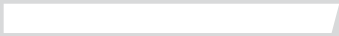


UNIVERSITY *of* WASHINGTON

# UW Facilities Information Spatial Data Model Implementation



# About

## Aaron Chevront – CAD/GIS Program Manager

- > Seattle Campus:
  - 640 acres
  - 250 buildings
  - 1,200 floors
  - 20 million GSF
- > GIS Inventory:
  - 380 buildings
  - 1,588 floors
  - 26+ million GSF



# Outline

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- > Intro to FISDM
- > FloorplanGIS
- > Gizinta Sync Engine
- > FISDM Database
- > Using FISDM – view/edit
- > Navigation
- > Expanding FISDM Capabilities
- > Ooh, pretty...



# FISDM

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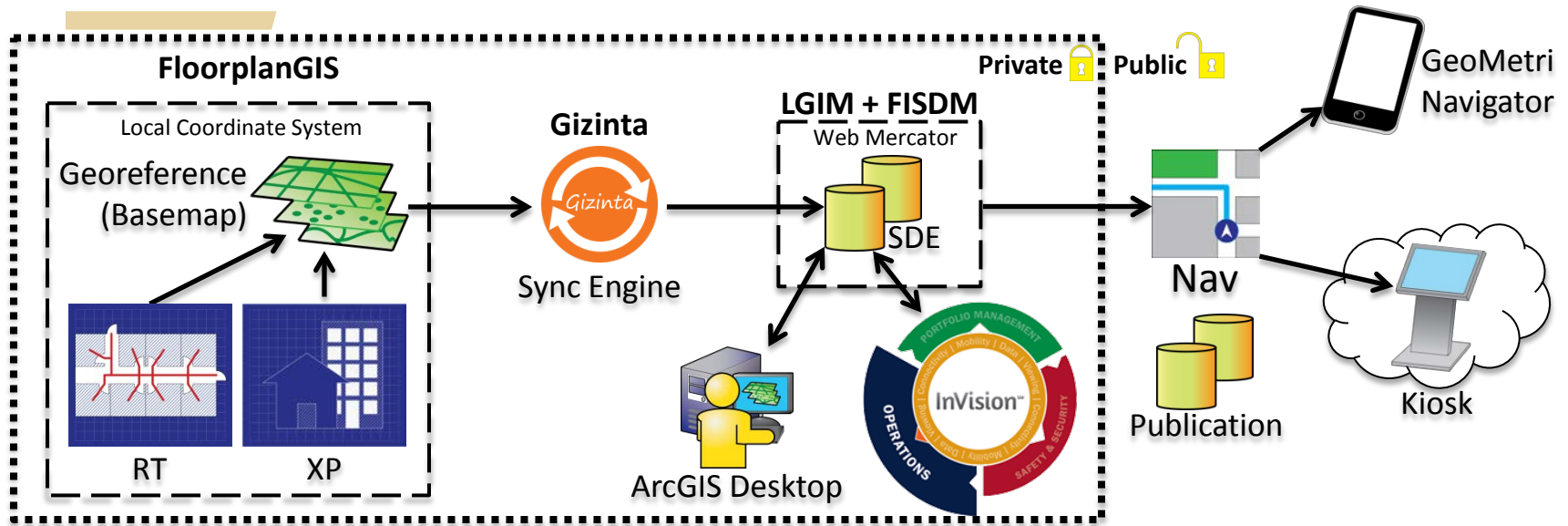
## What is FISDM?

- > Pragmatic approach to the storage and management of GIS data related to buildings.
- > Information models, cartographic designs, templates, and data interoperability tools

<http://www.fisdms.org>

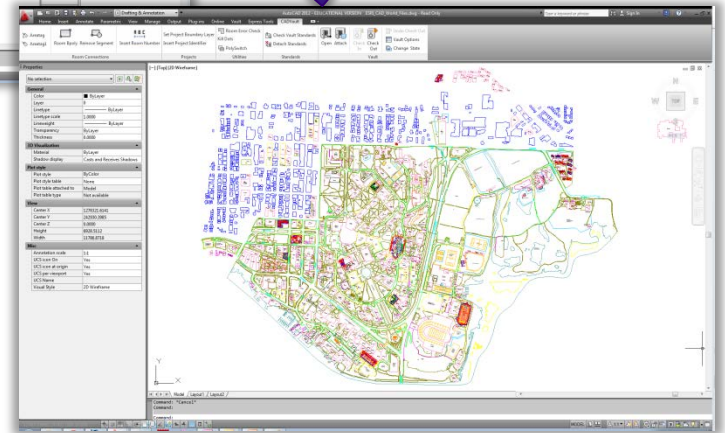
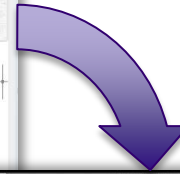
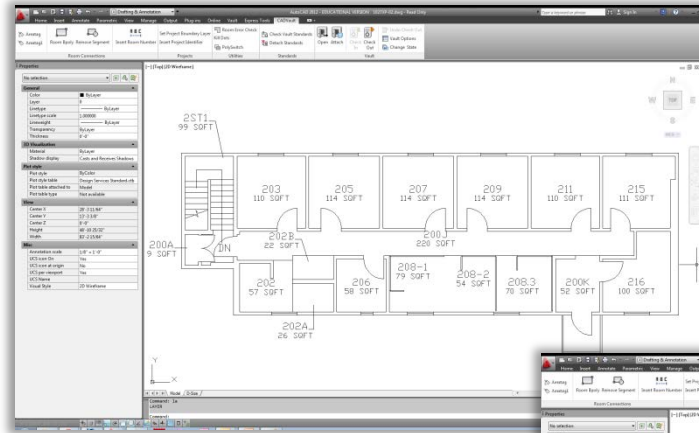
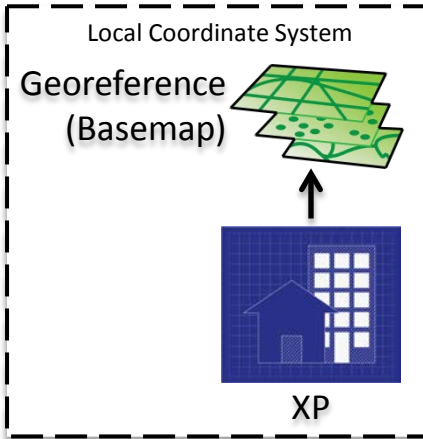


# FISDM Implementation + Navigation



# Floorplans - XP

## FloorplanGIS

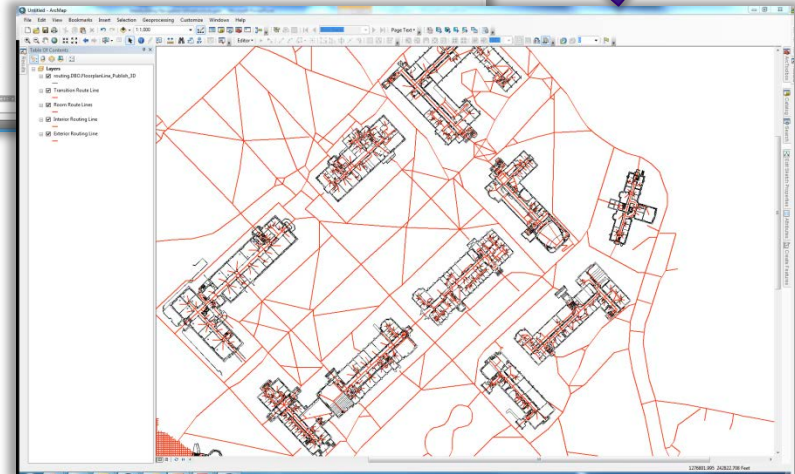
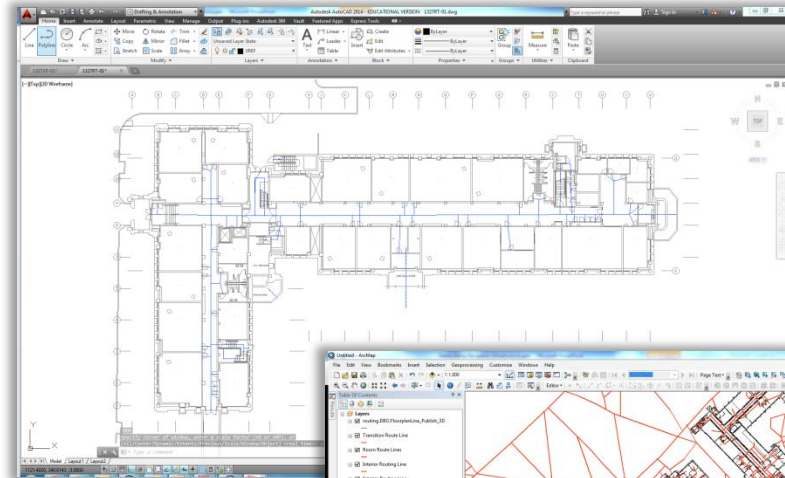
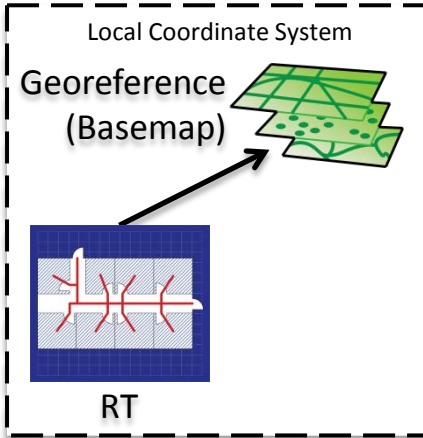


- 1027XP-01.dwg
- A Annotation
- FLOORAREA
- FLOORPLANLINE
- INTERIORSPACE
- MultiPatch
- Point
- Polygon
- Polyline
- 1027XP-02.dwg

