25TH ANNUAL

25TH LCI CONGRESS
OCTOBER 24-27, 2023

Demystifying the Integrated Project Delivery Contract:

Risk, Reward & Partnering for Success

John Zachara, Integrated Facilities Solutions
Kelcey Henderson, Continuum Advisory Group

25 YEARS OF LEARNING: SUPERCHARGE YOUR LEAN JOURNEY IN THE MOTOR CITY

October 24, 2023

Demystifying the Integrated Project Delivery Contract

WORKSHOP OBJECTIVES

→ How IPD Fits with Lean
→ When to use the IPD Contract
→ Types of IPD Contracts
→ Definitions
→ Conditions of Satisfaction
→ Validation
→ RFP/RFQ Process
→ Contract Structure
→ Incentives & Risk/Reward

Kelcey Henderson

President

CONTINUUM Advisory Group

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Continuum Advisory Group is a management consulting firm serving the building and construction industry. We partner strategically with our clients to solve difficult problems, bring about transformational change and guide their efforts to build a different future. Our sole focus on the building and construction industry gives us the technical expertise to provide insight from day one, while our management experience allows us to understand the cultural, political and organizational context of any engagement.

We offer a wide range of consulting services, including strategy, research, and project delivery support. With regards to Lean and Integrated Project Delivery, we work as a consultant and coach with large project teams to help implement Lean Practices and build Integrated, High Performing Teams. We also work with both owners and contractors at the organizational level to develop Lean Construction and Integrated Teams practices, with a focus on strategic and cultural fit to ensure successful adoption and implementation.

- STRATEGIC PLANNING
- CHANGE MANAGEMENT AND SYSTEM & PROCESS IMPLEMENTATION
- BUILDING HIGH PERFORMING TEAMS THROUGH LEAN AND INTEGRATION
- MARKET RESEARCH AND ANALYSIS
- ACQUISITION RESEARCH AND GROWTH ANALYSIS
- PROCESS STREAMLINING AND IMPROVEMENT

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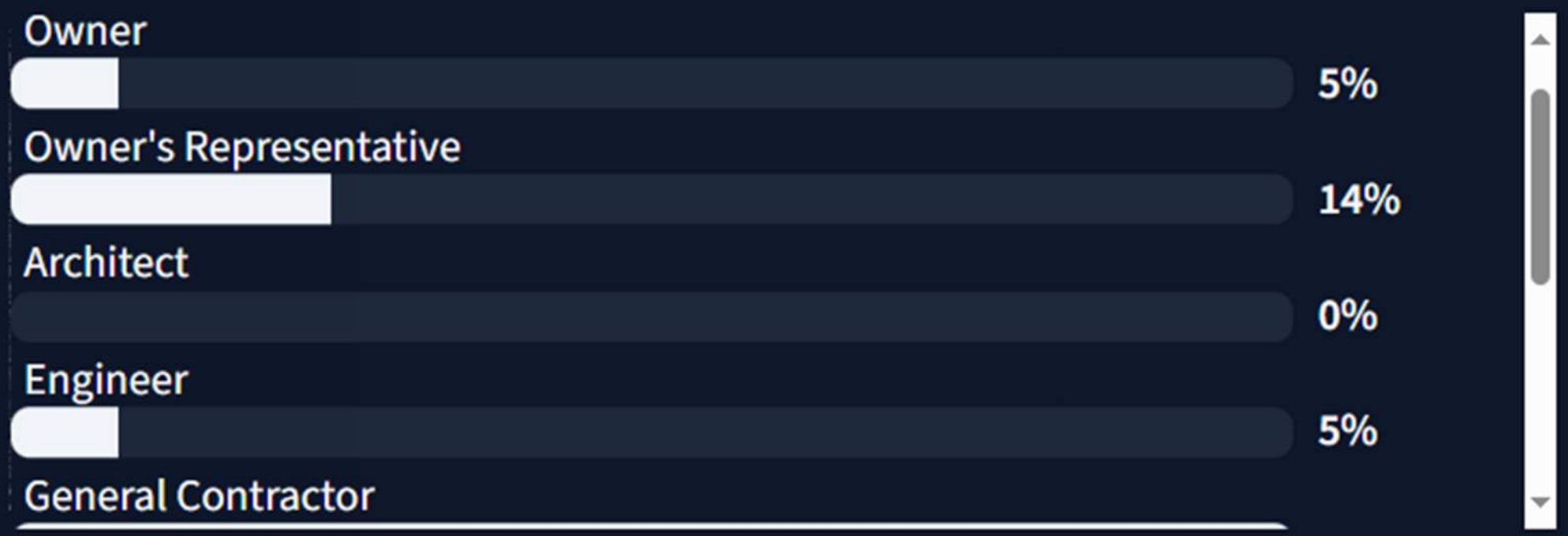
IFS
INTEGRATED FACILITIES SOLUTIONS, INC.
Owner's Representative/Program Management

- Illinois-based Owner's Representative & Lean Coaching company
- 20-person firm
- 25 years in business
- Successfully completed over $4.2B in work for more than 3,000 projects

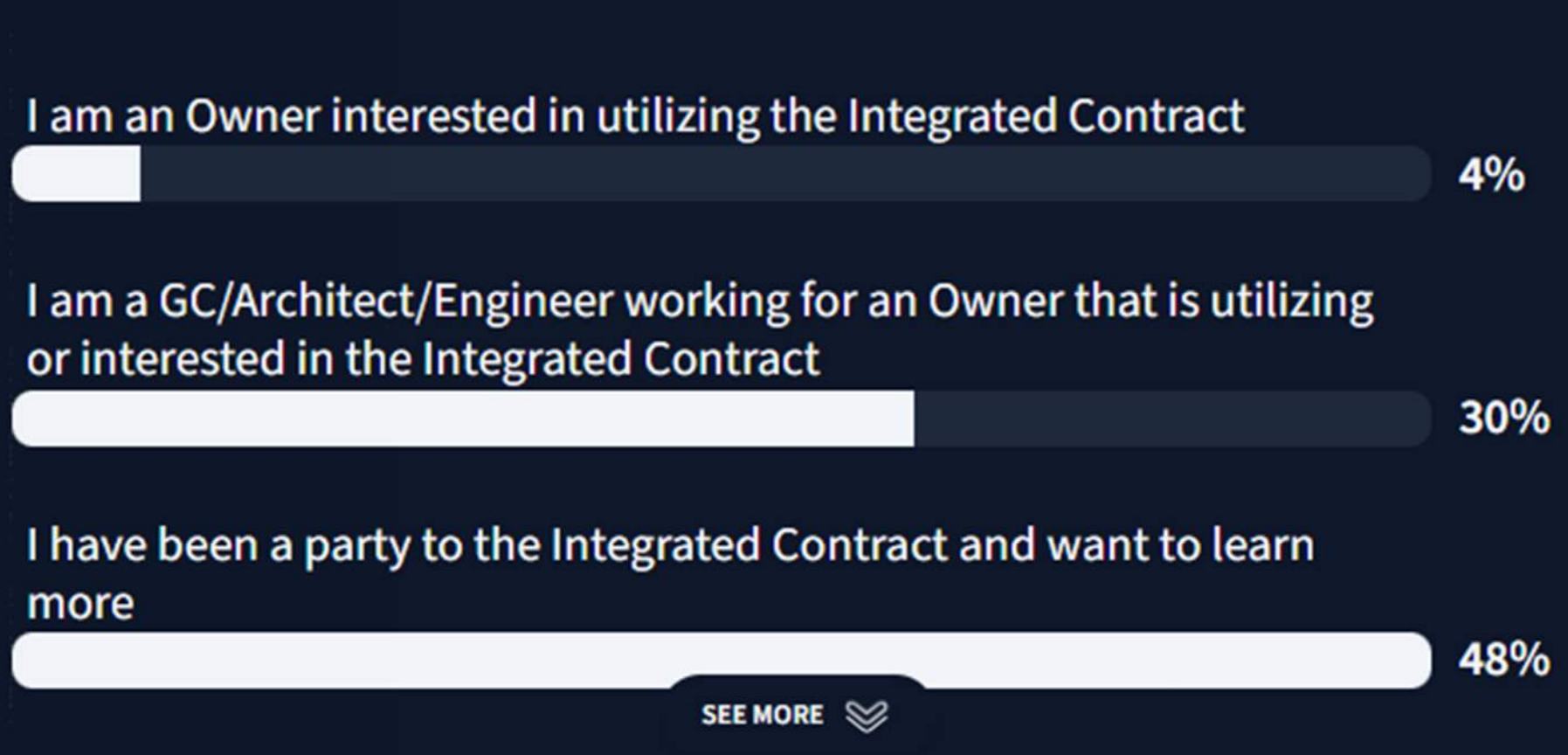

My role
is ____.

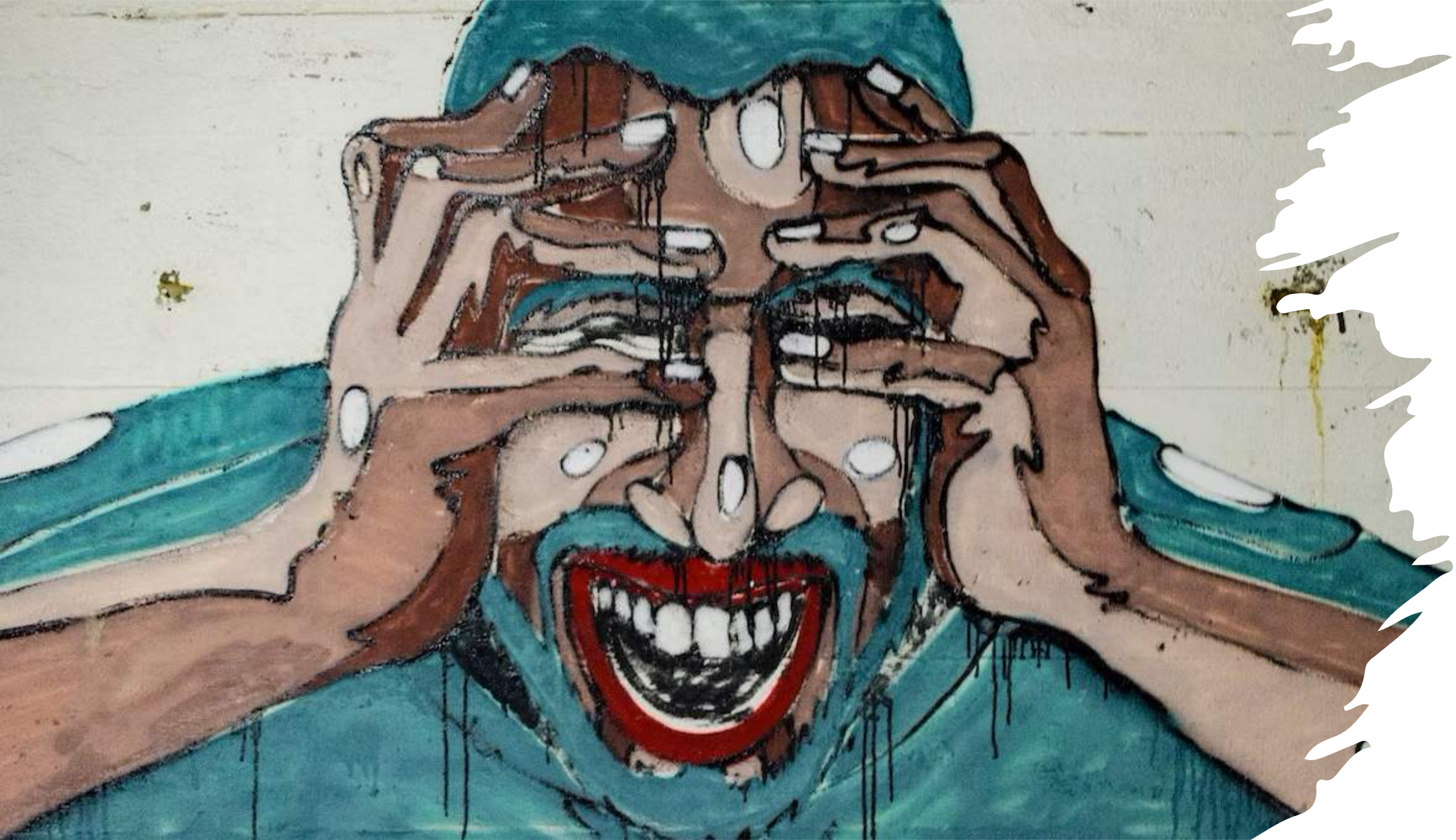
My role is:

21


Owner
5%
Owner's Representative
14%
Architect
0%
Engineer
5%
General Contractor


WHAT
DO YOU
WANT TO
LEARN?


I am an Owner interested in utilizing the Integrated Contract
4%
I am a GC/Architect/Engineer working for an Owner that is utilizing or interested in the Integrated Contract
30%
I have been a party to the Integrated Contract and want to learn more
48%
SEE MORE

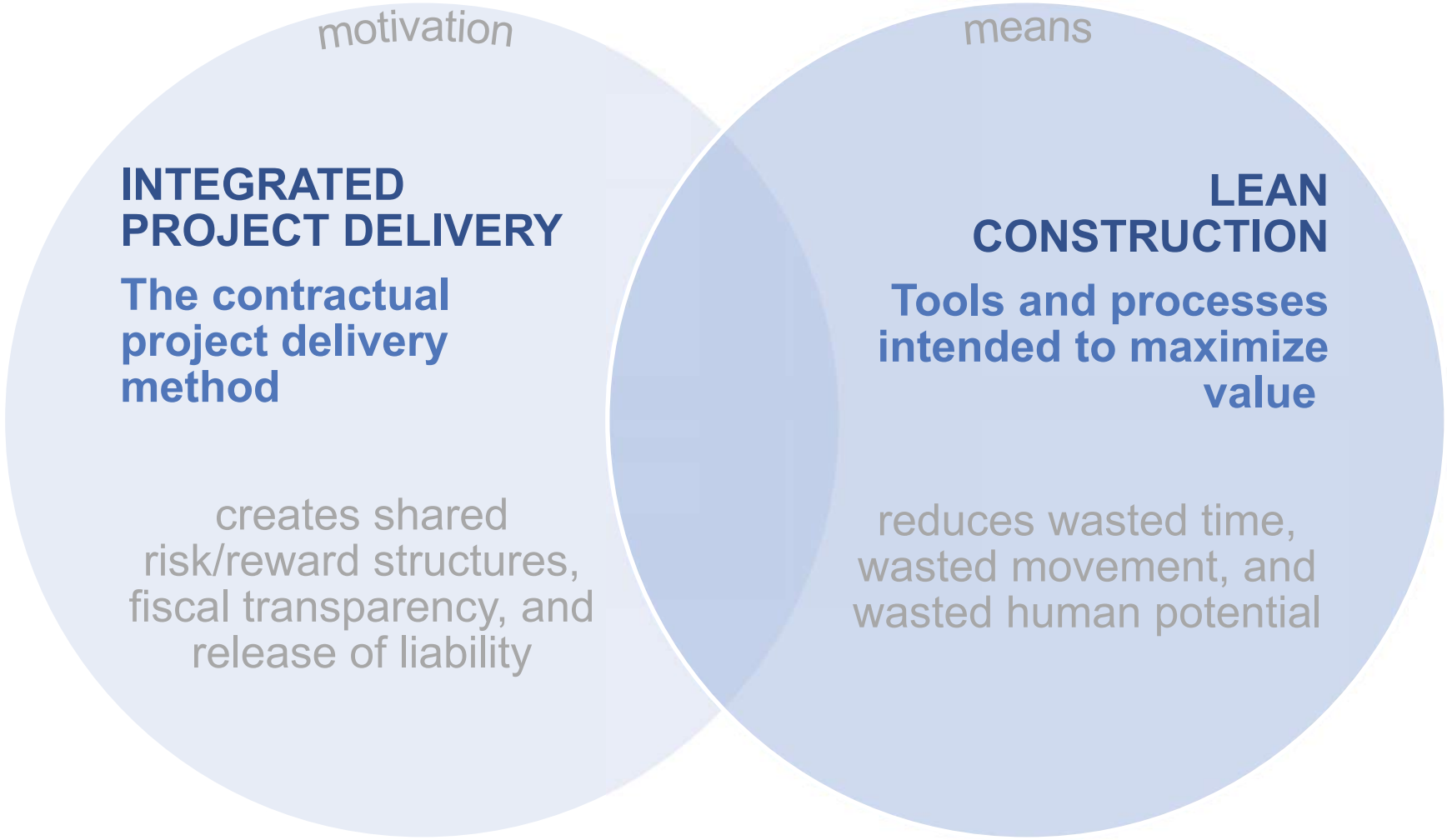



understanding
indecisiveness
communication
misunderstood
behaviours
unclear
set
confusing
efficiencies
mind
inconsistent
timelines
buy-in
vague
difficult
extras
adversarial
gray
constraints
negotiation
lack
misundrrstanding
clarity
one-sided
lawsuits

SIX TENETS OF LEAN CONSTRUCTION

1. Respect for People
2. Optimize the Whole
3. Generate Value
4. Eliminate Waste
5. Focus on Flow
6. Continuous Improvement

