University of Michigan
Founded: 1817

Ann Arbor Campus
Number of Buildings: ~750
Campus Size: ~3200 acres
Gross Sq Ft: ~40M

Ray Garrett
Senior Manager
Utilities Records Integration (URI) Department

With UM since 2006
6 FTEs in URI, 2 shared support

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Utilities Department

- Power Plant
- Medium Voltage
- Low Voltage
- Water
- Sanitary
- Storm
- Chilled Water
- Tunnels
- Steam
- Condensate
- Compressed Air
- DWS & DWR

Other Departments

- Fiber
- Fire Service

300+ miles of underground services

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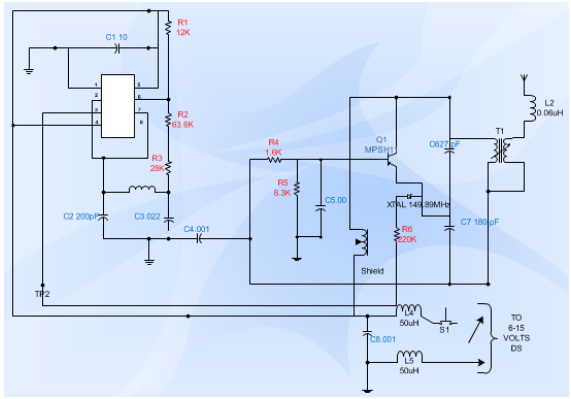
Utilities Records Integration (URI)

Mapping

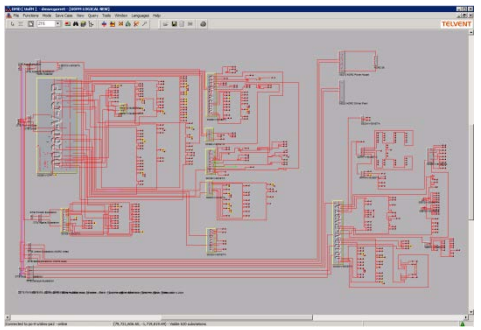
FMS



Electrical Documentation

Web

Miss Dig Administration



Distribution Management System

How do you start a Utility GIS System?

Determine the benefits
Management's Commitment
Authoritative Data Source
Implementation Plan
Involve the trades!
Maintenance Plan
Involve the trades!

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Benefits

- Single source of truth – Authoritative data source
  - Reduction in documentation costs by elimination of duplicate systems
- Data Federation
- Consolidation of institutional knowledge
- Better Panning
- Lower Miss Dig costs
  - Fewer Miss Dig hits
- Consistent & wider distribution of knowledge

