

Three Opportunities Created by Lean Construction

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Lean Project Consulting

How do we manage projects now?

- Determine client requirements including quality, time and budget limits and design to meet them.
- Break project into activities, estimating duration and resource requirements for each activity and placing them in a logical order with CPM
- Assign or contract each activity, give start notice and monitor safety, quality, time and cost standards. Act on negative variance from standards
- Coordinate with master, some intermediate schedules and weekly meetings
 - reduce cost by productivity improvement
 - reduce duration by speeding each piece or changing logic.
 - improve quality and safety with inspection and enforcement

Three Connected Opportunities

1. IMPECCABLE COORDINATION

**2. ORGANIZING PROJECTS AS
PRODUCTION SYSTEMS**

**3. PROJECTS AS COLLECTIVE
ENTERPRISE**

...Optimize the whole not the piece



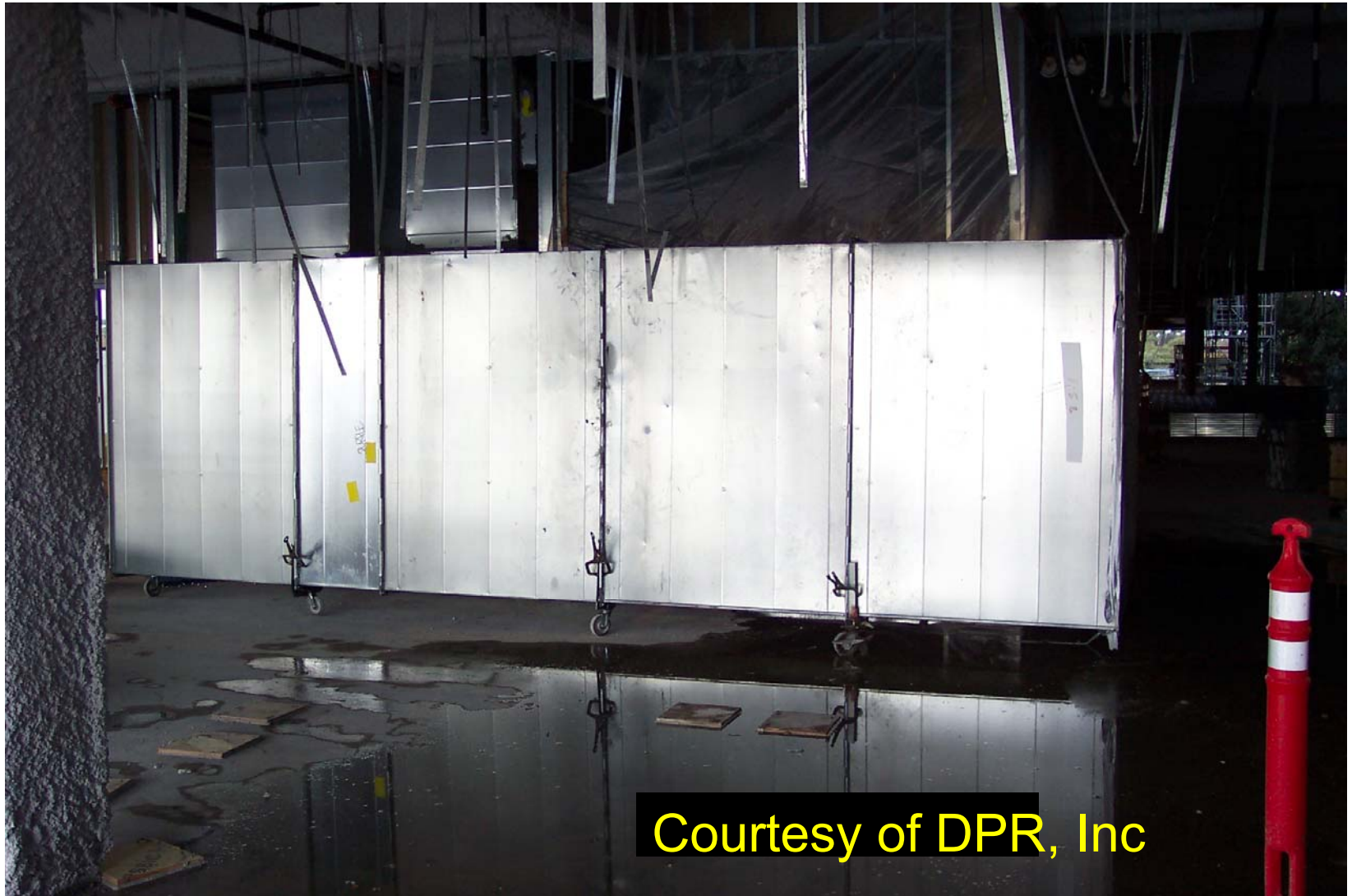
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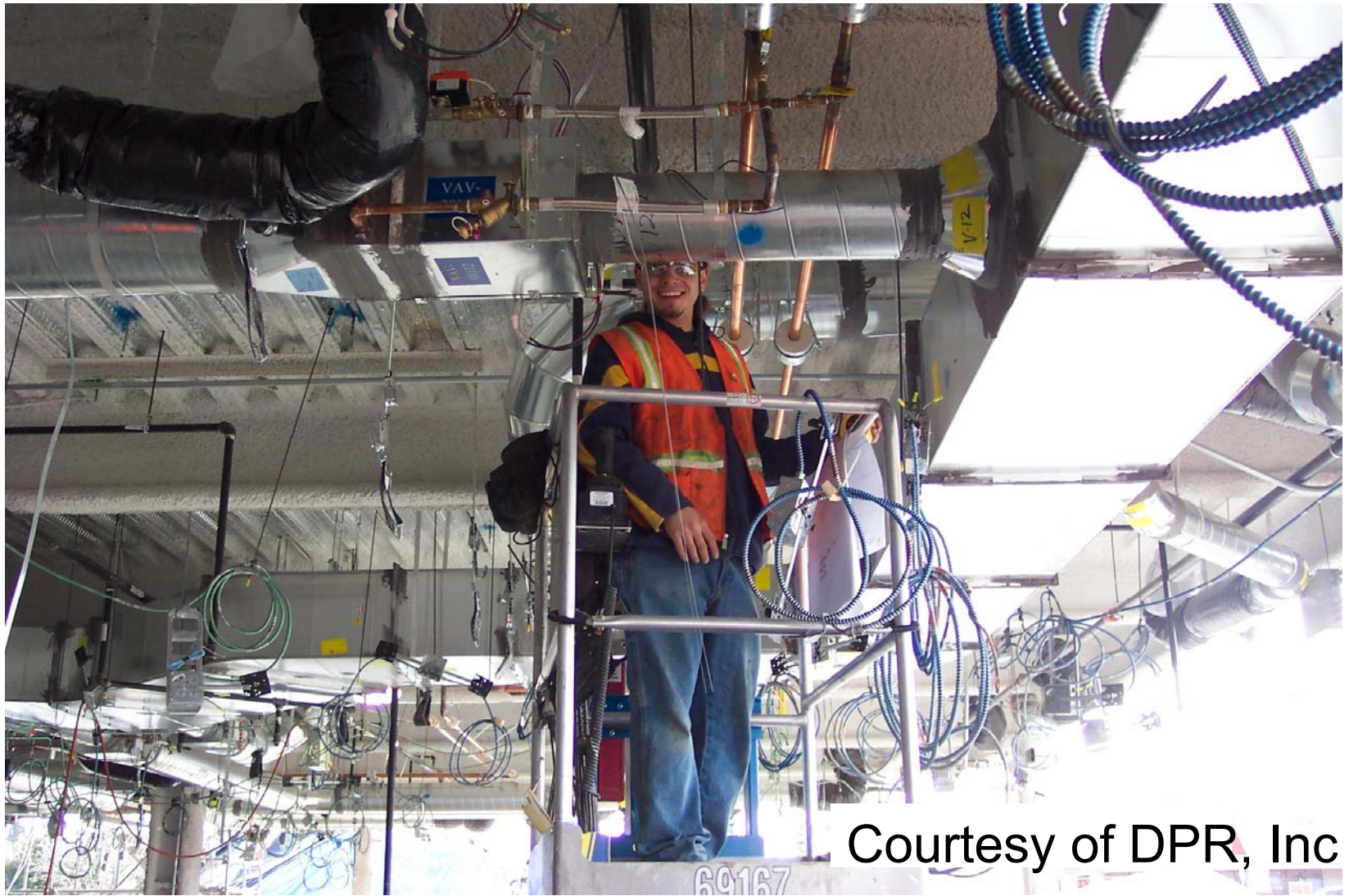
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1ST OPPORTUNITY: IMPECCABLE COORDINATION



