

SEPS+BIM

Space and Equipment Planning System
+
Building Information Modeling

Part 2

Technical Guidelines for
adding new Revit Families

VA



U.S. Department
of Veterans Affairs

Office of Construction & Facilities Management



Prepared by ONUMA 3-28-2015

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3-15-2015

Image: US Department of Veterans Affairs Logo



Revit MLSTD 1691 objects

Introduction

MLSTD 1691 consists of approximately 2,100 standardized, generic objects (medical equipment and furniture) each with a unique Joint Serial Number (JSN). Each object has a standard size and standard attributes. Most of them are specified as individual objects while a few (e.g. counter tops, curtains, rails) are specified in linear feet.

To model the Rooms and their Contents in BIM, the VA and the MHS have started to create those objects as unique Revit Families. Each family has only one single "Type" which is modeled based on the bounding box dimensions specified in MSLSTD 1691. The name of the family starts with the JSN number followed by a descriptive name similar to the name of the object in 1691.



As of October 2014, approximately 780 of the 2,100 objects have been modeled in Revit 2014 following specific rules to make them usable in an automated BIM process. The full library with all these families can be downloaded with the following link:
http://onuma.com/transfer/1691_Revit2014.zip

NOTE: This is a temporary links until the VA TiL gets updated
 When modifying existing or creating new BIM Templates, the families from the above library should be used **unaltered** for each 1691 object that **already exists** in this library.

If 1691 objects are being used in the BIM Templates that don't exist yet, they have to be newly modeled following the guidelines in this document.

Image: Sample graphic image of 3D Equipment in BIM showing detailed equipment as well as bounding box equipment in red.

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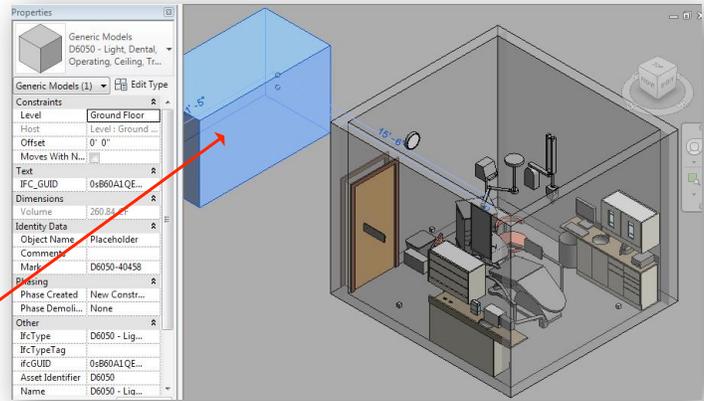
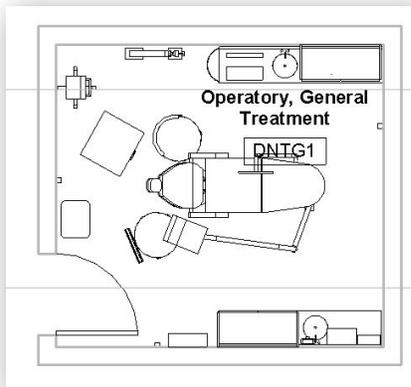
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Sample Test Fit / BIM template

Room Code DNTG1 was used to create the sample Test Fit / BIM Template

A



B

JSN D6050 was not in the current library of available Revit families. For that reason it was auto-generated as a block with the bounding box dimensions specified in MLSTD 1691. The block will have the JSN data associated with it. For the VA BIM process, missing Revit objects need to be created as new Families. (see guidelines below).

Important Note:

- All 1691 objects that exist in the current 1691_Revit library should not be remodeled or modified.



Image: Sample graphic image of 2D Floor Plan of one room with equipment, and 3D BIM view of the same room in BIM. Equipment example of detailed versus bounding box block.

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New Revit Families for BIM Template

You may review the sample files that can be downloaded here:

<http://onuma.com/transfer/SampleFamilies2014.zip>

NOTE: This is a temporary links until the VA TiL gets updated

1. Equipment should represent the equipment in floor plans, ceiling plans, sections, and in 3D views accurately.
2. If the families represent MLSTD 1691 objects, their dimensions and features should match the description in MLSTD 1691.
3. The families can be modeled in fairly simple shapes and forms (see sample files). Generally, stacked or attached extrusions and sweeps is all that is needed. They may have materials assigned if it helps for the understanding of the object (material assignment is optional).
4. For common objects, families by other authors found on the internet can be used as long as they are not overly complex and follow the rules of these guidelines and there are no restrictions on use.
5. None of the families should be wall, ceiling, or face hosted.
6. Normally they should be facing front and be placed on the reference level 0'-0" with their lowest point. They will be appropriately offset when placing the objects in the BIM (exceptions to this rule are ok)
7. The naming should follow the following model:
JSN# - space - dash - space - name, e.g.:
P5040 - Shower, Single, Hand-Held.rfa
8. The parameters "Length", "Depth", and "Height" should only be used if they span the full dimension of the object and if the dimension can be changed to change the size of the object. Since most objects are fixed in their dimensions, it's usually preferable to avoid these parameters.
9. Revit Families shall contain only a single Type that matches the dimensions in MLSTD 1691

All BIM files created for VA
should be created in
Autodesk Revit Architecture 2014

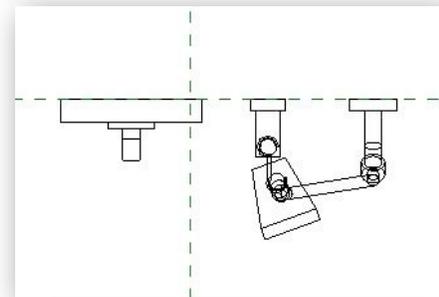
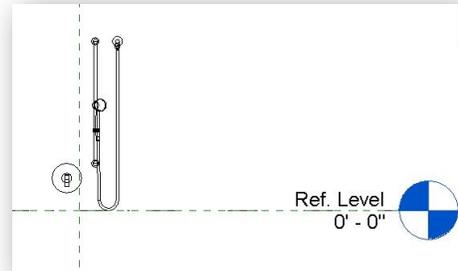


Image: Sample graphic image of 2D plan view and elevation view of one object in BIM. Dashed line indicates reference for insertion point of object.

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