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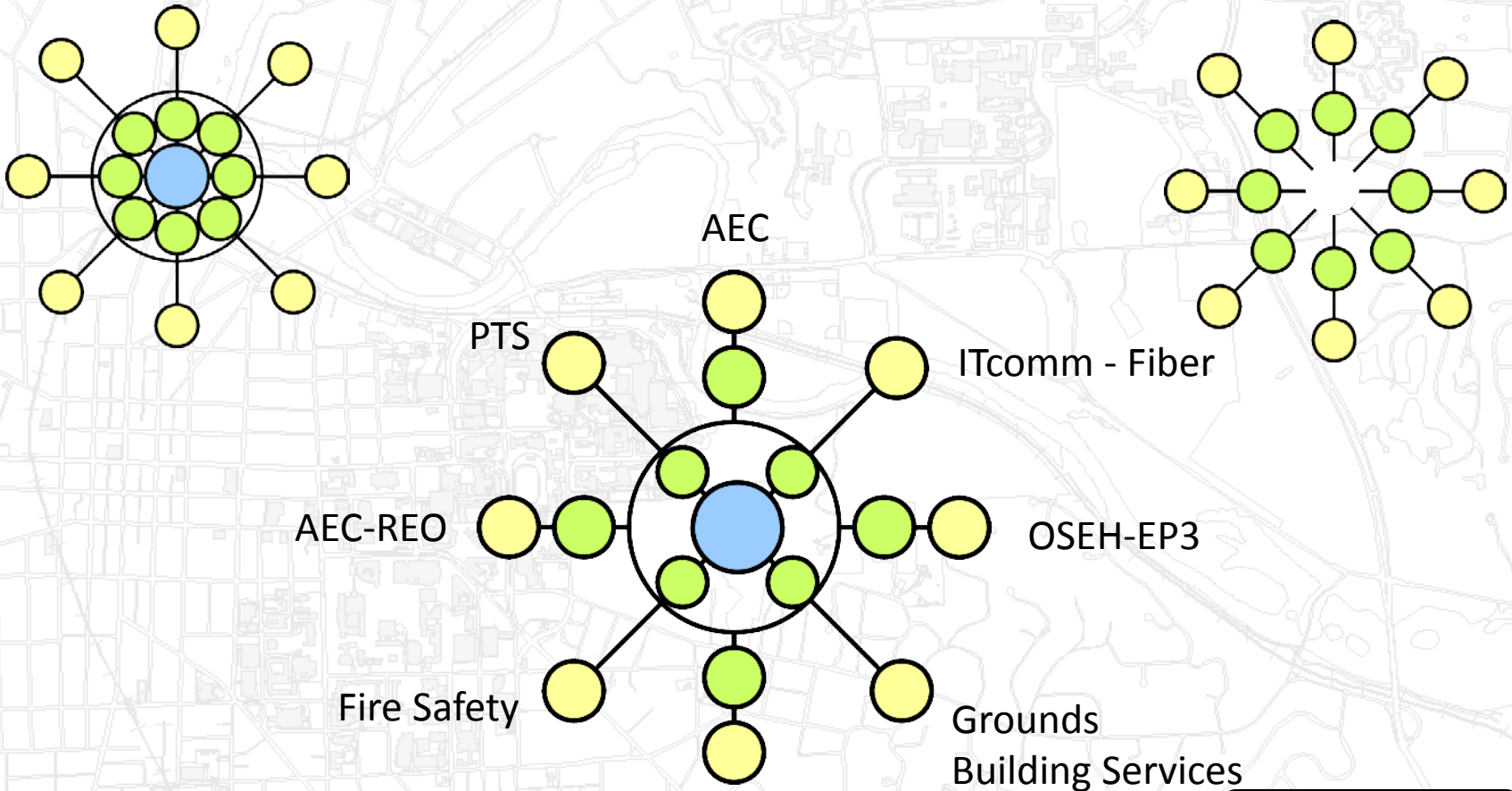
GIS Organizational Structure



Implementation Plan

GIS Standards Committee
Talk with the Shops and Trades
Jumpstart with Total Station locations of Water/Sanitary/Storm
Transfer Electrical from CAD
Involve the Trades for data correction
80/20 rule

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Implementation Plan

GIS Standards Committee

- Resolved duplication of efforts
- Security Coordination
- Data Federation
  - Data interchange guidelines
  - Established Spatial Reference
- Meta data guidelines
- Resolution of differences
- Exchange of ideas

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Implementation Plan

Talk with the Shops and Trades

Find out what would truly save the trades time and money
Solicit their help in correcting the data
Assure them that we are not going to take any paper away
Borrow and return redlines stashed in trucks and shop
Meet with them regularly

