

**Linking 3D Model**

with

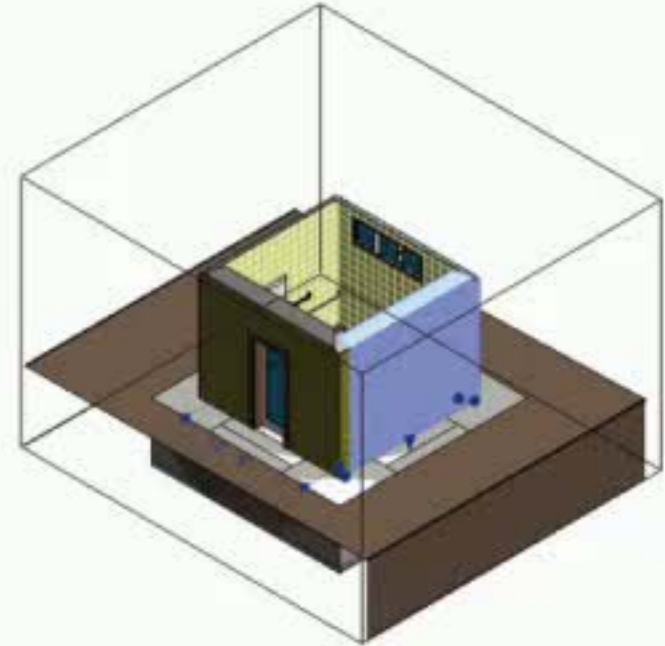
**Item of Work**

in

**Revit**

for

**Quantity Take-off**



# Brick Work in 3D Model in Revit

The image shows the Autodesk Revit Architecture 2011 software interface. The title bar reads "Autodesk Revit Architecture 2011 - [N Code Link Sample\_W...". The ribbon is set to the "Modify" tab, with the "Select" tool active. The ribbon includes categories for "Build" (Wall, Door, Window, Component, Column, Roof, Ceiling, Floor, Curtain System, Curtain Grid, Mullion), "Model" (Model Text, Model Line, Model Group), "Circulation" (Railing, Ramp, Stairs), "Opening" (By Face, Shaft, Vertical, Wall, Vertical, Domer), "Datum" (Level, Grid), "Room & Area" (Room, Area, Legend, Tag), and "Work Plane" (Set, Show, Ref Plane).

The Properties panel on the left shows the "3D View: {3D}" settings. The "Graphics" section includes: View Scale (1/8" = 1'-0"), Scale Value (1), Detail Level (Medium), Visual Style (Shaded with Edges), Discipline (Architectural), and Analysis Display Style (None). The "Views (All)" tree on the left shows the current view is "3D".

The main 3D view area displays a dark brown brick structure, which is a rectangular wall with a central opening. A mouse cursor is visible over the structure. A 3D navigation cube is located in the top right corner of the view area. The status bar at the bottom shows the scale "1/8" = 1'-0\"", the current view "Main Model", and the "Press & Drag" option.

Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

# Process - Creating Blank Sheet with Selected Parameter

The image shows a software interface with a 3D model of a dark brown U-shaped object on the right. A dropdown menu is open over the 'Schedules' button in the top toolbar, listing the following options:

- Schedule/Quantities
- Material Takeoff
- Sheet List
- Note Block
- View List

The interface includes a top toolbar with various icons for rendering and drafting, a left sidebar with a 'Graphics' panel and a 'Project Browser', and a bottom status bar showing the scale  $1/8" = 1'-0"$ .

## Process - Creating Blank Sheet with Selected Parameter - New Schedule

**New Schedule**

Category:

- <Multi-Category>
- Air Terminals
- Area Loads
- Areas (Gross Building)
- Areas (Rentable)
- Cable Tray Fittings
- Cable Tray Runs
- Cable Trays
- Casework
- Ceilings
- Communication Devices
- Conduit Fittings
- Conduit Runs
- Conduits
- Curtain Panels
- Curtain Systems

Show categories from all disciplines

Name:

Multi-Category Schedule

Schedule building components

Schedule keys

Key name:

Phase:

New Construction

OK Cancel Help

# Process - Creating Blank Sheet with Selected Parameter - Schedule Properties

**Schedule Properties**

Fields | Filter | Sorting/Grouping | Formatting | Appearance

Available fields:

- 04 CSI
- 95 CSI
- Accessory Tag
- Assembly Code
- Assembly Description
- AUTO/QTO
- CADworks URL
- Category
- CD
- Comments
- Cost
- Count
- Created Date

Scheduled fields (in order):

Buttons: Add -->, <-- Remove, Add Parameter..., Calculated Value...

