

HOCHSCHULE
KONSTANZ
UNIVERSITY OF
APPLIED SCIENCES



Lake Constance 5D-Conference 2012

Integrated Project Delivery – A Key for Lean Production

Will Lichtig and Dave Kievet
The Boldt Company

Integrated Project Delivery – A Key for Lean Production



Integrated **Lean** Project Delivery – A Key for Lean Production



Integrated **Lean** Project Delivery – A Key for Lean Production

BOLDT®

Integrated **Lean** Project Delivery – A Key for Lean Production

4 Generation Family Ownership

Founded 1889 – 123 Years

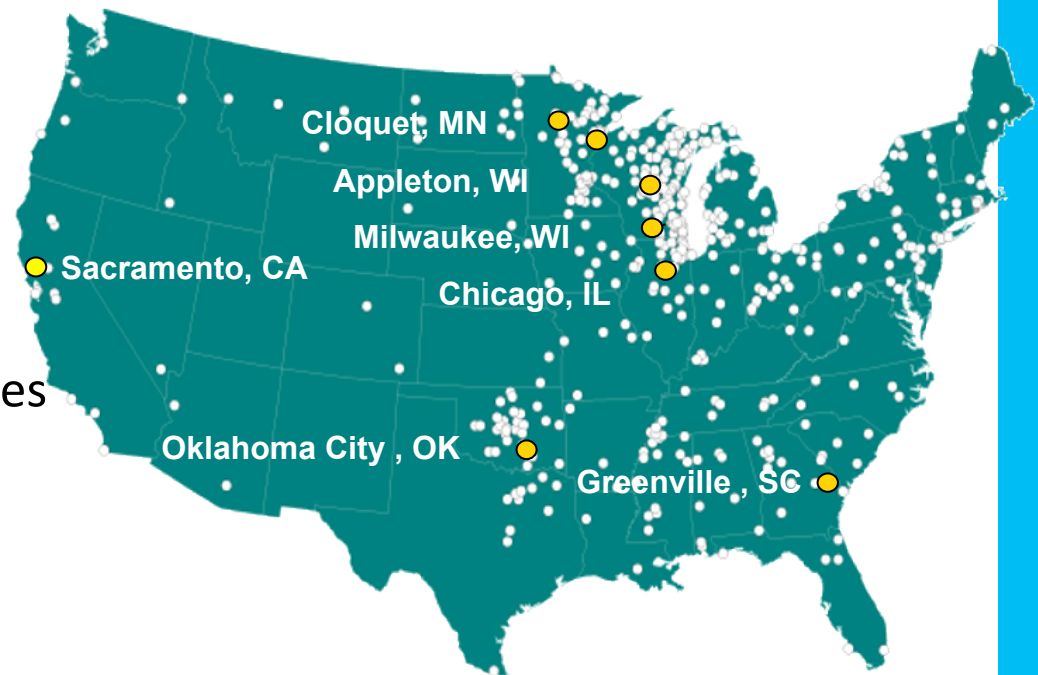
ENR Rankings

- 68th CM at Risk
- 85th GC
- 24th Health Care

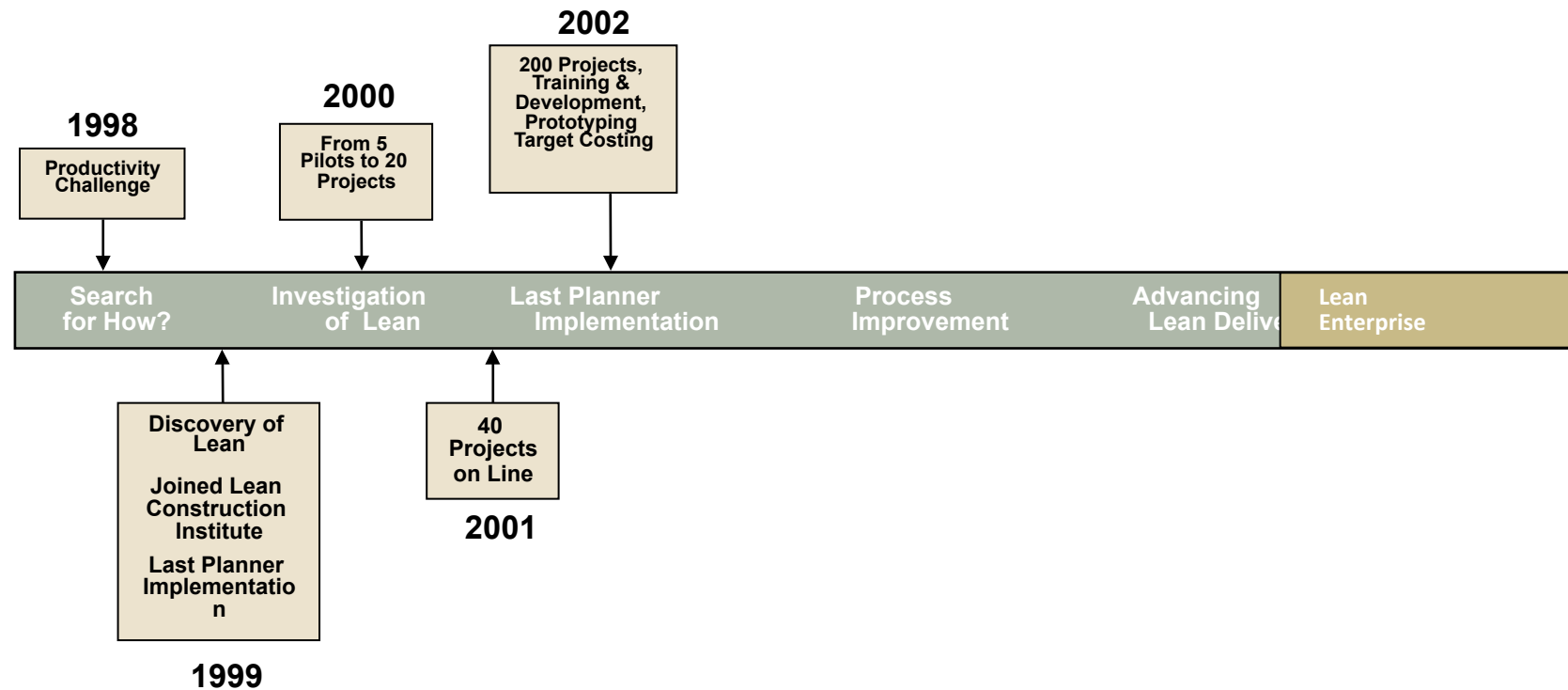
Lean Implementation since 1999

Integrated Delivery since 1979

Full Range of Construction Services



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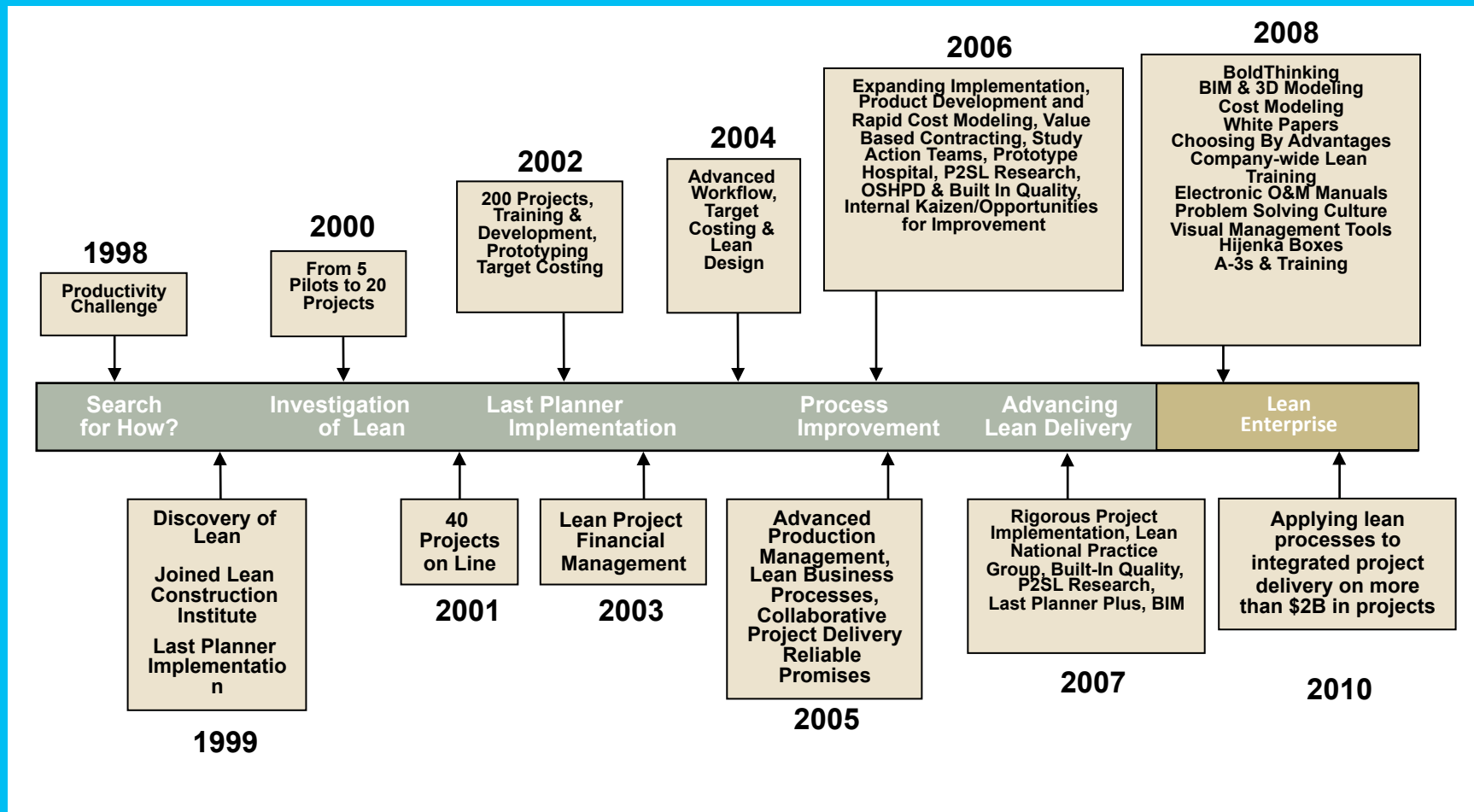
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BOLD THINKING™