Only promise what you can do and do what you say

Deliver results that benefit the trades

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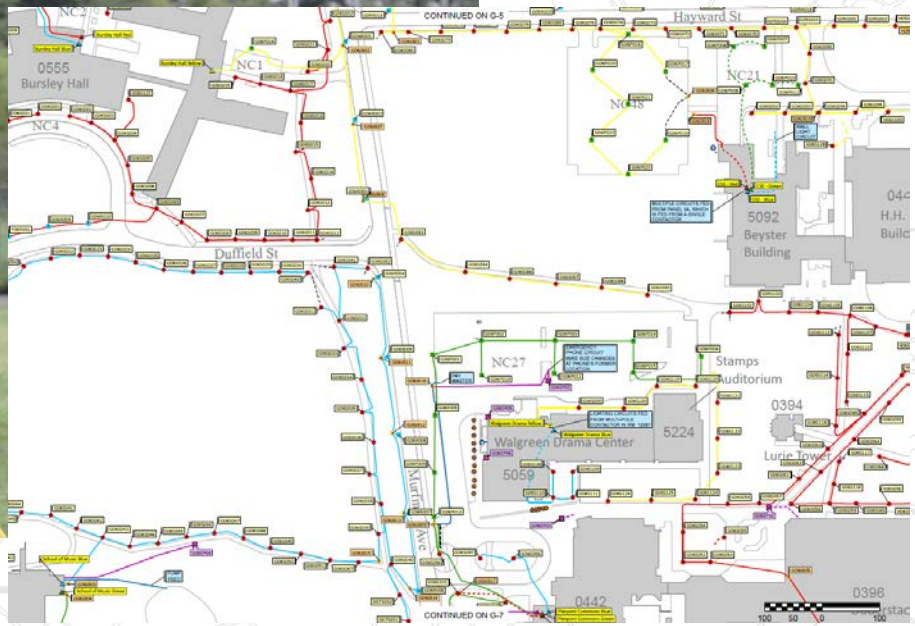
Implementation Plan



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Maintenance Plan

Talk with the Shops and Trades

Routinely solicit feedback on correcting the data
Help them in a timely manner
If you are unable to implement a suggestion or update in a timely manner let them know a realistic time frame

Updates should be timely and routine

Plan for measured growth

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How do you get the information to the end user?

Paper – 2%

ArcMap -2%

Web – 98%

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URI GIS Website

Responsive Design

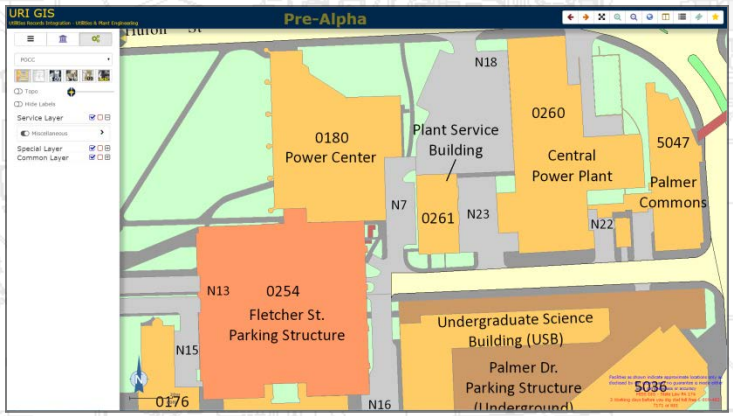
Multi-Platform

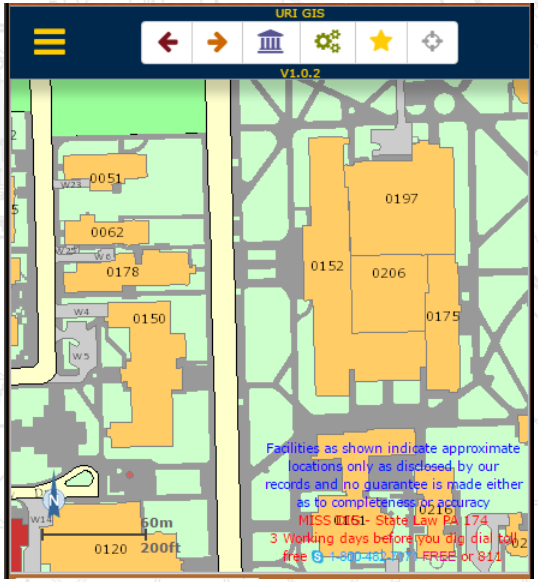
Desktop/Laptop

- Windows, Mac

Mobile

- iOS 8+, Android 4.4+
- MS Surface





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Web Technologies

HTML, CSS, JavaScript

ESRI ArcGIS API for JavaScript, Dojo Toolkit

Backbone.js, Marionette.js, Underscore.js

Bootstrap, JQuery

ESRI ArcGIS for Server

ASP.NET WebAPI

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Website Demonstration

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Other areas we are working on

