

# The migration from AutoCAD to BIM using REVIT at Ferris State University

Bruce C. Dilg, NCARB  
Professor Architectural  
Technology



# architectural TECHNOLOGY

[fsu home](#) [technology home](#) [main](#) [future students](#)

## Curriculum Guide

- welcome
- career options
- curriculum
- courses
- student work
- graduate
- success
- admissions
- scholarships

### FIRST YEAR - FALL SEMESTER (17 semester hours)

ARCH 101 Architectural Graphics  
 ARCH 109 Intro to Computer Graphics in Architecture  
 ARCH 112 Structure Materials, Systems & Codes  
 ENGL 150 English 1  
 MATH 116 Intern. Algebra/Num. Trigonometry

### FIRST YEAR - WINTER SEMESTER (17 semester hours)

ARCH 102 Architectural Construction Documents 1 (ARCH 101,109,112)  
 ARCH 115 Interior & Exterior Finishes & Systems (ARCH 112)  
 ARCH 244 Historical Development of Western Architecture  
 COMM 105 Interpersonal Communication OR  
 COMM 121 Fundamentals of Public Speaking  
 PHYS 211 Introductory Physics 1 (MATH 116)

### SECOND YEAR - FALL SEMESTER (17 semester hours)

ARCH 203 Architectural Construction Detailing (ARCH 102,112,115)  
 ARCH 223 Statics & Structures (ARCH 112, PHYS 211, MATH 116)  
 ARCH 241 Design Fundamentals (ARCH 244, or instructor's permission)  
 HVAC 337 Mech. & Electrical Systems for Bldgs. (PHYS 211, MATH 116)  
 ENGL 250 English 2

### SECOND YEAR - WINTER SEMESTER (15 semester hours)

ARCH 204 Arch. Const. Documents 2 (ARCH 203,223, or instructor's permission)  
 ARCH 216 Professional Practice (sophomore standing)  
 ARCH 250 Systems Cost Estimating (ARCH 102, MATH 116, or instructor's permission)  
 PSYC 150 Introduction to Psychology  
 \_\_\_\_\_ Architectural Elective \_\_\_\_\_

### ARCHITECTURAL ELECTIVES

ARCH 270 Adv Usage of CAD in Arch (ARCH 109, or instructor's permission)  
 ARCH 285 House - The American Evolution (ARCH 102,241,244)

### ARCHITECTURAL ELECTIVES FOR STUDENTS LADDERING INTO FACILITY MANAGEMENT

FMAN 321 Principles of Facility Management

### ARCHITECTURAL ELECTIVES FOR STUDENTS LADDERING INTO CONSTRUCTION MANAGEMENT

CONM 111 Construction Practices  
 CONM 122 Construction Surveying  
 CONM 212 Soils and Foundations



# facility MANAGEMENT

[fsu home](#) [technology home](#) [main](#) [future students](#)

## Curriculum Guide

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### THIRD YEAR - FALL SEMESTER (15 semester hours)

FMAN 321 Principles of FMAN (enrolled in FMAN or instructor's permission)  
 MGMT 301 Applied Management (junior standing or permission)  
 PSYC 326 Industrial-Organizational Psychology (PSYC 150)  
 ENGL 311 Advanced Technical Writing (ENGL 250)  
 STQM 260 Introductory Statistics (MATH 115)

### THIRD YEAR - WINTER SEMESTER (15 semester hours)

FMAN 309 Comp Appl. for FMAN (FMAN 321, ACAD comp. or instructor's permission)  
 FMAN 322 Project Management (FMAN 321 or instructor's permission)  
 FMAN 331 Facility Prog. & Design Process (FMAN 321)  
 BLAW 221 Elementary Business Law  
 ECON 221 Principles of Economics 1 (MATH 110)

### THIRD YEAR - SUMMER SEMESTER (4 semester hours)

FMAN 393 F-M Internship (completion of JR year or instructor's permission)

### FOURTH YEAR - FALL SEMESTER (18 semester hours)

FMAN 431 Concepts of Space Planning (FMAN 331)  
 FMAN 441 Property Development & Planning (FMAN 321, BLAW 221)  
 FMAN 451 Bldg. Diagnostics & Operations (FMAN 321)  
 ACCT 201 Principles of Accounting (MATH 110)  
 ECON 222 Principles of Economics 2 (ECON 221)  
 \_\_\_\_\_ Cultural Enrichment Elective

### FOURTH YEAR - WINTER SEMESTER (16 semester hours)

FMAN 432 Interior Design for Facility Managers (FMAN 431)  
 FMAN 499 Capstone Assessment Thesis (FMAN 393 and senior status)  
 HVAC 483 HVACR Building Systems  
 BIOL 111 Environmental Biology  
 \_\_\_\_\_ Cultural Enrichment Elective

The list above is a sample class schedule for a student in the Facility Management Program. By clicking this link you will be re-directed to the **Facility Management Course Catalog page.**



[CTM HOME](#)

[Faculty/Staff](#)

Academic Programs

[B.S. Degree](#)

[A.A.S. Degrees](#)

[Students](#)

[Alumni](#)

[Advisory Board](#)

[History](#)

[Photo Gallery](#)

[Facilities](#)

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Hall of Fame](#)

[FAQs](#)

[Contact Us](#)

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Students Website](#)

[Student Forms](#)

[CM Alumni Assoc.](#)

## Academics

The Construction Technology and Management Department offers two Associate of Applied Science (A.A.S.) degrees and one Bachelor of Science (B.S.) degree appropriately tailored to the needs of the nation's largest industry—construction.

### Construction Management Bachelor of Science Degree

**Accredited by the American Council for Construction Education (ACCE).**

Graduates of the Construction Management program are prepared to manage and supervise the complete construction process from initial considerations through bidding to final completion. Graduates enter the industry as project superintendents, project engineers, project managers, or owner's representatives for a variety of construction related firms such as: general contractors, specialty subcontractors, construction managers, designers, developers, consultants, or owners.

Students may enter the Construction Management program as freshmen or after completion of an approved associate degree. Course content includes management of skilled labor resources, contract administration, estimating, cost and schedule control, quality control and quality assurance, project management, engineering, mathematics, sciences, business, and computer application topics.

There are four paths for the students to obtain their Bachelor of Science in Construction Management, depending on the interest and background of the student.

The primary tracks emphasis either building construction or highway construction.

Within the building construction area, the Mechanical/Electrical/Plumbing (MEP) emphasis is relatively new. New courses will be added as time allows.

The B.S. program also provides an opportunity for A.A.S. graduates of the Architectural Technology program to enter the C.M. program as a Junior.

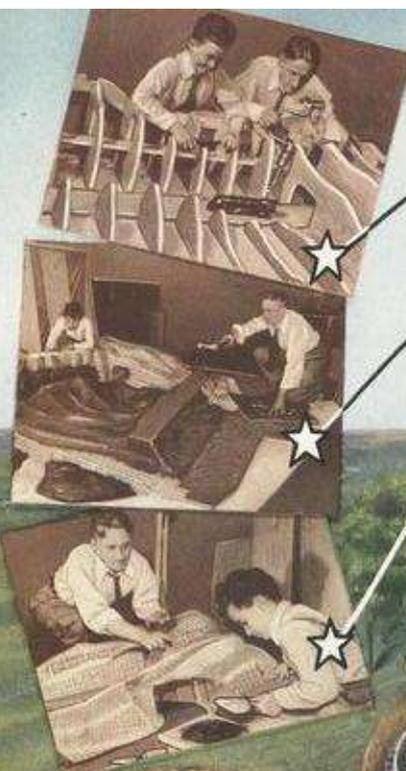
Click on the degree path for more information:

#### **Bachelor of Science - Construction Management**

**Building Construction Technology Management**

**Commercial/Industrial Building Emphasis**

**Mechanical/Electrical/Plumbing Emphasis**



★ Hills and mountains — with tunnels for your trains — add enormously to the realism of rail-roading with American Flyer. The first step is to make a suitable frame work. Plywood is excellent for the purpose.

★ The second step is to cover the frame work with fine wire mesh, shaping it to form interesting and natural-looking contours. Include one or two highways in your plan, flattening the mesh to a suitable width.

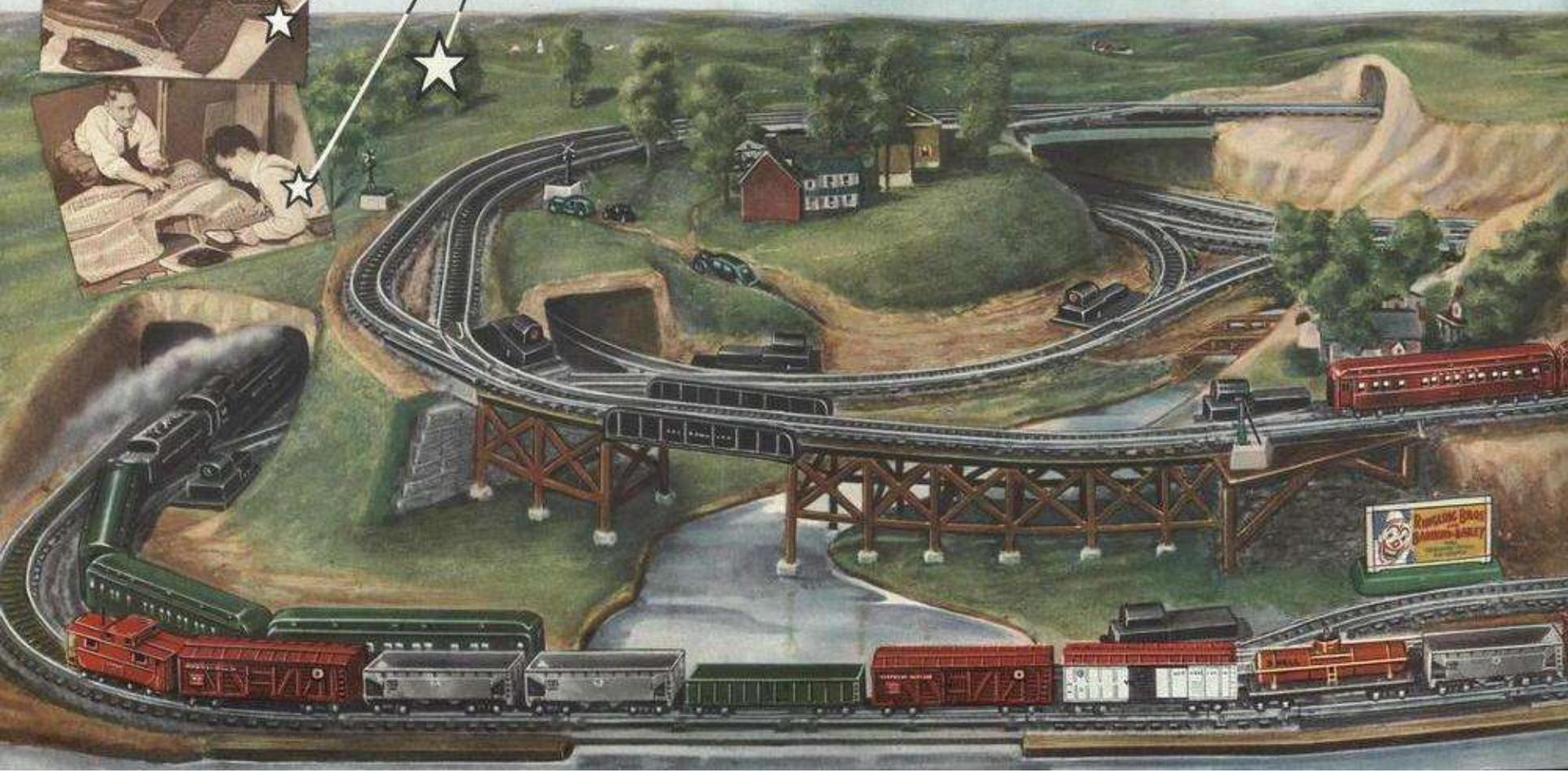
★ Next, mix asbestos plaster with water and apply it to the mesh, giving hills and mountains the desired shape. When dry, paint with water mix paints, using blends of blue, yellow and brown.

★ For the finishing touches, trees can be made of twigs dipped in shellac. Grass can be simulated by dyeing sawdust green, then sprinkling it over wet paint. You can make a lake by painting glass blue-green on the under side.

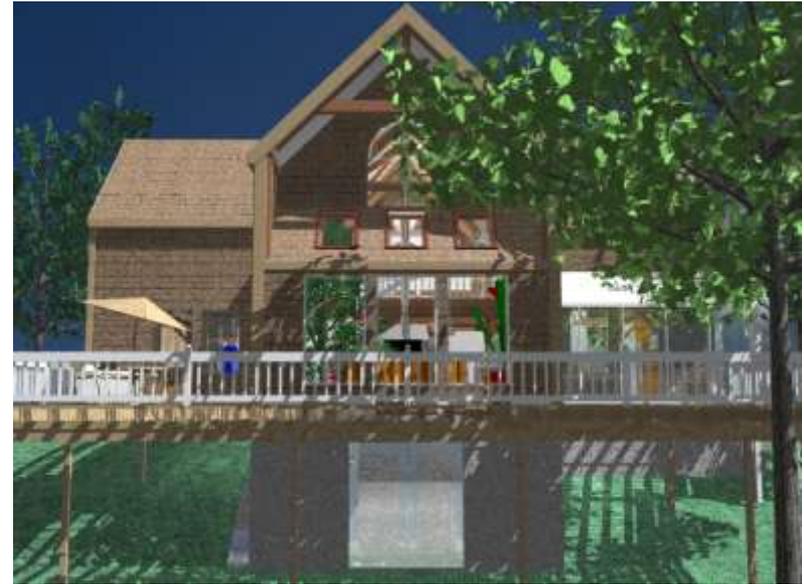
# HOW TO PLAN AND BUILD A MIGHTY RAILROAD EMPIRE

**T**HE natural goal of every scale model rail-roader is to have a mighty railroad empire. Send sleek trains roaring into a dark tunnel . . . hear the muffled noise of their "choo-choos" beating against the walls . . . then see the locomotive reappear at the other end engaged in a cloud of smoke. Have big freight yards where cars are loaded with spectacular automatic equipment — make up trains and hustle them over a maze of tracks to their destination — uncouple and unload cars by remote control.

