



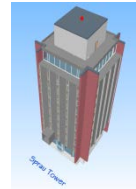
WESTERN MICHIGAN UNIVERSITY



BIM FOR SKILLED TRADES TRAINING MANUAL

Course goals

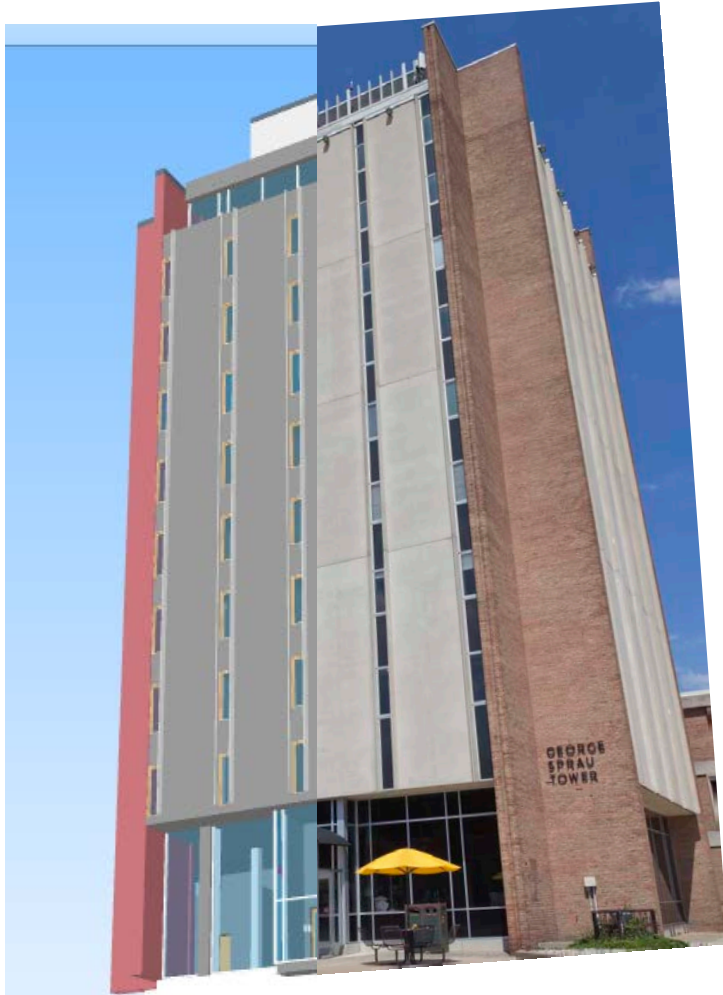
- Understanding what is BIM



- Learning how to access and navigate models on your iPad

- Learning how access the data

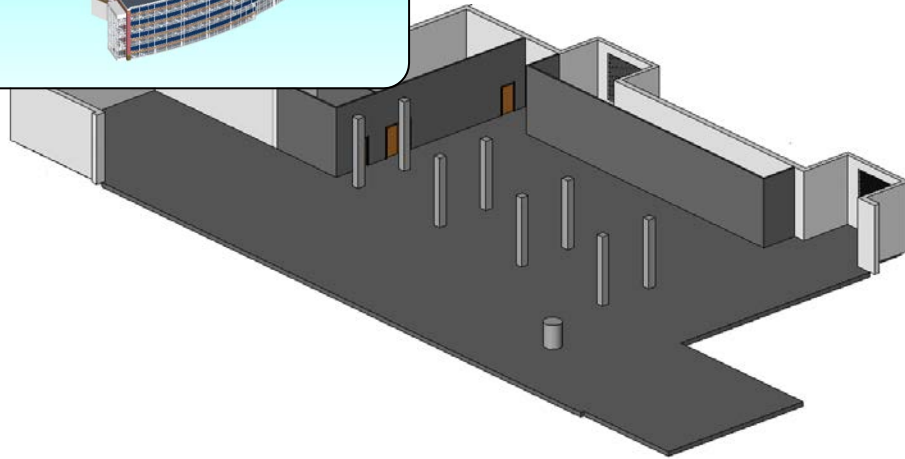
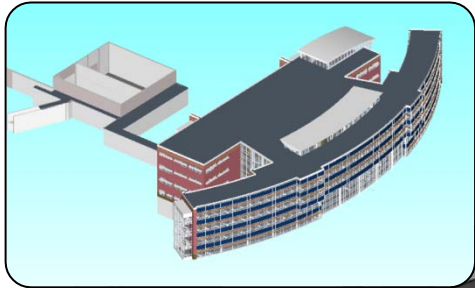
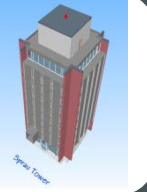





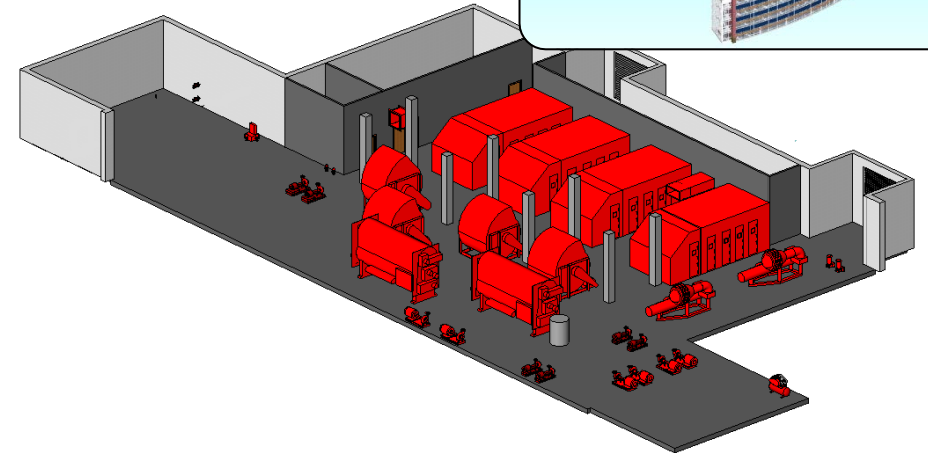
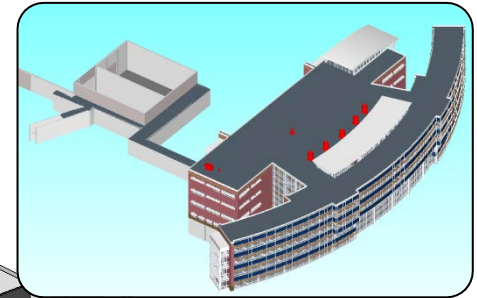
Sprau Tower

■ I. WHAT IS BIM

What is BIM?



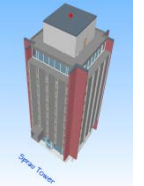
Properties	
	Absorption Chiller - Single Stage - 975-1350 Ton 975 Tons
Mechanical Equipment (1) Edit Type	
Constraints	
Level	Sub Basement
Host	Floor: Generic - 12"
Offset	0' 0"
Text	
WMU_LOCATION	083-SB05
WMU_MANUFACTURER	Thermax - USA
WMU_MODEL #	S530CCU
WMU_SERIAL #	9
WMU_SUBTYPE DESC	Steam Absorption
WMU_TYPE DESC	Chiller
DESCRIPTION	Chiller 4 (Steam)
WMU_TAG #	083CWCH4
WMU_FILTER TYPE	
WMU_FILTER SIZE	
WMU_FILTER QUANTITY	0
WMU_MOTOR ID	CH4-7806
WMU_MOTOR MODEL #	
WMU_MOTOR SERIAL #	
WMU_MOTOR HP	
WMU_MOTOR FRAME	
WMU_BEARING/COUPLING SIZE	
WMU_BELT NAME	
WMU_BELT SIZE	
WMU_BELT QUANTITY	0



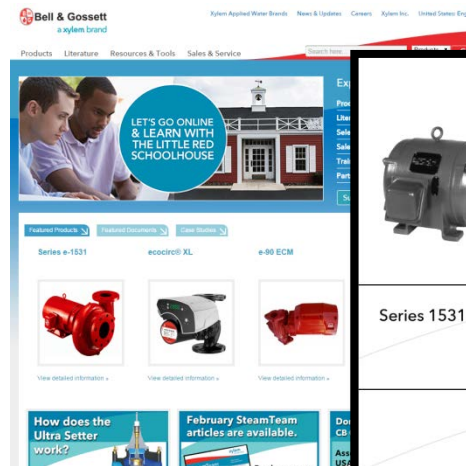
BUILDING 3D MODEL + INFORMATION + MODELLING

BUILDING INFORMATION MODELING

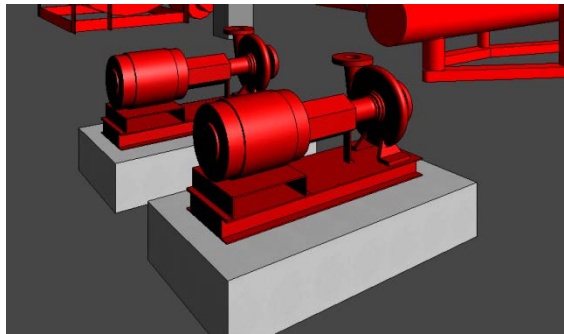
What is BIM?



Manufacturer website



Documentation



BUILDING 3D MODEL

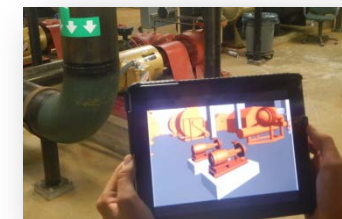


INFORMATION

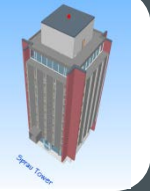


MODELLING

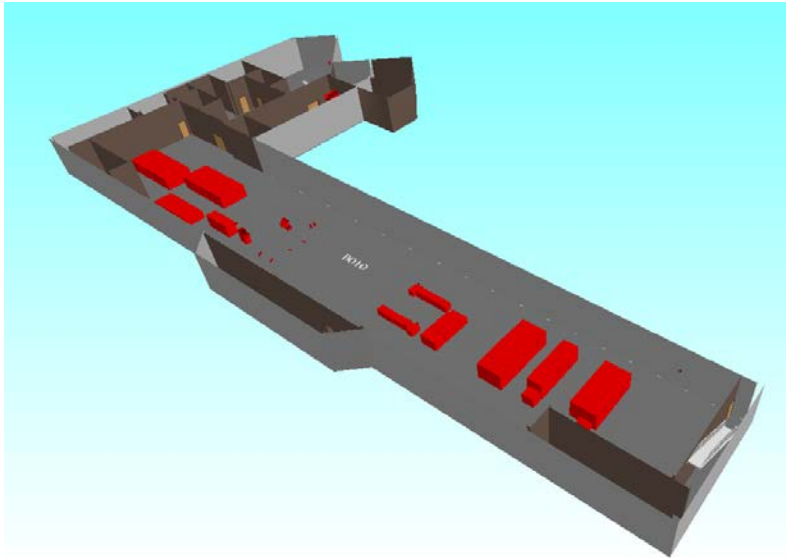
BUILDING INFORMATION MODELING



WMU BIM: EXISTING BUILDING AND NEW BUILDING



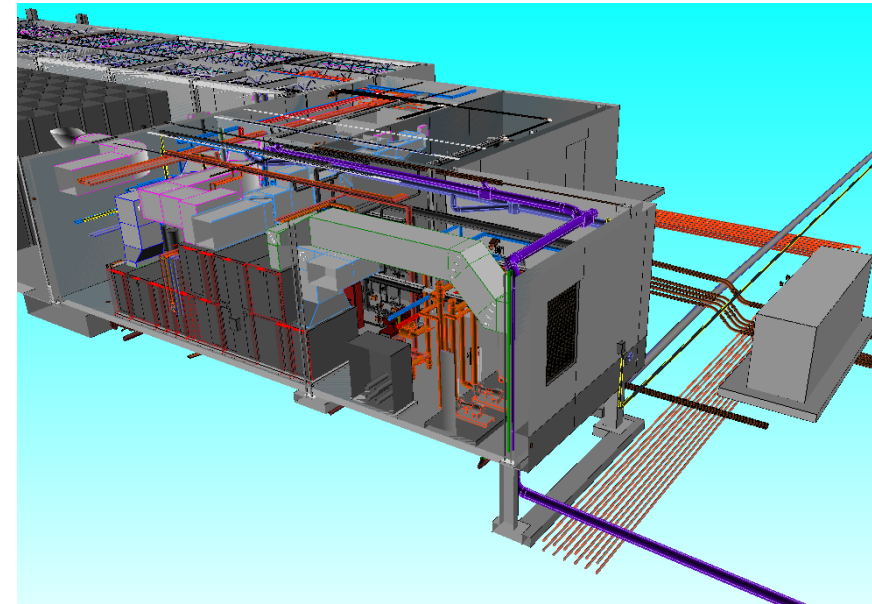
082 Dalton



Existing Building Model

What is in it? Mechanical equipment (8 categories)
What information you can find? 20 types of information

149 Zhang Legacy Building



New Building Model

What is in it? All the MEP and Technological systems
What information you can find? Various information

EXISTING BUILDING: Mechanical equipment



WHAT EQUIPMENT CAN YOU SEARCH IN THE MODEL?