1ST OPPORTUNITY:

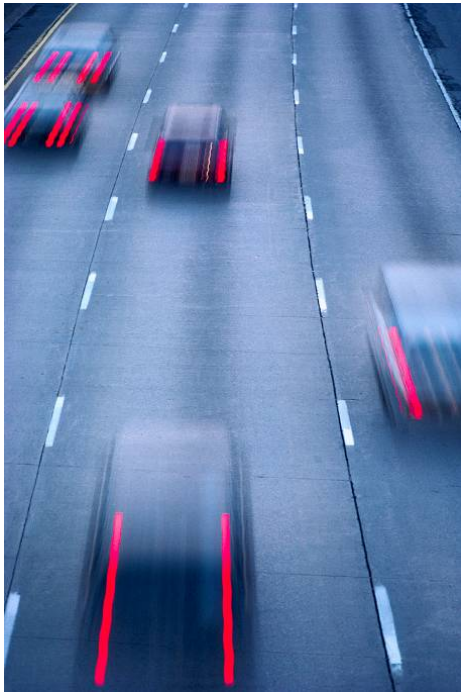
Improved if not IMPECCABLE

COORDINATION

- Maintain +/- existing work practices & structure
 - Improves productivity, safety, trust.
 - Reduce “friction”
- What affects implementation?
 - Level of engagement: Trade level to Owner/Designer/Contractor
 - Shifting focus from productivity to predictable flow
 - Ability to unlearn managing for local performance

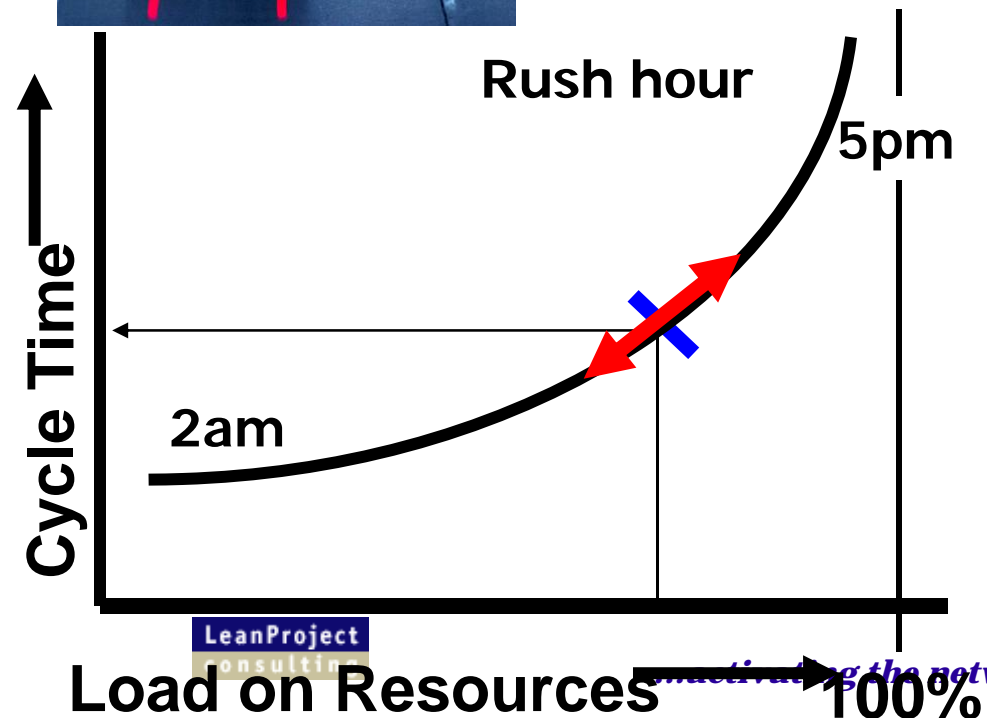
...Optimize the project not the piece

Creating and activating networks of
commitment



The gains are lost & the losses mount up

Traffic example: High Variability and Load on Resources (cars on the road) increases the travel (cycle) time.



