



Automation & Integration:

WorkFace Planning in an EPC Environment

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December 1, 2010

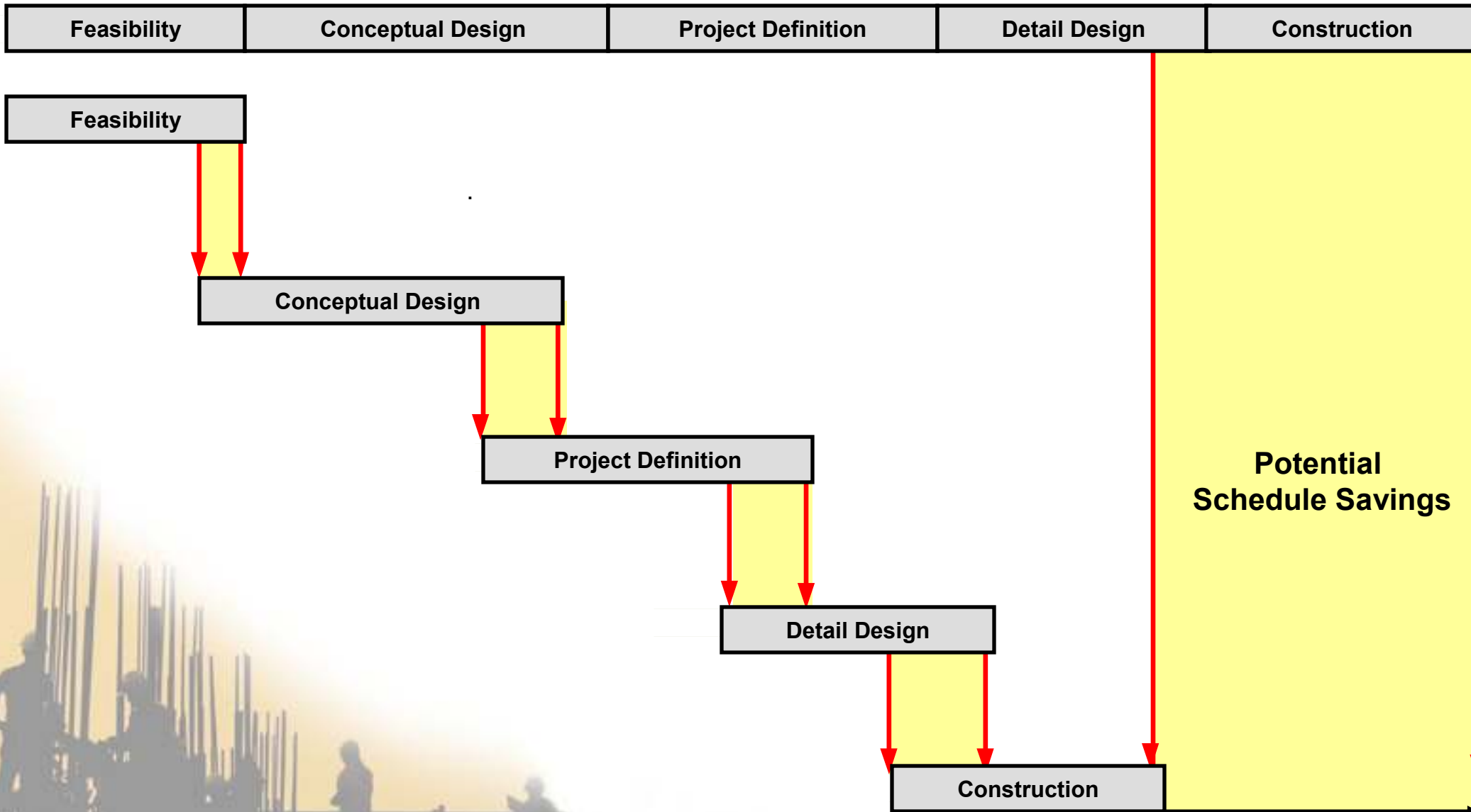


EPC Execution

- **Benefits**
 - Necessary for compressed Schedules
 - Single Point Accountability
 - Opportunities for earlier, incremental planning
- **Challenges**
 - Phase Overlap
 - Synchronization of Phases



