

# Integrated Asset management



Martin Tilt, GIS Analyst, CoV

# What is asset management

- ‘Infrastructure’ not ‘financial’
- Municipal infrastructure (i.e.)
  - Sewer mains
  - Street Lights
  - Water Hydrant
  - City owned buildings
  - Fiber networks

# W's of Asset Management

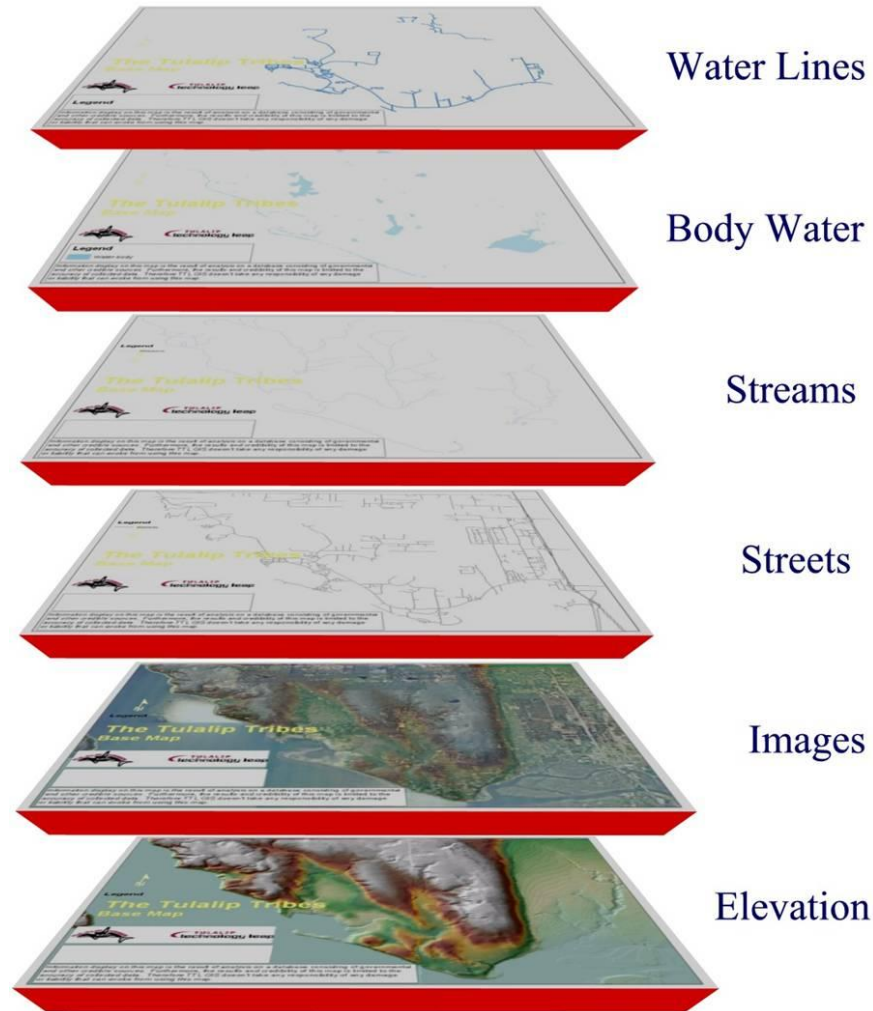
- What assets do we own?
- Where are they located?
- What condition are the assets in?
- What is its value?
- What needs to be done to preserve the assets (repair, renewal, or replacement)?
- When do you need to do it and how much will it cost?

# 'W's of Asset Management

Knowing when, where, and why can help us anticipate the problems and proactively replace them before they fail



# How does GIS fit in with AM?





# Collecting the data was only half the battle...

we were....

