Demystifying the Integrated Project Delivery Model: Risk, Reward & Partnering for Success

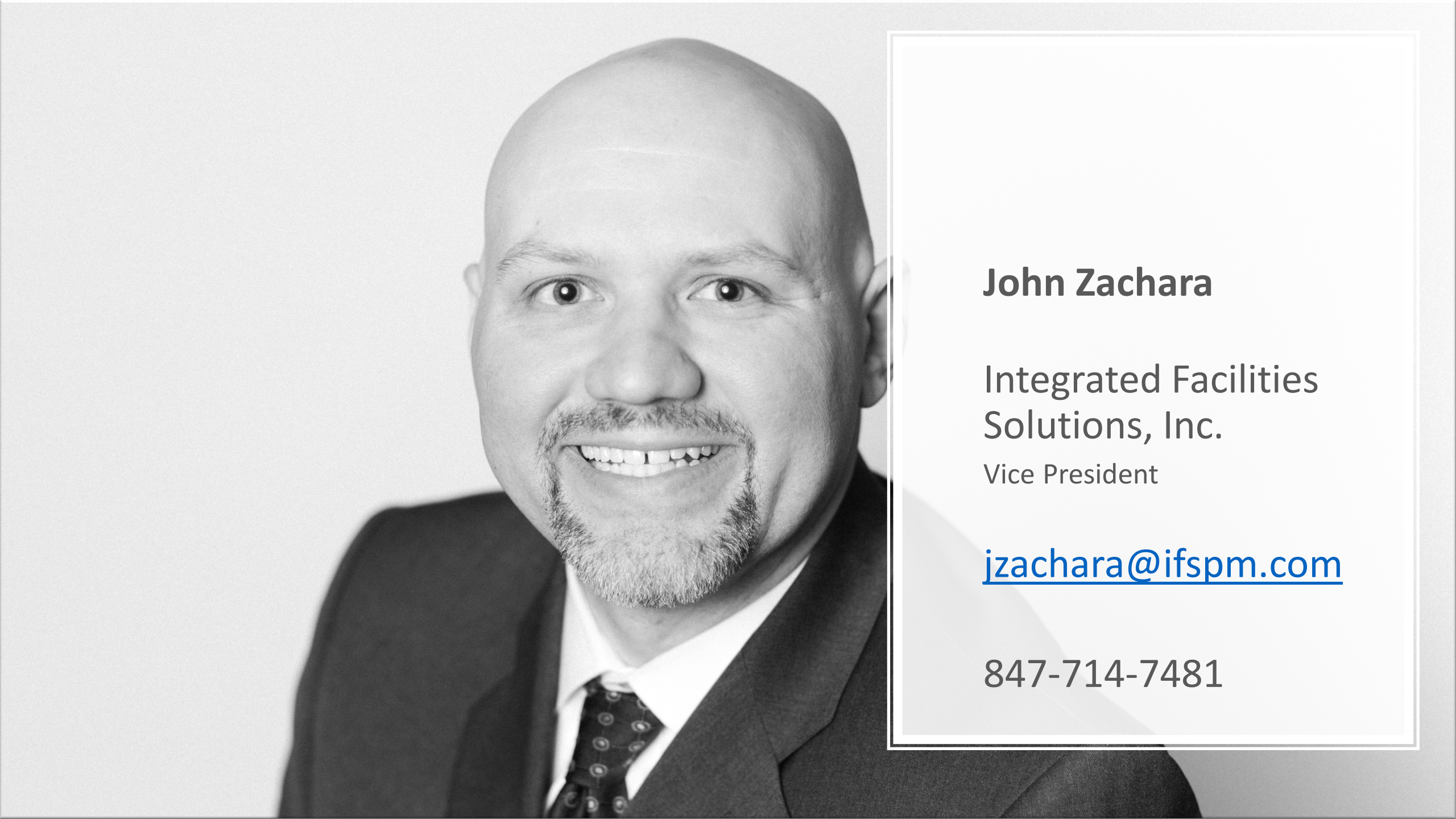
WORKSHOP OBJECTIVES

- When to use the IFOA
- Conditions of Satisfaction Overview
- What is Validation?
- Types of IFOAs
- Roles within the IFOA
- Trade Partner & Risk/Reward Partner Selection
- Incentive Pool, Risk/Reward Distributions


My role
is

What role do you have in the industry?

- Owner
- Owner's Representative
- Developer
- General Contractor
- Trade Contractor
- Architect
- Engineer
- Vendor/Supplier



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Vice President

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Integrated Facilities Solutions, Inc.

Owner's Representative/Program Management

- Illinois-based Owner's Representative & Lean Coaching company
- 20-person firm
- 24 years in business
- Successfully completed over $3.5B in work for more than 3,000 projects

WHAT DO YOU WANT TO LEARN?

What do you want to learn?

I am an Owner and am interested in utilizing an IFOA

I am a GC/Designer/Engineer that works for Owner's that are interested in utilizing an IFOA

I have utilized an IFOA previously and I want to learn more

I have heard of the IFOA and am interested in learning

Other

Contract Pain Points

No responses received yet. They will appear here...

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

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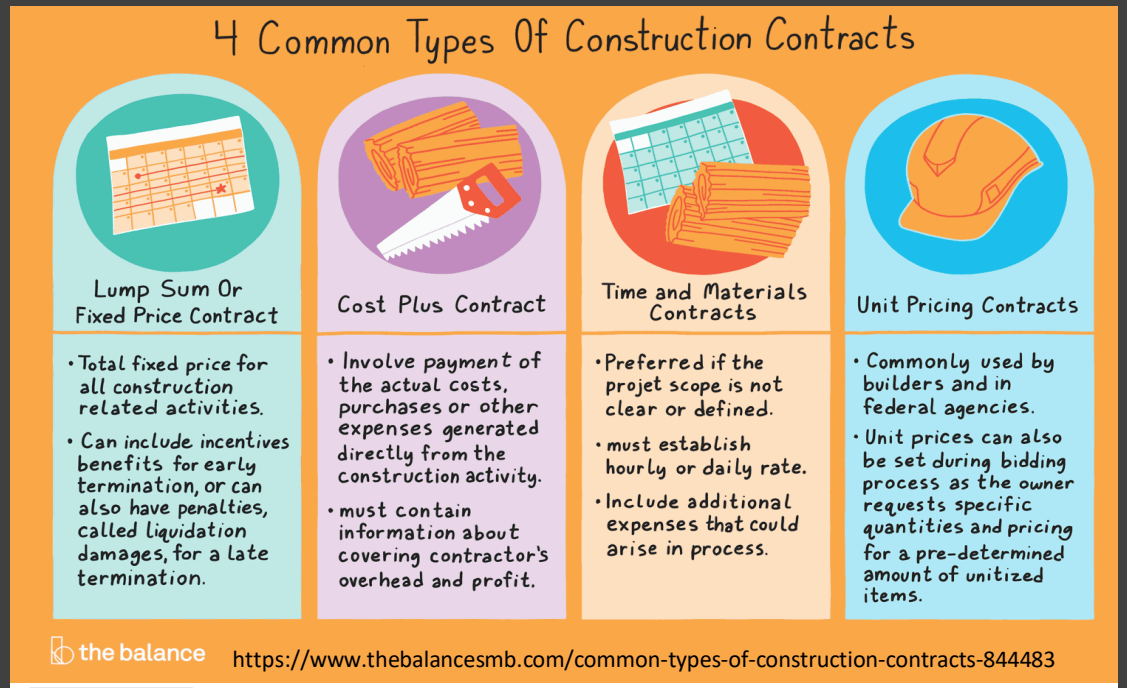
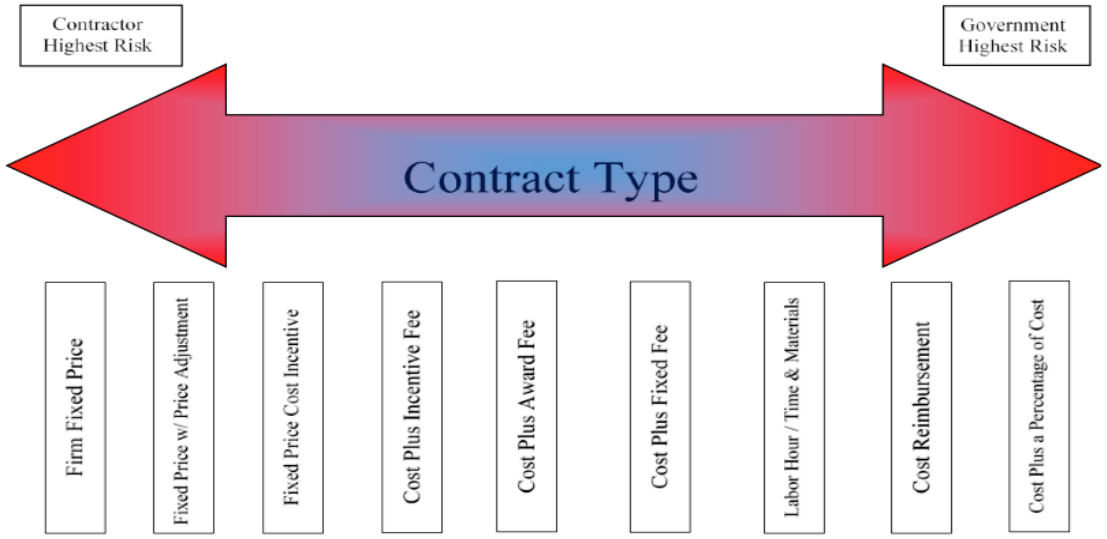
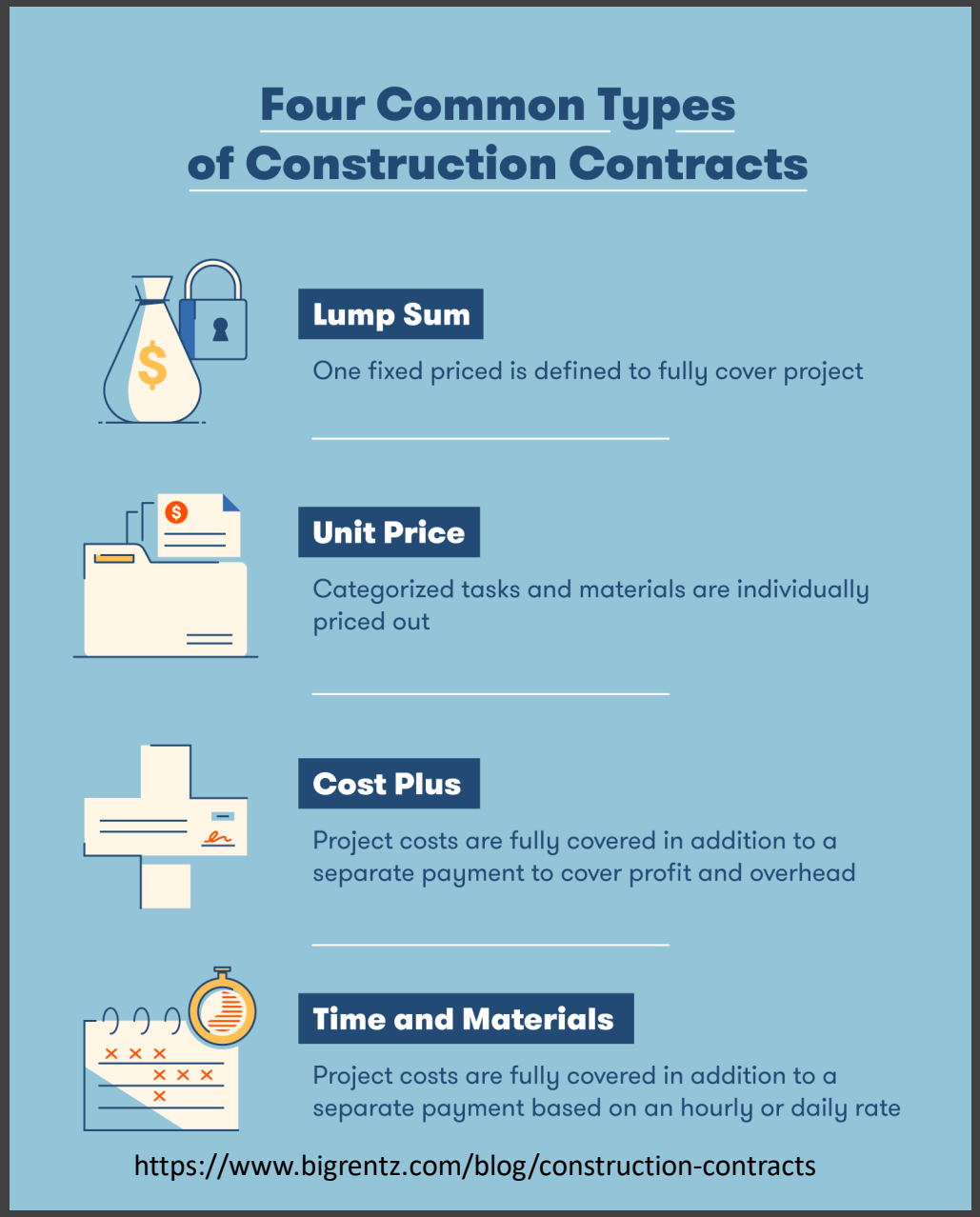
When to use the IFOA





