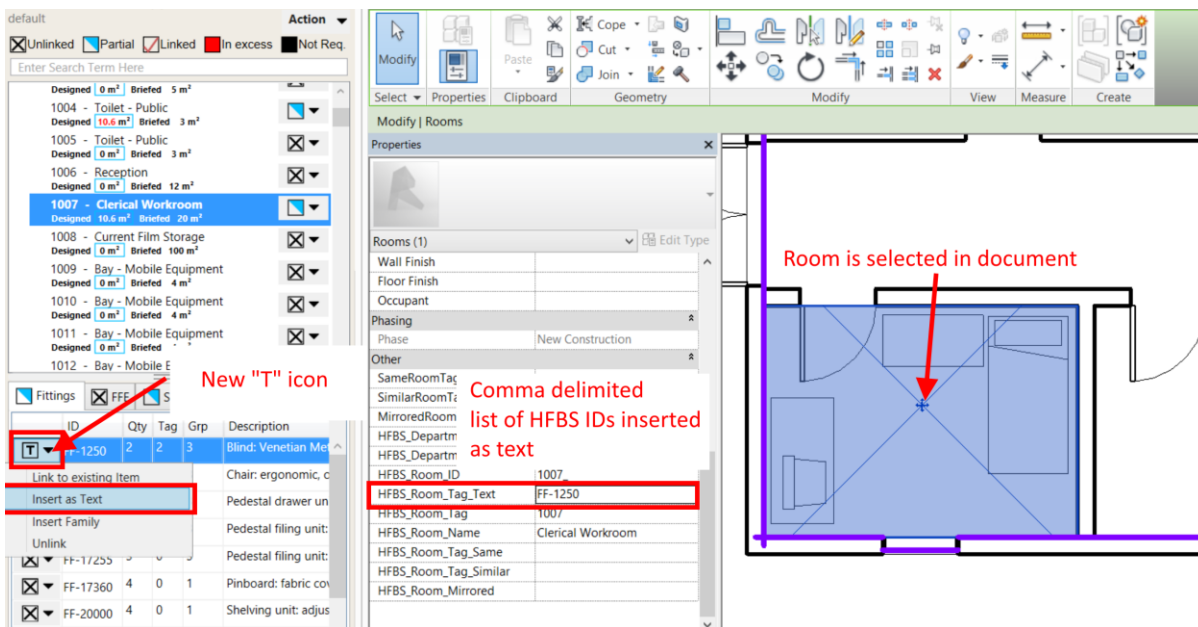

Figure 19 *Project Manager* **window - Inserting a HFBS room item as text into a Revit room.**

7. Understanding the Various HFBS Linked States

When a HFBS department, HFBS room or HFBS room item is linked from the *Project Manager* window to an open Revit project, the icon will change for the respective entry, where the icon change is indicative of the change in the linked status for this entry.

The key for these different linked states can be found at the top panel of the *Project Manager* window (see Figure 20).
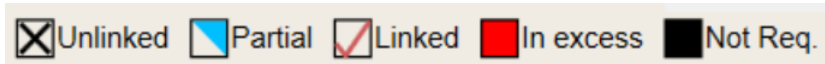

Figure 20 The various linked states of a HFBS department, HFBS room and HFBS room item.

There is one additional linked state that can occur on a HFBS room item only. When a HFBS room item is inserted via the *Insert as Text* menu item, the linked status icon appears as a "T" (see Figure 21).

Figure 21 *Project Manager* window - An example of a HFBS room item inserted via the *Insert as Text* menu item into a Revit room.

Important note: Because a HFBS project is hierarchical, the higher level HFBS department & HFBS room nodes, will not appear as fully linked (see Figure 22) until all HFBS room items are linked.

Figure 22 *Project Manager* window - HFBS room linked status, where all HFBS room items inside a HFBS room must be linked for a tick icon to be shown.

8. Creating Elevations Callouts and Room Layout Sheets

Elevations and Callout plans can be created for each Revit room that requires a room layout sheet.

Refer to the Revit Help section: "Creating Elevation view and Creating Callout view" here: https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/CloudHelp/cloudhelp/2015/ENU/Revit-DocumentPresent/files/GUID-12D53643-EE94-4556-9409-5E4B534C1E33-htm.html

1. Create a new room layout sheet by inserting the HFBS title sheet then create Callout & Elevation views.

2. The naming convention for the views will be based on the organisation's naming conventions.

HFBS
Health Facility Briefing System

Chapter 2 – The *Project Manager* Window Overview

1. The HFBS Project Brief

To view the *Project Manager* window.

1. Open Revit

2. Open a Revit project.

3. Select the *HFBS* ribbon tab.

4. From the *HFBS* ribbon, select the *Project* button.

5. If the user has not signed in, a dialog will appear for you to sign in into your HFBS account.

   Please see section **1. Opening a HFBS Project** for more information.
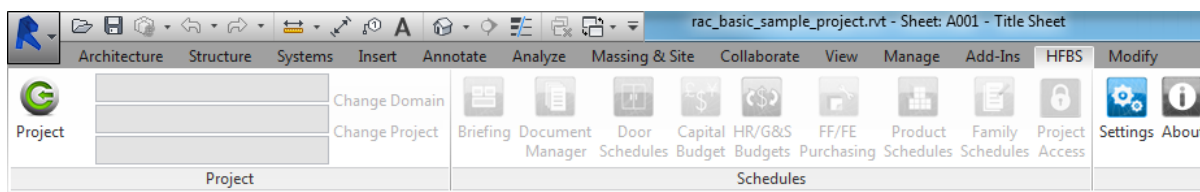
Figure 23 HFBS ribbon - Open a HFBS project using the Project button.