8 different Categories of Mechanical equipment



Type

Sub-type (examples)

Air Handling Unit

Air handler, Roof top unit

Air Compressor

House Air, Control Air

Chiller

Electric – Centrifugal, Steam Absorption, Electric - Screw-type, Recipricating, Electric – Rotary,

Condensate Equipment

Condensate Pump

Cooling Tower

Air Cooled, Gear Box, Free Cooler, Evaporative

Fan

Exhaust Fan, Return Fan, Supply Fan, Strobic Exhaust Fan, Relief Air Fan, Smoke Purge

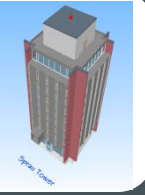
Pump

Chilled Water Circulating, Cooling Tower Circulating, Domestic Cold Water Circulating, Domestic Hot Water Circulating, Glycol Circulating, Heating Water Circulating, Sanitary Water Pump, Snow Melt Circulating, Specialty Pumps, Sump Pump, Vacuum Pump

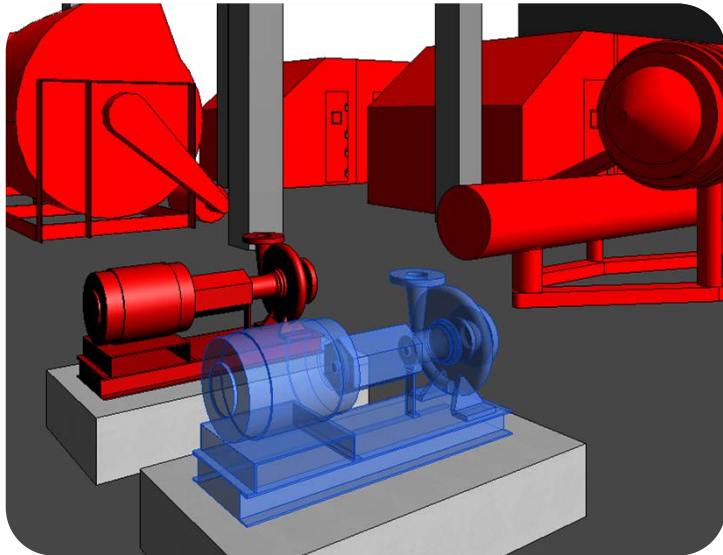
Refrigeration Equipment

Condensing Units, Furnace, AC

EXISTING BUILDING: Mechanical Equipment



WHAT INFORMATION CAN YOU FIND?



#20 Types of information

WMU_SUBTYPE DESC

WMU_TYPE DESC

DESCRIPTION

WMU_TAG #

WMU_LOCATION

WMU_MANUFACTURER

WMU_MODEL #

WMU_SERIAL #

WMU_FILTER TYPE

WMU_FILTER SIZE

WMU_FILTER QUANTITY

WMU_MOTOR ID

WMU_MOTOR MODEL #

WMU_MOTOR SERIAL #

WMU_MOTOR HP

WMU_MOTOR FRAME

WMU_BEARING/COUPLING SIZE

WMU_BELT NAME

WMU_BELT SIZE

WMU_BELT QUANTITY

General information

Filter

Motor

Belt

Future

Additional Documents

Web Links

SEQUENCE OF OPERATION

SUBMITTAL

PUMP CURVE

O&M

FAN CURVE

Web links



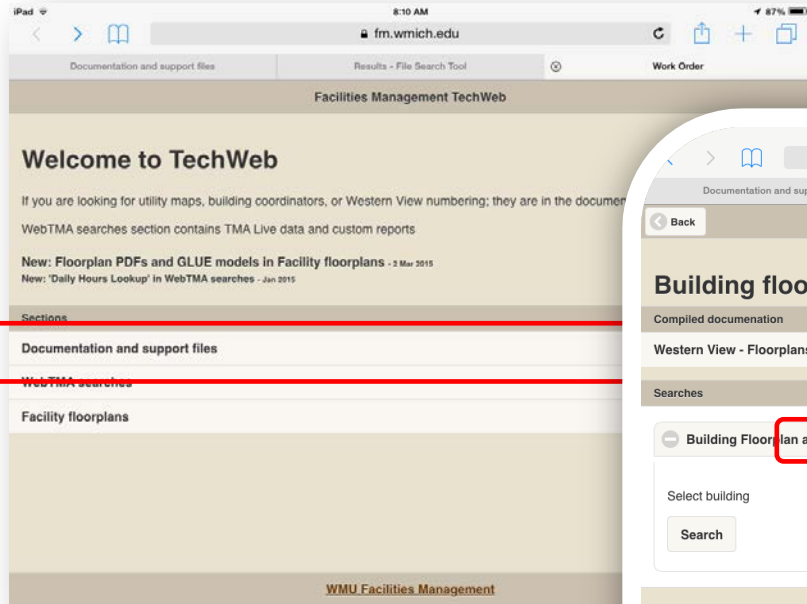
■ 2. HOW TO ACCESS THE BUILDING

HOW TO ACCESS THE BUILDING: webTech

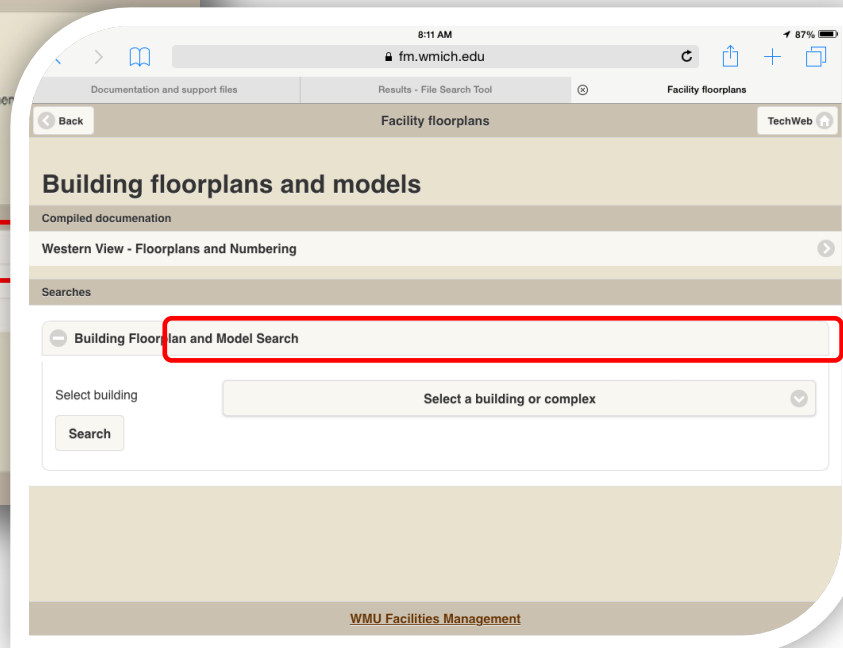


Step 1: Open “webTech” App on your iPad

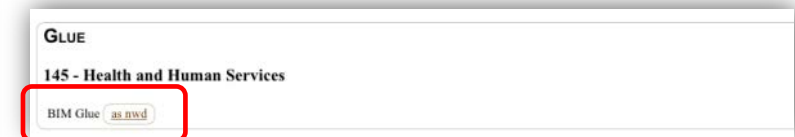
Step 2: Open floorplans



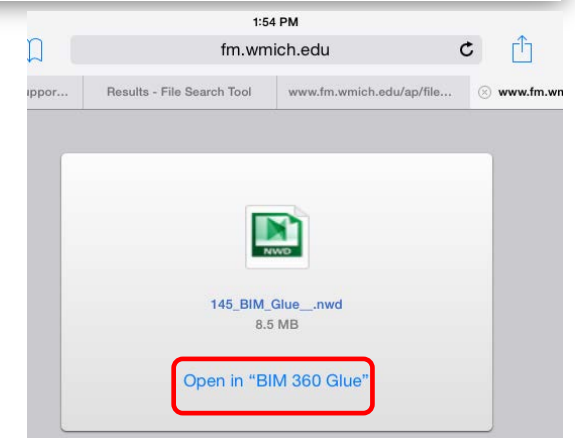
Step 3: Select building and click search



Step 4: Click on “as NWD” in the Glue tab..