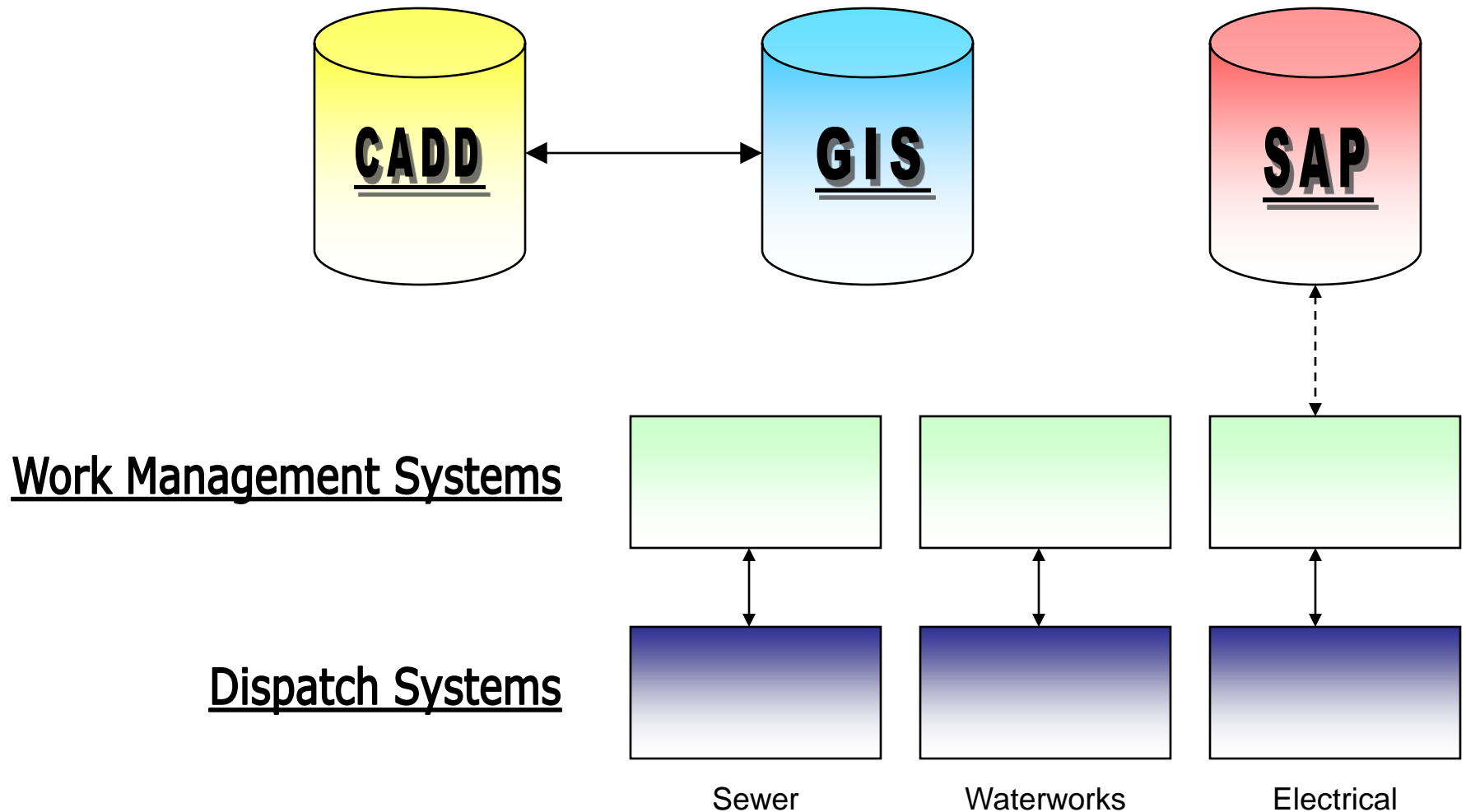
- Storing & displaying the as-built locations of the assets
- Maintaining a data dictionary describing the characteristics of the assets
- Still printing out paper maps ☹️

we weren't...

- Using the data to assist us in our decision making processes
- Integrating our GIS with our business systems

# The Result

Systems separated by function



# So along came IMS...

(Infrastructure Management strategy)