# W

# Routing - RT

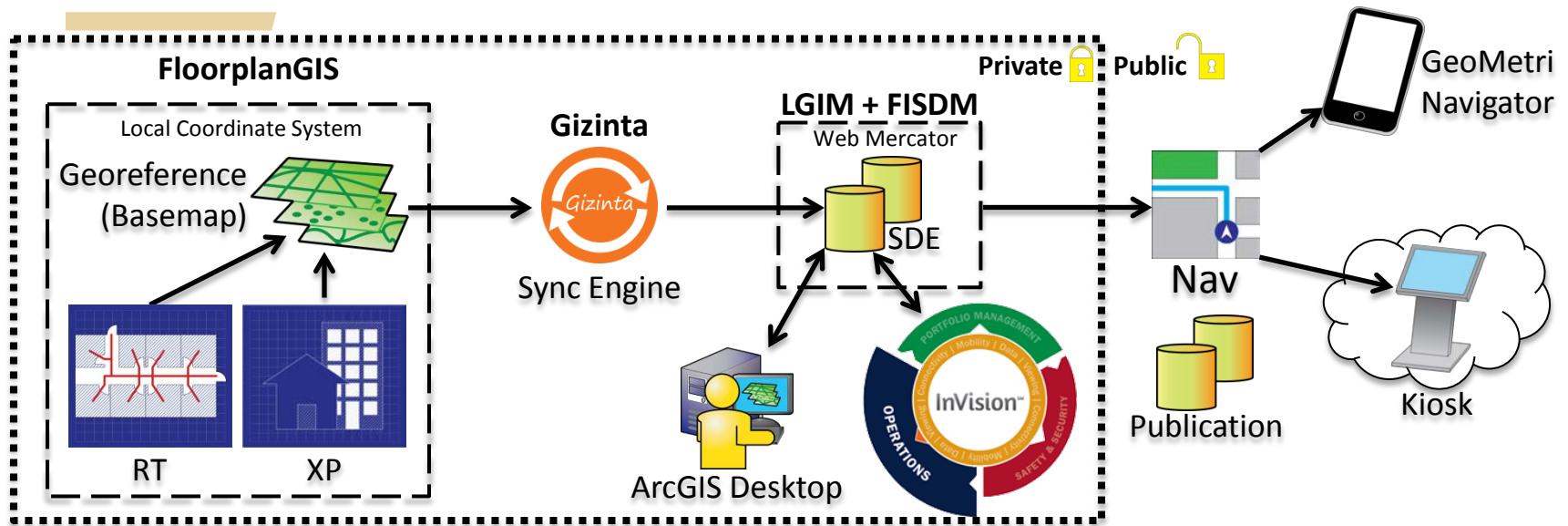
## FloorplanGIS



- 1027RT-01.dwg
  - A Annotation
  - M MultiPatch
  - P Point
  - P Polygon
  - P Polyline
- 1027RT-02.dwg
  - A Annotation
  - M MultiPatch
  - P Point
  - P Polygon
  - P Polyline

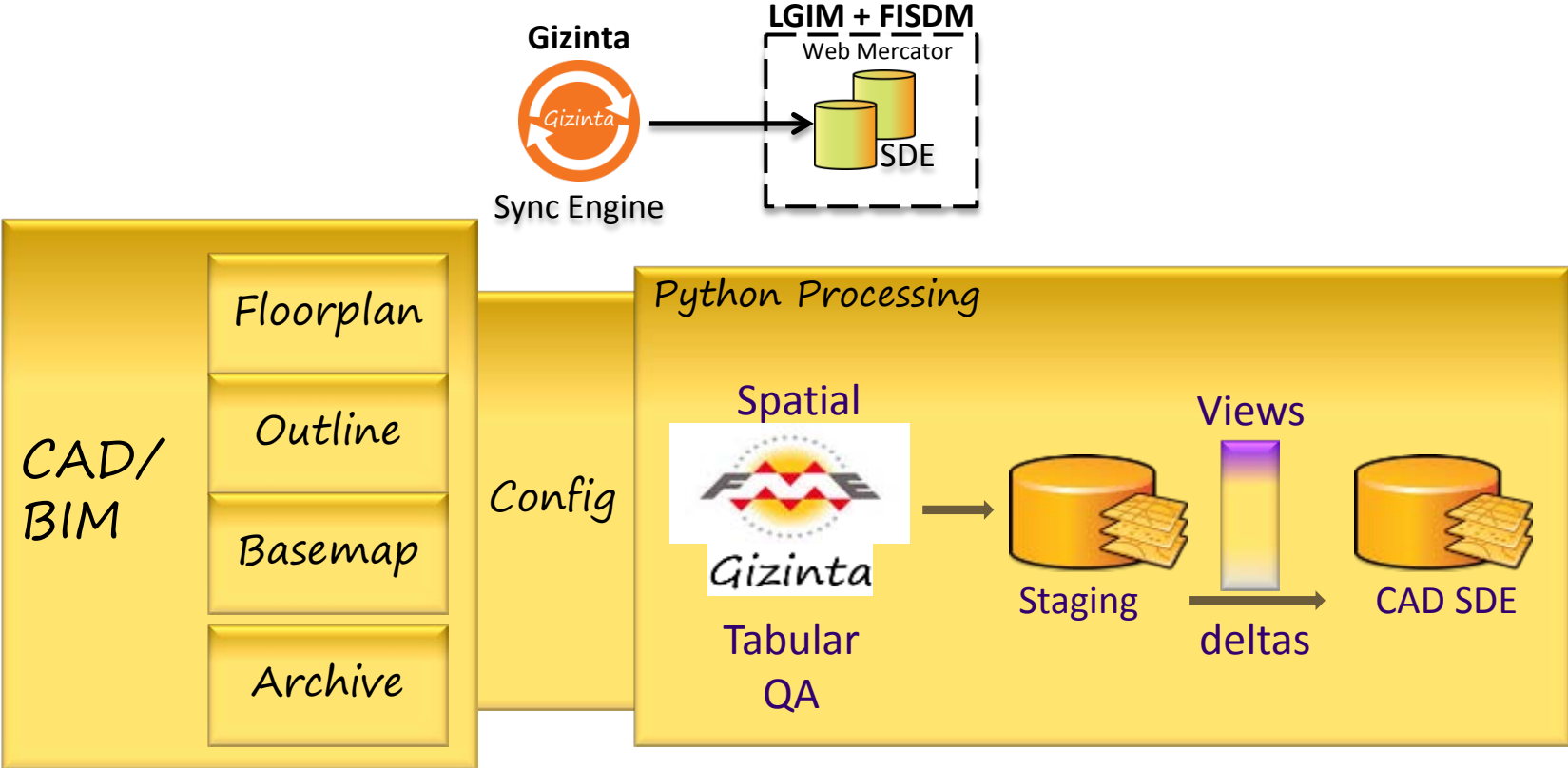
# W

# FISDM Implementation + Navigation



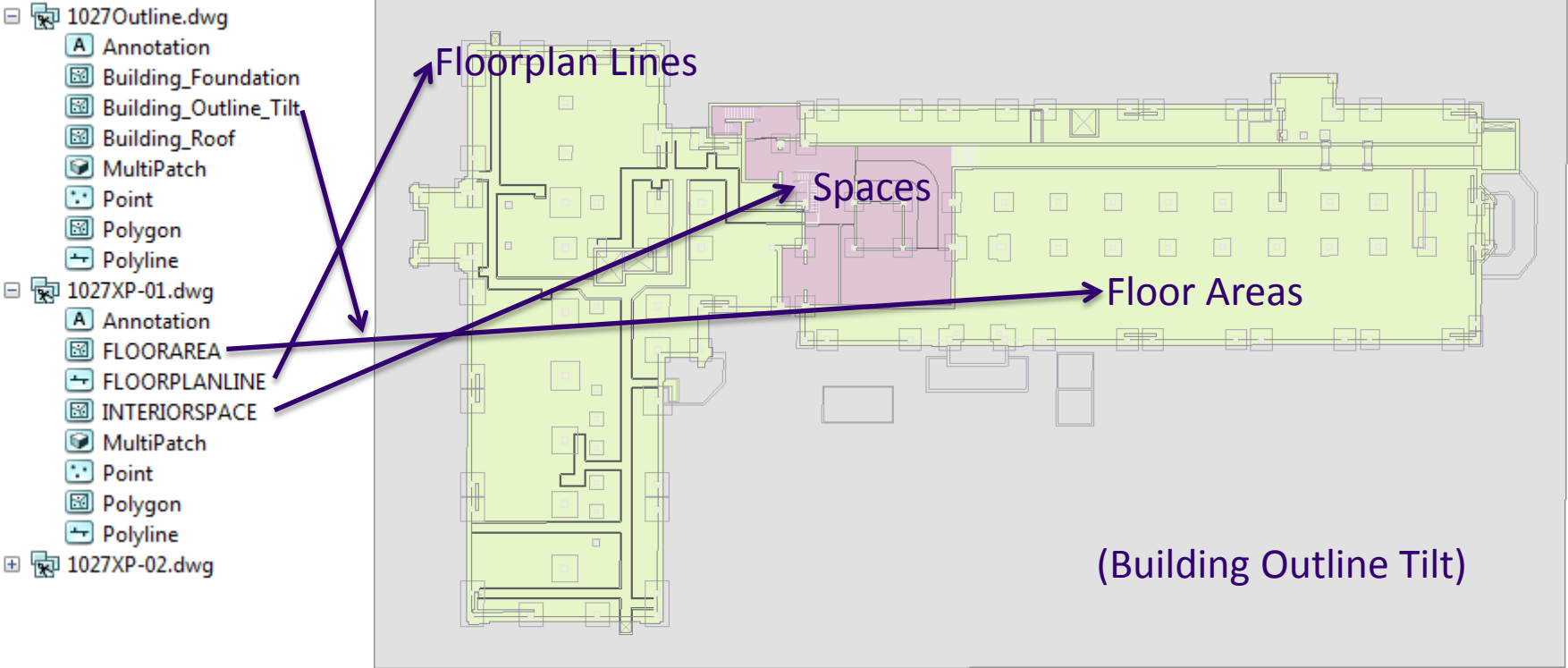


# Gizinta – Sync Engine

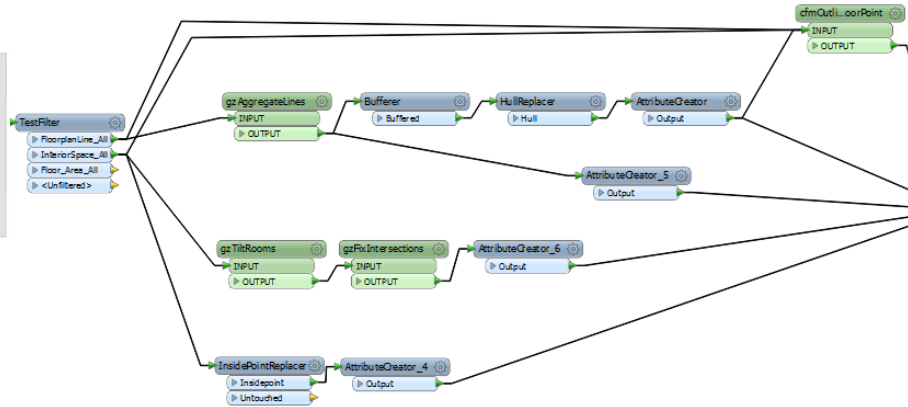
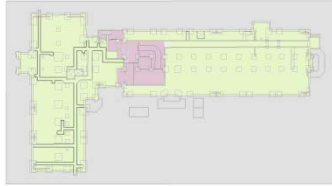