..and click open in BIM 360



HOW TO ACCESS THE BUILDING: BIM360 Glue



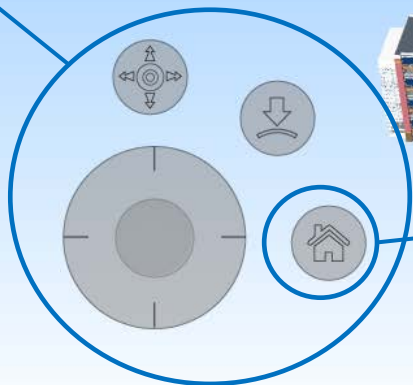
Exit to models

Exit to browse the models

← Models

Navigation Pane

Main buttons to browse the model



Home

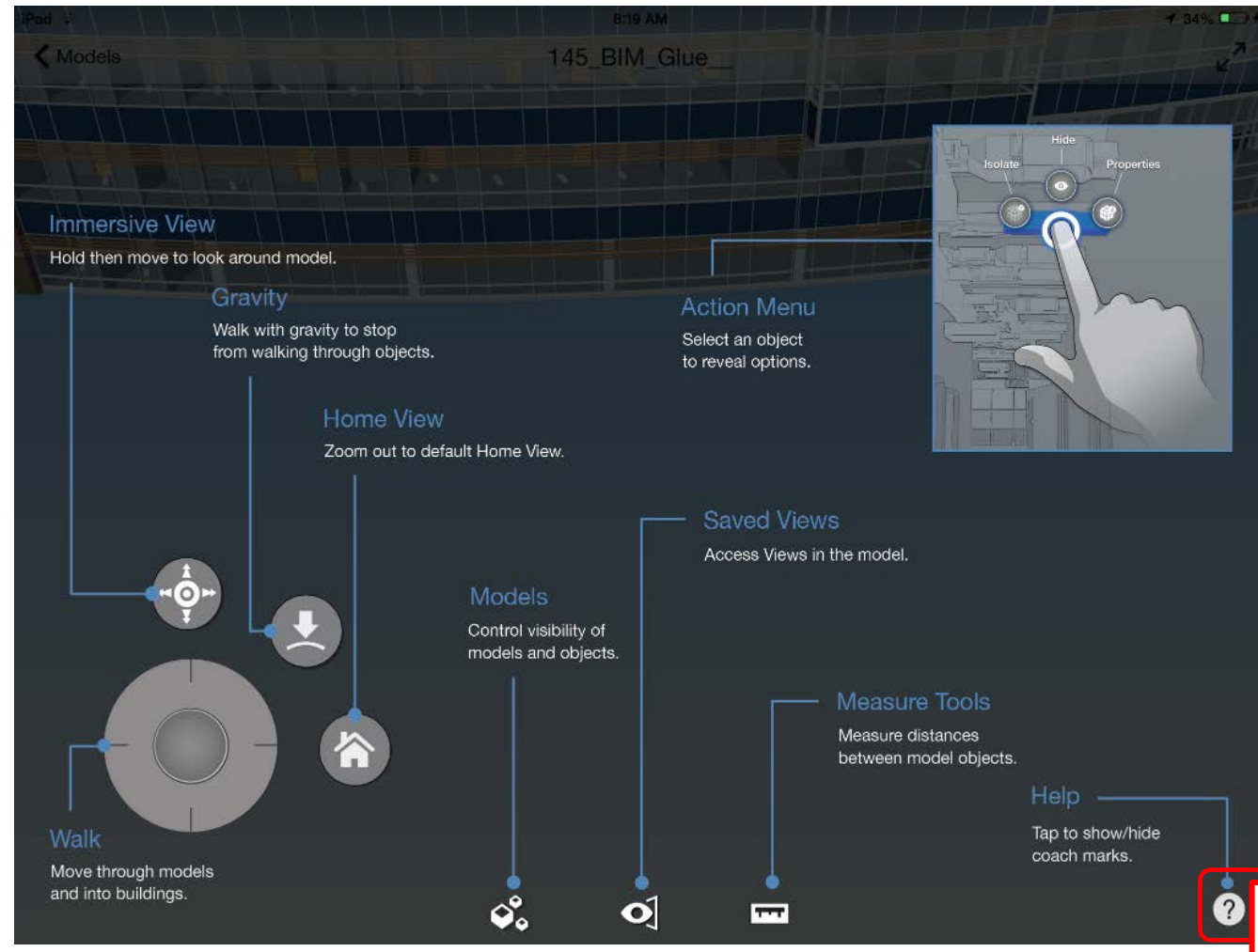
3D view of the exteriors

Building #145
College of Health & Human
Services

Help button

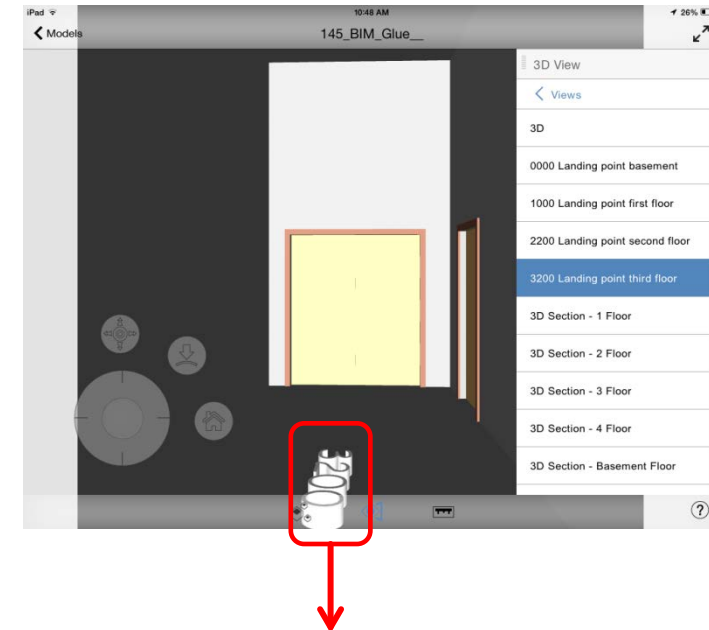
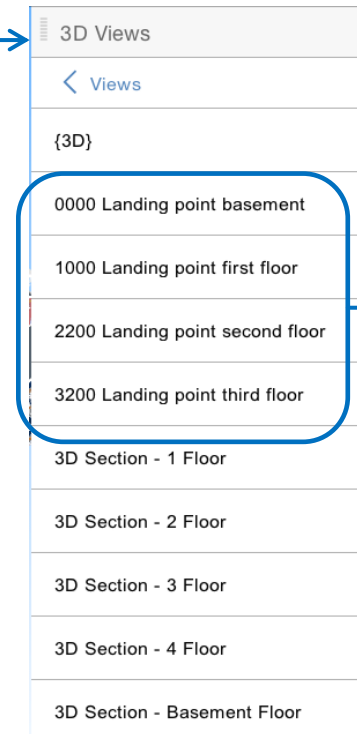
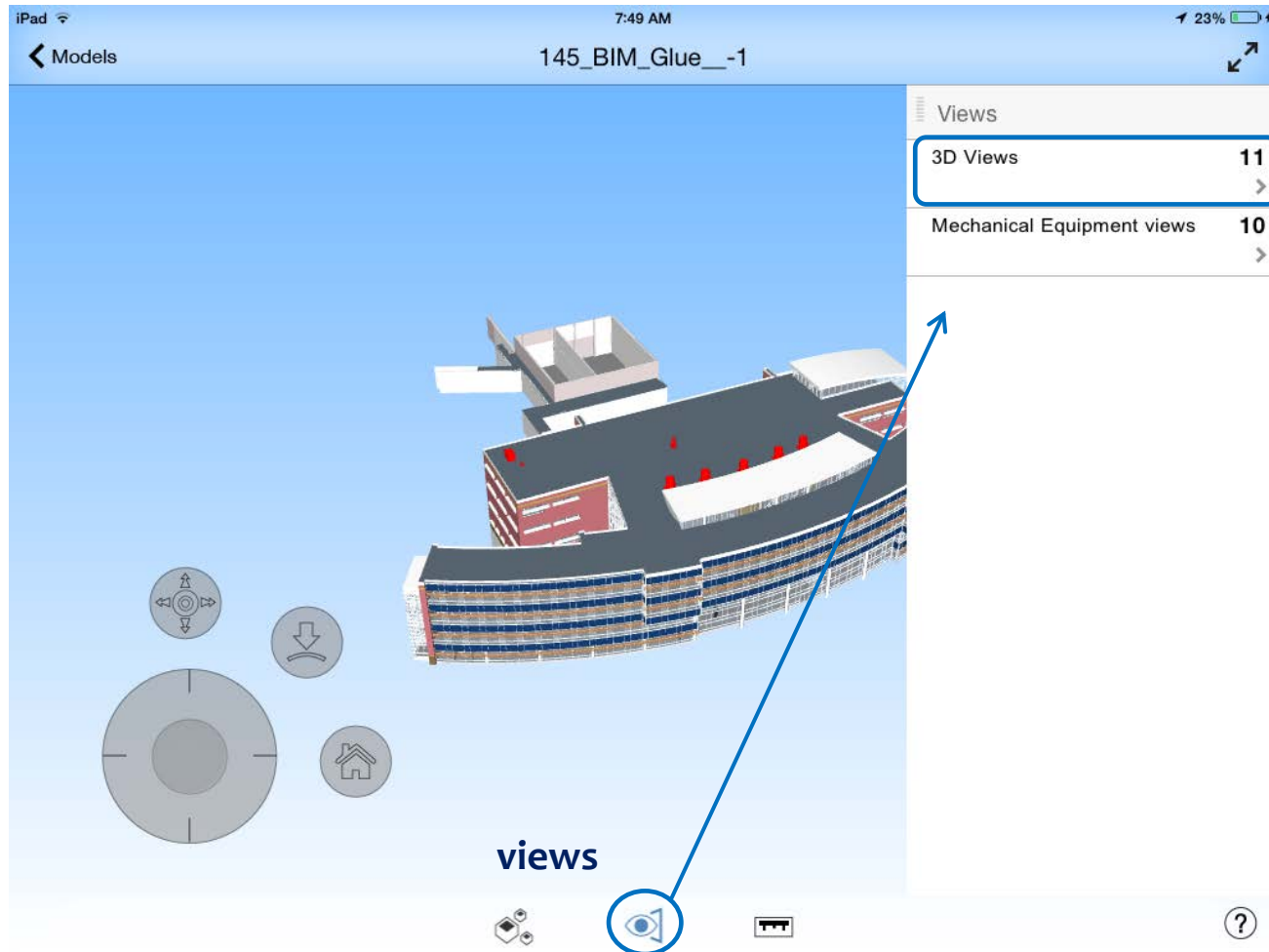


HOW TO ACCESS THE BUILDING: BIM360 Glue



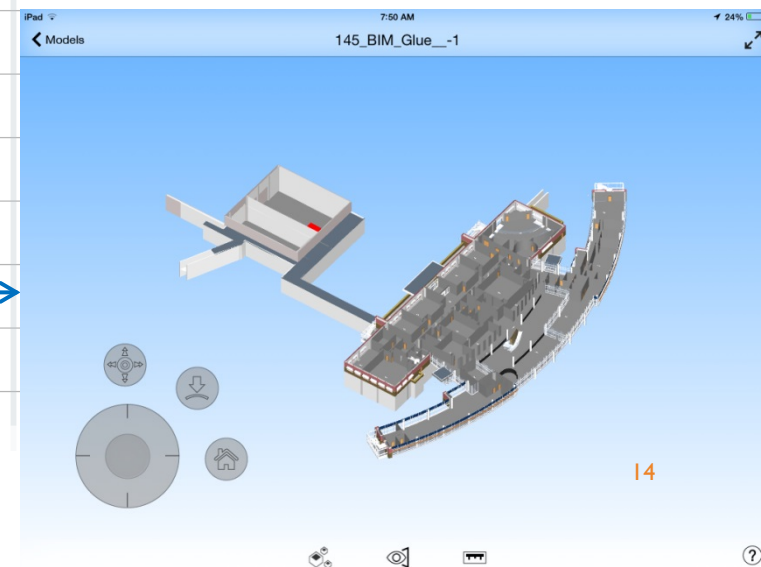
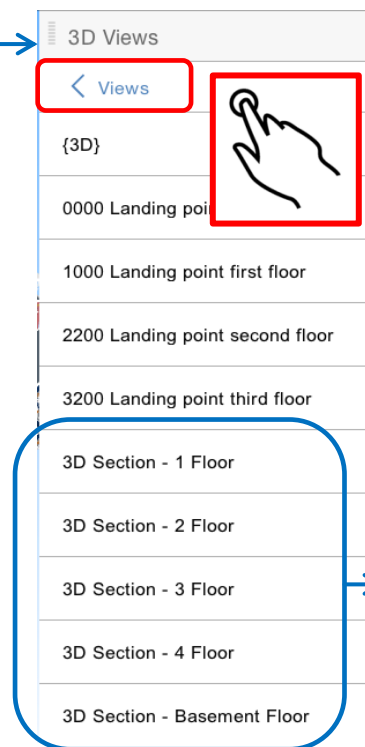
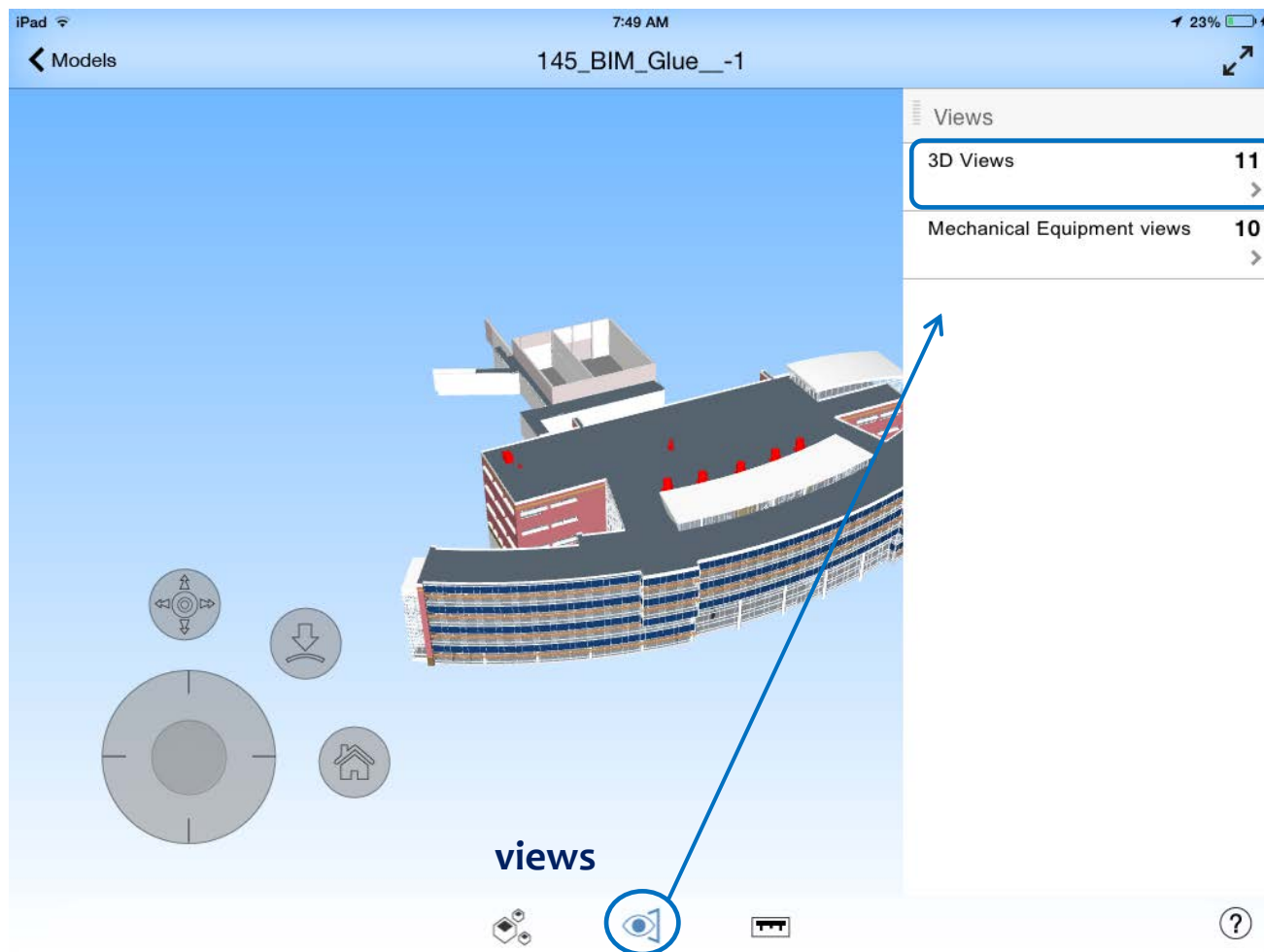
To exit press again
Help button

