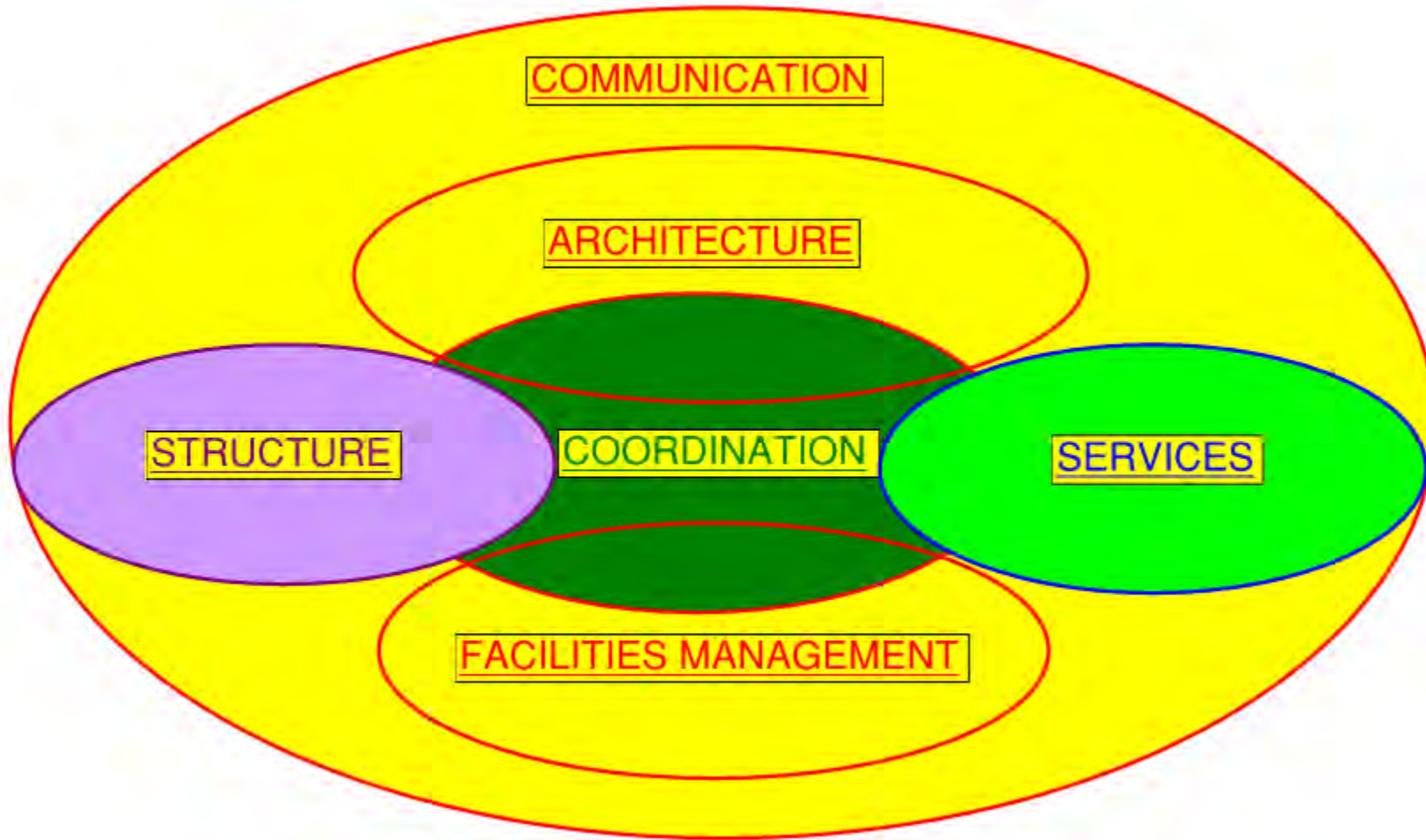


SPP GROUP

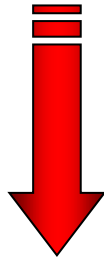
BUILDING SERVICES

# DESIGN PROCESS

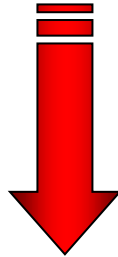


# REAL WORLD CONSTRUCTION PROCESS

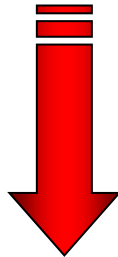
**FOUNDATION AND IN GROUND SERVICES**



**ABOVE GROUND MAIN LINE SERVICES INSTALL**



**INTERNAL STRUCTURE SOFT FIT AND FINISHES**



**SERVICES INSTALL AND FIT OFF**

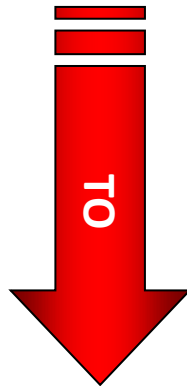
# HISTORICAL DOCUMENTATION AND CONSTRUCTION

## DESIGN OFFICE

- DRAFTING BOARDS
- TRACING PAPER
- INK PENS
- ANIMATED PRINTERS
- 2 D DOCUMENTATION
- FAX MACHINE
- LIGHT TABLES

## CONSTRUCTION OFFICE

- DRAFTING BOARDS
- PLAN HANGERS
- 2 D DOCUMENTATION
- FAX MACHINE





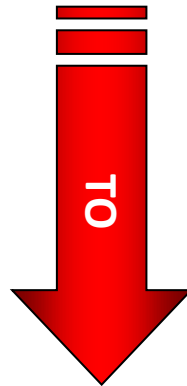
# PRESENT DOCUMENTATION AND CONSTRUCTION