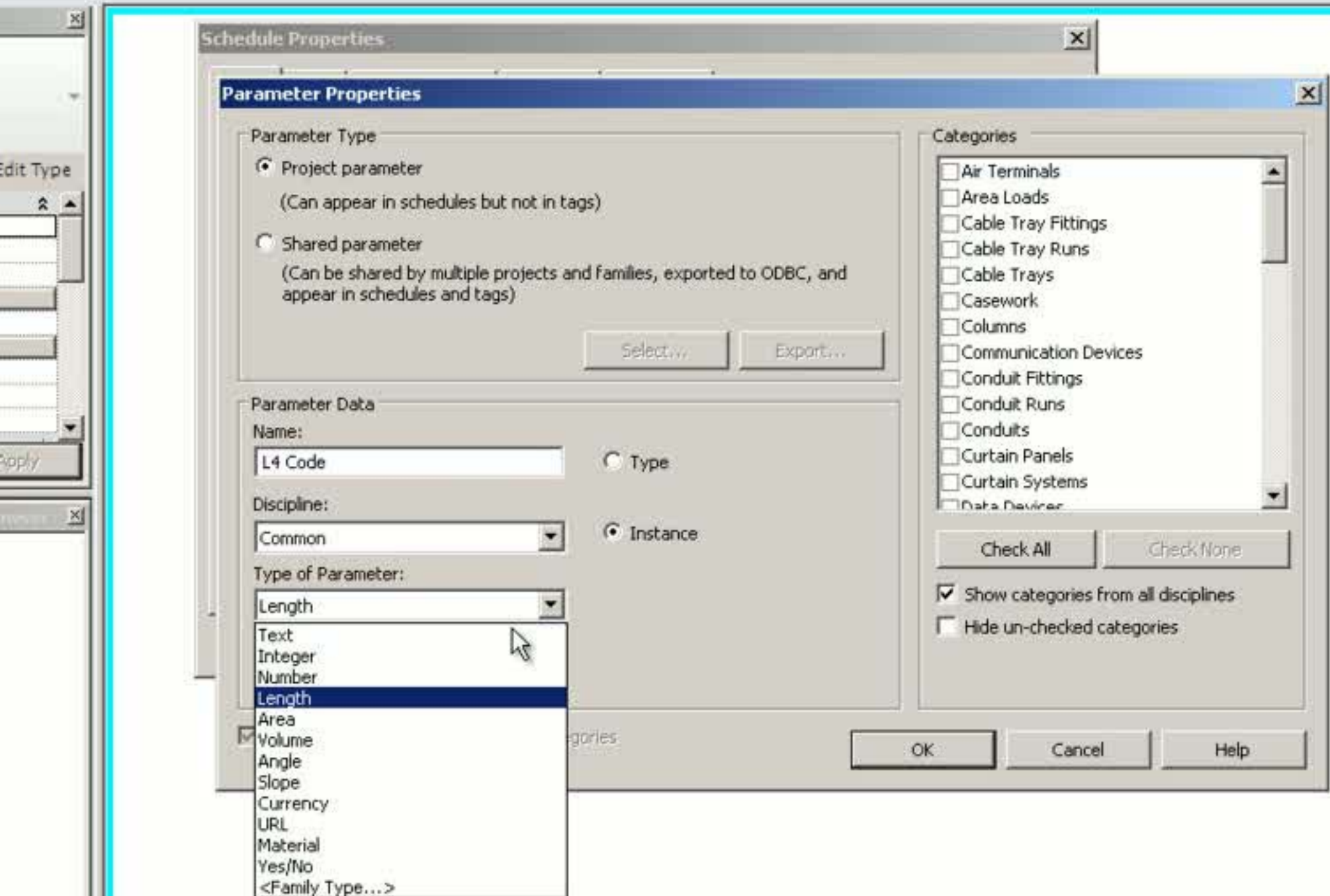
Buttons: Edit..., Delete (under Available fields); Edit..., Delete, Move Up, Move Down (under Scheduled fields)

Select available fields from: Multiple Categories

Include elements in linked files

Buttons: OK, Cancel, Help

# Process - Creating Blank Sheet with Selected Parameter - Parameter Properties



# Process - Creating Blank Sheet with Selected Parameter - Parameter Properties

Schedule Properties

### Parameter Properties

**Parameter Type**

Project parameter  
*(Can appear in schedules but not in tags)*

Shared parameter  
*(Can be shared by multiple projects and Families, exported to ODBC, and appear in schedules and tags)*

Select... Export...

**Parameter Data**

Name: L4 Title  Type

Discipline: Common  Instance

Type of Parameter: Text

Group parameter under: Text

Add to all elements in the selected categories

**Categories**

- Air Terminals
- Area Loads
- Areas
- Cable Tray Fittings
- Cable Tray Runs
- Cable Trays
- Casework
- Ceilings
- Columns
- Communication Devices
- Conduit Fittings
- Conduit Runs
- Conduits
- Curtain Panels

Check All Check None

Show categories from all disciplines

Hide un-checked categories

OK Cancel Help

# Process - Creating Blank Sheet with Selected Parameter - Schedule Properties



**Schedule Properties**

Fields | Filter | Sorting/Grouping | Formatting | Appearance

Available fields:

- Nominal Width
- OmniClass Number
- OmniClass Table 23 Code
- OmniClass Table 23 Title
- OmniClass Title
- Product URL
- Series
- Type
- Type Comments
- Type Mark
- URL
- Width

Scheduled fields (in order):

- S. No.
- L4 Code
- L4 Title

Buttons: Add -->, <-- Remove, Add Parameter..., Calculated Value..., Edit..., Delete, Move Up, Move Down, OK, Cancel, Help

Select available fields from: Multiple Categories

Include elements in linked files

1/8" = 1'-0"