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



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

Conditions of Satisfaction (CoS):
Define what “Success” means for the project team

DECISION MAKING CRITERIA

COMMON LANGUAGE DEVELOPMENT

SETS BEHAVIORAL EXPECTATIONS

DRIVES TEAM CULTURE

DESCRIBE POSITIVE OUTCOMES

1st Healthcare IFOA in Chicago

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

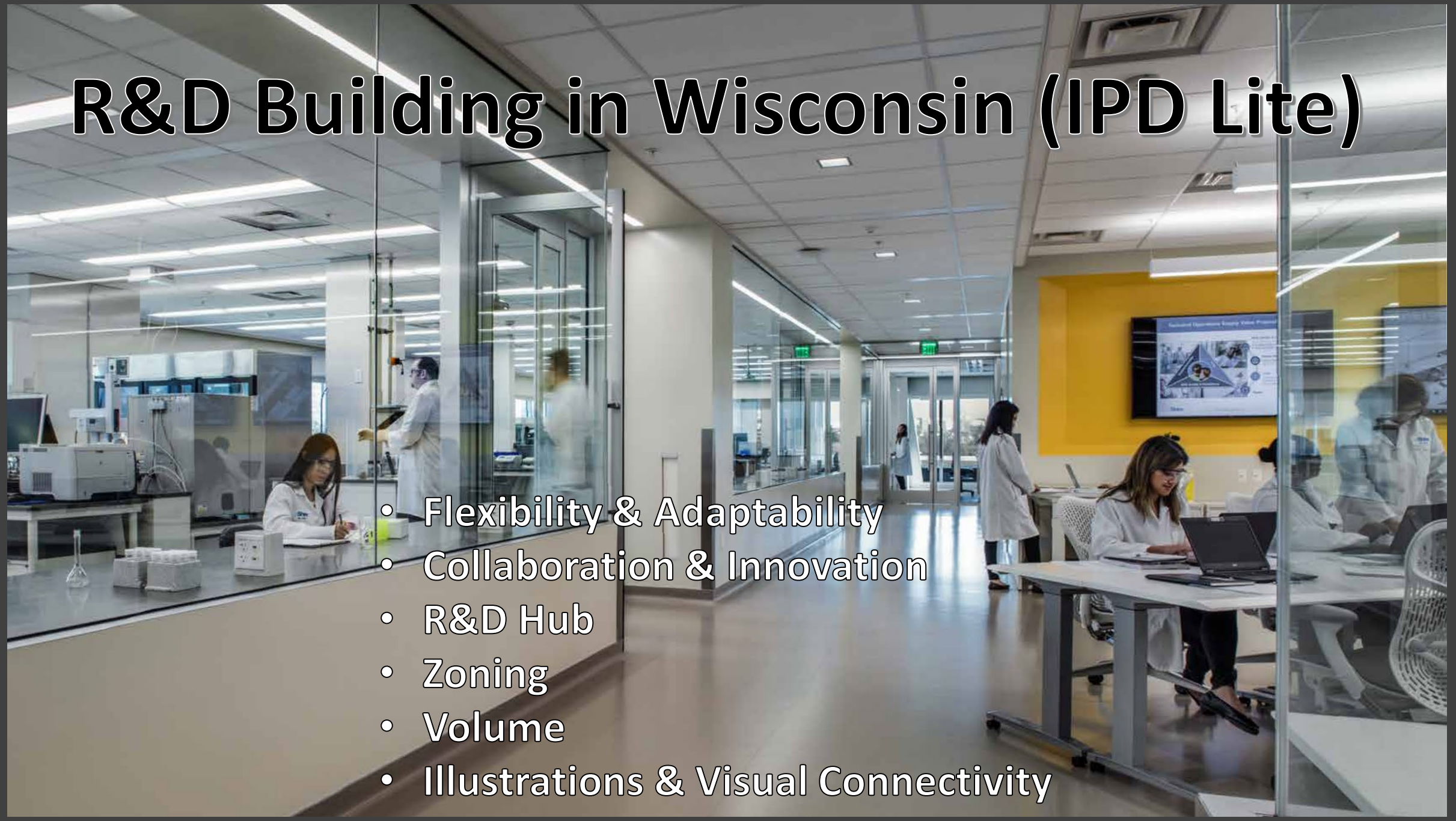
Hospital Campus Master Plan (IFOA & GMP)

- 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)

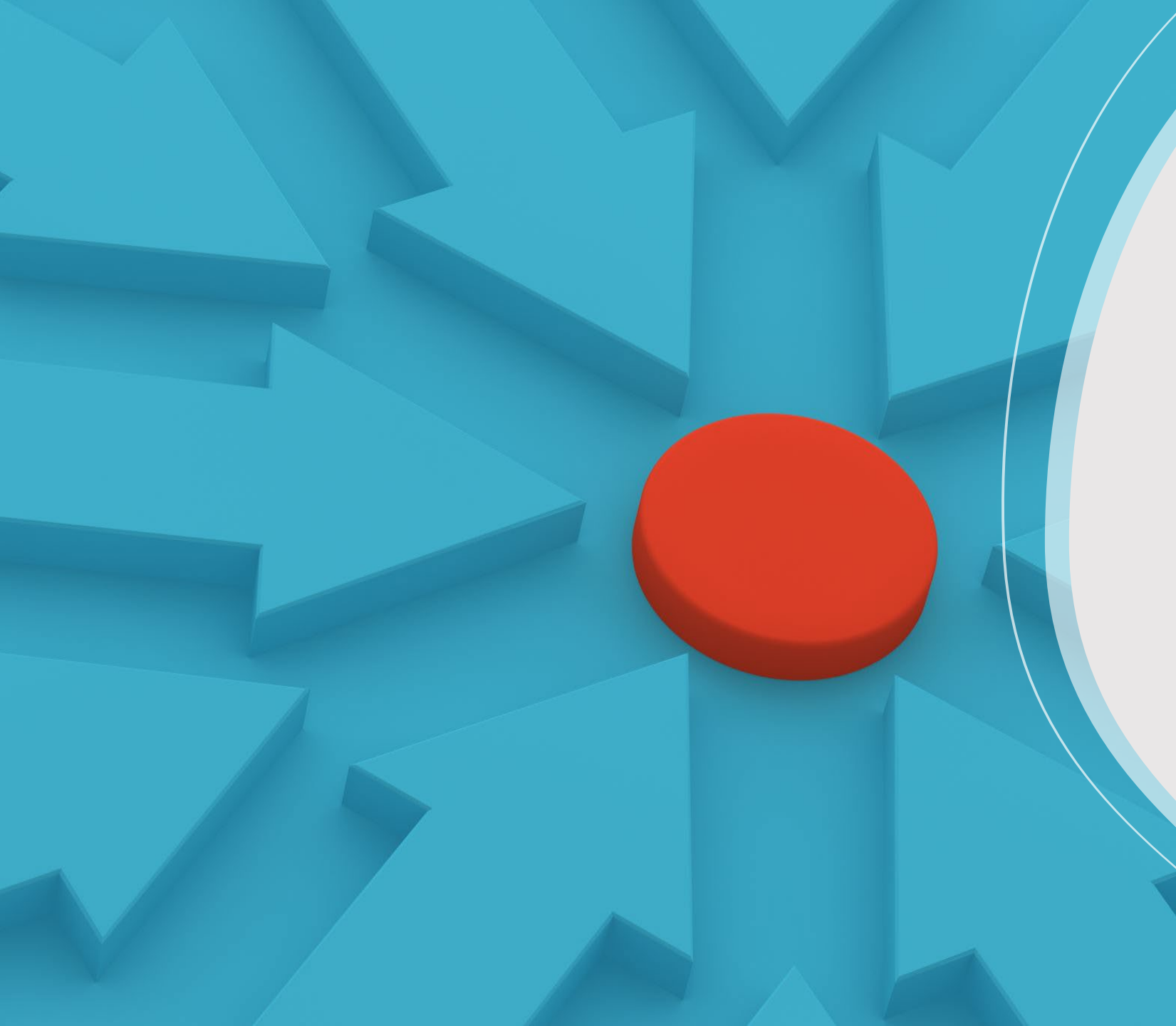
- Design Decisions must first be for the Benefit of Participants
- Minimize Disruption to Culture
- Need Campus Environment – coordinate with Training Center already built
- Building Employees can be proud of

R&D Building in Wisconsin (IPD Lite)

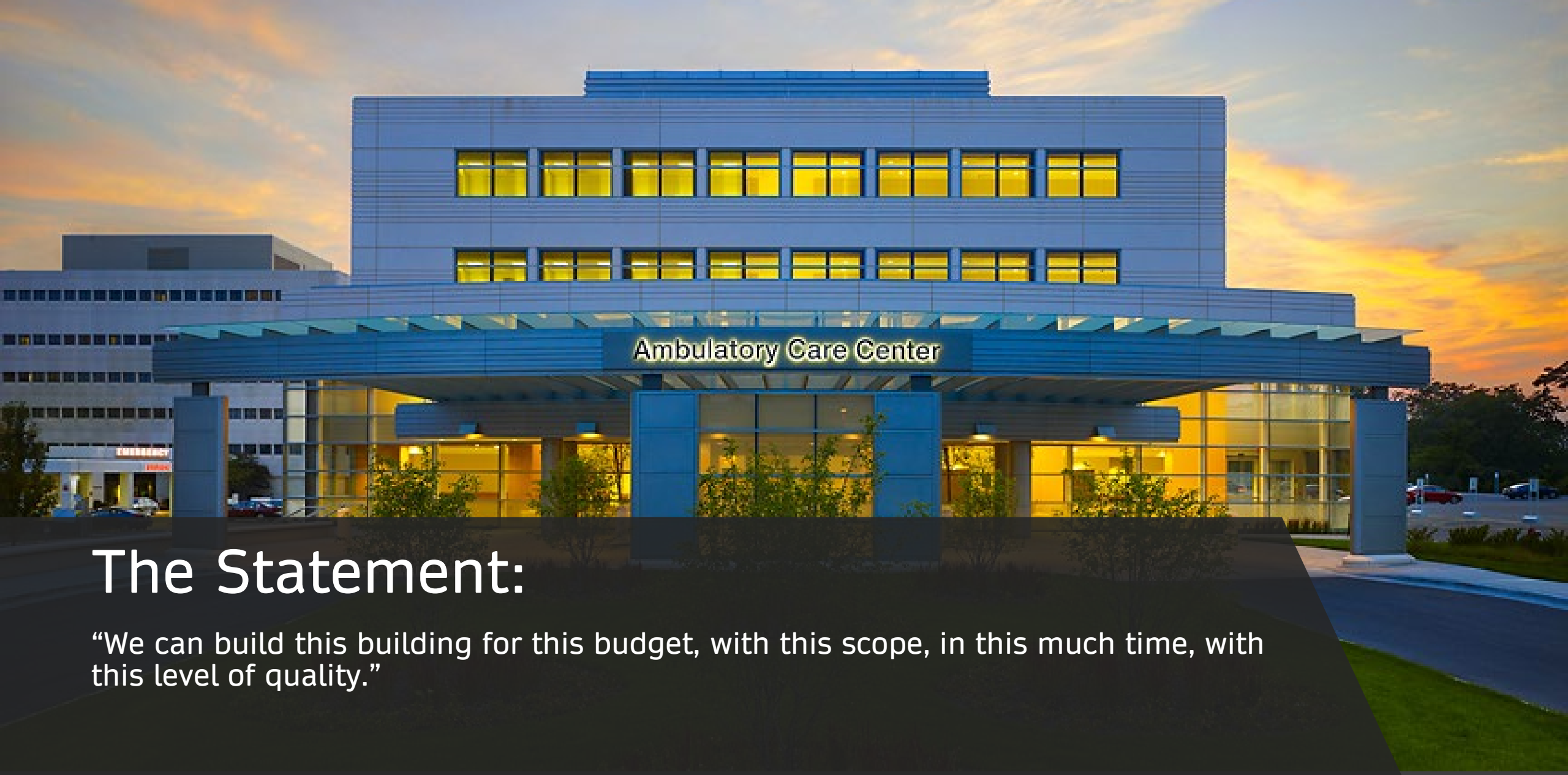


- Flexibility & Adaptability
- Collaboration & Innovation
- R&D Hub
- Zoning
- Volume
- Illustrations & Visual Connectivity

What is Validation and Why is it Important?