Local Optimization: Playing the capacity utilization game

Workflow losses are real, lead to adversarial relations and not can not be demonstrated by delay claims, so...

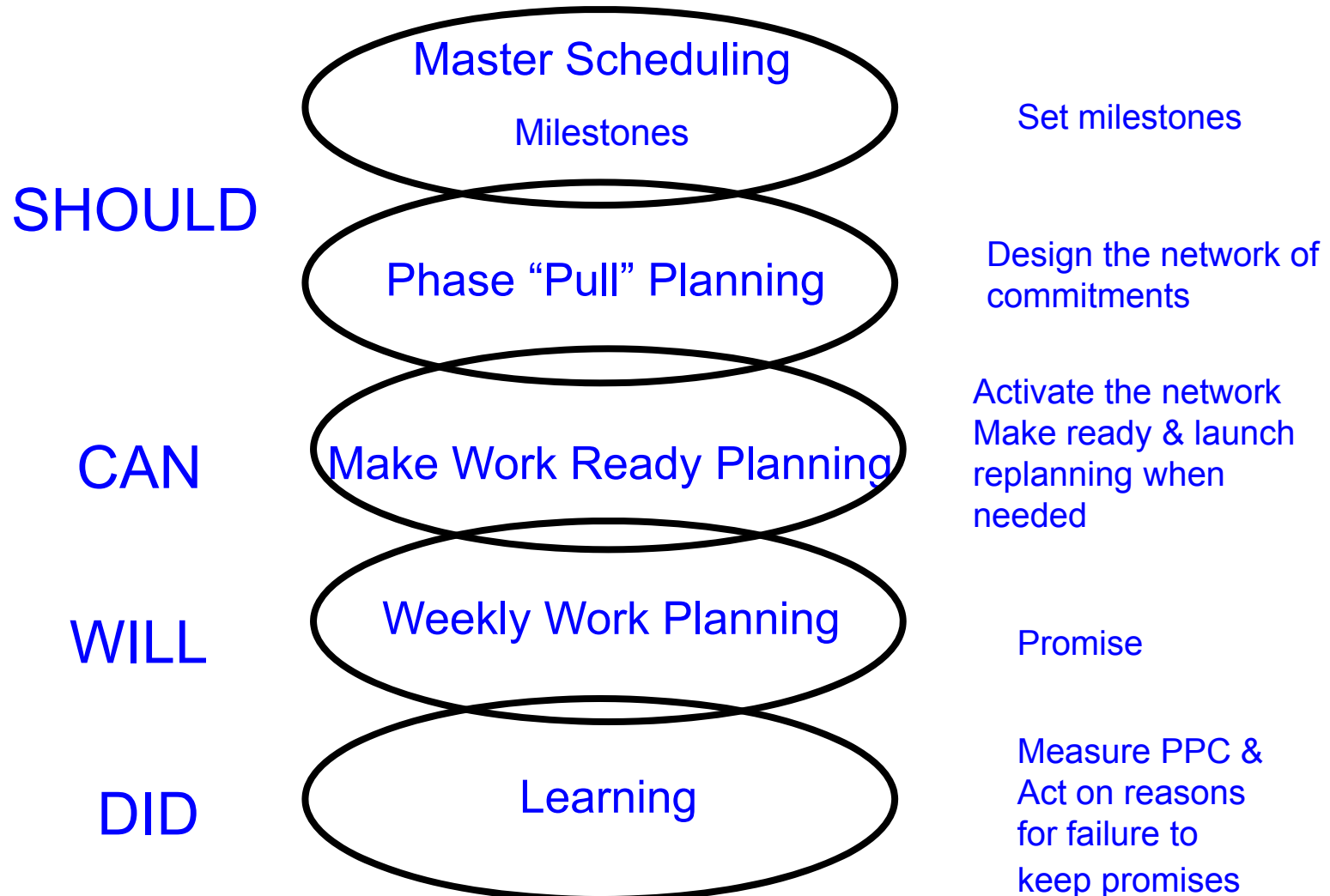
Subs protect themselves by adding contingency and holding back labor to keep utilization high.

This further reduces workflow predictability and increases project risk.