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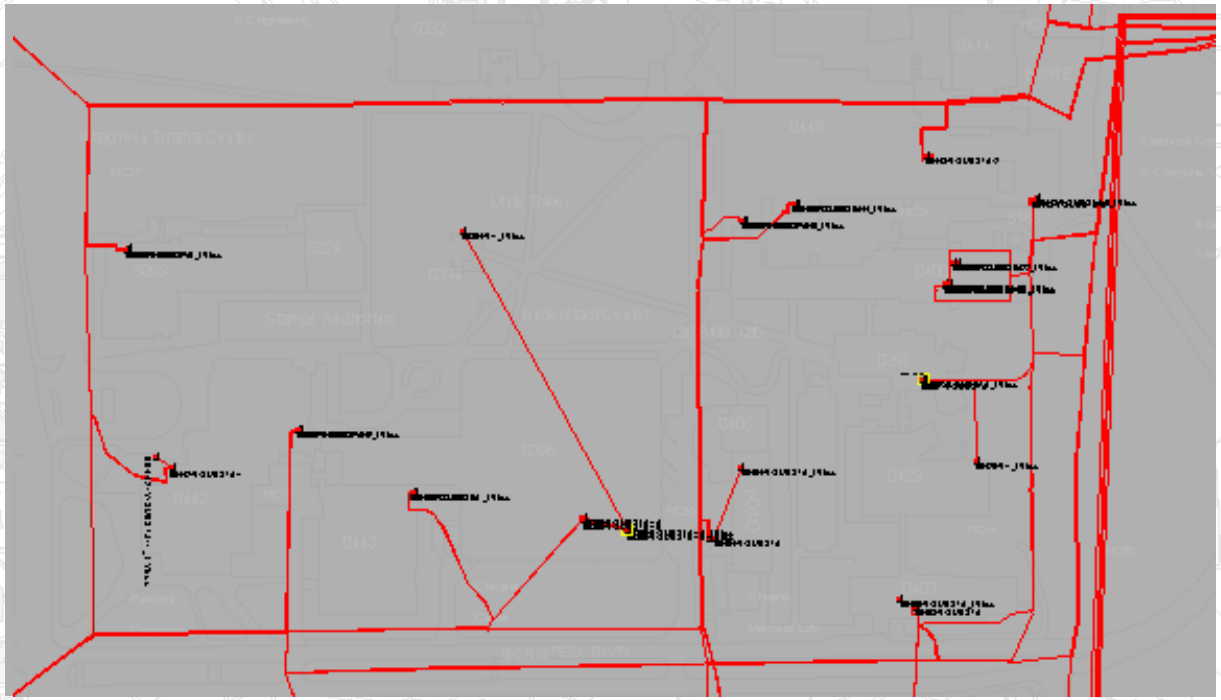
GIS to DMS