The Purpose of Validation is Certainty

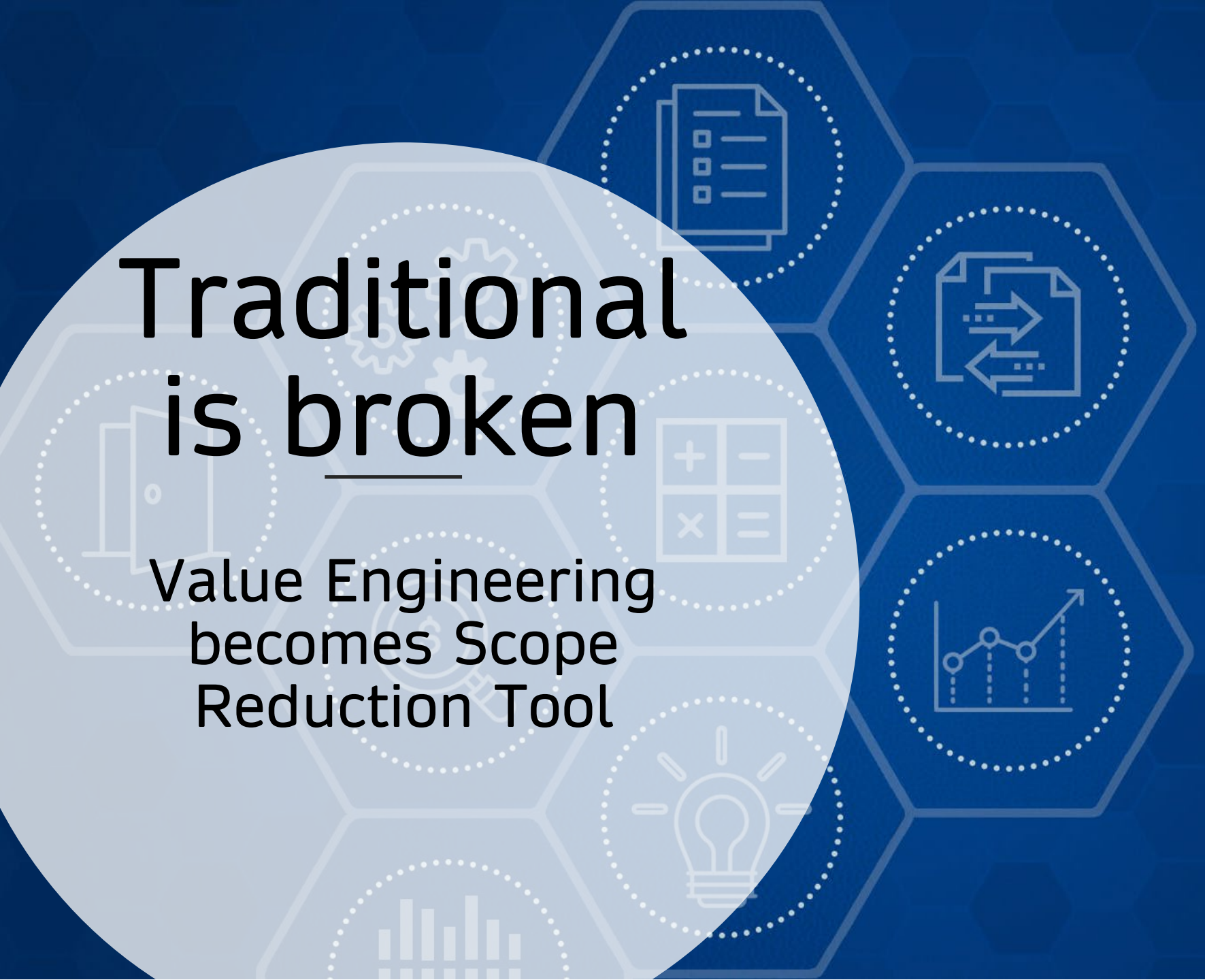


The Statement:

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

Traditional is broken

Value Engineering becomes Scope Reduction Tool



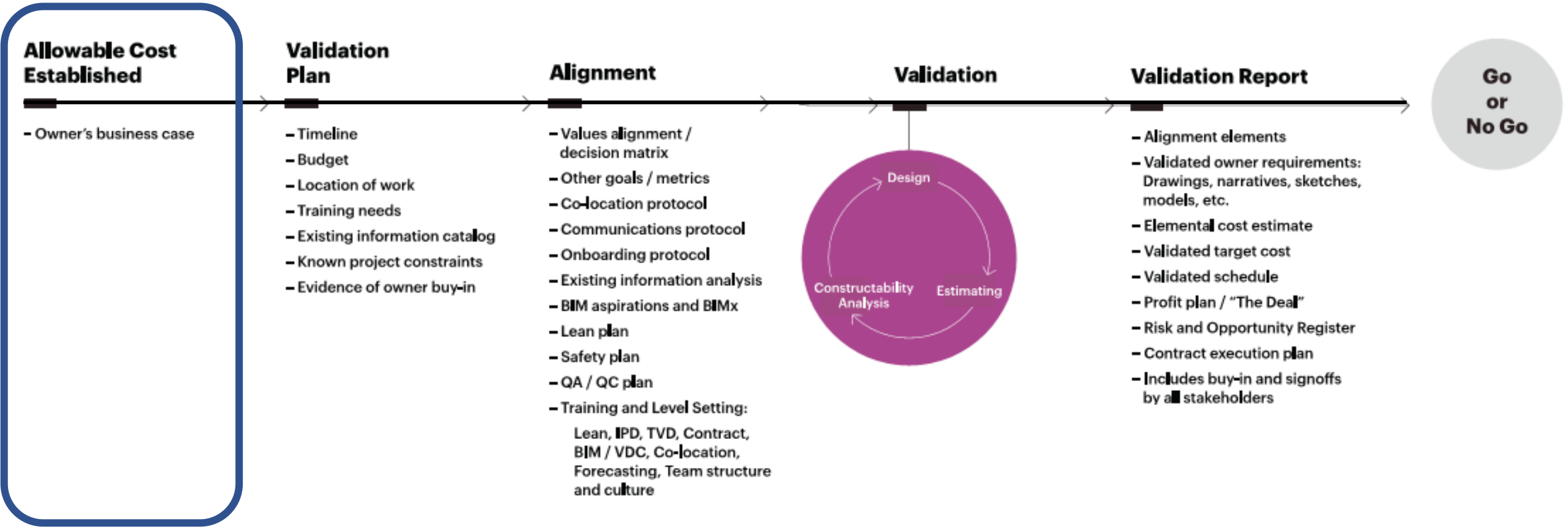
VALUE
Engineering

Getting Started

- Site Information
- Feasibility Studies
- Market Need
- Labor Market
- Owner’s Business Case
- Preliminary Program

Validation Parameters:

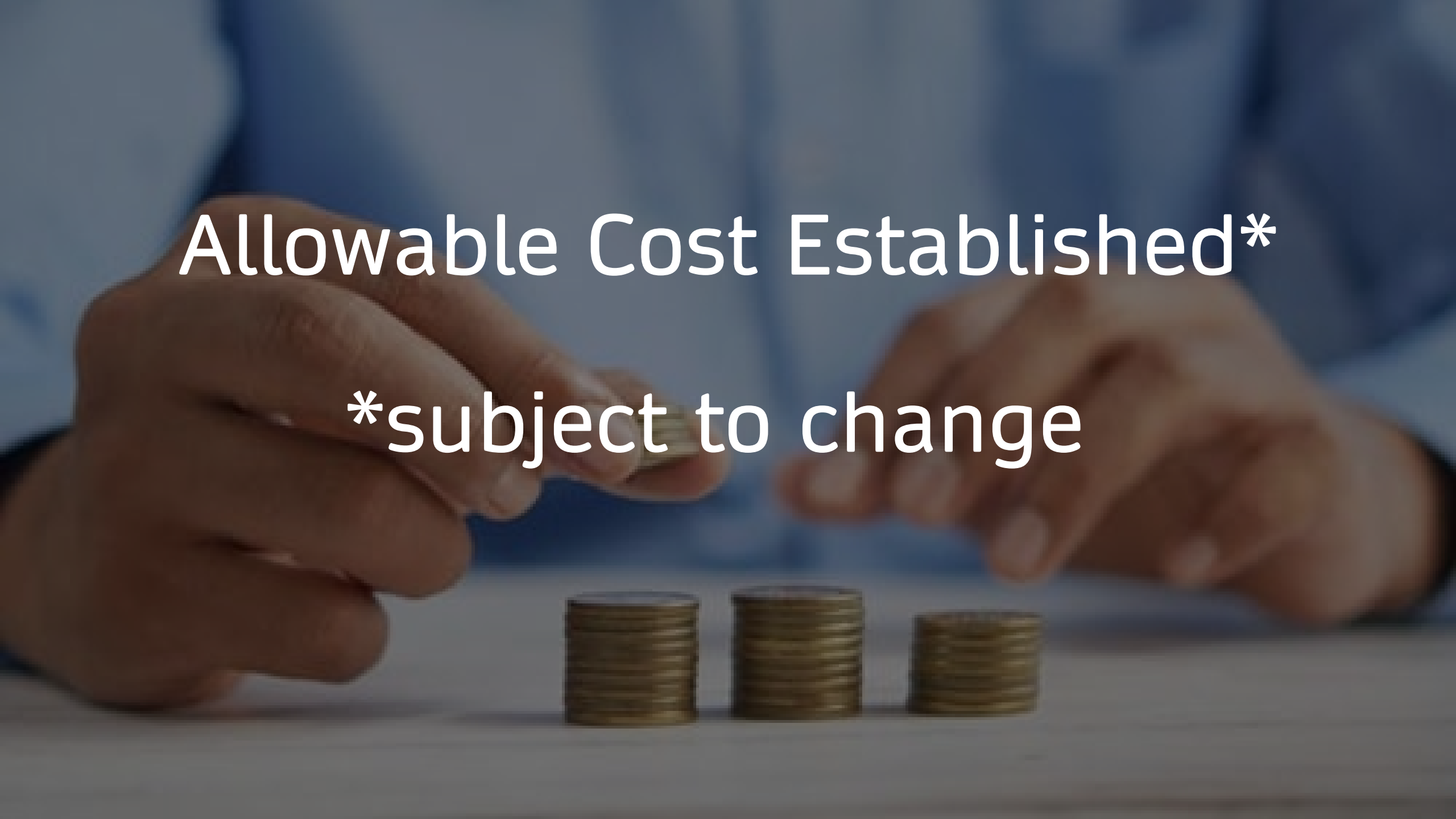
- Follows the Business Case
- Culminates in a Go, No-Go
- Dedicated Budget & Schedule
- Dedicated Team of Experts
- Design has not Started



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

The Owner

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

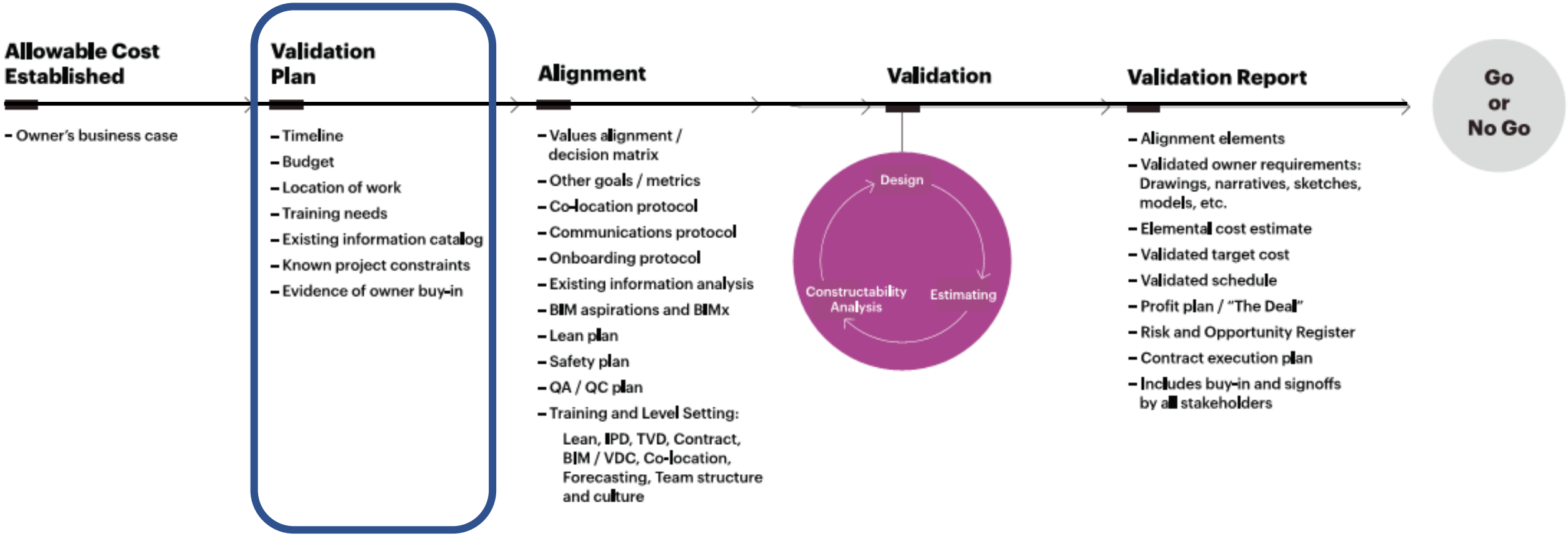

Allowable Cost Established*
*subject to change

Conditions of Satisfaction

Table 6. Examples of Conditions of Satisfaction

Conditions of Satisfaction	Yes	No
Team		
Maintain behaviors of excellence	❑	❑
Enhance team efficiency	❑	❑
Cause an IPD-novel owner to engage in future IPD projects	❑	❑
Motivate the owner to roll the team over a future project	❑	❑
Others (write down)	❑	❑
Project Delivery		
Meet scope	❑	❑
Meet or improve target cost value	❑	❑
Meet or improve target schedule	❑	❑
Meet or improve safety goals	❑	❑
Engage local labor	❑	❑
Meet or improve the acceptable level of risk	❑	❑
Obtain green building certification	❑	❑
Enhance aesthetics/branding (e.g. seek for design award)	❑	❑
Engage service/operation providers (e.g. physicians, operators)	❑	❑
Minimize the impact on ongoing operations	❑	❑
Engage community (e.g. during design)	❑	❑
Minimize the impact on the local community (e.g. during construction)	❑	❑
Others (write down)	❑	❑
Operations & Maintenance		
Advance operations start date	❑	❑
Improve flows	❑	❑
Reduce energy costs	❑	❑
Reduce operation costs	❑	❑
Others (write down)	❑	❑