Here is fun that will last you all the days of your



# 2D or not 2D? that is the question



**BRUCE C. DILG** (with apologies to will shakespeare)  
10APR97



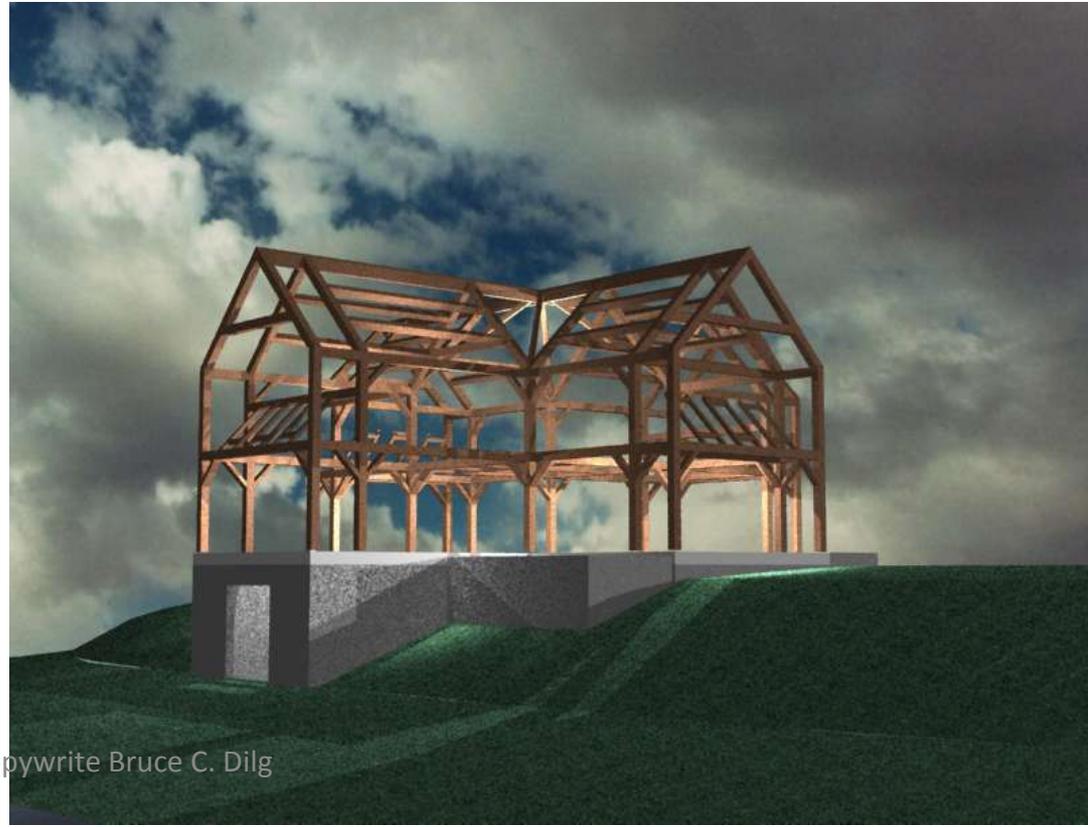
# Concept

- What if we build buildings rather than draw lines to represent parts of buildings?
  - can we visualize our spaces more accurately?
  - a client?
  - an engineer?
  - a code official?
  - a contractor?



# What if?

- we can put this model through a wind storm
- blow water against it
- load it with snow
- light a fire in it
- play a concert in it
- test lighting ideas



# Brainstorming

- Could a 3D model someday
  - be given to code officials to do their analysis?
  - be given to a contractor for bidding?
  - be used by contractors to decide what details or sections they want?





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**IMMANUEL LUTHERAN CHURCH**



**BIG RAPIDS BANDSHELL  
ACTUAL BUILDING**



**BIG RAPIDS BANDSHELL  
COMPUTER MODEL ON ACTUAL SITE**





Contents

- [7] Drawing Sheet: A501 ...
- [8] Drawing Sheet: A601 ...
- [9] Drawing Sheet: A701 ...
- [10] Drawing Sheet: A702 ...
- [11] Drawing Sheet: A801 ...
- [12] Drawing Sheet: A901...**

Model

Markups

Properties

Name	Value
author	SW
Created	5/6/...
creator	Aut...
Sheet Name	Dra...
Sheet Size	11.0
<b>Drawing Sheet [22...</b>	
Appears In Drawing List	Yes
Approved By	App
Checked By	Che
Designed By	Des

Layers

Views

Cross Sections

Animations

Drawing Sheet: A901 - RENDERINGS



1 INTERIOR RENDERING 1:1



2 EXTERIOR RENDERING 2 1:1

Contents

- [1] Drawing Sheet: A101 ...
- [2] Drawing Sheet: A102 ...
- [3] Drawing Sheet: A201 ...
- [4] Drawing Sheet: A202 ...
- [5] Drawing Sheet: A301 ...
- [6] Drawing Sheet: A401 ...

Model

Markups

Properties

Name	Val
author	SW
Created	5/6
creator	Aut
Sheet Name	Dra
Sheet Size	11.0

Drawing Sheet [21...]

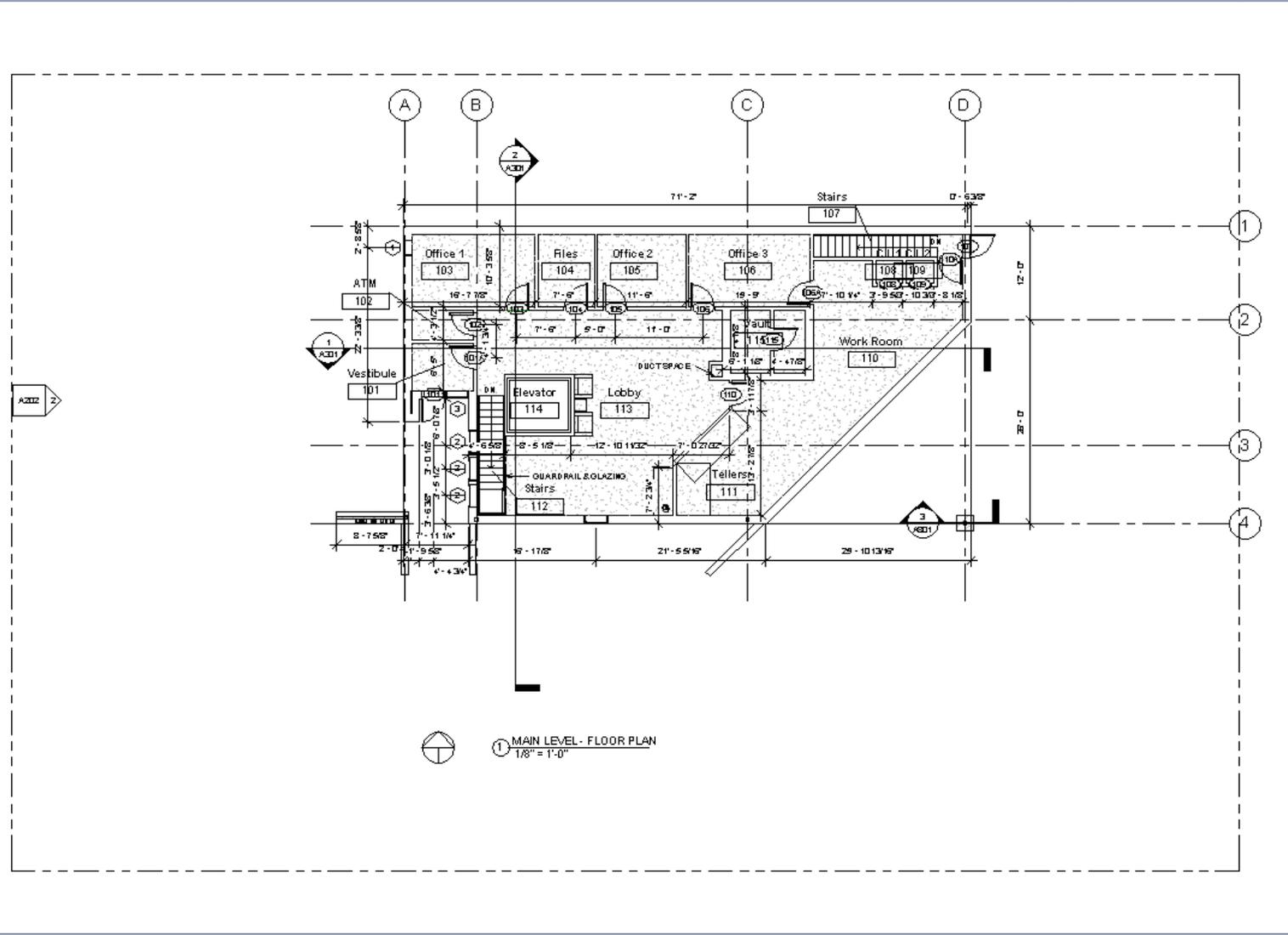
- Appears In Drawing List Yes
- Approved By App
- Checked By MR.
- Designed By Des

Layers

Views

Cross Sections

Animations



- [5] Drawing Sheet: A301 ...
- [6] Drawing Sheet: A401 ...
- [7] Drawing Sheet: A501 ...
- [8] Drawing Sheet: A601 ...
- [9] Drawing Sheet: A701 ...
- [10] Drawing Sheet: A702...**

Model

Markups

Properties

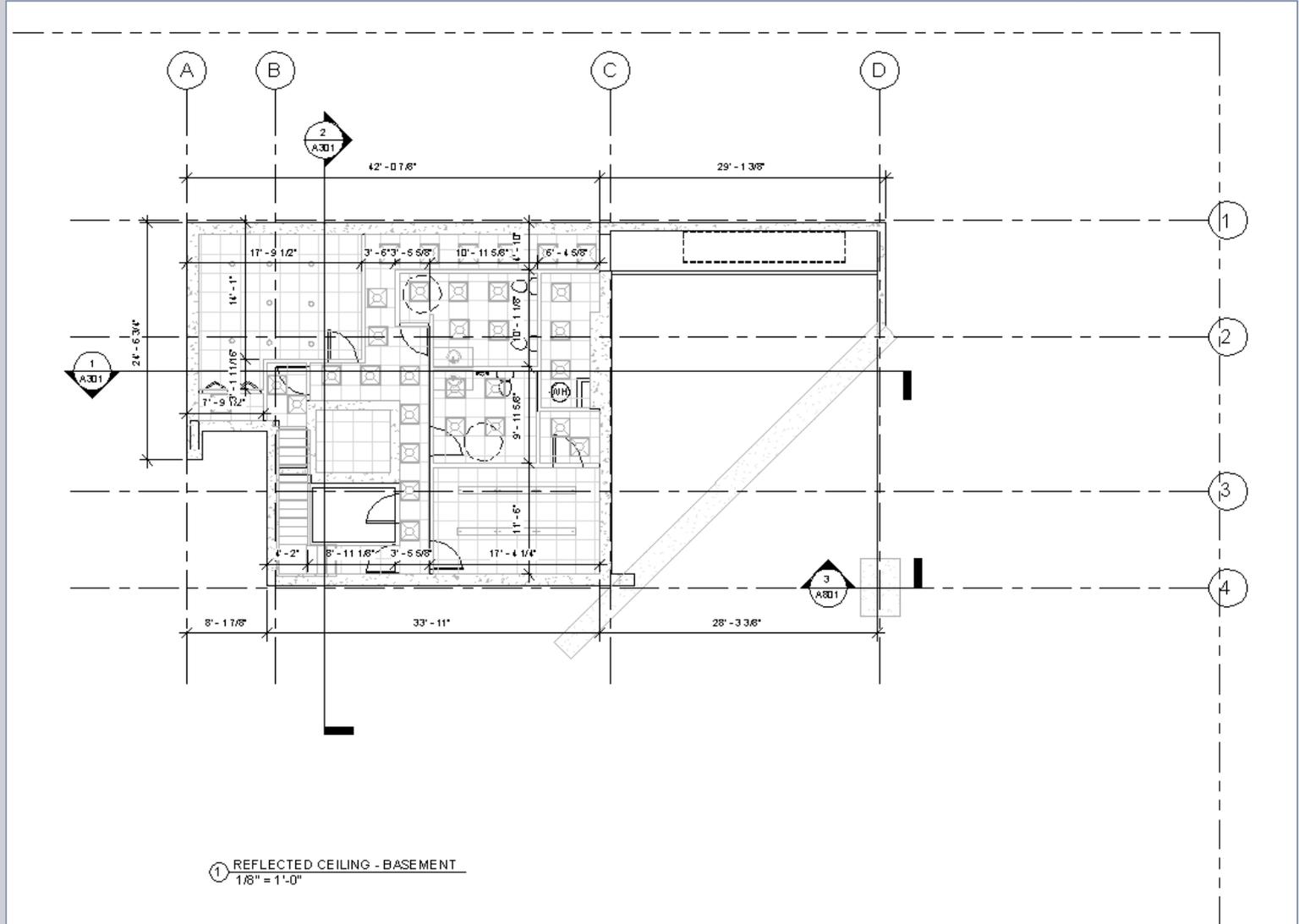
Name	Val
author	SW
Created	5/6/...
creator	Aut...
Sheet Name	Dra...
Sheet Size	11.0
<b>Drawing Sheet [21...</b>	
Appears In Drawing List	Yes
Approved By	App
Checked By	MR.
Designed By	Des

Layers

Views

Cross Sections

Animations



File Edit View Tools Help

Contents

[1] Drawing Sheet: A101 - ... [2] Drawing Sheet: A102 - ...  
 [3] Drawing Sheet: A201 ... [4] Drawing Sheet: A202 ...  
 [5] Drawing Sheet: A301 ... [6] Drawing Sheet: A401...