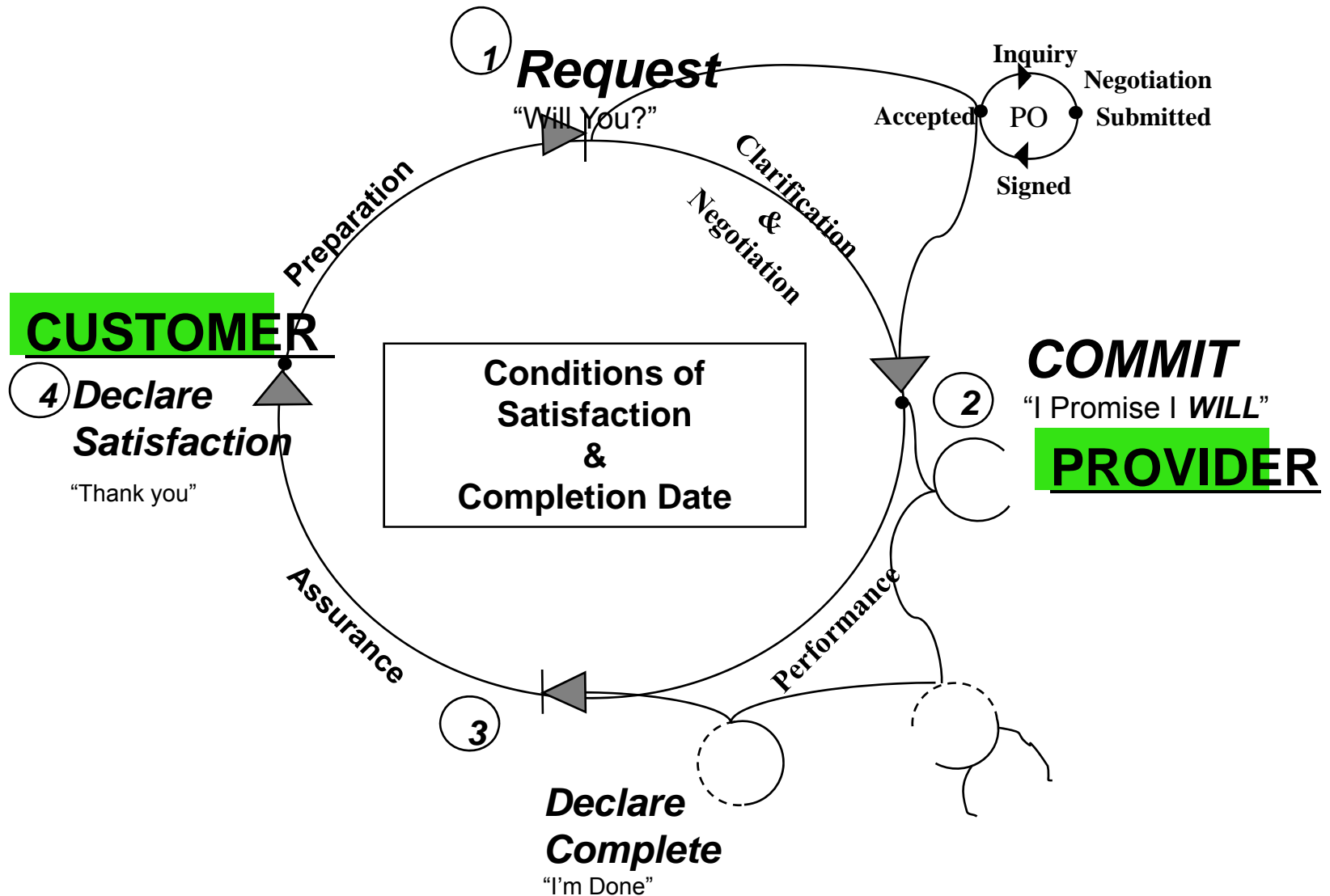
By their/our actions, we shift that risk along.

The Last Planner® System of Production Control

5 - Connected Conversations



Conversation for Coordination



Reliable Promises - 5 test questions

1. Am I competent to perform or do I have access to competence?
2. Have I estimated the amount of time (hands-on) required for this work?
3. Do I have the capacity available & allocated?
4. Am I having a private unspoken conversation in conflict with promise?
5. Will I be responsible?

2nd Opportunity: Organizing Production



2nd Opportunity: Organizing Production



2ND OPPORTUNITY: ORGANIZING

PRODUCTION

- Changing the structure of work
 - Who does what? Where? When?
 - Modules, prefab, workflow
 - Improves performance at project & company level, safety.
 - Less waste everywhere
- What limits implementation?
 - Ability to move beyond traditions and limitations of craft and contract
 - Shifting in project execution strategy
 - Example: Trade-by-trade or coordinated-flow-through-floor
 - The level, timing & extent of process change
 - Office and Project
 - Design and Installation

...Optimize the whole not the piece



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3RD OPPORTUNITY:

Projects as a Collective Enterprise

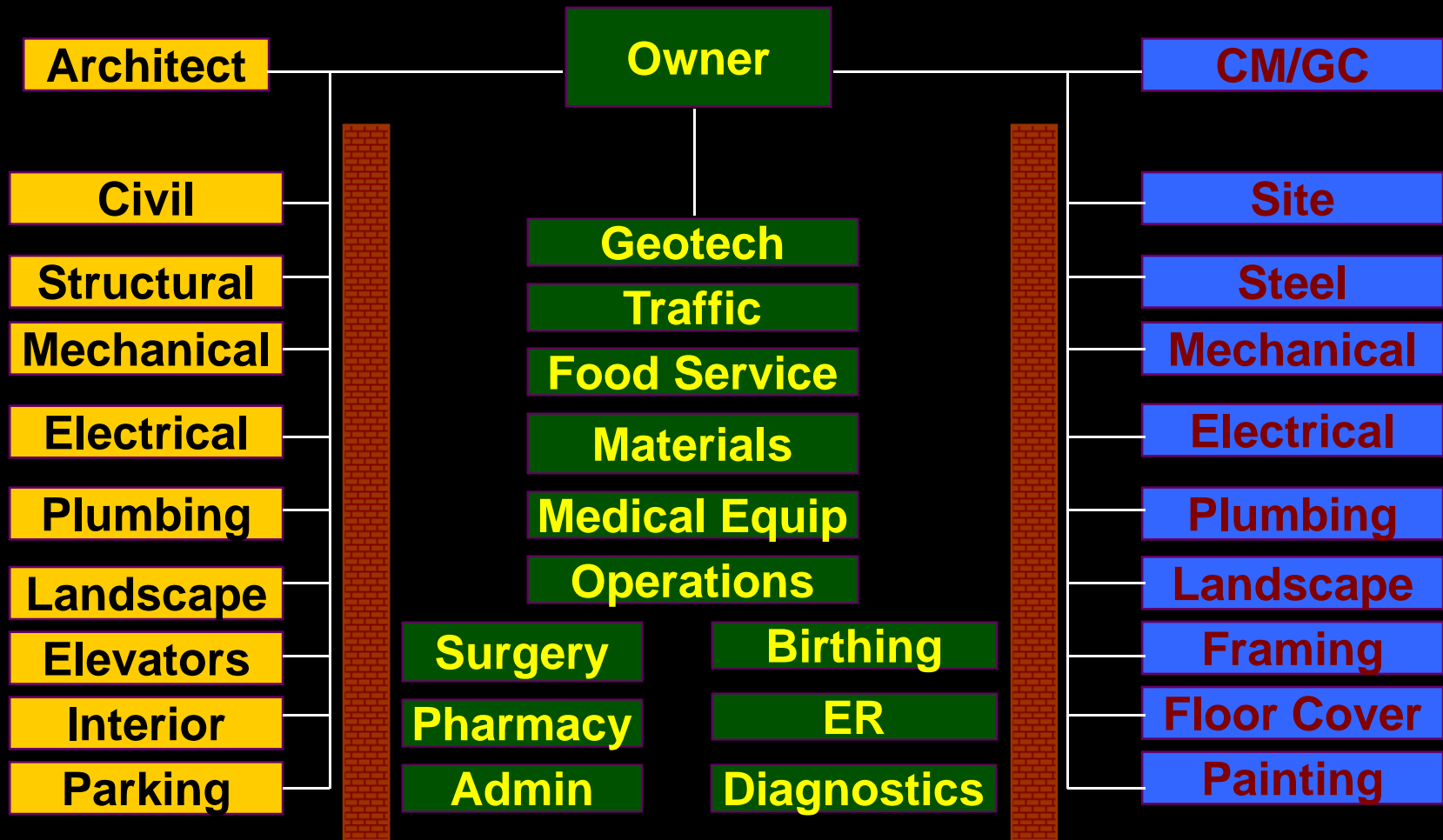
- Adopt an investment mentality to improving performance
 - Spend \$1.00 to save \$1.25
 - Time and space
- Limited by the ability
 - To build trust
 - To add value
 - To see and reduce waste.