<https://youtu.be/WqdHxgoimOU>

# Gizinta – Floorplan Datasets

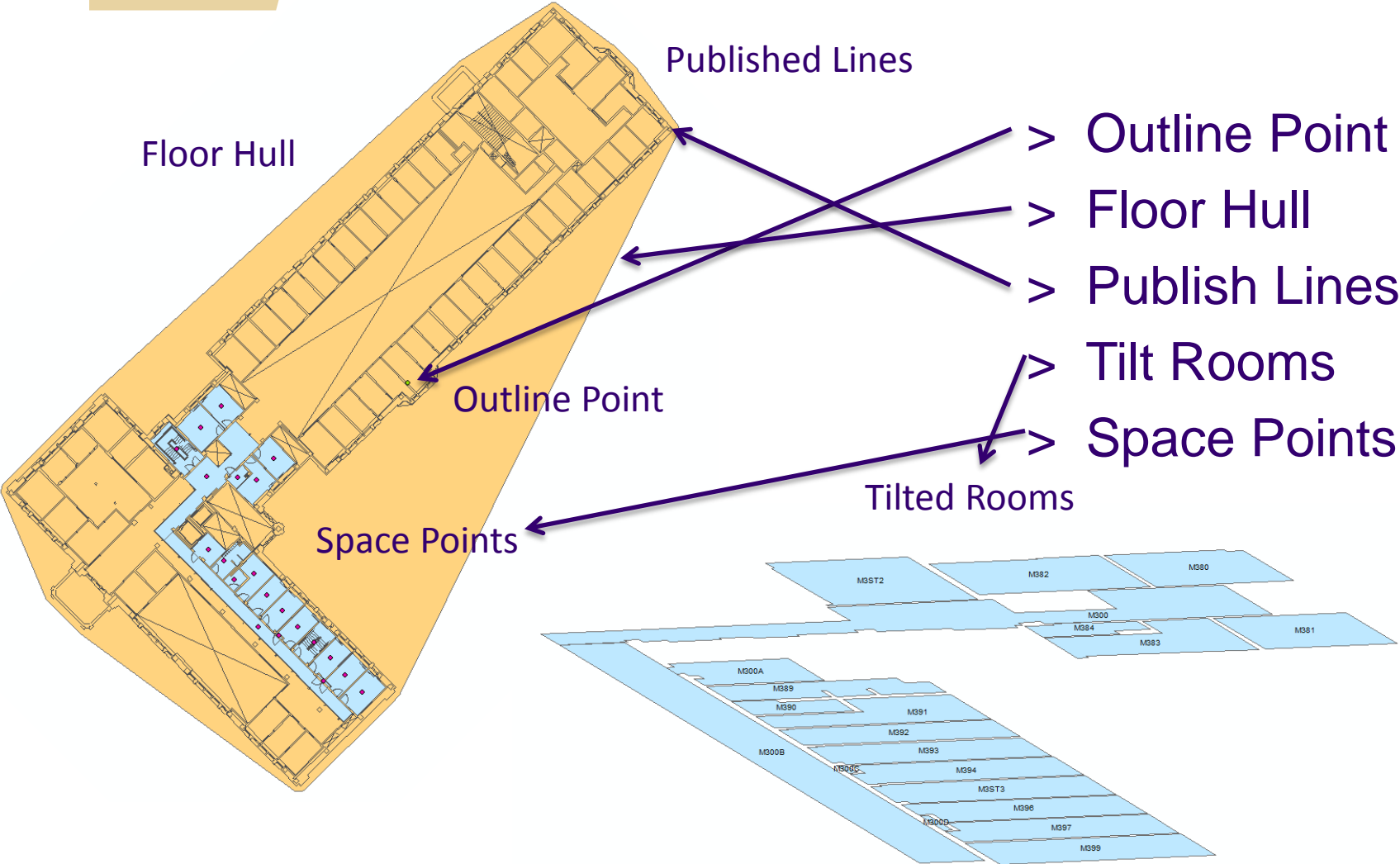


# Gizinta – Floorplan Derived Data

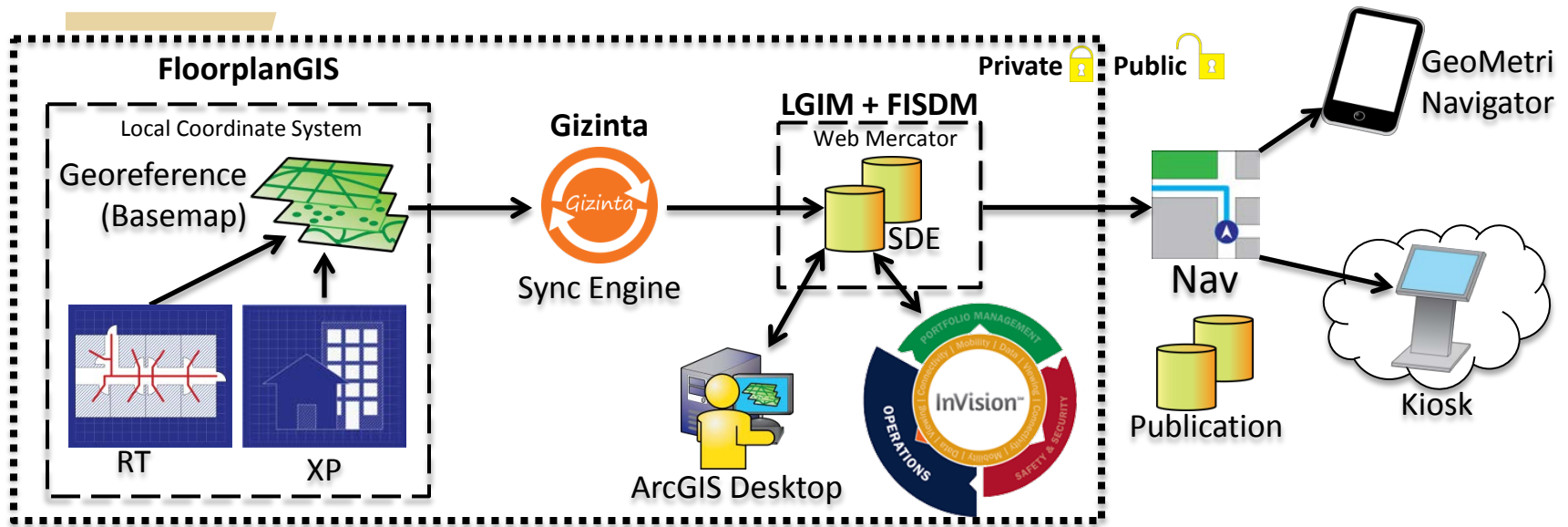


- > Outline Point
- > Floor Hull
- > Publish Lines
- > Tilt Rooms
- > Space Points

# Gizinta – Floorplan Derived Data

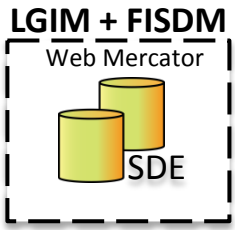


# FISDM Implementation + Navigation



# FISDM – Template Data Model

- FISDM.gdb
  - Asset
  - Basemap
  - Floorplan
  - FloorRaster
  - Active\_Floor
  - DDPIndex\_Support
  - Drawing\_Layer\_Content
  - DynamicValue
  - Floor\_Level
  - GenerateID
  - Space\_Classification

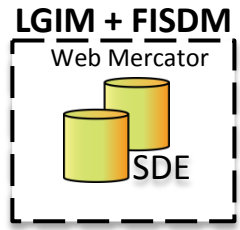


- Basemap
  - Building
  - Building\_Foundation
  - Building\_Outline\_Point
  - Building\_Outline\_Tilt
  - Building\_Point
  - Building\_Roof
  - LandscapeArea
  - Site
  - Site\_Point
  - SiteAmenityLine
  - StreetPavement
  - Waterbody

- Floorplan
  - Floor\_Area
  - Floor\_Point
  - Floor\_Poly
  - Floor\_Zone
  - FloorplanLine
  - FloorplanLine\_Publish
  - InteriorSpace
  - InteriorSpace\_Point
  - InteriorSpace\_Tilt

# FISDM – UW Database

- [-] cpo-sde.campus - sa.sde
  - [-] campus.DBO.Basemap
  - [-] campus.DBO.Caching
  - [-] campus.DBO.Communication
  - [-] campus.DBO.Floorplan
  - [-] campus.DBO.HS\_Maps
  - [-] campus.DBO.Navigation
  - [-] campus.DBO.ReferenceData
  - [-] campus.DBO.UWTopo
    - [-] campus.DBO.Active\_Floor
    - [-] campus.DBO.ASSETLINK
    - [-] campus.DBO.BUILDINGLINK
    - [-] campus.DBO.BuildingSelection
    - [-] campus.dbo.CPOPjectData
    - [-] campus.DBO.DDPIIndex\_Support
    - [-] campus.DBO.DynamicValue
    - [-] campus.dbo.Facility\_Table
    - [-] campus.DBO.Floor\_Level
    - [-] campus.DBO.HS\_RoomData
    - [-] campus.DBO.Project\_CapImprovmentComment
    - [-] campus.DBO.Project\_CapImprovmentLine
    - [-] campus.DBO.Project\_CapImprovmentPoly
    - [-] campus.DBO.Project\_CapImprovmentPt
    - [-] campus.DBO.Project\_CapitalImprovement
    - [-] campus.DBO.Project\_CapitalImprovement\_ATTACH
    - [-] campus.DBO.ProjectArea
    - [-] campus.DBO.ProjectLink
    - [-] campus.DBO.QR\_Test
    - [-] campus.DBO.Redline
      - [-] campus.DBO.Redline\_ATTACH
      - [-] campus.DBO.Redline\_ATTACHREL
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      - [-] campus.DBO.Redline\_Line\_Relate
      - [-] campus.DBO.Redline\_Point
      - [-] campus.DBO.Redline\_Point\_Relate
      - [-] campus.DBO.Redline\_Polygon
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    - [-] campus.DBO.rProjectToComment
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    - [-] campus.DBO.SA\_VIEWBYMAPLAYER
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    - [-] campus.DBO.SPACELINK
    - [-] campus.DBO.WingNames



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  - [-] campus.DBO.Floor\_Point
  - [-] campus.DBO.FloorplanLine
  - [-] campus.DBO.InteriorSpace
  - [-] campus.DBO.InteriorSpace\_Point
  - [-] campus.DBO.InteriorSpace\_Tilt
  - [-] CAMPUS.DBO.INTERIORSPPACES
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  - [-] campus.DBO.Redline\_Point
  - [-] campus.DBO.Redline\_Point\_Relate
  - [-] campus.DBO.Redline\_Polygon
  - [-] campus.DBO.Redline\_Polygon\_Relate
  - [-] campus.dbo.RoomData
  - [-] campus.DBO.rProject\_CapitalImprovement\_ATTACH
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  - [-] campus.DBO.rProjectToPoint