	St. Olaf Fieldhouse	Carleton College Recreation Center
Completion Date	August 2002	April 2000
Project Duration	14 months	24 months
Gross Square Feet	114,000	85,414
Total Cost (incl. A/E & CM fees)	\$11,716,836	\$13,533,179
Cost per square foot	\$102.79	\$158.44



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Design – Bid – Build

Design Build

- CM/GC As Lead
- Architect as Lead

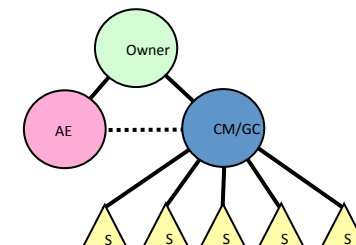
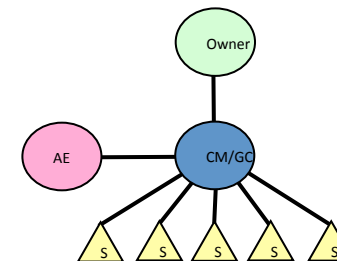
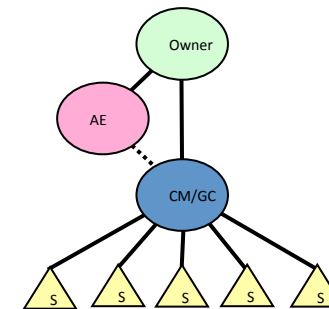
Construction Manager

- As Agent
- At Risk

General Contractor

Engineer, Procure, Construct (EPC)

Owner's Agent



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Design Build

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Construction Manager

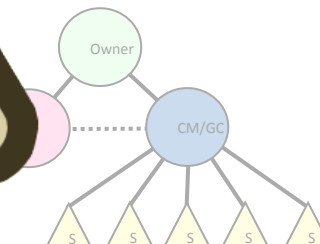
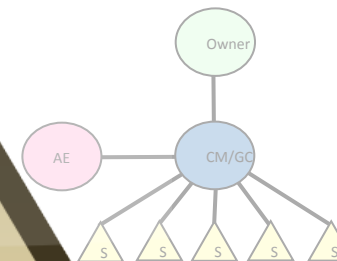
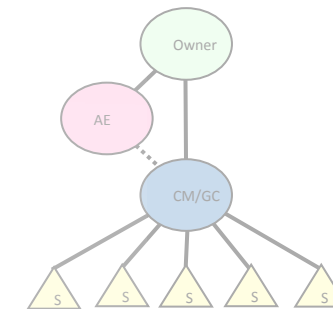
- As Agent
- At Risk

General Contractor

Engineer, Procure, Construct

Owner's Agent

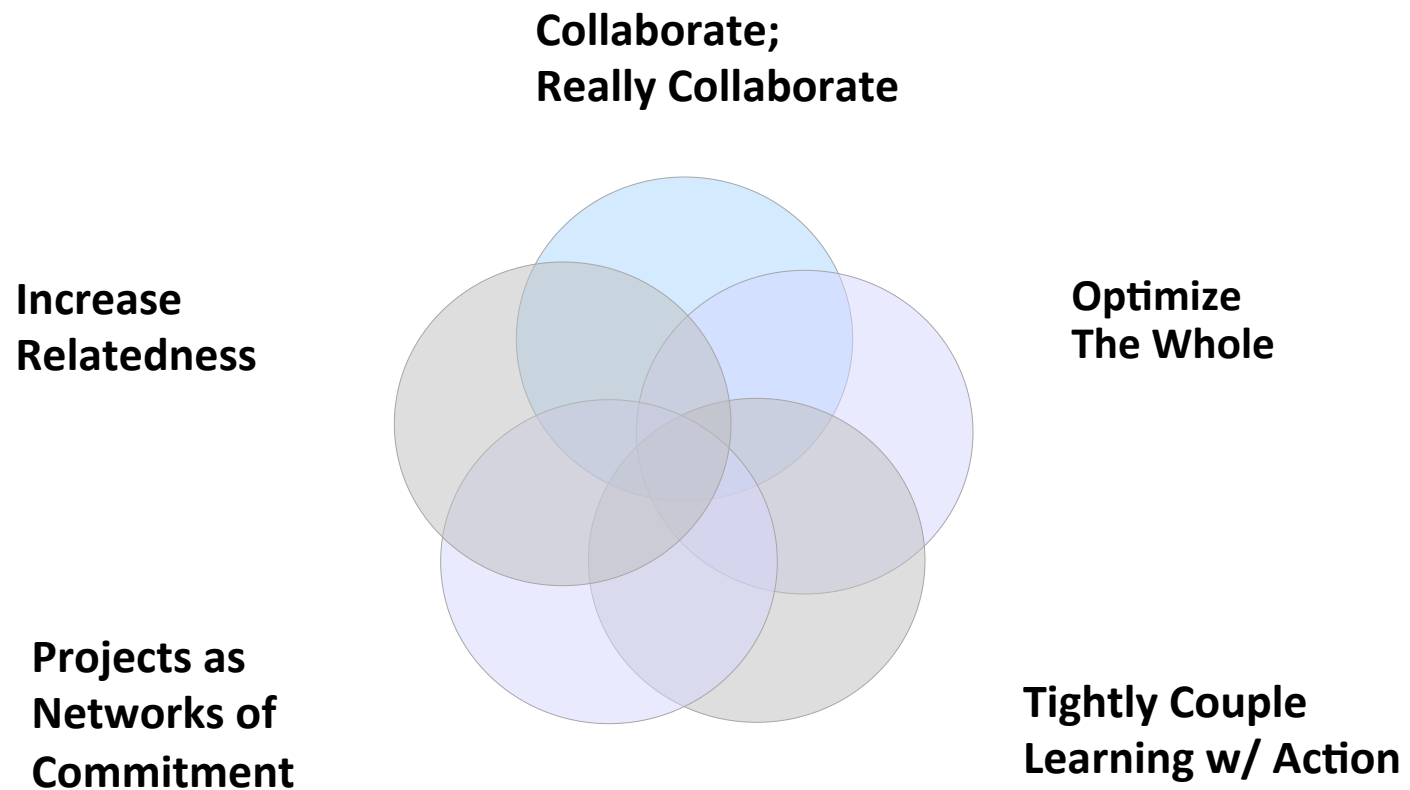
Integrated Project Delivery (IPD)