...Optimize the whole not the piece

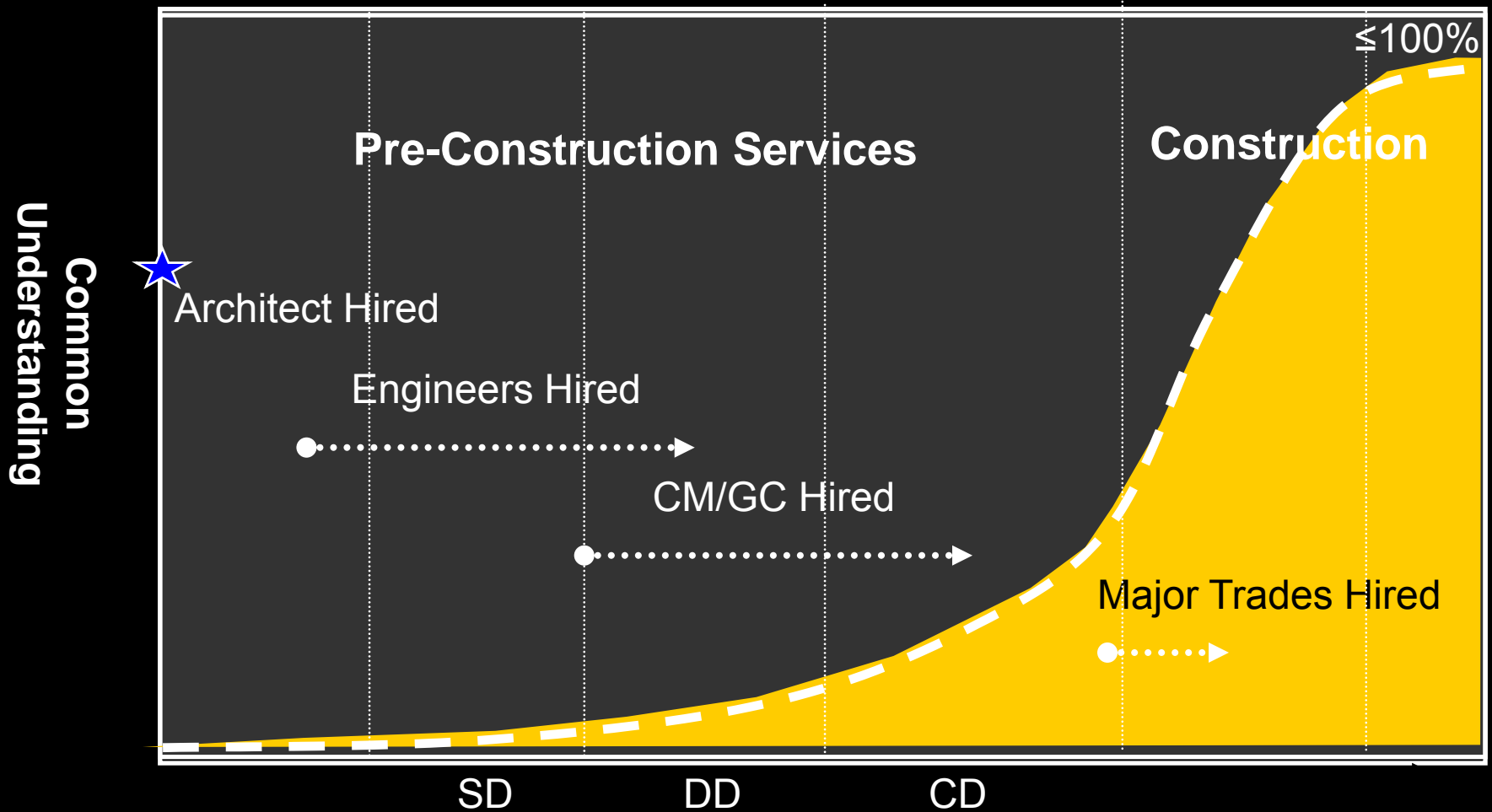
Problems with Current Practice

- **Activity Focus ignores value creation and the flow of work.**
 - Collaboration in design is limited
 - Fails to produce predictable work flow
- **Command and Control cannot organize the work or coordinate the arrival of the wherewithal with the work of specialists.**
 - Opportunities for trading ponies for horses are lost
 - Push systems are commitment free zones.
- **Control begins with tracking cost and schedule.**
 - Efforts to improve productivity leads to Unreliable Work Flow further reducing project performance.
 - Protecting activities leads to adversarial relations.