Model  
 Markups  
 Properties

Name	Value
author	SW
Created	5/6/...
creator	Auto
Sheet Name	Dra
Sheet Size	11.0
<b>Drawing Sheet [21...]</b>	
Appears In Drawing List	Yes
Approved By	App
Checked By	MR.
Designed By	Des

Layers  
 Views

Drawing Sheet A401 - SCHEDULES

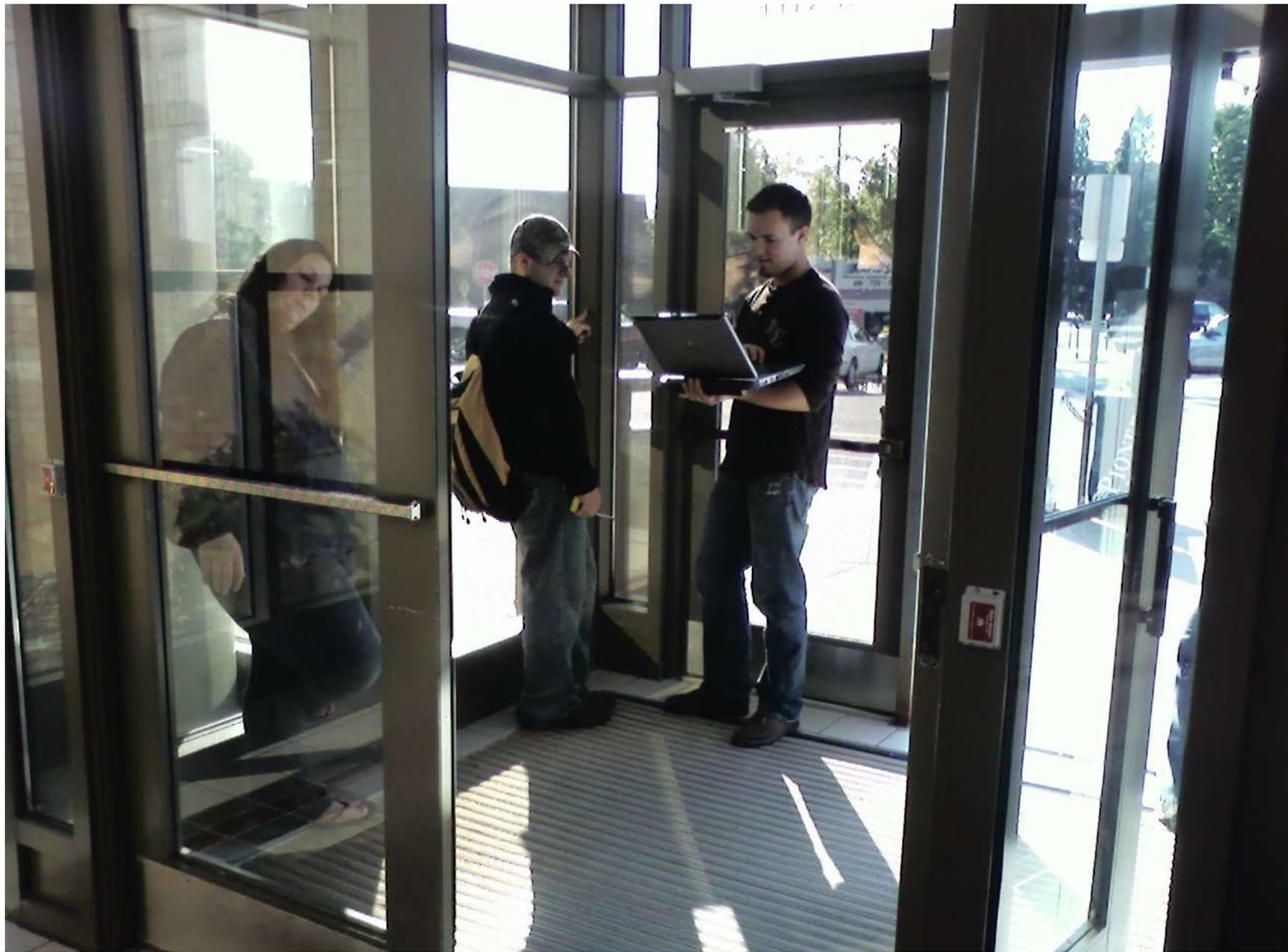
Gypsum Board Takeoff			
Material: Description	Material: Name	Material: Area	Keynote
GWB	Finishes - Interior - Gypsum Wall Board	189 SF	
GWB	Finishes - Interior - Gypsum Wall Board	189 SF	
GWB	Finishes - Interior - Gypsum Wall Board	189 SF	
GWB	Finishes - Interior - Gypsum Wall Board	197 SF	
GWB	Finishes - Interior - Gypsum Wall Board	249 SF	
GWB	Finishes - Interior - Gypsum Wall Board	261 SF	07210.A4
GWB	Finishes - Interior -	266 SF	

Mark	Description	Frame Type	Frame Material
103	Single-Flus h Wood	1	Wood
104	Single-Flus h Wood	1	Wood
105	Single-Flus h Wood	1	Wood
106	Single-Flus h Wood	1	Wood
106A	Single-Flus h Wood	1	Wood
110A	Single-Flus h Wood	1	Wood
107	Single-Flus h Wood	1	Wood
108	Bi-fold Two Panel	3	Wood
109	Bi-fold Two Panel	3	Wood
115	Single-Flus h Wood	1	Wood
102	Single-Flus h Wood	1	Wood
101A	Single-Flus h Wood	1	Wood
012	Single-Flus	1	Wood

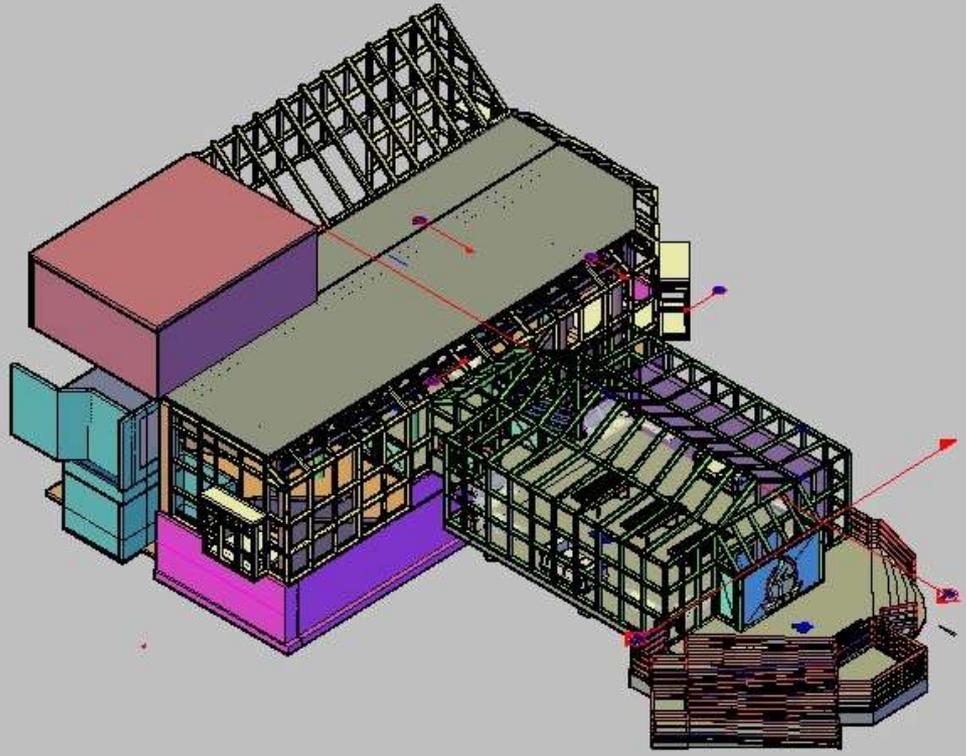
- Architectural Detailing
  - How do you teach students how a building goes together?
- Can “building the building virtually” help students understand the process?













A1-1 First Floor Plan

Contents



[1] A1-1 First Floor Plan

Model

Markups

Properties

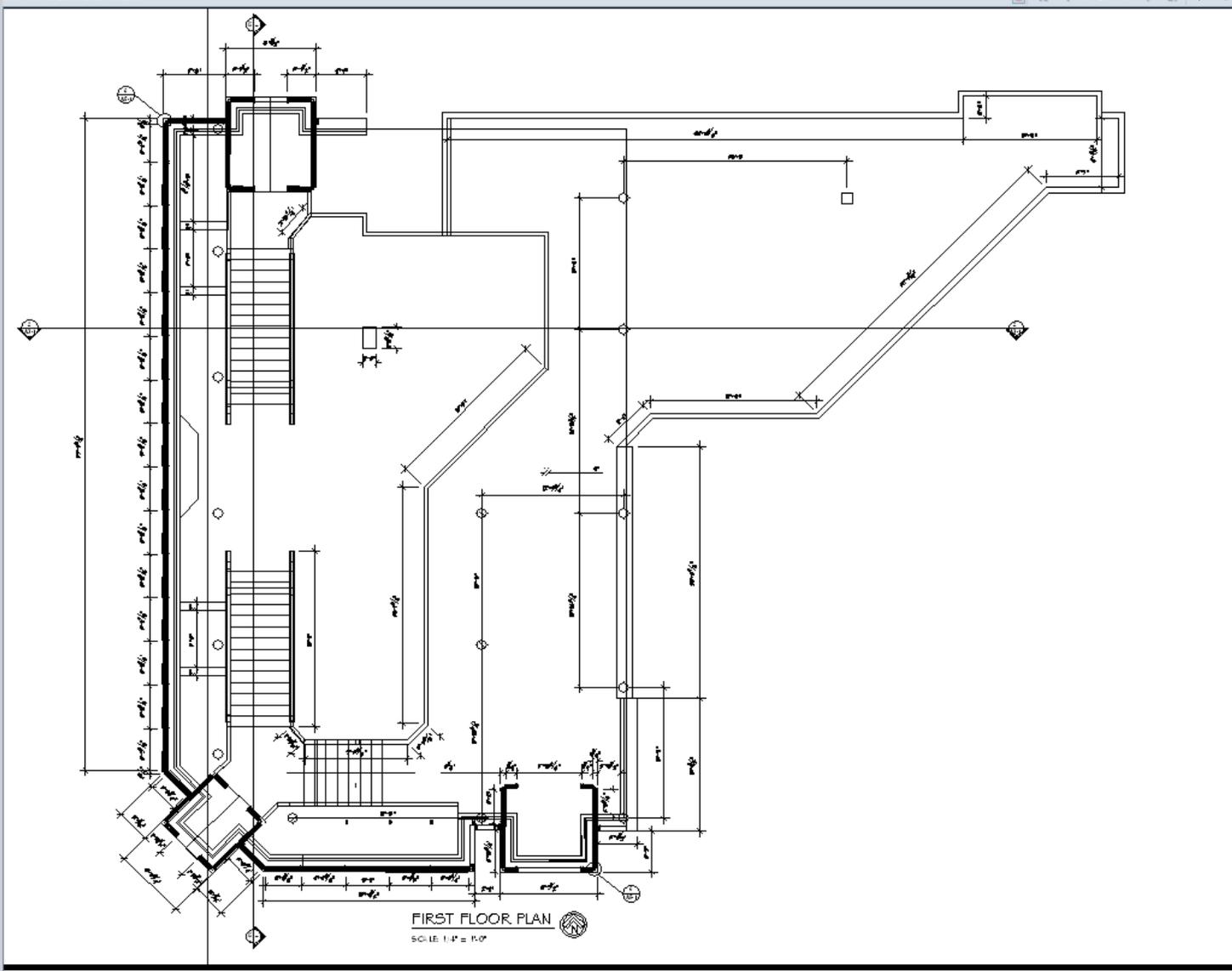
Name	Value
author	SWN205
Creation Time	11/13/2007 6:28
Modification Time	11/13/2007 6:28
Sheet Name	A1-1 First Floor Plan
Sheet Size	36.0 x 24.0 in
<b>AutoCAD Drawing</b>	
author	
comments	
copyright	
Creation Time	10/18/2007 10:00

Layers

Views

Cross Sections

Animations



**Contents**

- [1] A2-1 Elevations

---

**Model**

**Markups**

**Properties**

Name	Value
author	SWN205
Creation Time	11/13/2007 7:42
Modification Time	11/13/2007 7:42
Sheet Name	A2-1 Elevations
Sheet Size	36.0 x 24.0 in

**AutoCAD Drawing**

- author
- comments
- copyright
- Creation Time: 10/18/2007 10:00

**Layers**

**Views**

**Cross Sections**

**Animations**

A2-1 Elevations 1 of 1

**North Elevation**

**East Elevation**

**Revision Table**

No.	By	Date

**Project Information**

R and J Architects  
 2121 1st Ave  
 10th Floor  
 Fort Worth, TX 76102

**Sheet Information**

Sheet Name: A2-1  
 Project Name: Rankin  
 Date: 11/13/2007

Contents



[1] A3-1 Building...

Model

Markups

Properties

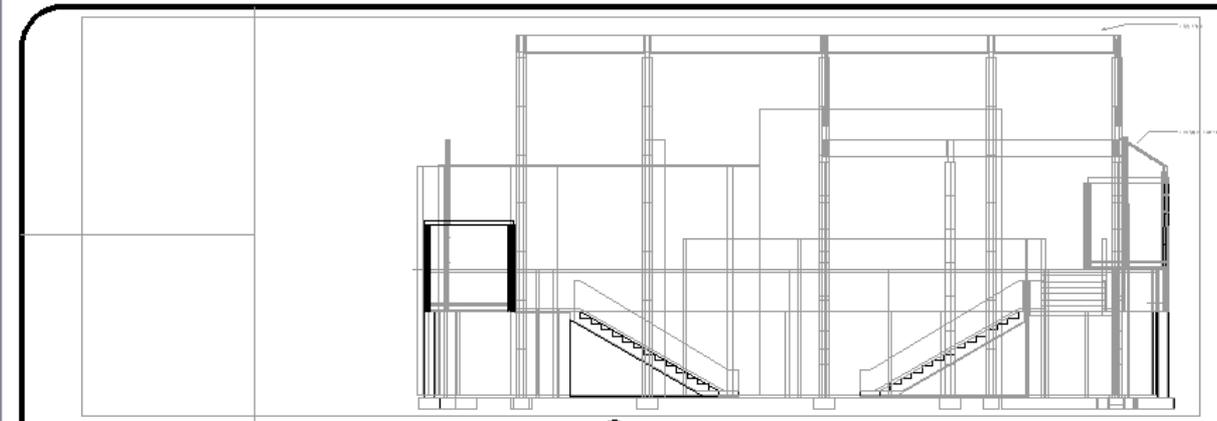
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author	SWN205
Creation Time	11/13/2007 6:11
Modification Time	11/13/2007 6:11
Sheet Name	A3-1 Building Sec
Sheet Size	36.0 x 24.0 in
<b>AutoCAD Drawing</b>	
author	
comments	
copyright	
Creation Time	10/18/2007 10:00