- Image courtesy of Project Validation: A Guide to Improving Owner Value and Team Performance, 2019



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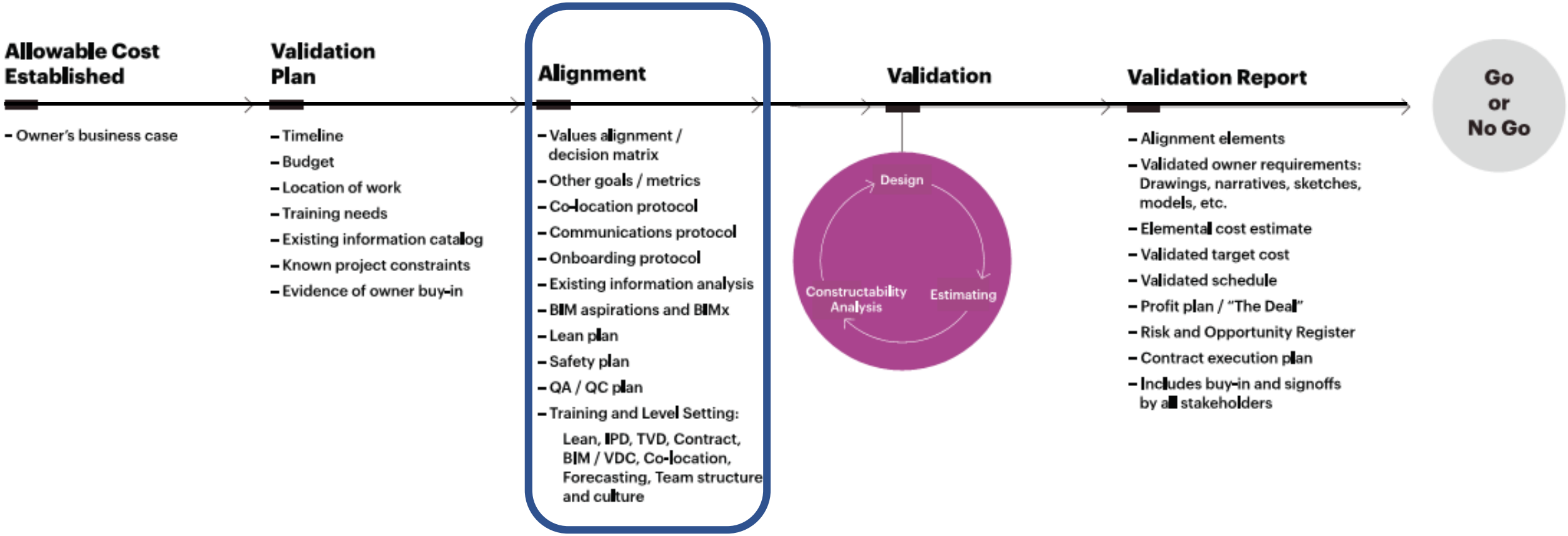
Validation Plan



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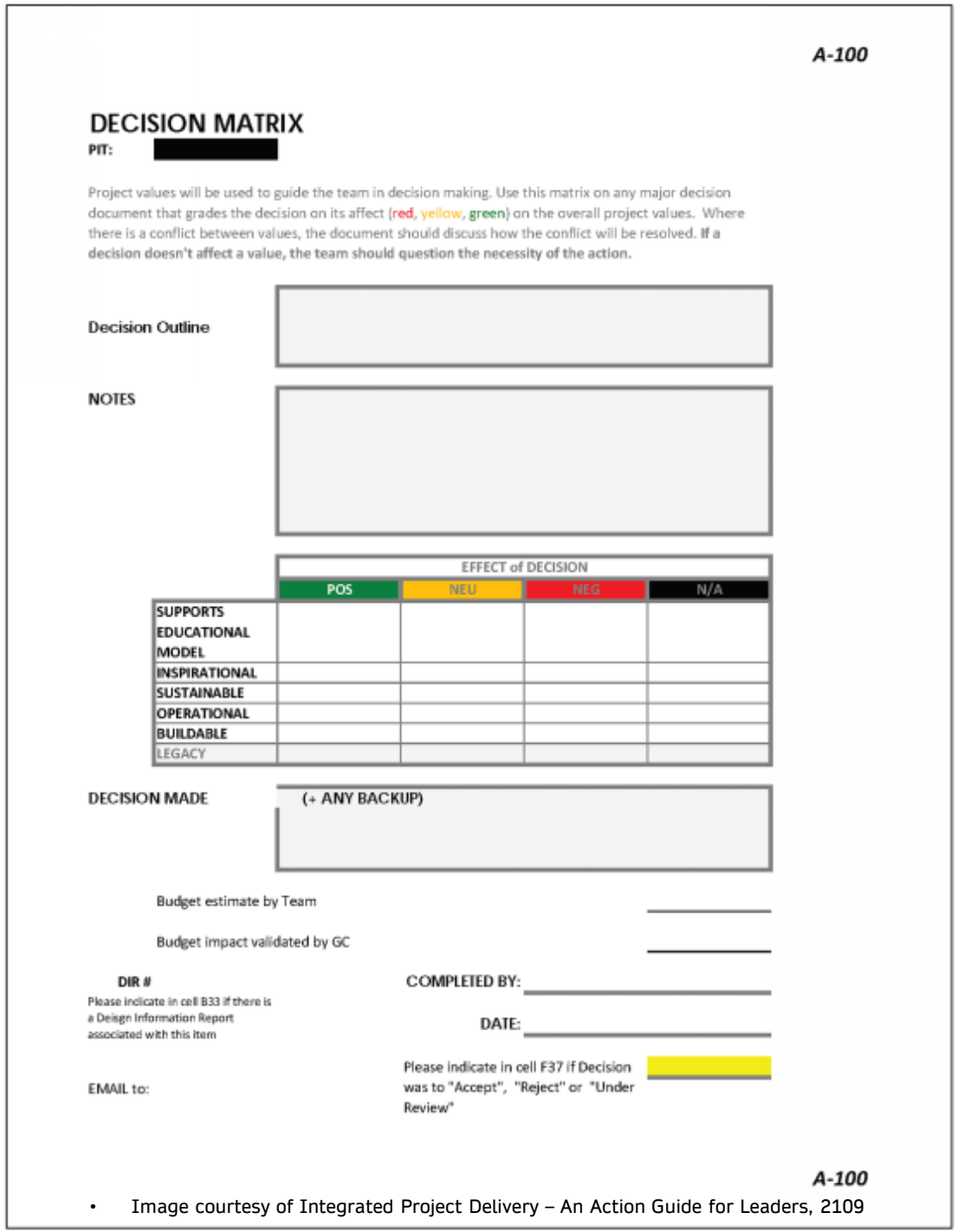
Alignment

- Values Alignment/Decision Matrix
- Other goals/metrics
- Co-location protocol
- Communications protocol
- Onboarding protocol



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DECISION MATRIX

PIT: [redacted]

Project values will be used to guide the team in decision making. Use this matrix on any major decision document that grades the decision on its affect (red, yellow, green) on the overall project values. Where there is a conflict between values, the document should discuss how the conflict will be resolved. If a decision doesn't affect a value, the team should question the necessity of the action.

Decision Outline

NOTES

	EFFECT of DECISION			
	POS	NEU	NEG	N/A
SUPPORTS EDUCATIONAL MODEL				
INSPIRATIONAL				
SUSTAINABLE				
OPERATIONAL				
BUILDABLE				
LEGACY				

DECISION MADE (+ ANY BACKUP)

Budget estimate by Team

Budget impact validated by GC

DIR #

Please indicate in cell B33 if there is a Deisgn Information Report associated with this item

COMPLETED BY:

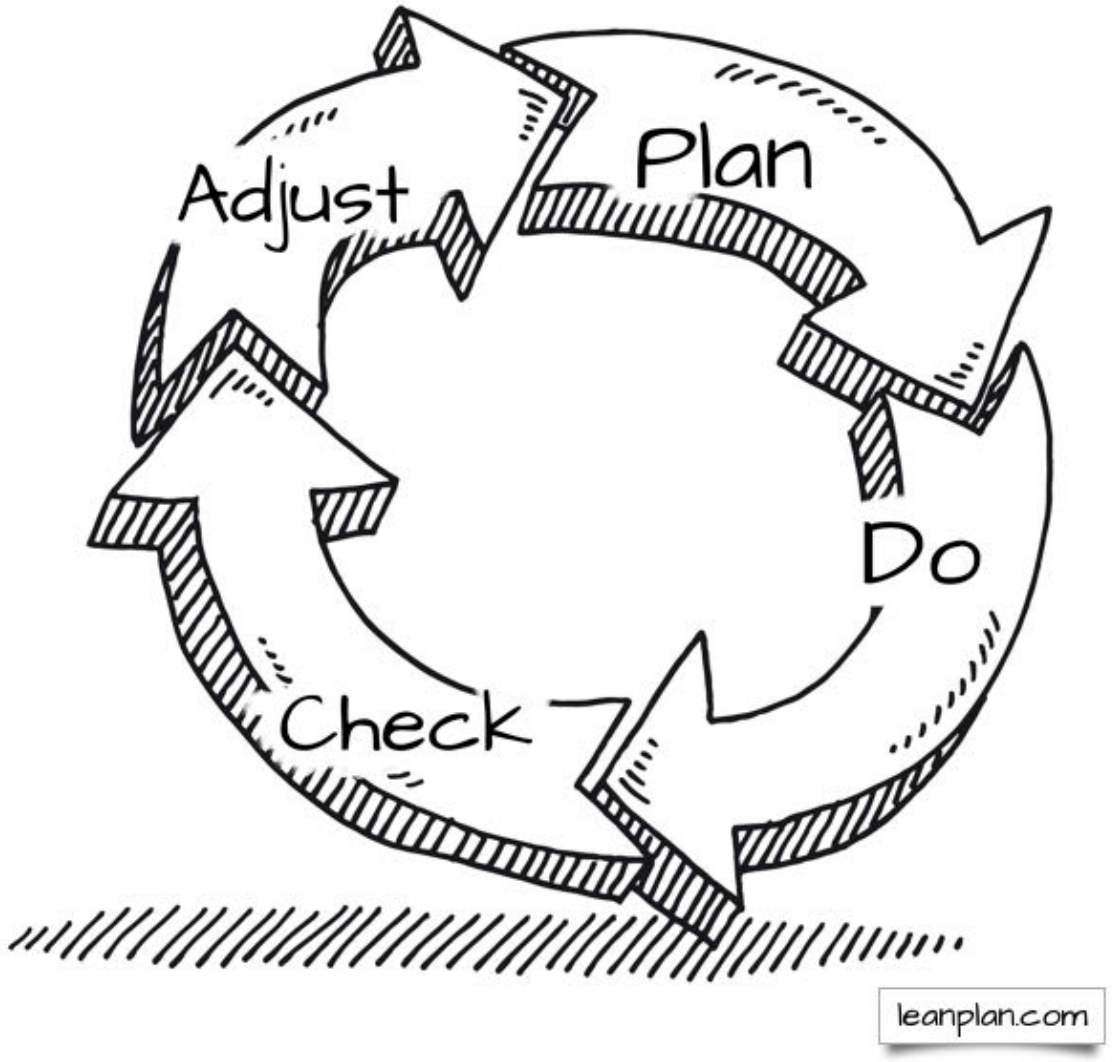
DATE:

EMAIL to:

Please indicate in cell F37 if Decision was to "Accept", "Reject" or "Under Review"