Motivation & Means

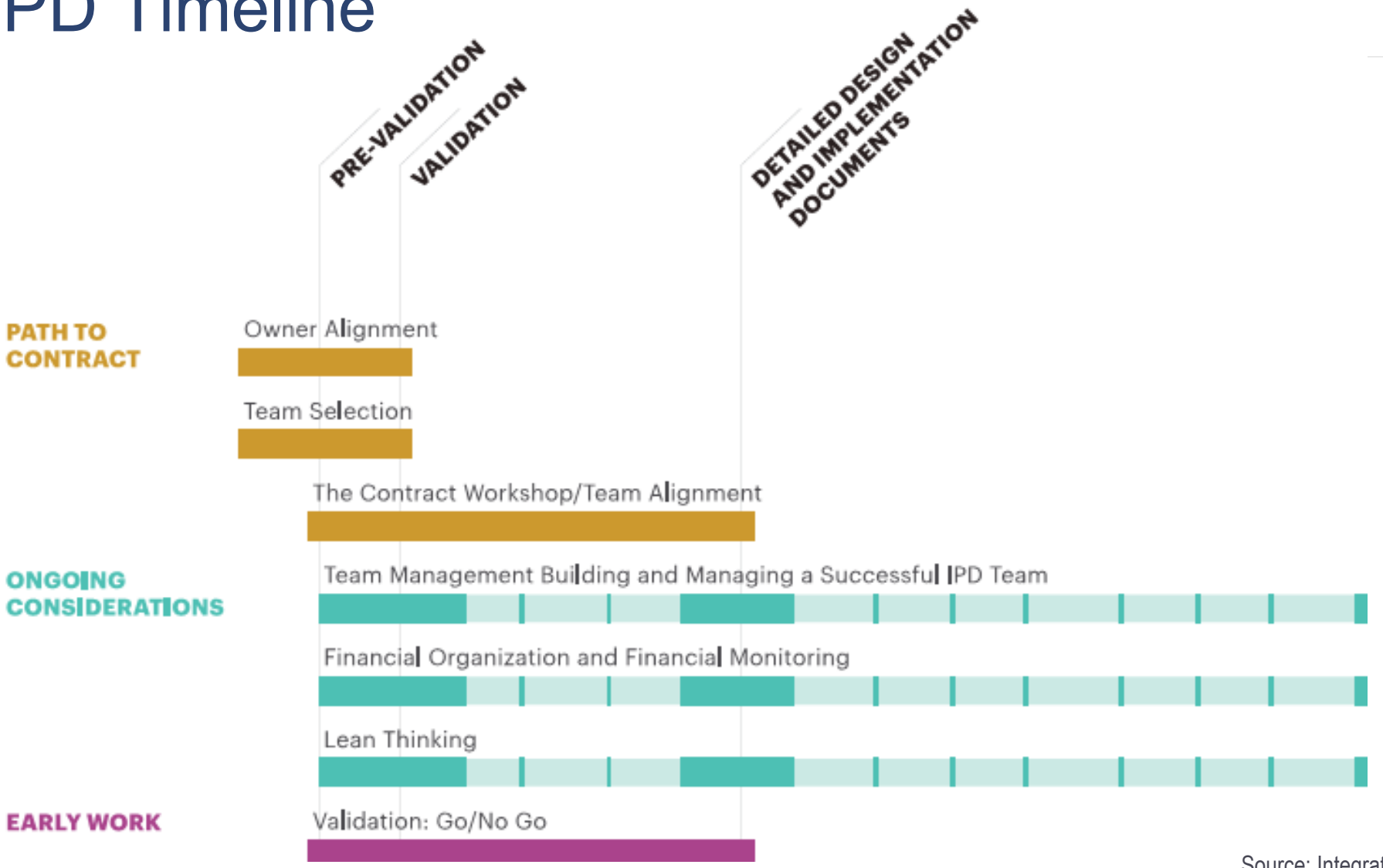


Lean Integrated Project Delivery

Traditional Project Delivery		Integrated Project Delivery
Fragmented, assembled on “just-as-needed” or “minimum-necessary” basis, strongly hierarchical, controlled	TEAMS	An integrated team entity composes key project stakeholders, assembled early in the process, open, collaborative
Linear, distinct, segregated; knowledge gathered “just-as-needed”; information hoarded; silos of knowledge and expertise	PROCESS	Concurrent and multi-level; early contributions of knowledge and expertise; information openly shared; stakeholder trust and respect
Individually managed, transferred to the greatest extent possible	RISK	Collectively managed, appropriately shared
Individually pursued; minimum effort for maximum return; (usually) first cost based	COMPENSATION/ REWARD	Team success tied to project success; value-based
Paper-based, 2 dimensional; analog	COMMUNICATION/ TECHNOLOGY	Digitally based, virtual; Building Information Modeling (3, 4 and 5 dimensional)
Encourage unilateral effort; allocate and transfer risk; no sharing	AGREEMENTS	Encourage, foster, promote and support multi-lateral open sharing and collaboration; risk sharing

Source: AIA 2007

IPD Timeline

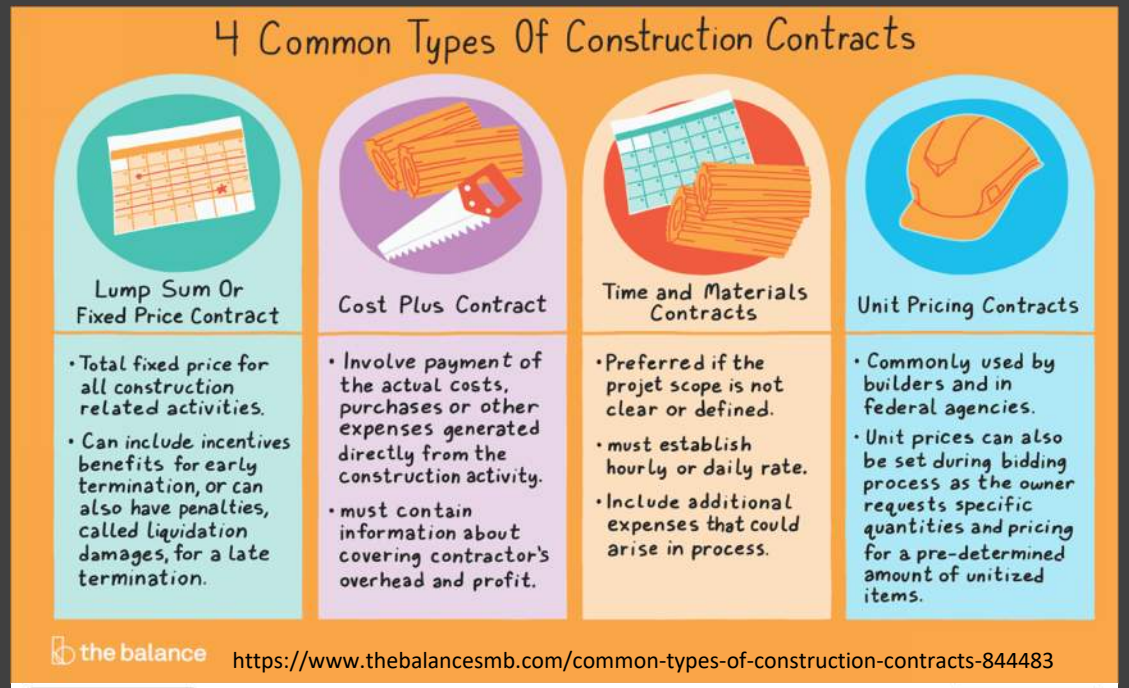


Source: Integrated Project Delivery: An Action Guide for Leaders

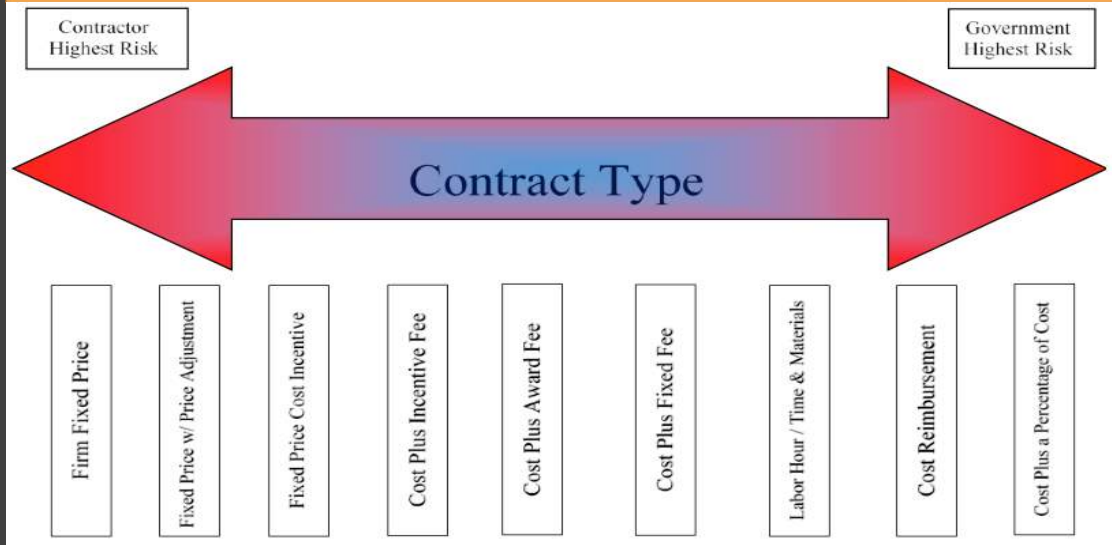
IPD Timeline

Source: Integrated Project Delivery: An Action Guide for Leaders


When to use the IPD Contract



https://www.thebalancesmb.com/common-types-of-construction-contracts-844483



https://spo.hawaii.gov/procurement-wizard/manual/determine-contract-type/?print=print

https://www.bigrentz.com/blog/construction-contracts

PROJECT CHARACTERISTIC		HIGH	LOW
Level of Ambition	Technical Innovation	○	○
	Creative Innovation	○	○
	Other Areas of Innovation	○	○
	High Sustainability Goals	○	○
Stressors	High Value to Budget	○	○
	Challenging Schedule	○	○
Level of Clarity[1]	Current Scope Development	○	○
	Expected Time for Future Scope Development	○	○
Probability of Change	Expected Change in Building Technology	○	○
	Expected Change in Business Case	○	○
	Expected Stakeholder / Public Driven Change	○	○
Complexity of Interaction	Level of Interdependency of Systems	○	○
	Level of Interdependency of Participants	○	○

1 IPD is a good choice when managing projects with scopes that are not initially clear, but it will require a more extended validation period before setting targets

Common Contracts

HansonBridgett

INTEGRATED PROJECT DELIVERY AGREEMENT

EXCERPTS FOR WORKSHOP

his Integrated Project Delivery Agreement ("Agreement") is entered into on ____, 2022 ("Effective ate") among the Owner, Architect, and Contractor ("Parties"), for the complete design and onstruction of the Project. The Parties agree that all Work performed on the Project is subject to the llowing terms and conditions.

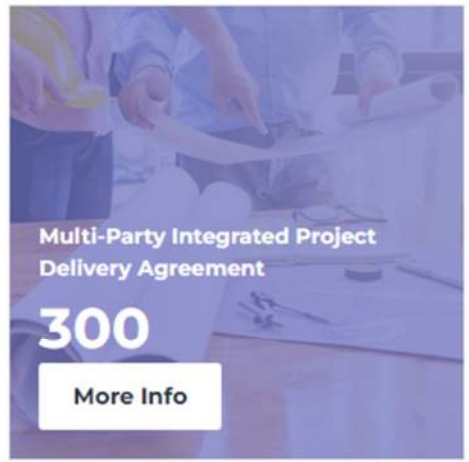
BUSINESS TERMS SHEET

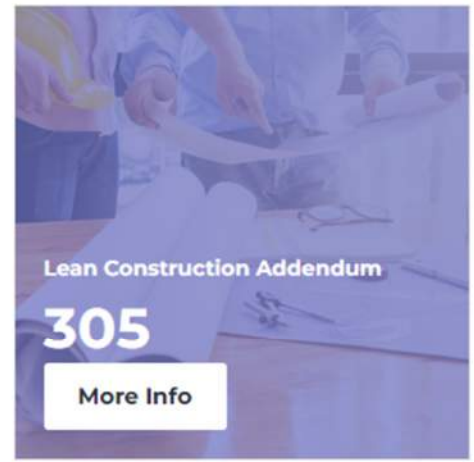
The key business terms of this Agreement are set forth below and included in the Agreement:

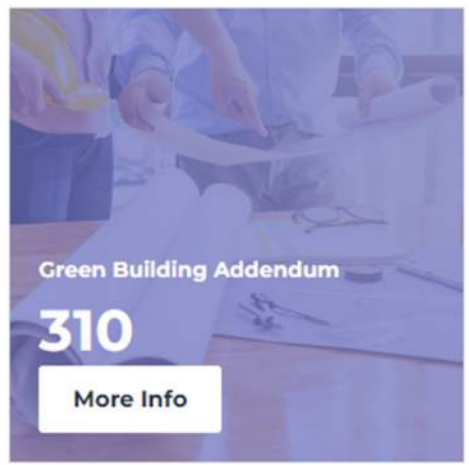
Senior Management Team	Owner	
	Architect	
	Contractor	
Project Management Team (PMT)	Owner	
	Architect	
	Contractor	
Project Neutral per Section 4.2.2(a) of Agreement		
Project's Budget	$00,000,000	
Target Cost	$TBD (by Amendment)	
Savings Threshold	$TBD (TC -$1) (By Amendment)	
ICL	$TBD (See Exhibit 4C) (By Amendment)	
	Architect ___% ICL	Contractor __% ICL
Shared Savings, if earned	R/R Team	Owner
	___%	___%
Architect's and R/R Design Partners' Overhead Multipliers	Exhibit 4D	
Contractor's and R/R Trade Partners' Overhead Multipliers	Exhibit 4E	
ICL, ICL Share, and Change Order Profit	Exhibit 4C Change Order Profit must match ICL % above	
CCIP Mark-Up	___% Chargeable Costs for Volume of Construction Work	
SDI Mark-Up	___% Chargeable Costs of the Construction Work for enrolled R/R Trade Partners and subcontractors	
Substantial Completion Date	[insert date]	(established by Amendment)
Final Completion Date	[insert date]	(established by Amendment)

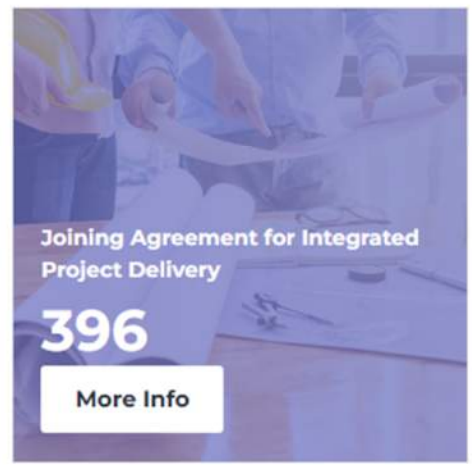
ConsensusDocs®

BUILDING A BETTER WAY



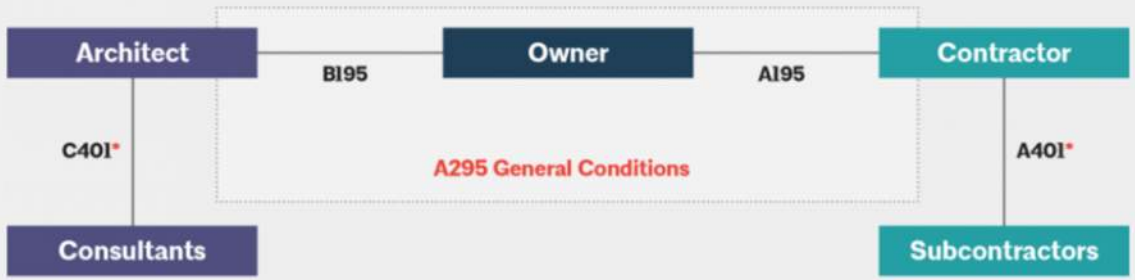






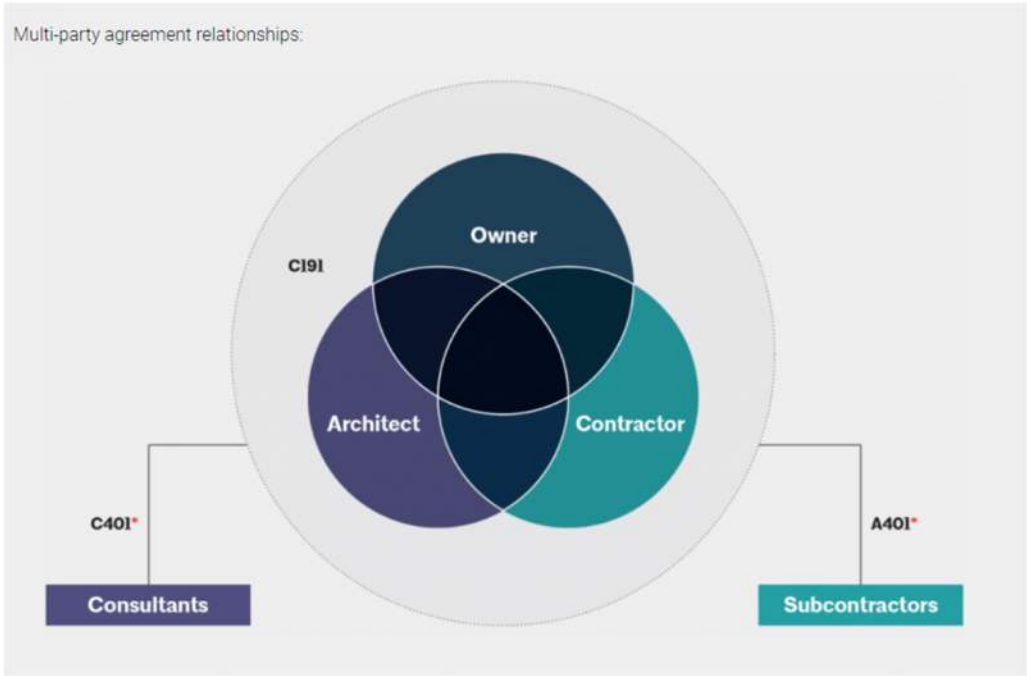
AIA Contract Documents

Transitional documents relationships:



Single Purpose Entity (SPE) contract relationship:

Multi-party agreement relationships:




Definitions

IPD Trade Partner: A subcontractor contracted with the general contractor or owner, profit-at-risk

Risk-Reward Pool (R/R): 100% of the profit put at risk by the R/R Members. Dependent on the Final Actual Cost, the R/R Members may earn all, a portion of, or no Risk/Reward Amount.