Once the user has signed in, the *Project Manager* window will open.

The *Project Manager* window shows all, the information relating to the project brief, specifically all HFBS departments, HFBS rooms and HFBS room items (see Figure 24).

HFBS room items include *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics*.

Figure 24 The *Project Manager* window.

2. Understanding the Various HFBS Linked States

In the *Project Manager* window, when a HFBS department, HFBS room or HFBS room item is linked to an element in the open Revit project, the icon will change for the respective HFBS entry
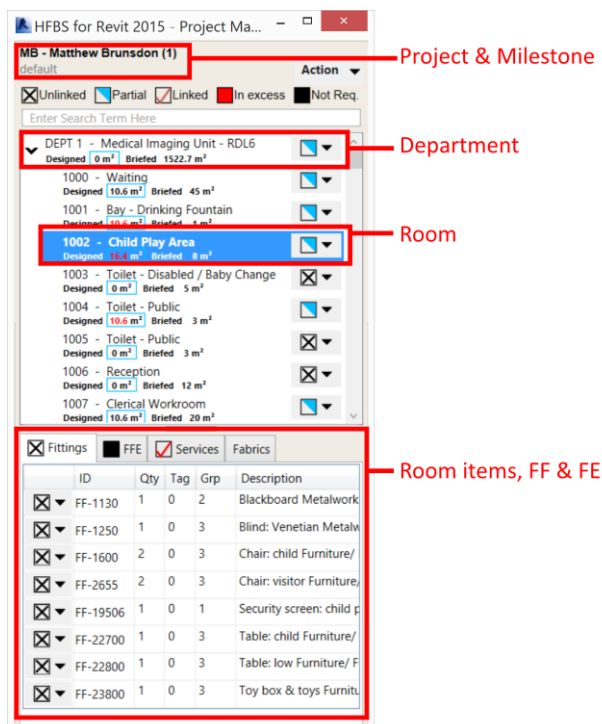
The icon displayed is indicative of the change in the linked status for the HFBS entry.

The legend for these different linked states can be found at the top panel of the *Project Manager* window (see Figure 25).

Figure 25 The various linked states of a HFBS department, HFBS room and HFBS room item.

Examples of Linked States and the Linked State Hierarchy

Figure 26 shows a partially linked HFBS department *Medical Imaging Unit*, with two partially linked HFBS rooms, *Waiting* and *Child Play Area*.
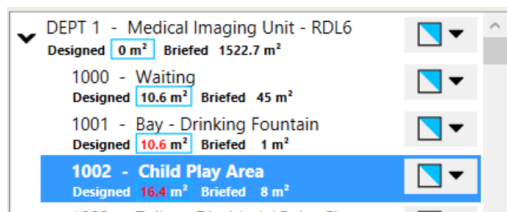

Figure 26 The HFBS department is partially linked as not all HFBS rooms are fully linked to the open Revit project.

In Figure 27, we have a HFBS room that is partially linked. The HFBS room is only partially linked because associated HFBS room items are not linked to the open Revit project.

Linking these HFBS room items will change the HFBS room's icon from being partially linked, to a fully linked tick icon or a *Tagged as Text* icon (see Figure 28).
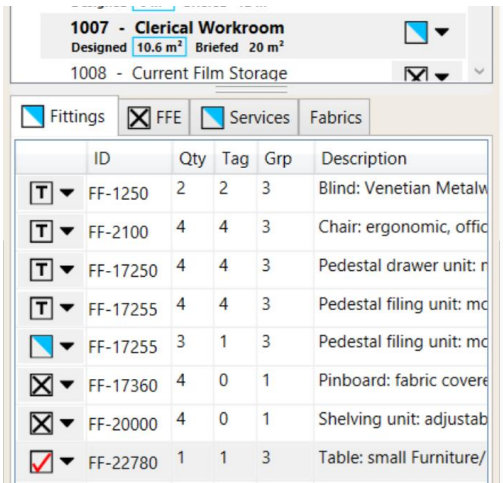
Figure 27 *Project Manager* window - The HFBS room is partially linked as not all HFBS room items are linked to the open Revit project.

When all HFBS room items in a HFBS room are linked to the open Revit project, the HFBS room & HFBS room item entries will be shown with the fully linked tick icon or *Tagged as Text* icon as per Figure 28.
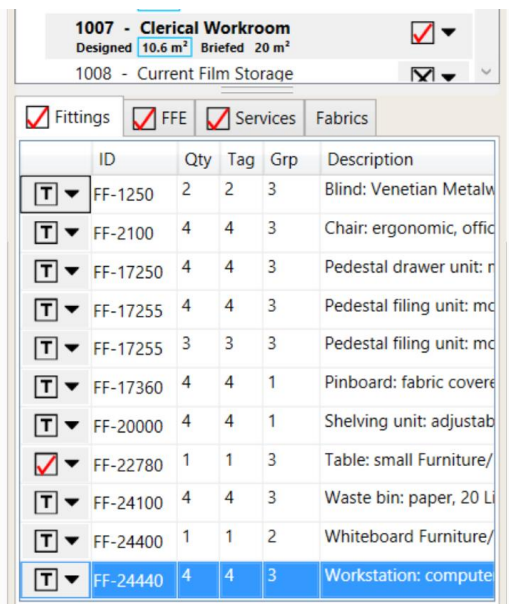
Figure 28 *Project Manager* window - The HFBS room & HFBS room items are fully linked to the open Revit project.