EPC Phase Overlap



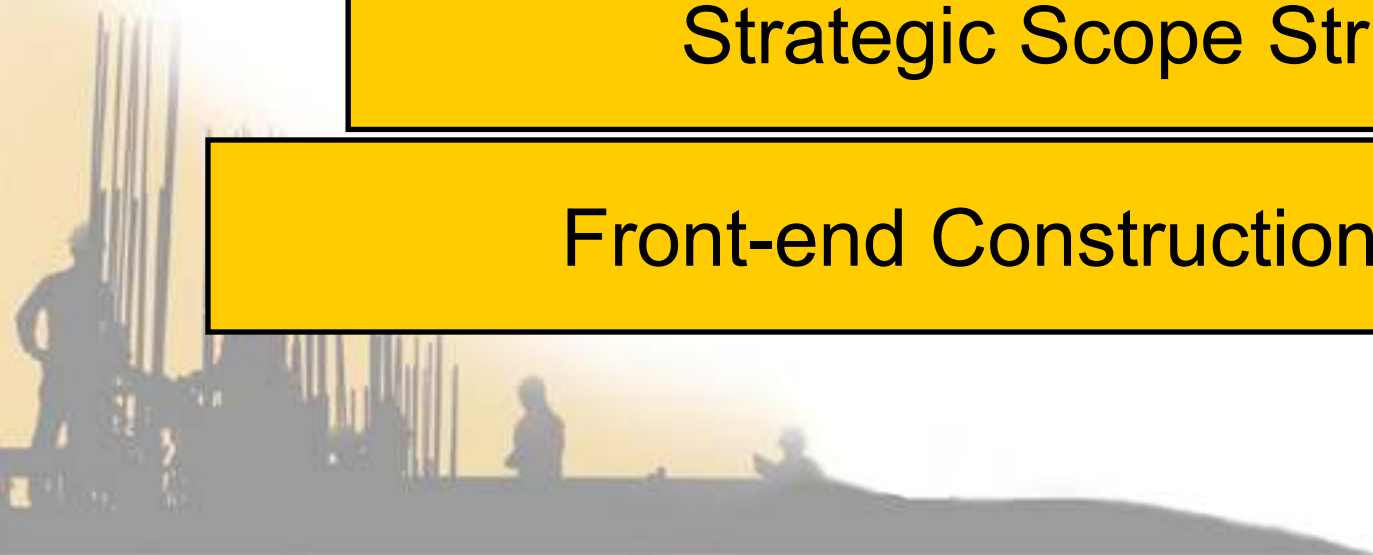
Model for EPC Success

WorkFace Planning

Integration of Automation Tools

Strategic Scope Structure

Front-end Construction Planning

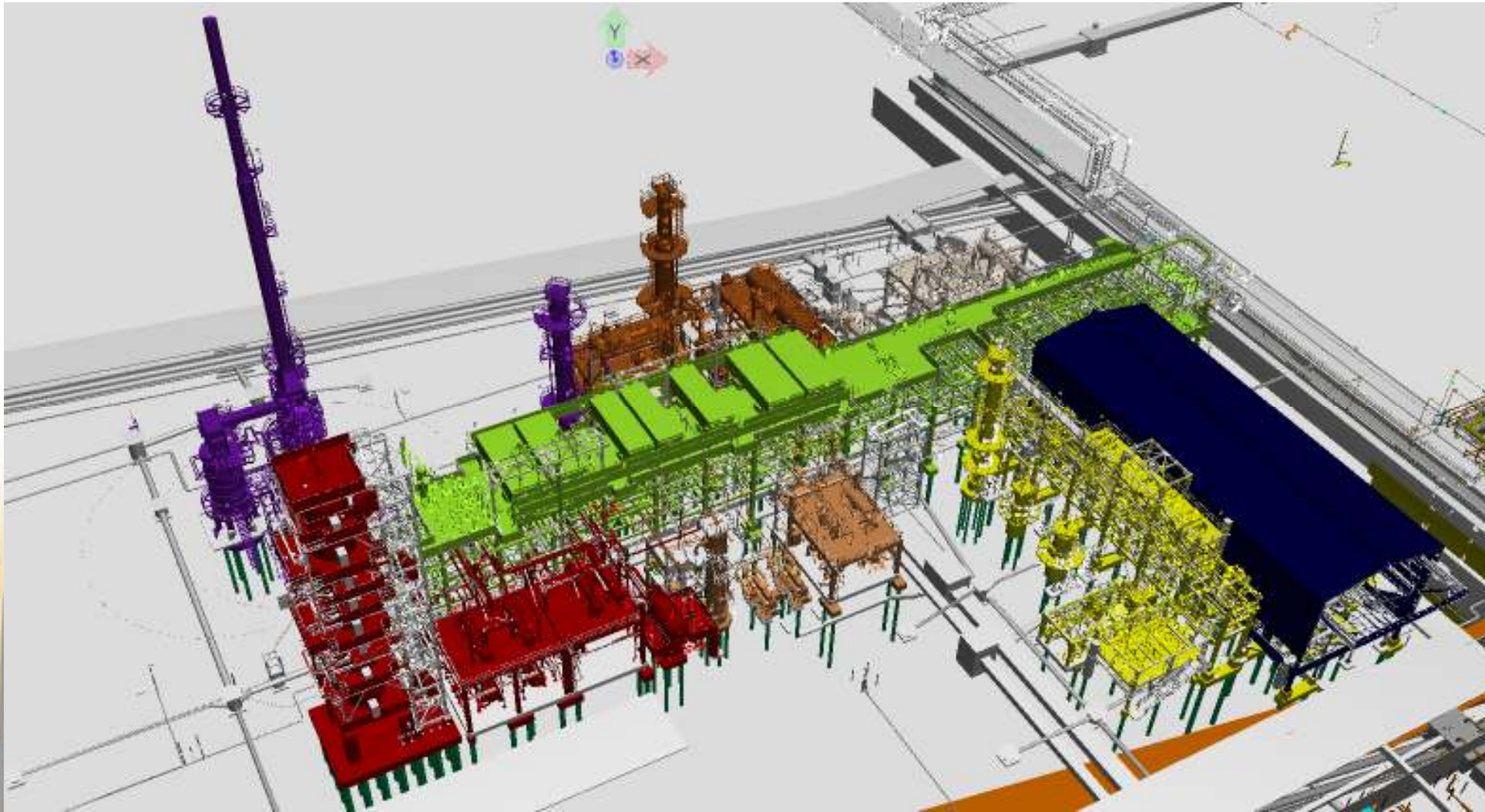