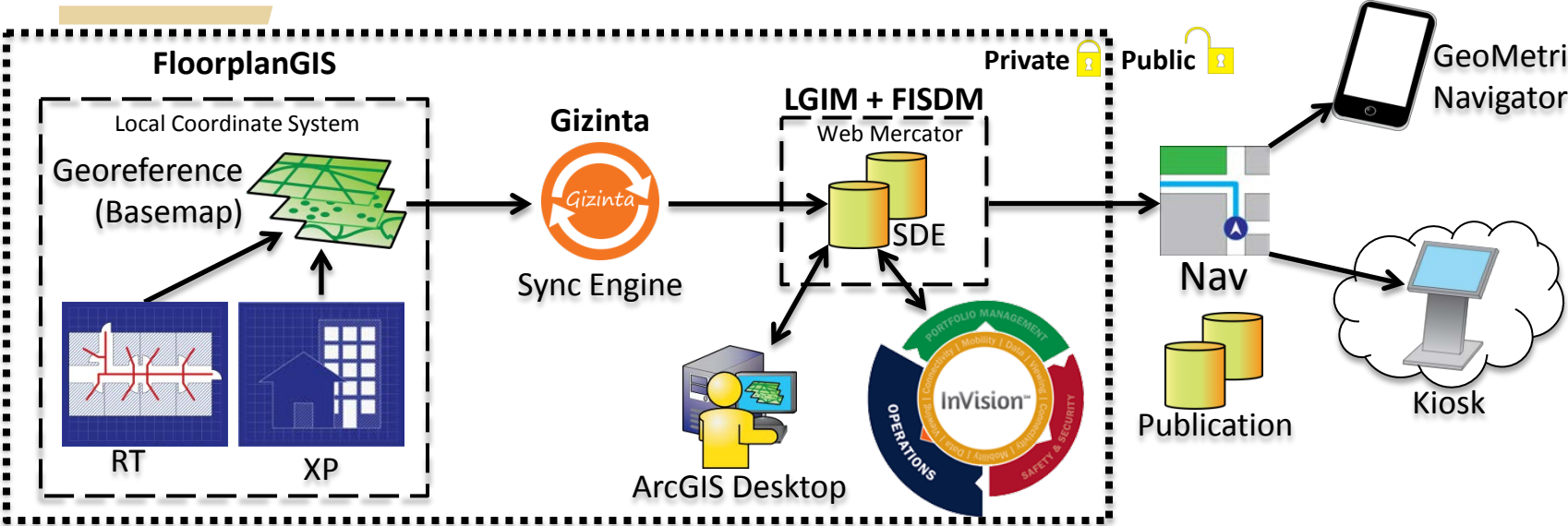
Geometry

Spatial View

Business Data



# FISDM Implementation + Navigation





# Using FISDM - Data Driven Pages

- Floorplan
  - Floor\_Area
  - Floor\_Point**
  - Floor\_Poly
  - Floor\_Zone
  - FloorplanLine
  - FloorplanLine\_Publish
  - InteriorSpace
  - InteriorSpace\_Point
  - InteriorSpace\_Tilt

Set Up Data Driven Pages

Definition Extent

**What are data driven pages?**  
An index layer is used to produce multiple output pages using a single layout. Each page shows the data at a different extent. The extents are defined by the features in the index layer.

Enable Data Driven Pages

Index Layer

Data Frame: Layers

Layer: Floor\_Points

Name Field: FloorID

Sort Field: DDPFloorSort

Sort Ascending

Optional Fields

Rotation: CalcRot

Spatial Reference: none

Page Number: none

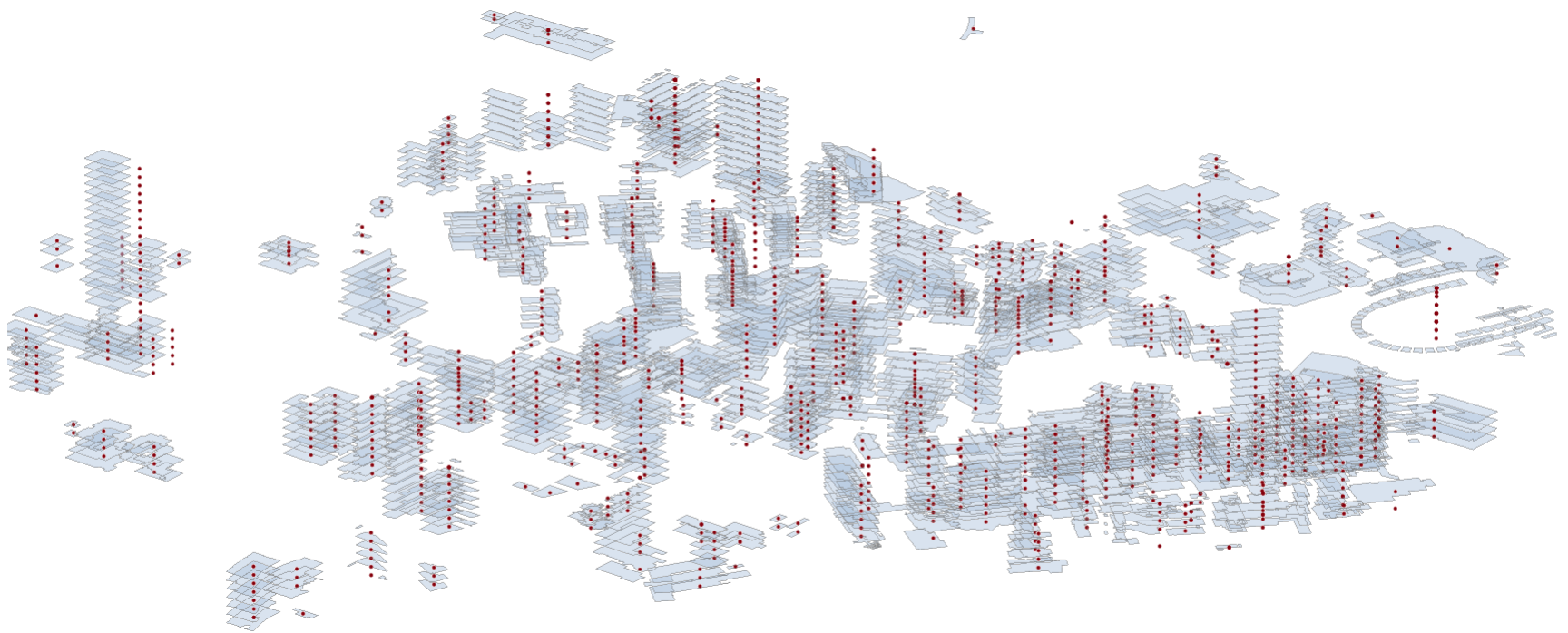
Starting Page Number: 1

OK Cancel



# Using FISDM - Data Driven Pages

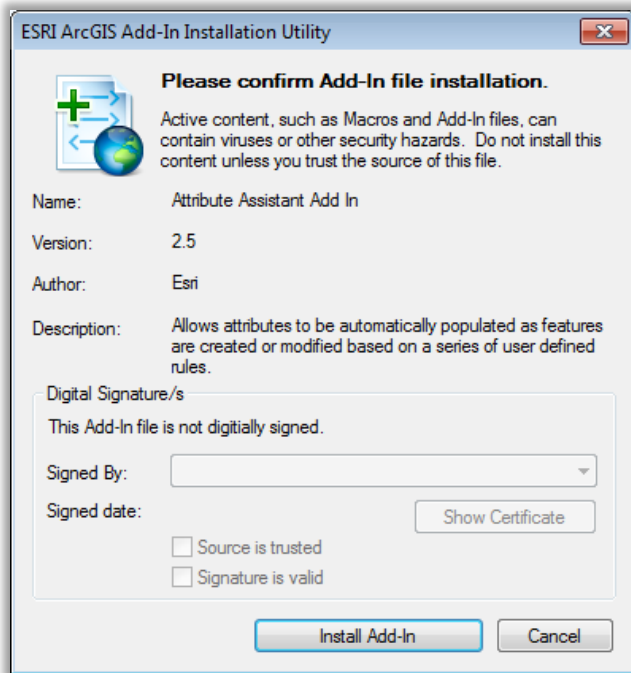
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ArcGIS Desktop