3. The *Project Manager* Window

The *Project Manager* window has three main sections, based on the

- *Project & Milestone*,

- *Department & Room Panel*, and

- *Room Item Panel*

These sections are hierarchically separated based on the following HFBS groups:

- HFBS project and milestone,

- HFBS departments,

- HFBS rooms, and

- HFBS room items.

The following diagram (see Figure 29) explains in detail the various groupings and functions of the *Project Manager* window.

HFBS | hfbsinfo.com | (+61) 9460 4199 | techsupport@healthdesign.com.au

Figure 29 *Project Manager* window - Explanation of the *Project Manager* window.

4. The *Project Manager* Menu Items/Actions

The *Project Manager* window has four sets of menu items/actions that are applied by selecting the menu item that is attached to the relevant HFBS entry in the window.
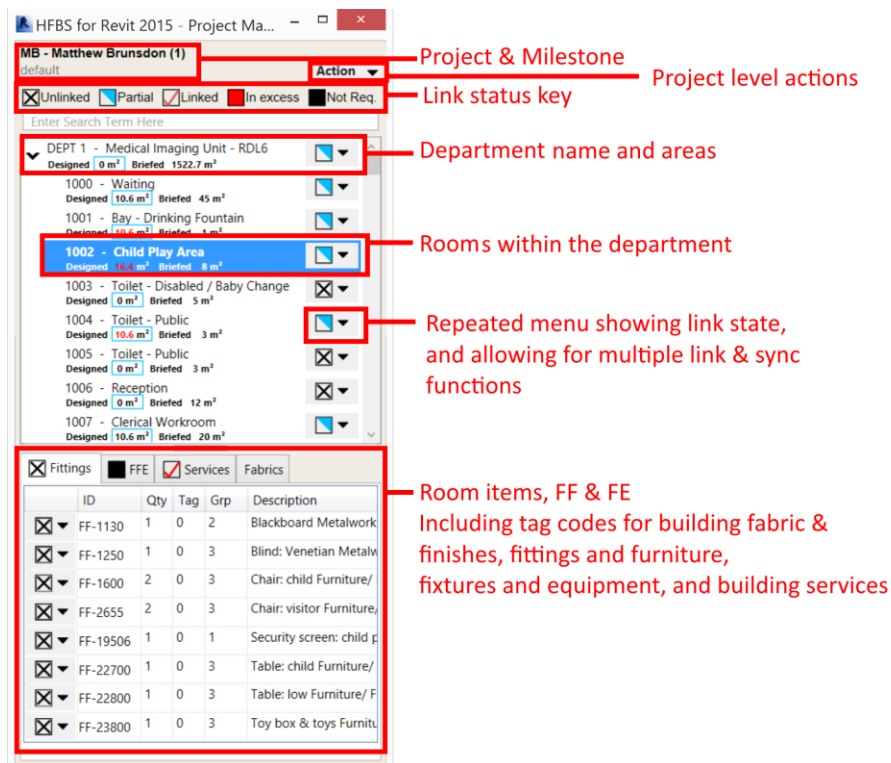
These menu items can be activated on a HFBS project entry, HFBS department entry, HFBS room entry and HFBS room item entry.

HFBS Project Menu Items/Action

The HFBS project entry has three menu items (see Figure 30).
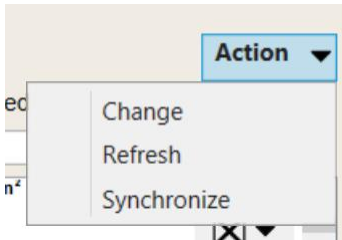

Figure 30 *Project Manager* window - The HFBS project menu items/actions.

- **Change**

   This menu item will change a HFBS milestone without closing the open Revit project.

- **Refresh**

   This menu item refreshes the HFBS project, by reloading the HFBS project, HFBS departments, HFBS rooms and HFBS room items.

   All existing links in the open Revit project will still exist.

   You will be asked "Do you want to synchronize the opened document with the HFBS project?", and synchronization will occur as per the following description.

- **Synchronise**

   This menu item synchronizes all HFBS departments, HFBS rooms and HFBS room items.

   You will be asked "Do you want to synchronize the opened document with the HFBS project?" and upon selecting *OK*, existing links will be detected between the HFBS project and the open Revit project.

   Changes will be reflected in the HFBS project and updated in the open Revit project.

   In the background, HFBS for Revit searches for specific HFBS shared parameters, then matches the values contained in these HFBS shared parameters between the HFBS project and the open Revit project.

   This can be a time-consuming process, depending on the amount of linked HFBS entries and the number of elements in the open Revit project.

HFBS
Health Facility Briefing System

HFBS Department Menu Items/Actions

The HFBS department entry has multiple menu items (see Figure 31):

- **Link Multiple Rooms**

  This menu item tool will place the cursor in a mode where the user can link multiple rooms without having to return to the *Project Manager* window.

  The rooms will be linked in ascending room ID order, starting with the Revit room that this is selected.

  An example workflow is that the user selects the *Link Multiple Rooms* menu item on department 1, then the user selects the corresponding room 1 in the open Revit project, then room 2, the room 3 and so on.

  To exit this operation (i.e. the cursor mode that is enabled), simply select the escape key, or right click on the open Revit project and select *Cancel*.

- **Unlink**

  This menu item will remove the link between the HFBS department and any linked HFBS rooms in the open Revit project.