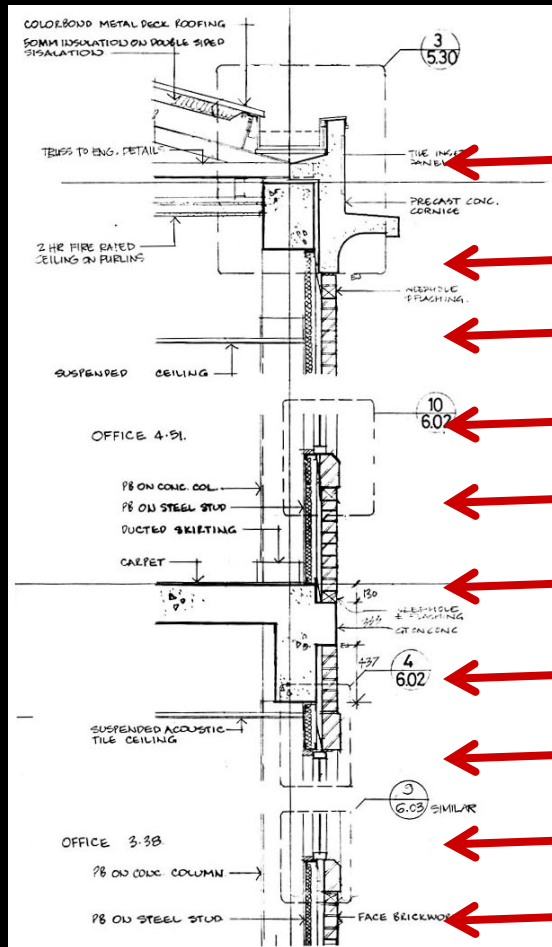
Typical Organization



Traditional Project Delivery Level of Common Understanding



“Buildings Leak at the Intersection of Contracts”



Roofing contractor

Wall stud contractor

Caulking contractor

Window contractor

Masonry contractor

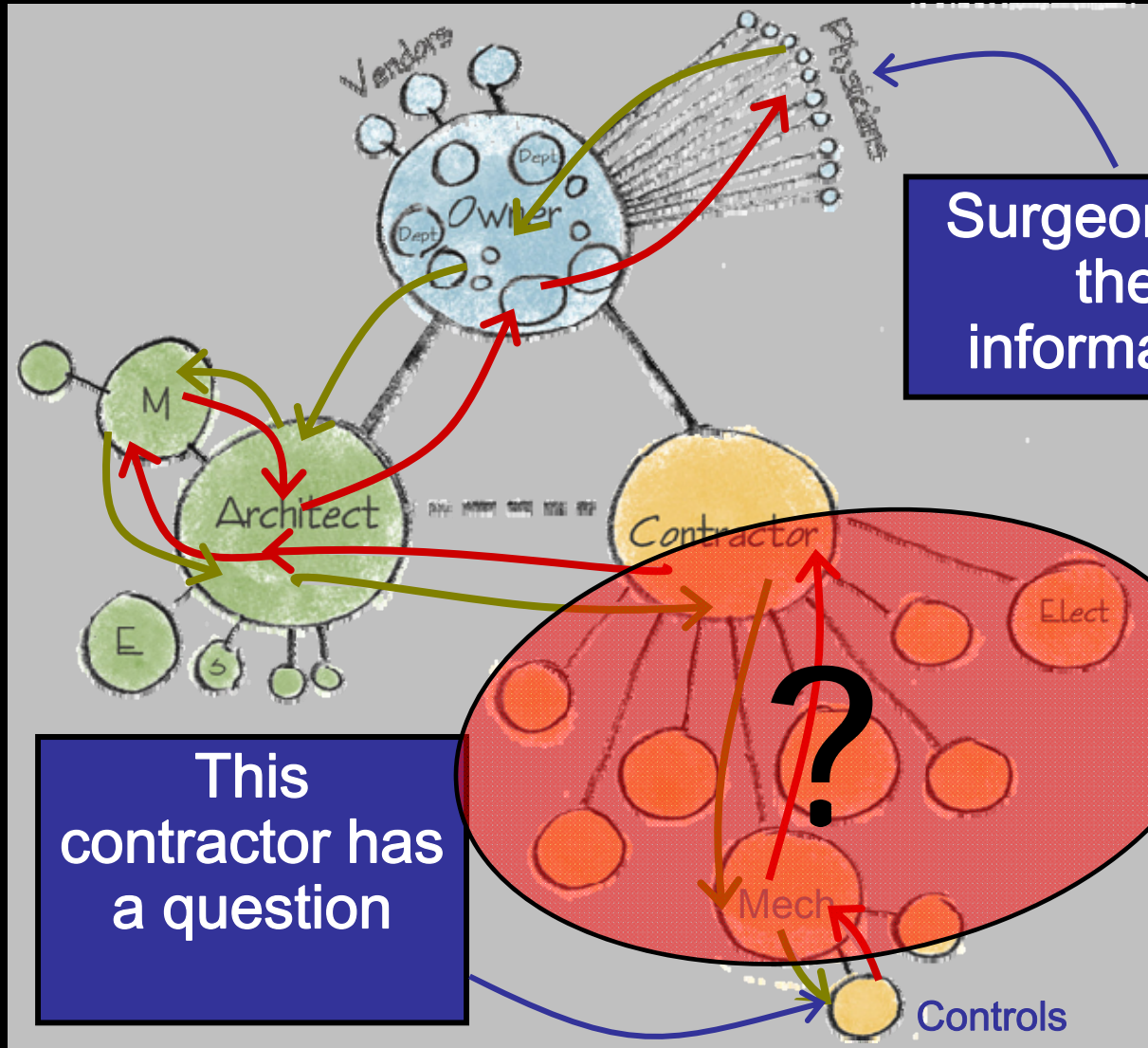
Waterproofing contractor

Concrete contractor

Structural steel contractor

Foundation contractor

Excavation contractor



Surgeon has the information

This contractor has a question



Are We Helpless
Victims of Fate?