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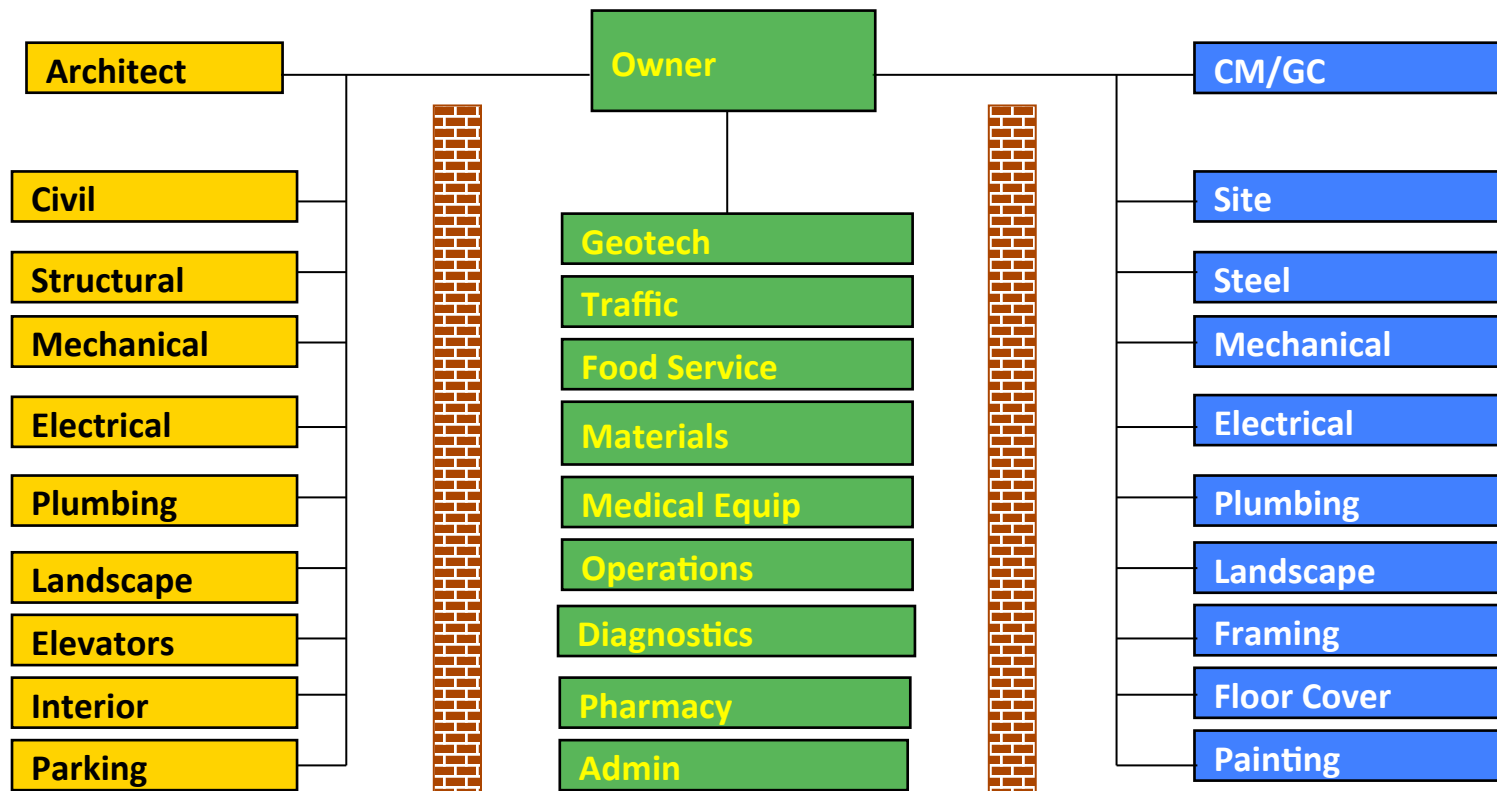
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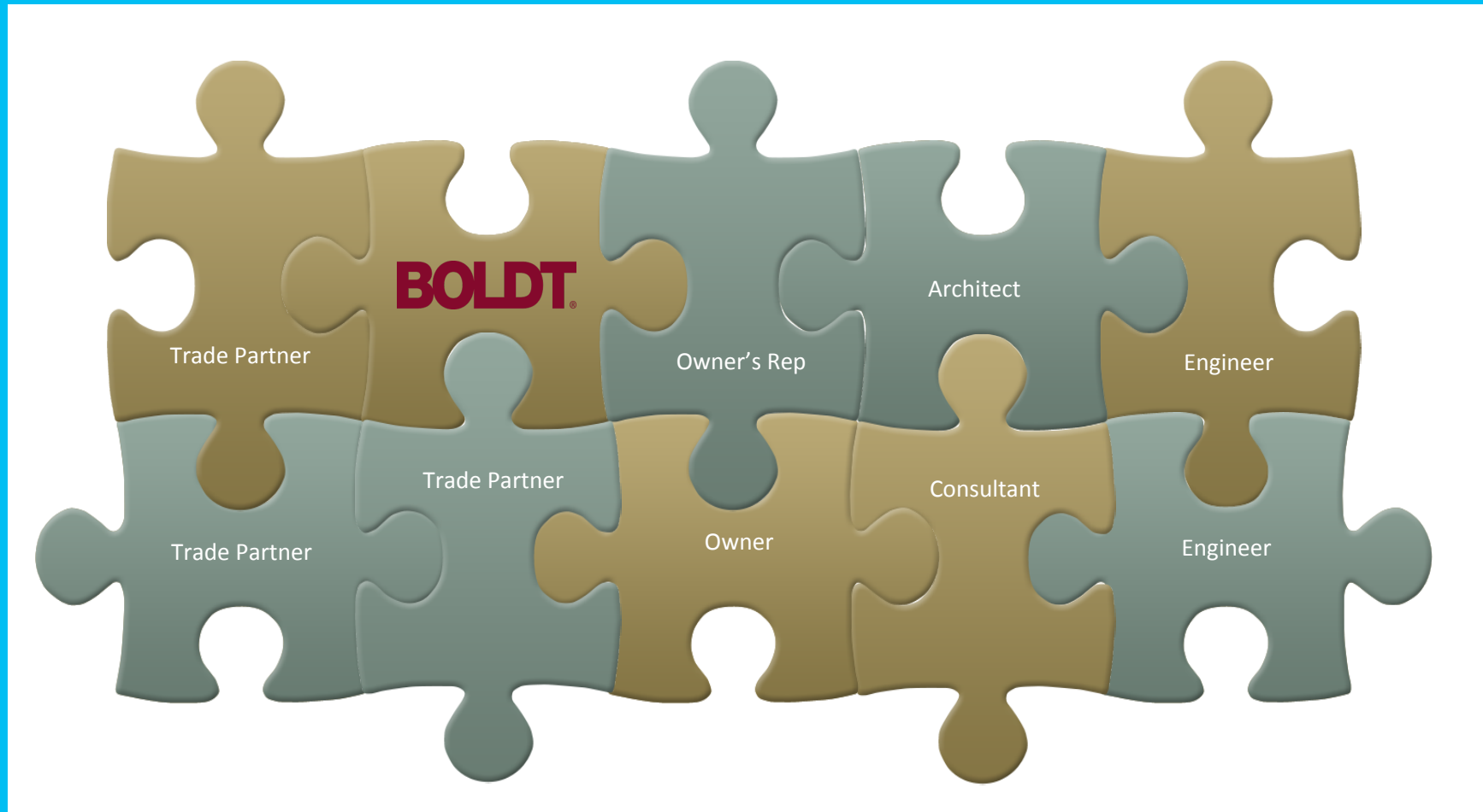
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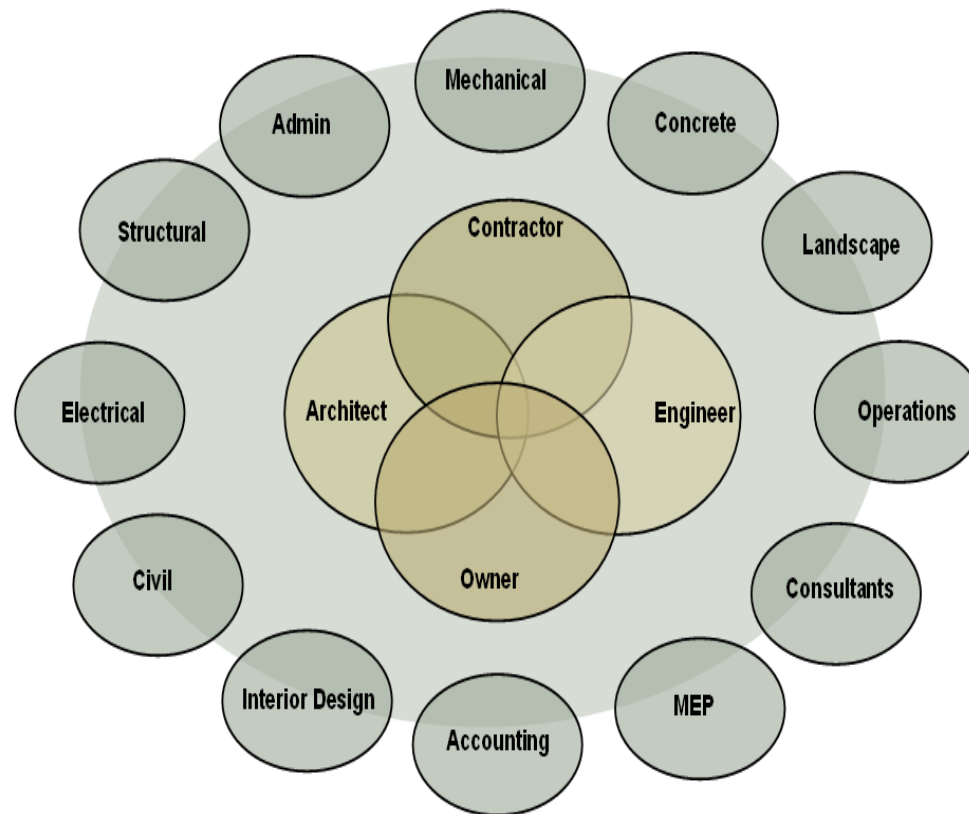