ArcFM
ArcMap



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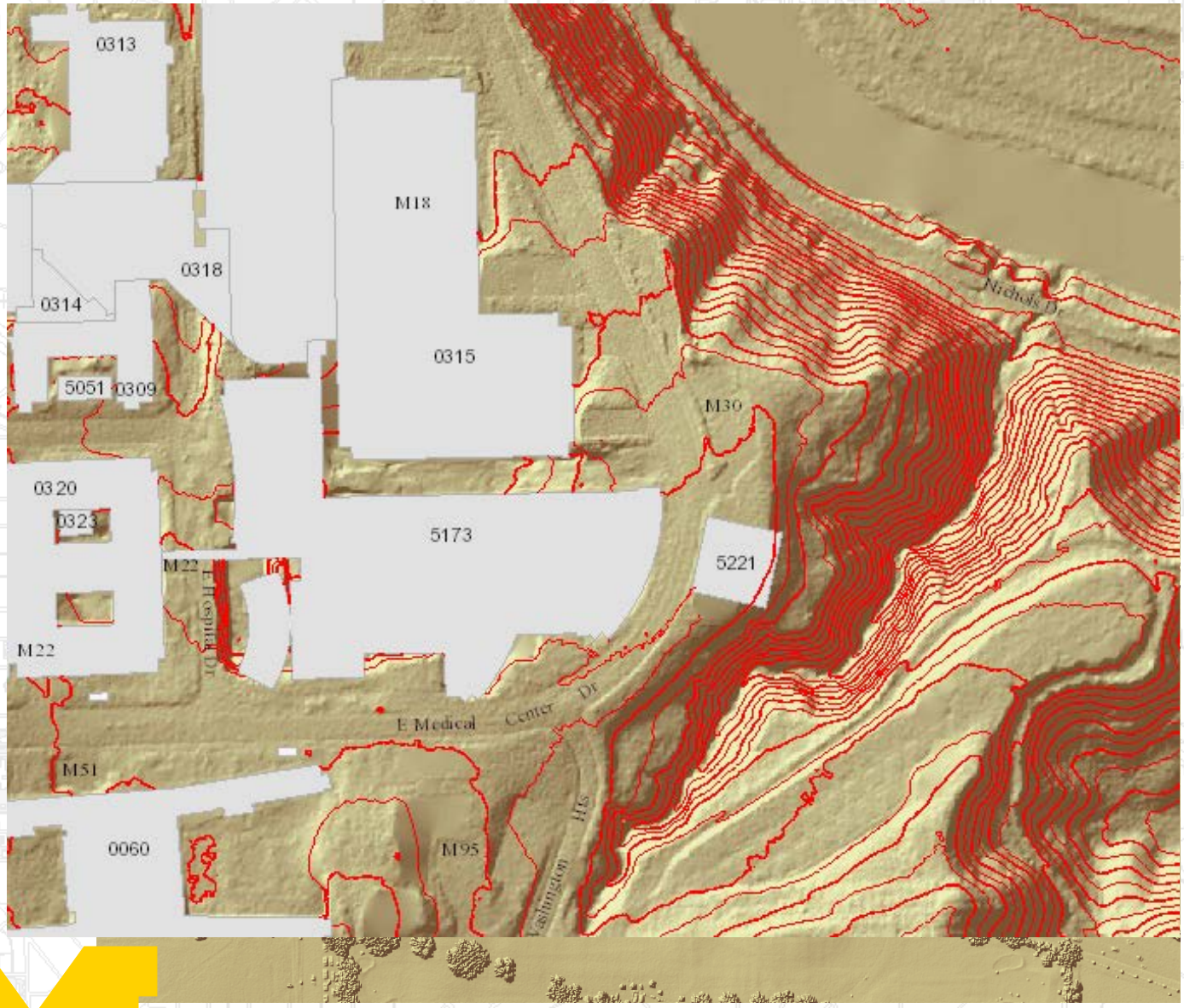
DSM



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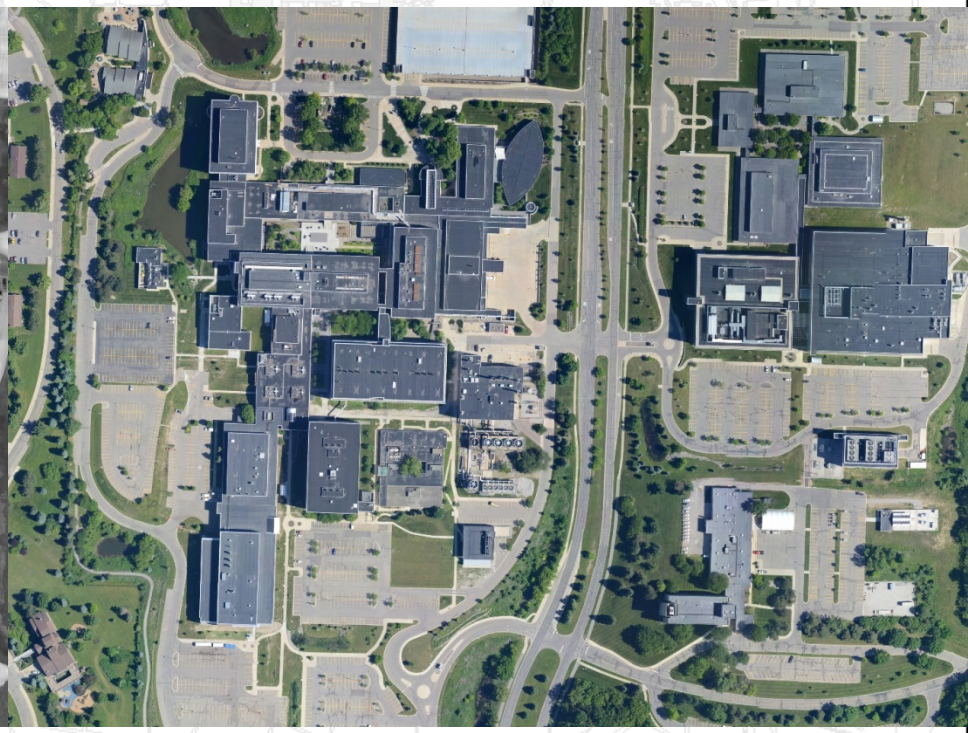