HOW TO ACCESS THE BUILDING: Views

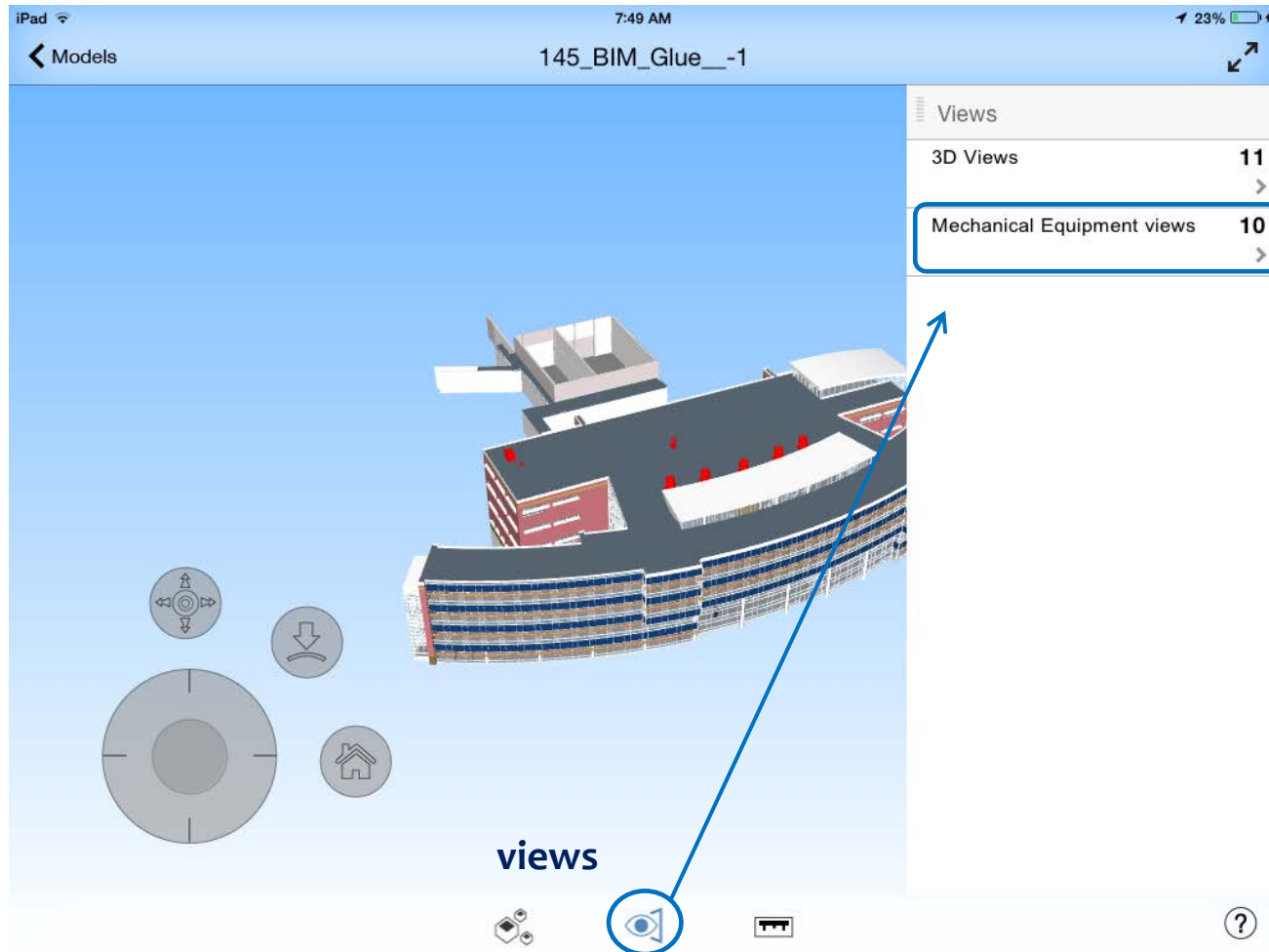


Room number on the floor

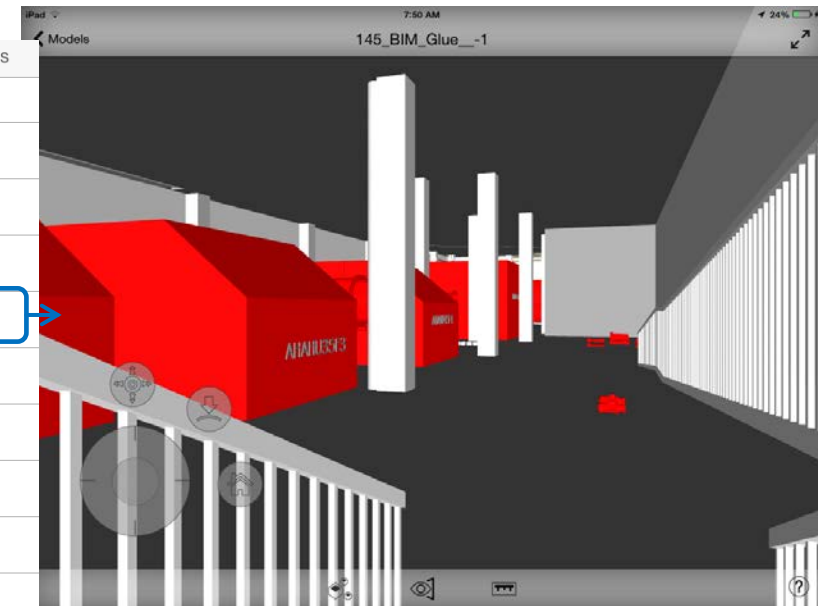
HOW TO ACCESS THE BUILDING: Views



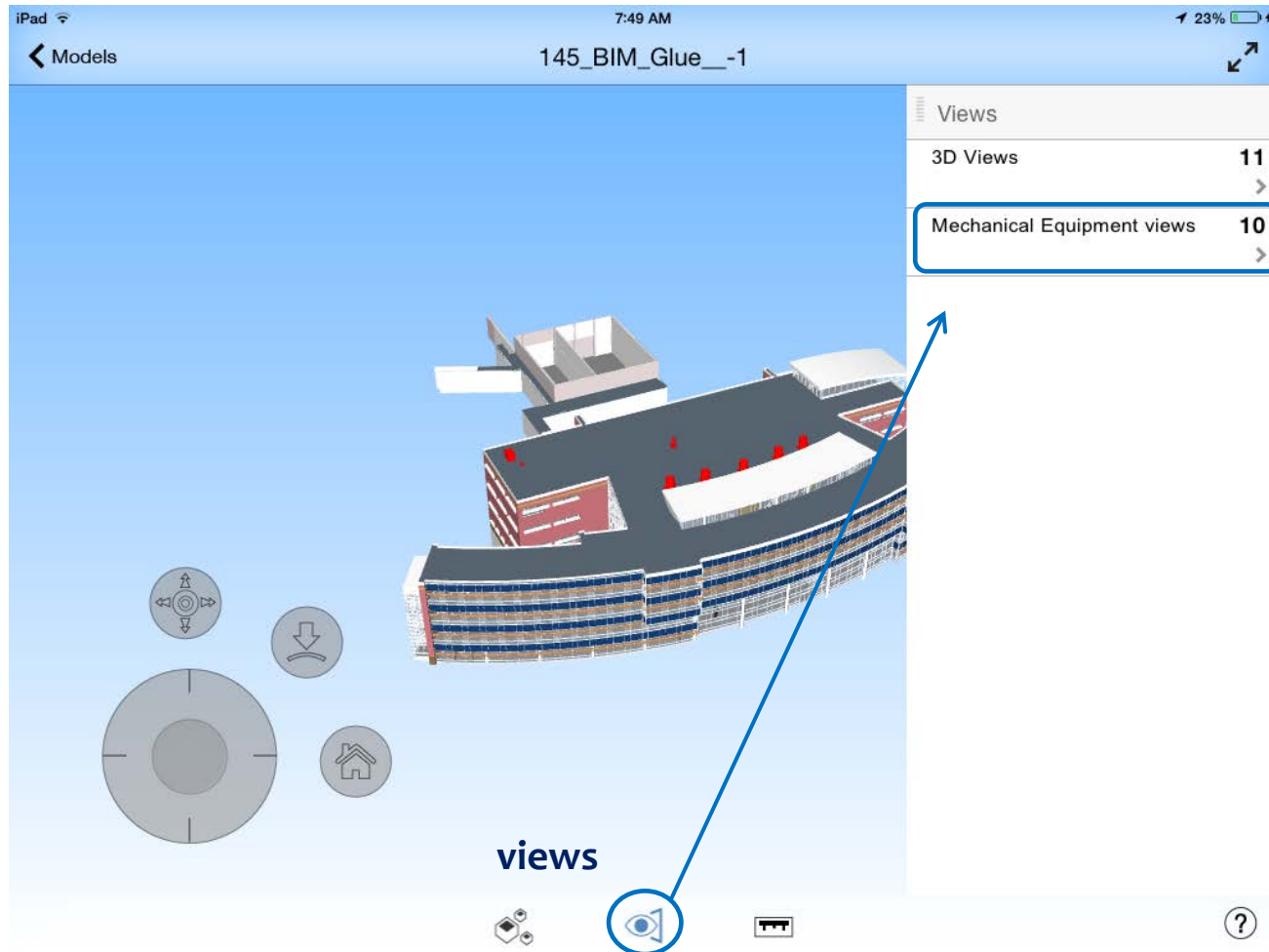
HOW TO ACCESS THE BUILDING: Views



- Mechanical Equipment views
- < Views
 - 0001-5 Mechanical 1
 - 0585 Mechanical 1
 - 0586 Mechanical 1
 - 0590 Mechanical 1
 - 0590 Mechanical 2
 - 0590 Top view
 - 2016 Mechanical 1
 - 2004 Mechanical 1
 - 2014 Mechanical 1
 - 3085 Mechanical 1