Standard Subcontractor: A subcontractor contracted with the general contractor, lump sum

IPD Consultant: A consultant contracted with the architect or owner, profit-at-risk

Standard Consultant: A design consultant contracted with the architect or owner, lump sum

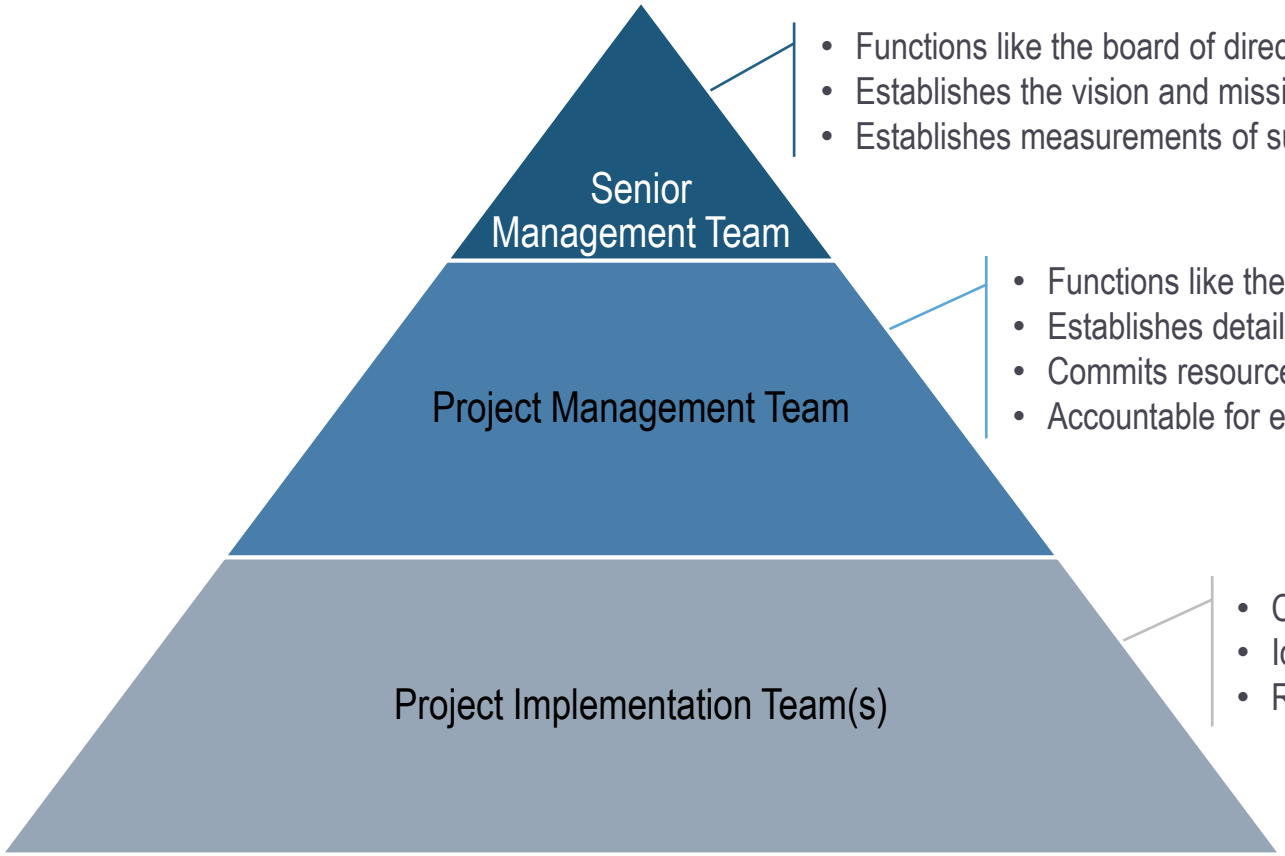
Estimated Maximum Price (EMP): Sum of all estimated Chargeable Costs + IFOA Contingency + Allowances + R/R Amount

* Occurs before completion of the Planning Phase

At Risk Threshold (ART): Maximum project cost acceptable to the Owner before the R/R Amounts will be applied to cover team cost overruns.

- **Incentive Threshold (IT):** An amount set below the ART that will be compared to Final Actual Costs to determine the savings for calculation of the Incentive Amount

Developing a “Project Organization”



- Functions like the board of directors
- Establishes the vision and mission
- Establishes measurements of success

- Functions like the C-level leadership
- Establishes detailed plans to achieve goals and objectives
- Commits resources as necessary
- Accountable for established measurements

- Carries out initiatives and action plans
- Identifies issues and obstacles
- Regularly reports out to higher levels

Define Teams

SMT: Senior Management Team

- Provide Executive Level sponsorship for the Project Team and for the Lean IPD execution approach
- Assure the team has adequate resourcing and support
- Adjudicate decisions when the PMT cannot reach consensus
- Hold regular SMT meetings with reliable participation

PMT: Project Management Team

- Overall Leadership and Guidance for the Project Team
- Assure collaboration through the planning, design and implementation phases of the Project
- Decision Making for the Project Team
- Hold regular PMT meetings with reliable participation
- Interpretation of Implementation Documents
- Responsible for Cost, Schedule and Change Management for the Project

PIT: Project Implementation Team(s)

- Responsible for designing and implementing the Project consistent with the CoS
- Made up of members of owner, design, construction and other trades, vendors and suppliers
- Hold regular PIT meetings to advance TVD concepts and LPS planning for the PIT scope
- Drive innovation and creativity by harnessing the collective knowledge and experience of the team

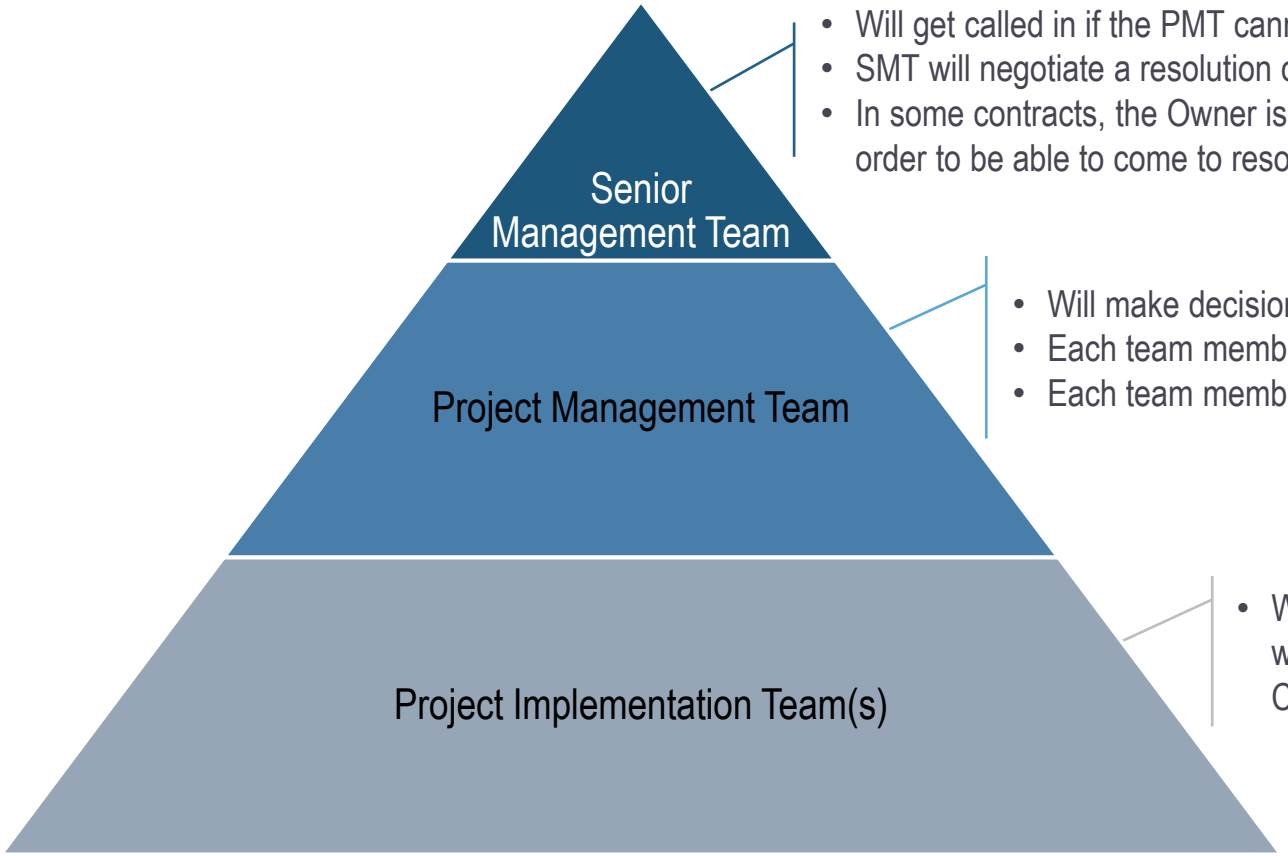
Key Facets of an Effective Model

- An agreed upon project team structure
  - All parties are represented in each team
  - All teams are cross functional
  - All teams are peer-to-peer (decision-making authority)
  - Teams are lean

- Effective systems of measurement and tracking, including consistent use of collective tools:
  - Stand and deliver report-out
  - Action plans
  - Metrics and dashboards
  - Regular measurement of what's important

- Commitment to collective culture, goals, etc.
- Clearly established rules of engagement and RRAA by team
- Leadership of all parties is committed to investing in collaboration as a discipline

Decision Making

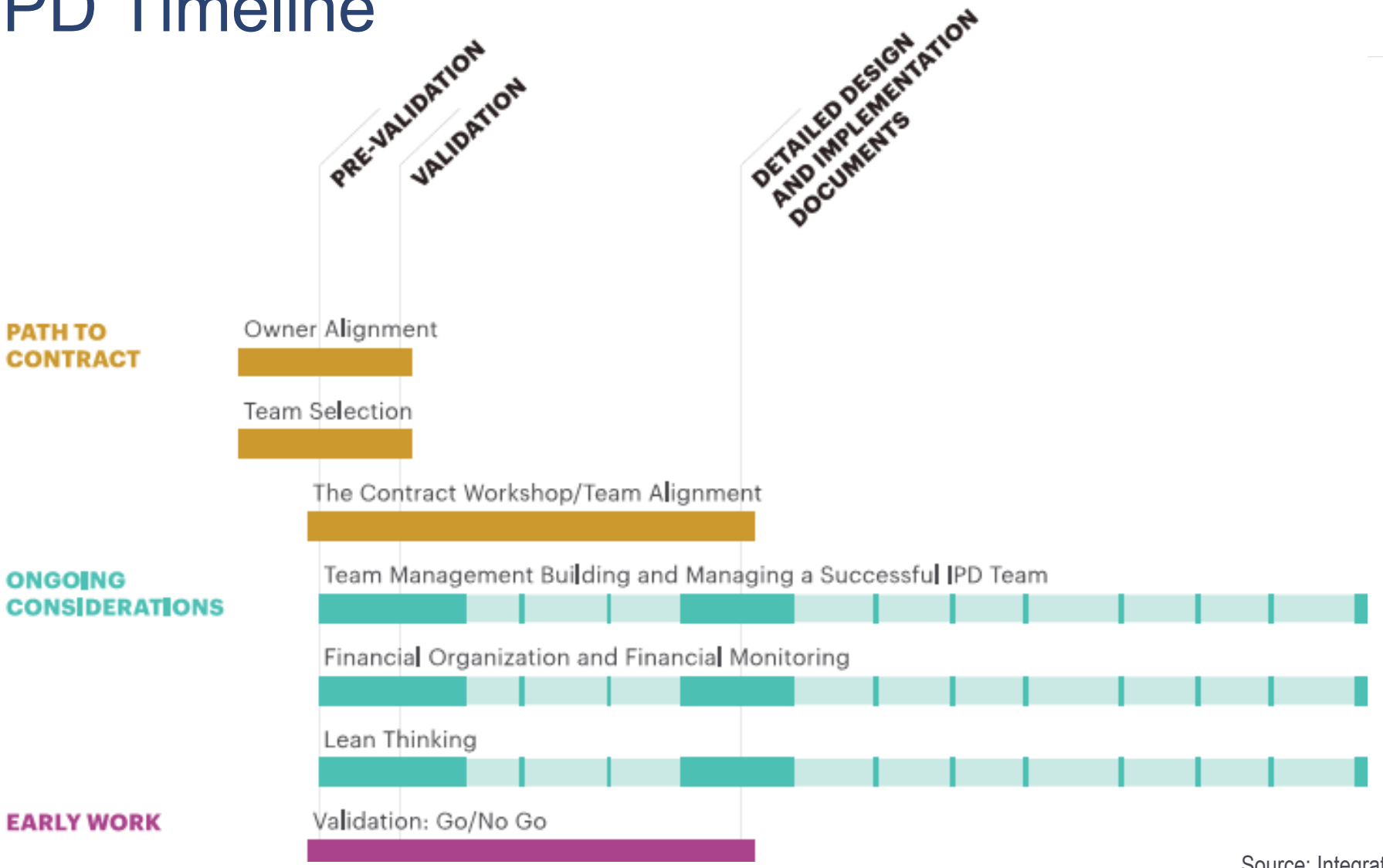


- Will get called in if the PMT cannot decide
- SMT will negotiate a resolution of the dispute
- In some contracts, the Owner is awarded 50% of the votes, in order to be able to come to resolution

- Will make decisions on a 100% consensus basis
- Each team member has one vote (including the owner)
- Each team member can veto the overall vote with a “No”

- Will bring decisions to the PMT on a weekly basis (or more often) out of the Cluster Group/PIT meetings

IPD Timeline



Source: Integrated Project Delivery: An Action Guide for Leaders

IPD Timeline

Source: Integrated Project Delivery: An Action Guide for Leaders

Conditions of Satisfaction (CoS)

What conditions must *be met to declare success?*

- An explicit description of all the actual requirements that must be satisfied for the initiative to be successful. CoS are collaboratively developed and committed to by all team members.
- A set of statements, each with a clear pass/fail result, that specify requirements at a defined stage of a project (often completion).
- There is no partial acceptance: either a criterion is met, or it is not.

Conditions of Satisfaction (CoS)

What does "done" look like?

- Top priorities – critical for project success
- What would cause you to consider the effort to be a failure if it does not happen?
- Co-developed – everyone must buy-in
- Define what "success" means for the project team
- Guide decision making throughout development and implementation
- Point of reference and measurement when reaching consensus is difficult

A team might establish CoS around any of the following:

- Budget, schedule, safety
- Profitability (ex: everyone is profitable)
- The number of months in which the project is delivered
- Number of RFIs
- Number of Change Orders
- Number of punch list items
- % below market cost
- % operational cost improvement
- % improvement in productivity
- Rapid improvement
- Exceptional teamwork
- Quality at acceptable levels the first time
- Total project transparency
- Strong stakeholder involvement
- Application of Lean Tools/Practices
- Community engagement
- Sustainability

Source: Lean Construction Institute, CAG Experience

Establishing CoS: Best Practices

- **SMART Goals** – Specific, Measurable, Attainable, Relevant and Time-Based
- **Avoid** absolutes
- All CoS **must be met** for the project to be successful
- Choose CoS wisely, as **partial credit does not apply**
- **Can be adjusted** by the team

Recap: CoS Define What “Success” Means

DECISION MAKING CRITERIA

COMMON LANGUAGE DEVELOPMENT

SET BEHAVIORAL EXPECTATIONS

DRIVE TEAM CULTURE

DESCRIBE POSITIVE OUTCOMES

Beyond Development: Best Practices for Using CoS

- Publish and commit
- Make them visual
- Measure progress (and use as a reference point for course correction)
  - Review at project milestones
- Refer to them when reaching consensus is difficult
- Revisit during onboarding or other major changes (and revise as needed)
- Conduct lessons learned

CoS Example

1. Safety: 50% reduction in TRIR from last project
2. Operations: Zero interruptions to production
3. Schedule: Certificate of Occupancy on May 15, 2020
4. Quality: 60% reduction of punch list items & NCRs
5. Budget: Shared savings incentive – 5% of budget cost improved
6. Documentation: RFI submittal turnaround time of 3 business days
7. Culture of Trust: 80% positive feedback from anonymous survey
8. Customer Goal: Apply at least five “Industry 4.0” principles during design phase

CoS Example

1. Safety: 2 Safety/Behavior Observations per week for all site supervision foreman and above (superintendents, PMs, etc.)
2. Design/Engineering: Reduce design phase from 12 weeks to 10 weeks
3. Schedule: Plant steam available by November 22, 2020
4. Quality: <1% weld rejection rate
5. Budget: <10% change orders
6. Team Building: At least 1 team event per quarter
7. Continuous Learning: Lessons learned session after each major milestone is achieved
8. Customer Goal: Increase production capacity by 30%

CoS Example

Quantitative

- Project has Zero Injuries
- Project will be delivered at mutually agreed Target Cost ($15MM)
- All team partners earn a fair profit, all team members benefit from project success
- AC5 at full production by AMJ'22 to meet LRD Roll-out Schedule.
- Maximize Project Quality – Minimize Rework (measure TBD)
- No unplanned impacts to operations. All planned impacts follow a plan.

Qualitative

- Culture of Collaboration: Conflict resolution is forward focused.
- Team operates with a high degree of openness and trust.
- Team fosters a learning culture to build Lean IPD Delivery skills in P&G and Partner organizations.
- Team respects standards (platform, IWS, etc.), yet challenges constraints when doing so drives value.
- Project has clear acceptance criteria (documentation, handover, ECR, etc.)

Measurement Methods

- Quantitative: Current results aligned and reported by PMT
- Qualitative: Regular Culture Survey for Qualitative Measures by IFOA members

CoS Example

Cost: Each team member drives the required amount of rigor in their work process to meet the agreed upon project budget in their area of responsibility

Schedule: Each team member meets or exceeds expectations to provide their deliverables for each project schedule item

Shared Success: Every member can be proud of the finished product

Business Need: The Quicksilver team safely and successfully delivers ~450,000 square feet of finished product storage space for 1,200 pallet inventory locations with 60 dock door positions along the south face of the plant and all associated scope including required fire protection, air exchange, electrical and dock equipment scope to deliver best value to the business

CoS Example

TEAM GOAL

A world class partnership built on trust, integrity and open communication, using industry leading design, construction and communication tools to drive innovation and reduce waste in support of a safe and flawless launch of GM's next generation truck.