# Using FISDM - Attribute Assistant



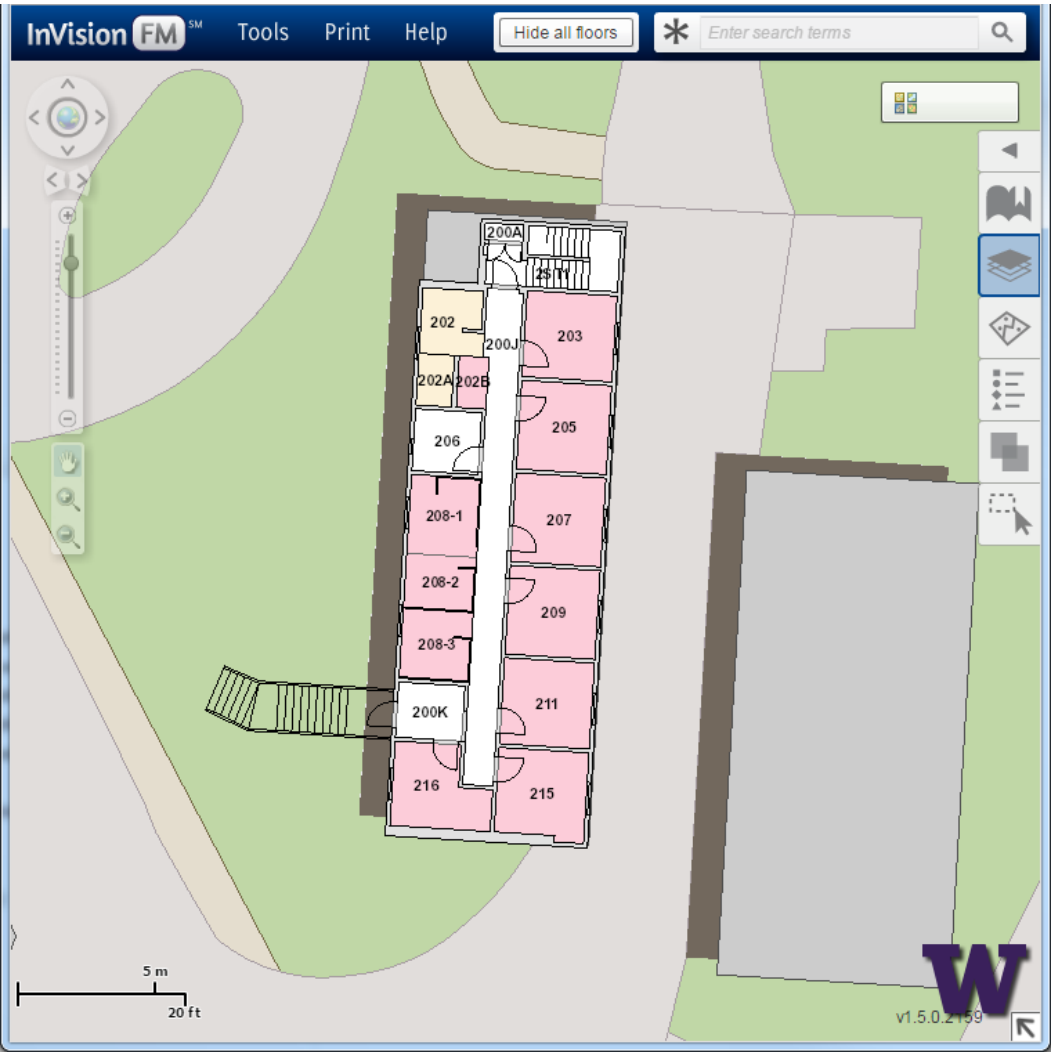
Table

DynamicValue

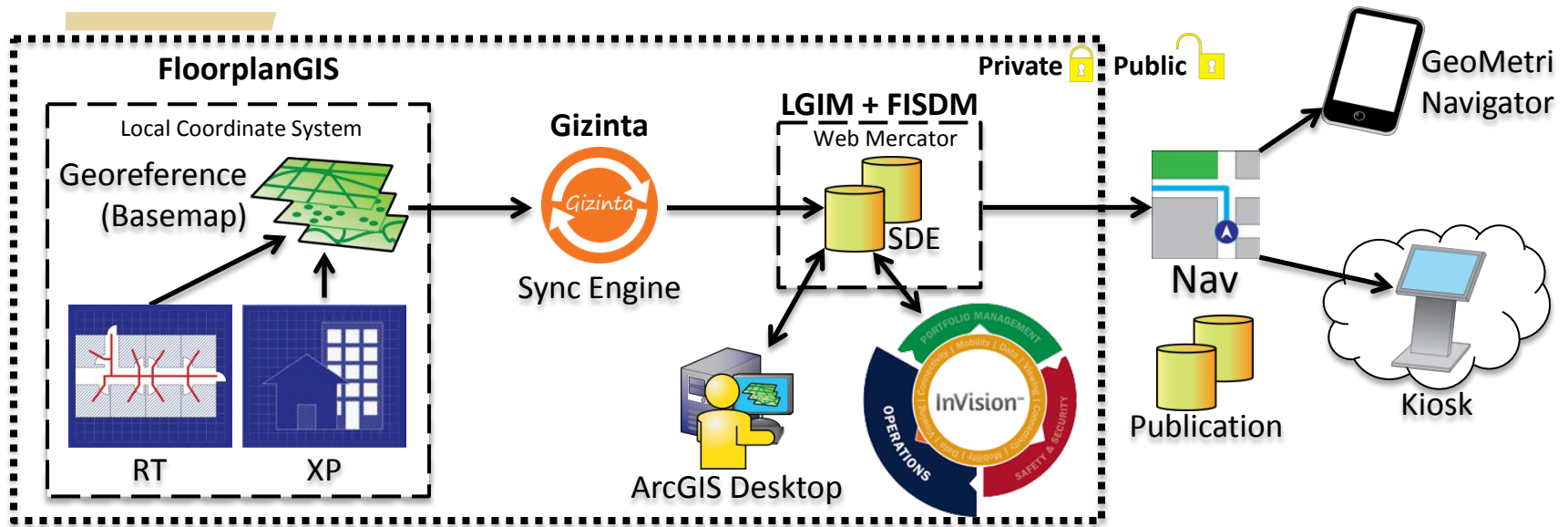
OBJECTID *	Table Name	Field Name	Value Method	Value Info	Create	Change
2	*	INSTALLDATE	LAST_VALUE	<Null>	True	True
4	*	LASTUPDATE	TIMESTAMP	<Null>	True	True
9	*	LASTEDITOR	CURRENT_USER	<Null>	True	True
17	*	OWNEDBY	LAST_VALUE	<Null>	True	True
18	*	MAINTBY	LAST_VALUE	<Null>	True	True
56	BuildingFloorplanLine	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
57	BuildingFloorplanLine	BUILDINGKEY	INTERSECTING_FEATURE	BuildingFloor\BUILDINGKEY	True	True
58	BuildingFloorplanLine	FLOORID	INTERSECTING_FEATURE	BuildingFloor\FLOORID	True	True
59	BuildingFloorplanLine	BASEELEV	INTERSECTING_FEATURE	BuildingFloor\BASEELEV	True	True
60	BuildingFloorplanLine	FLOOR	INTERSECTING_FEATURE	BuildingFloor\FLOOR	True	True
61	BuildingFloorplanLine	BUILDING	INTERSECTING_FEATURE	BuildingFloor\BUILDINGKEY	True	True
62	BuildingFloorplanLine	FLOORKEY	INTERSECTING_FEATURE	BuildingFloor\FLOORID	True	True
65	Tree	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
66	LandscapeArea	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
67	SiteAmenityLine	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
68	StreetPavement	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
70	PavementMarkingLine	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
71	PavementMarkingPoint	FACILITYID	INTERSECTING_FEATURE	FacilitySite\FACILITYID	True	True
72	BuildingInteriorSpace	FLOORKEY	INTERSECTING_FEATURE	BuildingFloor\FLOORID	True	True
73	BuildingInteriorSpace	BUILDING	INTERSECTING_FEATURE	BuildingFloor\BUILDINGKEY	True	True
74	BuildingInteriorSpace	FLOOR	INTERSECTING_FEATURE	BuildingFloor\FLOOR	True	True
75	BuildingInteriorSpace	BASEELEV	INTERSECTING_FEATURE	BuildingFloor\BASEELEV	True	True

DynamicValue

# Using FISDM – InVision FM

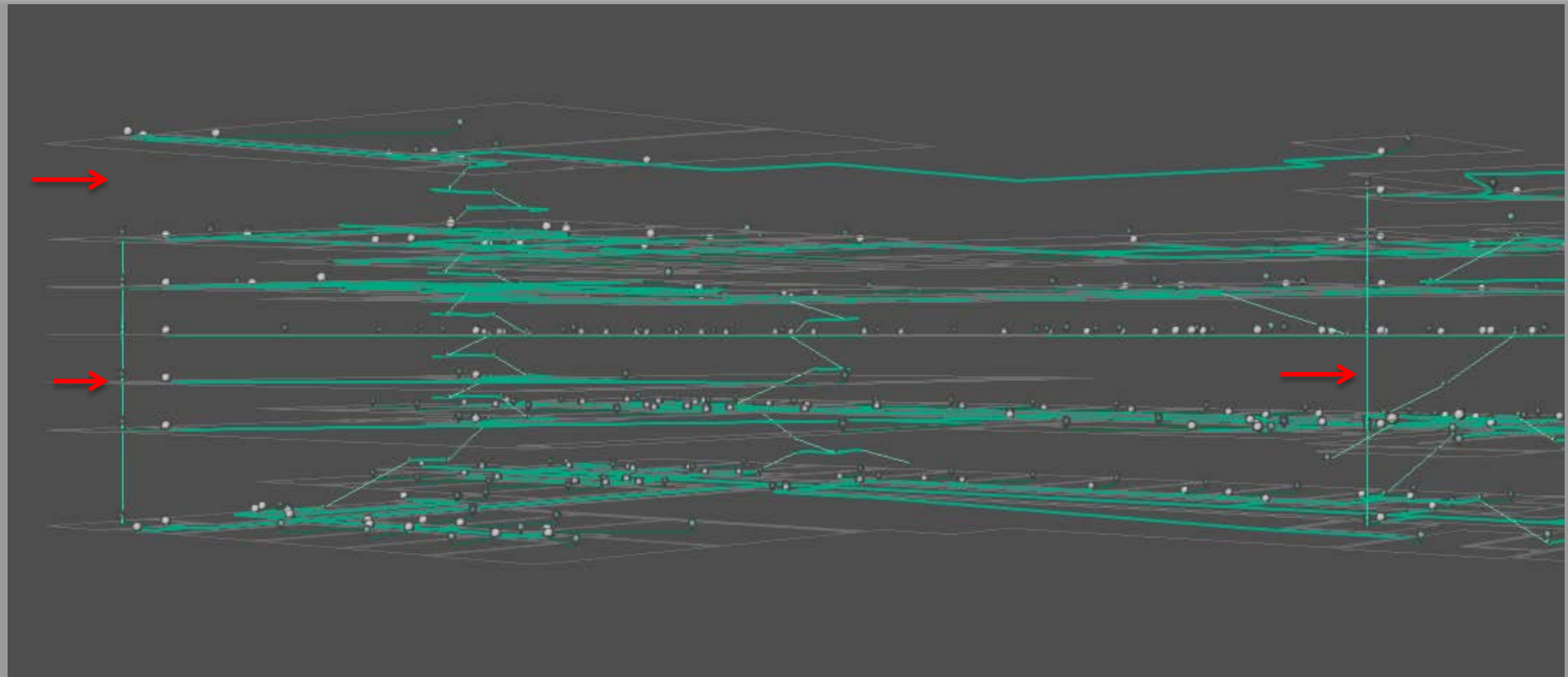


# FISDM Implementation + Navigation



# Navigation – 3D GIS From 2D CAD

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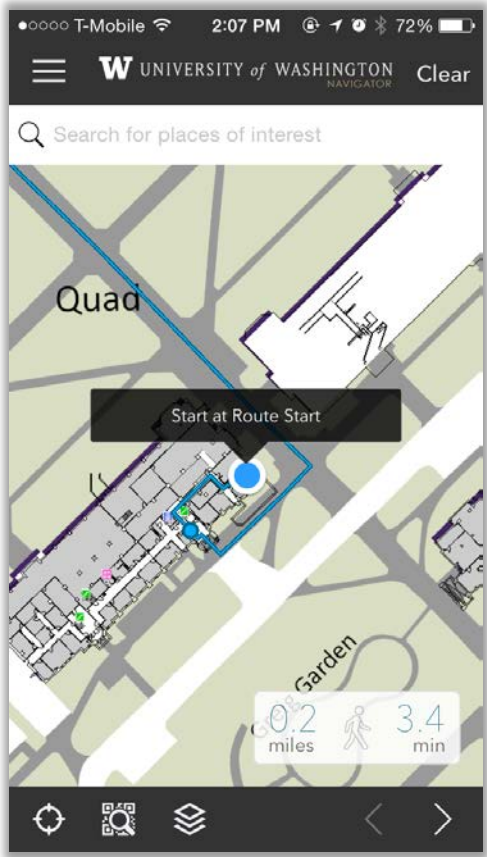
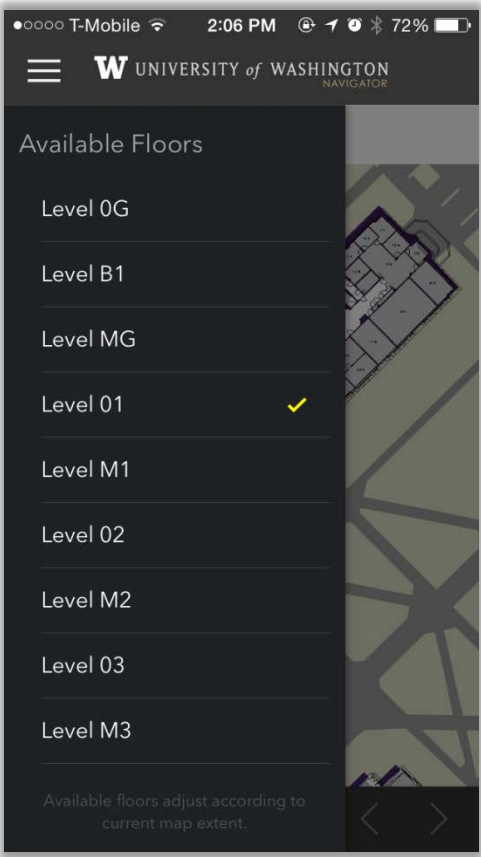
Gizinta