HOW TO ACCESS THE BUILDING: Views



Mechanical Equipment views

< Views

0001-5 Mechanical 1

0585 Mechanical 1

0586 Mechanical 1

0590 Mechanical 1

0590 Mechanical 2

0590 Top view

2016 Mechanical 1

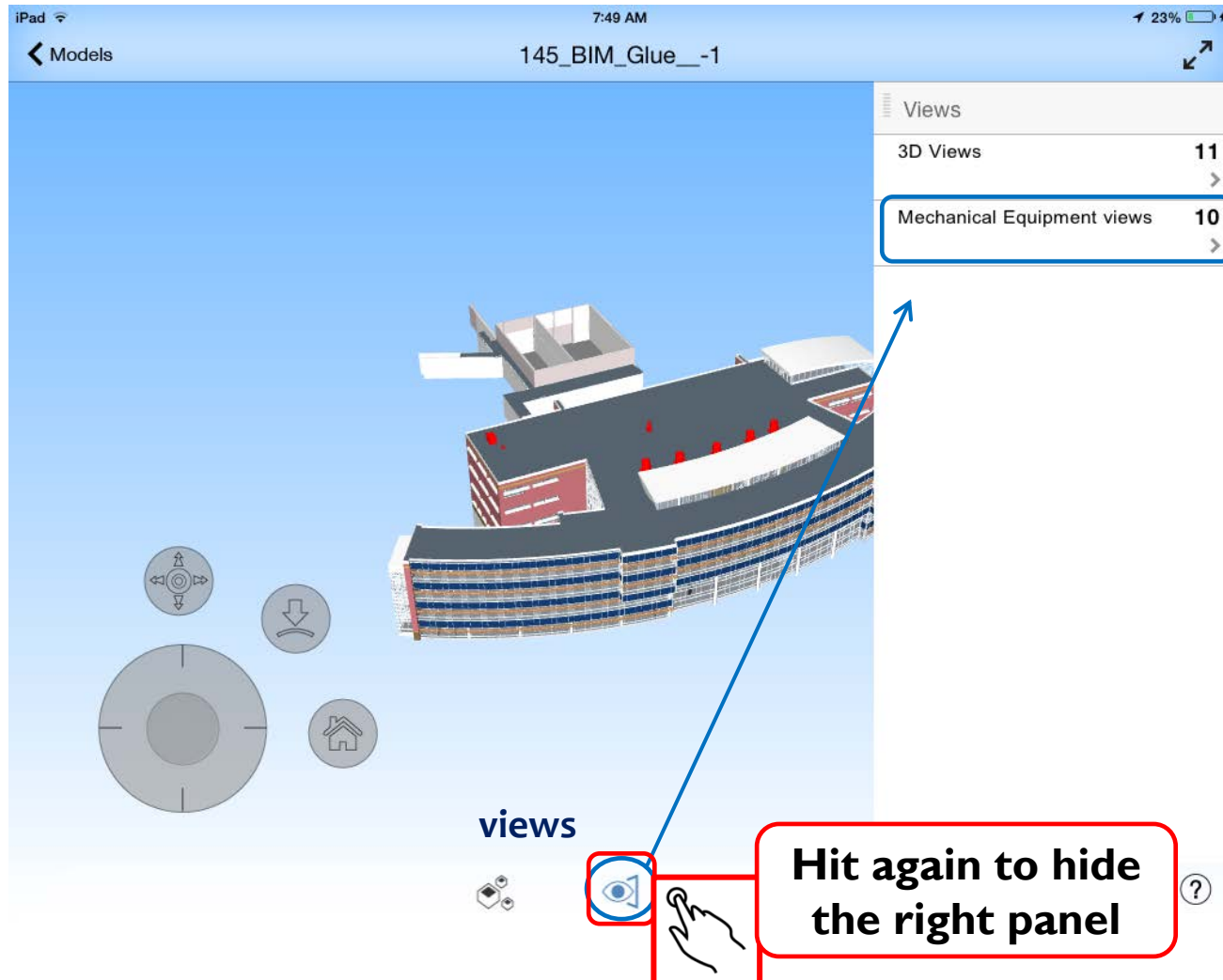
2004 Mechanical 1

2014 Mechanical 1

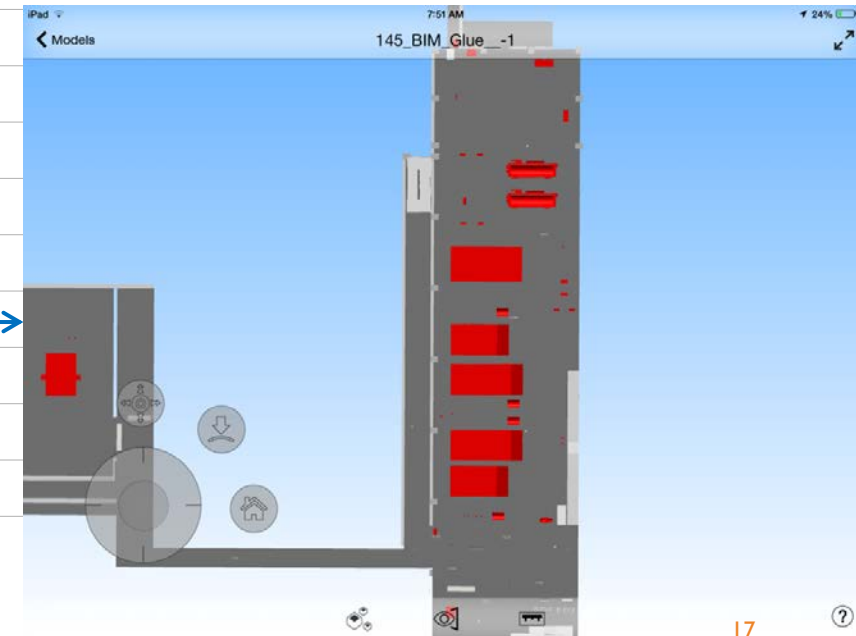
3085 Mechanical 1



HOW TO ACCESS THE BUILDING: Views

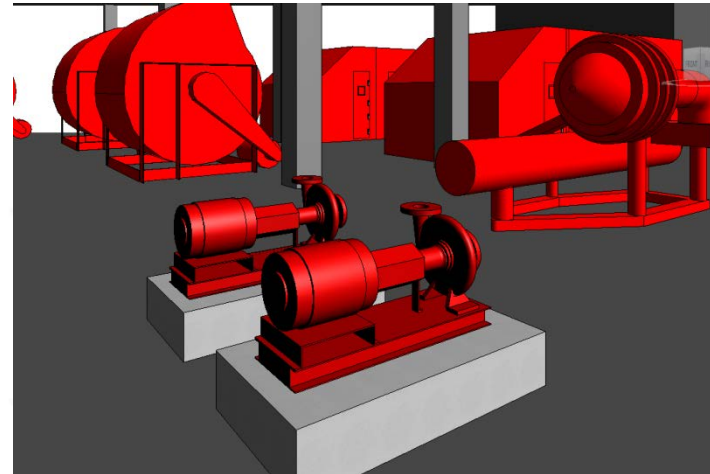


- Mechanical Equipment views
- Views
- 0001-5 Mechanical 1
- 0585 Mechanical 1
- 0586 Mechanical 1
- 0590 Mechanical 1
- 0590 Mechanical 2
- 0590 Top view
- 2016 Mechanical 1
- 2004 Mechanical 1
- 2014 Mechanical 1
- 3085 Mechanical 1





■ 3. HOW TO NAVIGATE THE 3D MODEL



BIM360 GLUE : Navigation pane



Open mechanical view for room # 2014



Keep pressed
and move up

Walk

Walks straight forward or backward

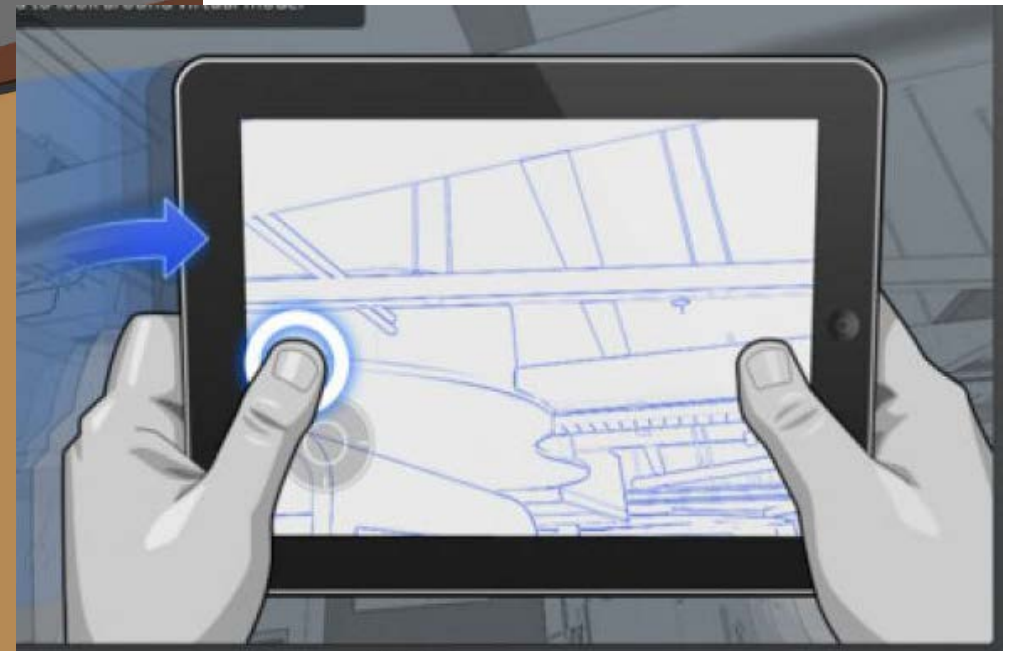
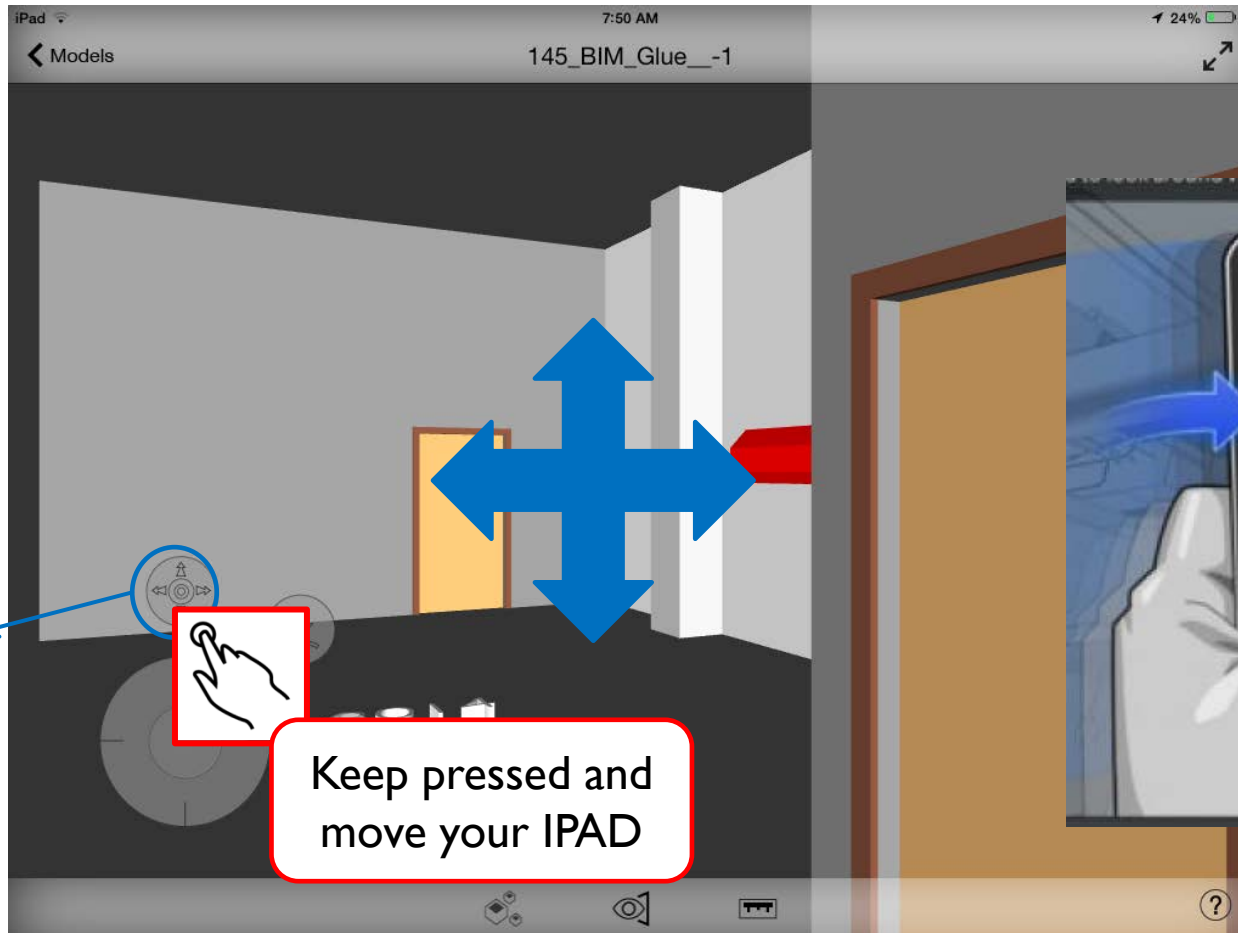