TEAM CONDITIONS OF SATISFACTION

1. Every person felt personal responsibility for a safe work environment
2. Met all Production Launch Dates with zero unplanned production interruptions
3. Experienced minimal team conflicts requiring Steering Committee intervention
4. Effectively utilized team resources through clear direction and empowerment
5. Mitigated cost and schedule impacts of all changes
6. All team members achieve their project financial expectations – fair profit and budget compliance
7. Develop a partnership-based project delivery Business Model with transformed processes
8. Implement a minimum of three Lean tools
9. Institutionalize defined M5 Team Culture and Norms validated through regular surveys
10. Limit re-work to less than 0.2% of construction value

1st Healthcare IFOA in Chicago

- Schedule
- EMP w/Shared Savings
- Everyone Finishes with a Profit
- Owner Operational Efficiency
- All Stakeholders Feel Satisfied

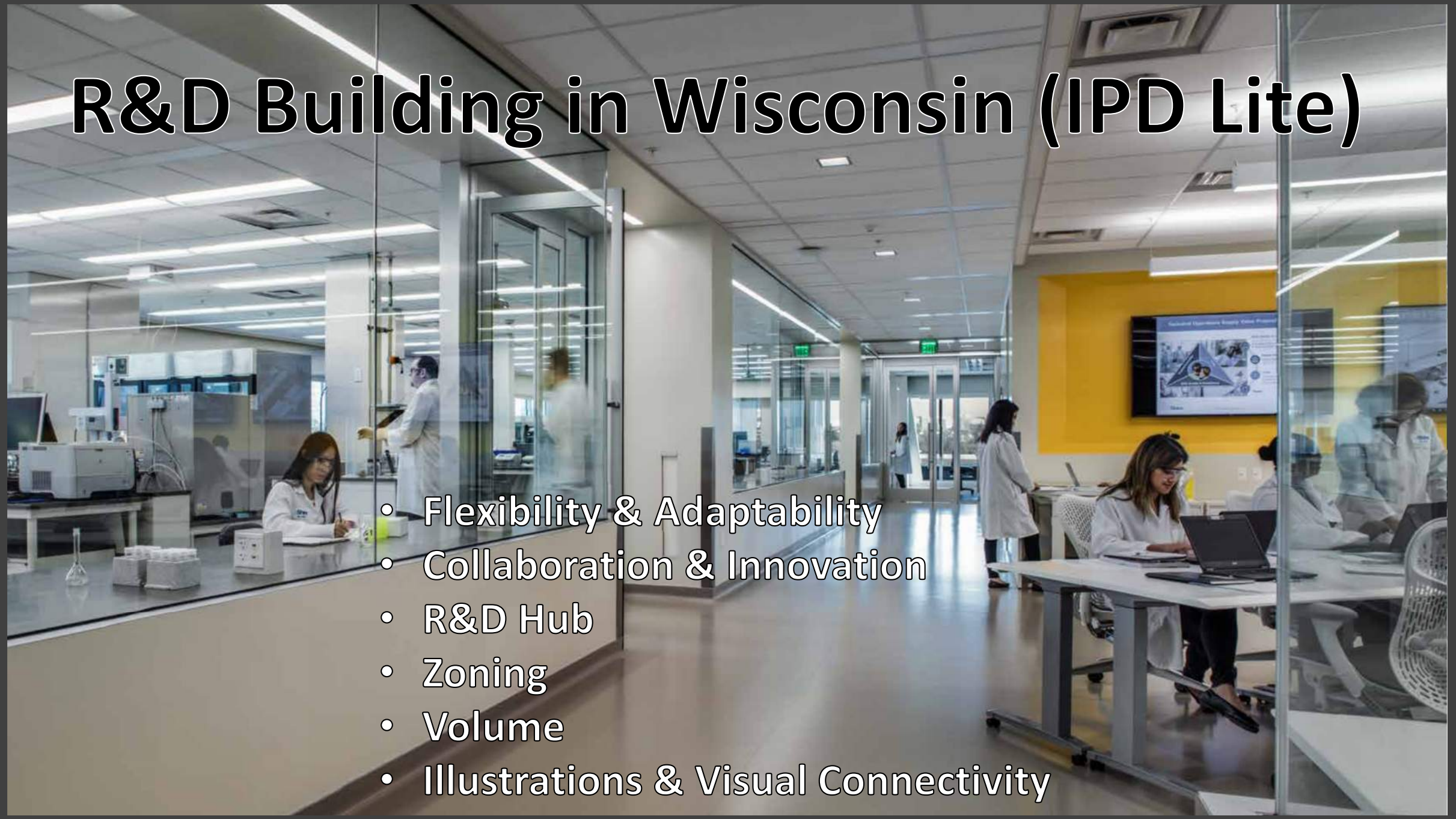
Hospital Campus Master Plan (IFOA & GMP)

- Improvement of RFI and Submittal Metrics over “standard projects”
- EMP w/Shared Savings
- Everyone Finishes with a Profit
- Timeframe for overall project/master plans

Office Building in Illinois (GMP)

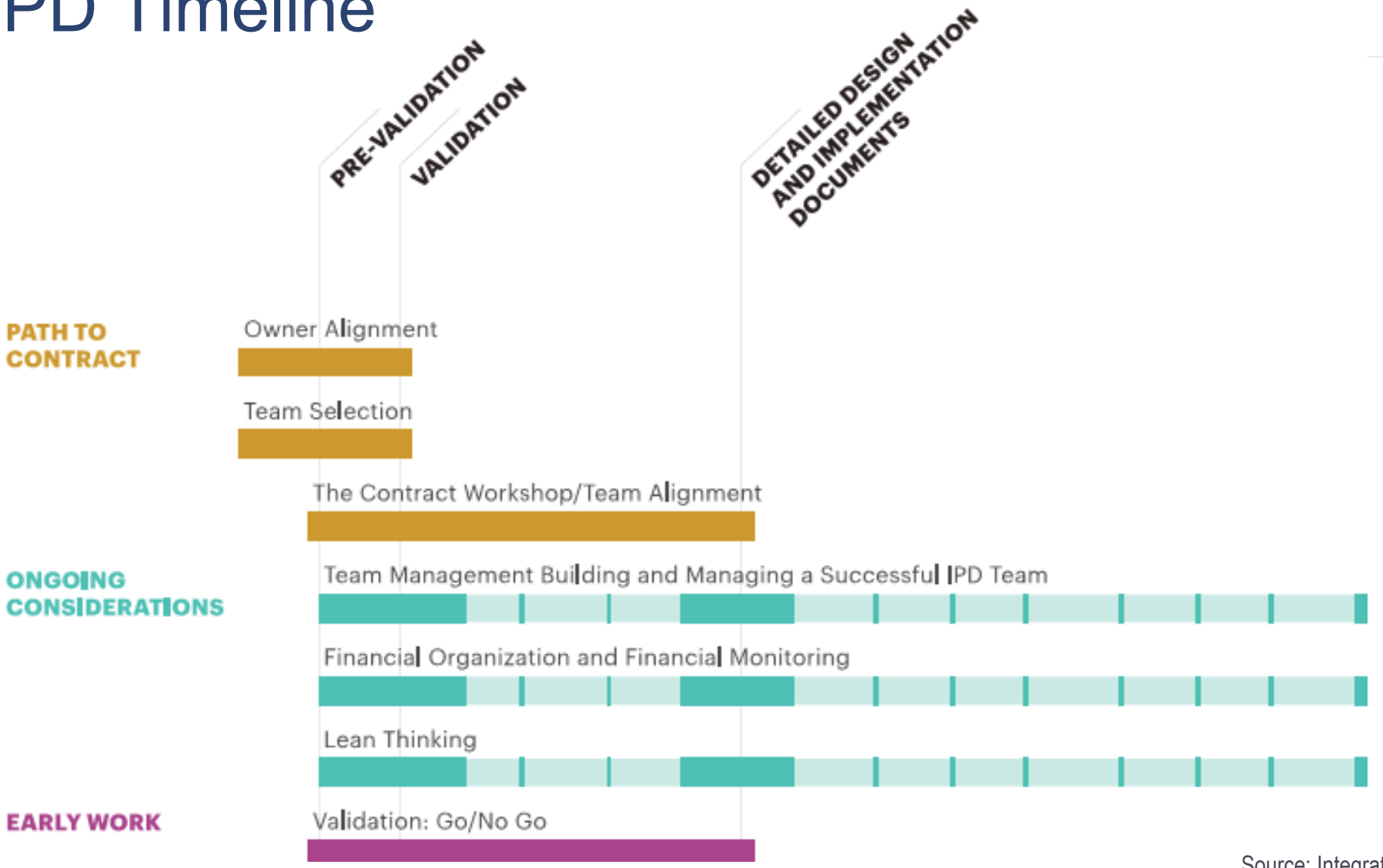
- Design Decisions must first be for the Benefit of Participants
- Minimize Disruption to Culture
- Need Campus Environment – coordinate with Training Center already built
- Building Employees can be proud of

R&D Building in Wisconsin (IPD Lite)



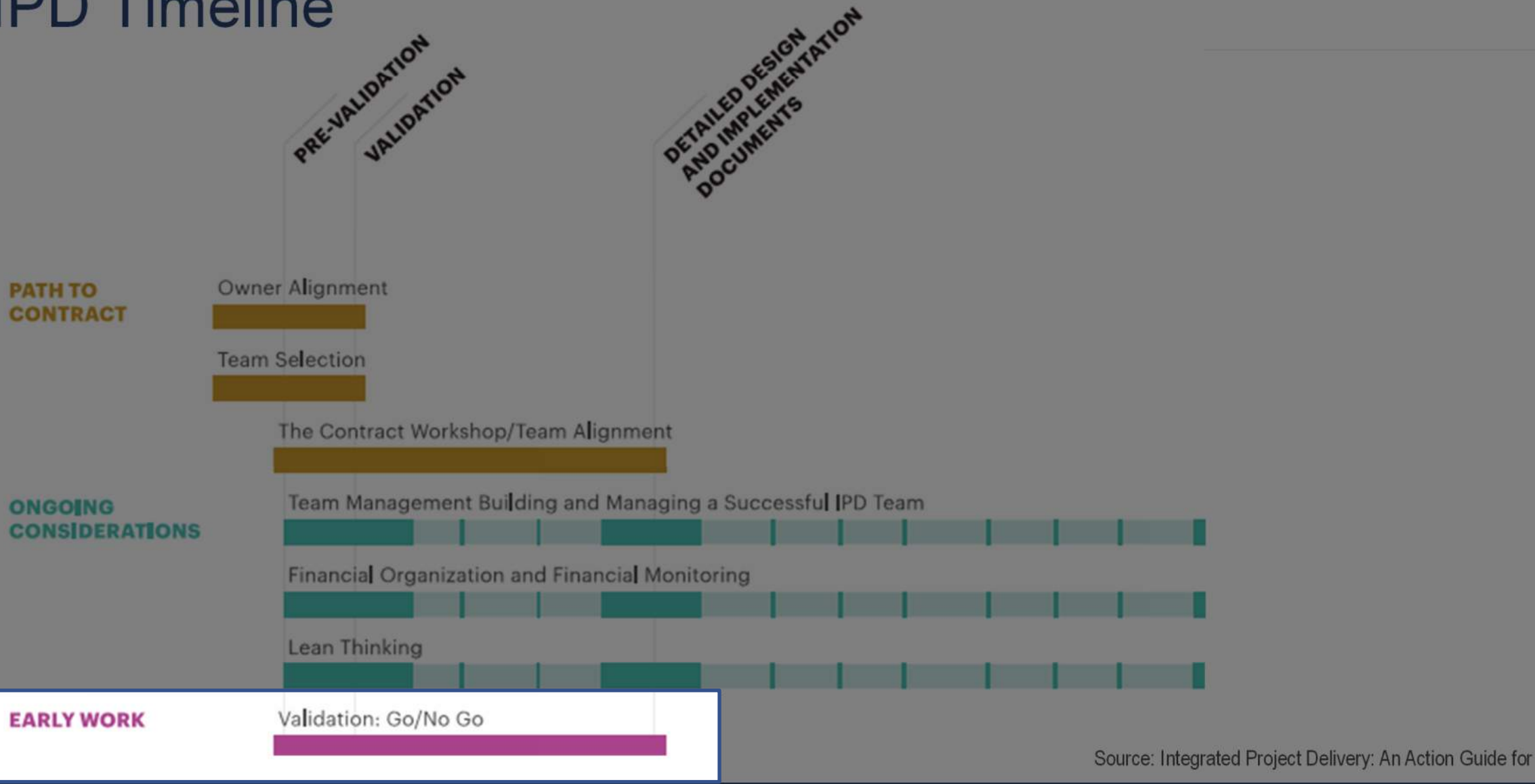
- Flexibility & Adaptability
- Collaboration & Innovation
- R&D Hub
- Zoning
- Volume
- Illustrations & Visual Connectivity

IPD Timeline



Source: Integrated Project Delivery: An Action Guide for Leaders

IPD Timeline

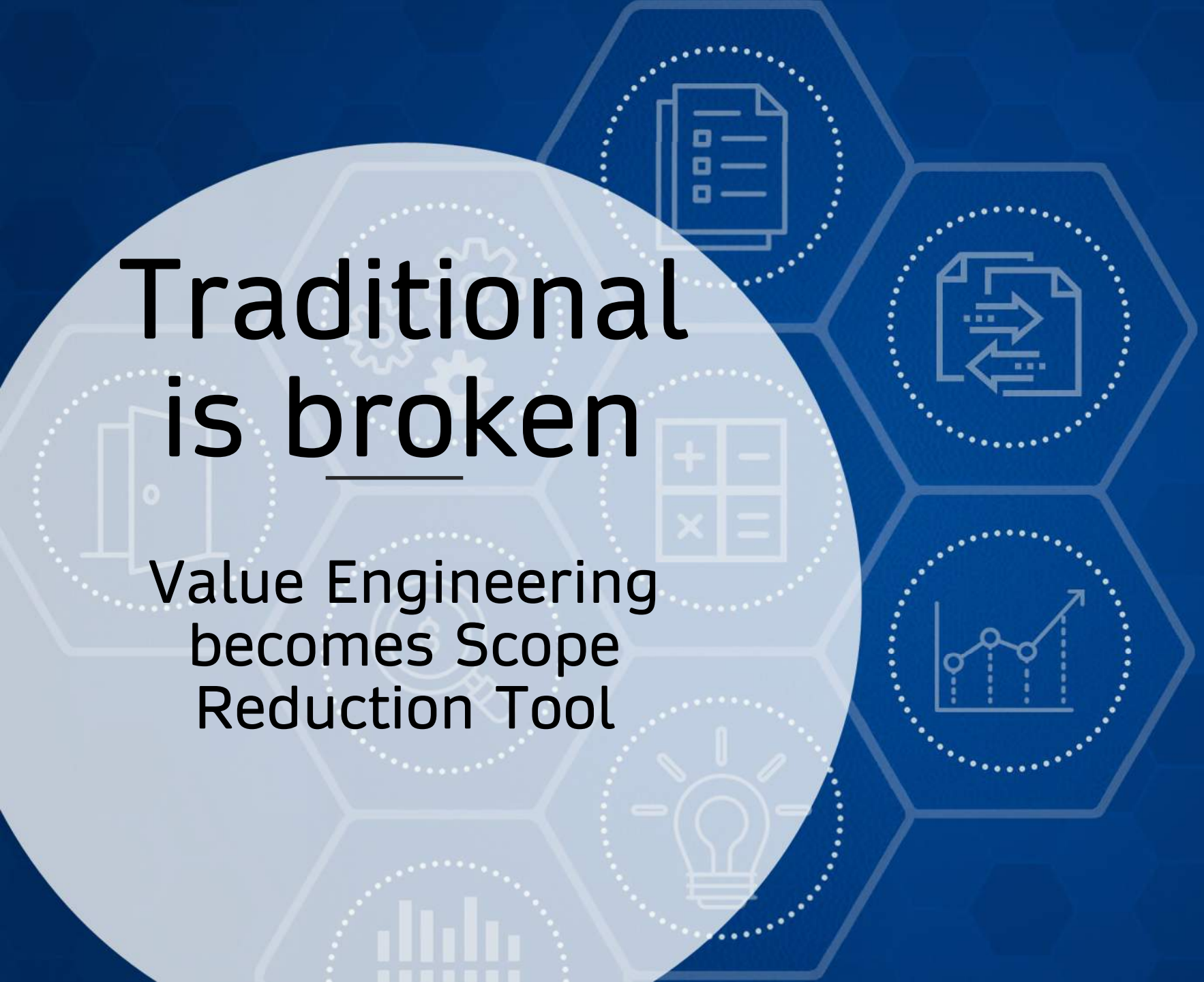


Source: Integrated Project Delivery: An Action Guide for Leaders

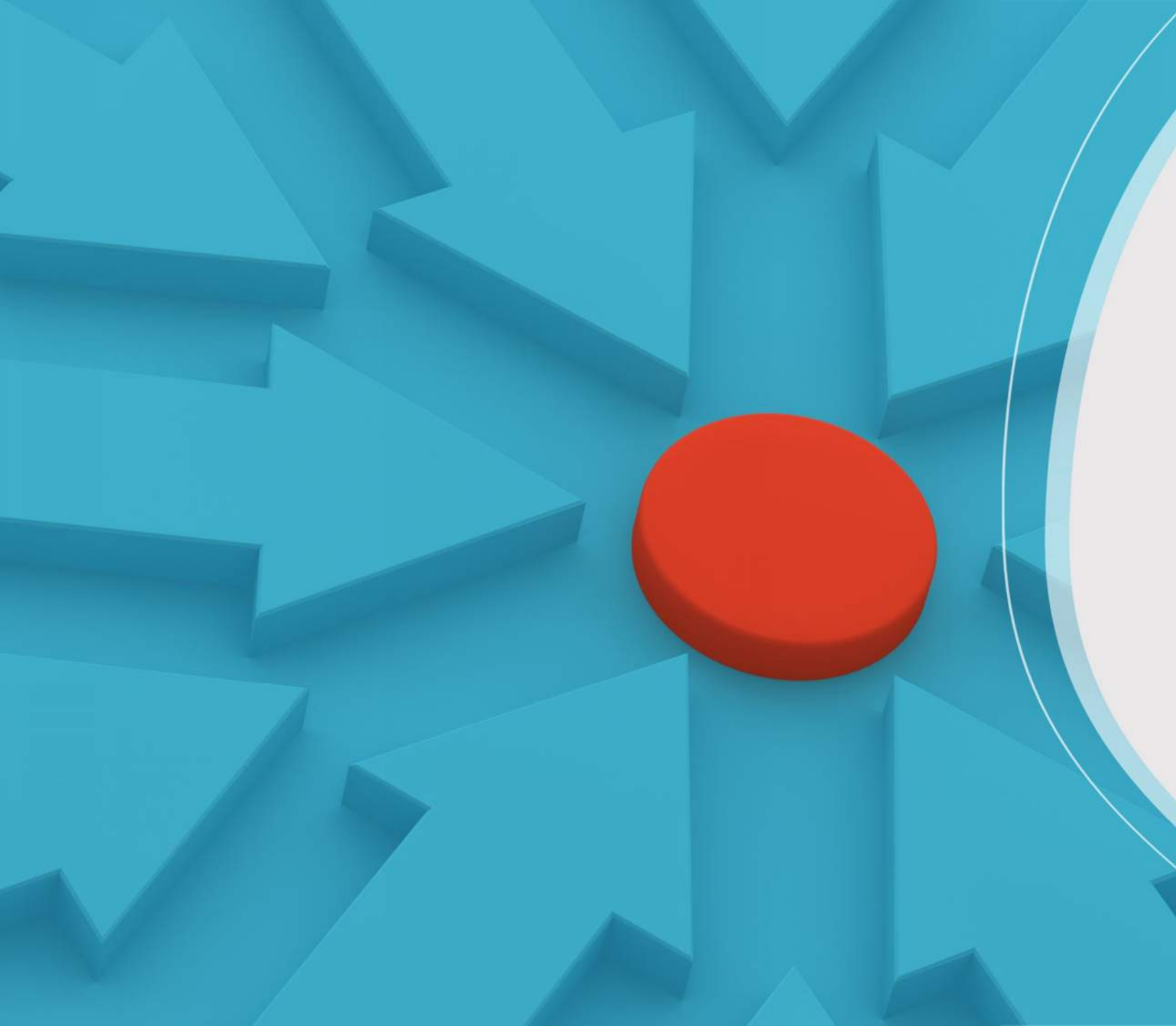

W is Validation and
W is it Important?