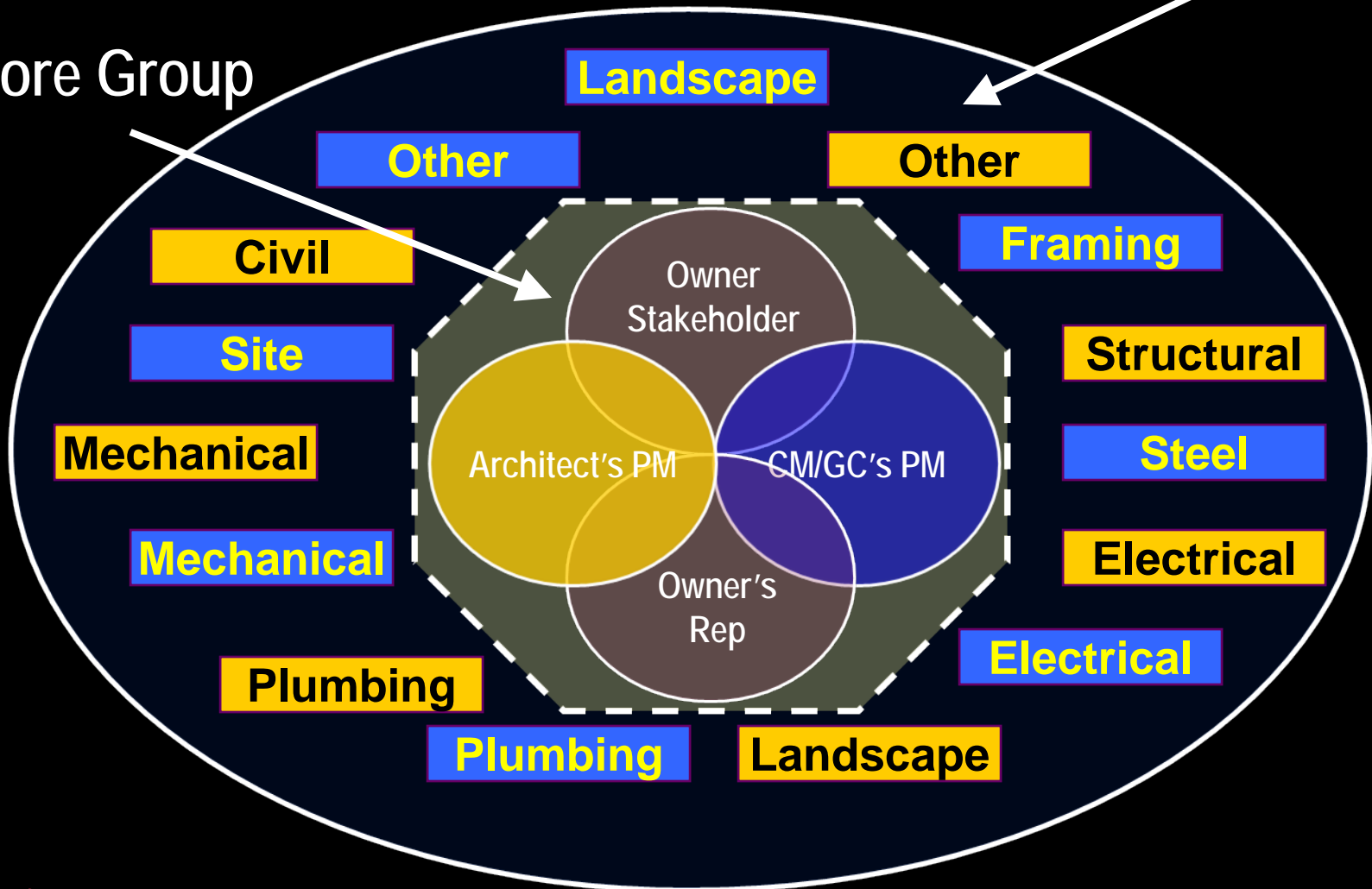


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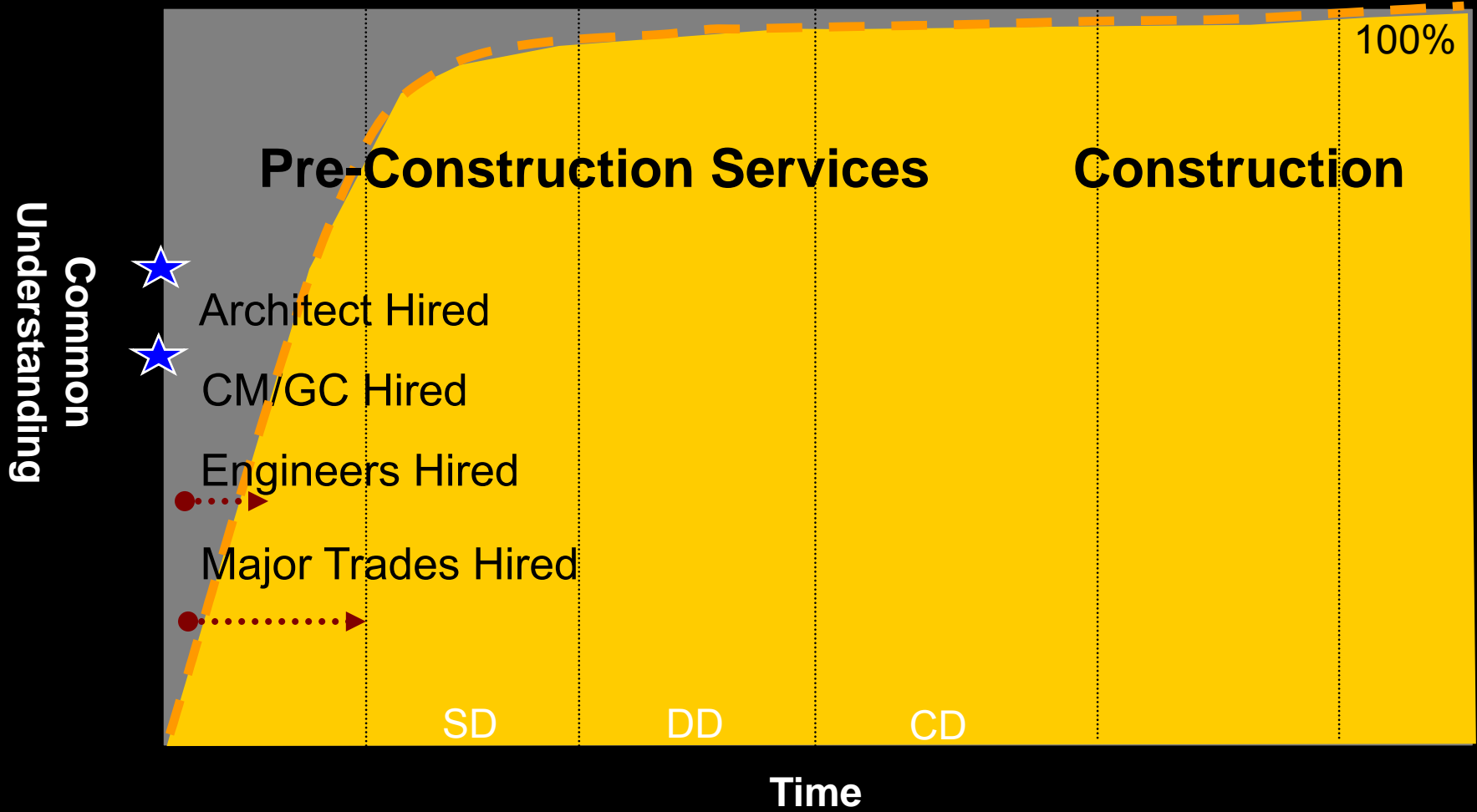
IPD Team