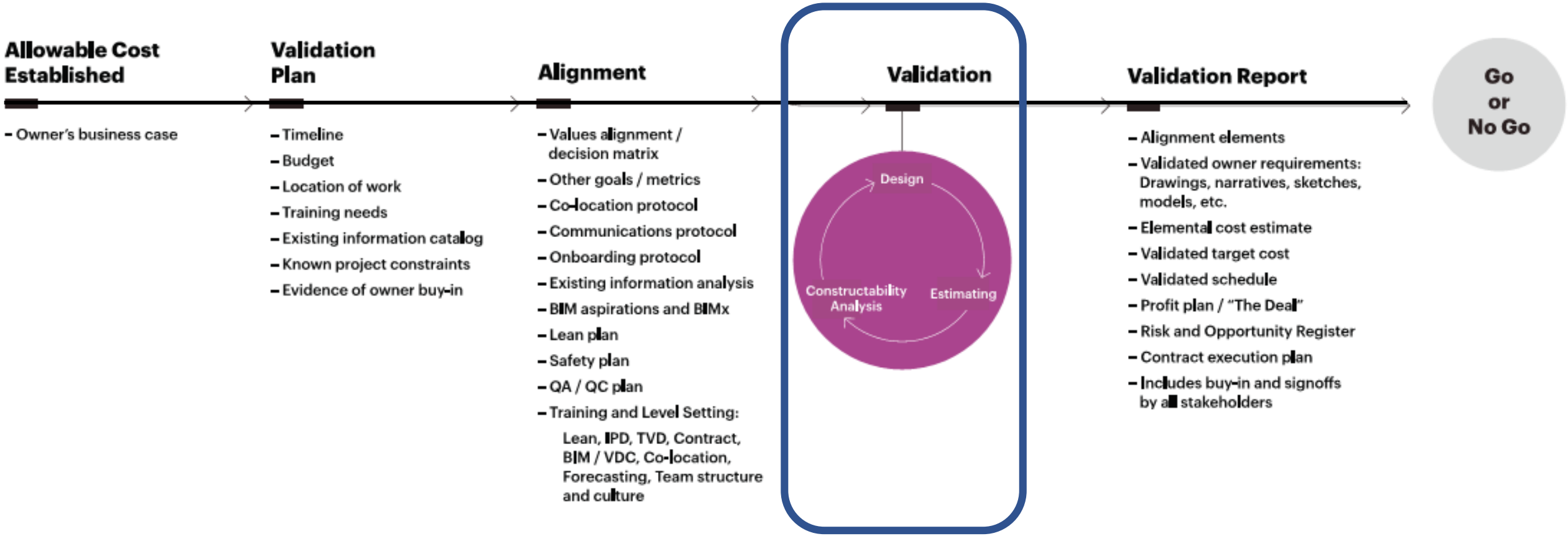
A-100

- Image courtesy of Integrated Project Delivery – An Action Guide for Leaders, 2109



Alignment

- Existing information analysis
- BIM aspirations and BIMx
- Lean plan
- Safety plan
- QA/QC plan
- Training and level setting: Lean, IPD, TVD, Contract, BIM/VDC, Co-location, Forecasting, Team Structure and culture



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

Validation

Setting the Tone

Table 5. Kickoff Content

	Yes	N
Information Input		
Owner's Culture and Project Significance (*)	❑	☐
Owner's Priorities (*)	❑	☐
Behaviors of Excellence (*)	❑	☐
Project Approval Process (*)	❑	☐
Others (write down)	❑	☐
Team Advancement		
Relational Contracting (IFOA)	❑	☐
IPD	❑	☐
Last Planner™ System	❑	☐
Target Value Delivery	❑	☐
Others (write down)	❑	☐
Team Activities		
Identification of Validation Deliverables (*)	❑	☐
Pull Planning Validation (*)	❑	☐
Determining Rules of Engagement & Communication (*)	❑	☐
Determining Conditions of Satisfaction (*)	❑	☐
Others (write down)	❑	☐

- Image courtesy of Project Validation: A Guide to Improving Owner Value and Team Performance, 2019

What Does "Done" Look Like?

(check applicable project cost)		☐			☐			☐			☐		
		< $10M			$10M to $29.99M			$30M to $100M			> $100M		
Item	Description	Mandatory	Included	N/A	Mandatory	Included	N/A	Mandatory	Included	N/A	Mandatory	Included	N/A
1. Introduction													
1.1	Cover Sheet		☐	☐		☐	☐	☒			☒		
1.2	Table of Contents		☐	☐	☒			☒			☒		
1.4	Executive Summary		☐	☐		☐	☐	☒			☒		
2. Program, Planning and Design													
2.1.b	Project Charter (A3.1)	☒			☒			☒			☒		
2.1.c	Model of Care		☐	☐		☐	☐		☐	☐	☒		
2.2.a	Operational Assumptions	☒			☒			☒			☒		
2.2.b	Service Plan Summary		☐	☐		☐	☐		☐	☐		☐	☐
2.2.c	Regulatory constraints/requirements	☒			☒			☒			☒		
2.3.a	Stacking Diagrams	☒			☒			☒			☒		
2.3.b	Department Block Layouts	☒			☒			☒			☒		
2.3.d	Concept floor plan(s) & alternatives	☒			☒			☒			☒		
2.3.g	Detailed room design/room data sheets for key rooms	☒			☒			☒			☒		
2.3.h	Design options/set-based studies		☐	☐	☒			☒			☒		
2.3.i	Simulation Results		☐	☐		☐	☐		☐	☐		☐	☐
2.3.j	Code Research	☒			☒			☒			☒		
2.4.a	Site/Urban Plan Analysis/Context		☐	☐		☐	☐		☐	☐	☒		
2.4.b	Utilities & Encroachments		☐	☐	☒			☒			☒		
2.4.c	General Site considerations		☐	☐	☒			☒			☒		
2.4.d	Site Survey/key features/impacts	☒			☒			☒			☒		
2.4.e	Traffic/Access/Parking		☐	☐	☒			☒			☒		
2.4.g	Concept Site Plan	☒			☒			☒			☒		
2.4.h	Building Massing Options		☐	☐	☒			☒			☒		
2.4.i	Building Concept Elevations		☐	☐	☒			☒			☒		
2.4.j	Exterior wall studies/sections		☐	☐		☐	☐	☒			☒		
2.4.k	Concept Roof Plan		☐	☐	☒			☒			☒		
2.4.p	Outline Specifications		☐	☐	☒			☒			☒		
2.4.q	Sustainability strategy/tracking	☒			☒			☒			☒		
3. Building Systems													
3.1	Structural Systems		☐	☐		☐	☐	☒			☒		
3.2	Exterior Skin Systems		☐	☐	☒			☒			☒		
3.3	Mechanical Systems	☒			☒			☒			☒		

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BUILDABLE				
LEGACY				

DECISION MADE (+ ANY BACKUP)

Budget estimate by Team

Budget impact validated by GC

DIR #

Please indicate in cell B33 if there is a Design Information Report associated with this item

COMPLETED BY:

DATE:

Please indicate in cell F37 if Decision was to "Accept", "Reject" or "Under Review"

EMAIL to:

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RISK / OPPORTUNITY LOG

UPDATE DATE: 4/9/18

DG	OPPORTUNITY THAT WILL IMPROVE CONDITIONS
LG	OPPORTUNITY THAT MIGHT IMPROVE CONDITIONS
O	MEDIUM RISK
Y	HIGH RISK
R	CRITICAL - HIGHEST RISK

RISK / OPPORTUNITY IDENTIFICATION					RISK / OPPORTUNITY ASSESSMENT		MANAGEMENT PLAN		
ID	Certainty / Uncertainty	Topic	Description	Category	Probability: Low/Med/Hi	Impact: Low/Med/Hi	Action	By Whom	By When
1	DG	Big Room	Co-locating for expedited documentation and approval	Schedule	High	High	Determine location and start date for Big Room	CM - [redacted]	4/30/18
2	R	Onsite labor	Local electrical labor shortage	Schedule	High	Medium	Prefab offsite as much as possible: Room in a box; headwalls; bathrooms?	Arch - [redacted]	4/21/18
3	LG	Phased permitting	Early site, concrete, superstructure	Cost	Medium	High	Contact AHJ to discuss permitting options	CM - [redacted]	4/9/18
4	Y	Design team staffing not complete	Room strategy and responsibility matrix without full staffing plan	Team	Medium	High	Plan by end of month	Arch - [redacted]	4/27/18
5	Y	Final approval of layouts	Owner team final approval ongoing	Schedule	Medium	Medium	Approval by end of week	Owner - [redacted]	4/13/18

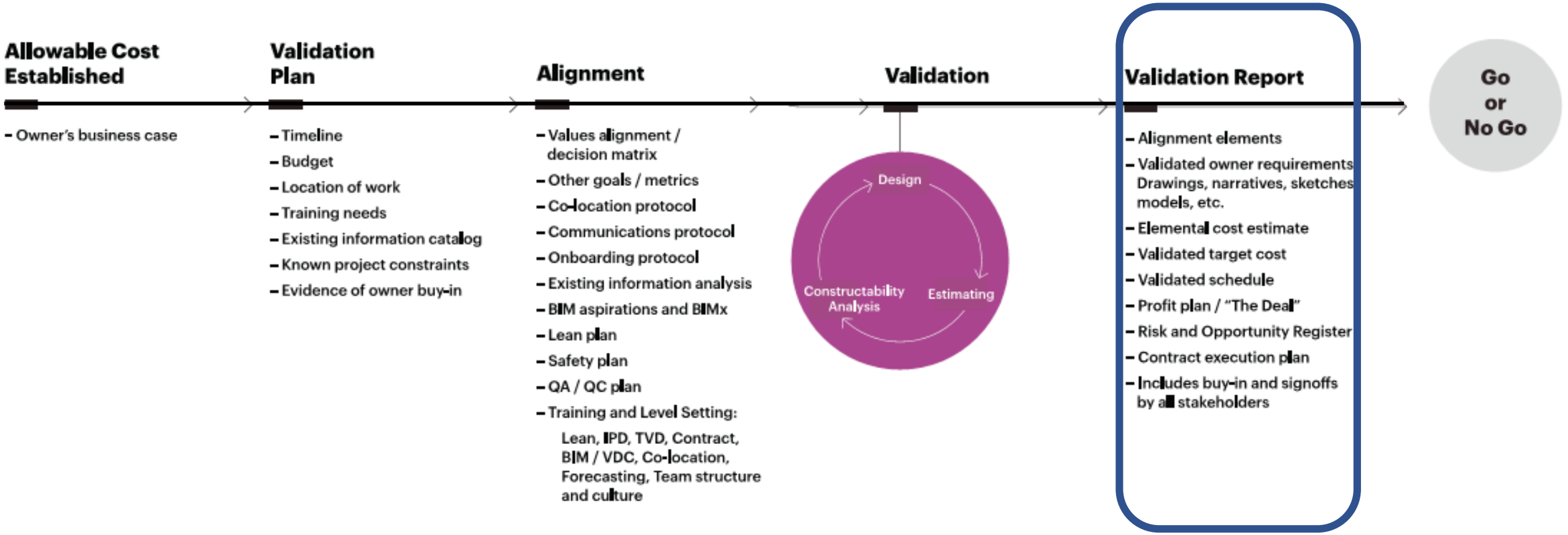
ms the decision of the mechanical system to be used for Natomas and
e MOBs. Each building will be 3 stories in height and roughly 100,000
BGSF.

55 hours / week
UC/ Imaging / Lab: 7am-7pm, 7 days a week
90,000 sf
275 tons
3 BTU heating
Plenum return

Mechanical system that is energy efficient, has consistent temperature, and lower operational costs for lifetime of project.

alysis

	Rooftop AHU w/ VAV hydronic reheat & DX. Boiler/Air Handler on roof (same system).		Rooftop AHU w/ Single Duct VAV Evap condensing with Hydronic Reheat. Boiler/Air Handler on roof.		Water sourced heat pumps w/ single hydronic loop, boiler, and cooling tower. Separate OSA system. Boiler and cooling tower on roof. Pumps in building.		Ground source water heat pump. Separate OSA system. Pumps in building.	
NTROL, more is better erature to occupant desire erature to hours of operation	Better pressure control & temp sensitivity Zone size: 0 - 2,000 sf. Easily altered systems for future tenant improvement.	4	Better pressure control & temp sensitivity. Zone size: 0 - 2,000 sf. Easily altered systems for future tenant improvement.	4	Larger temperature swings, less thermal controllability, small zone size range (300-2,000 sf). Possible heat pump change for tenant improvement.	1	Larger temperature swings, less thermal controllability, small zone size range (300-2,000 sf). Possible heat pump change for tenant	1
E, less need better anned ption -annual cost	Filter cleaning (2 banks on roof) $56,866 annually	4	Filter cleaning (2 banks on roof) 68,566 annually. Water treatment required.	3	Filter cleaning (at each heat pump above ceilings 100+) 68,747. annually. Access required through T-Bar. Water treatment required.	1	Filter cleaning (at each heat pump above ceilings 100+) 60,305 annually. Access required through T-bar.	2
less is better , electricity ($/KWH), water	$191,858 electric, $7,109 gas, $5,322,957 LCC (102%)	1	$180,746 electric, $7,109 gas, $5,197,183 LCC	2	$122,274 electric, $1,951 gas, $4,459,614 LCC	4	$151, 188 electric, $0 gas, $4,904,450 LCC	3
UPANCY, more flexible better oning of shelled space ert shelled space to occupancy	Not install VAV until later for shell space, extend ducts and hydronic lines	0	Not install VAV until later for shell space, extend ducts and hydronic lines	0	Not install heat pump until later for shell space; extend hydronic, electrical, ductus, and fire alarm	0	Not install heat pump until later for shell space; extend hydronic, electrical, outside air ducts, and fire alarm	0
LIARITY, more is better rk with other buildings d of engineers	Mechanical system exists within SVMF, hired vendor will be responsible for service.	0	Mechanical system exists within SVMF, hired vendor will be responsible for service.	0	New system, but hired vendor will be familiar with system and responsible for service.	0	New system, but hired vendor will be familiar with system and responsible for service.	0
NEEDS, less is better building area or rooms ted outside building on site	Second floor shaft: SR = 36 sq. ft. RA = 36 sq. ft. EA= 4.0 sq. ft. Fire Pump Room 8' x 10' Booster Pump Room 8' x 8' Water Heater Room 6' x 6' Third floor shaft: SA = 42.5 sq. ft. RA = 42.5 sq. ft. EA = 4.0 sq. ft. Hydronic = 4.0 sq. ft. 86,000 - 90 CPM 215 tons 2.8 million Btu/h heat	0	Second floor shaft SA = 36 sq. ft. RA = 36 sq. ft. EA = 4.0 sq. ft. Fire Sup Room = 8' x 10' 86,000 - 90,000 cfm SA 215 tons 2.8 million Btu/heat Booster Pump Room = 8' x 8' Water Heater Room = 6' x 6" Third floor shaft: SA = 42 sq. ft. RA = 42.5 sq. ft. EA = 4.0 sq. ft. Hydronic = 4 sq. ft.	0	Marginally smaller vertical shaft (30 sf savings). Second floor shaft: OA - 20 sq. ft. EA = 4.0 sq. ft. Fire Pump Room = 8'x10' Booster Pump Room = 8' x 8' Water heater room = 6' x 6' Pump Room = 8' x 8' Hydronic 4.0 sq. ft. Third floor shaft: OA = 25 sq. ft. EA = 4.0 sq. ft. 215 tons 2.8 million Btu/h heat	0	Marginally smaller vertical shaft (30 sf savings) Second floor shaft: OA = 20 sq. ft. EA = 4.0 sq. ft. Fire Pump Room = 8' x 10' Booster Pump Room = 8' x 8' Water Heater Room = 6' x 6' Pump Room = 8' x 8' Third floor shaft: OA = 25 sq. ft. EA = 6.0 sq. ft. Hydronic = 4.0 sq. ft. 215 tons 2.8 million Btu/h heat	0
ss is better ng cost for Year 1	$2,340,000 ($26 / sf) (Base system) $4,000 - $5,000 per VAV		$2,565,000 ($28.5 / sf) 109% of base system. $4,000 - $5,000 per VAV		$3,150,000 ($35 / sf) 134% of base system $8,000 - $10,000 per heat pump		$3,510,000 ($39 / sf) 150% of base system.	
- Points, more is better		9		9		6		6