Traditional is broken

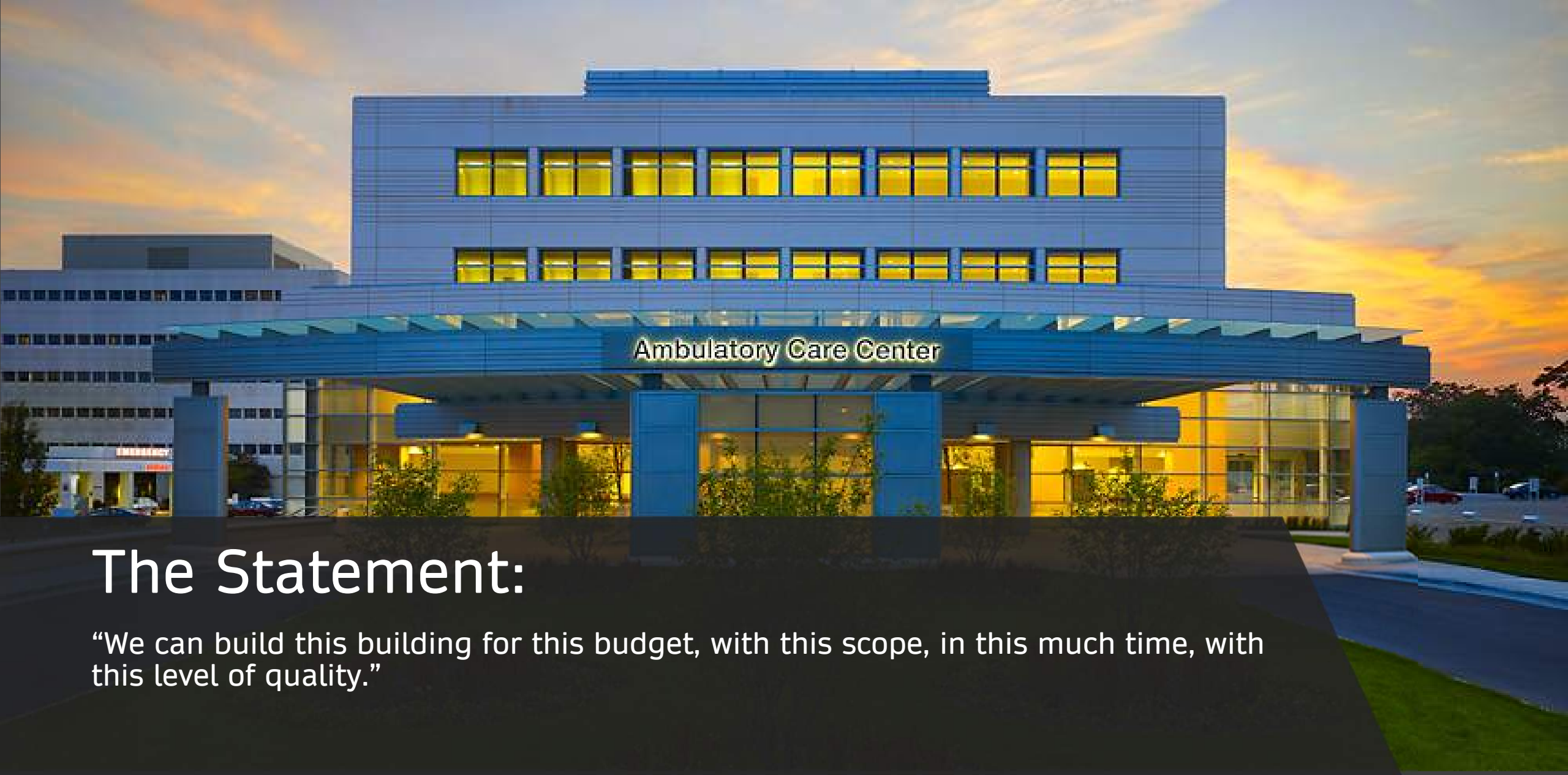
Value Engineering becomes Scope Reduction Tool



VALUE
Engineering

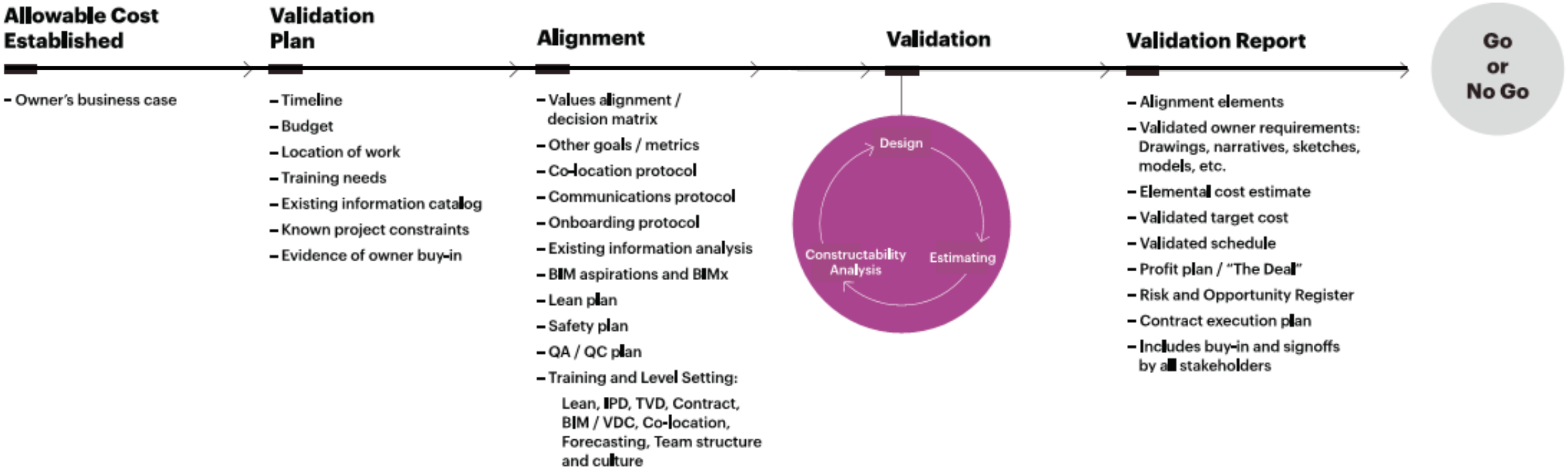


The Purpose of Validation is Certainty



The Statement:

“We can build this building for this budget, with this scope, in this much time, with this level of quality.”



- Image courtesy of Integrated Project Delivery – An Action Guide for Leaders, 2019

The Owner

- Role Model
- Leadership
- Model Transparency
- Need Support from Upper Management


Allowable Cost Established*
*subject to change

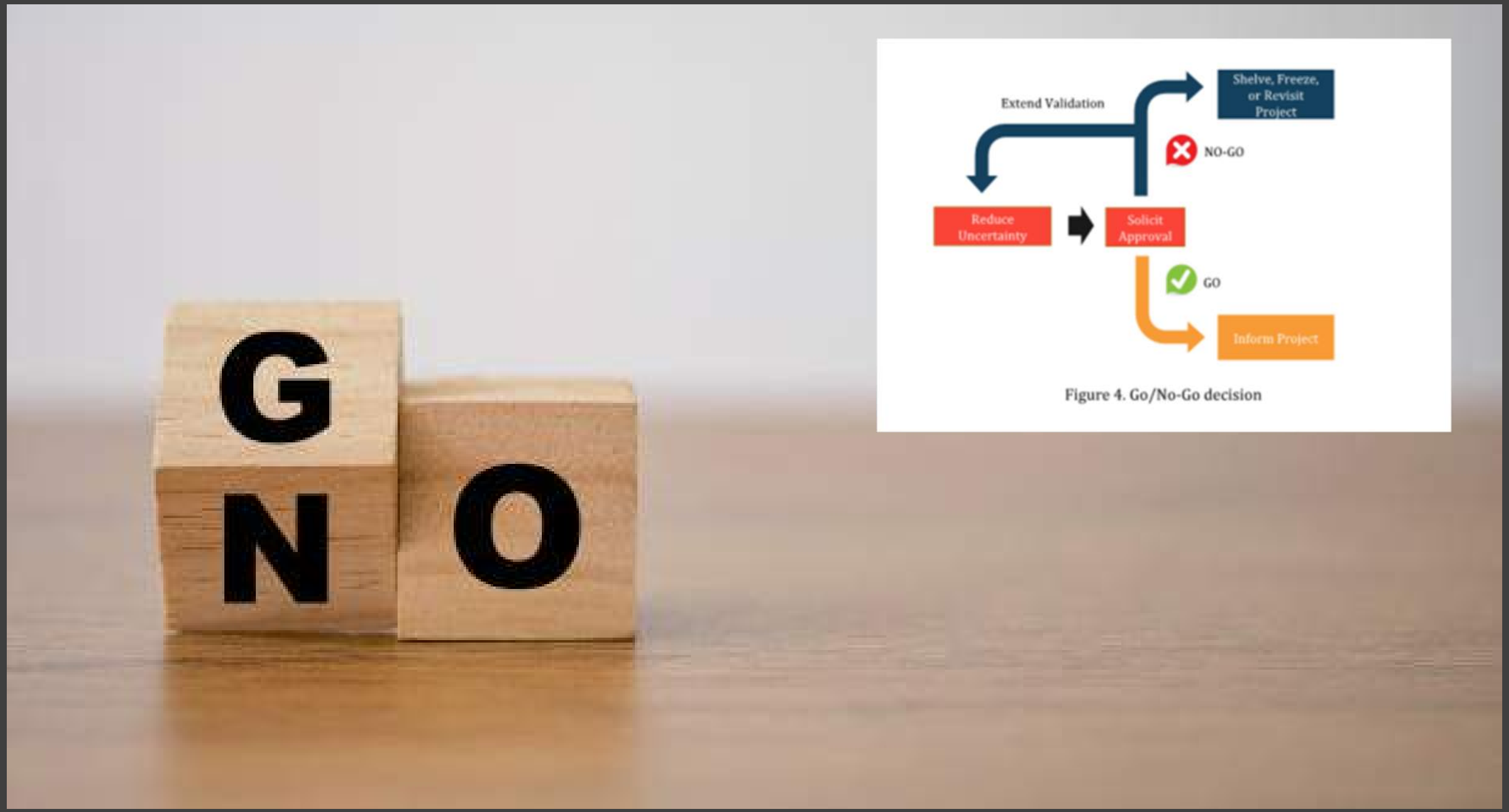


Figure 4. Go/No-Go decision

Office Building in Wisconsin (IPD)

- Developer Provides Budget for Renovation at $30M
- Owner Hires Lean Coach
- Conditions of Satisfaction Established
- Owner Selects IPD contract
- Architect and General Contractor Hired For Validation Process
- THE ISSUE: Validation Process completes with a Target Value of $60M
- THE SOLUTION: Owner Can Now Make a Good Business Decision For Next Step
- RESULTS: Validation: 3 Months at 1% of Budget Cost vs. Traditional: 12 Months at 15% of Budget

General
Sutter Health integrated strategy for capital construction projects, utilizing their lean project delivery approach has yielded in significant benefits with contract partners for interior products/systems. All Interior materials and finish components meet and represent the Value-Based Ambulatory Clinic Design Standards including finish types and classifications.

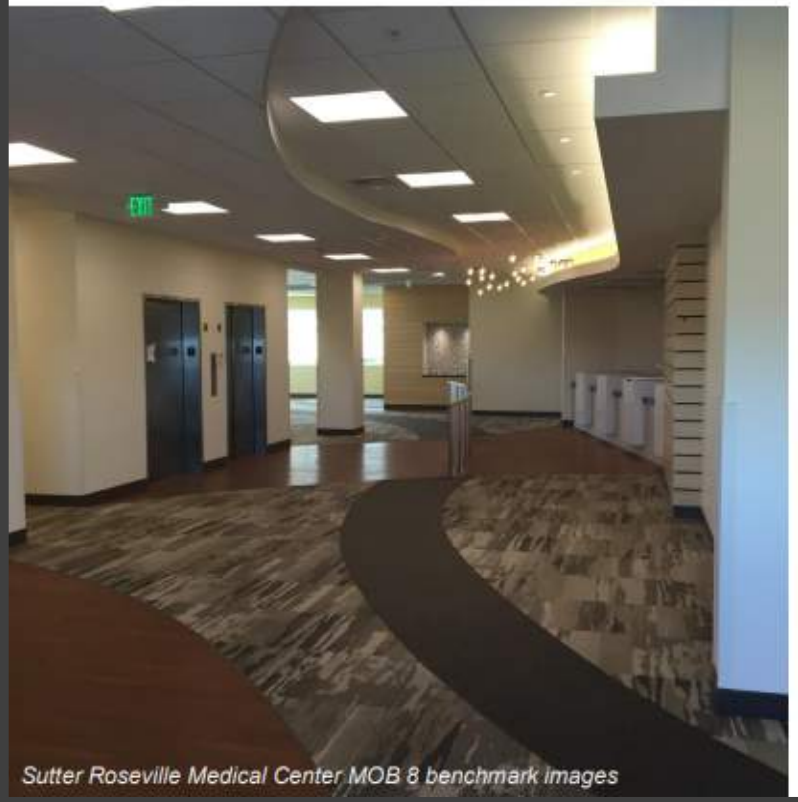
Design Elements, Features and Systems
All design elements, features and systems shall comply with applicable codes. They shall be cost effective up front and promote lower cost to operate and maintain. Elements should be durable and appropriate for project scope and types; they should withstand wear and repetitive use.

Entry/Lobby:
The entrance and lobby are the first impression and shall look professional, clean, warm and friendly. Natural daylight will flood through the glass storefront and vestibule area providing a connection and views to the nature.

Registration:
Sophisticated and modern elements will greet the visitor at Registration.
Interior architecture and finishes will promote clear wayfinding to this first point of contact. Interior architecture will include wood look paneling and ceiling soffits as well as decorative pendant lights giving an impression of a hospitality environment.

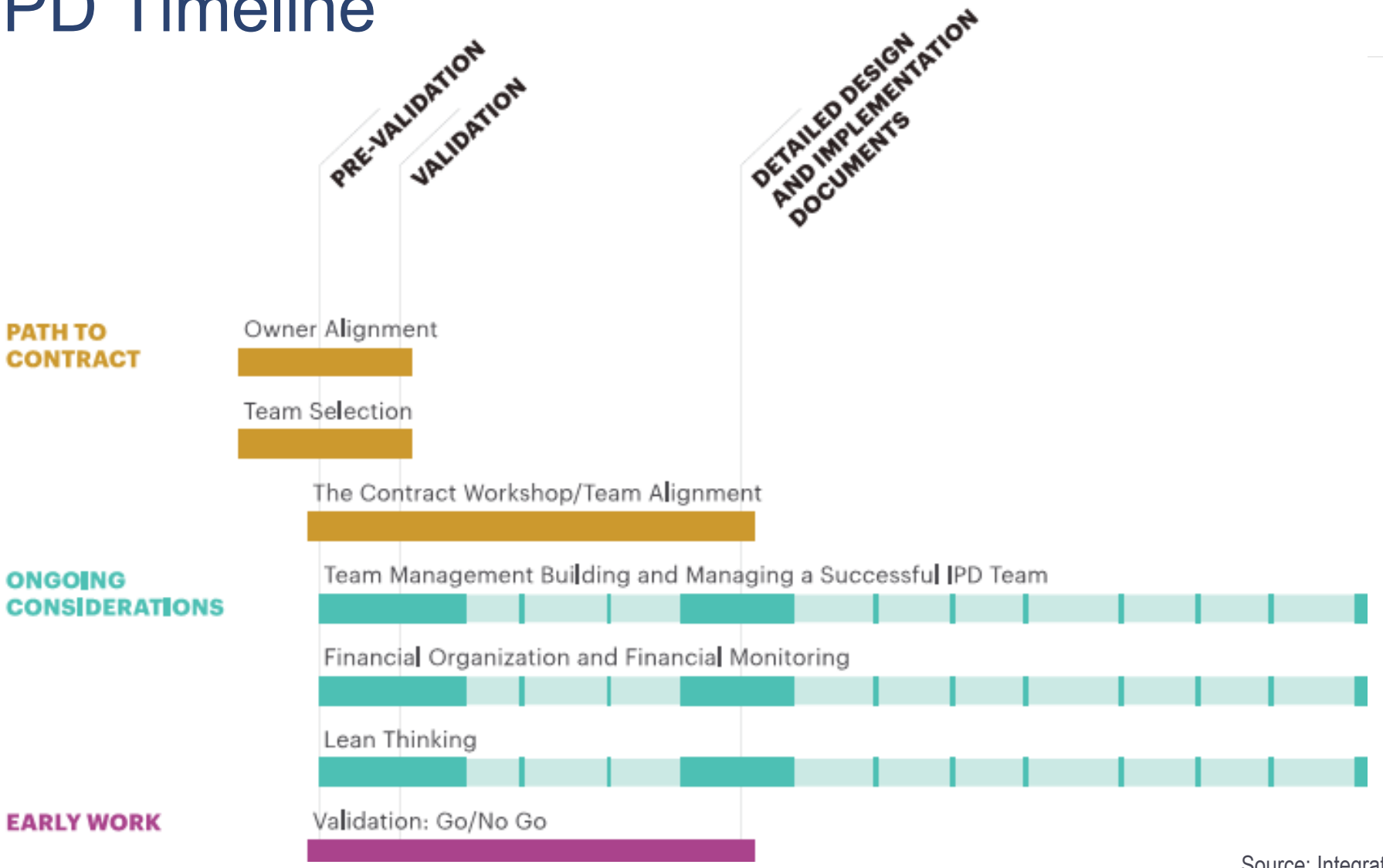
Waiting Areas:
Comfortable seating areas will be dispersed and provided throughout the clinical zones. A variety of seating will be provided for a variety of people types and appropriate for the context/neighborhood where this building is located and for the community it is serving. Seating fabric will be pleasing in appearance and easily maintained. Furniture will have vibrant color tones with fresh patterns that are aesthetically pleasing and timeless.