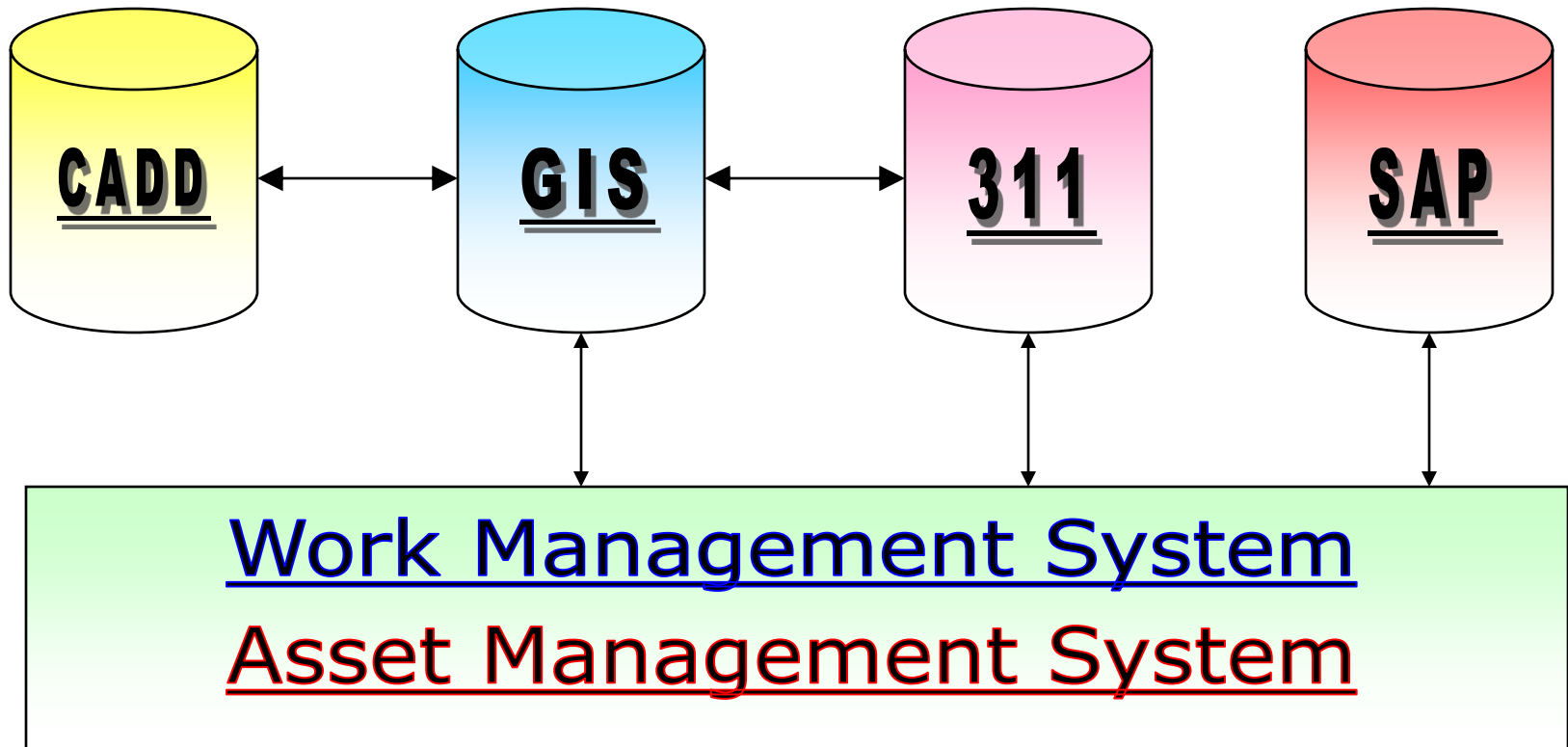
## We'd identified a...

- **Need to** optimize use of dollars spent maintaining / replacing City's \$8 billion in infrastructure assets
- **Need to** minimize the risk of critical infrastructure failure
- **Need to** meet citizen's rising customer service expectations
- **Need to** create centralized way to monitor and record work history, condition, and data related to infrastructure assets
- **Need to** replace obsolete systems and disparate processes
- **Need to** establish better systems for financial accountability and capital planning
- **Need to** comply with new Public Sector Accounting Board (PSAB) requirements