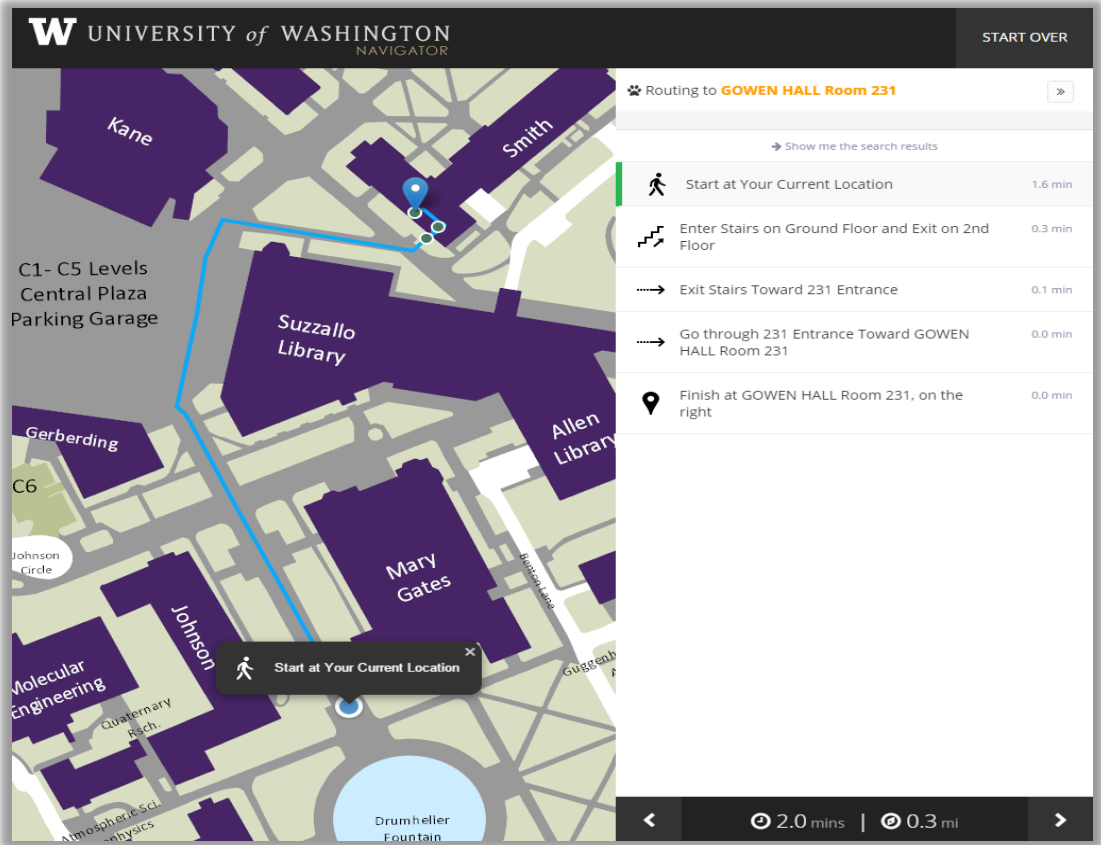
Sync Engine

W

# Navigation – Mobile App

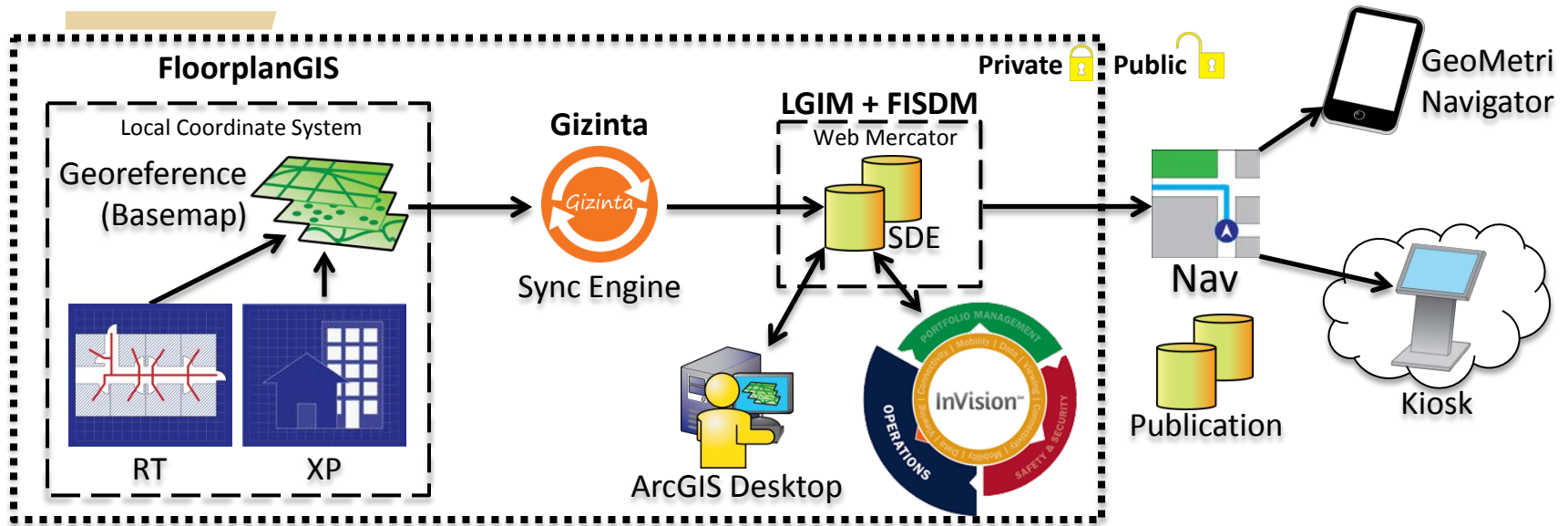


# Navigation – Kiosk App

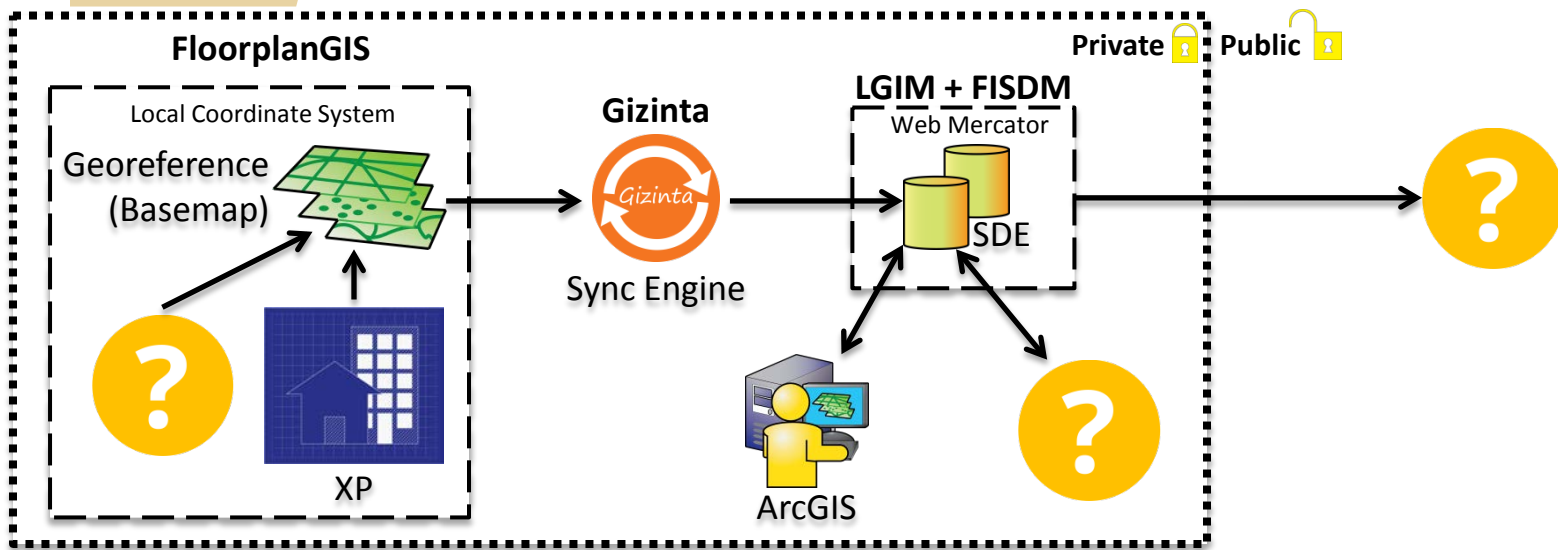




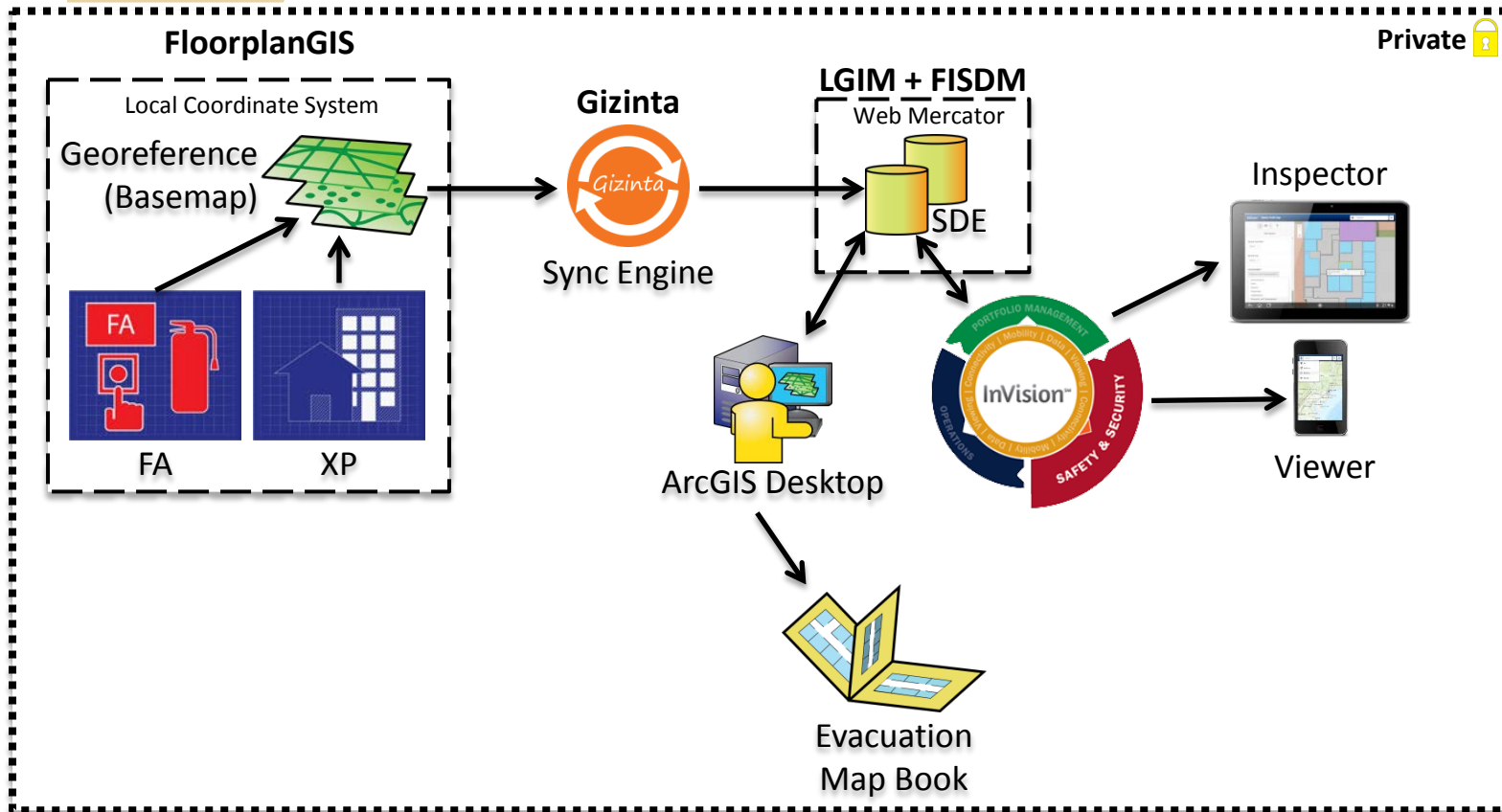
# FISDM Implementation + Navigation



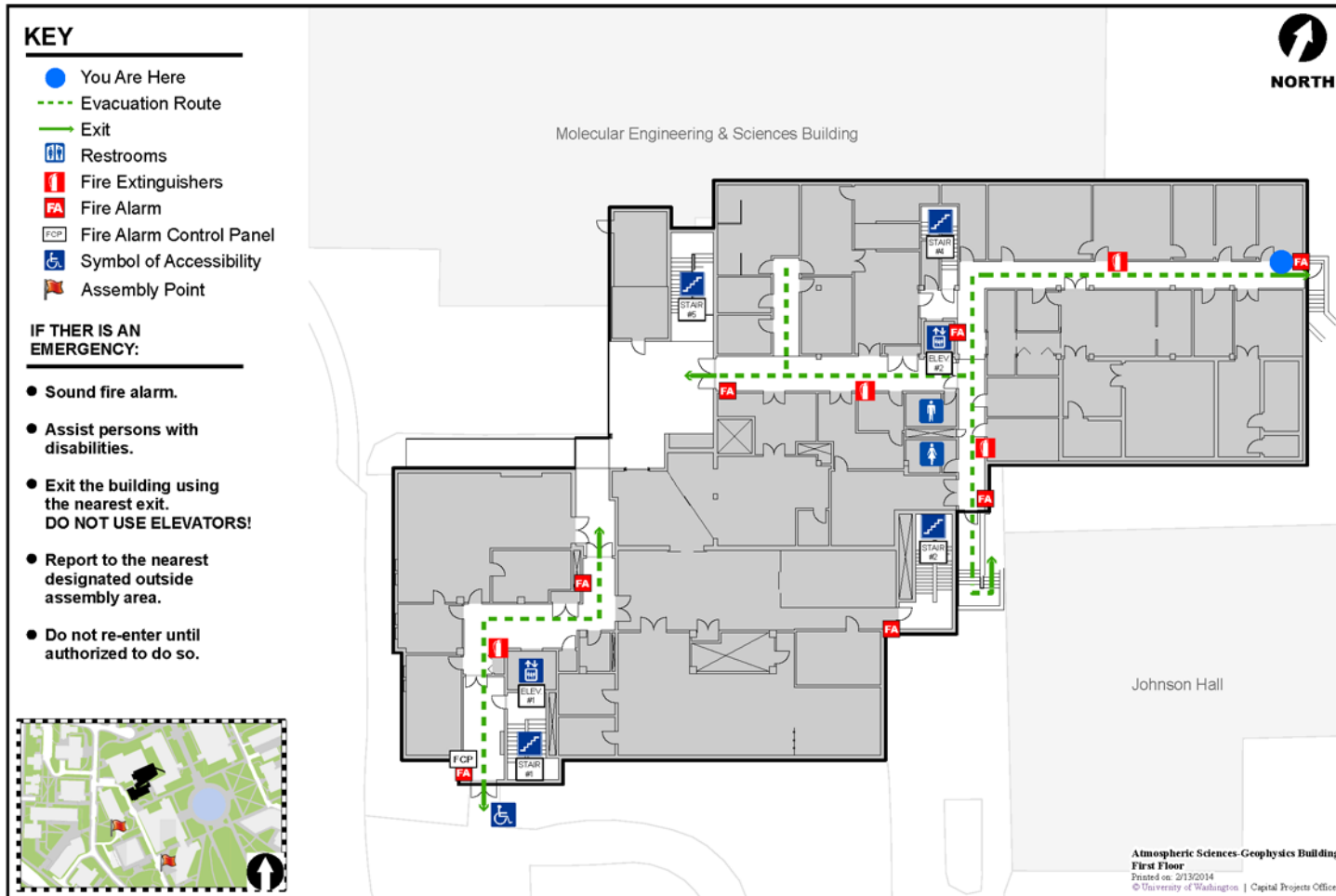