Tenets for EPC Workface Planning:

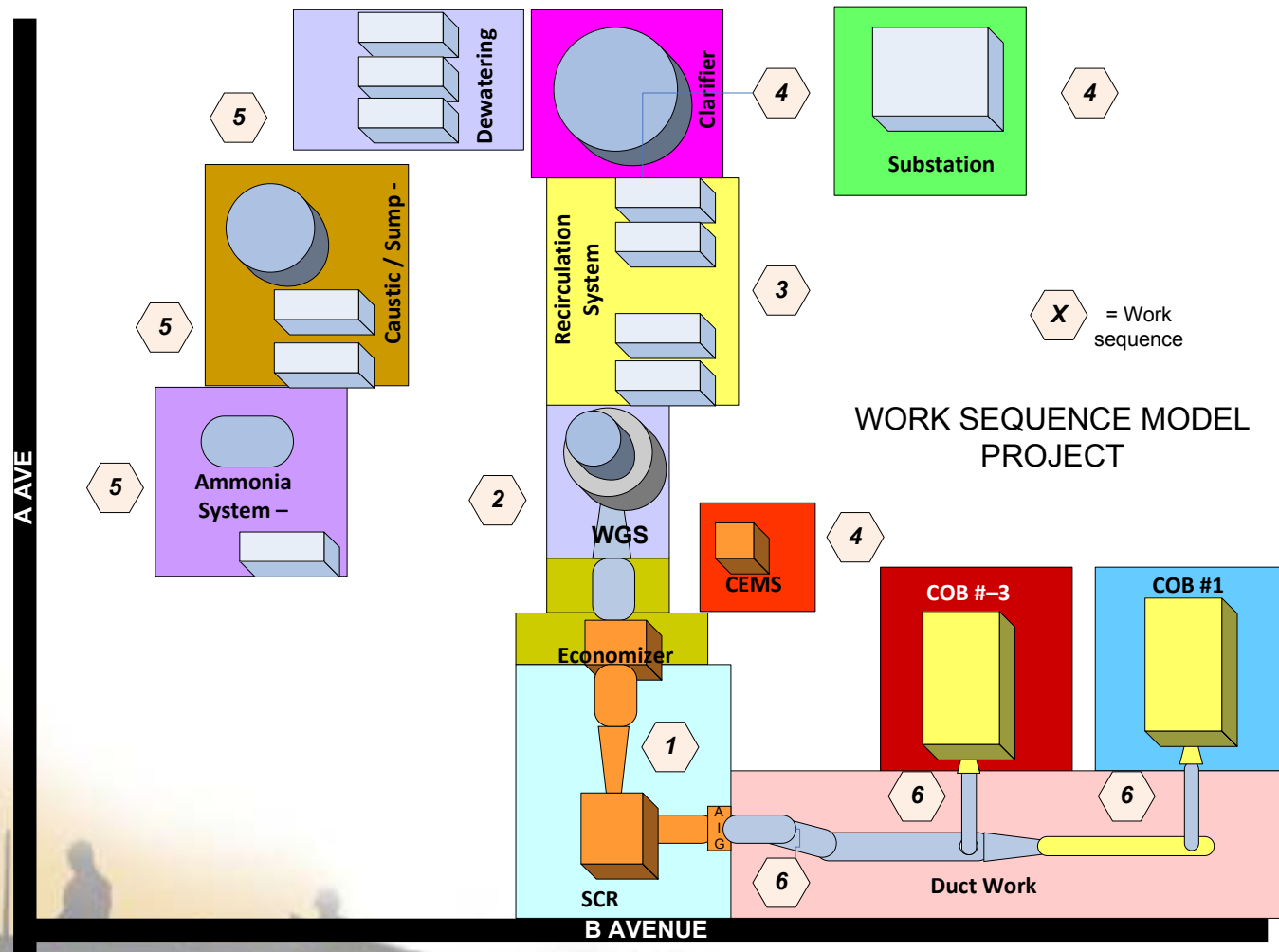
- Scope is organized by Construction
- Construction Plan drives design sequence
- Construction work areas frame FIWPs
- Automation tools integrated to support WFP