Layers

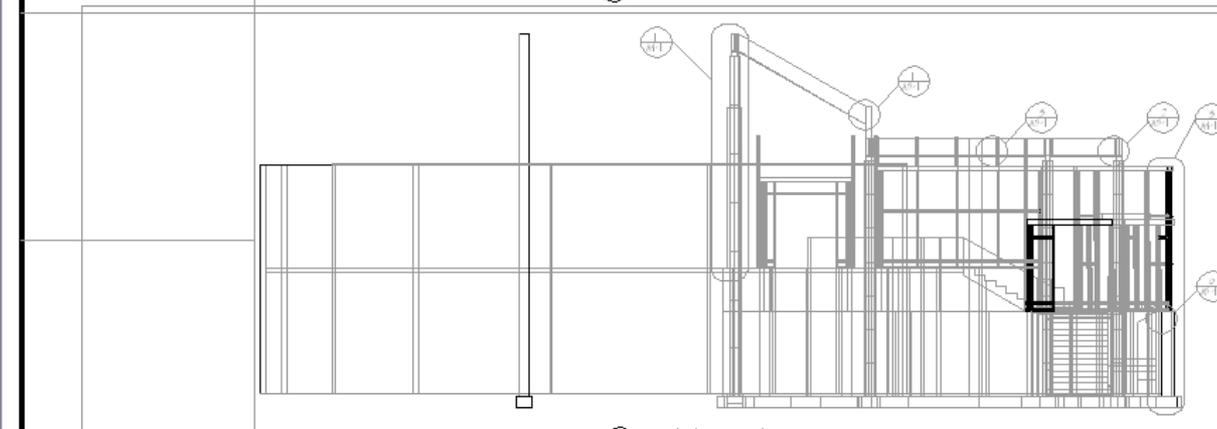
Views

Cross Sections

Animations



LONGitudinal BUILDING SECTION



TRANSVERSE BUILDING SECTION

Sheet Notes

No.	Rev.	Date

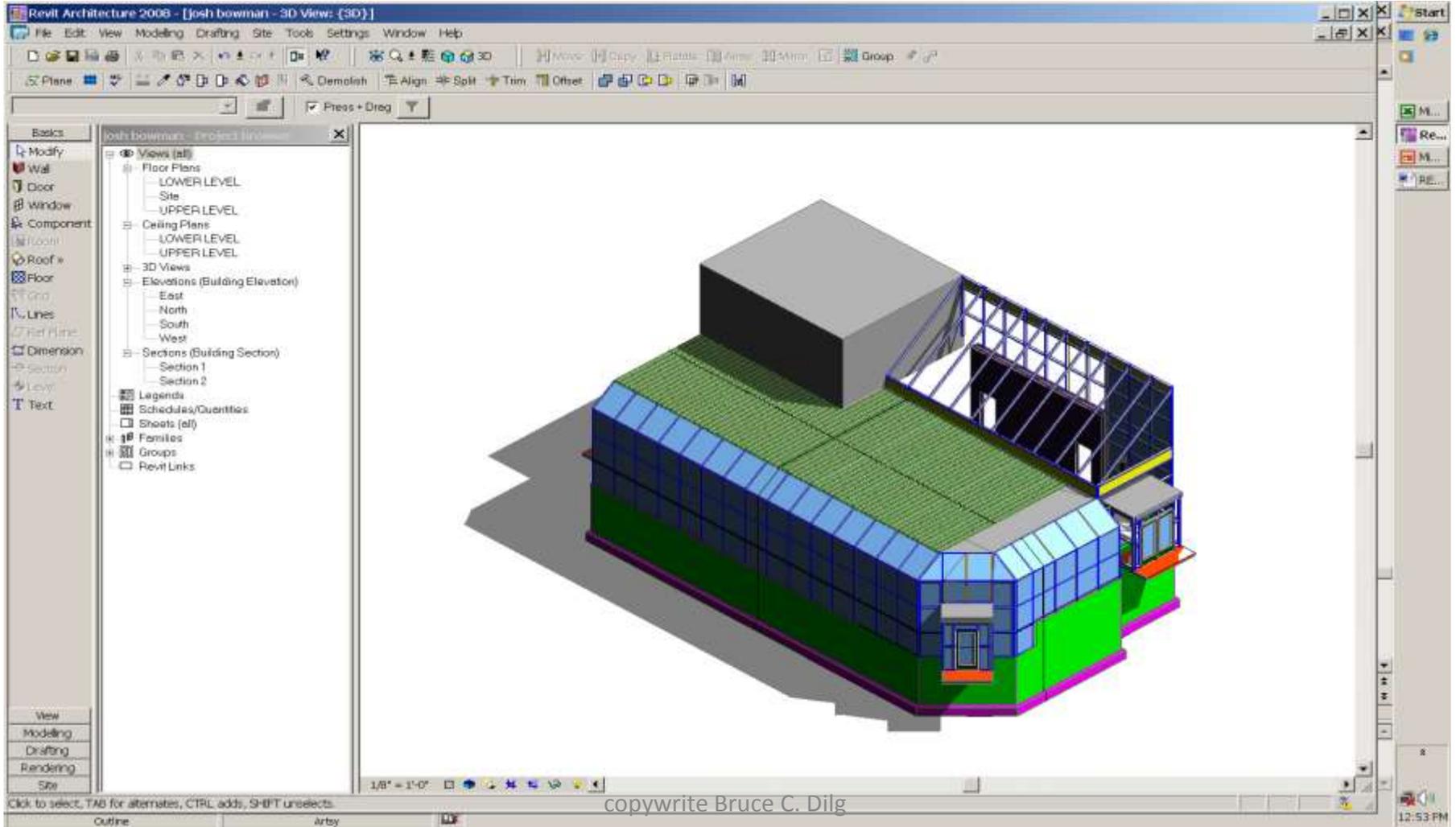
**R and J Architects**  
 2-27-08  
 1105 South 2nd Ave.  
 Fort Lauderdale, FL 33304

**2127 Ole Circle**  
 Fort Lauderdale, FL 33304  
 Project: 080401

	<b>A3-1</b>
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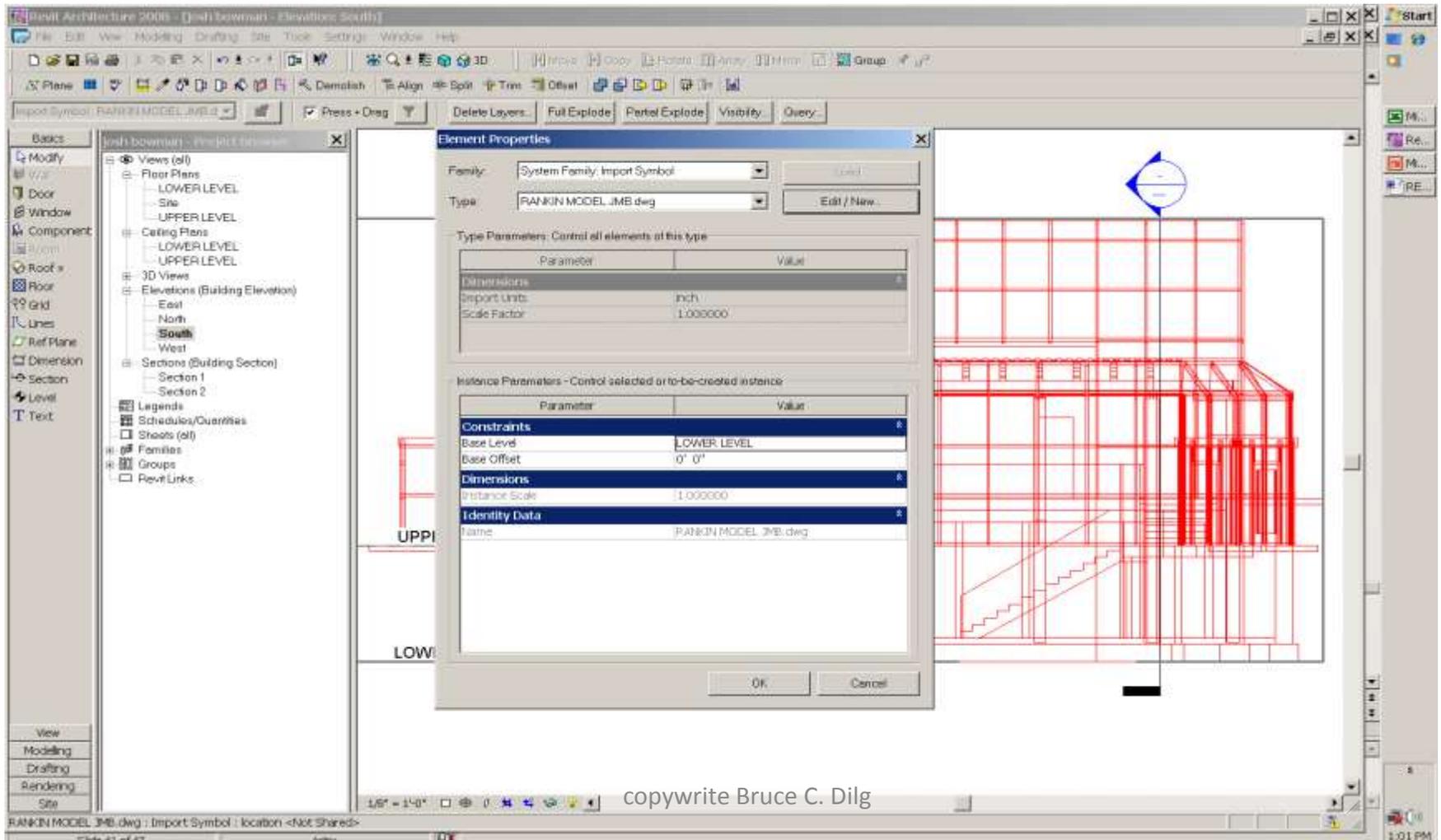
An example of a model created in AutoCAD and imported into REVIT. However everything in the model is “dumb” because it was done in AutoCAD.



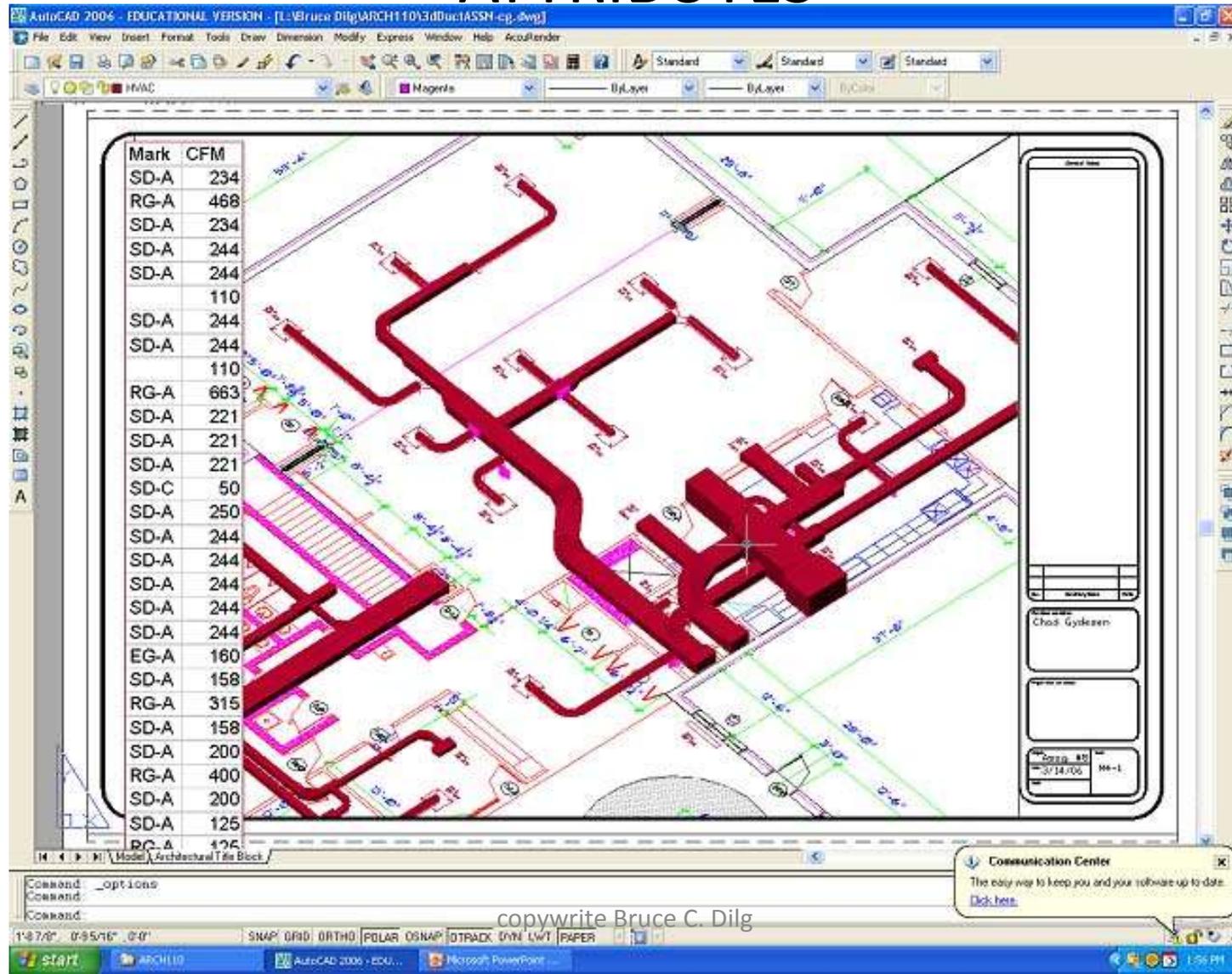




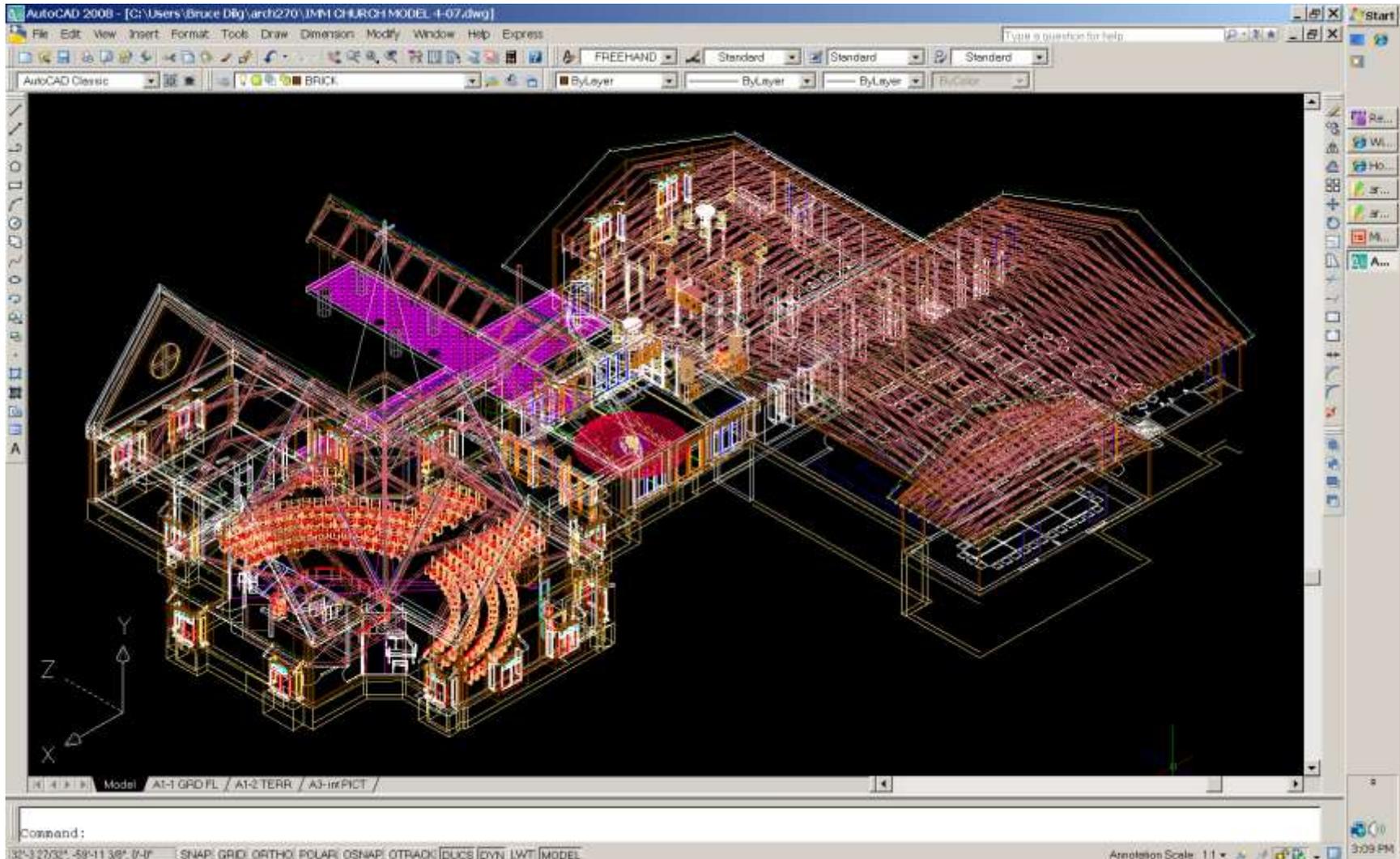
An AutoCAD model imported into REVIT retains its geometry, but as shown here has no Properties (Intelligent Data) associated with it.