# Other FISDM Implementations



# Fire Alarm Systems



# Emergency Evacuation Maps



# Ooh, Pretty...



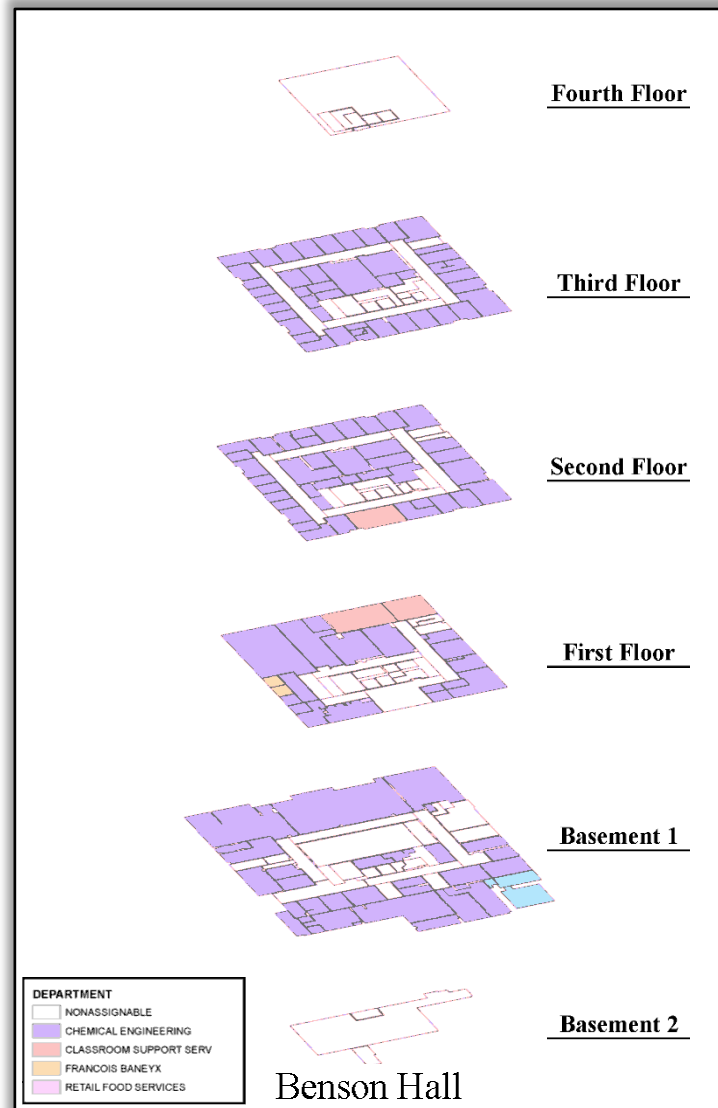
# Ooh, Pretty...



# Ooh, Pretty...

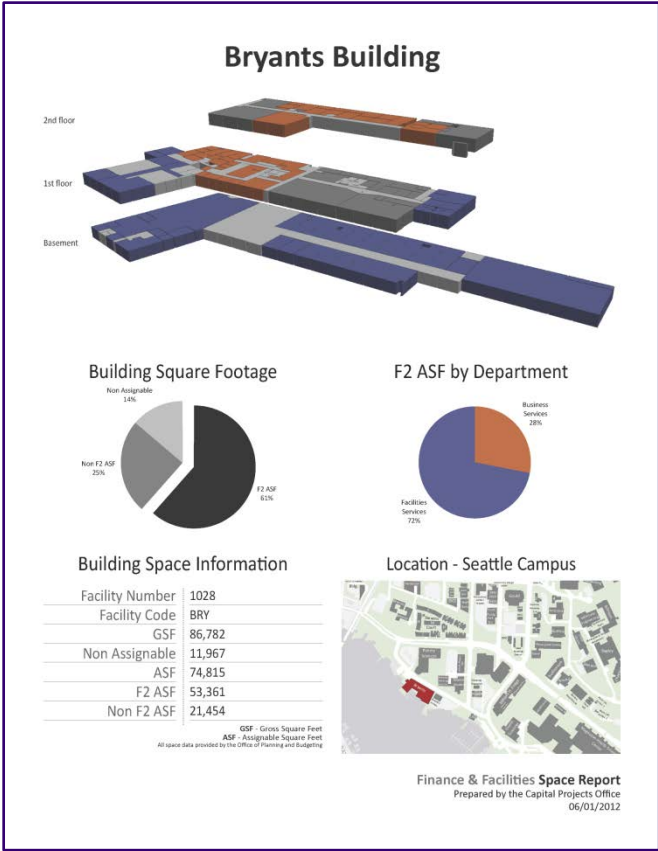
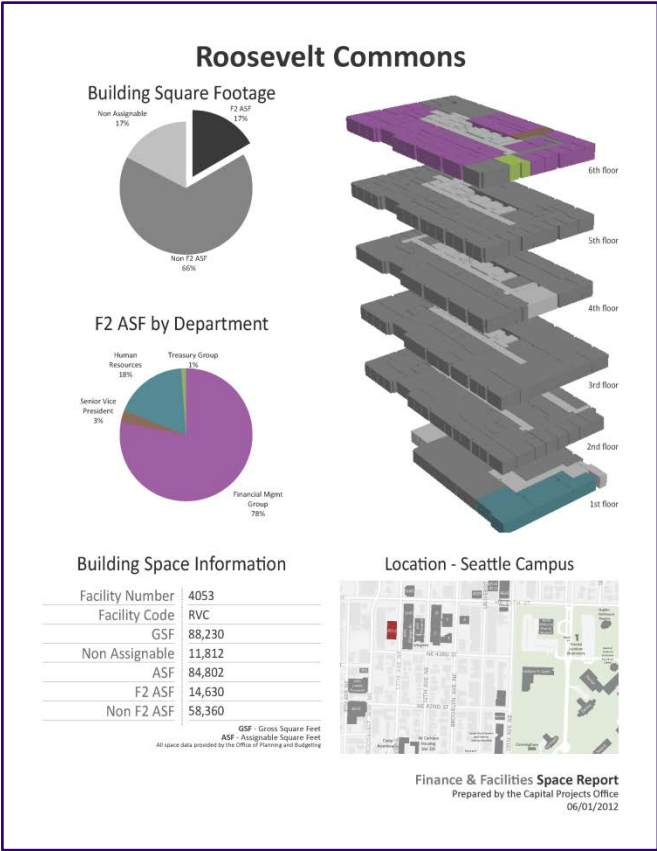