Medium

haded with Edges

Architectural

stone

Apply

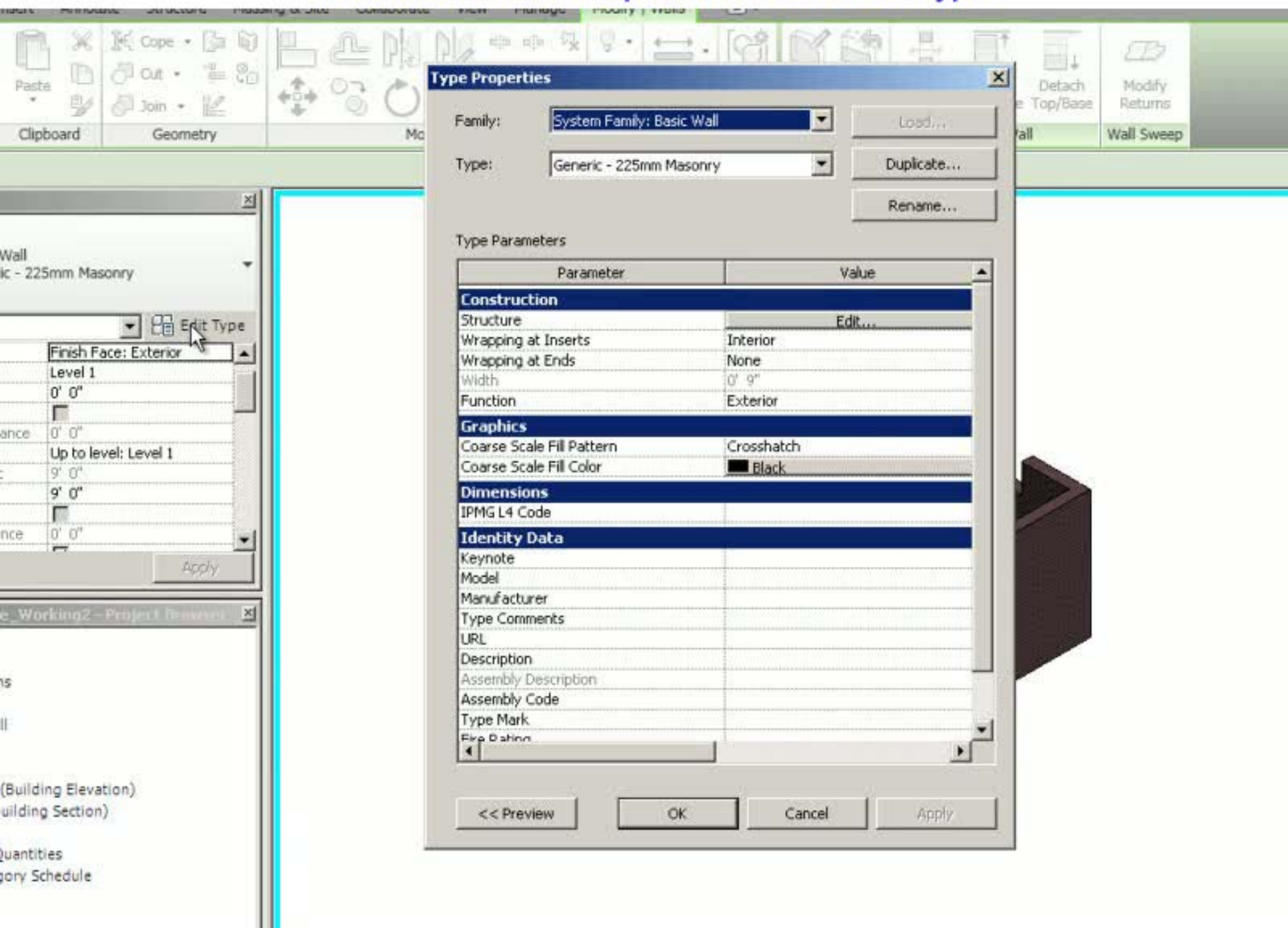
g Elevation)

Section)





# Brick Work Model Properties in Revit - Edit Type



**Type Properties**

Family: System Family: Basic Wall [Load...]

Type: Generic - 225mm Masonry [Duplicate...]