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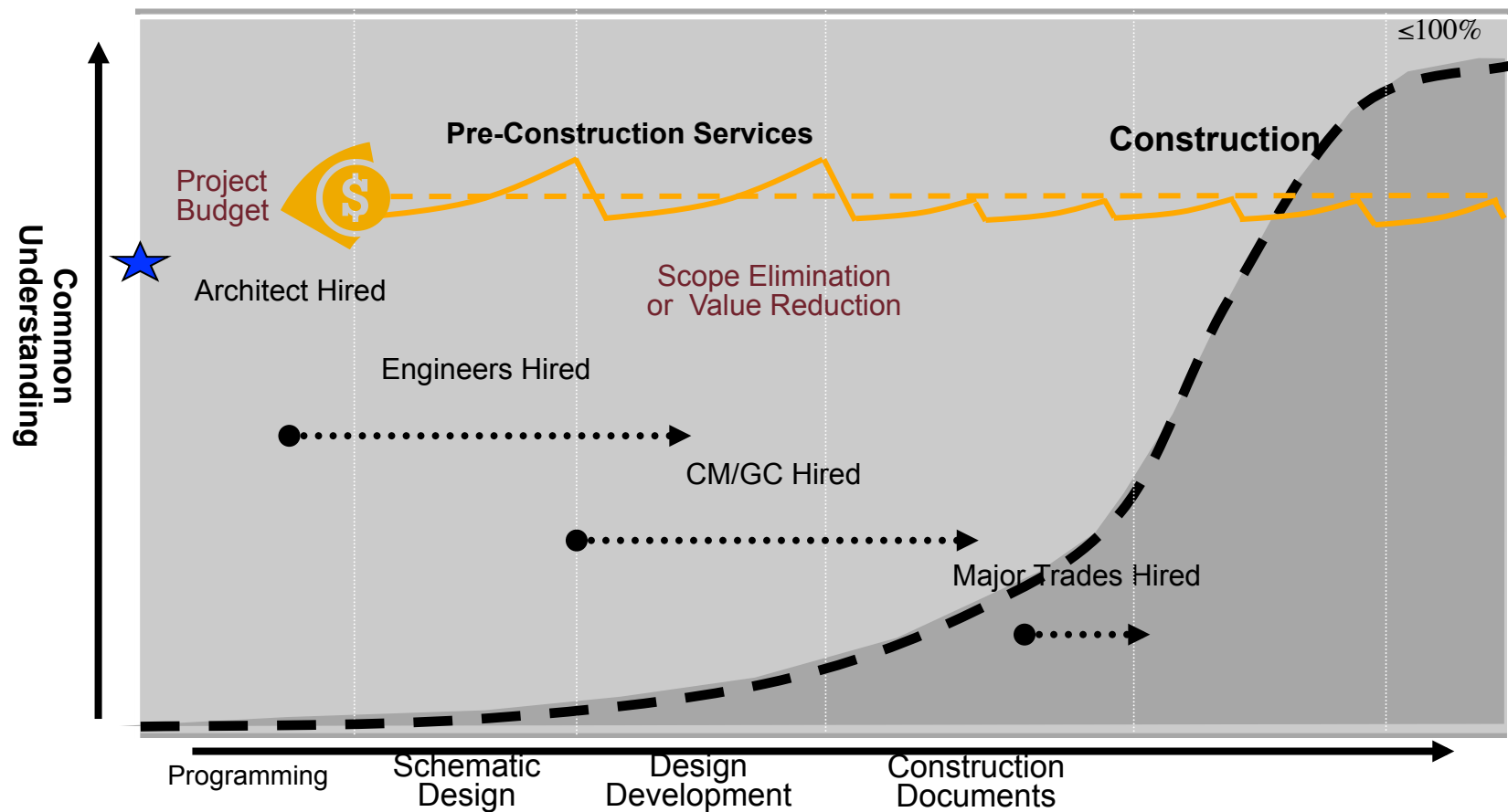
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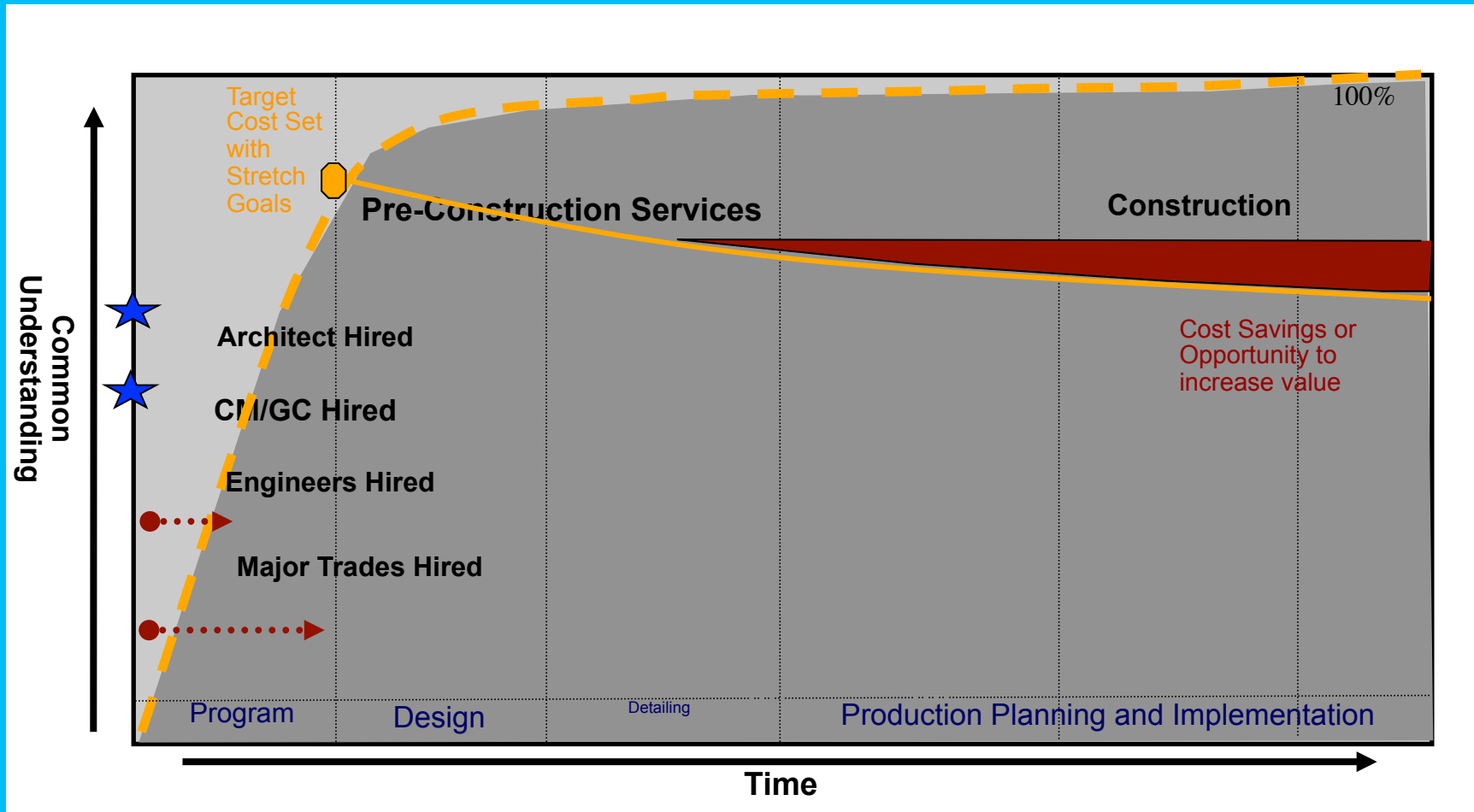
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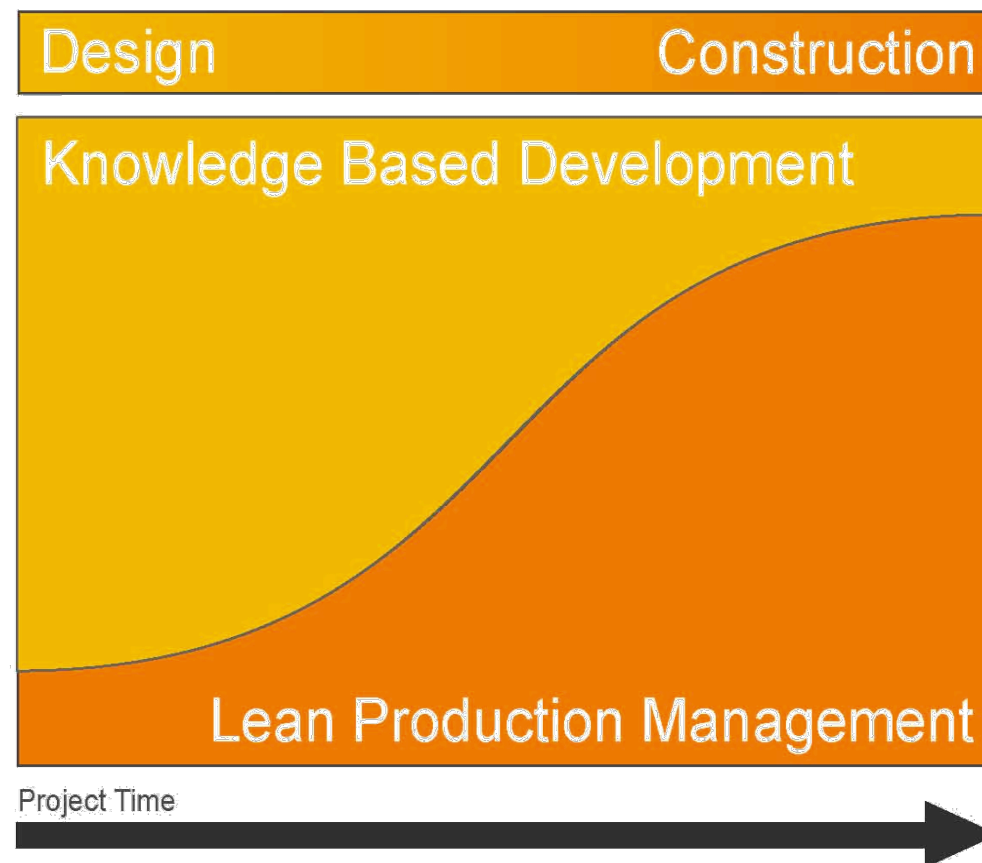
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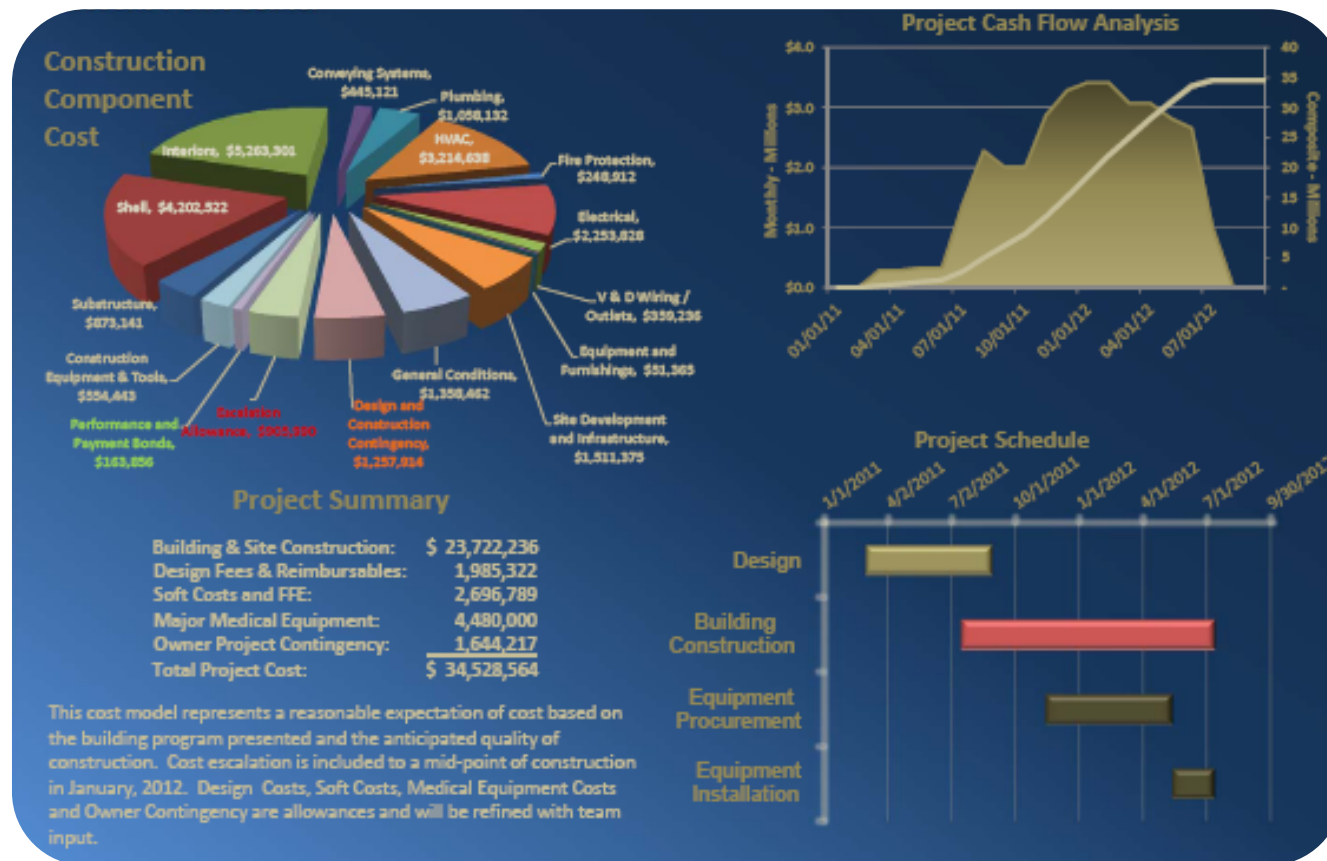