Keep pressed
and move right

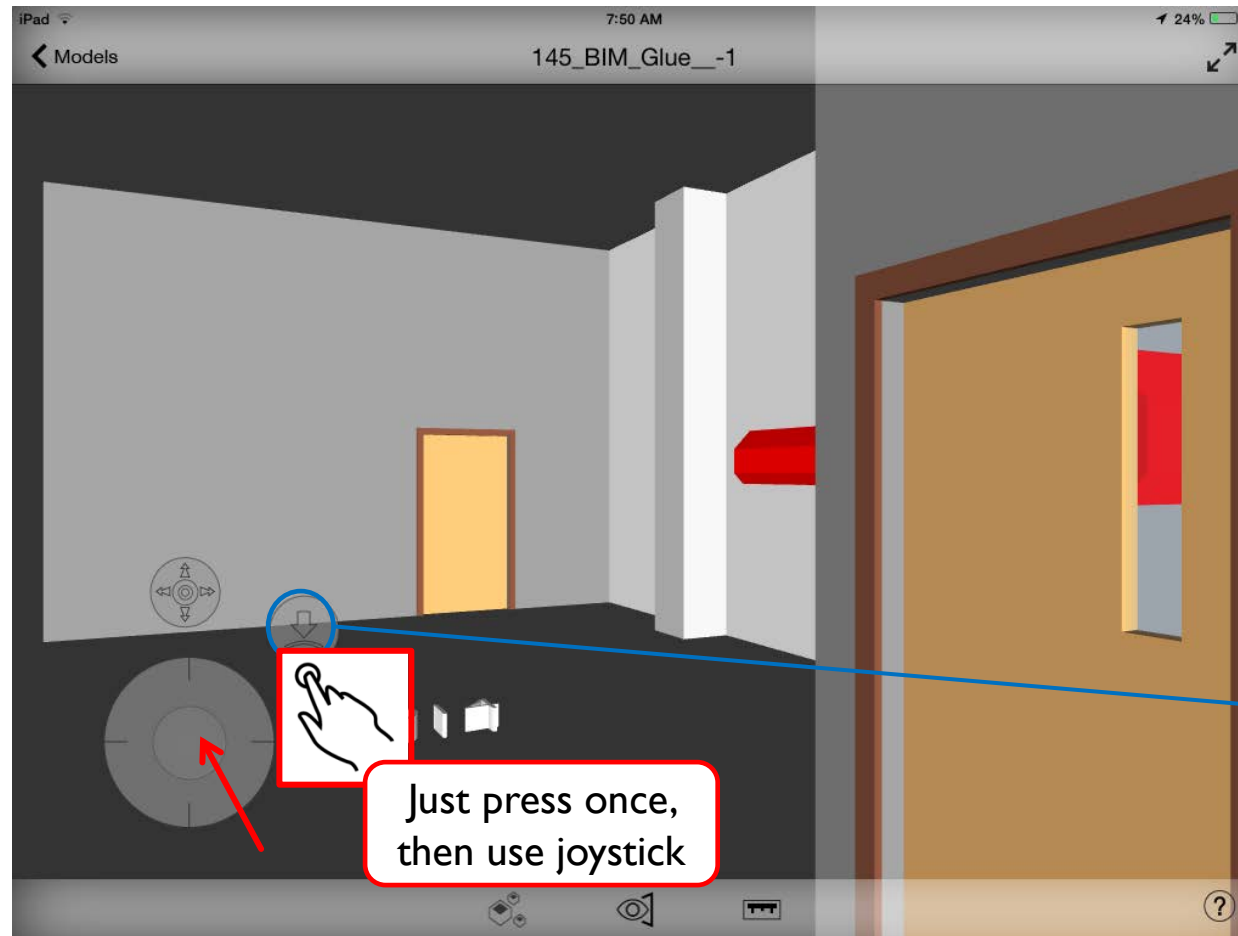
Turning around

Turns your head around in your actual position

BIM360 GLUE : Navigation pane



BIM360 GLUE : Navigation pane



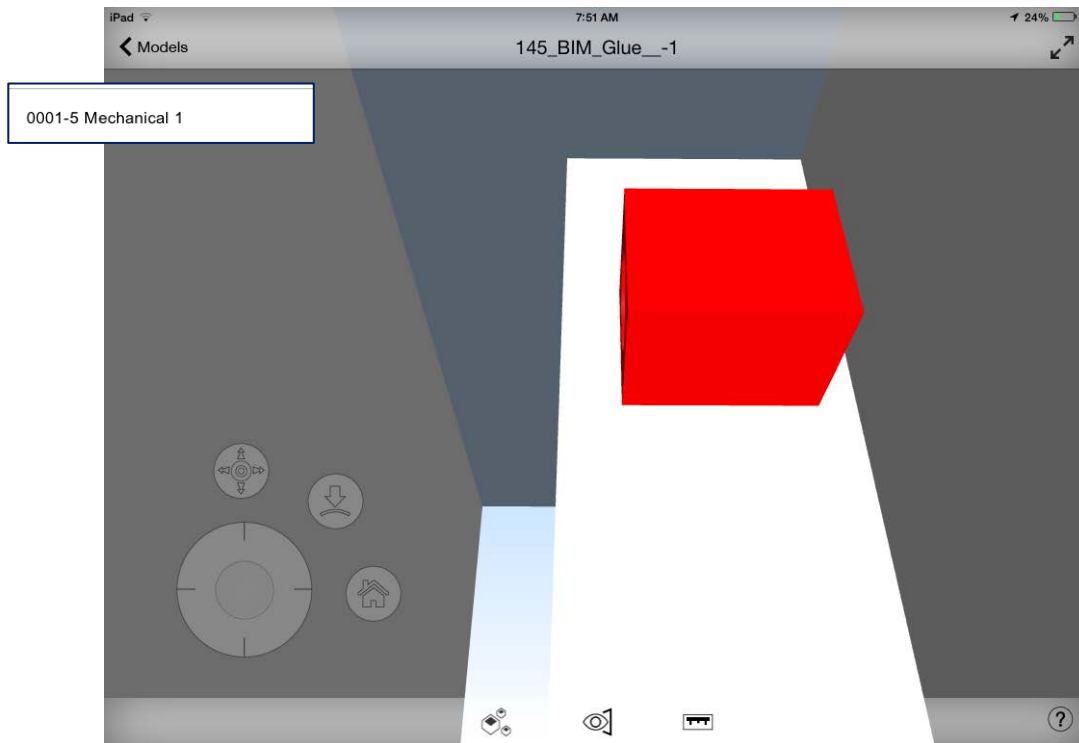
GRAVITY button

You won't walk through walls and stuff, and you can actually walk up the stairs!

BIM360 GLUE : Navigation using the touchscreen



Open mechanical view for room # 0001-5



1 FINGER



Rotate

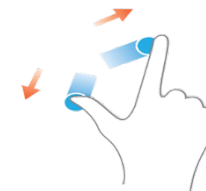
Tip:

if you select an object, a piece of equipment for instance, the rotation will be around the object axis

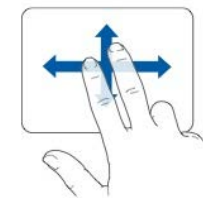
2 FINGERS



Zoom out



Zoom in



Move

■ 4. HOW TO ACCESS INFORMATION AND DOCUMENT THAT YOU NEED



HOW TO ACCESS INFORMATION AND DOCUMENTS



THE INFORMATION IN THE MODELS



WHERE DO YOU FIND THEM?

#20 Types of information

WMU_SUBTYPE DESC
WMU_TYPE DESC
DESCRIPTION
WMU_TAG #
WMU_LOCATION
WMU_MANUFACTURER
WMU_MODEL #
WMU_SERIAL #
WMU_FILTER TYPE
WMU_FILTER SIZE
WMU_FILTER QUANTITY
WMU_MOTOR ID
WMU_MOTOR MODEL #
WMU_MOTOR SERIAL #
WMU_MOTOR HP
WMU_MOTOR FRAME
WMU_BEARING/COUPLING SIZE
WMU_BELT NAME
WMU_BELT SIZE
WMU_BELT QUANTITY

Additional Documents

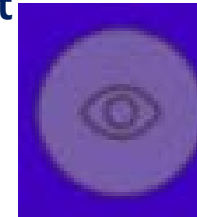
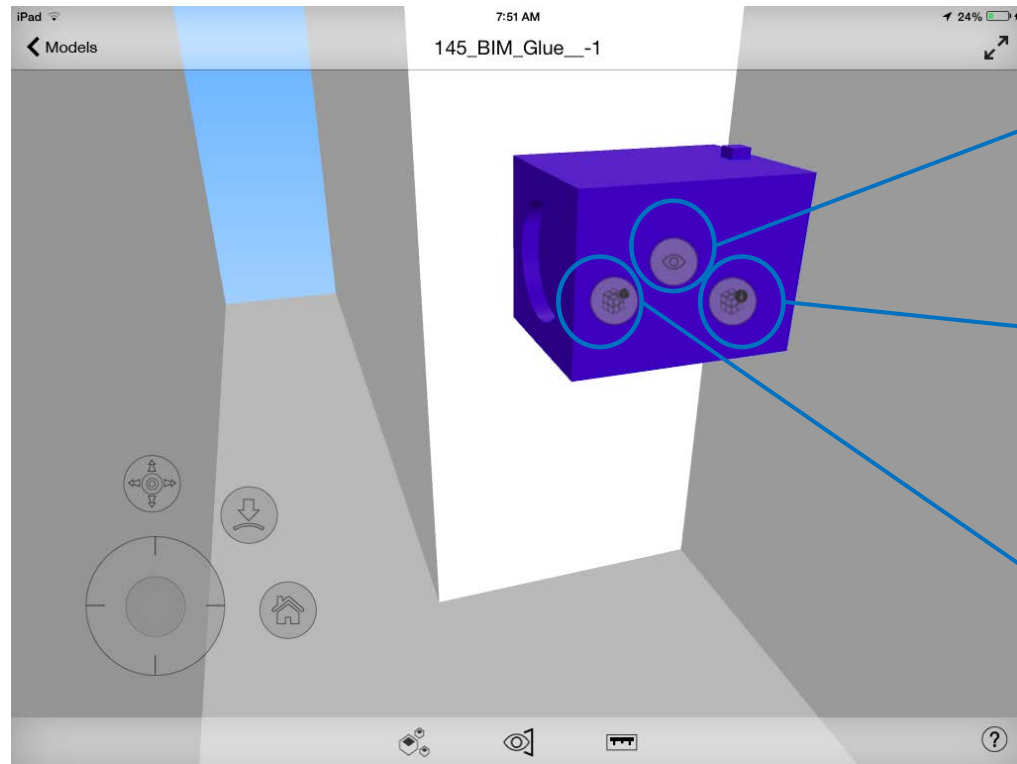
Web Links

SEQUENCE OF OPERATION
SUBMITTAL
PUMP CURVE
O&M
FAN CURVE

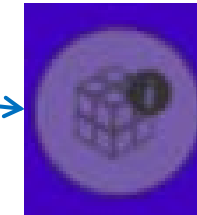
HOW TO ACCESS INFORMATION: Properties



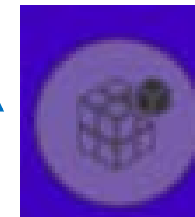
Open mechanical view for room # 0001-5 and touch the mechanical equipment