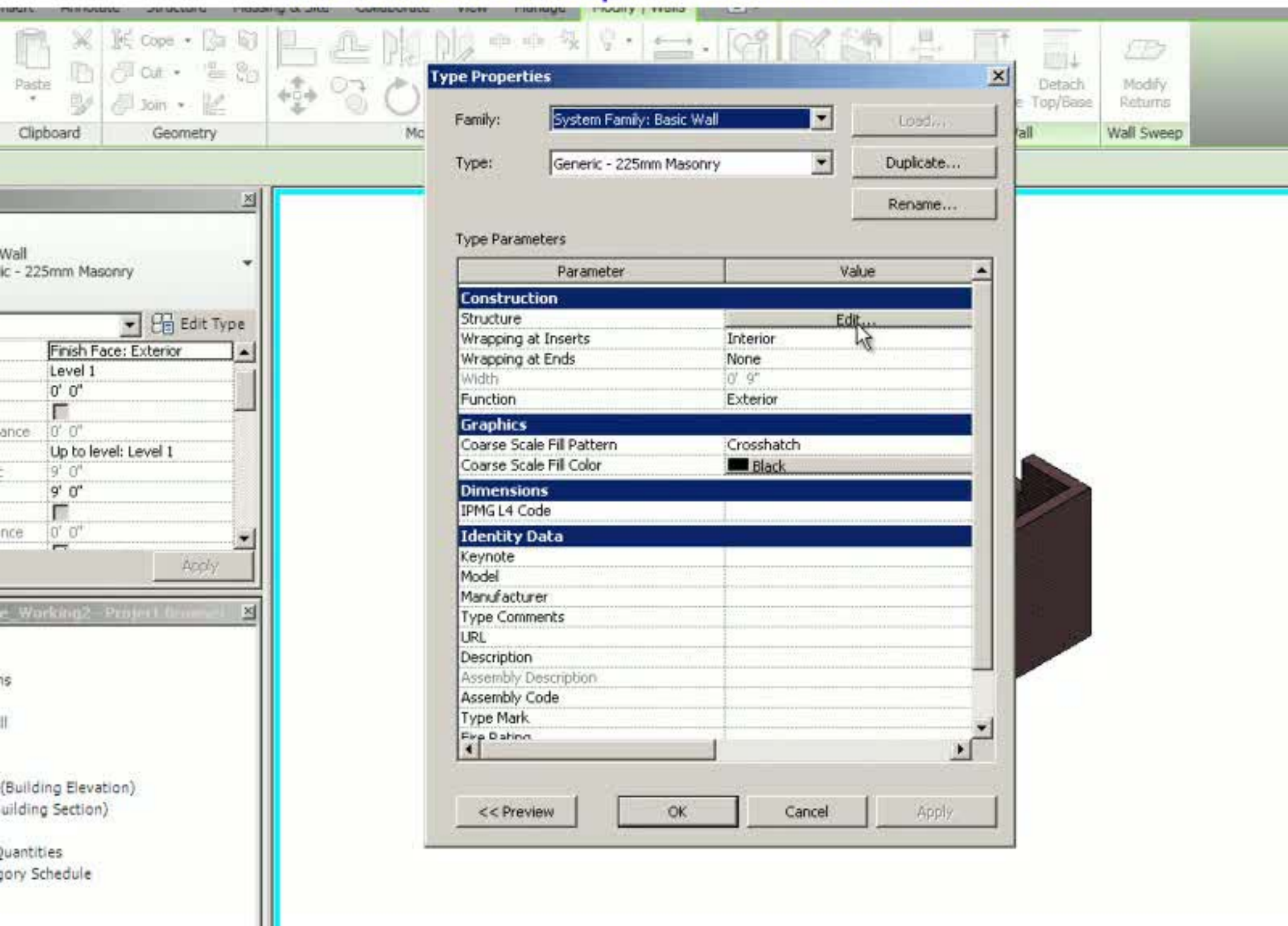
[Rename...]

Type Parameters

Parameter	Value
<b>Construction</b>	
Structure	Edit...
Wrapping at Inserts	Interior
Wrapping at Ends	None
Width	0' 9"
Function	Exterior
<b>Graphics</b>	
Coarse Scale Fill Pattern	Crosshatch
Coarse Scale Fill Color	Black
<b>Dimensions</b>	
IPMG L4 Code	
<b>Identity Data</b>	
Keynote	
Model	
Manufacturer	
Type Comments	
URL	
Description	
Assembly Description	
Assembly Code	
Type Mark	
Fire Rating	

<< Preview    OK    Cancel    Apply

# Brick Work Model Properties in Revit - Edit Parameter



**Type Properties**

Family: System Family: Basic Wall Load...

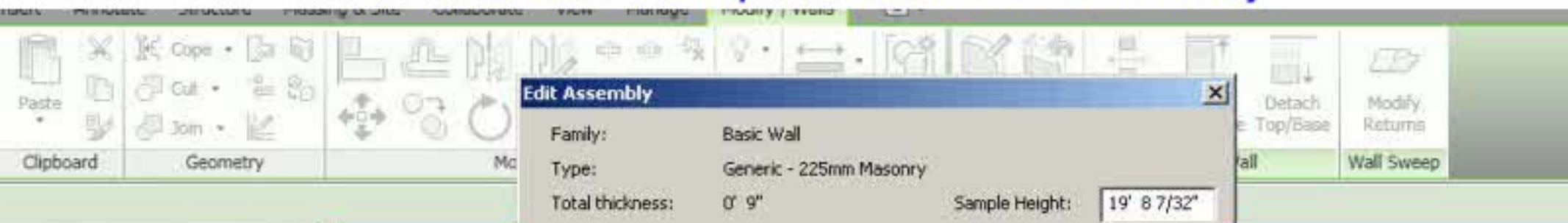
Type: Generic - 225mm Masonry Duplicate... Rename...