# The Goal

## Integrated Systems



# TIMELINE

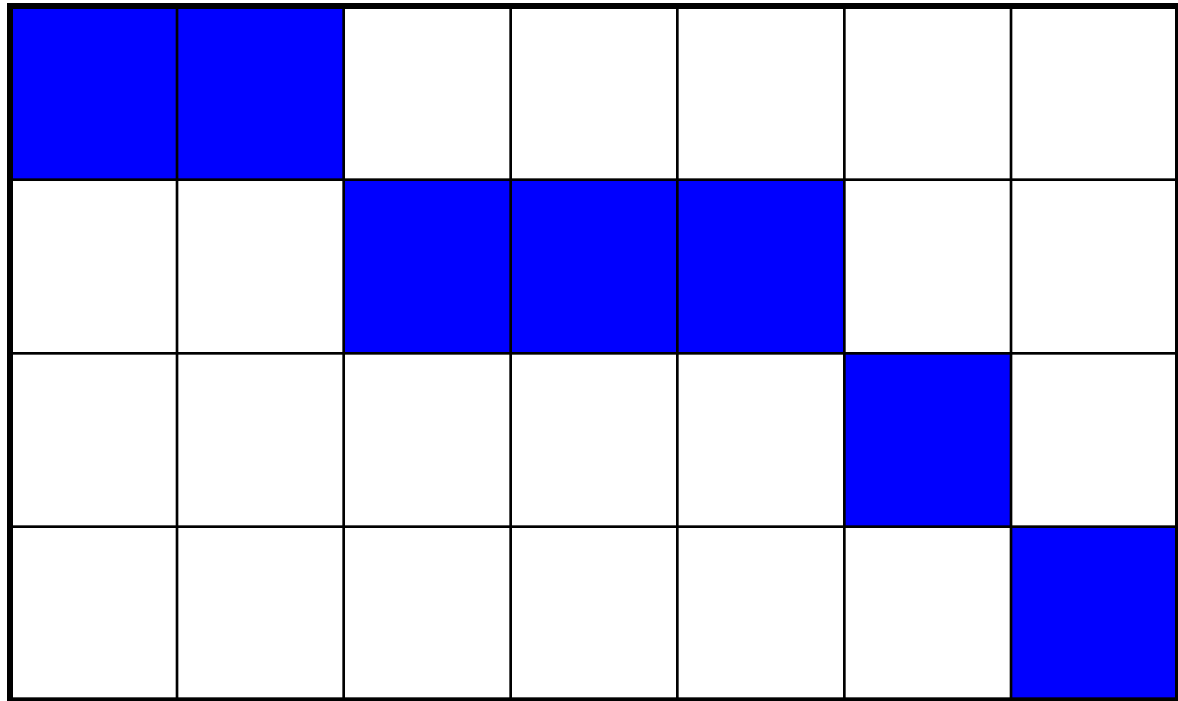
2005 2006 2007 2008 2009 2010 2011

Pre-Release

Release 1

Release 2

Release 2.x



# What was delivered?

## **A system that featured:**

- consistent business-driven work management processes impacting over 500 staff
- integration with our SAP financial system
- integration with our 311 call centre for trouble calls
- asset valuation models for many of our asset classes
- an integrated GIS front-end
- custom SSRS reporting interfaces

# A scary IT slide

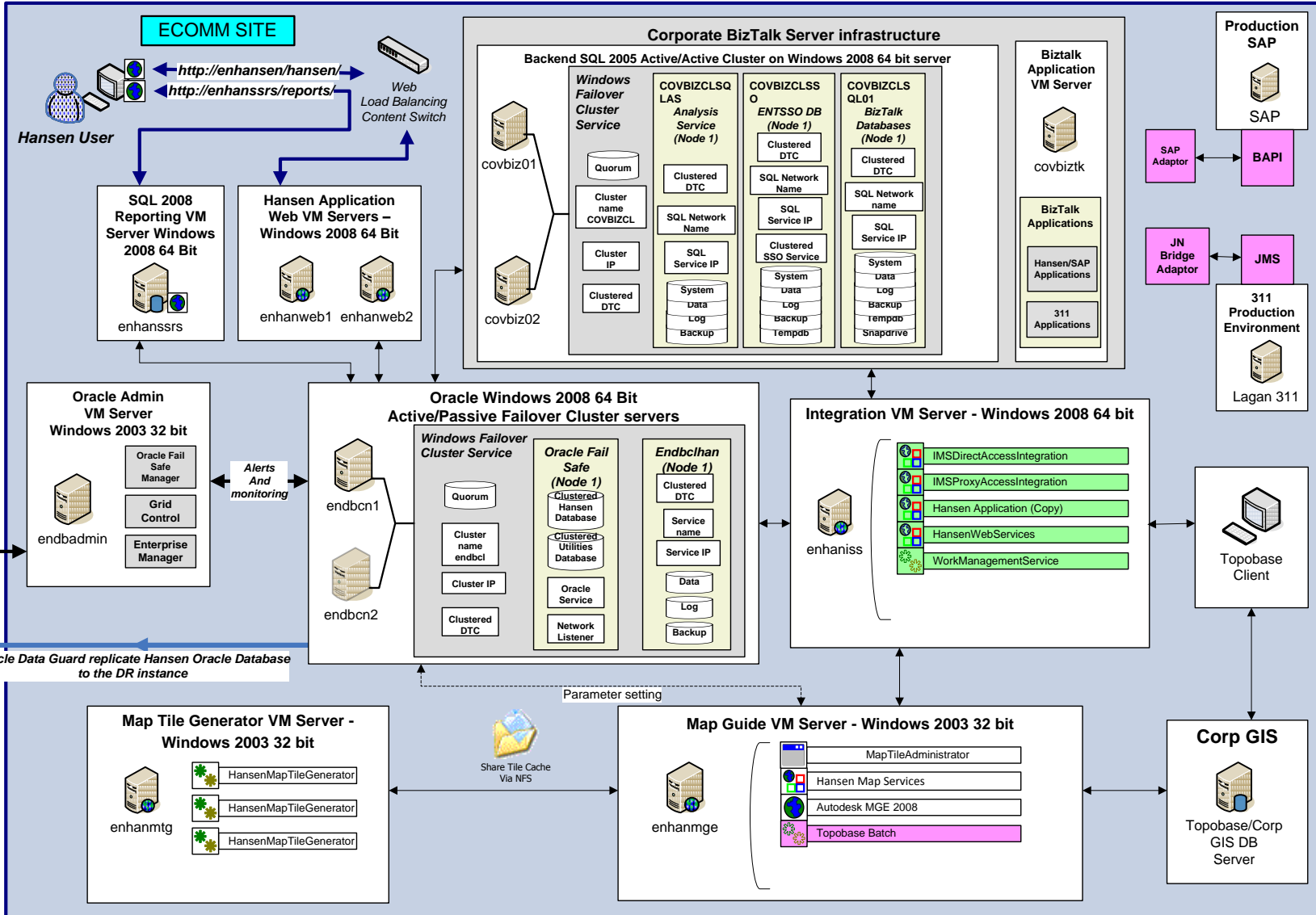
## Hansen Production Integration Architecture