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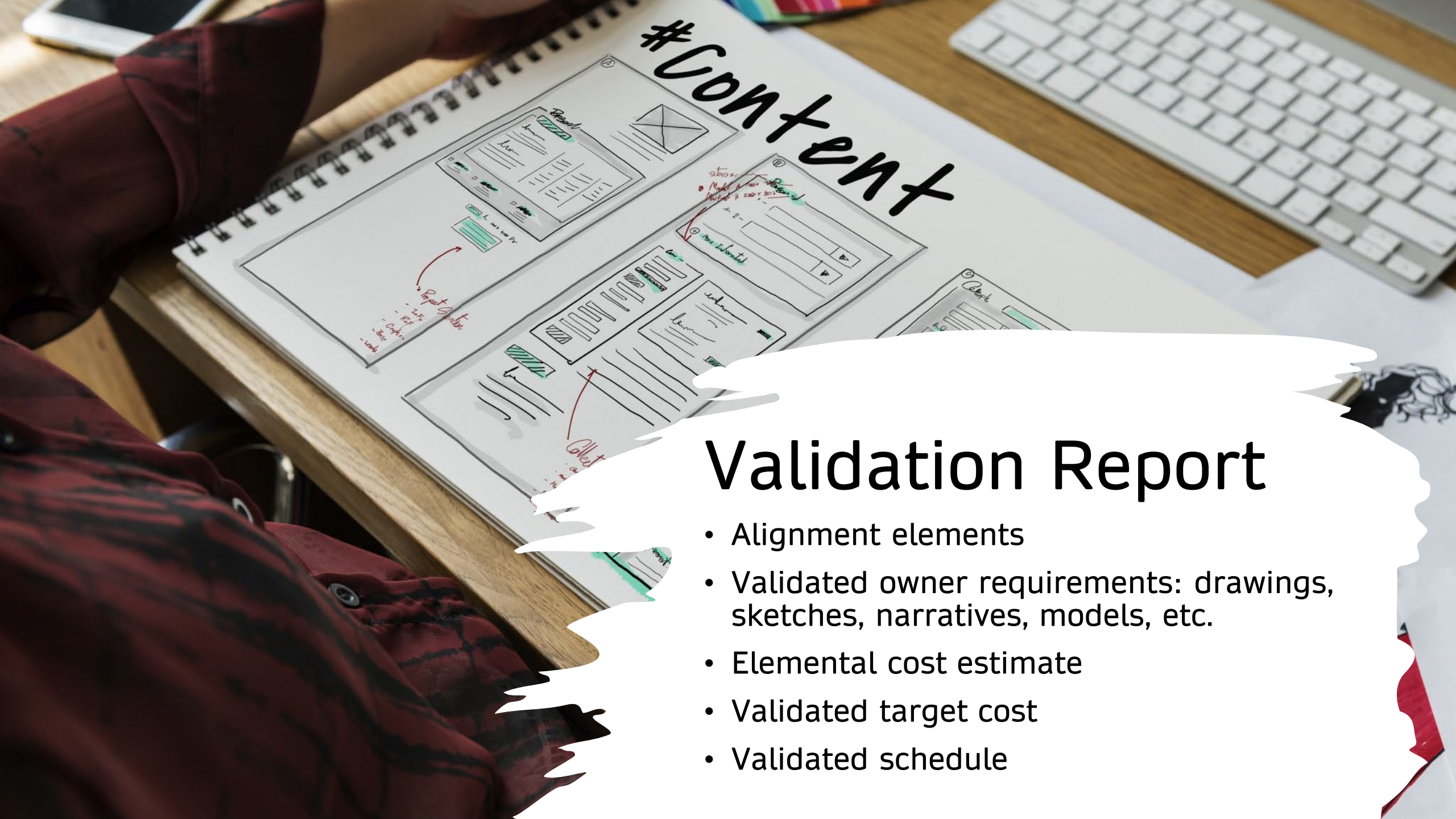


Validation Report

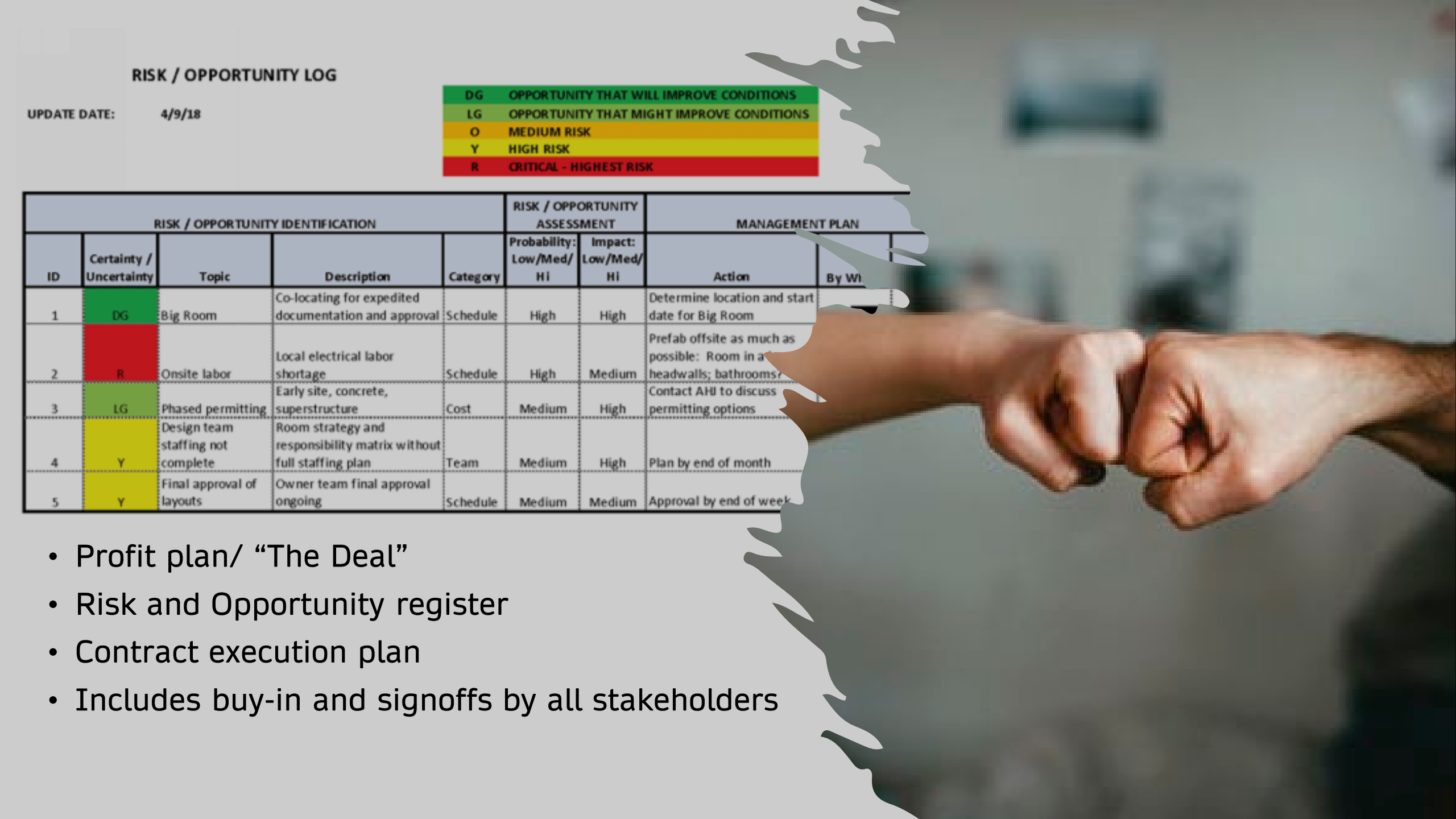
- Alignment elements
- Validated owner requirements: drawings, sketches, narratives, models, etc.
- Elemental cost estimate
- Validated target cost
- Validated schedule

RISK / OPPORTUNITY LOG

UPDATE DATE: 4/9/18

DG	OPPORTUNITY THAT WILL IMPROVE CONDITIONS
LG	OPPORTUNITY THAT MIGHT IMPROVE CONDITIONS
O	MEDIUM RISK
Y	HIGH RISK
R	CRITICAL - HIGHEST RISK

RISK / OPPORTUNITY IDENTIFICATION					RISK / OPPORTUNITY ASSESSMENT		MANAGEMENT PLAN	
ID	Certainty / Uncertainty	Topic	Description	Category	Probability: Low/Med/ Hi	Impact: Low/Med/ Hi	Action	By Wh
1	DG	Big Room	Co-locating for expedited documentation and approval	Schedule	High	High	Determine location and start date for Big Room	
2	R	Onsite labor	Local electrical labor shortage	Schedule	High	Medium	Prefab offsite as much as possible: Room in a headwalls; bathrooms	
3	LG	Phased permitting	Early site, concrete, superstructure	Cost	Medium	High	Contact AHJ to discuss permitting options	
4	Y	Design team staffing not complete	Room strategy and responsibility matrix without full staffing plan	Team	Medium	High	Plan by end of month	
5	Y	Final approval of layouts	Owner team final approval ongoing	Schedule	Medium	Medium	Approval by end of week	



- Profit plan/ “The Deal”
- Risk and Opportunity register
- Contract execution plan
- Includes buy-in and signoffs by all stakeholders

A3

sheet

A3 Title	Champion	Collaborators	Date
Exterior Envelope	Tracy Gordon (revision)	Brent Forslin, Bill Whipple, Kathy Sherry, Beth Young, Dana LeSher, Kristin Maxim, Tracy Gordon, Greg Branch, Creed Kampa, Emily Newcomb, Jessica Mills (revision)	9/13/2016

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Section 1 - Background

This A3 informs the decision of 60% or more of the exterior envelope to be used for Natomas MOB. This building will be 2 stories in height and roughly 78,000 BGSF. The building will be operated by SVMF and maintained by CBRE. Existing SVMF buildings have experienced exterior water intrusion, lack of thermal control, and isolated maintenance problems. All R values are equivalent at approximately R-19.

Section 2 - Problem Statement

Determine the best value exterior envelope assembly that reflects "the modesty of a not-for-profit organization" for a medical office building suitable for the climate of the California Central Valley. The selected system should incorporate maintenance costs for 25 years of continuous operations. Each exterior envelope system shall assume an effective minimum thermal insulation value of R-19. The exterior system is part of the target construction cost of $150 / SF for the construction of the building core and shell.