- **Zoom**

  This menu item zooms the open Revit project to the selected HFBS department.

- **Synchronise**

  This menu item synchronizes all HFBS rooms and HFBS room items.

  Changes will be reflected in the HFBS rooms and updated in the open Revit project.

  In the background, HFBS for Revit searches for specific HFBS shared parameters, then matches the values contained in these HFBS shared parameters between the HFBS rooms and the open Revit project.

  This can be a time-consuming process, depending on the amount of linked HFBS entries and the number of elements in the open Revit project.

- **Apply group to room items**

  This menu item inserts the *Grp (Group)* value associated to a HFBS room item.

  For all linked HFBS room items for the selected HFBS department and HFBS rooms, the *Grp* value is populated to the shared parameter (*HFBS_Group_No*), which is added to the corresponding linked Revit room item (see Figure 32).
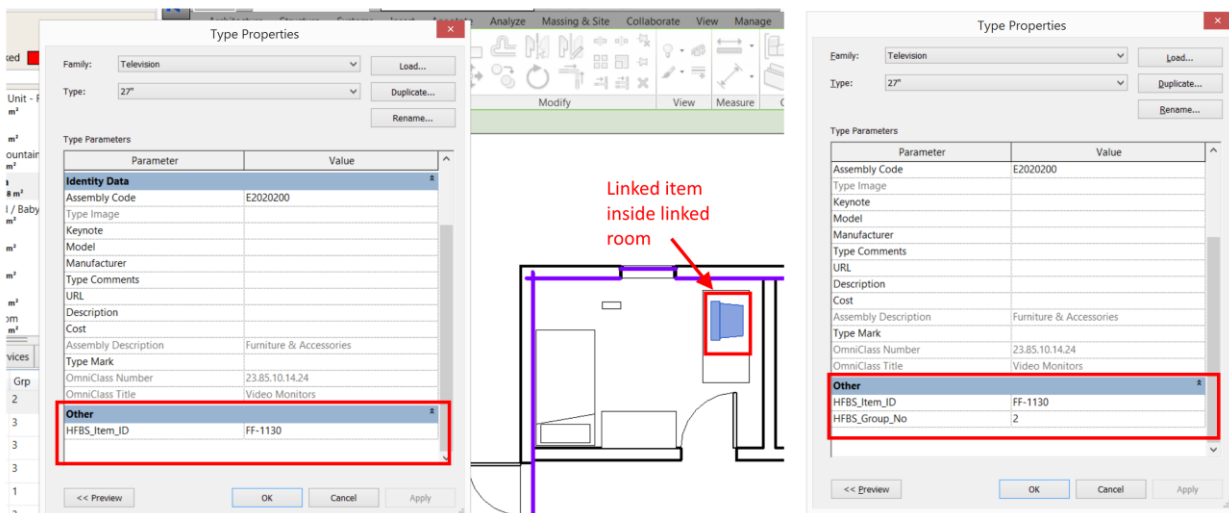

Figure 32 *Project Manager* **window - Applying the group no. to Revit room items.**

HFBS Room Menu Items/Actions

The HFBS room has multiple menu entries (see Figure 33).
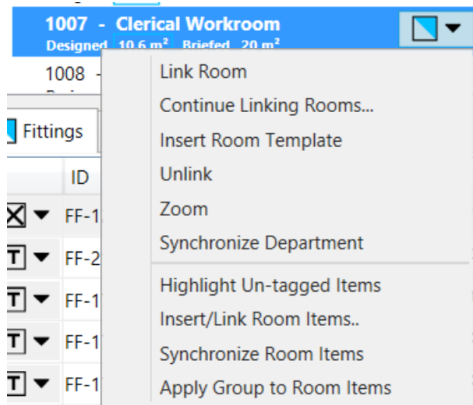
- **Link Room**

  This menu item links a HFBS room to a Revit room in the open Revit project.

  o In the open Revit project, select the Revit room to link to (see Figure 12).

  o The icon to the right of the HFBS room will then appear as a *Partial* link (see Figure 13), this is because the room contains *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics* room items that need to be linked.

  These HFBS room items can be viewed in the bottom panel of the *Project Manager* window and linked using the same process.

  On completion of this operation, the Revit room will have populated HFBS shared parameters (such as *HFBS_Room_ID*, *HFBS_Room_Tag_Text*, *HFBS_Room_Tag*, *HFBS_Room_Name*, *HFBS_Room_Tag_Same*, *HFBS_Room_Tag_Similar* and *HFBS_Room_Mirrored*) (see Figure 13).

- **Continue linking rooms**

    This menu item will place the cursor in a mode where the user can link multiple rooms without having to return to the *Project Manager* window. The rooms will be linked in ascending room ID order, starting with the room that is selected.

    e.g.: The user selects the *Continue Linking Rooms* menu item on room 1, the user then selects the corresponding room 1 in the open Revit project, then room 2, room 3 and so on (see Figure 34).