Type Parameters

Parameter	Value
<b>Construction</b>	
Structure	Interior Edit...
Wrapping at Inserts	Interior
Wrapping at Ends	None
Width	0' 9"
Function	Exterior
<b>Graphics</b>	
Coarse Scale Fill Pattern	Crosshatch
Coarse Scale Fill Color	Black
<b>Dimensions</b>	
IPMG L4 Code	
<b>Identity Data</b>	
Keynote	
Model	
Manufacturer	
Type Comments	
URL	
Description	
Assembly Description	
Assembly Code	
Type Mark	
Fire Rating	

<< Preview OK Cancel Apply

# Brick Work Model Properties in Revit - Edit Assembly



**Edit Assembly**

Family: Basic Wall  
Type: Generic - 225mm Masonry  
Total thickness: 0' 9"      Sample Height: 19' 8 7/32"

Layers

EXTERIOR SIDE

	Function	Material	Thickness	Wraps
1	Core Boundary	Layers Above Wr	0' 0"	
2	Structure [1]	General Wall	0' 9"	<input type="checkbox"/>
3	Core Boundary	Layers Below Wr	0' 0"	

INTERIOR SIDE

Insert    Delete    Up    Down

Default Wrapping

At Inserts: Interior    At Ends: None

Modify Vertical Structure (Section Preview only)

Modify    Merge Regions    Sweeps

Assign Layers    Split Region    Reveals

<< Preview    OK    Cancel    Help

Finish Face: Exterior

Level 1

0' 0"

0' 0"

Up to level: Level 1

9' 0"

9' 0"

0' 0"

Apply

Working2 - Project Browser

Quantities

Quantity Schedule



# Linking Item of Work with Material Properties

The image shows a screenshot of the Revit software interface, specifically the **Materials** dialog box. The dialog is divided into several sections:

- Materials:** A search bar with the text "Enter Search Words" and a magnifying glass icon. Below it is a dropdown menu for "Material Class" set to "<All>". A list of material classes is visible, including "Default Floor", "Default Form", "Default Light Source", "Default Mass Exterior Wall", "Default Mass Floor", "Default Mass Glazing", "Default Mass Interior Wall", "Default Mass Opening", "Default Mass Roof", "Default Mass Shade", "Default Mass Skylight", "Default Mass Zone", "Default Roof", "Default Wall", "Default Zoning Envelope", "Door - Frame", "Door - Frame/Mullion", "Door - Handle", "Door - Moulding", "Door - Panel", "Door Panel Material", "EIFS - Exterior Insulation and Finish System", "Excavating, Trench", "Fabric", "Form In Place", "Form In Place COLUMN", "Form In Place LINTEL", "Frame Moulding", and "General Wall".
- Graphics:** A tabbed interface with "Render Appearance", "Identity", and "Physical" tabs. The "Render Appearance" tab is active.
- Shading:** A section with a checked checkbox "Use Render Appearance for Shading". Below it is a color swatch showing a dark brown color with the RGB value "076-055-059". A "Transparency" slider is set to "0%".
- Surface Pattern:** A section with a dropdown menu showing a brickwork pattern and a "Brickwork" label. To the right is a "Black" color swatch.

Overlaid on the Materials dialog is a smaller dialog box titled **Duplicate Revit Material**. It contains the following fields and controls:

- Material Class:** A dropdown menu set to "Miscellaneous".
- Name:** A text input field containing "Brick Work, Conventional Bricks".
- Buttons:** "OK" and "Cancel" buttons.

At the bottom of the Materials dialog, there are buttons for "Properties <<", "By Category", "OK", "Cancel", and "Apply".

# Linking Item of Work with Material Properties - Identity

The screenshot shows a software window titled "Materials" with a search bar and a list of material classes. The "Identity" tab is selected, displaying various fields for defining material properties. The "Material Class" field is set to "Bricks". The "Descriptive Information" section includes fields for "Description", "Comments", and "Keywords". The "Product Information" section includes fields for "Manufacturer", "Model", "Cost", and "URL". The "Annotation Information" section includes fields for "Keynote" and "Mark". The "Custom Parameters" section includes a table with columns "Parameter" and "Value", containing entries for "S. No." and "L4 Code".

Materials

Enter Search Words

Material Class: <All>

- Air Barrier - Air Infiltration Barrier
- Aluminum
- ANTI TERMITE TREATMENT
- ANTI TERMITE TREATMENT
- Asphalt
- Back Fill
- Bradley Corp Stainless Steel - Chrome
- Bradley Corp Stainless Steel - Satin
- Brick Work, Conventional Bricks
- Bronze - Brizo - Brilliance - Brushed
- Bronze - Brizo - Venetian
- Cabinets
- Cabinets - Handles
- Carpet
- Carpet (2)
- Ceiling Tile 600 x 600
- Ceiling Tile 600 x 1200
- Ceramic Tile
- Chrome - Brizo - Polished
- Concrete
- Concrete - Cast In Situ
- Concrete - Cast in Situ Lightweight
- Concrete - Cast-in-Place Concrete
- Concrete - Precast Concrete - Normal Weight 5 ksi
- Concrete - Sand/Cement Screed
- Concrete Field Mix
- Counter Marble
- Counter Top
- D.P.C

Graphics | Render Appearance | Identity | Physical

Filter Criteria

Material Class: Bricks

Descriptive Information

Description:

Comments:

Keywords:

Product Information

Manufacturer:

Model:

Cost:

URL:

Annotation Information

Keynote:

Mark:

Custom Parameters:

Parameter	Value
S. No.	
L4 Code	

Properties << By Category OK Cancel Apply

# Linking Item of Work with Material Properties in Keynote - 13 digit code

Keynotes - [C:\Documents and Settings\All Users\Application Data\Autodesk\RAC 2011\M...