# FERRIS STUDENT WORK MODELING IN AUTOCAD WITH INTELLIGENCE ADDED THROUGH ATTRIBUTES



# A Case Study of why “Dumb” models can add value but have substantial limitations.

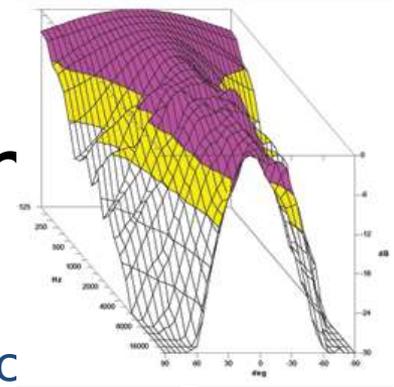


copywrite Bruce C. Dilg

The “DUMB” model produced in AutoCAD could produce great renderings and walkthroughs.



# Acoustical Consideration

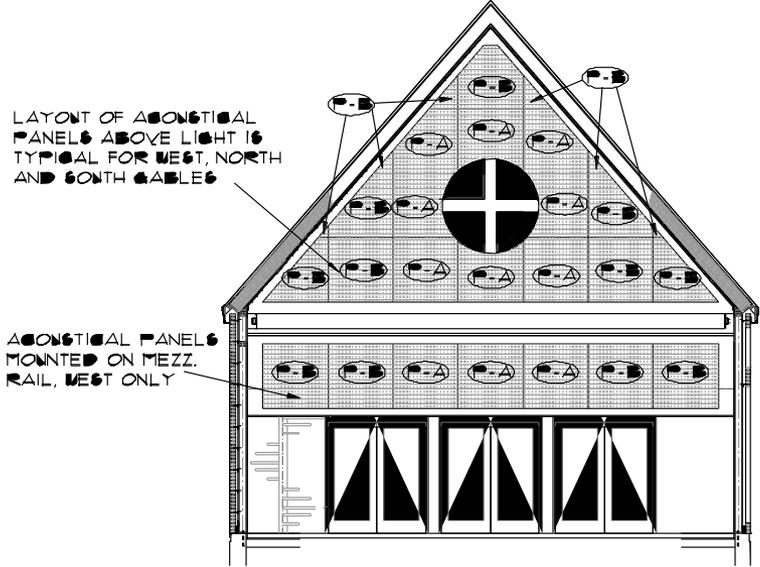


- The Acoustical Consultants diagnose potential acoustic problems and solve them—before those problems are built into new structures. As acoustical design consultants, we review architectural design plans, research applicable noise ordinances, conduct building site evaluations, and **use sophisticated acoustical modeling software** to deliver the optimal solutions.
- • **Acoustical Modeling for Architectural Design**
- Modeling acoustics before spaces are built can reveal [architectural acoustics](#) performance issues—arming architects, engineers, facilities managers, and building owners with acoustical modeling data and information to make the optimal design decisions. With sophisticated acoustical modeling software and the experience of our acoustical engineers, you can attain the desired acoustical environment for your clients.

# What happened?

- All of the data available in the architectural model was imported into a German acoustical modeling software.
- Acoustical modeling was done and an acoustical design report was prepared showing the extent, frequency and design of custom acoustical tuner panels to produce the acoustical ambiance and reverberation time desired.

# Implementation of Acoustical Recommendations



**ACOUSTICAL WALL PANEL SCHEDULE**  
 ALL PANELS BY KINETIC NOISE CONTROL

- PANEL P-A - STANDARD PANEL 4" THICK
- PANEL P-B - TUNED PANEL 4" THICK FABRIC-WRAPPED FIBERGLASS WITH PEGBOARD PANEL

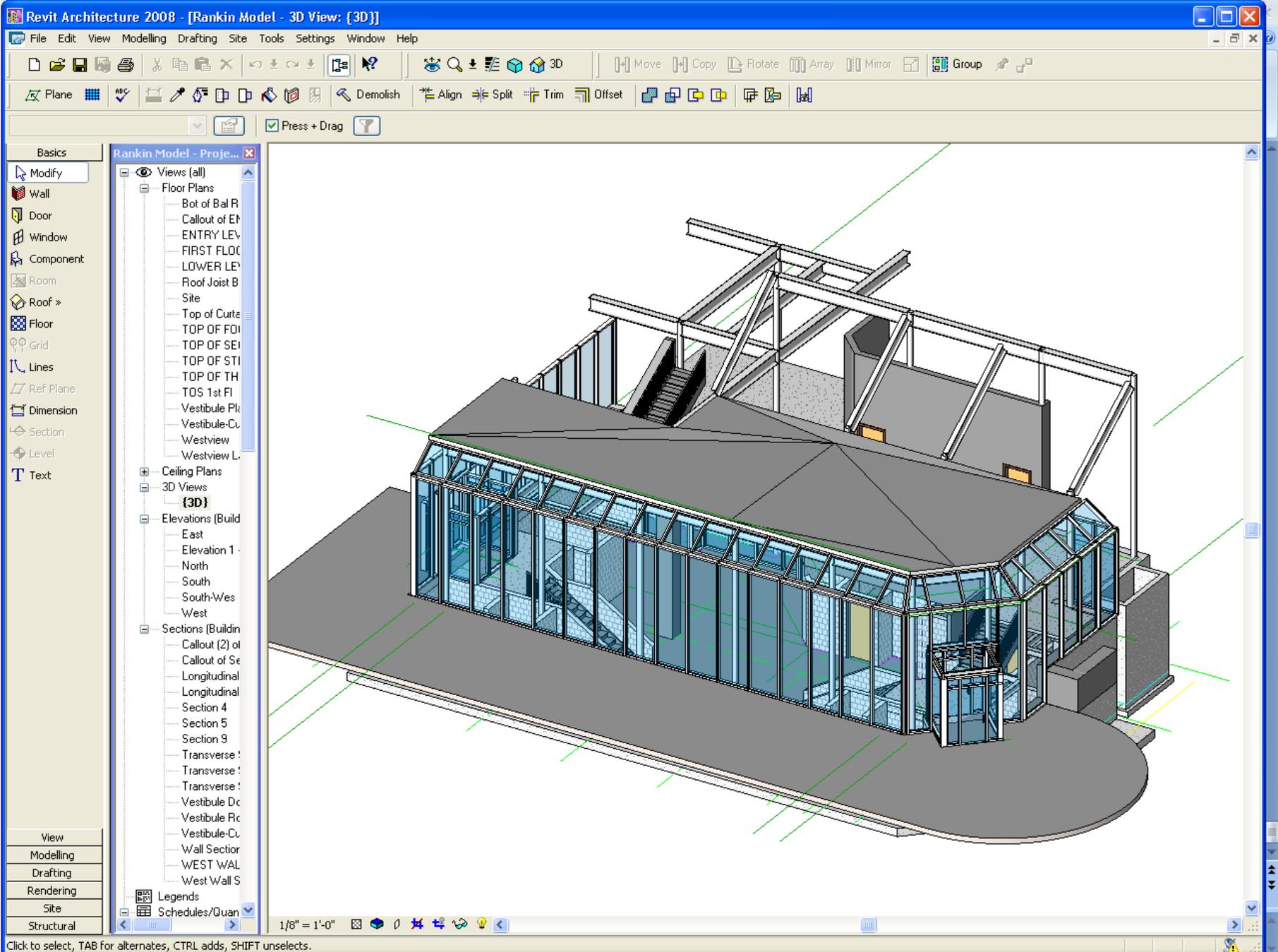
ALL PANELS TO BE MOUNTED PER MANUFACTURER'S RECOMMENDATIONS

4 TRANSVERSE SECTION THROUGH GANOTIARY - LOOKING WEST  
 AB-B scale 1/8" = 1'-0"

RELIEF AIR OPENING AS PART OF BRICK COURSE

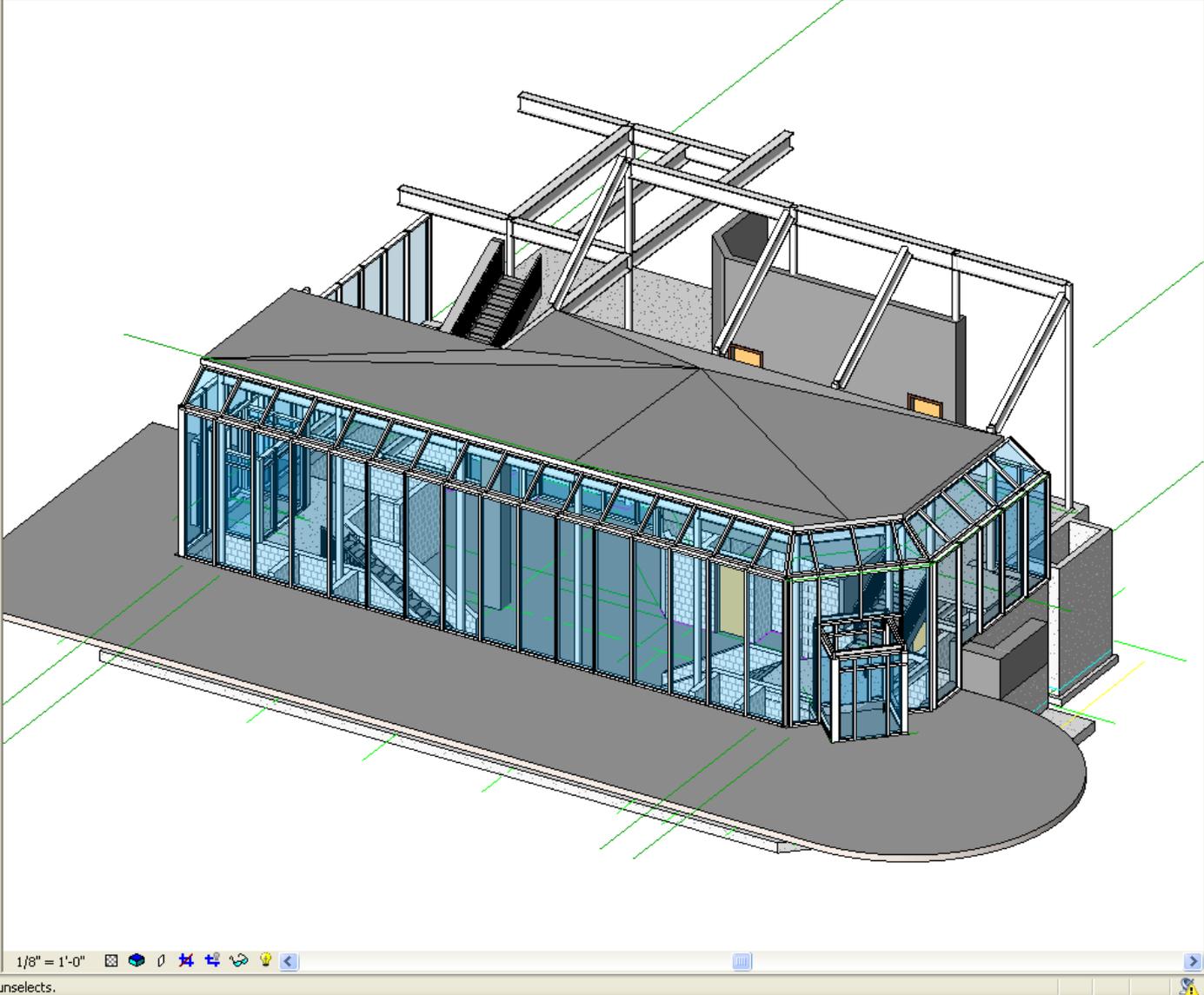
# The Reality

- When the building opened after all recommendations had been followed the acoustics were TERRIBLE!
- The Electrical Engineer had placed two lighting dimmer panels on the balcony. Each had three fans which produced 42db per fan.
- This was not accounted for in the model because the model was not “SMART”. It was just geometry.



Rankin Model - Proje...

- Views (all)
- Floor Plans
  - Bot of Bal R
  - Callout of EN
  - ENTRY LEV
  - FIRST FLOC
  - LOWER LEV
  - Roof Joist B
  - Site
  - Top of Curte
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  - TOP OF STI
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  - Vestibule Pl
  - Vestibule-Cu
  - Westview
  - Westview L
- Ceiling Plans
- 3D Views
  - {3D}
- Elevations (Build)
  - East
  - Elevation 1
  - North
  - South
  - South-Wes
  - West
- Sections (Build)
  - Callout (2) of
  - Callout of Se
  - Longitudinal
  - Longitudinal
  - Section 4
  - Section 5
  - Section 9
  - Transverse :
  - Transverse :
  - Transverse :
  - Vestibule Dc
  - Vestibule Rc
  - Vestibule-Cu
  - Wall Sector
  - WEST WAL
  - West Wall S
- Legends
- Schedules/Duan



1/8" = 1'-0"