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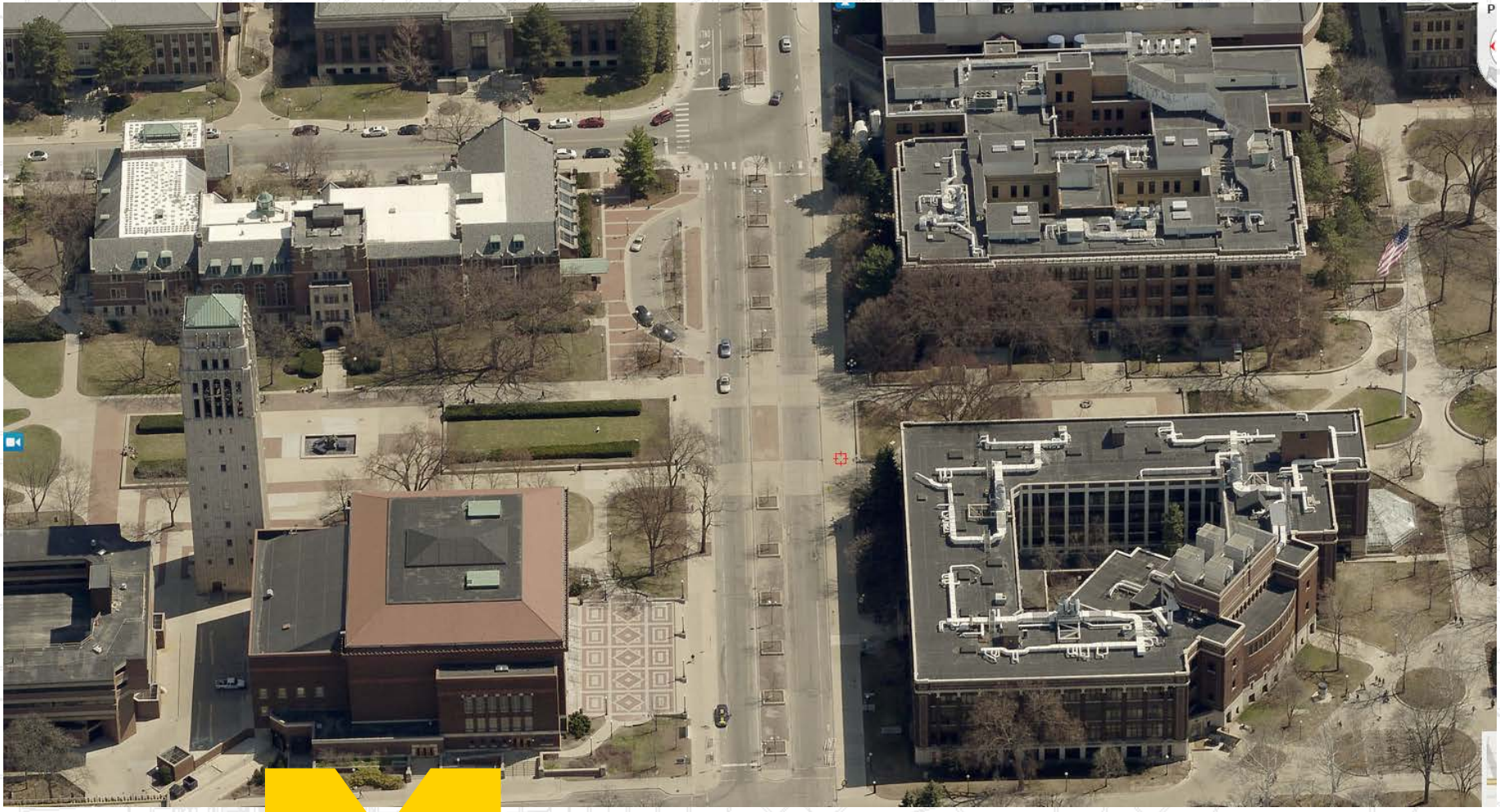
High Quality Aerials