# Ooh, Pretty...

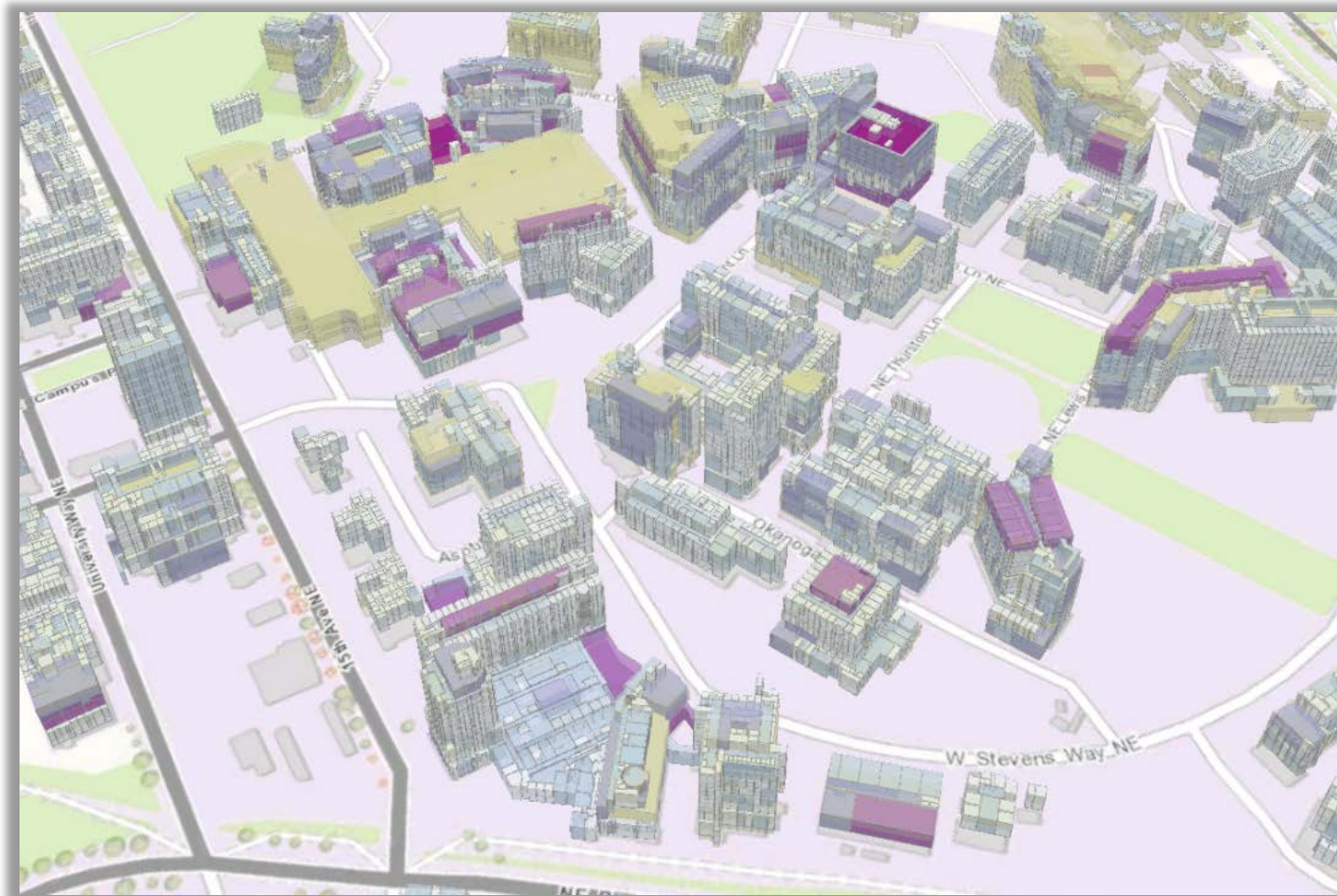




# Ooh, Pretty...



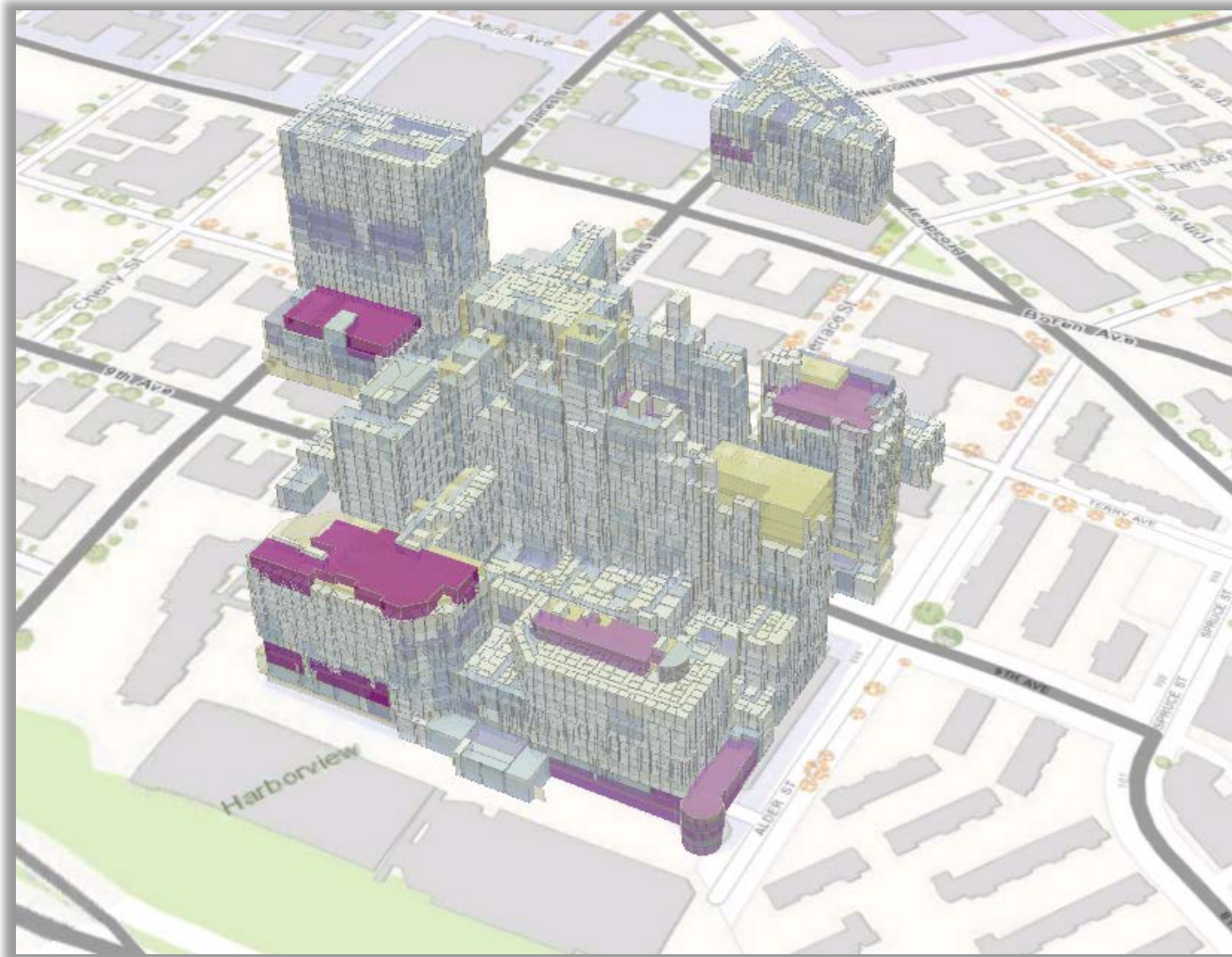
Ooh, Pretty...



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Ooh, Pretty...

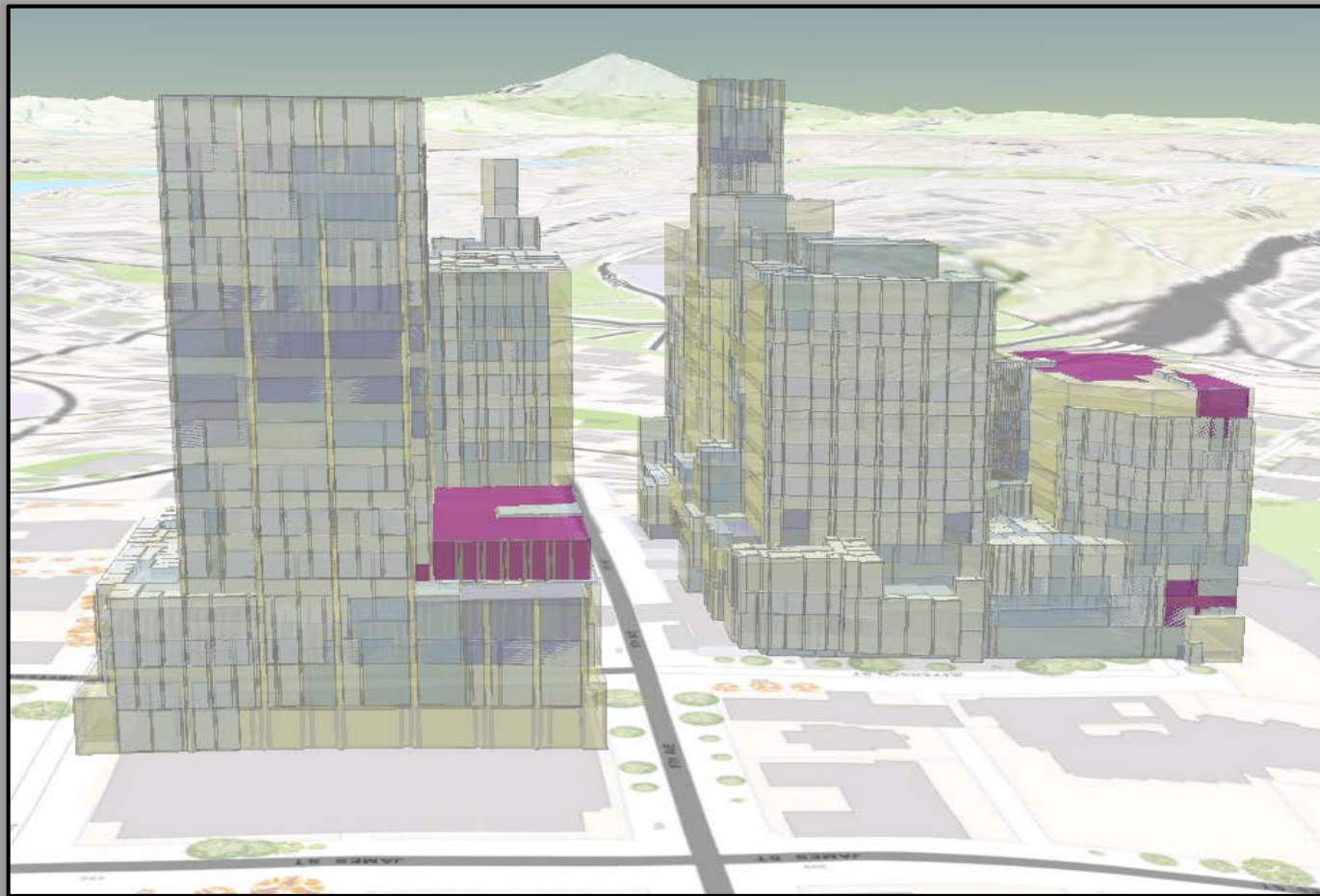
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Ooh, Pretty...

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W

# Questions?

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Capital Projects Office  
aaronch@uw.edu  
[geonet.esri.com/people/aaronch](https://geonet.esri.com/people/aaronch)  
206-616-4489