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

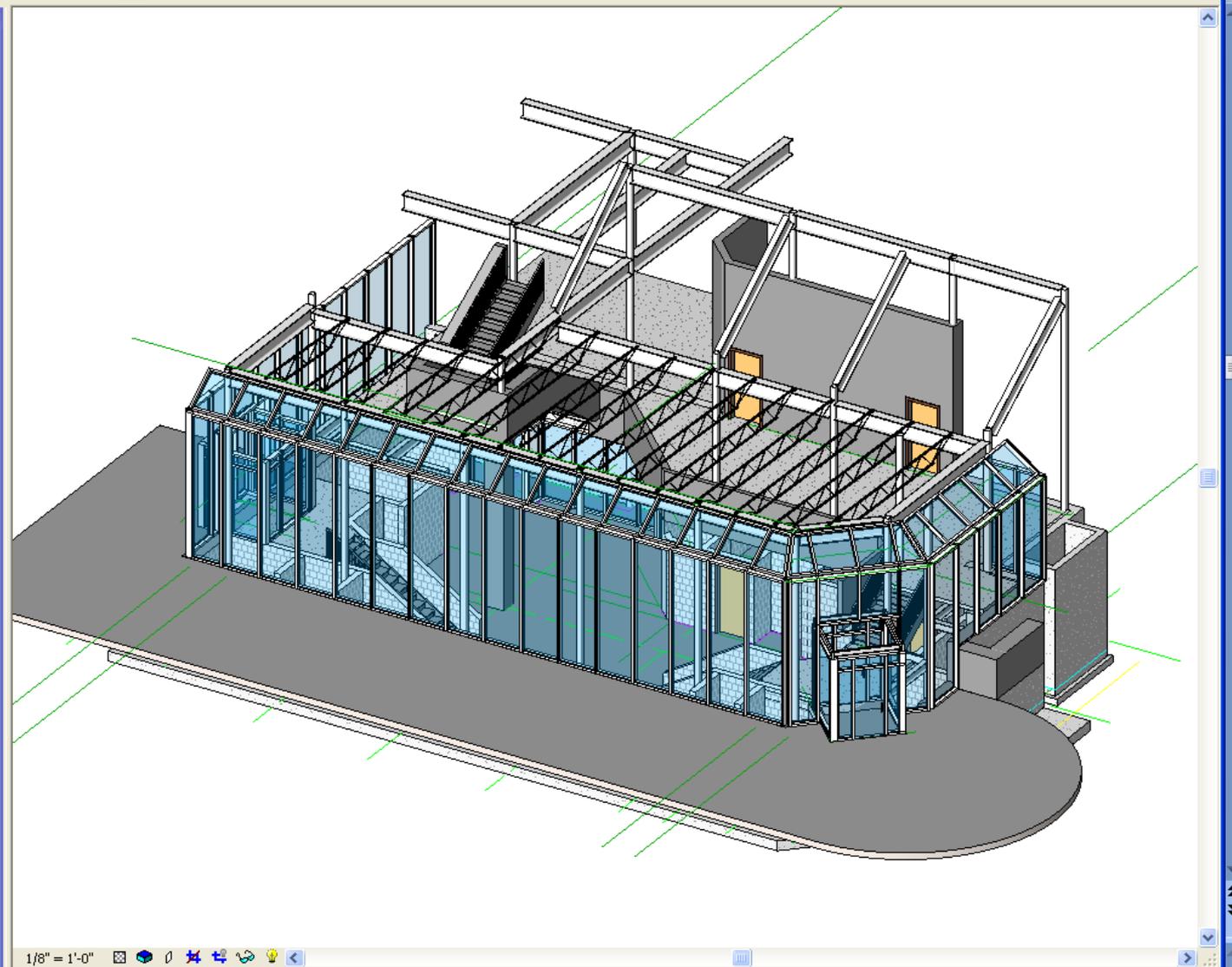


Basics

- Modify
- Wall
- Door
- Window
- Component
- Room
- Roof >
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

View

- Modelling
- Drafting
- Rendering
- Site
- Structural



Revit Architecture 2008 - [Rankin Model - Floor Plan: TOP OF STEEL]

File Edit View Modelling Drafting Site Tools Settings Window Help

Move Copy Rotate Array Mirror Group

Plane Demolish Align Split Trim Offset

Rankin Model - Proj... x

Views (all)

- Floor Plans
  - Bot of Bal R
  - Callout of EN
  - ENTRY LEV
  - FIRST FLOC
  - LOWER LEV
  - Roof Joist B
  - Site
  - Top of Curte
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  - TOS 1st FI
  - Vestibule Plk
  - Vestibule-Cu
  - Westview
  - Westview L
- Ceiling Plans
- 3D Views (3D)
- Elevations (Build)
  - East
  - Elevation 1
  - North
  - South
  - South-Wes
  - West
- Sections (Buildin)
  - Callout (2) of
  - Callout of Se
  - Longitudinal
  - Longitudinal
  - Section 4
  - Section 5
  - Section 9
  - Transverse :
  - Transverse :
  - Transverse :
  - Vestibule Dc
  - Vestibule Rc
  - Vestibule-Cu
  - Wall Sector
  - WEST WAL
  - West Wall S
- Legends
- Schedules/Duan

Open

Look in: Steel

C-Channel	LH-Series Bar Joist	ST-Struct
DLH-Series Bar Joist	LL-Double Angle	WRF-Wel
HP-Bearing Pile	MC-Miscellaneous Channel	WT-Struc
HSS-Hollow Structural Section	M-Miscellaneous Wide Flange	WWF-We
HSS-Round Structural Tubing	MT-Structural Tee	W-Wide F
K-Series Bar Joist-Angle Web	Plate	
K-Series Bar Joist-Rod Web	Round Bar	
L-Angle	S-American Standard	

File name:

Files of type: Family Files (\*.rfa)

No type catalog available

1/8" = 1'-0"



Basics

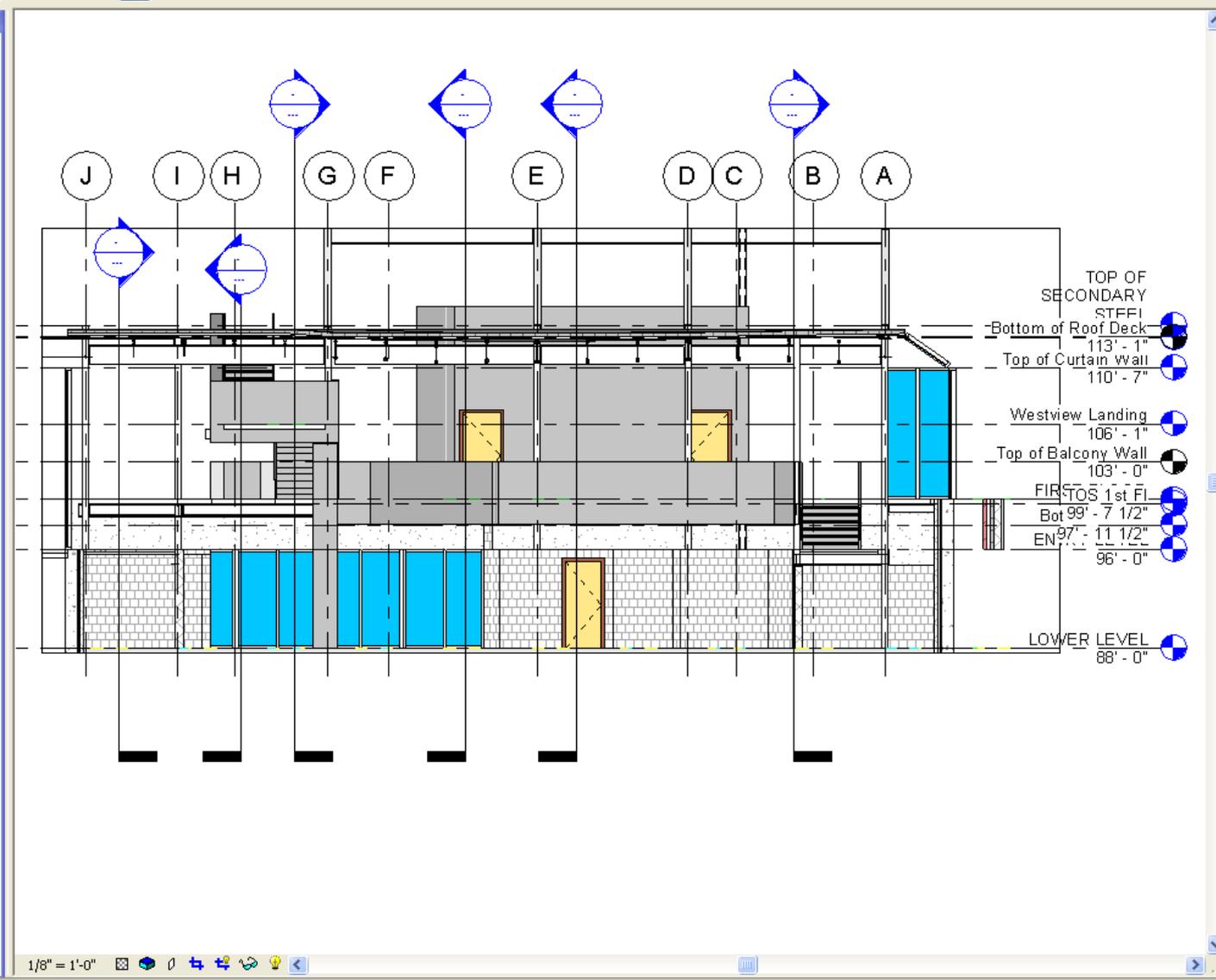
- Modify
- Wall
- Door
- Window
- Component
- Room
- Roof
- Floor
- Grid
- Lines
- Ref Plane
- Dimension
- Section
- Level
- Text

View

- Modelling
- Drafting
- Rendering
- Site
- Structural

Rankin Model - Proj...

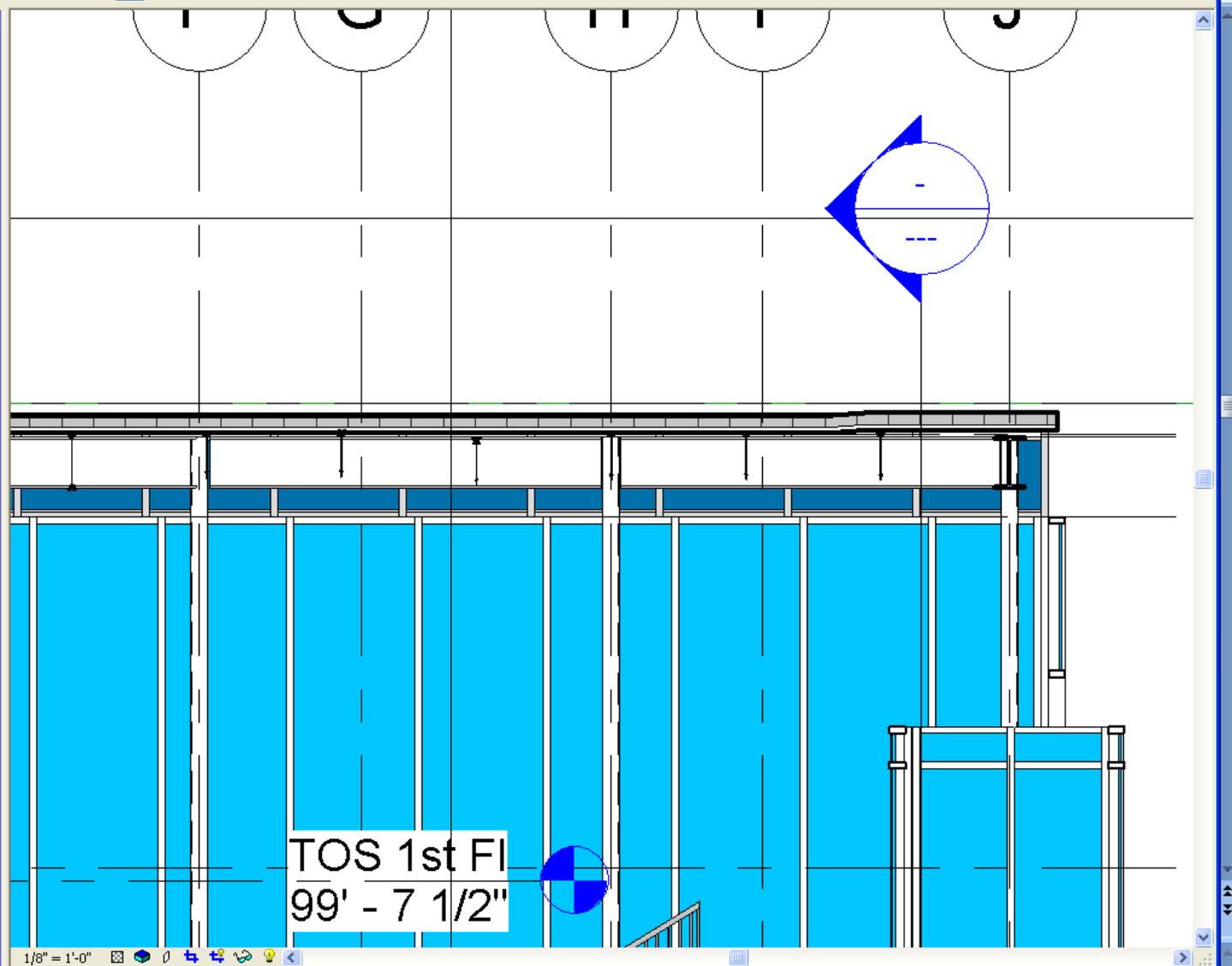
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  - Callout (2) of
  - Callout of Se
  - Longitudi**
  - Longitudinal
  - Section 4
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  - Wall Sector
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  - West Wall S
- Legends
- Schedules/Quan



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



- Basics
  - View
  - Modelling
  - Drafting
  - Rendering
  - Site
  - Structural
  - Modify
  - Ref Plane
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      - Wall Sector
      - WEST WAL
      - West Wall S
    - Legends
    - Schedules/Duan





# □ Designing details

Not neat, linear, or fully logical

Messy complex process

The bad

False starts, wrong turns, mental blocks, dead ends, backtracking, despair.

The good

Purposeful progress, intelligent decisions, creative synthesis, gratification, insight, and triumph

## **Section 2- Getting started**

The step by step process of detailing a building

- ❑ Step 1-Clarify your aspirations
  - ❑ Determine function, constructability, and aesthetics
- ❑ Step 2- Set performance standards
  - ❑ Identify key details, Put into sketch form
  - ❑ Draw given features; skeletal structure, plane of structural wall, ground plane, floor-to-floor dimensions
    - ❑ The first ideas for the key details will emerge logically from these elements
- ❑ Step 3-Access each detail
  - ❑ How does it meet the broad goals<sub>(function, constructability, and aesthetics)</sub>
  - ❑ How does each compare to performance standards
  - ❑ Look at compositional/spatial complications of first efforts

## **Section 2-** **Getting started**

The step by step process of detailing a building

- Step 4- refine aesthetic goals-Make more precise
  - Make notes graphically or in writing to summarize important items of each detail
    - Repeat for each detail - ensure common source
- Step 5-test details
  - Look at the less typical conditions
    - How does the detail turn the corner?
    - How is an opening made in it for a horizontal chase?

## **Section 2- Getting started**

The step by step process of detailing a building

# Use of the internet

The screenshot displays the Kawneer North America website in a Windows Internet Explorer browser window. The address bar shows the URL [http://www.kawneer.com/kawneer/north\\_america/en/home.asp](http://www.kawneer.com/kawneer/north_america/en/home.asp). The website features a red and grey color scheme. At the top, there is a navigation menu with links for HOME, ABOUT, NEWS, PRODUCTS, RESOURCES, and CONTACT US. A search bar is located below the navigation menu. The main content area is divided into several sections:

- Kawneer North America:** A section with a map of North America and text describing the company's offerings in architectural aluminum building products and systems for the commercial construction industry. It highlights features like efficiency, sustainability, and hurricane and blast resistance.
- What's New:** A section with three sub-sections: BIM Models, 2500 PG Unitwall™, and Featured Project. Each sub-section has a corresponding image.
- REALM CONDOMINIUMS:** A large image of a modern high-rise building in Atlanta, Georgia, USA.
- INTRODUCING KAWNEER'S NEW LIGHT SATIN ALUMINUM FINISH:** A red banner with white text announcing a new architectural metal series, with a "Take a closer look" button.