    To exit this operation (i.e. the cursor mode that is enabled), simply press the escape key, or right click on the open Revit project and select *Cancel*.
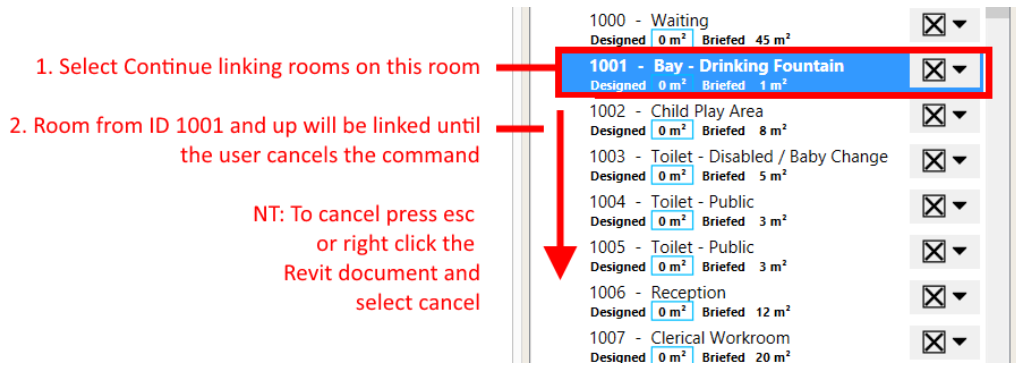
Figure 34 *Project Manager* **window – The workflow to continuously link HFBS rooms.**

- **Insert Room Template**

    The user can also insert predefined room templates that match the briefed room in HFBS by selecting the room menu item *Insert Room Template* (see Figure 14).

    Selecting the menu item will start a folder scan of the location of the room template .rvt files configured in the *Application Settings* window.

    Any family files that match the HFBS room items (based on matching IDs and filenames) will be inserted.

- **Unlink**

    This menu item will remove the link between a HFBS room and the corresponding linked Revit room in the open Revit project.

- **Zoom**

    This menu item, for the selected HFBS room, zooms to the linked Revit room for the open Revit project.

- **Synchronise Department**

  This menu item, for the selected HFBS department/room, will refresh all linked Revit rooms and Revit room items.

  Any links that have been made will be refreshed and updated in the *Project Manager* window.

  Any changes that have been made in the HFBS brief will also be updated in the Project Manager window.

- **Highlight Untagged Room Items**

  This menu item, for the selected HFBS room, will highlight any Revit room items or Revit families that have not been linked (also known as *tagged*) (see Figure 15).

- **Insert/Link Room Items**

  This menu item allows the user to insert predefined family .rfa files that match the HFBS room items for the selected HFBS room.

  Selecting this menu item will start a folder scan of the location of the room family .rfa files configured in the *Application Settings* window.

  Any family files that match the HFBS room items (based on matching IDs and filenames) will be inserted.

  Compatible Revit family files are available at the HFBS for Revit Market website for download: http://healthdesign.com.au/RevitMarket.

- **Synchronise Room Items**

  This menu item is similar to the *Synchronise Department* menu item, however it will only synchronise *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics* room items for the selected HFBS room.

  This a quick way to synchronize at a granular level.

- **Apply Group to Room Items**

  This menu item inserts the HFBS group no. for all linked HFBS room items (in the selected HFBS room), into the corresponding Revit room items in the open Revit project (see Figure 16).

HFBS
Health Facility Briefing System

HFBS Room Item Menu Items/Actions

For the selected HFBS room, the bottom panel in the *Project Manager* window contains all HFBS room items grouped in separate tabs by *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* and *Fabrics* room item categories.

The HFBS room item has multiple menu items, which are shown by selecting the icon for a given HFBS room item (see Figure 35 and Figure 36).
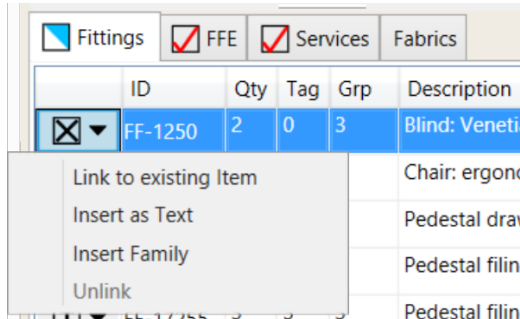

Figure 35 *Project Manager* **window - HFBS room item menu items/action & HFBS room item category tabs.**
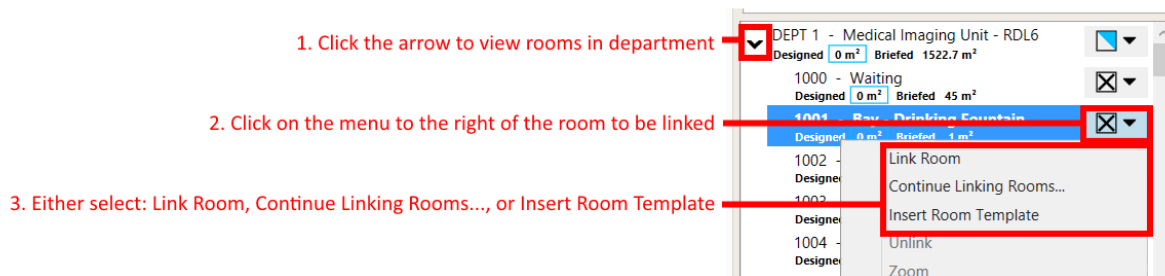

Figure 36 *Project Manager* **window - Process to locate a HFBS room and to link it to the open Revit project.**

- **Link to Existing Item**

  After linking a HFBS room to the open Revit project, you can link HFBS room items to the Revit room items located inside the linked Revit room.

  1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.

  2. Select the menu item.

  3. In the bottom panel in the *Project Manager* window, locate the HFBS room item by selecting either the *FF* (furniture fittings), *FFE* (furniture, fixtures & equipment), *Services* or *Fabrics* tab.