## DESIGN OFFICE

- BIM DRAFTING
- PDF OVERLAY TOOLS
- PDF MARKUP TOOLS
- PLOTTERS
- 3 D DOCUMENTATION  
COORDINATION
- 2 D FINAL  
DOCUMENTATION
- EMAIL

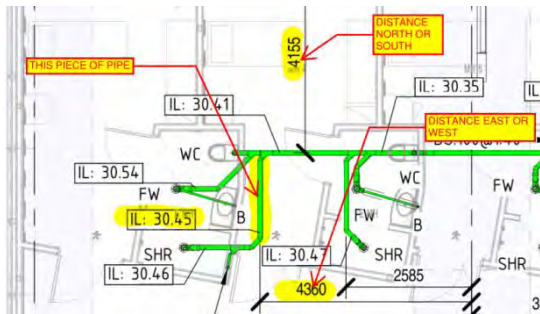
## CONSTRUCTION OFFICE

- ON LINE DOCUMENT VIEWERS
- DOCUMENT MANAGEMENT TOOLS
- 2 D DOCUMENTATION
- EMAIL

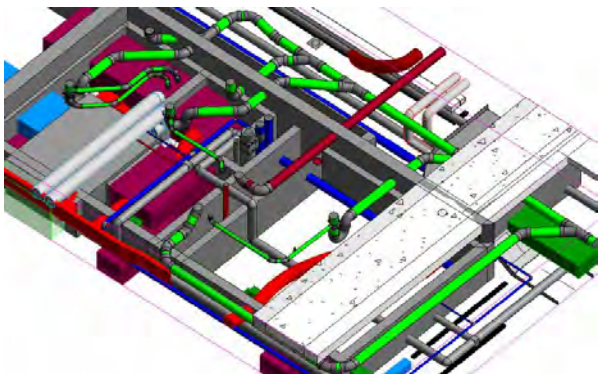


# CONSTRUCTIBLE ATTRIBUTES FOR DOCUMENTATION

## HISTORICALLY REPRESENTED

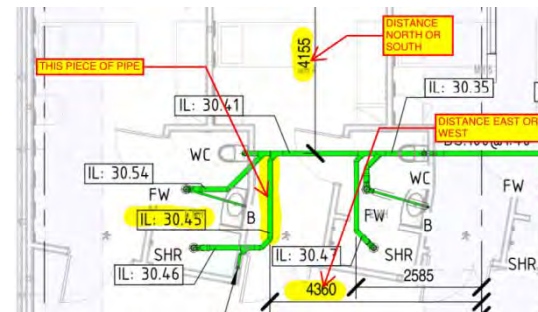


## REPRESENTED NOW INTERNALLY FOR COORDINATION



- DISTANCE FROM THE NORTH SOUTH
- DISTANCE FROM EAST/WEST
- DISTANCE FROM THE GROUND (IL)

## REPRESENTED FOR CONSTRUCTION



# LESSONS LEARNT

- **CO ORDINATION ISSUES THROUGH A LACK OF INTER DESIGN TEAM COMMUNICATION**
- **MAJOR RE DESIGN THROUGH LACK OF UNDERSTANDING**

# FUTURE DOCUMENTATION AND CONSTRUCTION

## DESIGN OFFICE

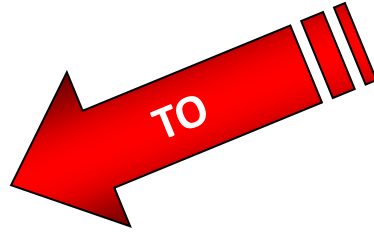
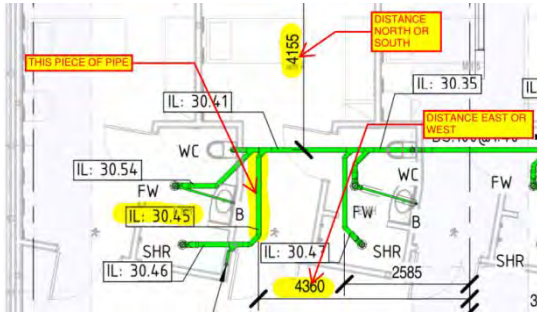
- THOUGHT AND HAND GESTURING DRAFTING?
- VIRTUAL GLASSES HEADS UP DISPLAYS
- 3 D DOCUMENTATION
- EMAIL

## CONSTRUCTION OFFICE

- INFORMATION GLASSES (HEADS UP DISPLAYS)
- PRODUCTIVITY AIDS TO ASSIST PLANNING AND SCHEDULING
- 3 D DOCUMENTATION LINKED TECH
- EMAIL



# OBJECTIVE IS TO BUILD

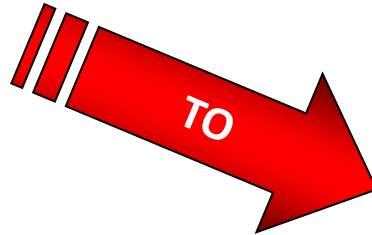


**TO THIS**

**FROM THIS**



**TO THIS**



**TO THIS**