### VM host Information

**ECOMM Site:**  
**Covesx01ec Hosting:**  
 Enhanmtg  
 Enhanweb1  
 Enhanssrs  
 Enhansis

**Covesx02ec Hosting:**  
 Endbadmin  
 enhanmge  
 Enhanweb2

**OPS DR Site:**  
**Covesx02 Hosting:**  
 All Hansen production VM from ECOMM when issue arise



# What is left to do?

- Mobile computing
- Legacy systems still in use
- New business areas
  - Land Fill
  - Fiber Networks
  - Facilities Management
- Business Intelligence

# A few more words about GIS...

The screenshot displays the Autodesk Topobase Client 2009 interface for a sewer network. The main window shows a map with sewer lines and manholes. A detailed data window for a specific section is open, providing the following information:

**Section - TB\_WW**

Function: Classification Network Tracer

Address and Location Information

Common Attributes Hansen Related Connection attributes Main Inspection Table

**CITY OF VANCOUVER SEWER**

Section: [55.14 - 250 ST VC 4.44% 1970] Installation Date: 1/1/1970

Pipe use	Main	Service Status	In Service	Effluent Type	Storm
Length (m)	55.14	Diameter	250	Grade %	4.44
Material	Verified Clay	Validation Date		BUN	
Upstream Invert	38.61	Upstream Invert Estimated	No <input checked="" type="checkbox"/>		
Downstream Invert	36.17	Downstream Invert Estimated	No <input checked="" type="checkbox"/>		
Pipe Shape	Round	Height (mm)	0.00	Width (mm)	0.00
Section Name		Flow Category	Gravity	Normal Pressure	0.00
Lining Material		On Piles	N <input checked="" type="checkbox"/>	On Slab	N <input checked="" type="checkbox"/>
		Wet Weather Only?	No <input checked="" type="checkbox"/>		
Drawing Number		PP Number	B66		

NFB Notation: [ ] NFB Elevation: 0.00 NFB Type: [ ]

Record 1 of 1 (Filter active)