Under Appearance Identity Physical

Material Class: Bricks

Description:

Comments:

Keywords:

Manufacturer:

Model:

Cost:

URL:

Keynote:

Mark:

Key Value	Keynote Text
Division 00	Procurement and Contracting Requirements
Division 01	General Requirements
Division 02	Existing Conditions
Division 03	Concrete
03 31	Structural Concrete
03 31 05	Normal Weight Structural Concrete
03 31 05 30	Concrete, Field Mix
03 31 05 30 10005	P/L cement concrete with coarse sand,aggregate 40mm in f...
03 31 05 31	Reinforced Cement Concrete
03 31 05 31 10005	P/L specified mix RCC (1:2:4) In foundation and plinth (1.5 ...
Division 04	Masonry
04 21	Clay Unit Masonry
04 21 13	Brick Masonry
04 21 13 46	Brick Work, Conventional Bricks
04 21 13 46 10005	Brick work including scaffolding in cement mortar 1:6 in Fou...
04 21 13 46 10010	Brick work including scaffolding in cement mortar 1:6 in Sup...
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal and Moisture Protection
Division 08	Openings
Division 09	Finishes

Keynote Text:

Brick work including scaffolding in cement mortar 1:6 in Superstructures upto 20.0 m above plinth level

OK Cancel Help

# Linking Item of Work with Material Properties in Keynote - Add Parameter

The screenshot shows the 'Materials' dialog box in Keynote. The 'Physical' tab is selected, and the 'Add Parameter' section is expanded. The 'Material Class' is set to 'Bricks'. The 'L4 Code' is '04 21 13 46' and the 'L4 Title' is 'Brick Work, Conventional Bricks'.

**Materials**

Enter Search Words

Material Class: <All>

- Air Barrier - Air Infiltration Barrier
- Aluminum
- ANTI TERMITE TREATMENT
- ANTI TERMITE TREATMENT
- Asphalt
- Back Fill
- Bradley Corp Stainless Steel - Chrome
- Bradley Corp Stainless Steel - Satin
- Brick Work, Conventional Bricks
- Bronze - Brizo - Brilliance - Brushed
- Bronze - Brizo - Venetian
- Cabinets
- Cabinets - Handles
- Carpet
- Carpet (2)
- Ceiling Tile 600 x 600
- Ceiling Tile 600 x 1200
- Ceramic Tile
- Chrome - Brizo - Polished
- Concrete
- Concrete - Cast In Situ
- Concrete - Cast in Situ Lightweight
- Concrete - Cast-in-Place Concrete
- Concrete - Precast Concrete - Normal Weight 5 ksi
- Concrete - Sand/Cement Screed
- Concrete Field Mix
- Counter Marble
- Counter Top
- D.P.C

Graphics | Render Appearance | Identity | Physical

Filter Criteria

Material Class: Bricks

Descriptive Information

Description:

Comments:

Keywords:

Product Information

Manufacturer:

Model:

Cost:

URL:  ...

Annotation Information

Keynote: 04 21 13 46 10010 ...

Mark:

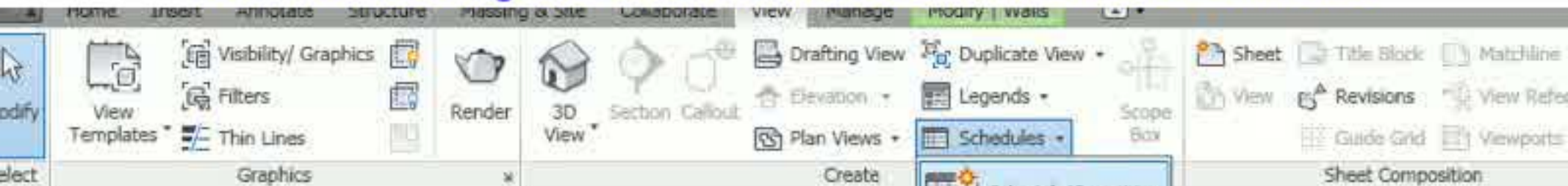
Custom Parameters:

Parameter	Value
L4 Code	04 21 13 46
L4 Title	Brick Work, Conventional Bricks

Properties<< | By Category | OK | Cancel | Apply



# Process - Creating Take off Sheet with Selected Parameter - Schedule



Properties

Basic Wall  
Generic - 225mm Masonry

Walls (1) Edit Type

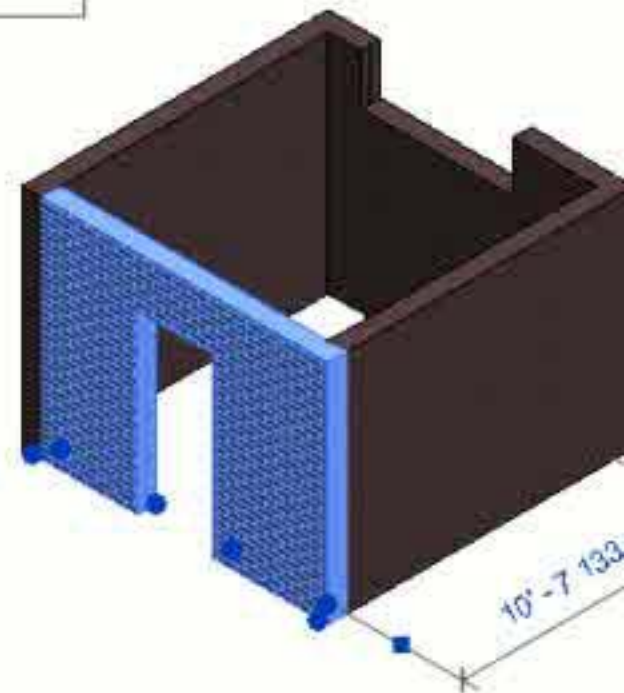
Location Line	Finish Face: Exterior
Base Constraint	Level 1
Base Offset	0' 0"
Base is Attached	<input type="checkbox"/>
Base Extension Distance	0' 0"
Top Constraint	Up to level: Level 1
Unconnected Height	9' 0"
Top Offset	9' 0"
Top is Attached	<input type="checkbox"/>
Top Extension Distance	0' 0"