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CityEngine Campus

Why 3D?

To accurately represent:

- Buried Utilities
- Tunnels
- Building Light Locations

Help with Miss Dig

Help with project planning

Reduce Engineering Costs

BIM Integration

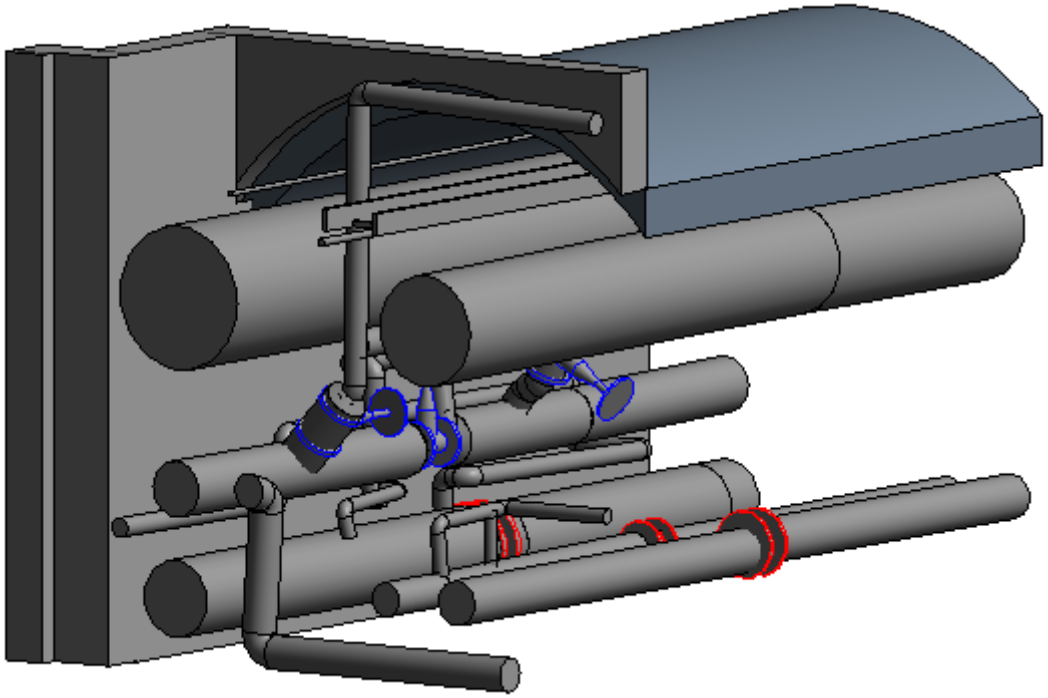
Join us Friday August 14, 2015 9:45am at the CFTA annual conference hosted at Michigan State University, East Lansing, MI

Tunnels

Point cloud to BIM to GIS

BIM to AiM

(CMMS)



Join us Thursday August 13, 2015 9:30 am at the CFTA annual conference hosted at Michigan State University, East Lansing, MI

CFTA 2015 Silver Anniversary Conference @ Michigan State University in East Lansing, Michigan August 11-14

Registration @ http://www.cfta.org/

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Questions?

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