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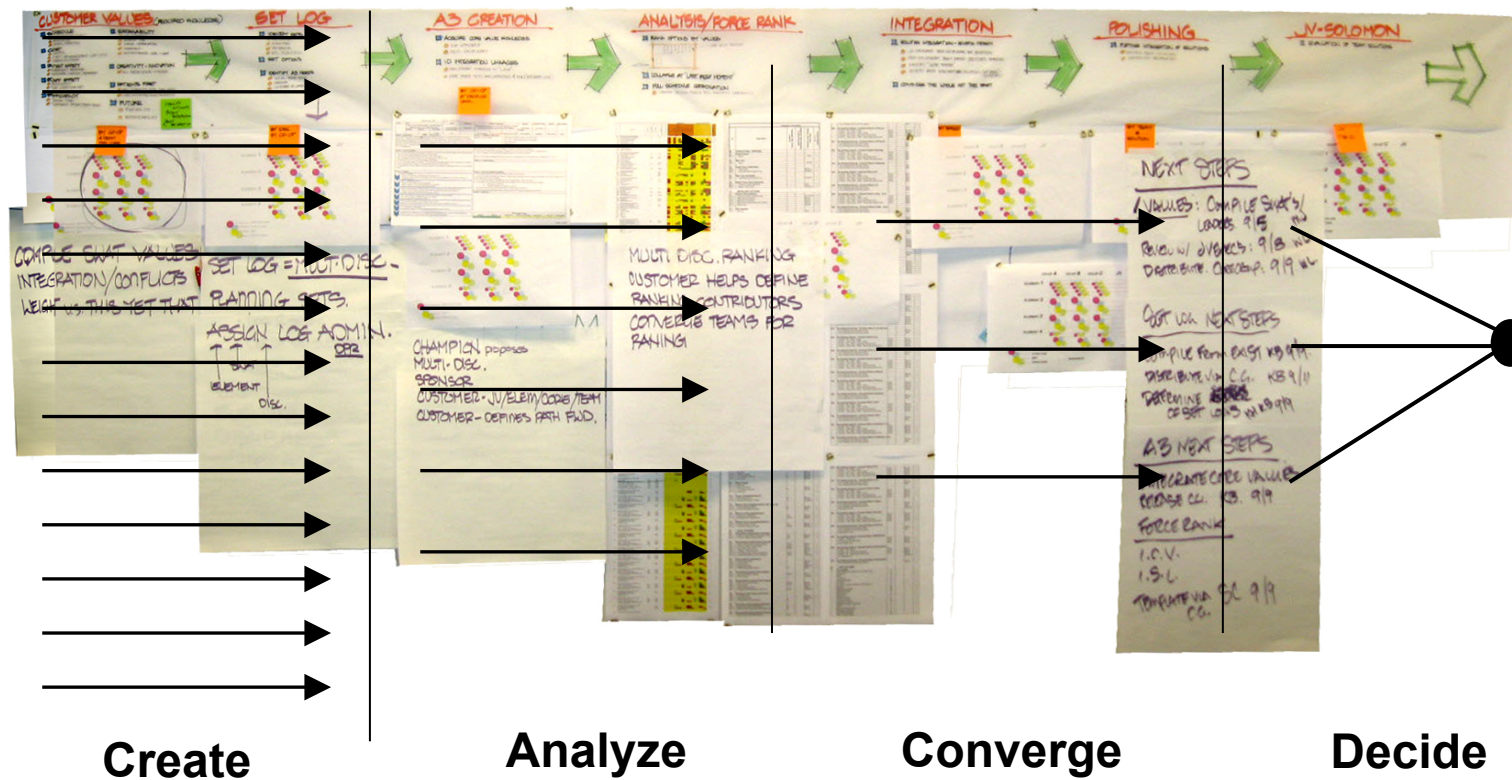
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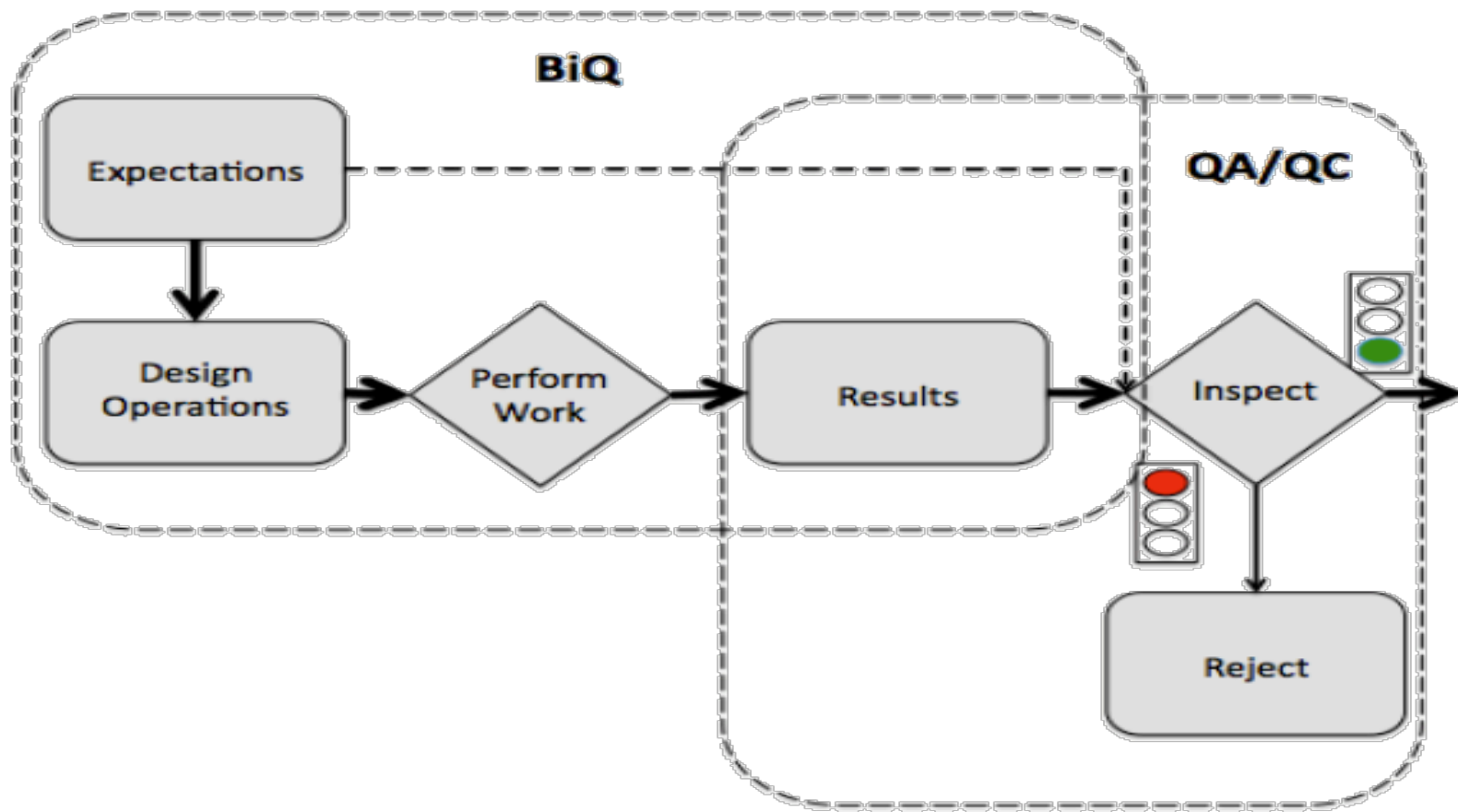
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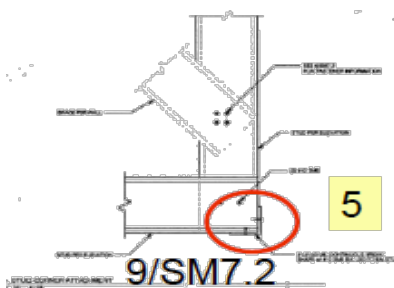