  4. The HFBS room item will be highlighted.

  5. Select the menu to the right of the HFBS room item, then the *Link to Existing Item* menu item.

  6. In the open Revit project, select the Revit room item you would like to link to.

On completion of this operation, the HFBS room item in the *Project Manager* window will appear with a linked icon next to it, where the linked Revit room item will have populated HFBS shared parameters (such as *HFBS_Item_ID* and/or *HFBS_Item_SubID*) (see Figure 17).

For a given HFBS room item, linking to a Revit room item in the open Revit project occurs in two different ways.

- If the HFBS room item is unique (i.e. there is only **one room item** listed under a given room item *ID*), then selecting a Revit room item, links to the *family type* via the shared parameter *HFBS_Item_ID* only.

- If the HFBS room item is not unique (i.e. there are **multiple room items** listed under a given room item *ID*), then selecting a Revit room item, links to the *family type* via the shared parameter *HFBS_Item_ID* and links to the *family instance* via the read-only shared parameter *HFBS_Item_SubID*.

This *SubID* value is automatically generated by HFBS and is not editable by the user.

- **Insert as Text**

This menu item allows the user to indirectly link a HFBS room item to a Revit room via a *Tagged as Text* shared parameter. It does not physically allocate the HFBS room item to the Revit room though.

1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.

2. Select the menu item.

3. In the open Revit project, select the Revit room you would like to link to.

On completion of this operation, the HFBS room item in the *Project Manager* window will appear with a linked (T) icon next to it, where the linked Revit room will have a populated HFBS shared parameter (*HFBS_Room_Tag_Text*) based on the ID of the HFBS room item. The shared parameter can contain multiple comma-separated ID values (see Figure 20).

- **Insert Family**

This menu item allows you to insert the .rfa family files that were originally configured in the *Application Settings* window and have these inserted families automatically linked to the HFBS room items in the *Project Manager* window.

1. Select a HFBS room in the *Project Manager* window. The HFBS room will be highlighted.

2. Select the menu item.

3. This will open a dialog window that presents various HFBS families that match the selected HFBS room item.

4. From the graphical list of families shown, select a single family.

5. Select the *Insert* button.

6. In the open Revit project, a *Place Component* cursor will be shown.

7. Select a location in the selected Revit room to insert the family as a Revit room item.

In the open Revit project, the selected HFBS room item will now be linked to the family (as a Revit room item) (see Figure 18).

- **Unlink**

This menu item will remove the link between a HFBS room item and the corresponding linked Revit room item in the open Revit project.

5. HFBS Department & HFBS Room – Briefed vs Designed Physical Areas

The physical area that a room uses can be determined.

In the *Project Manager* window, a HFBS room contains two values related to the physical area that it uses.

- **Designed area** – This is the total area used for a linked HFBS department/area in the open Revit project.
  - For a HFBS department, this value is calculated as the sum of the *actual* areas used for all linked HFBS rooms in the open Revit project.
  - For a HFBS room, this value is calculated as the *actual* area used for a linked HFBS room in the open Revit project.
- **Briefed area** – This is the estimated designed area for a HFBS room.

These value appear under the HFBS department entry and HFBS room entry in the *Project Manager* window (see Figure 37). If the HFBS department or HFBS room is not linked, the designed area will show as *0 m2*.

Figure 37 *Project Manager* **window - Designed area from Revit, vs Briefed area from HFBS is displayed under rooms and departments.**

6. The HFBS Room Items Panel

HFBS Room Items to Link/Tag

In the *Project Manager* window, users can select a HFBS room and view the associated HFBS room items in the bottom panel.

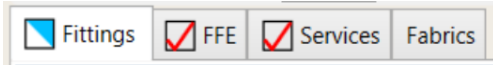This panel contains four room item categories as tabs across the top of this panel (see Figure 38).

Figure 38 *Project Manager* **window - HFBS Room item, tabbed panel.**

These categories consist of:

- *FF* (furniture fittings),
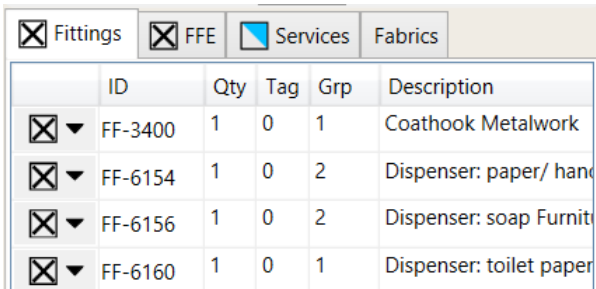- *FFE* (furniture, fixtures & equipment),
- *Services* and
- *Fabrics*

HFBS room items when linked/tagged can have different linked statuses. These are shown in Figure 39).

Figure 39 *Project Manager* **window - HFBS room item, linked status legend.**

Untagged HFBS Room Items

All untagged HFBS room items are displayed in a list with a cross icon next to them (see Figure 40).

Figure 40 *Project Manager* **window - HFBS room item, ready to be tagged or linked.**

HFBS | hfbsinfo.com | (+61) 9460 4199 | techsupport@healthdesign.com.au

HFBS
Health Facility Briefing System

Tagged HFBS Room Items

All tagged HFBS room items are displayed with a tick, blue half square, or red box to the left of them, with a full explanation and key displayed in Figure 41 & Figure 42.

- The *Qty* column indicates the number of HFBS room items that are required by the HFBS project brief.
- The *Tag* column indicates the *actual* number of tags/links created by the user between the HFBS room item and the open Revit project.