Command: \_tbattributes 1 found

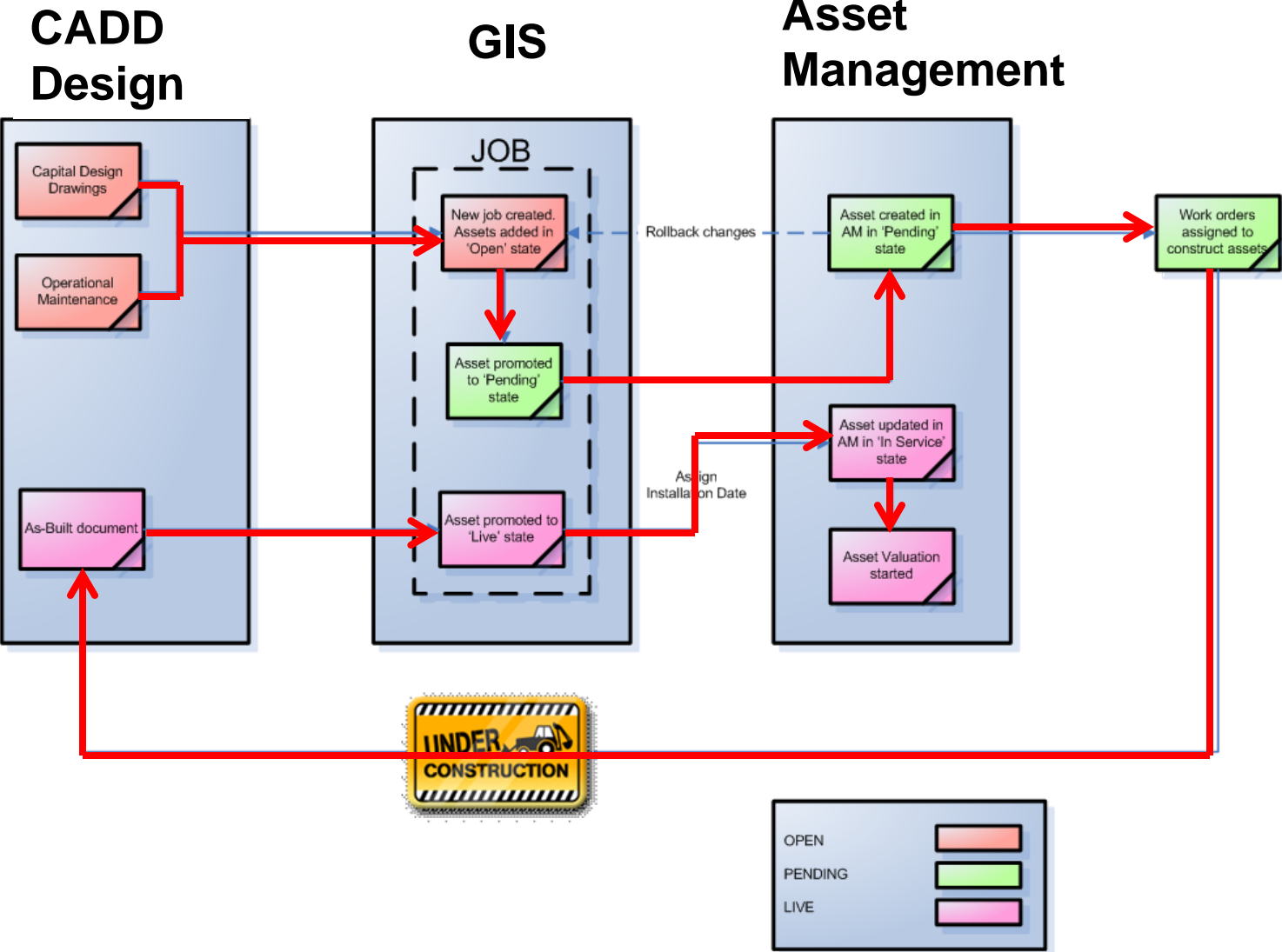
The interface also includes a Topbase panel on the left with a tree view for 'TB\_WW' (Topics, COV, Drain area, Point, Protection, Section, Utility) and a Task Pane on the right showing a legend for 'Wastewater' (Section - Combined, Section - STM, Section - SAN, Manhole - Combined, Manhole - Storm, Manhole - Sanitary, Catch Basin, Valve - Combined, Fitting - San, Outfall, Cap, Plug, Reducer, Thrustblock, Bend, Wye, Air Vent).