Coffee Area:
Edible provisions will bring natural aromas to the Entry/lobby area. Slight aromas will provide a positive distraction and ease anxiety for patients. Since patients and family spend a lot of time in waiting areas, this provides a convenient location to wait in a neighborhood café type setting. Café tables and booths combined with a ceiling architectural feature will provide a visual interest for patients and family to stay which are amenities that make patients feel calmer.



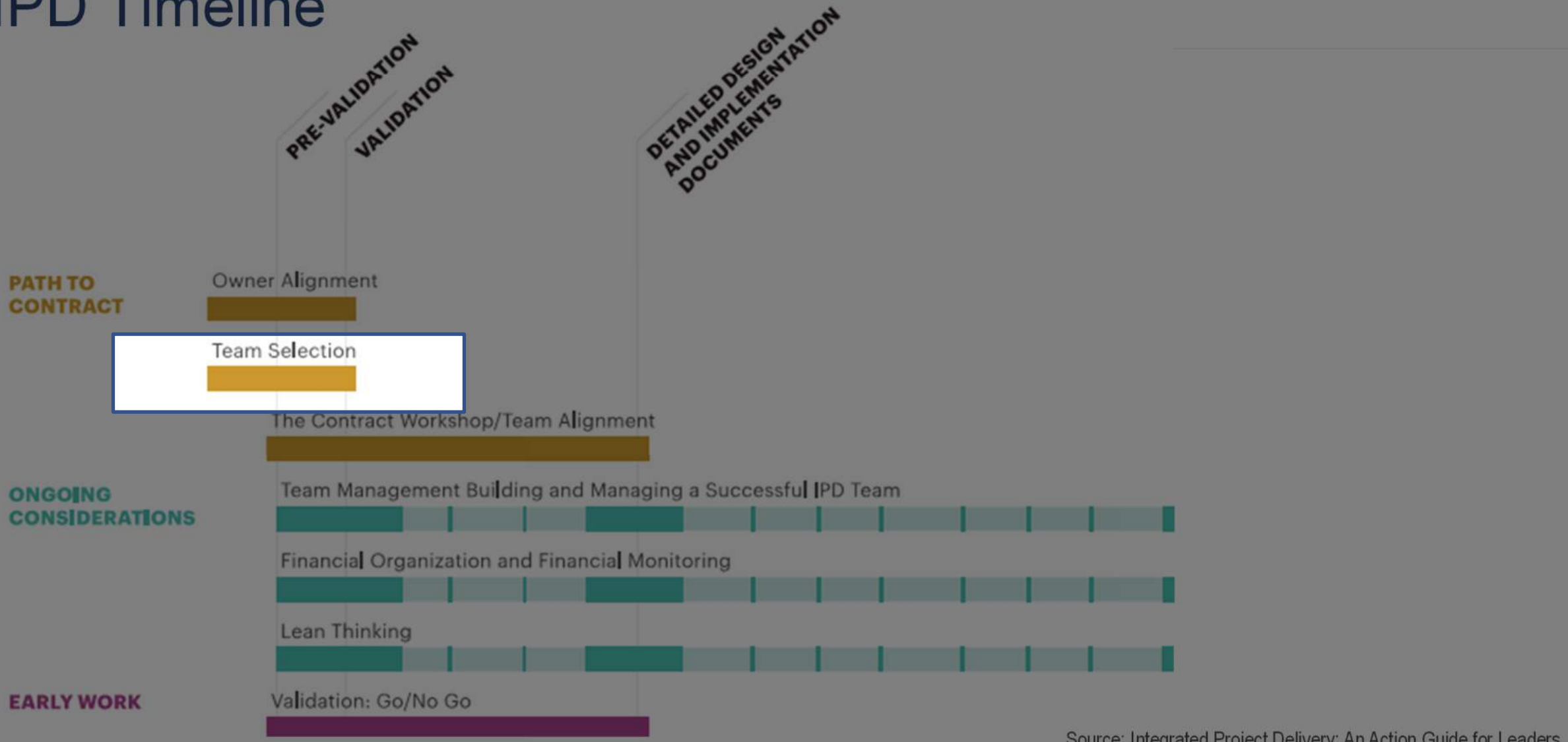
Sutter Roseville Medical Center MOB 8 benchmark images

IPD Timeline



Source: Integrated Project Delivery: An Action Guide for Leaders

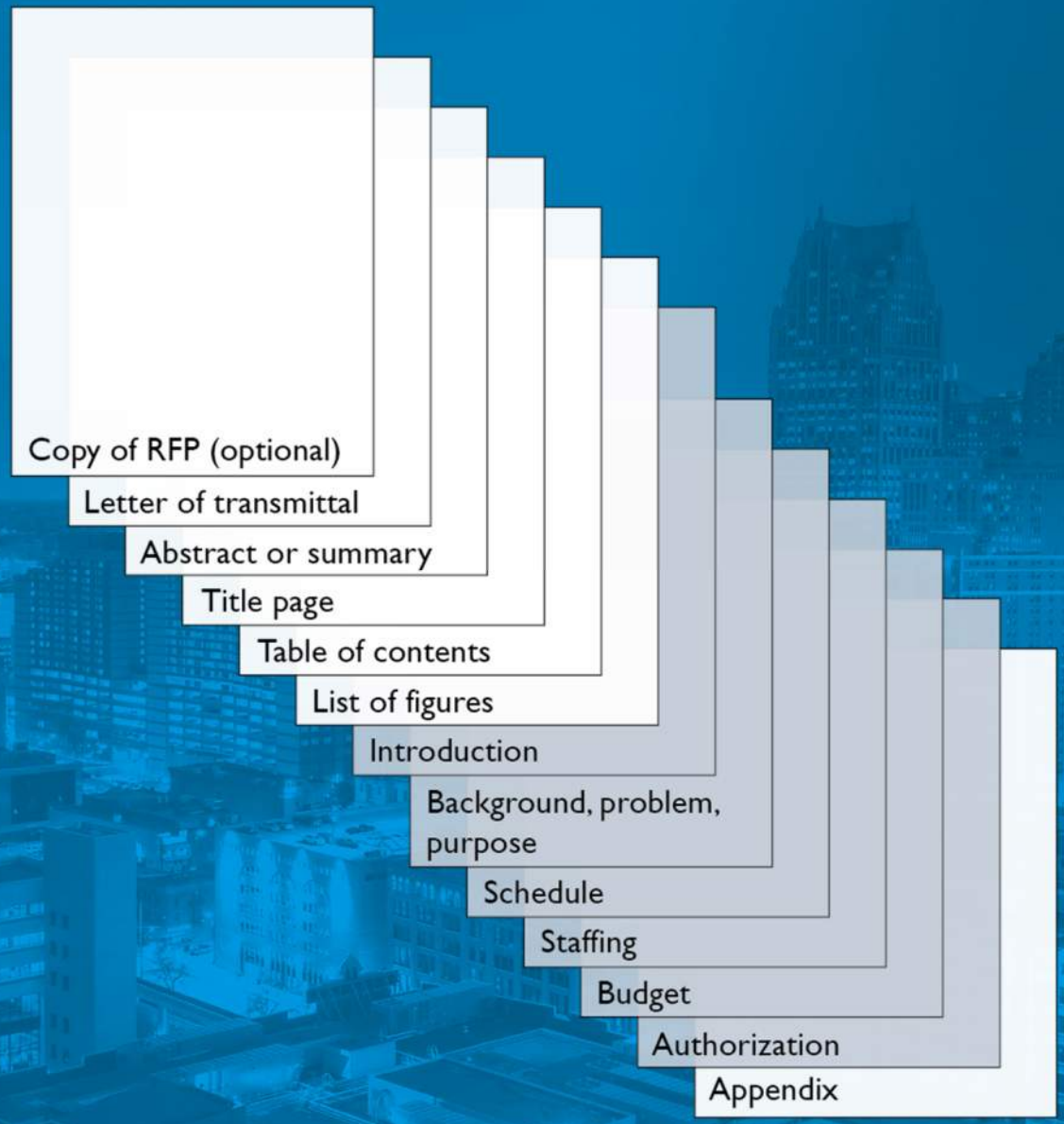
IPD Timeline



Source: Integrated Project Delivery: An Action Guide for Leaders

RFPs & IPD

Group Discussion



Lean Construction Institute
Transforming Design and Construction

Pre-Construction

Based on the scope of work provided the A/E/GC team will develop an Estimated Maximum Price (EMP) for the master plan projects construction cost along with a line item, schedule of values.

The A/E/GC team will:

- Develop a preliminary construction schedule.
- Actively collaborate with the Owner, IFS and the design team throughout the design process using BIM to assist in the development of a complete set of coordinated Construction Drawings.
- Develop a project logistics plan.
- Participate in and lead the Target Value Design Process as required for the completion of the Construction Documents.
- Participate in all government approvals as needed.

Architectural and Interior Design Services to include:

- Lead visioning and space programming with staff and stakeholders
- Collection of facility and building system requirements via stakeholder needs assessment.
- Conceptual design through construction document development
- Close-out and post occupancy surveys

Output and methods:

BIM

Revit files

AutoCad files

Construction Management

The A/E/GC team will participate with the Elim team, and IFS, the Elim Program Manager, with Elim ultimately maintaining final control of the master plan. Integrated Facilities Solutions will have a project manager assigned to the master plan and will act as Program manager for the projects.

Scheduling

The A/E/GC team will develop and maintain (with Owner input) a project master schedule – both total project and short-term schedules. The Schedule will incorporate:

1. Regulatory Approvals
2. Design
3. Owner review/approval milestones
4. Integration of Owner-provided services (IT, FF&E, etc.)
5. Long Lead: decisions, procurement
6. City review/approvals
7. Bidding and construction activities
8. Third party Commissioning (due to LEED requirements/training)
9. Post-occupancy/warranty support

Estimating (GC Scope)

The GC will work with Owner and the Design Team to:

1. Implement and manage Target Value Design
2. Complete review of the budget validation overall budget categories
3. Develop cost model by building system
4. Once program and construction budget are validated, perform ongoing cost analysis at key milestones reconciling back to previous revisions and identifying variances
5. Ongoing assistance in evaluation of systems, methods and materials to allow choices: brainstorm alternate methods, routing, etc., developing pros and cons relative to price and facility operation impacts
6. Evaluation of best value options which include life cycle analysis
7. Discuss means of more clearly describing cost/operation trade-offs to various user reps
8. Impacts of phasing/sequencing and other logistical coordination on cost/schedule
9. Identification of required allowances and Estimated Maximum Price contingency

Research and Constructability (GC scope)

1. Research existing conditions, access, utility sizes/locations, etc.
2. Provide construction means, methods and practices as needed
3. Details and other documentation conveying design intent as cost effective and ultimately buildable
4. Coordination with the various design disciplines
5. Coordination between drawings and specifications
6. Work with the A/E team and all consultants to ensure design is **complete** when submitted for approval
7. Assist Owner and A/E team in refining the ultimate structure of the “design-assist” and “design-build”.

Every effort will be made to ensure all elements that are typically deferred approvals are coordinated into the construction documents.

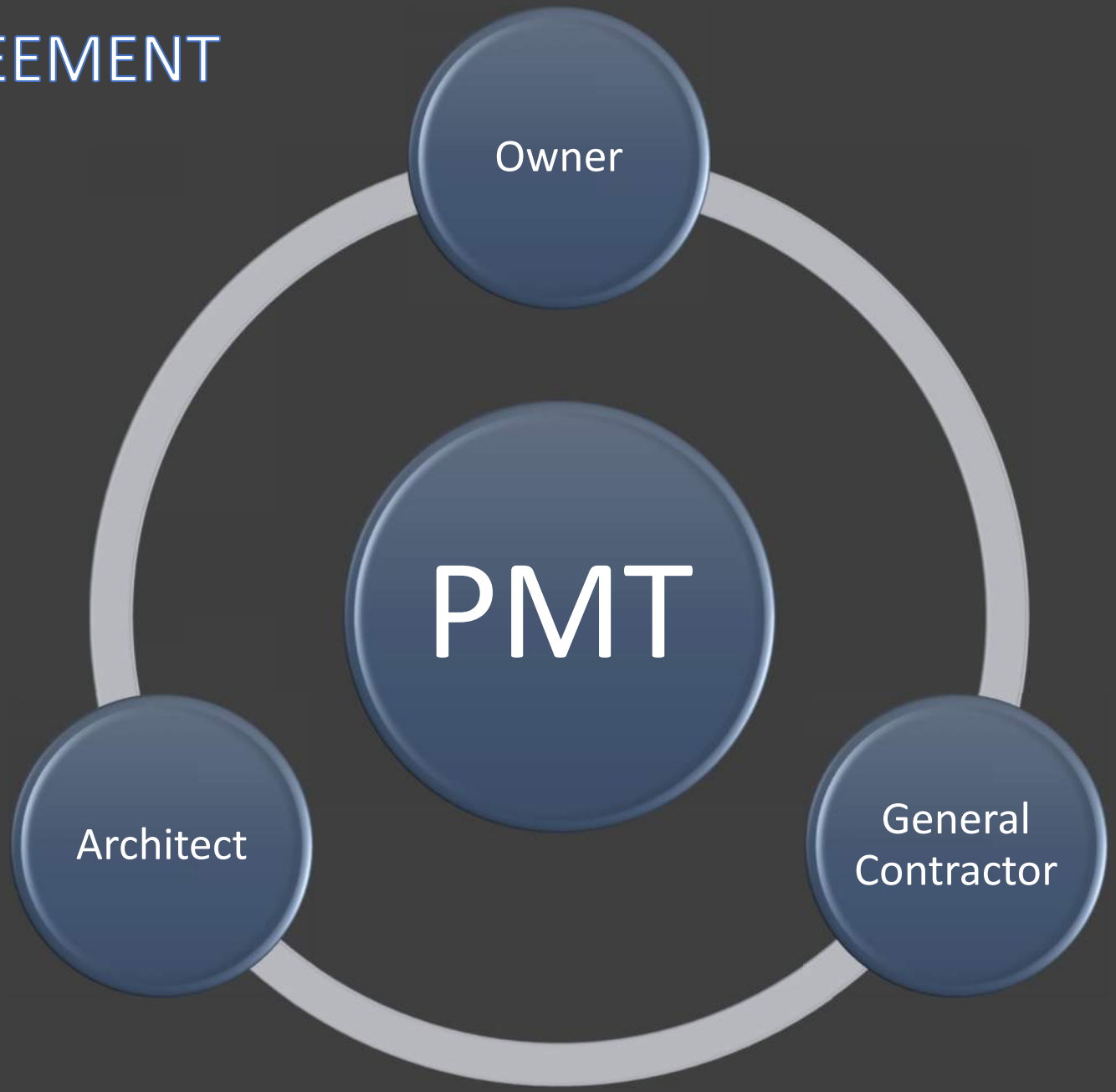
Refining Means of Subcontracting (GC scope)

1. Subcontractor pre-qualification
2. Bidding (and subcontract ”RFP’s” if applicable)
3. Provide recommendation on various subcontracting options for early participation that you feel would benefit the project

Other (GC scope)

1. Construction staging and site management planning
2. Provisions for temporary services
3. Owner requirements for early occupancy, partial move-ins, etc.
4. Analysis of noise and disruption mitigations adjacent to/over areas of ongoing operations
5. Potentially develop and maintain Web-based project management application
6. Cash flow analysis/projection over life of project