The footer of the website contains copyright information: ©2008 Kawneer | 3186666 | Privacy Policy | Legal Notices | KawneerDirect | Kawneer. The browser's taskbar at the bottom shows the date as Wednesday, November 26, 2008, and the time as 9:10 AM.



Search input field with 'GO' button

Resources

- Overview
- AIA Continuing Education
- BIM Models
  - Overview
  - Curtain Wall
  - Entrances - Sliding
  - Entrances - Swing
  - Storefronts - Framing
  - Sun Control Products
  - Windows - In/Out Projecting
- Blast Resistant Info
- Cad & Spec Download
- Featured Projects
- Finishes
- Fire-Rated Products
- Hurricane Resistant Products
- Industry Websites
- KawneerDirect Customer Login
- Kawneer Global Special Projects
- Kawneer Training Center**
- Material Safety Data Sheets (MSDS)
- Miscellaneous Booklets
- Product Literature
- Sustainable Solutions
- Sweets Brochures

BIM Models - Overview

Kawneer NA > Resources > BIM Models > Overview

KAWNEER'S BIM MODELS. DESIGN THE WAY YOU THINK

In support of an emerging trend in architecture, Kawneer has adopted Building Information Modeling (BIM) to deliver product specific content to the design community. Kawneer's BIM product models help bring your vision to life, providing a virtual hand to help you design the way you think.

Our growing library of BIM models will enable architects to be more efficient in the design process and demonstrates our continued commitment to providing valuable products and tools to architects and customers.

To deliver the library of BIM models to a broad audience, Kawneer has partnered with one of the leading developers of manufacturer specific BIM content in the construction marketplace, BIMWorld.

Our models are offered in Autodesk® Revit®, as well as a variety of applications, including, Graphisoft® ArchiCAD®, Bentley Architecture, and Google™ SketchUp.

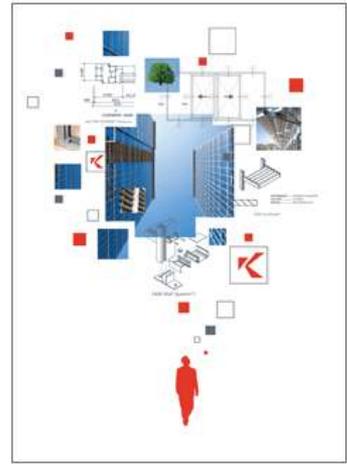
DOWNLOADS AND LINKS

Click on the links below to download Kawneer BIM product models:

- [Curtain Wall](#)
- [Entrances - Sliding](#)
- [Entrances - Swing](#)
- [Storefronts - Framing](#)
- [Sun Control Products](#)
- [Windows - In/Out Projecting](#)

OR

Click on the link below to view, browse, download and manage BIM models via the BIMWorld website. → [bimworld.com](#)



Link to Advertisement → [PDF of BIM advertisement](#)

Promotional video → [video \[WMV, streaming\]](#)



Kawneer

1600 SS™ (Screw Spline) - (2-1/2" x 6&amp;#

Based on the popular tried and true design of 1600 Wall System®1 and 2, the 1600 SS's screw spline joinery allows 1600 SS to be sealed in more controlled shop conditions than the job site provides. By pre-assembling and then delivering "ready to go" units, the time and effort required in the field is minimized.

**Key Features Include:**

- glazed captured or SSG curtain wall system
- 1600 SS™ has 2-1/2" (63.5) sightlines
- Standard 6" (152.4) or 7-1/2" (190.5) depth systems
- Infill options up to 1-1/8" (28.6)
- Perimeter seal can be installed at the pressure plate or mullion shoulder
- 1600 SS™ can be supplied fabricated and knocked down (KD) or in stock lengths
- Interlocking mullion design to eliminate need for anti-buckling clips
- Concealed fastener joinery creates smooth, monolithic appearance
- EPDM gaskets and thermal break
- Screw spline joinery method allowing for shop assembly
- Corners available with shear block fabrication method
- Offers integrated entrance framing systems
- Silicone compatible glazing materials for long-lasting seals
- Two color option
- Permanodic® anodized finishes in 7 choices
- Painted finishes in standard and custom choices

**Optional Features**

- Captured system thermal separator can be pre-installed into pressure plate
- Captured and SSG systems integrate with concealed GLASSvent™
- Profit\$Maker® Plus die sets available
- Captured system Integrates with standard Kawneer windows
- Deep and bullnose covers available

**Product Applications**

1600 SS is ideal for high-rise buildings, hotels, hospitals, and government buildings.

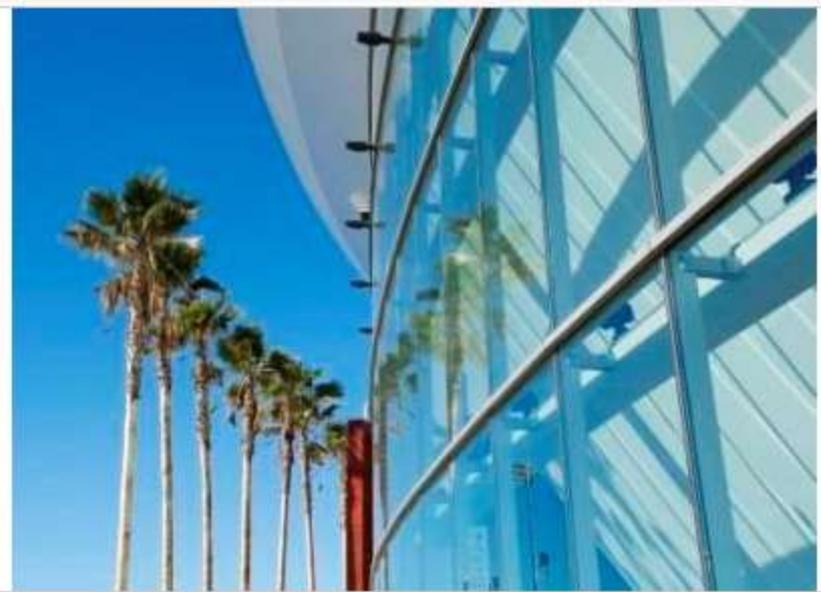


Download



INTRODUCING KAWNEER'S  
BIM PRODUCT MODELS

[View DWF](#) | [Rate this Object](#) | [Kawneer-1600\\_SS\\_6](#)



[Product Overview](#) | [Product Data](#) | [Content Downloads](#) | [Download Cart](#)

[View Download Cart](#)

File Description	File T
1600 SS™ (Screw Spline) Spec.	.z
SSG with Pressure Plate - 6" Deep Mullion (1" and 1/4" infill)	.z
3D Revit Family	.r
3D Autocad Model	.d
3D Bentley Model	.c
3D Sketchup Model	.s
3D Archicad Model	






**Oldcastle Glass<sup>®</sup>**  
Engineered Products



Learning Unit  
Request Form



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Software  
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[Entrances](#)

[Heat/Smoke Vents](#)

[Ribbon Windows](#)

[Single Slope Lean-To](#)

[Sliding Storefronts](#)



**HR-251**

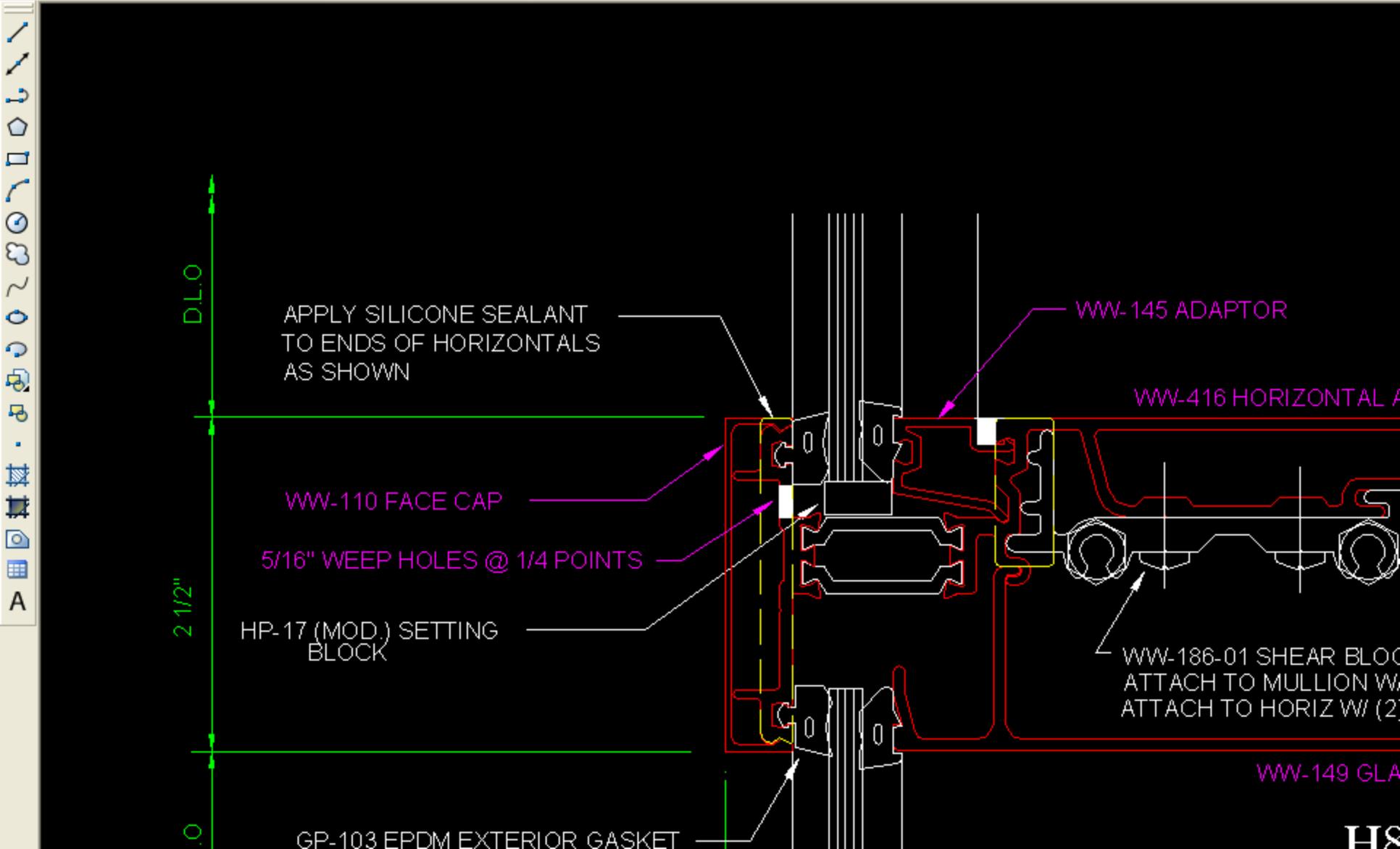
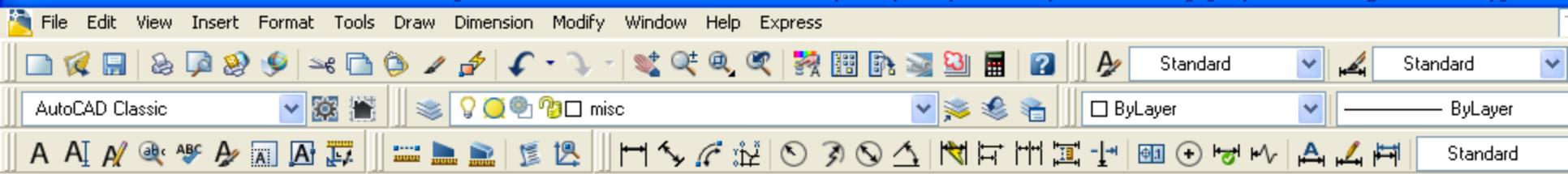
**StormMa**

IMPACT RESISTANT CURTAIN WALL SY

**HR-251**



**Oldcastle Glass<sup>®</sup>**



Picture Tasks

- View as a slide show
- Order prints online
- Print pictures
- Copy all items to CD

File and Folder Tasks

- Make a new folder
- Publish this folder to the Web

Other Places

- Bruce Dilg
- My Pictures
- My Computer
- My Network Places

Details

ARCH 203  
File Folder



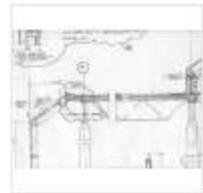
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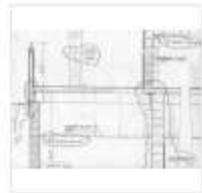
2006 Energy Code