Figure 41 *Project Manager* **window - HFBS room item, tag symbols explained, note quantity and tag are used in conjunction to determine the icon that is shown.**

Figure 42 *Project Manager* **window - HFBS room item, explanation of the relation between the *Qty* column & *Tag* column.**

HFBS Room Item - Services Tab

When the user selects the *Services* tab, all services are listed.

The only services that require linking/tagging are ones that have a quantity in the *Qty* column. All other services are for reference only (see Figure 43).

Figure 43 *Project Manager* **window - HFBS room item, the** *Services* **tab, where some room items are not require to be linked (see the** *Qty* **column).**

HFBS Room Item - Fabrics Tab

When the user selects the *Fabrics* tab, all fabrics are listed.

Fabrics are shown for informational purposes only, and linking is not required as the *Qty* value is always 0 (see Figure 44).

Figure 44 *Project Manager* **window - HFBS room item, the** *Fabrics* **tab, showing a list of room items.**

Chapter 5 – HFBS Methodology & Work Flow

HFBS for Revit Methodology

HFBS for Revit is designed to increase productivity by linking the *HFBS Briefing Module* directly into Revit.

It serves as a drafting, design and asset management program allowing Planners and Architects to link a brief created in the HFBS Briefing to a project in Revit right down to room items.

HFBS for Revit expands on Revit, by using tracking compliance with the HFBS briefing system and providing a highly functional user interface that can be directly accessed inside of Revit.

The best way to use HFBS is to complete the brief before design, while usually the architect will complete the design followed by the full documentation

Instead, the HFBS project brief gets completed using HFBS before the design phase.

Creating Individual Room Layout Sheets (RLS)

As previously explained, it is possible to link an individual room with a room layout sheet (RLS) either by:

- Linking an existing HFBS room to a Revit project, or by
- Inserting a room template file directly into the Revit project

Please see section **2. Inserting a Predefined HFBS Room Template File** for more information.

Recommendations for using HFBS for Revit with Small to Medium sized projects

Working with small to medium size projects in the HFBS environment can be achieved by linking HFBS departments and HFBS rooms to a single (unlinked) Revit project.

Recommendations for using HFBS for Revit with Large sized projects

In previous sections we have pointed out that in HFBS, the HFBS project gets created, then the Revit project is created in accordance with the project brief.

HFBS departments and HFBS rooms gets created, and then assigned to the Revit project.

Modelling large projects:

A Revit modeller can link HFBS rooms inside HFBS departments from the brief.

Where a team of architects/health planners will be working in Revit activating other work sets, the model should be divided into multiple worksets, level by level.

The number of work sets is dependent on the size of the project, and each level can be divided into multiple zones.

- To link HFBS rooms in a large project, a view can be created in Revit, this view can be named "FF & FE" or depending on the office standards.
- Families are inserted in the "FF & FE" view for linking/tagging.
- Architectural elements such as walls, windows, doors for example can be modelled in a different view.

HFBS
Health Facility Briefing System

Workset Creation

Worksets can be useful in a Revit project where HFBS for Revit is being used.

Use worksets in Revit when you want to reserve parts of a project so that only the assigned user can edit the elements in that workset. Also consider these benefits for creating worksets:

- Convenience for editing

  Dividing a project into worksets makes it easier to make sections of a project editable at once.

- Visibility control

  You can control overall visibility in a project when you link Revit models into other Revit projects. For example, it is often convenient to turn off visibility of the *Shared Levels and Grids* workset when linking models so that you do not have to turn off levels and grids individually in each view.

You can assign a display mode to worksets so that you can visually identify and differentiate them in your model.

For more info on planning worksets, see the Revit documentation here:
https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/Revit-Collaborate/files/GUID-6054CEF3-C4E6-4334-BA43-568DF5DF5702-htm.html

After enabling a team project for work-sharing, create worksets to organize elements into collections so that team members can display and work on selected worksets.

- Open your local copy of the central model.
- Select the *Collaborate* tab *Manage Collaboration* panel (Worksets).
- In the *Worksets* dialog, select New.
- In the New Workset dialog, enter a name for the new workset.
- To display the workset in all project views, select *Visible* in all views.
- Clear this option if you want the workset to display only in views where you specifically turn on its visibility.
- You can change the visibility of worksets later in the Visibility/Graphics dialog.
- Note: To improve performance, hide worksets that are not required for current work in the local model.
- Select *OK*.
- The new workset displays in the list of worksets; it is editable, and your user name displays for Owner.
- If you are setting up a workshare model for your team and want to assign owners to each workset, each team member must open a local copy of the central model, select the workset in the Worksets dialog, and then select *Yes* in the *Editable* column.
- When you finish creating worksets, select OK to close the Worksets dialog.
- If you have added only one new workset, Revit prompts you to make the new workset active. Select *Yes* or *No*.

For more information on creating worksets, see the Revit documentation here:
https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/Revit-Collaborate/files/GUID-D5ED15A6-C652-4E7F-8C1F-F6966376A490-htm.html

Chapter 6 – HFBS for Revit Product Info

HFBS Website

The HFBS website has product information, pricing, terms and other useful information when using the HFBS product suite.

For more information check the website here: http://hfbsinfo.com

HFBS Training

The HFBS support team offer detailed training and support either via telephone, email or video conference.