Integrated Project Delivery Team

Core Group



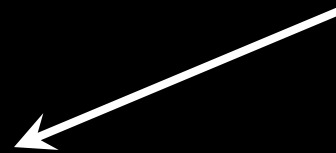
Integrated Project Delivery Level of Common Understanding



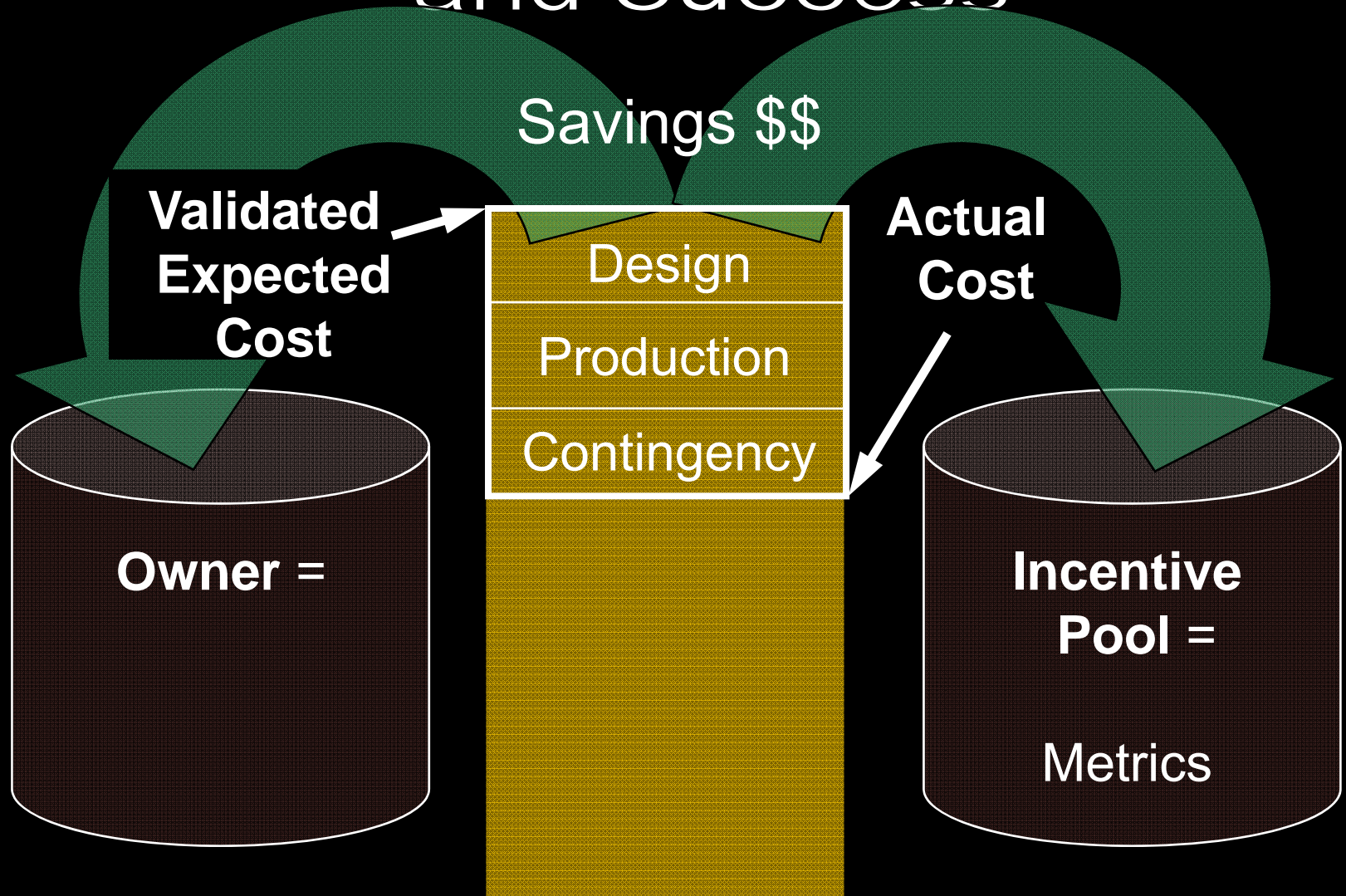
Sharing of Risk



Losses or Cost
Overruns



Sharing Project's Innovation and Success



What is your level of ambition?