# New concepts

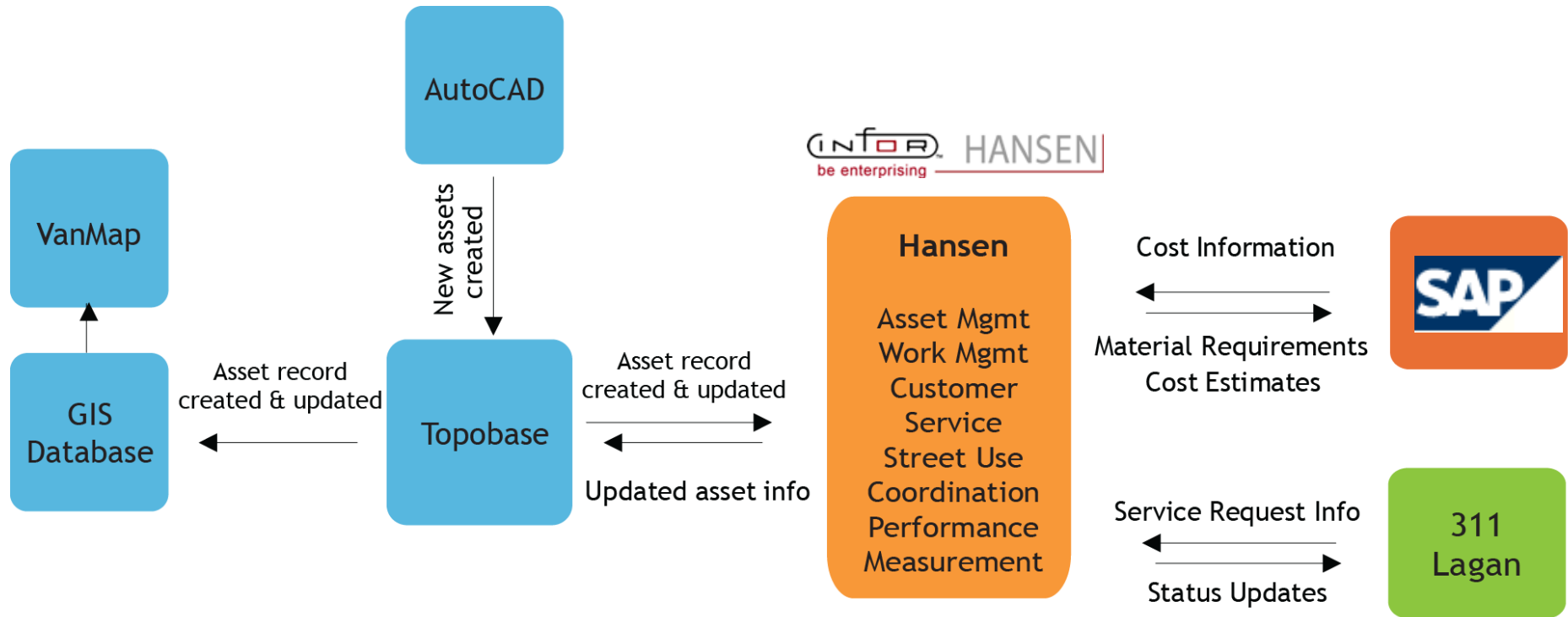
- GIS as a front-end to asset management system
  - Two-way updates
- As-built vs. Design time



# GIS asset integration



# Integrated Asset Management

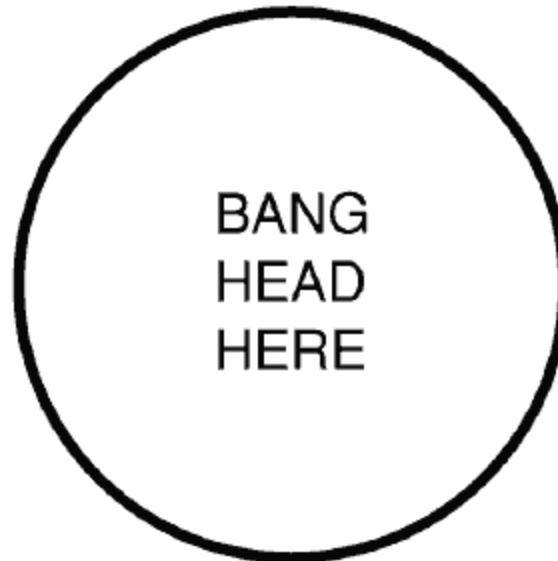


Data is integrated for Systematic Reporting and Operational Efficiency

# Please note...it wasn't easy

## ANTI-STRESS KIT

1. PLACE ON A FIRM SURFACE
2. FOLLOW DIRECTIONS IN CIRCLE
3. REPEAT UNTIL YOU ARE UNSTRESSED  
OR BECOME UNCONSCIOUS



**But thanks to a talented  
dedicated team...**

**We succeeded!**



**At least for now...**

**QUESTIONS?**