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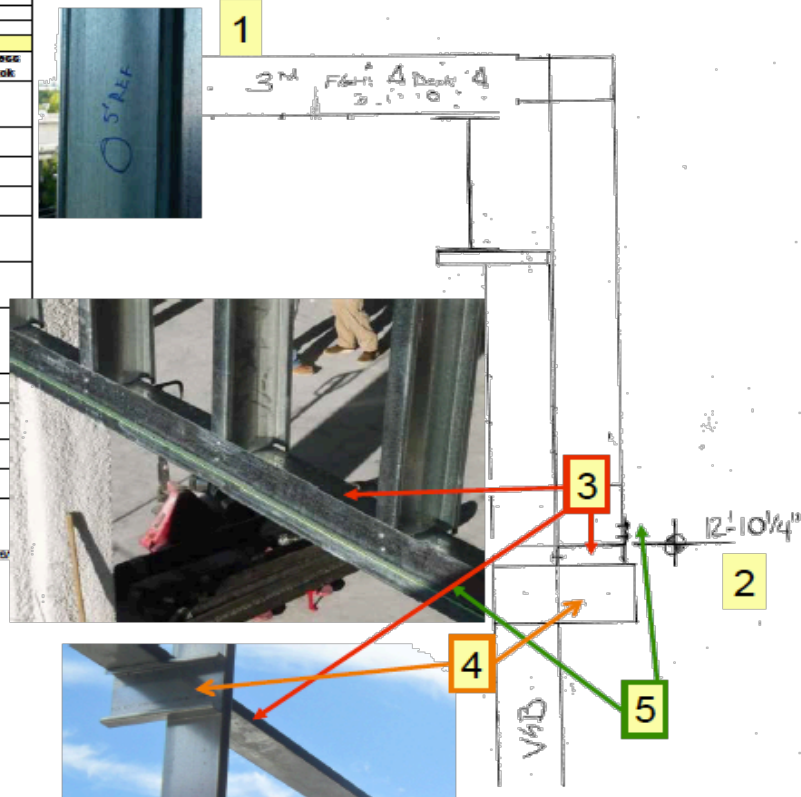
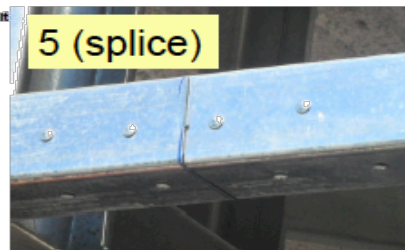