There is a YouTube channel for HFBS that is constantly being updated with useful how to videos here: https://www.youtube.com/channel/UCcTeg7zTtEA5HhHOpG8srfg

To arrange a training session please contact HFBS support:

Website: http://www.hfbsinfo.com/contact/

Email: techsupport@healthdesign.com.au

Phone: (+61) 2 9460 4199

HFBS Support

The HFBS support team is ready to answer your questions regarding HFBS or HFBS for Revit, simply contact us using the following details:

Website: http://www.hfbsinfo.com/contact/

Email: techsupport@healthdesign.com.au

Phone: (+61) 2 9460 4199

Appendix

Software Licence Agreement

1. Introduction

You are licensed to legally use this software program ("the Software") by Health Projects International Pty Limited (HPI) under this licence agreement (The Agreement). If you do not agree with any of the provisions in this Agreement, please do not install, copy or use the Software. By installing and/or using the Software, you are deemed to fully understand and accept the provisions of this Agreement.

2. Intellectual Property

All intellectual property rights in the Software, together with all information and documents included with the Software (including but not limited to copyright), are the property of HPI, and are protected by relevant laws and regulations.

3. Licence to Use

The software is licensed, not sold. This agreement only gives you some rights to use the software. HPI reserves all other rights.   Unless applicable law gives you more rights despite this limitation, you may use the software only as expressly permitted in this agreement. In doing so, you must comply with any technical limitations in the software that only allow you to use it in certain ways.

You are authorised to use the Software on one (1) single computer only.   You may not use the Software on any other machines other than the said single computer. If you wish to use the Software on a different computer, you must first uninstall it from the original computer.

4. Limitations on Use

You may not:

- Work around any technical limitations in the Software;
- Reverse engineer, decompile or disassemble the Software, except and only to the extent that applicable law expressly permits, despite this limitation;
- Make more copies of the Software than specified in this agreement or allowed by applicable law, despite this limitation;
- Use components of the Software to enhance other software (other than Autodesk Revit)\
- Use downloadable components of the Software within other software (other than Autodesk Revit)
- Transfer the Software or this agreement to any third party; or
- Use the Software for software hosting services.

5. Authority to Copy

The Software and all documents included with the Software, and copyright thereof, are property of HPI. You are licensed to make one (1) copy of the Software for your personal backup purposes. All other acts of copying are strictly prohibited. You may not sell, rent, lease, copy, translate, adapt or derive the Software, or obtain the source code of the Software by any other means. Publish the software for others to copy. You may not use the Software for any purposes other than those permitted under this Agreement.

HFBS
Health Facility Briefing System

6. Business Users

If you need to install or use the Software on more than one (1) computer, please contact HPI or our local distributor to purchase a licence for the additional use. Alternatively, in some domains (localities) the Software licence may be available for purchase on the HFBS website.

7. Beta Testing

Certain Beta versions of the Software may be provided to Beta testers at no cost. All Beta versions of the Software will also be subject to these Licensing requirements regardless of cost. Commercial use of the Beta versions of the Software is prohibited. Should Beta testers wish to use the Software (even the Beta version) for commercial purposes, they must contact HPI and obtain a licence to do so. Such licence may be subject to cost.

8. Liability

You agree to indemnify HPI against all losses, costs, debts, settlement payments or other expenses (including but not limited to legal fees) arising from your breach of this Agreement, and you agree to compensate HPI for all of the abovementioned damages.

9. No Warranty

The Software is licensed "as-is."   You bear the risk of using it. The Software is intended for use by reasonably skilled professionals in the Healthcare Design Industry. You may have a "duty of care" to others including Clients and the General Public. It is entirely up to you to fulfil that "duty of care". HPI gives no express warranties, guarantees or conditions. To the extent permitted under your local laws, HPI excludes the implied warranties of merchantability, fitness for a particular purpose and non-infringement. Effectiveness of software in handling information is closely related to its software and hardware environment. The Software is published following careful development and product testing by HPI and its contractors, but HPI is not able to conduct tests based on all possible combinations of software and hardware environment. Therefore, HPI is unable to either promise or warrant that there will be absolutely no risk of loss or damage of information, or any other kind of loss, during installation and/or execution of the Software. You must be fully aware of your risks in using the Software. HPI will provide you with the Software and support services in respect of the Software to the maximum extent permitted by law. However, HPI does not warrant that the Software and information included in the package of the Software contains no defects or errors. HPI is not liable for any indirect, special or incidental loss arising from the Software, including but not limited to loss of profits, damage to business reputation, cessation of work, hardware malfunction or damage, or any other commercial damage or loss arising from commercial use of the Software.

10. Limitation of Liability and Damages

The maximum amount of compensation payable by HPI, in respect of any damage incurred by you for any reason under this agreement, is limited to the amount you have already paid to HPI in respect of the Software. Under no circumstances will HPI be held liable for the possibility of loss, notwithstanding HPI may be aware of the possibility of such loss. HPI accepts no responsibility for any or liability of any kind for free Beta versions of the Software.

11. Prohibition against Sublicense

You are prohibited to assign the licence in respect of the Software granted to you under this Agreement, or to grant a sublicense to another person.

12. Jurisdiction

With regard to any disputes arising from this Agreement, you and HPI agree that the court having jurisdiction over the business location of HPI will be the court in the first instance.

HFBS
Health Facility Briefing System

13. Miscellaneous

In the event that any provision of this Agreement is found to be invalid at law, such invalidity will not affect the validity of any other provisions, or the legal enforceability of such other provisions. In the event that the Software cannot be executed under conditions of normal use, due to any damage to the original disk/s, HPI will replace the disk/s free of charge.

14. Entire Agreement

This agreement, and the terms for supplements, updates, Internet-based services and support services that you use, are the entire agreement for the software and support services.

HFBS
Health Facility Briefing System

HFBS

Health Facility Briefing System