Hide



Properties

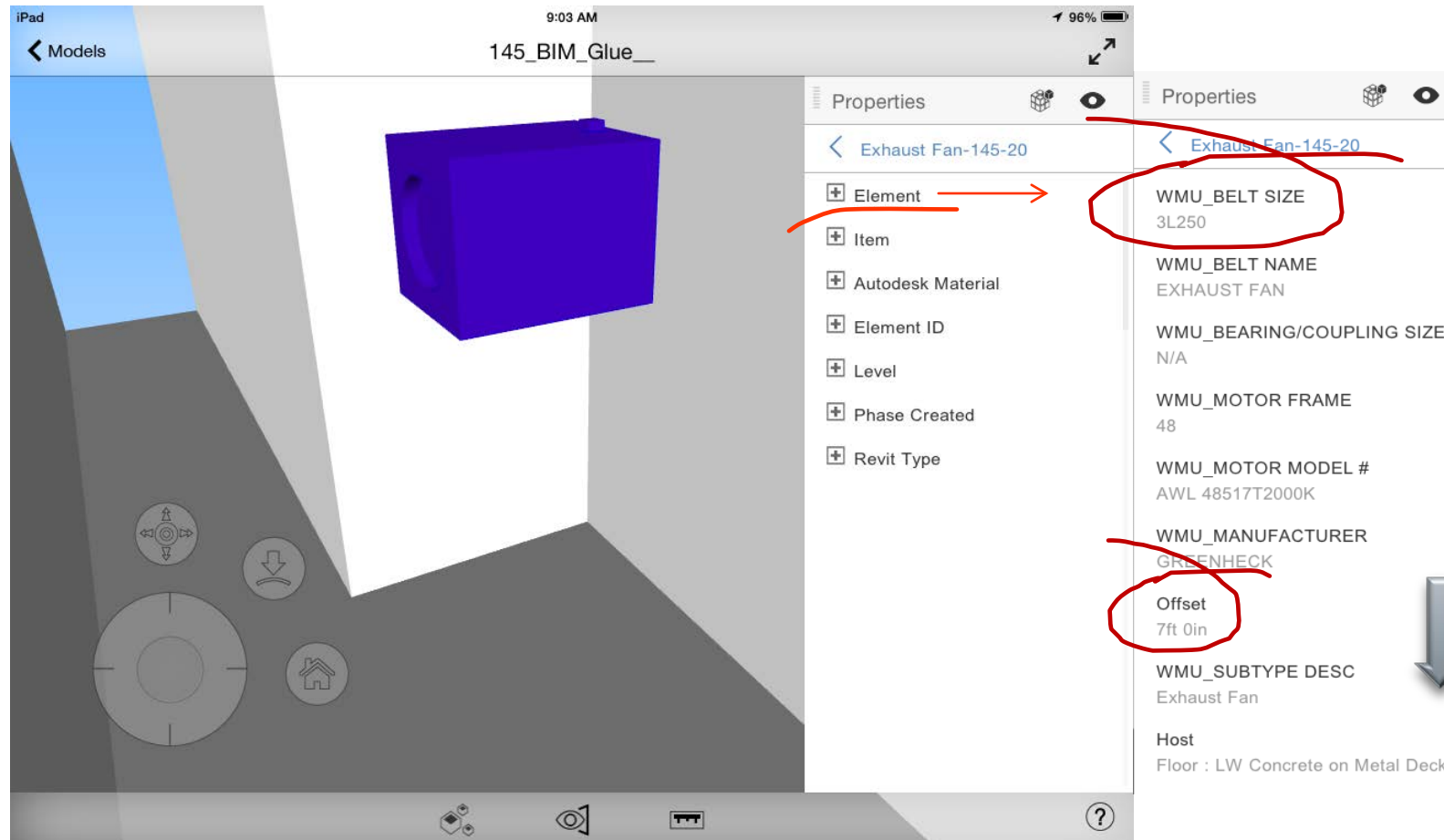


Isolate

HOW TO ACCESS INFORMATION: Properties



Properties

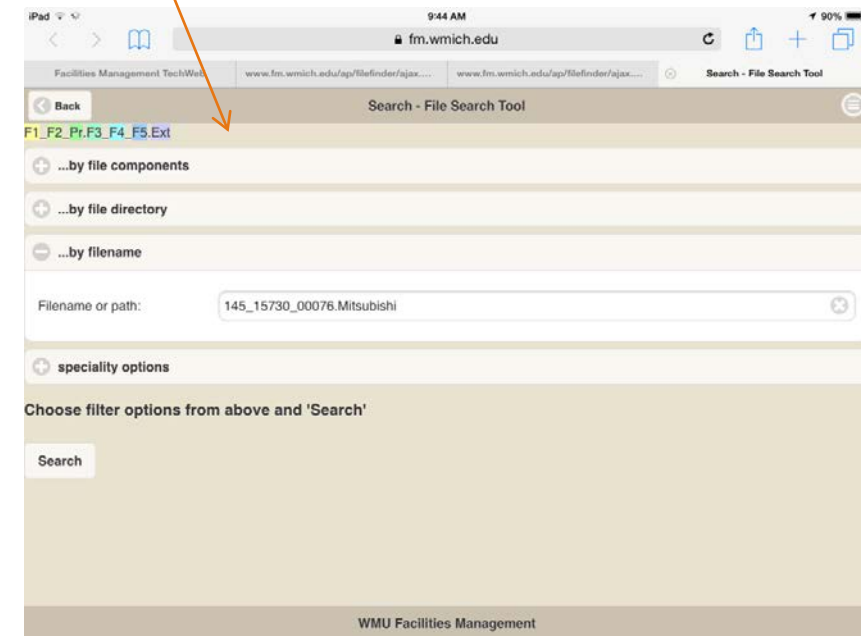
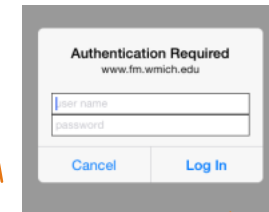
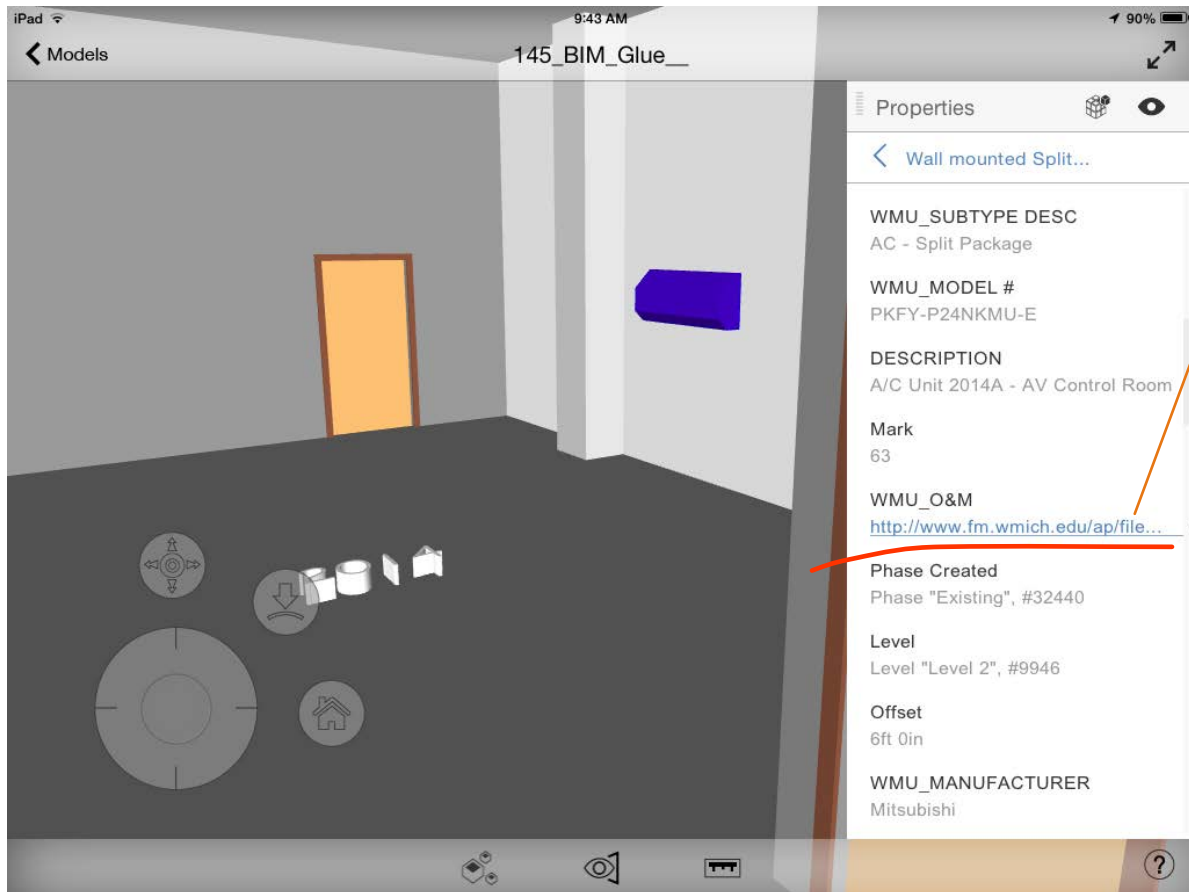


WMU_MOTOR HP
1/3
WMU_O&M
http://www.fm.wmich.edu/ap/fil... Si
DESCRIPTION
Exhaust Fan 5 - serves AT Build...
WMU_LOCATION
145-0001-5

HOW TO ACCESS DOCUMENTS: Web links through file finder



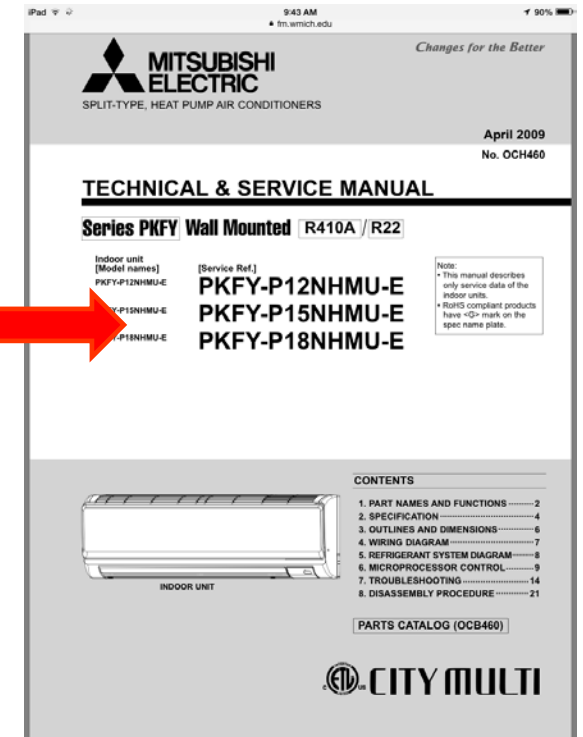
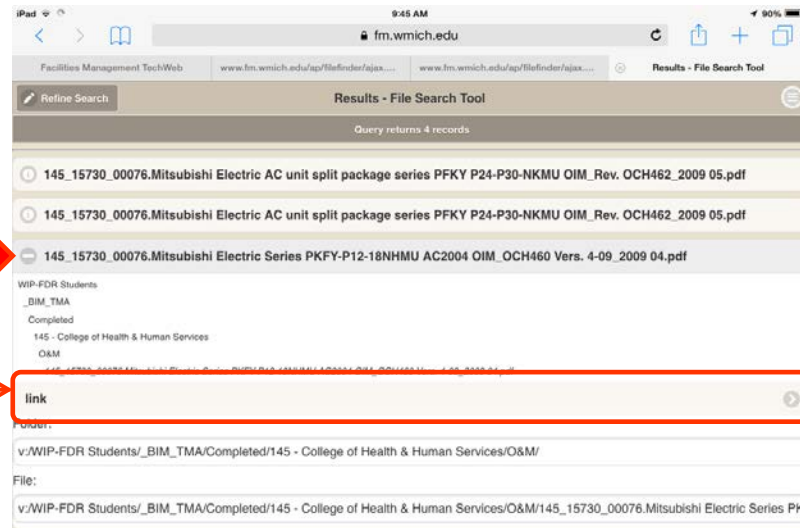
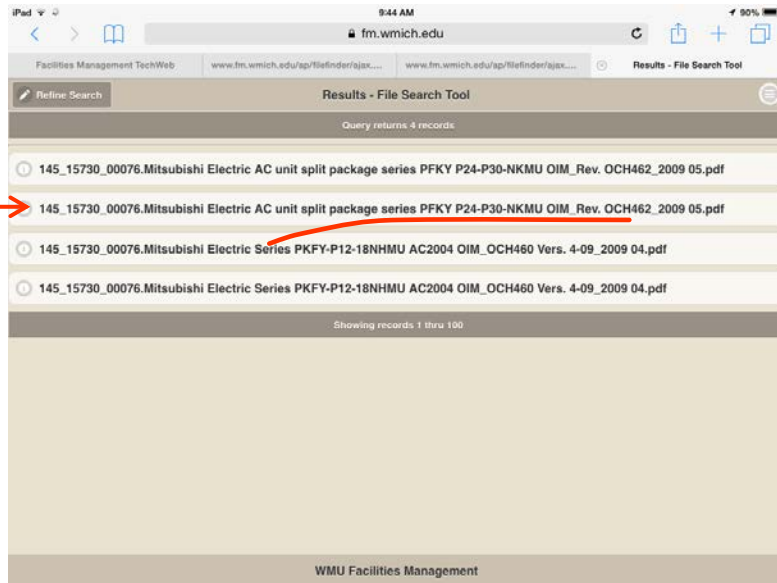
Properties