Scope Organised by Construction

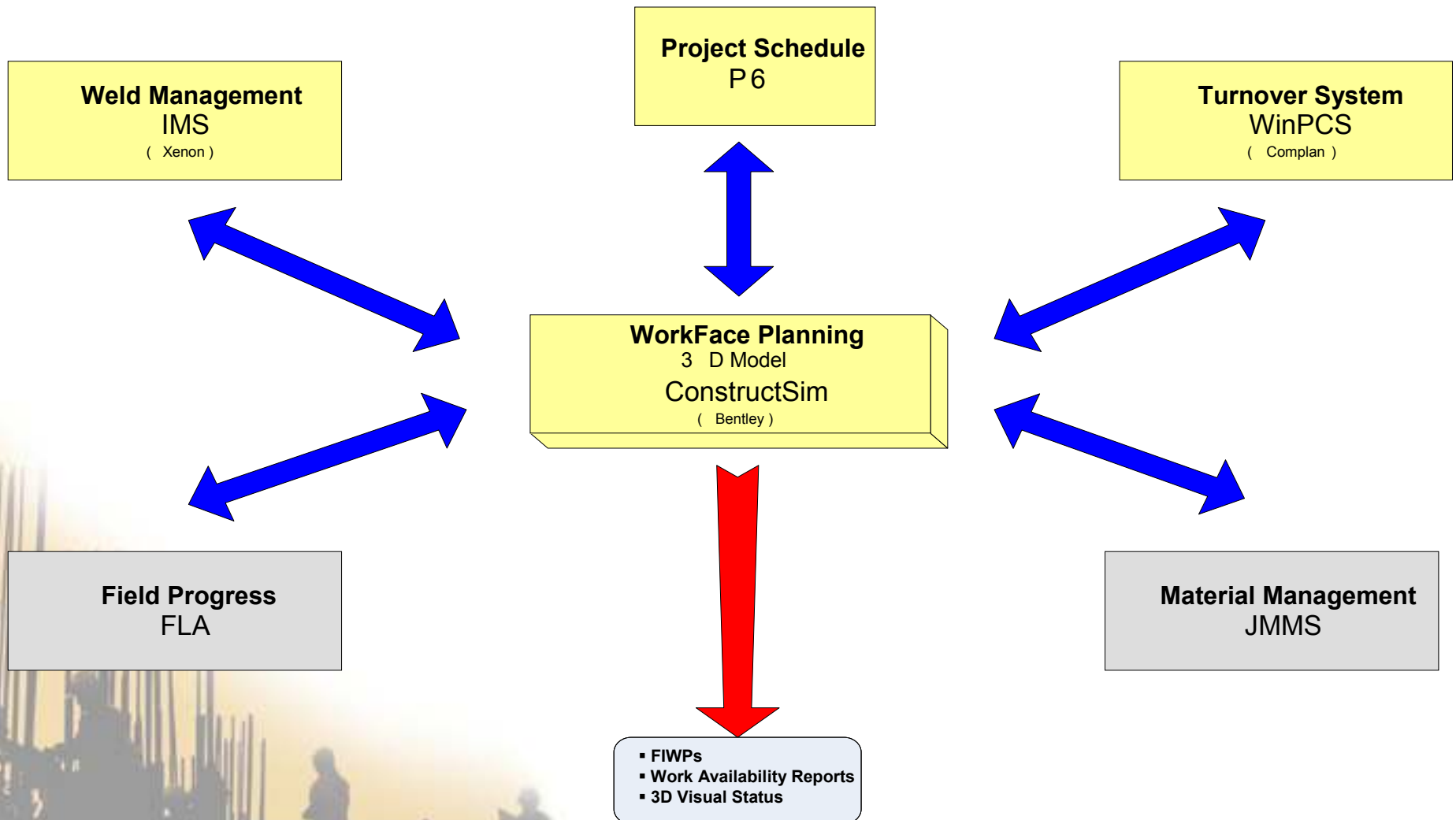


Construction Plan Drives Design Sequence

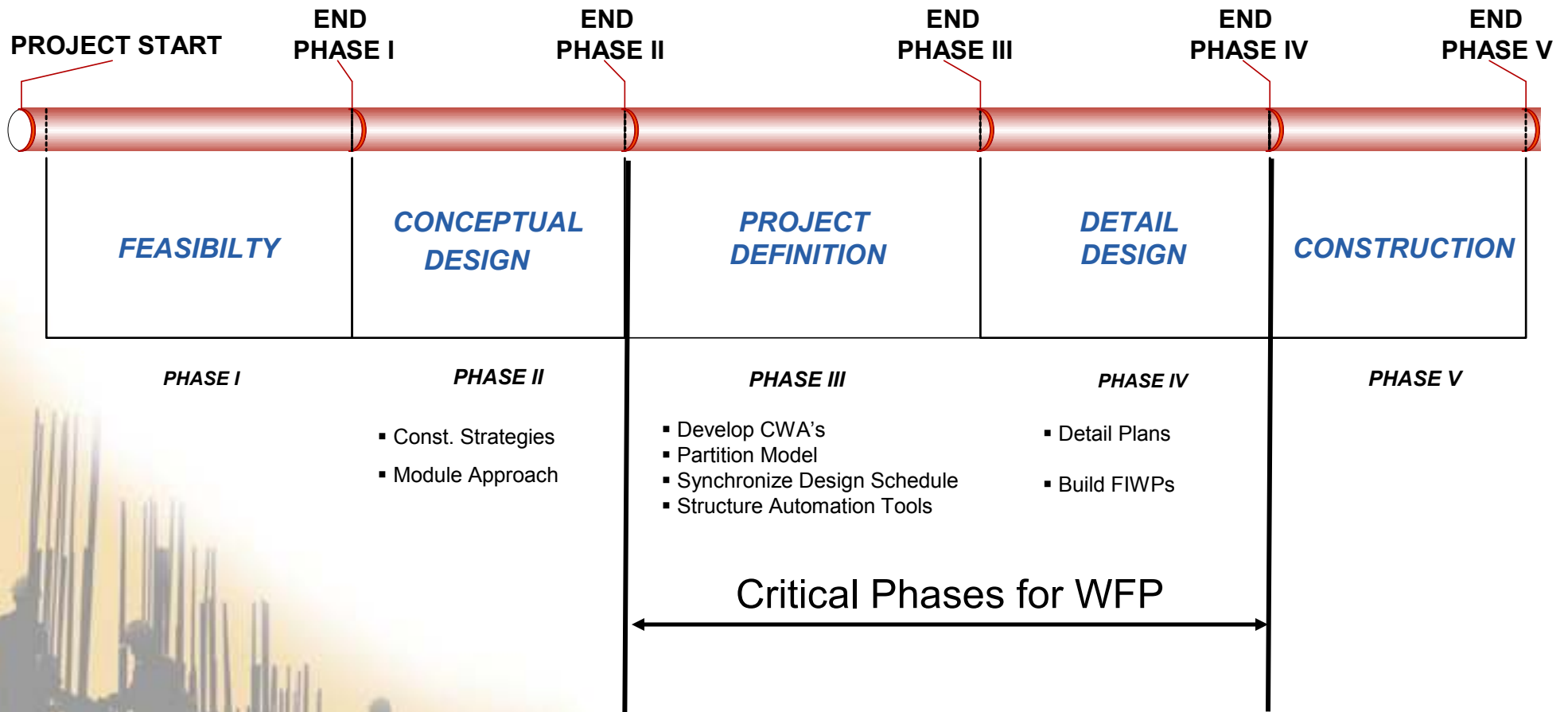


Automation Tools Integrated

Data Flow



WorkFace Planning Begins Early



Results:

- TRIR .21
- Productivity factor = 11% better than budgeted
- Rework is < 2% and < 0.5% on construction
- Beat original schedule





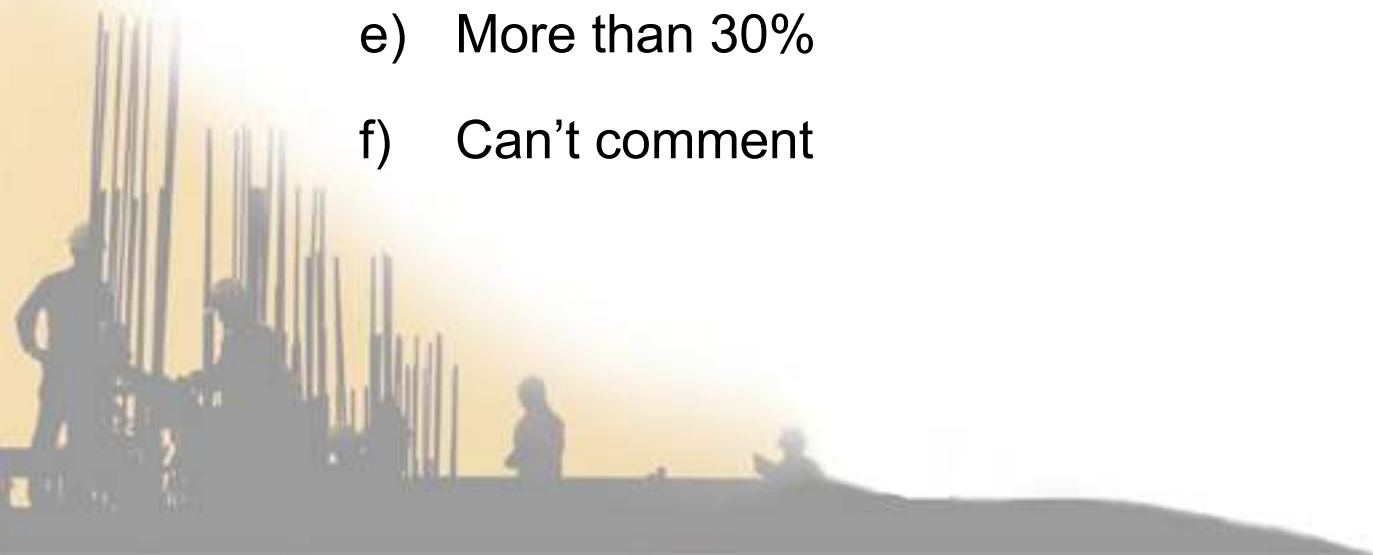
What we've Learned:

- **WFP success depends upon proper EP sequence**
- **WFP success depends on timely data integration**
- **Structure scope early, and stay with it**
- **It's never too early to start WorkFace Planning!**



Audience Participation

1. Based on your experience what is the expected % improvement in labour productivity an effective WorkFace Planning System will provide?
 - a) Less the zero
 - b) 0 to 10%
 - c) 10 to 20%
 - d) 20 to 30%
 - e) More than 30%
 - f) Can't comment





Audience Participation

2. Does your organization Utilize Front-End Construction Planning?
 - a) Yes
 - b) No



Audience Participation

3. Can WorkFace Planning be effectively used if it is not implemented during FEED?
 - a) Yes
 - b) No



Audience Participation

4. Do you believe WorkFace Panning can add value to all projects?
 - a) Yes
 - b) No



Audience Participation

5. Do you use a 3D Visual Tool to help you assemble FIWPs?
 - a) Yes
 - b) No