TRI-PARTY AGREEMENT



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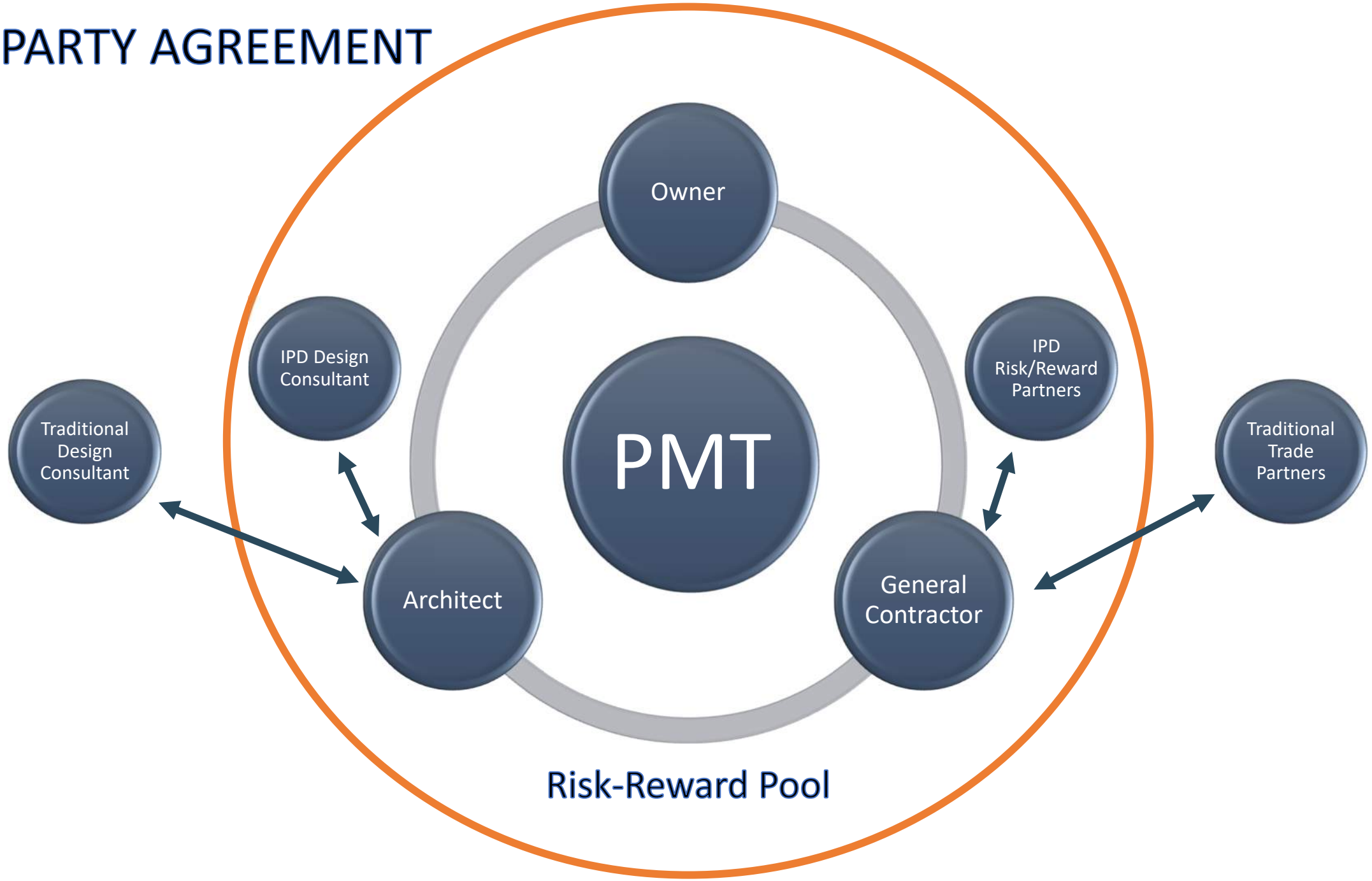

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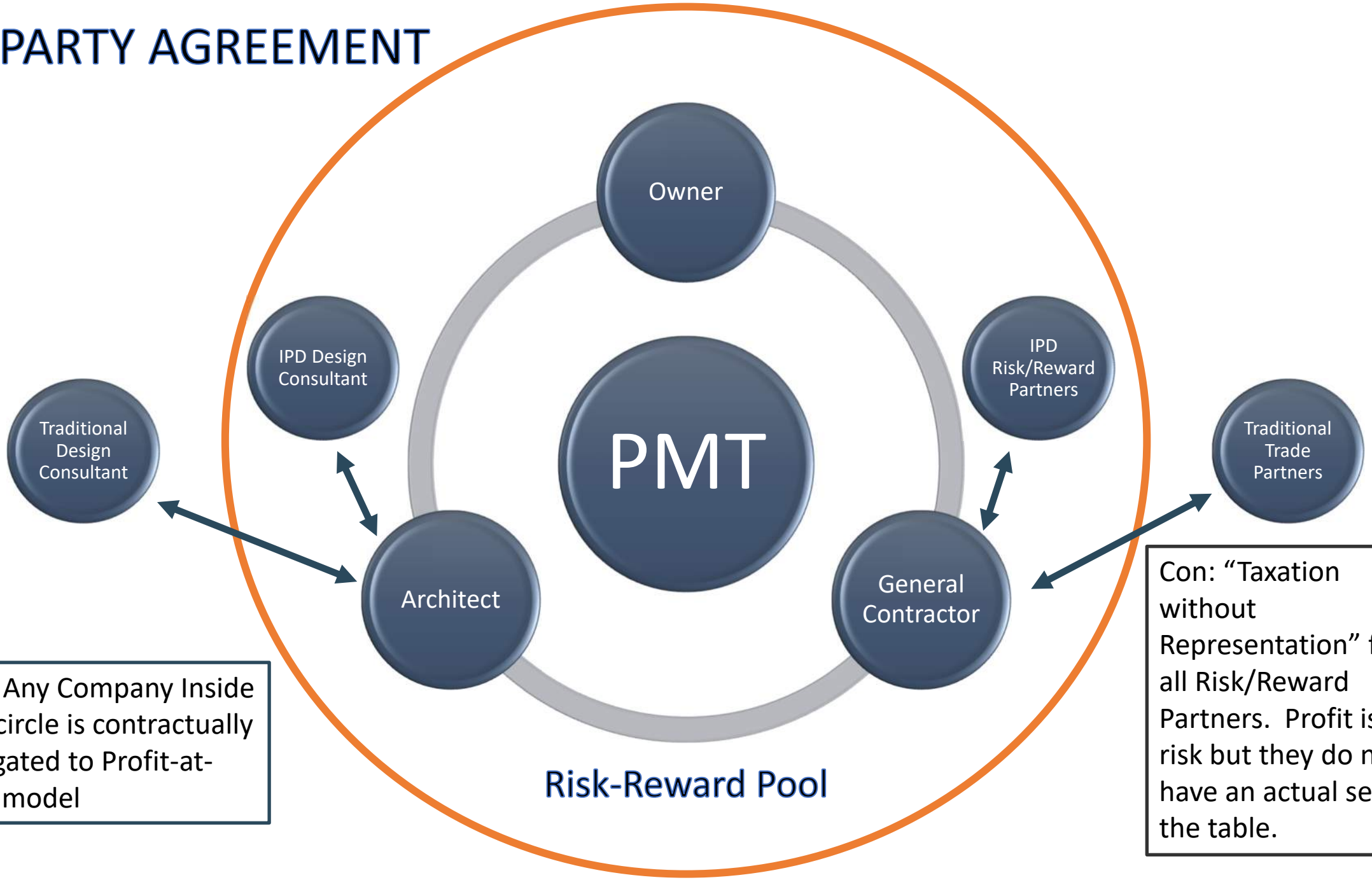
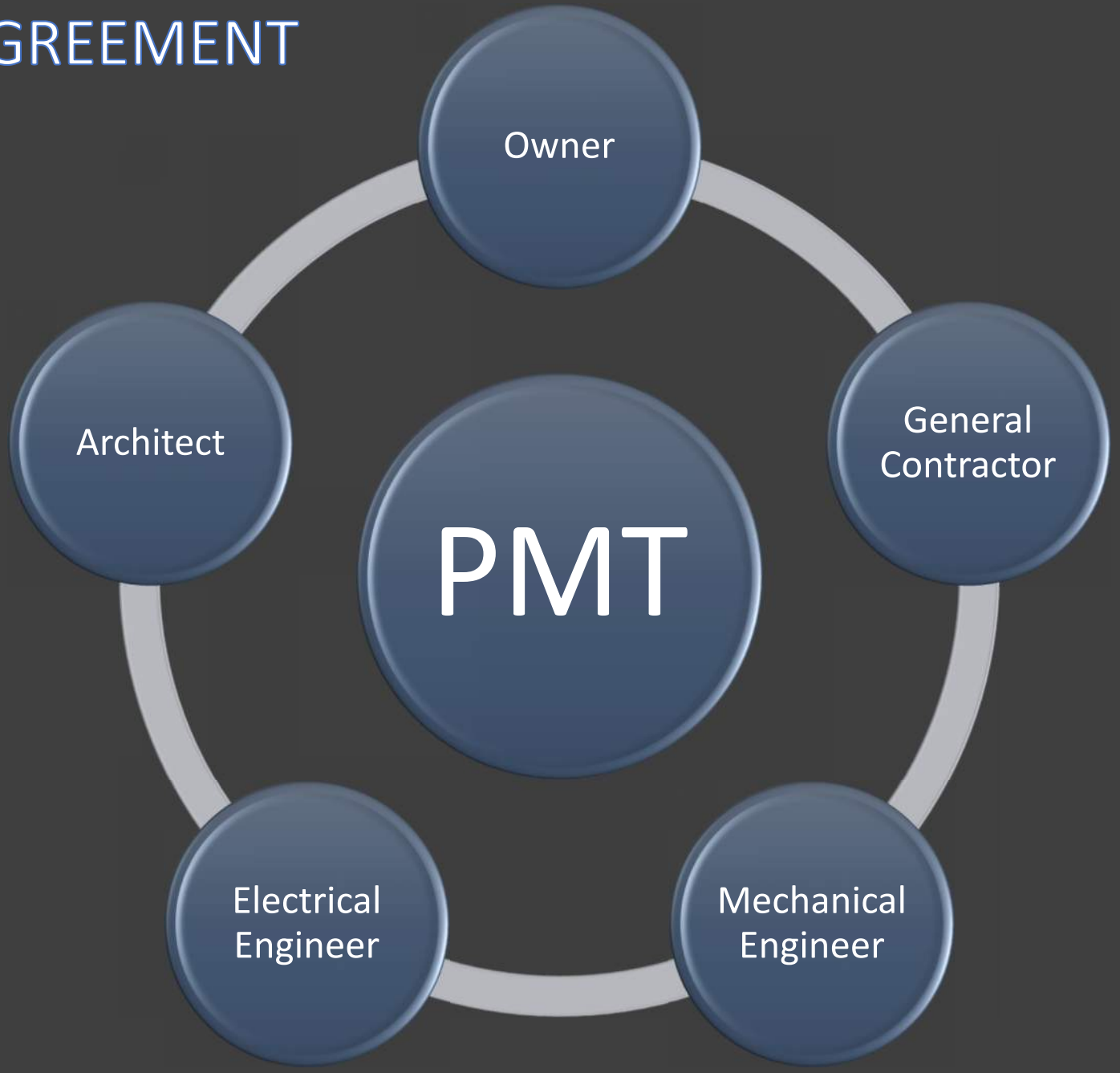


Pro: Any Company Inside the circle is contractually obligated to Profit-at-Risk model

Con: “Taxation without Representation” for all Risk/Reward Partners. Profit is at risk but they do not have an actual seat at the table.

POLY-PARTY AGREEMENT



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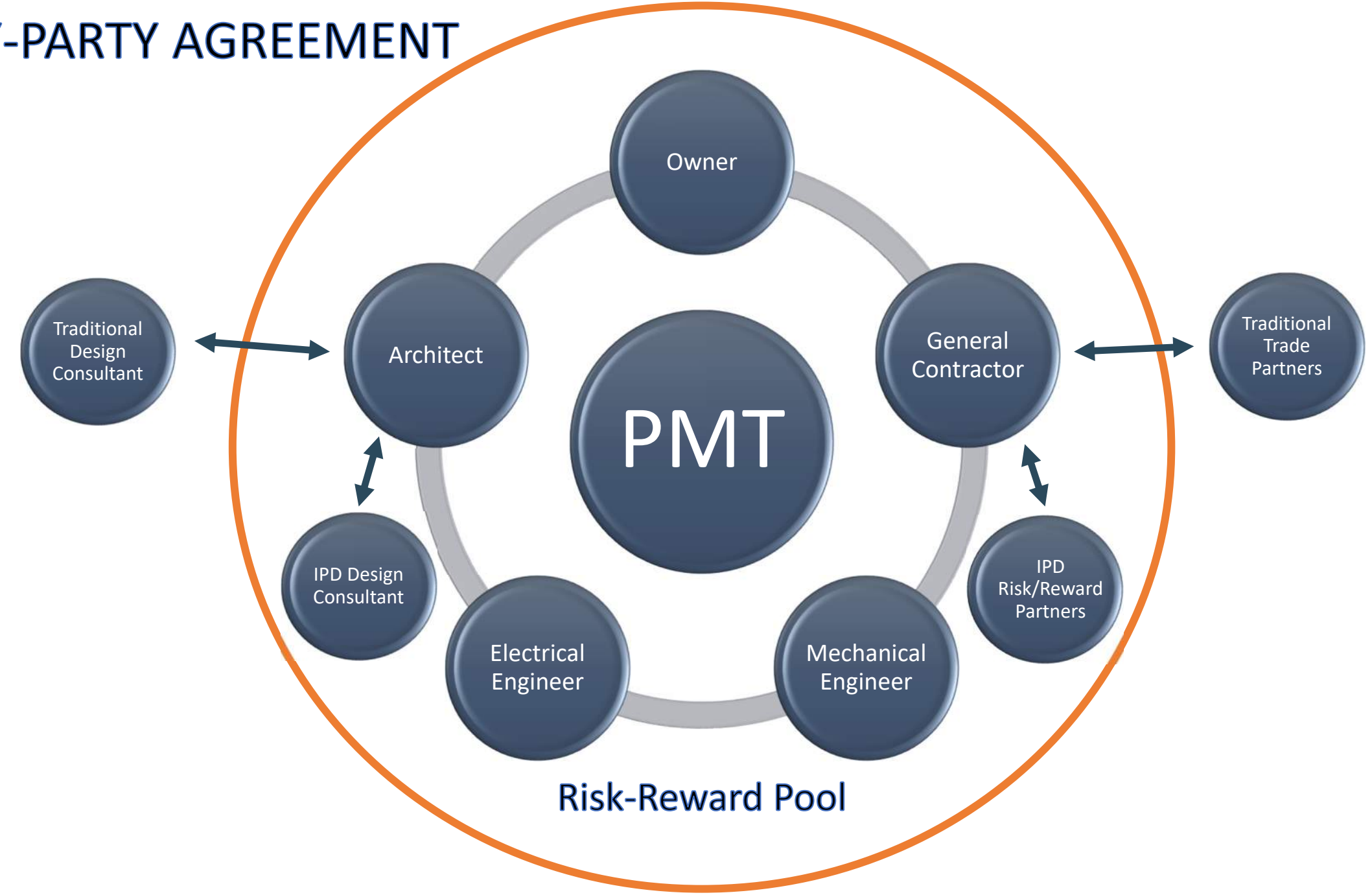

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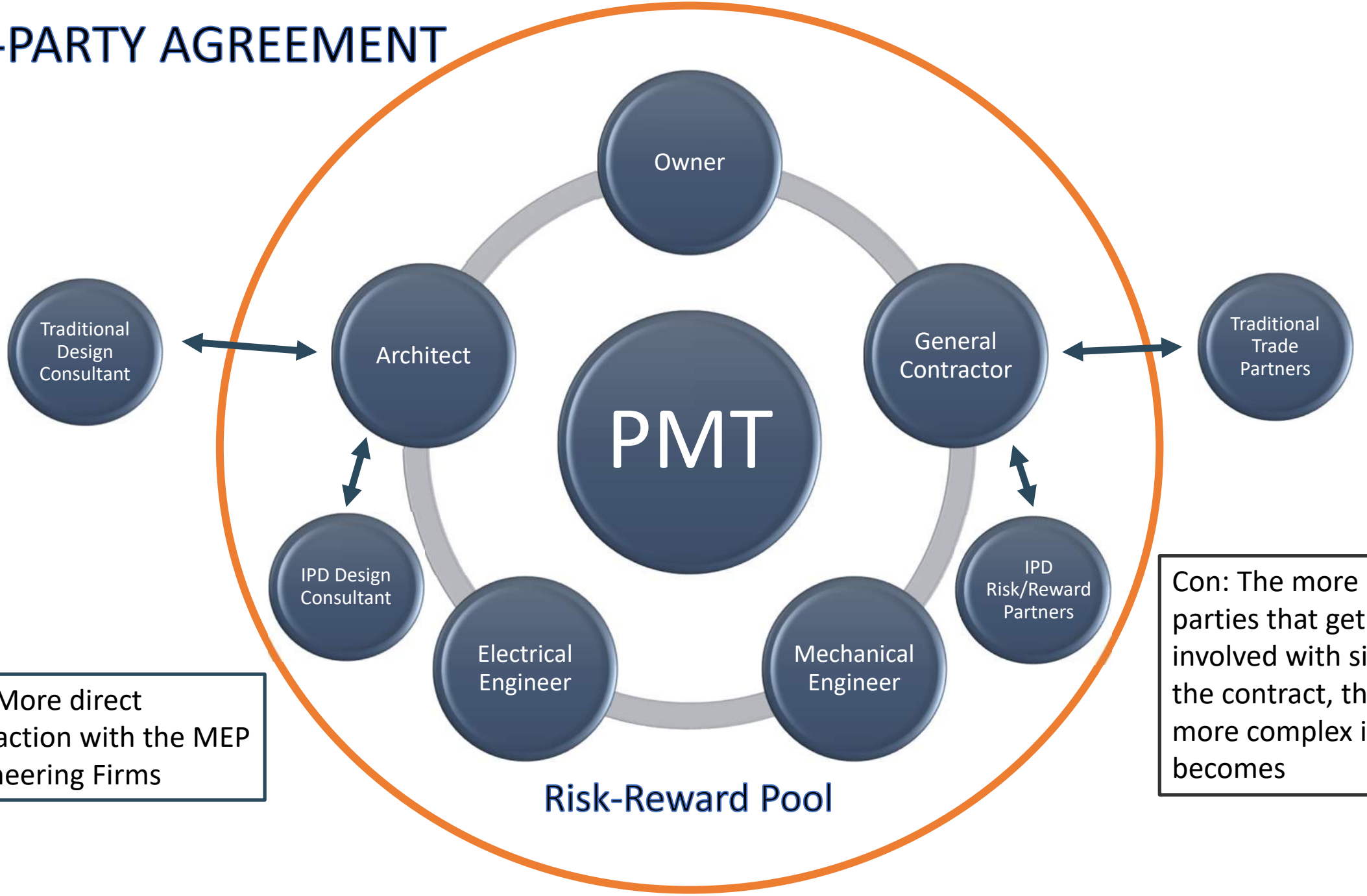
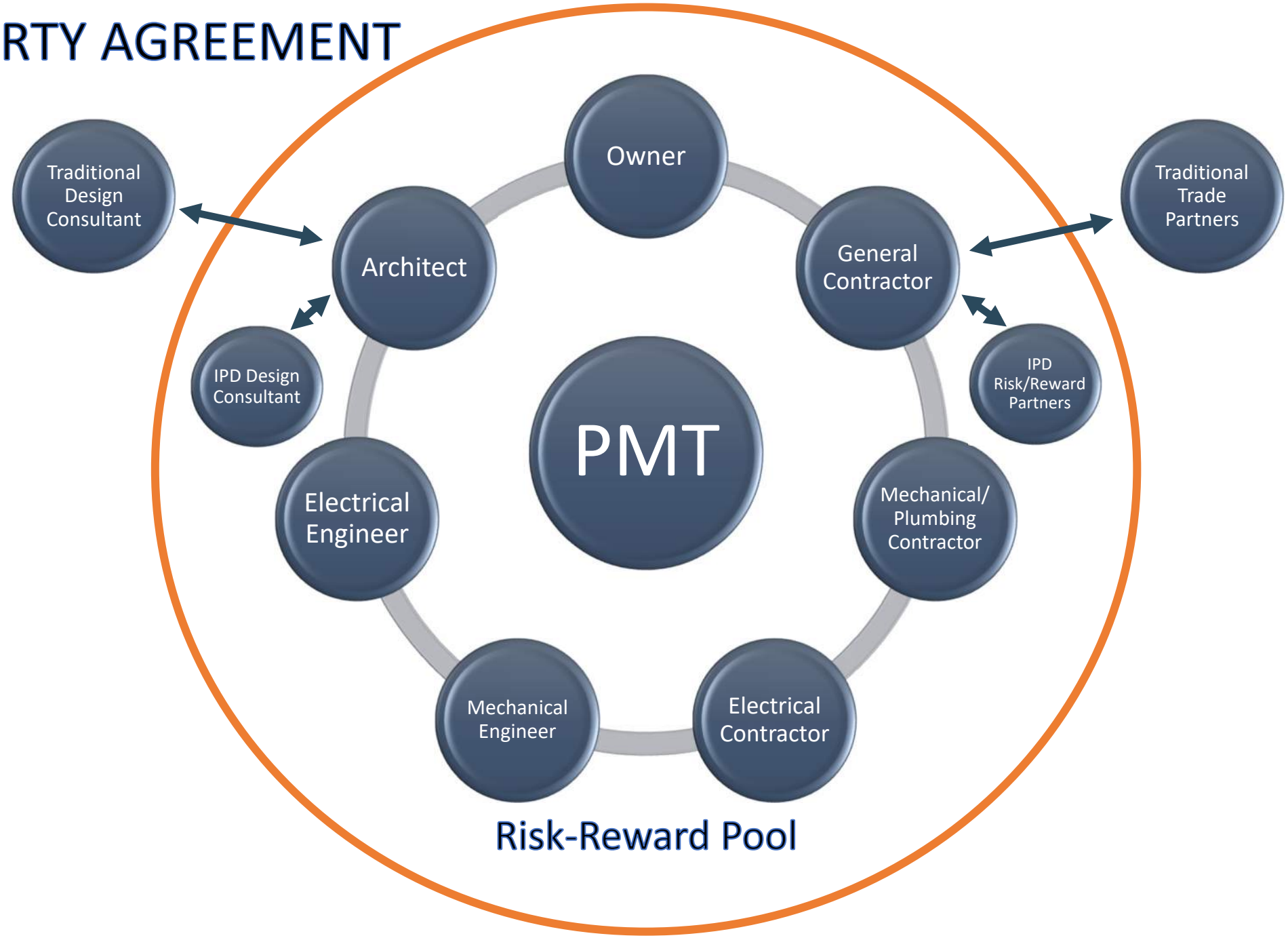