Apply

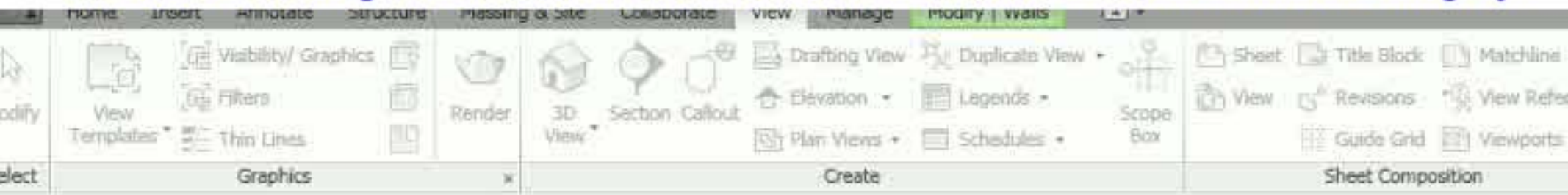
Code Link Sample Working Project

Views (all)

- Floor Plans
- Ceiling Plans
- 3D Views
  - Back Fill
  - Rebar
  - {3D}
- Elevations (Building Elevation)
- Sections (Building Section)
- Legends
- Schedules/Quantities



# Process - Creating Take off Sheet with Selected Parameter - Material Take-off Category



Modify | Walls

Properties

Walls (1) Edit Type

Location Line	Finish Face: Exterior
Base Constraint	Level 1
Base Offset	0' 0"
Base is Attached	<input type="checkbox"/>
Base Extension Distance	0' 0"
Top Constraint	Up to level: Level 1
Unconnected Height	9' 0"
Top Offset	9' 0"
Top is Attached	<input type="checkbox"/>
Top Extension Distance	0' 0"

[Properties help](#) Apply

**New Material Takeoff**

Category: Lighting Fixtures  
Mechanical Equipment  
Nurse Call Devices  
Plumbing Fixtures  
Roofs  
Security Devices  
Site  
Specialty Equipment  
Sprinklers  
Stairs  
Structural Columns  
Structural Foundations  
Structural Framing  
Telephone Devices  
**Walls**  
Windows

Name:

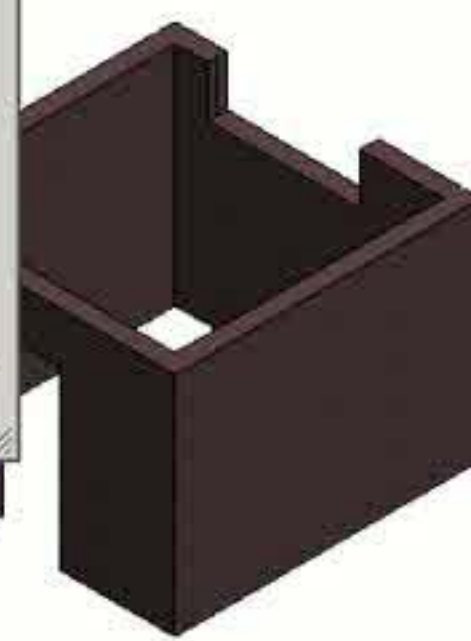
Phase: New Construction

Show categories from all disciplines

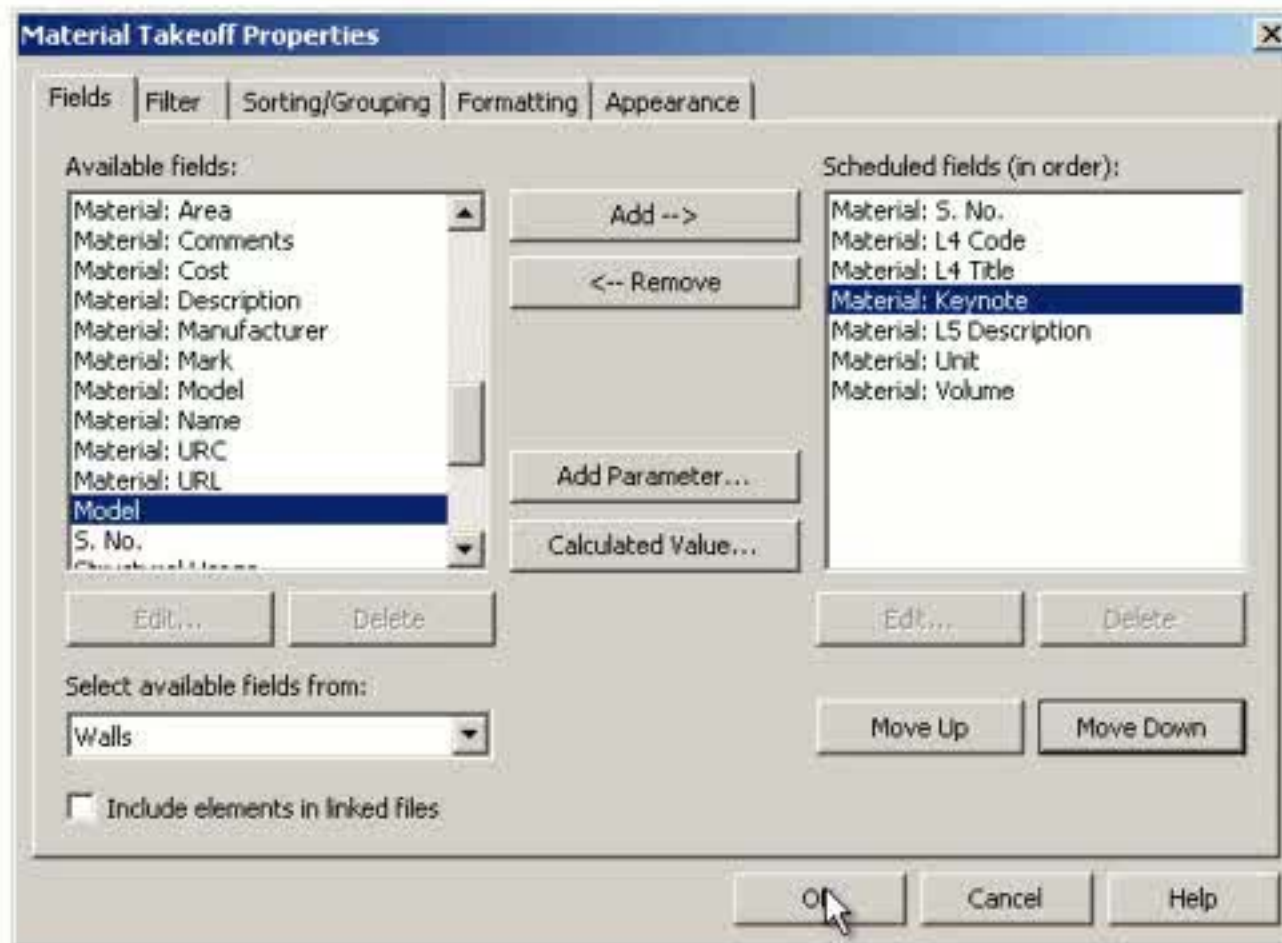
OK Cancel Help

Code Link Sample\_Workspace - Project Home

- Views (all)
- Floor Plans
- Ceiling Plans
- 3D Views
  - Back Fill
  - Rebar
  - {3D}
- Elevations (Building Elevation)
- Sections (Building Section)
- Legends
- Schedules/Quantities



# Process - Creating Take off Sheet with Selected Parameter - Material Take-off Field



1/8" = 1'-0"

Main Model

# Take off Sheet with Items of Work having 13 Digit Codes and Quantities

Autodesk Revit Architecture 2011 - [N Code Link Sample\_W... Type a keyword or phrase

ing & Site Collaborate View Manage Modify **Modify Material Takeoff**

Highlight in Model  
Element

Wall Material Takeoff

Material: S. N	Material: L4 Code	Material: L4 Title	Material: Keynote	Material: L5 Description	Material: Unit	Material: Volu
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46 10010	Brick work including scaffolding in cement mor	cum	2.17 m <sup>3</sup>
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46 10010	Brick work including scaffolding in cement mor	cum	1.73 m <sup>3</sup>
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46 10010	Brick work including scaffolding in cement mor	cum	1.92 m <sup>3</sup>
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46 10010	Brick work including scaffolding in cement mor	cum	2.17 m <sup>3</sup>

# Take off Sheet Showing Linkage with 13 Digit Codes having Items of Work

 Highlight in Model  
 Element

Material: S. N	Material: L4 Code	Material: L4 Title	Material: Wall
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46
1	04 21 13 46	Brick Work, Conventional Bricks	04 21 13 46

Key Value	Keynote Text
Division 00	Procurement and Contracting Requirements
Division 01	General Requirements
Division 02	Existing Conditions
Division 03	Concrete
Division 04	Masonry
04 21	Clay Unit Masonry
04 21 13	Brick Masonry
04 21 13 46	Brick Work, Conventional Bricks
04 21 13 46 10005	Brick work including scaffolding in cement mortar 1:6 in Fou..
04 21 13 46 10010	Brick work including scaffolding in cement mortar 1:6 in Sup...
Division 05	Metals
Division 06	Wood, Plastics, and Composites
Division 07	Thermal and Moisture Protection
Division 08	Openings
Division 09	Finishes
Division 10	Specialties
Division 11	Equipment
Division 12	Furnishings
Division 13	Special Construction
Division 14	Conveying Equipment
Division 21	Fire Suppression

Keynote Text:

Brick work including scaffolding in cement mortar 1:6 in Superstructures upto 20.0 m above plinth level

**Thank You**