Integrated **Lean** Project Delivery – A Key for Lean Production

Building Enclosure				
Operation:	Exterior Framing	Location of Work:	edge of deck	
Task:	Soffit Angle and Support - Level 2	Champion:	Johnny Legnard	
Process	Key Attributes	Source of Info	Lessons Learned	Process Check
1	Locate 5' benchmark marked by others on vertical strongback	Strongback Crew will lay this out		
2	Establish header height	Typical 12'-10 1/4" AFF (Lead man to mark if otherwise)	Measure from pre-set benchmark	BAGS
3	Install soffit angle support	6" stud material located @ 12'-10 1/4" framing elevation attached to VSB		
4	Install soffit angle support brace	6" x 14" stud material installed perpendicular under soffit angle support		BAGS
5	Install soffit angle	3 x 3 angle material; bottom of angle at 12'-10 1/4" 20' sections spliced together w/ 8" long 3 x 3 angle & (2) #10 SMS per side; locate splice between stud drops	See Picture & photo	
6	Fasten soffit angle	use (2) #10 SMS in face; (1) #10 SMS in bottom	KHSS Working Drawing See KHSS BIQ Workbook	
Trade partner next in Production				

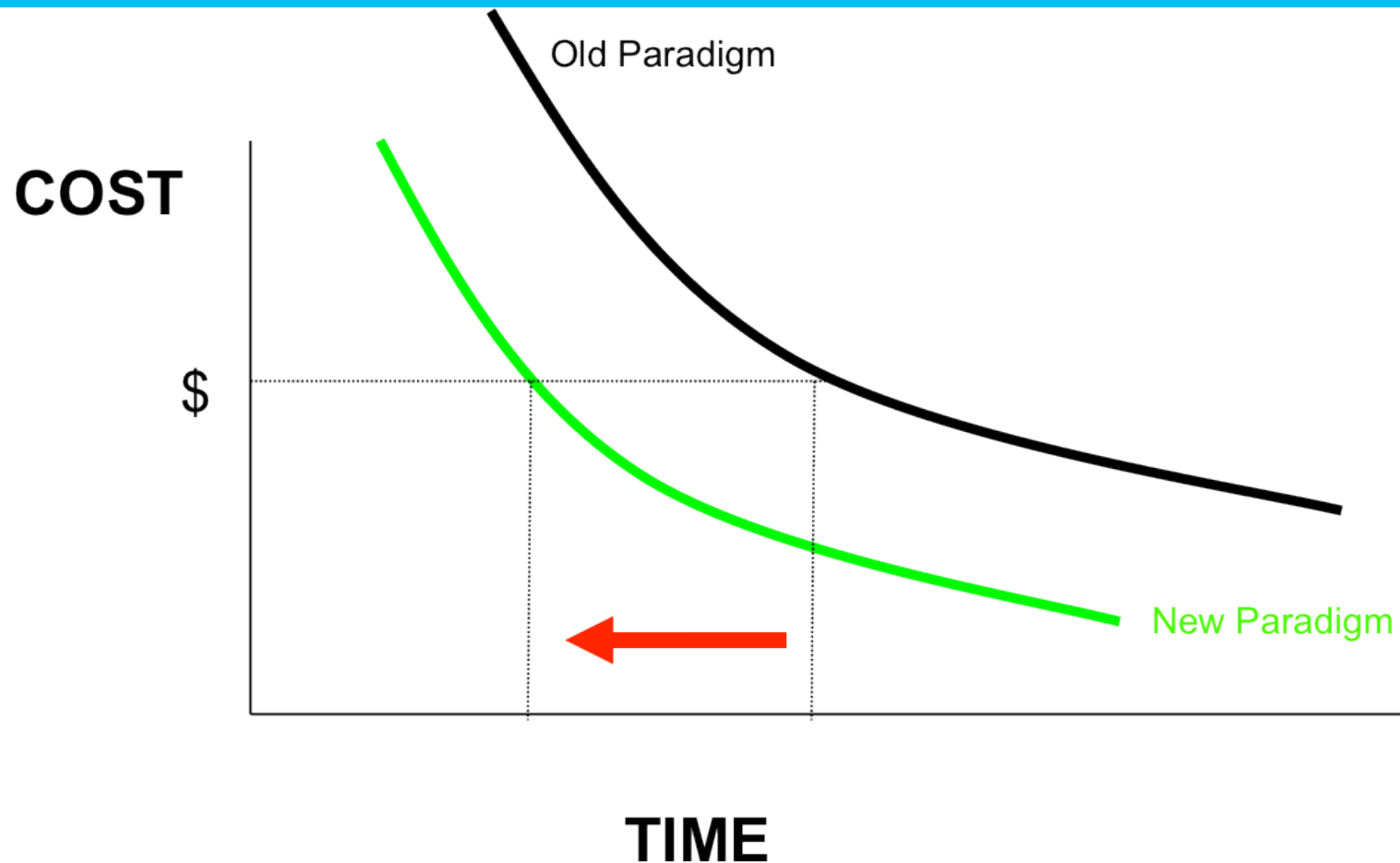


KHSS Enclosure BIQ Field Book



Ver. 1 8/29/11

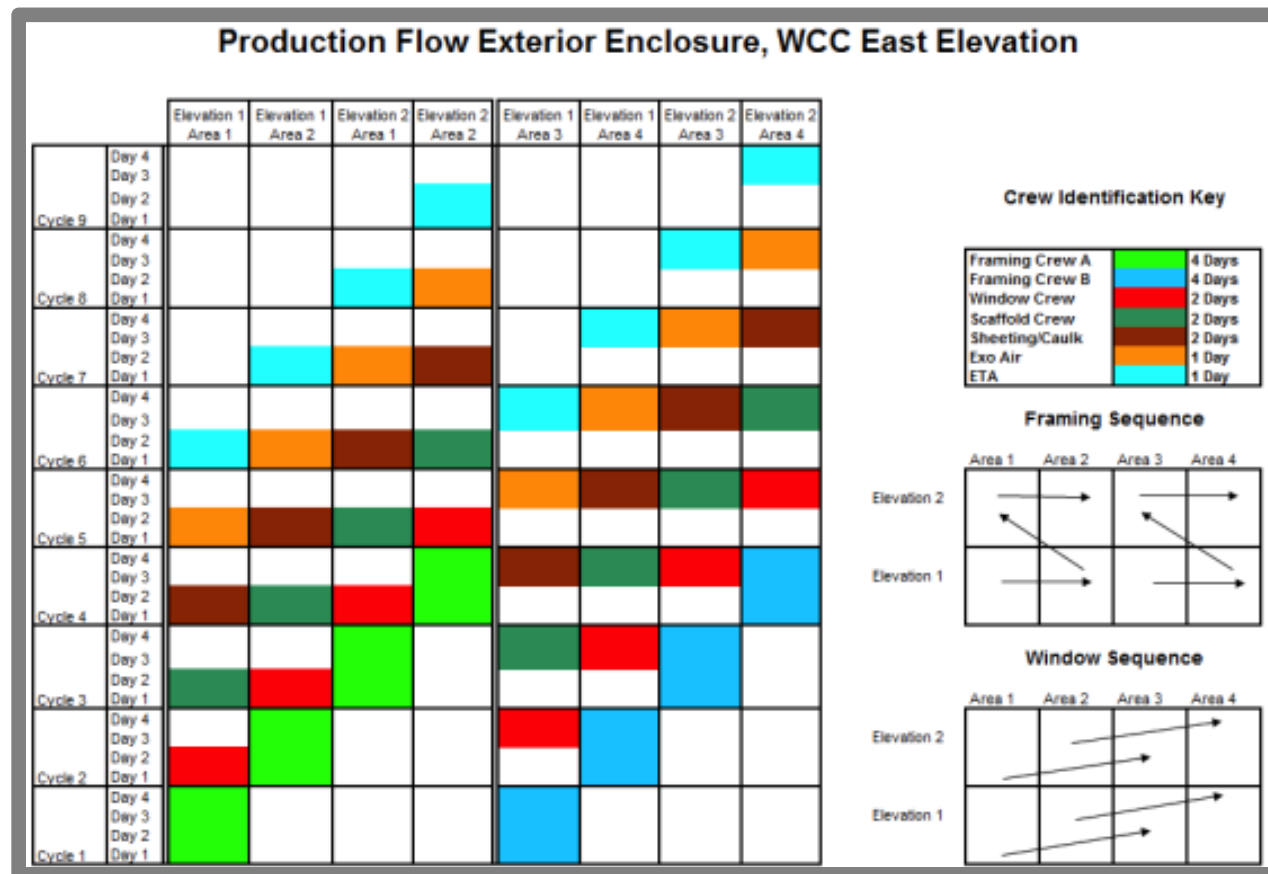
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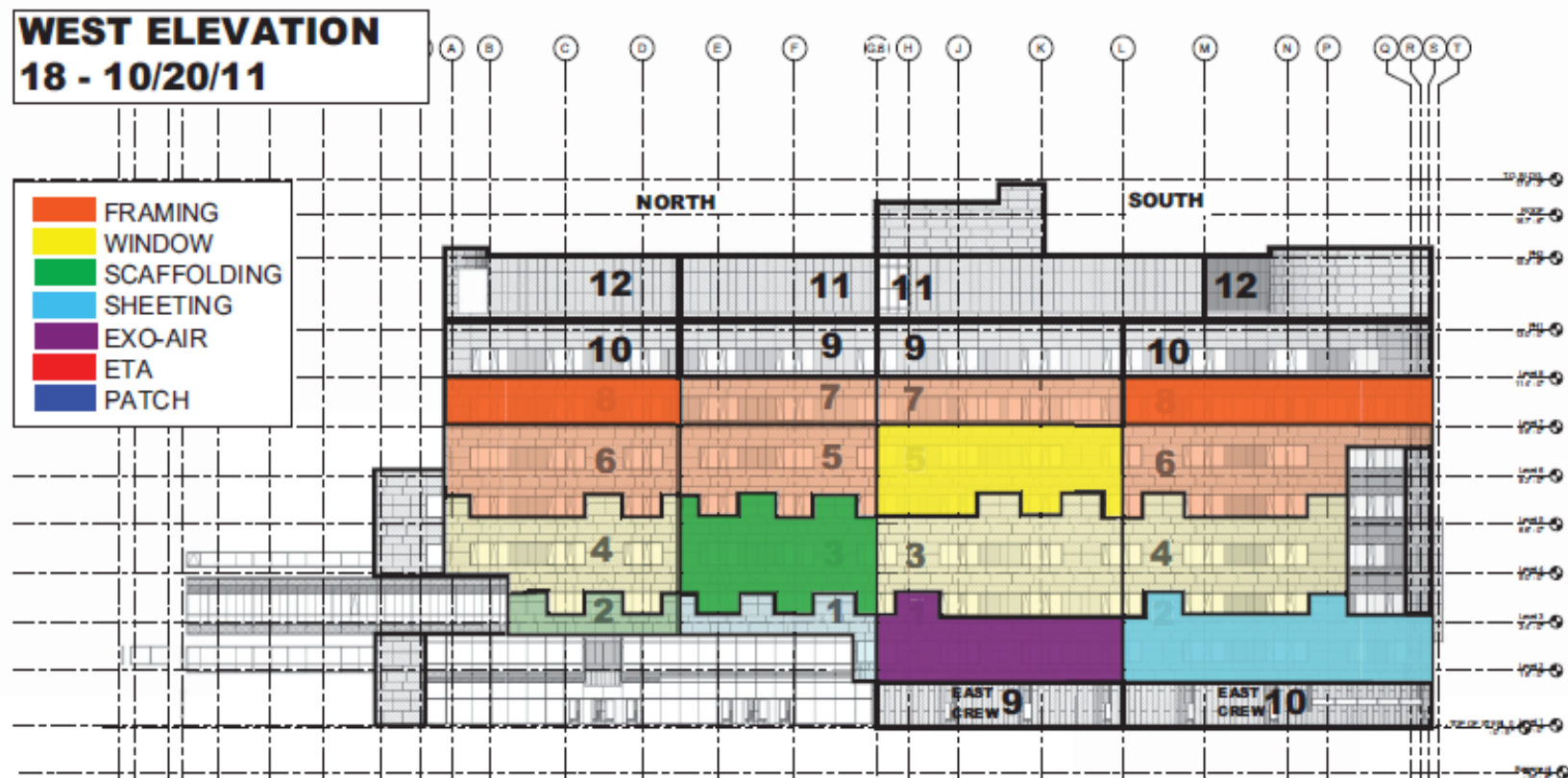
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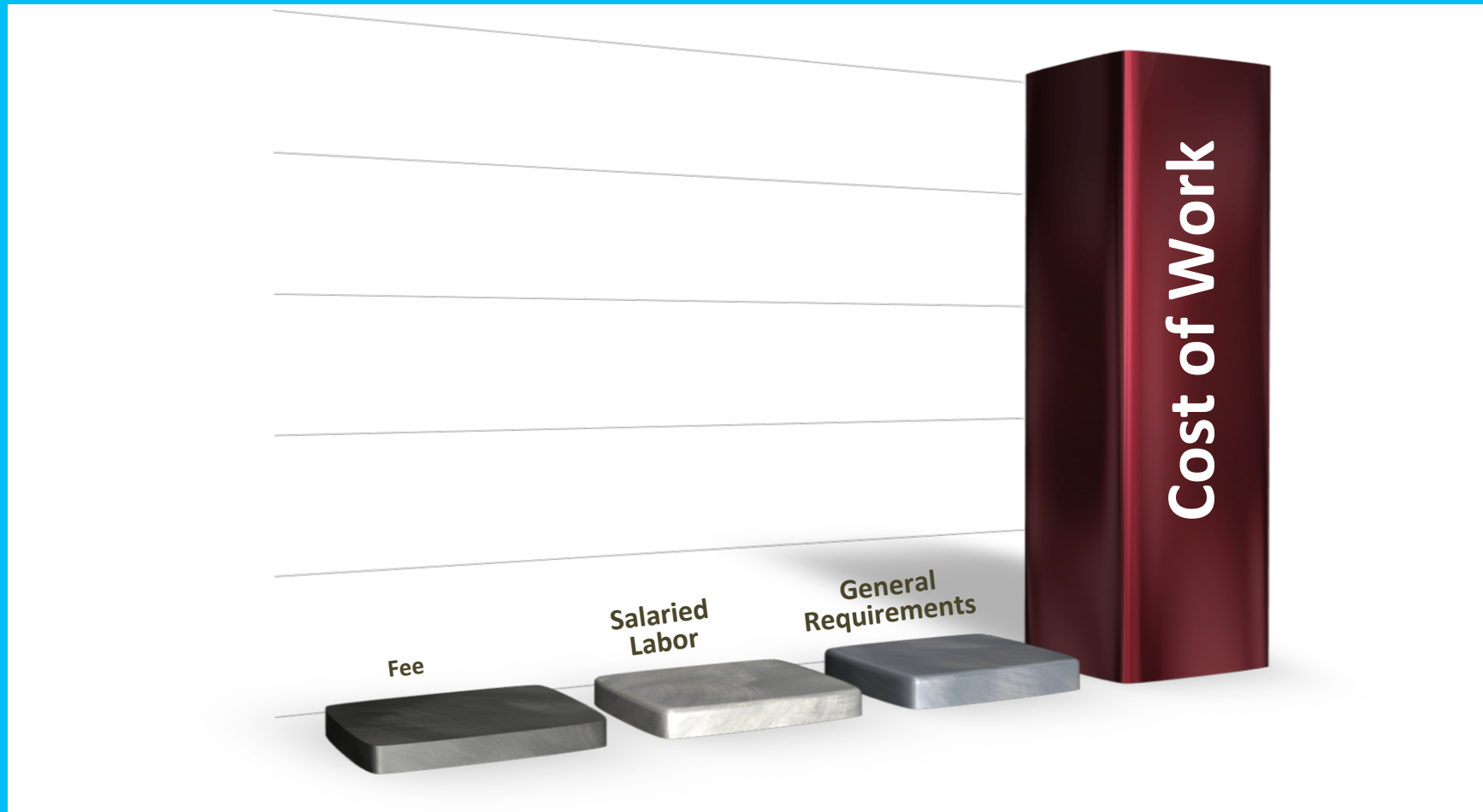
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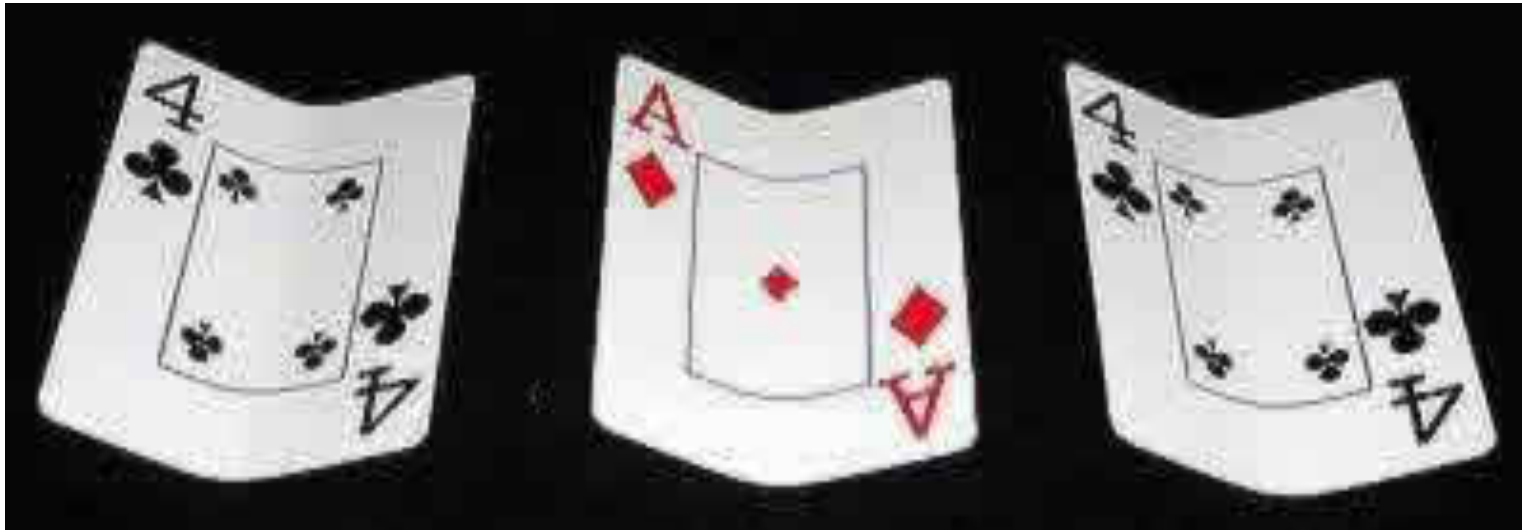
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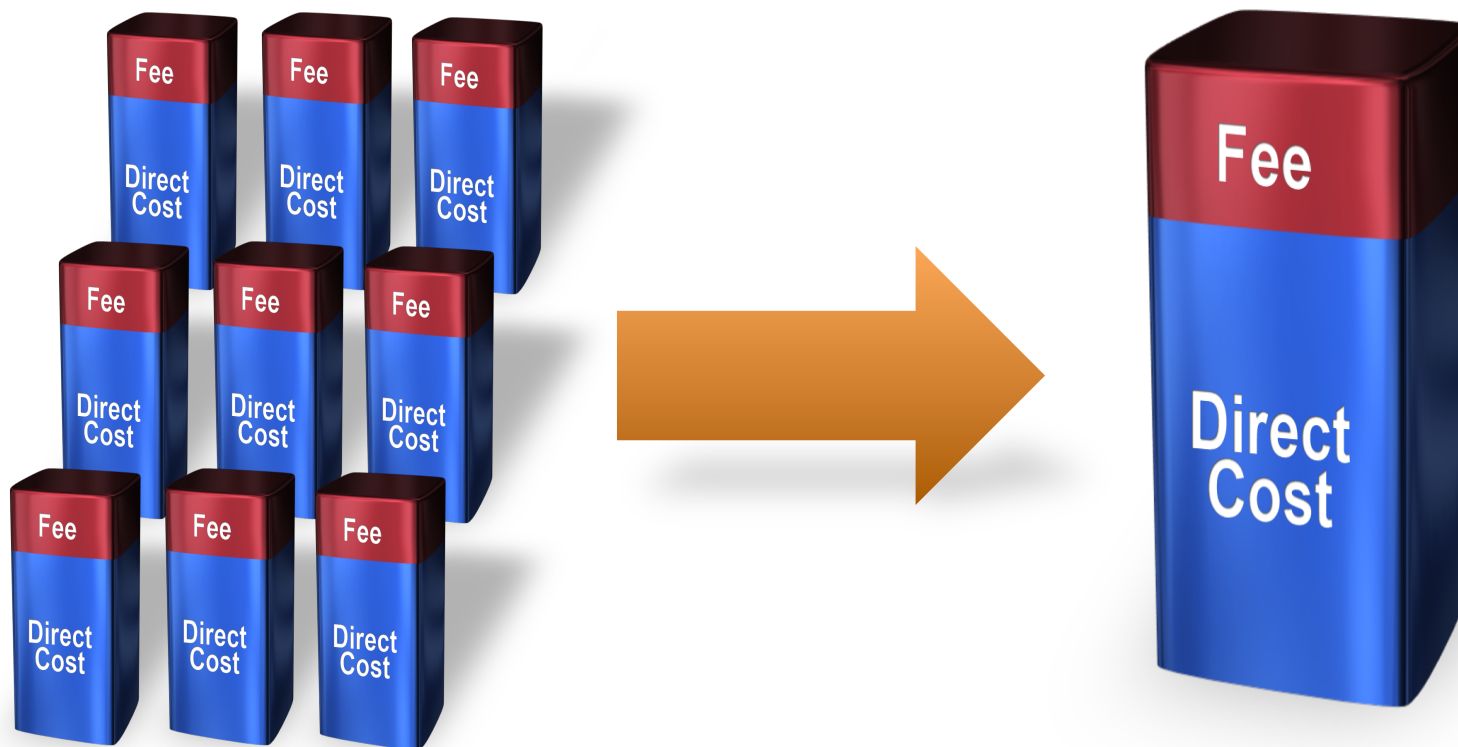
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Thank You