Pro: More direct interaction with the MEP Engineering Firms

Con: The more parties that get involved with signing the contract, the more complex it becomes

POLY-PARTY AGREEMENT



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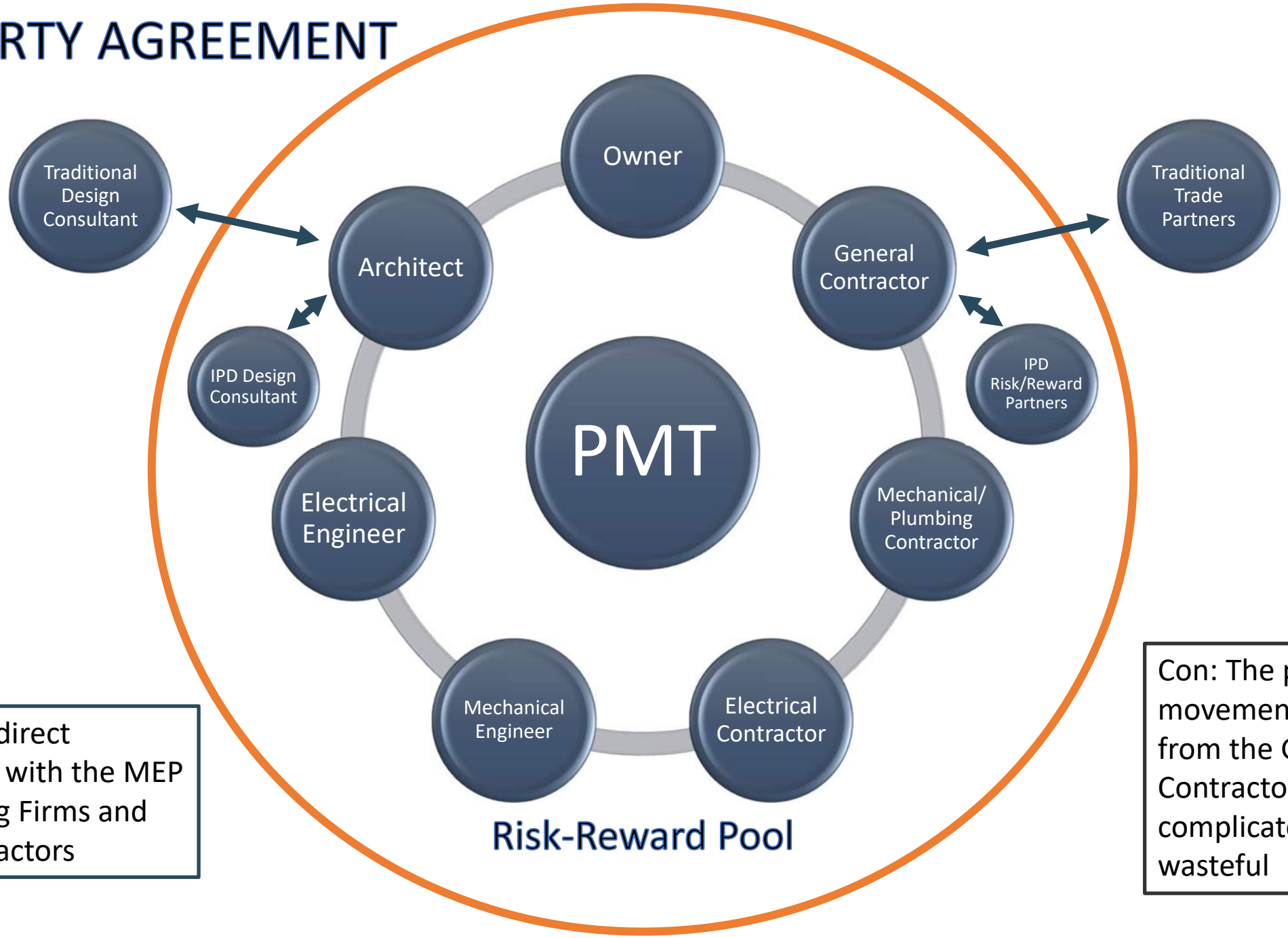
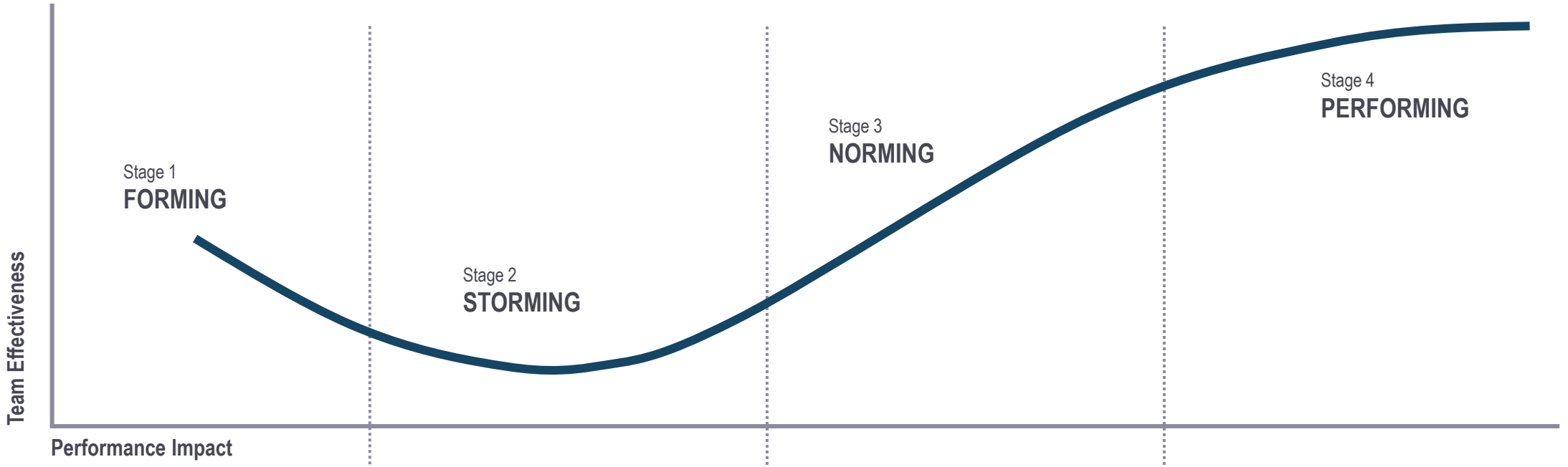


Pro: More direct interaction with the MEP Engineering Firms and MEP Contractors

Con: The potential movement of dollars from the GC to a MEP Contractor becomes complicated and wasteful

The Four Stages of Teaming



Stage 1: The team act as individuals and there is a lack of clarity about the team's purpose and individual roles.

Stage 2: Conflict arises as people begin to establish their place in the team.

Stage 3: There is a level of consensus and agreement within the team. There is clarity about individual roles. The role of the leader is important in managing this.

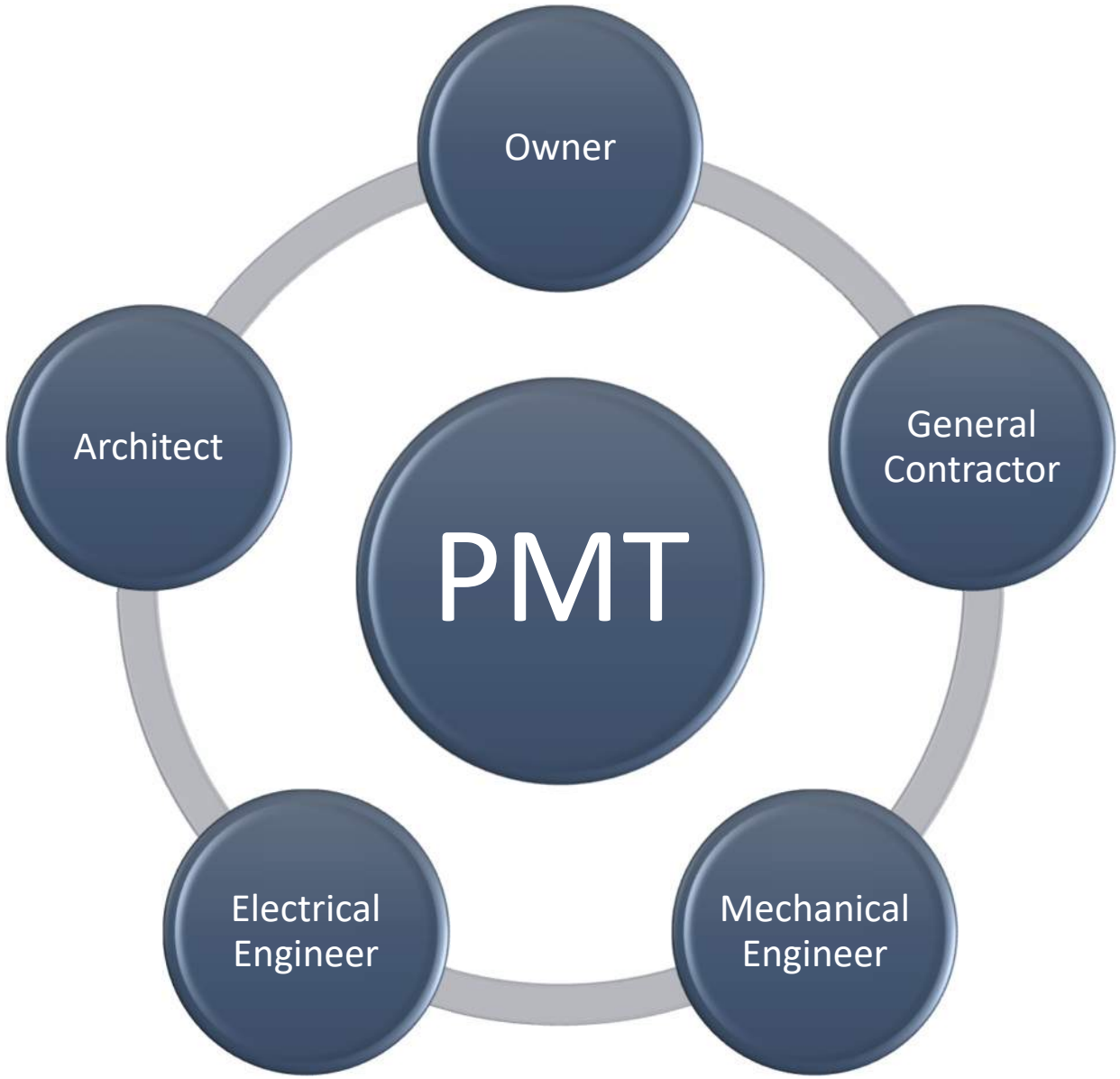
Stage 4: The group has a clear strategy and shared vision. It can operate autonomously and resolve issues positively.

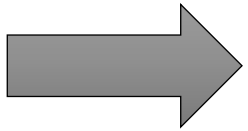
Adapted from Tuckman 1965

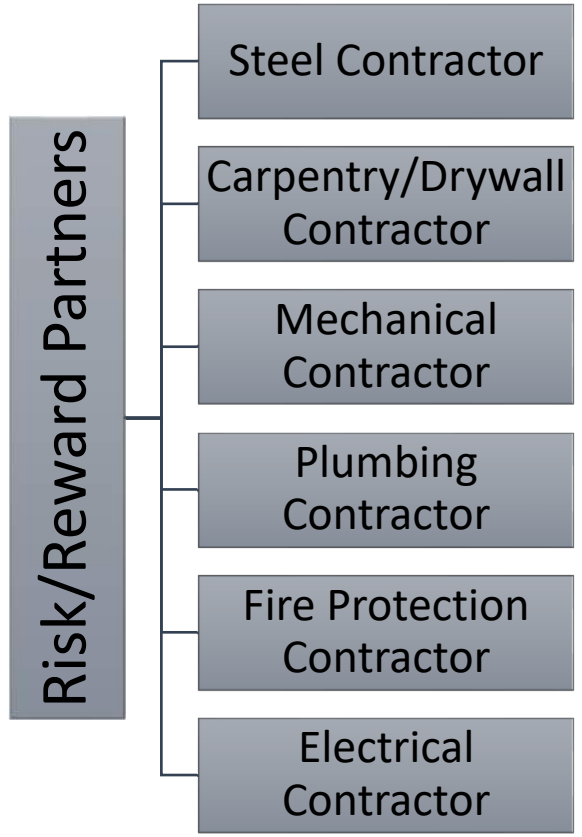
Partner Selection

On a Lean IPD project, selecting the right partners is even more critical than in a traditional project environment.

The buy-in of team members into executing work in a Lean and integrated way, where risk and reward are shared, will be key to project success.







Risk/Reward Partners are chosen based on the trade contractors that are determined to bring the most risk mitigation to the team

Incentive Pool Calculations

EMP

Architect	$	170,000
Mechanical Engineer	$	95,000
Electrical Engineer	$	60,000
General Contractor (w/Trade Partners)	$	9,750,000
IFOA Contingency	$	400,000
	$	10,475,000

EMP vs. FINAL COST ANALYSIS

EMP	$	10,475,000	(all costs + contingency)
ART	$	10,187,500	(EMP - Profit)
Incentive Threshold	$	9,787,500	(ART-contingency)
Final Cost	$	9,416,500	(actual costs)
Variance	$	371,000	(shared incentive)

INCENTIVE CALCULATIONS

Shared Incentive $371,000	R/R Members	Owner	
Final cost < Incentive			(R/R Members/Owner)
$1 to $100,000	$ 35,000	$ 65,000	(35% / 65%)
$100,001 to $200,000	$ 50,000	$ 50,000	(50% / 50%)
$200,001 to $500,000	$ 111,150	$ 59,850	(65% / 35%)
	$ 196,150	$ 174,850	Shared Incentive $371,000
Contingency		$ 400,000	
Total Incentive	$ 196,150	$ 574,850	

RISK/REWARD DISTRIBUTION

R/R Members	Risk/Reward Amount	Risk/ Reward %	Added Profit Pool	Total R/R Profit
Architect	$ 15,000	5.22%	$ 10,234	$ 25,234
Mechanical Engineer	$ 9,500	3.30%	$ 6,481	$ 15,981
Electrical Engineer	$ 6,000	2.09%	$ 4,094	$ 10,094
General Contractor	$ 105,000	36.52%	$ 71,637	$ 176,637
Steel Trade Partner	$ 30,000	10.43%	$ 20,468	$ 50,468
Carpentry Trade Partner	$ 55,000	19.13%	$ 37,524	$ 92,524
Fire Protection Trade Partner	$ 5,000	1.74%	$ 3,411	$ 8,411
Plumbing Trade Partner	$ 12,500	4.35%	$ 8,528	$ 21,028
Mechanical Trade Partner	$ 27,500	9.57%	$ 18,762	$ 46,262
Electrical Trade Partner	$ 22,000	7.65%	$ 15,010	$ 37,010
	$ 287,500	100.00%	$ 196,150	$ 483,650

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Risk/Reward Essentials

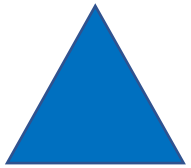
Labor Rates

Material Rates

Overhead Percentage

Profit Percentage

(What did we find was valuable?)



(What would we adjust for next time?)

Kelcey Henderson

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