Section 3 - Future State

Exterior building assembly and finish that has:
- low maintenance needs and costs
- no water intrusion problems over life of building
- insulation value to enhance interior thermal control
- pleasing aesthetic appearance that reflects not-for-profit modesty

Section 4 - Analysis

WALL TYPE	WALL TYPE AV (TILT - UP)		WALL TYPE ES(EIFS) ENHANCED		WALL TYPE US (PLASTER STUCCO)		WALL TYPE AD(C-CAPP)	
								
	8" concrete panel, 0.5" air gap, 2.5" metal stud, interior drywall for assembly depth 11"		1.5" finished continuous insulation panel, 6" metal stud, interior drywall for assembly depth of 8"		0.75" cement plaster, 1.5" continuous insulation, 6" metal stud, exterior drywall for assembly depth of 9"		2" prefinished concrete, 6.25" tube steel frame, 2" spay foam, 2.5" metal stud, interior drywall for assembly depth of 14"	
PERFORMANCE - Moisture Control, more is better	Elastomeric paint and sealed caulk joints. No sheet membrane. Interior spay foam insulation provides limited moisture control.	2	Sealed caulk joints and sheet membrane installation.	3	Sealed caulk joints and sheet membrane installation.	3	Sealed caulk joints. Factory installed interior spray foam insulation provides limited moisture control.	2
PERFORMANCE - Durability, more is better	Can sustain heavy impact	4	Very susceptible to penetration from environmental factors. Ease of repair.	1	Cracking from thermal movement. Ease of repair.	2	Durable wear surface. Difficult to repair.	3
PERFORMANCE - Ease of Maintenance, higher score better	Elastomeric paint needs to be replaced every 5 years. Recaulk every 15-20 years. Sealant joints continuous at vertical panels and openings	2	Repaint every 20 years. Recaulk every 15-20 years. Sealant joints around panels and openings.	3	Repaint every 20 years. Recaulk every 15-20 years. Sealant joints around panels and openings.	3	Painting not required. Recaulk every 15-20 years. Sealant joints around panels and openings.	4
EXPERIENCE - Trade partner experience and availability, more is better	High availability of qualified trade partners	4	Limited availability of qualified trade partners.	2	High availability of qualified trade partners	4	Proprietary system with Clark Pacific	2
DESIGN - Building Layout Flexibility, floor plan flexibility, more is better	Tilt-up panel is lateral system which limits exterior wall options. Vertical continuity.	2	Inside and outside corner details. Exterior skin can follow horizontal and vertical building geometry efficiently.	4	Inside and outside corner details. Exterior skin can follow horizontal and vertical building geometry efficiently.	4	Regularity would be desired to follow typical panel sizes.	3
DESIGN - Opportunities, flexibility of architectural features	Monolithic and panelized. Can add texture, reveals and foam.	2	Ability to sculpt exterior profile. More inconsistencies with manual application.	4	Ability to sculpt exterior profile, limited by framing attachment. More inconsistencies with manual application	3	Monolithic and panelized. Can add texture, and reveals. Predetermined fabrication sizes.	2
SCHEDULE - Faster sealing in of building, faster is better	Using casting slabs for 50% of panels. 6-7 months total schedule	3	Field fabricated metal stud exterior, openings, and finish. 7-8 months total schedule	2	Field fabricated metal stud exterior, openings, and finish. 7-8 months total schedule.	2	Fabrication of site and erection in sequence. Potential savings of 1 month in total construction schedule with an estimated savings of $77,000 per month. 5-6 months total schedule.	4
UNIQUE COST FACTORS - Savings in other building systems reflected in cost/sf below, more is better	Tilt-up requires a heavier foundation. Removal of perimeter columns and lateral steel system is marginal savings. Total system impact +$2.00 / SF							
TOTAL SCORE - Points, more is better		19		19		21		20
COST / SF - Exterior skin system area		40.23 $		47.03 $		44.86 $		77.25 $
VALUE - Cost per SF per point total		2.12		2.48		2.14		3.86

Section 5 - Proposal

Tilt up and metal studs with stucco have a very similar Based on the similarity of values and the previous work done, the Natomas project team will design 60% of the building exterior with cement plaster, using the assembly noted above. The glazed portion of the building will be storefront construction. The glazed and accent finish of building not exceeding 40% of the total building exterior area.

Section 6 - Follow up

Project team will contunue to study schedule, budget, and value inacts of metal studs and stucco vs tilt-up system.

A3

sheet

A3 Title	Champion	Collaborators	Date
Structural Systems	Tracy Gordon (revision)	Brent Forslin, Beth Young, Kathy Sherry, Tracy Gordon, Dana LeSher, Julia S, Daniel Cervantes, Greg Brunch, Soun Min Kwon	9/13/2016

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Section 1 - Background

This A3 informs the decision of the structoil system to be used for Natomas MOB. The building will be 2 stories in height and roughly 75,000 BGSF.

Section 2 - Problem Statement / Current State

75,000 SF "L" shaped building, 2 story, above grade.
Evaluation of super-structure above the foundation.
Exterior skin assume to be 2" for exterior finish, 6" for stud, and 5/8" for interior gypsum board for all structural systems as a common denominator.

Section 3 - Future State

Structural system that has: efficient/lean building footprint size; ease of future renovations; flexibility in exterior skin options/features;

Section 4 - Analysis

	Option 1 - Tilt-Up		Option 2- Conventional Moment Frame @ Exterior Wall		Option 3 - Braced Frame		Option 4 - ConXTech w/ Interior Moment Columns	
Building Footprint size and thickness of exterior wall assembly, less is better	11"	1	9"	4	9"	4	9"	4
TI flexibility within building footprint and interior openness, more is better	May require interior bracing or shear walls	2	Maximum flexibility	4	May require interior bracing and may be exposed at exterior walls.	1	Maximum flexibility with exception of plumbing at column lines requires more space for interior chases	2
Time Schedule of Construction, less is better	superstructure & skin erection - 10 weeks (shortest overall schedule)	4	superstructure erection - 6 weeks	2	superstructure erection - 6 weeks	2	superstructure erection - 3 weeks	3
Increased exterior skin options / architectural features, more is better	Least opportunity for architectural articulation. Lose cost advantages with adding features	1	No limitations	4	No limitations, however, bracing may be expressed at exterior and interior elevations.	2	No limitations	4
Ability to upgrade to higher performance building for a seismic activity, more is better	Not possible	1	Can be upgraded, could be cost neutral	3	Can be upgraded, with nominal cost increase	2	Can be upgraded, could be cost neutral	3
Conflict with underground utilities, less is better	Exterior grade beams, but less conflict	4	Exterior grade beams, but less conflict	4	May require interior grade beams, some conflict	2	All interior grade beams, conflict	1
Initial Cost of Superstructure, less is better	$16/sf		$22/sf		$24/sf		$20/sf	
TOTAL SCORE - Points, more is better		13		21		13		17
COST / SF		16 $		22 $		24 $		20 $
VALUE - Cost per SF per point total		1.23		1.05		1.85		1.18

Section 5 - Proposal

Based on value, the Natomas and West Roseville project teams will design either conventionalmoment frame. (no change to recommendation after updates to pricing & building scope)

Section 6 - Follow up

A3

sheet

A3 Title	Champion	Collaborators	Date
Mechanical Systems Study	Brian Provencal	Brian Provencal, David Ainsworth, Alan Layman, Crain Topp, Beth Young, Tracy Gordon, Greg Brance Branch, Kathy Sherry	8/4/2016

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Section 1 - Background

This A3 informs the decision of the mechanical system to be used for Natomas and West Roseville MOBs. Each building will be 3 stories in height and roughly 100,000 BGSF.

Section 2 - Problem Statement / Current State

25 year life cycle cost
55 hours / week
UC/ Imaging / Lab: 7am-7pm, 7 days a week
90,000 sf
275 tons
3 BTU heating
Plenum return

Section 3 - Future State

Mechanical system that is energy efficient, has consistent temperature, and lower operational costs for lifetime of project.

Section 4 - Analysis

	Rooftop AHU w/ VAV hydronic reheat & DX. Boiler/Air Handler on roof (same system).		Rooftop AHU w/ Single Duct VAV Evap condensing with Hydronic Reheat. Boiler/Air Handler on roof.		Water sourced heat pumps w/ single hydronic loop, boiler, and cooling tower. Separate OSA system. Boiler and cooling tower on roof. Pumps in building.		Ground source water heat pump. Separate OSA system. Pumps in building.	
THERMAL CONTROL, more is better - adjust temperature to occupant desire - adjust temperature to hours of operation	Better pressure control & temp sensitivity Zone size: 0 - 2,000 sf. Easily altered systems for future tenant improvement.	4	Better pressure control & temp sensitivity. Zone size: 0 - 2,000 sf. Easily altered systems for future tenant improvement.	4	Larger temperature swings, less thermal controllability, small zone size range (300-2,000 sf). Possible heat pump change for tenant improvement.	1	Larger temperature swings, less thermal controllability, small zone size range (300-2,000 sf). Possible heat pump change for tenant	1
MAINTENANCE, less need better - frequency planned - level of disruption -annual cost	Filter cleaning (2 banks on roof) $56,866 annually	4	Filter cleaning (2 banks on roof) 68,566 annually. Water treatment required.	3	Filter cleaning (at each heat pump above ceilings 100+) 68,747. annually. Access required through T-Bar. Water treatment required.	1	Filter cleaning (at each heat pump above ceilings 100+) 60,305 annually. Access required through T-bar.	2
ENERGY USE, less is better - gas ($/therm), electricity ($/KWH), water ($/gal)	$191,858 electric, $7,109 gas, $5,322,957 LCC (102%)	1	$180,746 electric, $7,109 gas, $5,197,183 LCC	2	$122,274 electric, $1,951 gas, $4,459,614 LCC	4	$151, 188 electric, $0 gas, $4,904,450 LCC	3
PHASED OCCUPANCY, more flexible better - limit conditioning of shelled space - quickly convert shelled space to occupancy	Not install VAV until later for shell space, extend ducts and hydronic lines	0	Not install VAV until later for shell space, extend ducts and hydronic lines	0	Not install heat pump until later for shell space; extend hydronic, electrical, ductus, and fire alarm	0	Not install heat pump until later for shell space; extend hydronic, electrical, outside air ducts, and fire alarm	0
SYSTEM FAMILIARITY, more is better - standard work with other buildings - training need of engineers	Mechanical system exists within SVMF, hired vendor will be responsible for service.	0	Mechanical system exists within SVMF, hired vendor will be responsible for service.	0	New system, but hired vendor will be familiar with system and responsible for service.	0	New system, but hired vendor will be familiar with system and responsible for service.	0
HVAC SPACE NEEDS, less is better - conditioned building area or rooms - devices located outside building on site	Second floor shaft: SR = 36 sq. ft. RA = 36 sq. ft. EA= 4.0 sq. ft. Fire Pump Room 8' x 10' Booster Pump Room 8' x 8' Water Heater Room 6' x 6' Third floor shaft: SA = 42.5 sq. ft. RA = 42.5 sq. ft. EA = 4.0 sq. ft. Hydronic = 4.0 sq. ft. 86,000 - 90 CPM 215 tons 2.8 million Btu/h heat	0	Second floor shaft: SA = 36 sq. ft. RA = 36 sq. ft. EA = 4.0 sq. ft. Fire Sup Room = 8' x 10' 86,000 - 90,000 cfm SA 215 tons 2.8 million Btu/heat Booster Pump Room = 8' x 8' Water Heater Room = 6' x 6" Third floor shaft: SA = 42 sq. ft. RA = 42.5 sq. ft. EA = 4.0 sq. ft. Hydronic = 4 sq. ft.	0	Marginally smaller vertical shaft (30 sf savings). Second floor shaft: OA - 20 sq. ft. EA = 4.0 sq. ft. Fire Pump Room = 8'x10' Booster Pump Room = 8' x 8' Water heater room = 6' x 6' Pump Room = 8' x 8' Hydronic 4.0 sq. ft. Third floor shaft: OA = 25 sq. ft. EA = 4.0 sq. ft. 215 tons 2.8 million Btu/h heat	0	Marginally smaller vertical shaft (30 sf savings) Second floor shaft: OA = 20 sq. ft. EA = 4.0 sq. ft. Fire Pump Room = 8' x 10' Booster Pump Room = 8' x 8' Water Heater Room = 6' x 6' Pump Room = 8' x 8' Third floor shaft: OA = 25 sq. ft. EA = 6.0 sq. ft. Hydronic = 4.0 sq. ft. 215 tons 2.8 million Btu/h heat	0
Initial cost, less is better - system cost - commissioning cost for Year 1	$2,340,000 ($26 / sf) (Base system) $4,000 - $5,000 per VAV		$2,565,000 ($28.5 / sf) 109% of base system. $4,000 - $5,000 per VAV		$3,150,000 ($35 / sf) 134% of base system $8,000 - $10,000 per heat pump		$3,510,000 ($39 / sf) 150% of base system.	
TOTAL SCORE - Points, more is better		9		9		6		6
COST / SF		26		28.5		35		39
VALUE - Cost per SF per point total		2.89		3.17		5.83		6.50

Section 5 - Proposal

Based on value, the Natomas and West Roseville project teams will design a rooftop AHU with a VAV system. The boiler/air handler will be on the roof. VAV with hydronic reheat and DX has a higher energy use while VAV with Evap. Condensing and hydronic reheat has a higher maintenance cost. No team value in studying this further during validation.

Section 6 - Follow up

Team will further study energy efficiency and maintenance implications of modified VAV systems as project progresses.