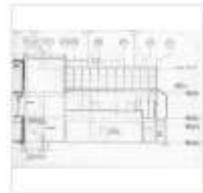
ARCH203 lecture schedule f08



ATRIUM DETAIL



BALCONY



BLDG SECT EAST



curtain walls



ENTRY DETAIL



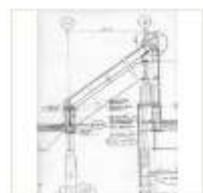
FL FRAME



FTG DETAIL



GRD FL PLAN



HIGH ATRIUM DETAIL



MEASURED DRAWINGS



Rankin 1



RANKIN ENTRY



Rankin North



Rankin West



ROOF FRAME





File Edit View Modelling Drafting Site Tools Settings Window Help

Move Copy Rotate Array Mirror Group

Plane Demolish Align Split Trim Offset

Press + Drag

Basics

Modify

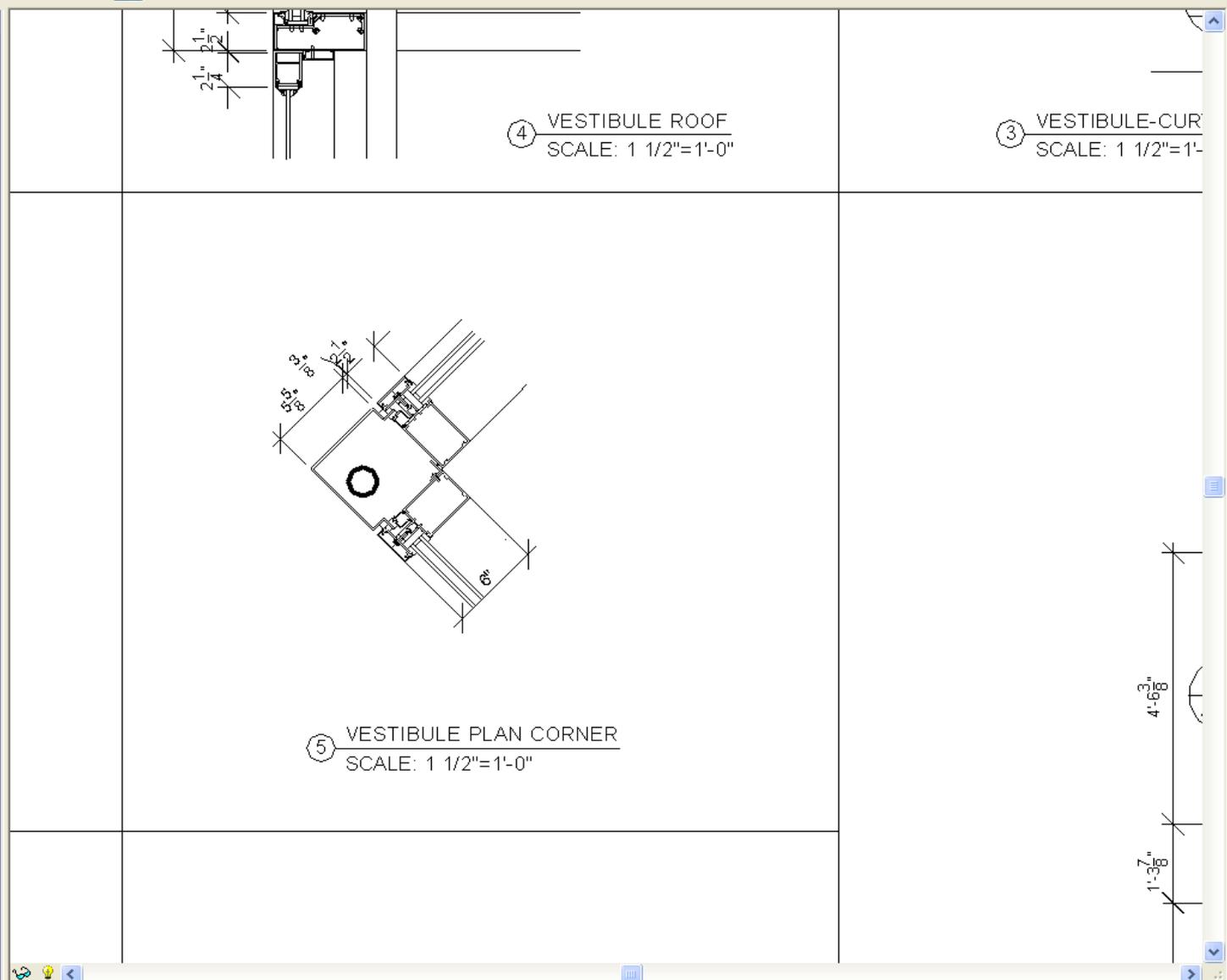
- Wall
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- Room
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- Floor
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- Dimension
- Section
- Level
- Text

View

- Modelling
- Drafting
- Rendering
- Site
- Massing
- Structural
- Construction

Rankin Center One...

- Views (all)
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    - Callout of E
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    - First Floor
    - Lower Level
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Click to select, TAB for alternates, CTRL adds, SHIFT unselects.



Basics

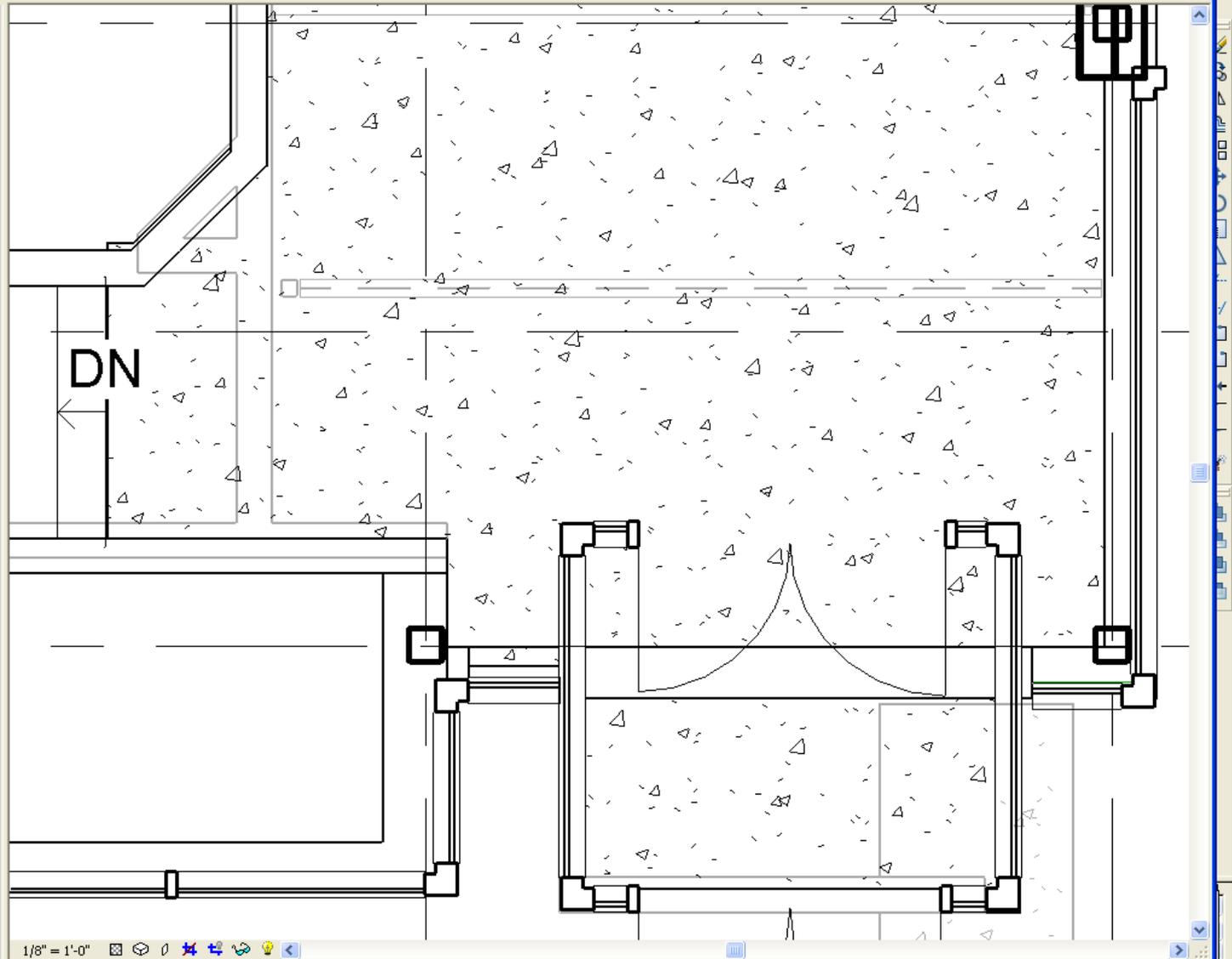
- Modify
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rankin-enty - Project...

- Views (all)
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    - Columns
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      - Curtain Wall
      - Empty Syste
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      - Solid
    - Curtain Systems

View

- Modelling
- Drafting
- Rendering
- Site
- Massing
- Room and Area
- Structural
- Construction



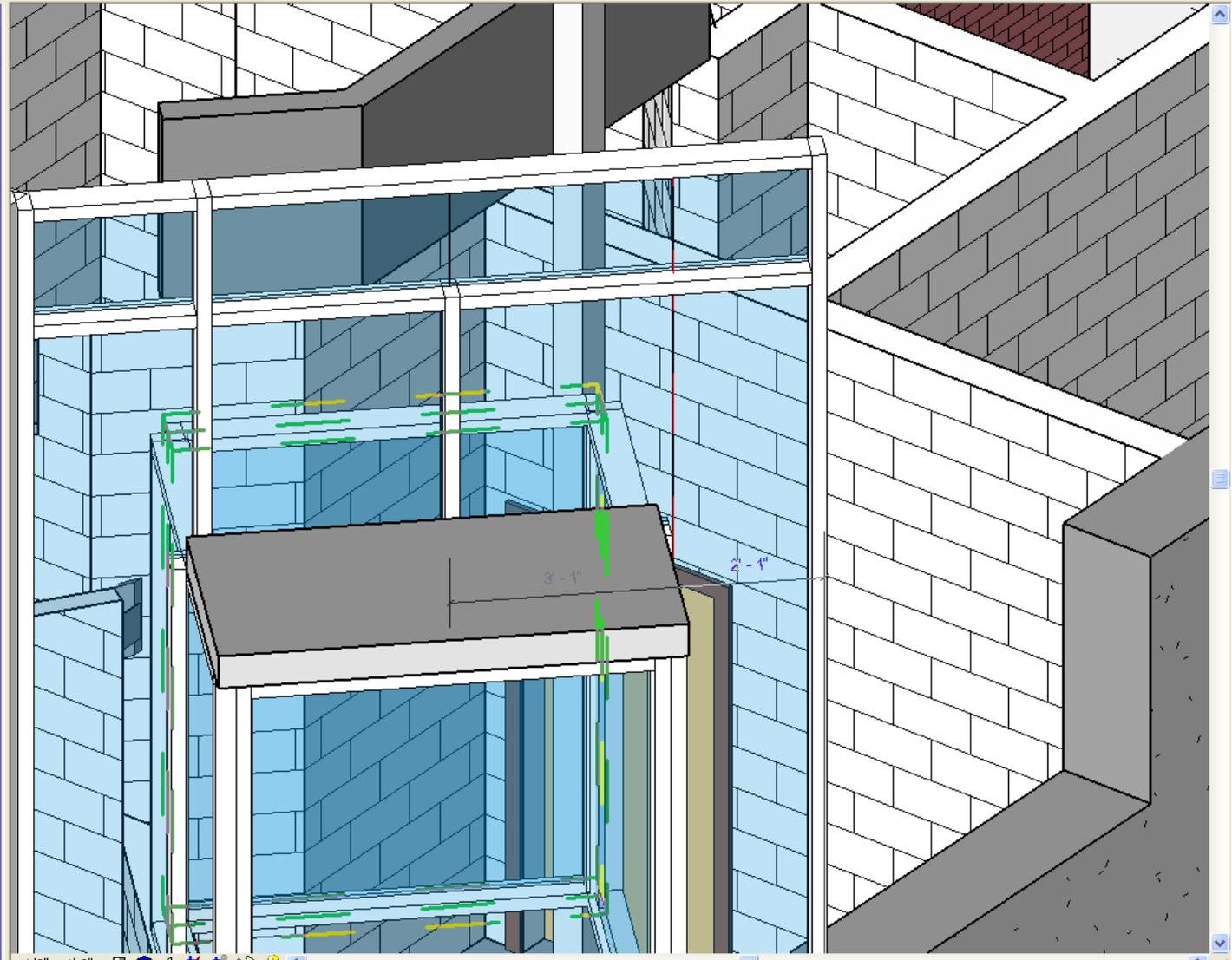
File Edit View Modelling Drafting Site Tools Settings Window Help

Move Copy Rotate Array Mirror Group

Plane Press + Drag Add or Remove Segments

- Basics
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- Modelling
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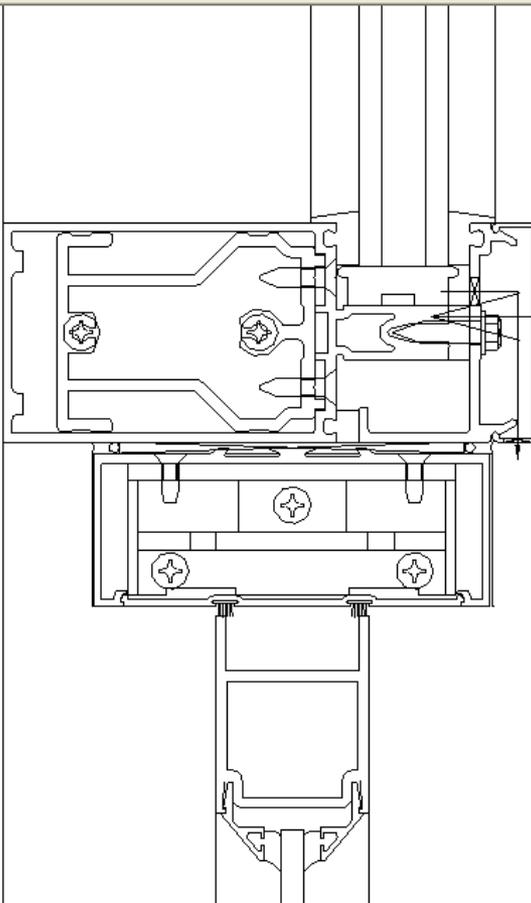


Walls : Curtain Wall : Exterior Glazing

Found New Hardware  
USB Mass Storage Device

- Basics
- View
- Modelling
- Drafting
- Modify
- Dimension
- Spot Dimension
- Text**
- Grid
- Level
- Ref Plane
- Scope Box
- Keynote >
- Tag >
- Room Tag
- Tag All Not Tag
- Symbol
- Legend Comp
- Color Scheme L
- Detail Lines
- Detail Group
- Detail Compone
- Masking Region
- Repeating Deta
- Insulation
- Filled Region
- Revision Cloud
- Rendering
- Site
- Massing
- Structural

- Rankin - Project bro... x
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    - Floor Plans
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      - TOVR
      - TOW
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      - BUILDING 9
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WI  
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**Found New Hardware**  
U3 smart 2GB

# STUDENT COMMENTS ON THE USE OF BIM

- Using REVIT forced me to understand how the building was put together and what was behind every wall.
- REVIT is a complex program to learn but a great way to force yourself to think like a contractor and examine the buildings details.
  - The way changes are so easily fixed makes learning a new program well worth it.
- It's hard to explain the simplicity of REVIT compared to AutoCAD, it just is. It took me only half the time to be as far on the Rankin Center model in REVIT compared to AutoCAD.
- When I heard Professor Dilg announce he was switching to a new program it made me extremely nervous because of my past experiences. When I saw how much easier REVIT was than CAD it was like an answer to my prayers. REVIT allows you to be a builder without the hard hat. This building program makes designing goals so much clearer and you really get a chance to challenge your knowledge and go to the next step of how a building is really built.

# Comments from the Ferris Physical Plant on the use of BIM

We have investigated BIM but have not used it to date. There seems to be two primary reasons as to why we have not gotten involved to date:

- Cost - BIM is not currently a universal tool in the A/E world. It seems to be growing and more prevalent in the last two years. I can think of only one or two firms that we have interviewed in the last 3-4 years that have this as a basic service. There may be another 2-5 firms that would offer it as an additional service but I think we would be their guinea pig.
- The other issue is that there seems to be very little participation from the construction industry in BIM. I am aware of one firm that has gone after our projects that is very familiar with BIM. Several are indicating that they are looking at it but to date have not gone in that direction.

I think this is the way of the future. Especially as the next generation takes over for us old guys in the industry.

Michael J. Hughes  
Associate Vice President for Physical Plant

# What's Next?

- Expand use of BIM into Advanced Construction Documents, add mass modeling.
- Bring BIM into HVAC program to replace AutoCAD.
  - Bring BIM into FM program.
  - Bring BIM into CM program.
- Develop cross university virtual course with the University of Oklahoma.