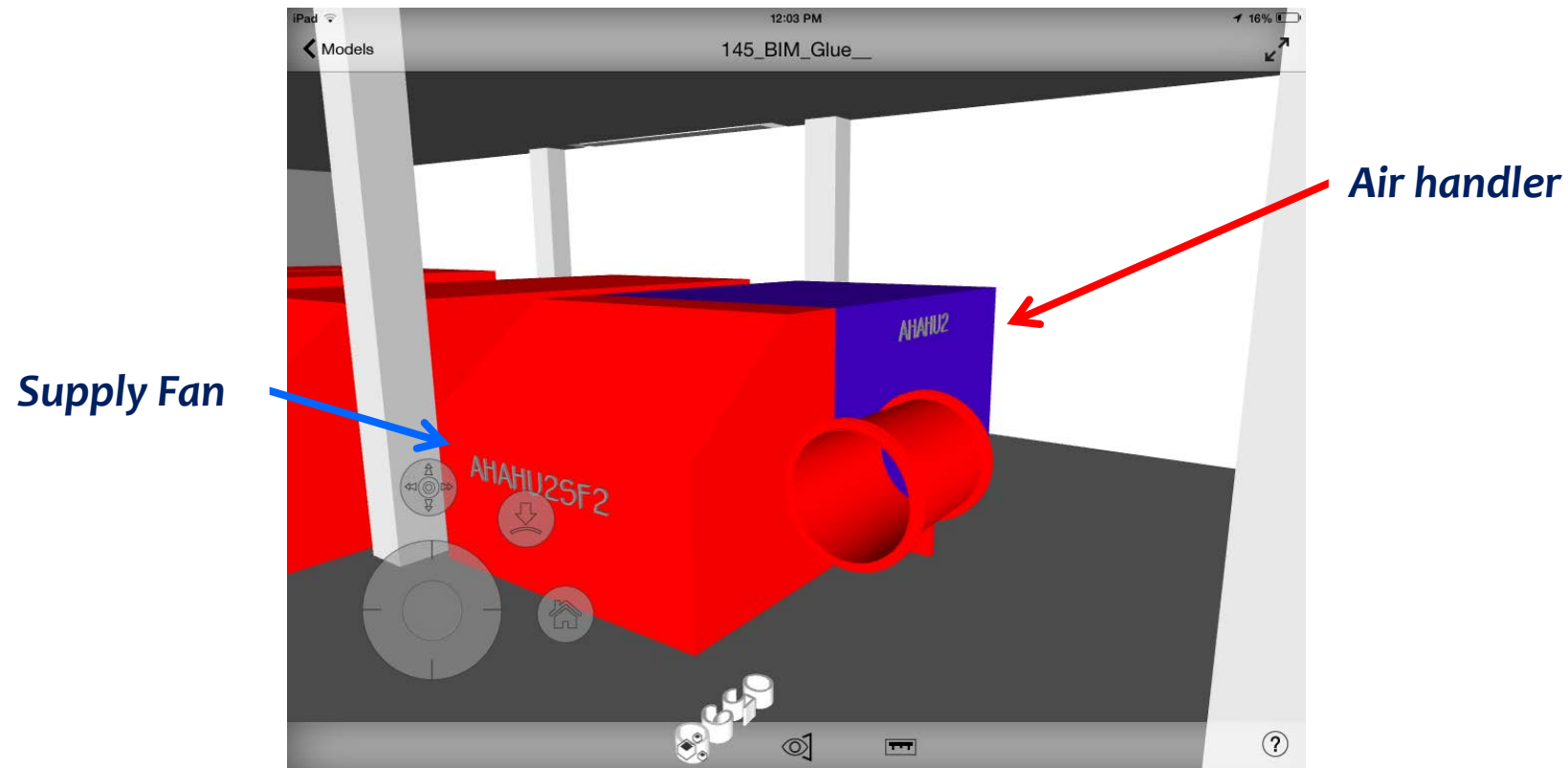
HOW TO ACCESS DOCUMENTS: Web links through file finder



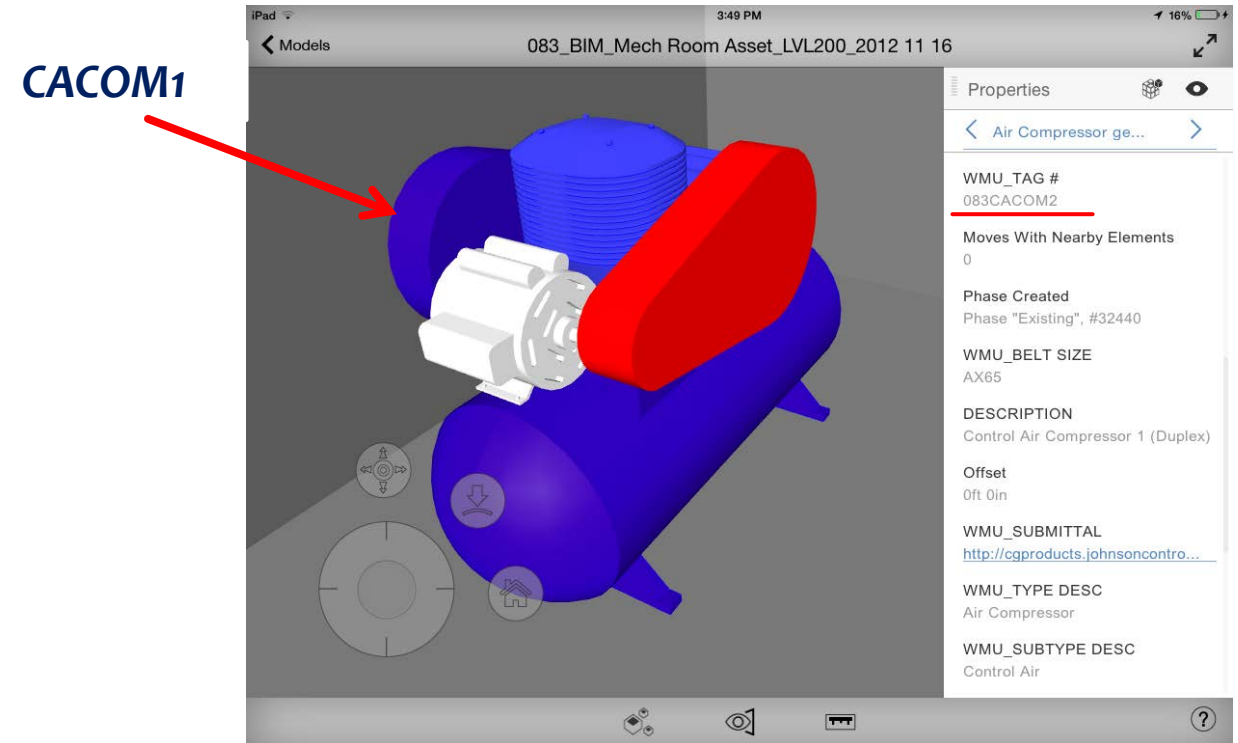
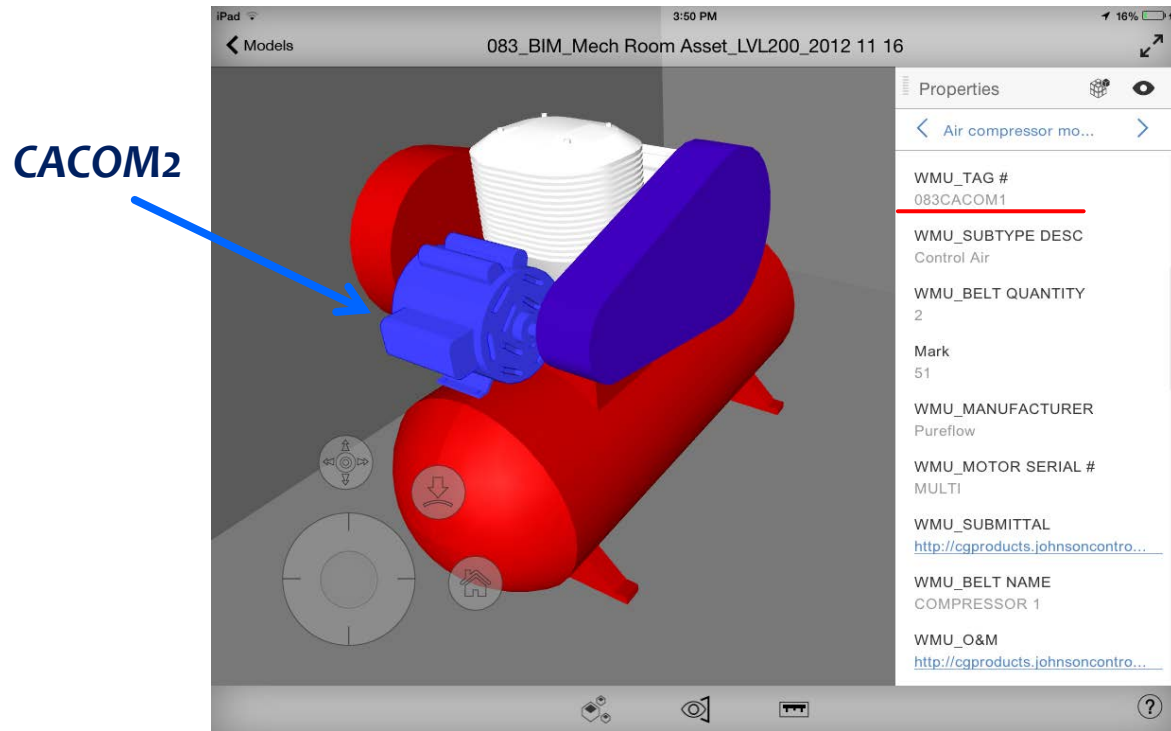
Properties



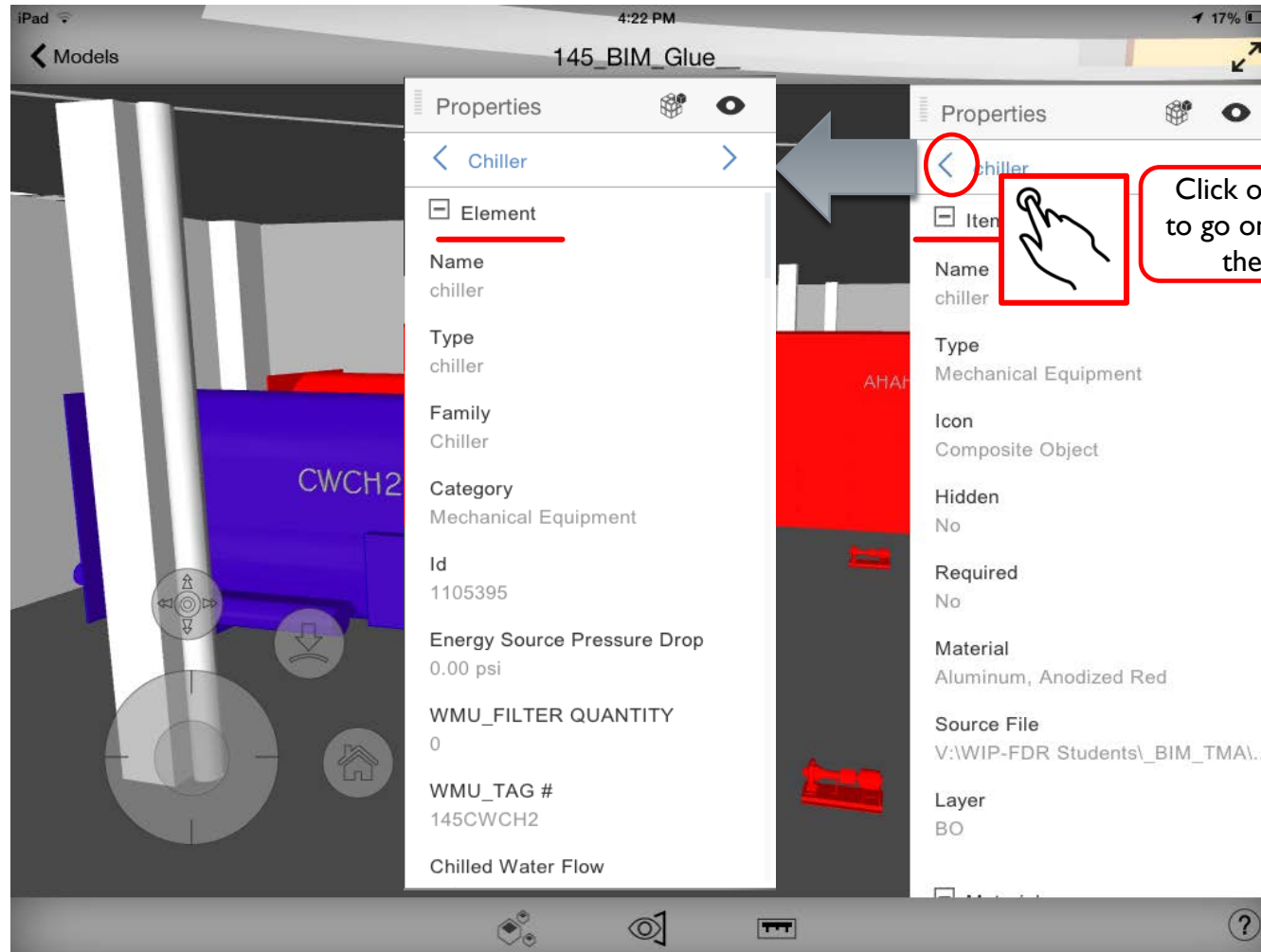
3D EQUIPMENT: Multi-components



3D EQUIPMENT: Multi-components



3D EQUIPMENT: Folder structure



Summary

- ✓ **What is BIM**
- ✓ **How to access models on your iPad**
- ✓ **Finding mechanical equipment information**
- ✓ **Retrieve pdf's and documentation**