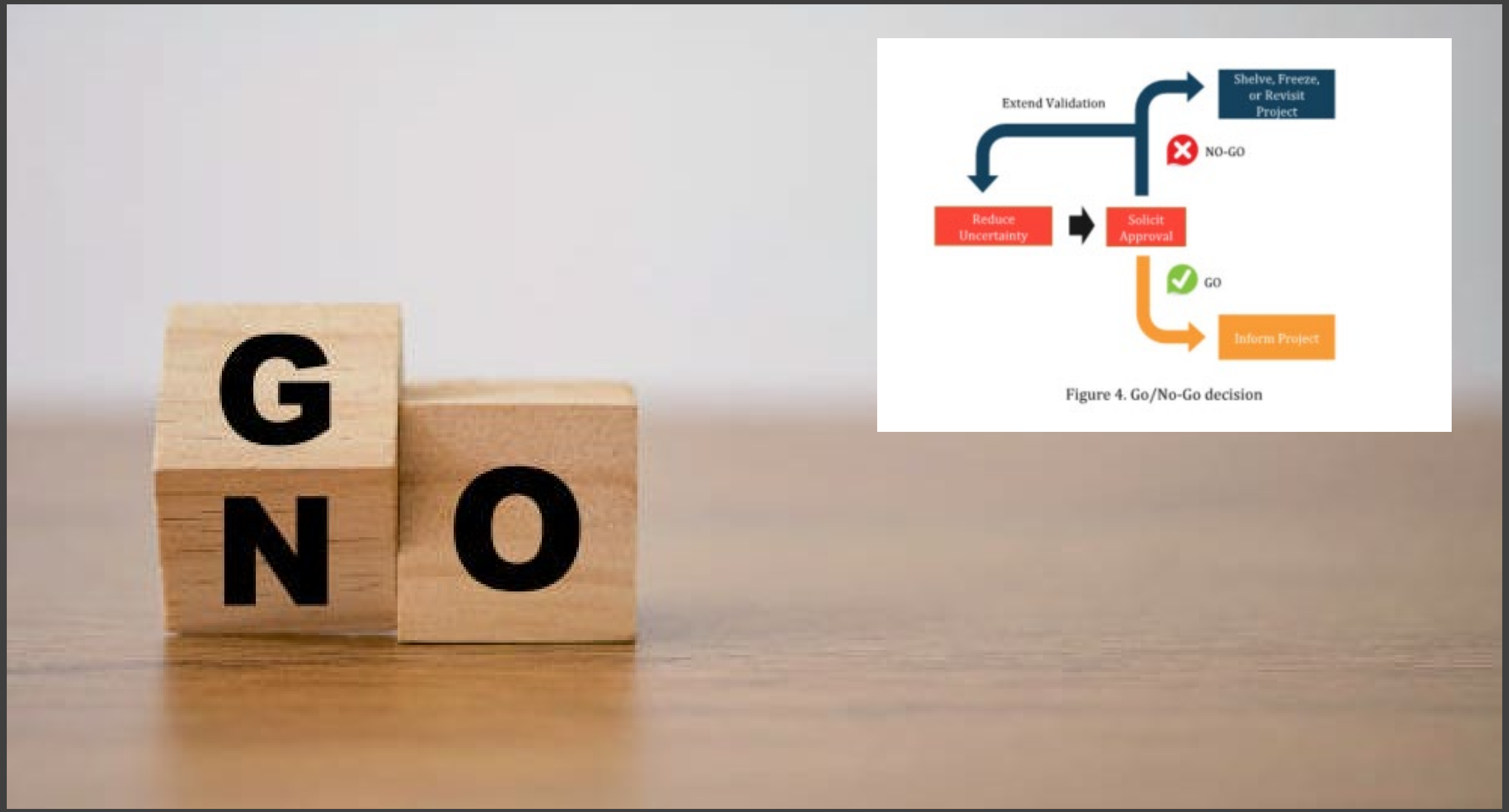
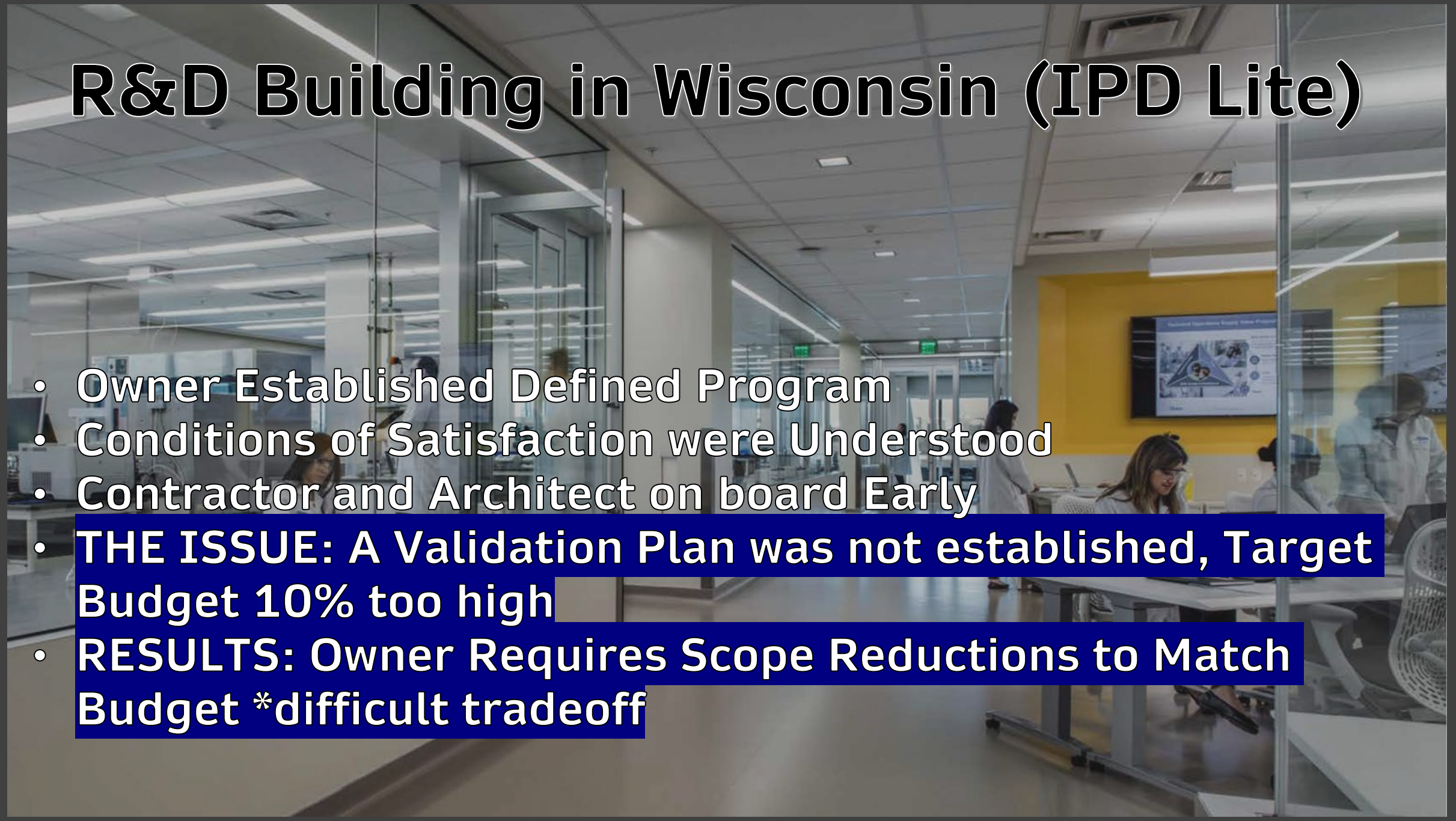


Figure 4. Go/No-Go decision

R&D Building in Wisconsin (IPD Lite)

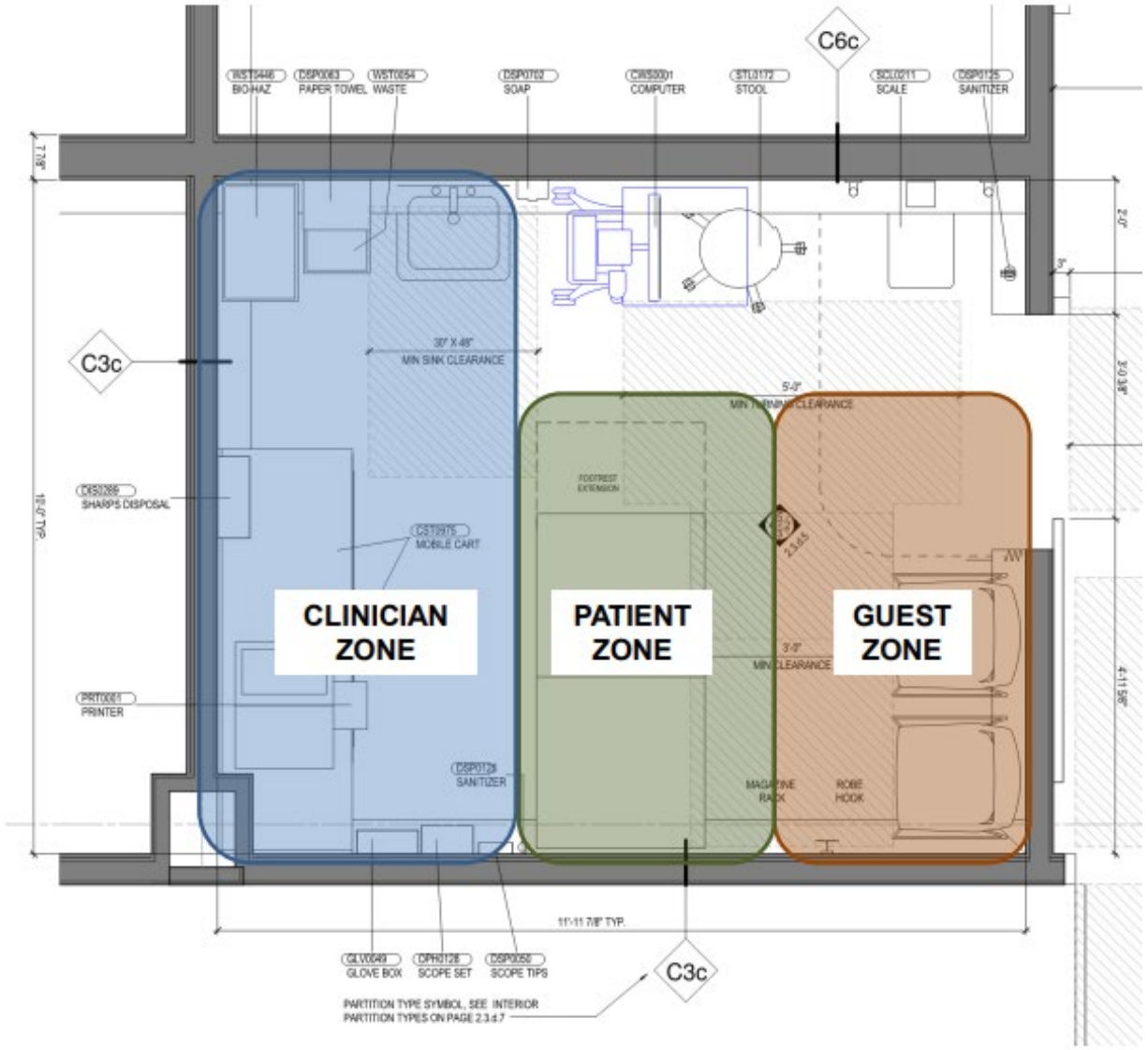


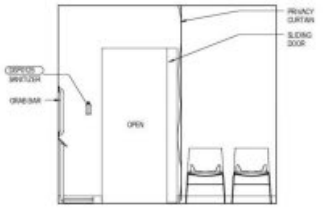
- Owner Established Defined Program
- Conditions of Satisfaction were Understood
- Contractor and Architect on board Early
- THE ISSUE: A Validation Plan was not established, Target Budget 10% too high
- RESULTS: Owner Requires Scope Reductions to Match Budget *difficult tradeoff

Office Building in Wisconsin (IPD)

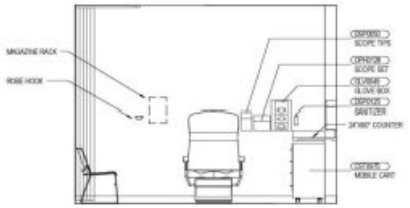
- Developer Provides Budget for Renovation at $30M
- Owner Hires Lean Coach
- Conditions of Satisfaction Established
- Owner Selects IPD contract
- Architect and General Contractor Hired For Validation Process
- THE ISSUE: Validation Process completes with a Target Value of $60M
- THE SOLUTION: Owner 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

Examples

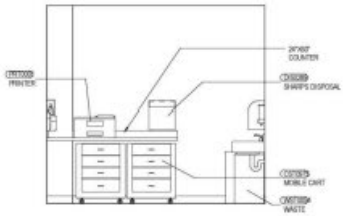

C6c
WST0446
BIOHAZ
DSP0063
PAPER TOWEL
WST0054
WASTE
DSPV702
SOAP
CWS3001
COMPUTER
STL0172
STOOL
SCL02211
SCALE
DSP0125
SANITIZER
C3c
30" X 48"
MIN SINK CLEARANCE
5'-0"
MIN TURNING CLEARANCE
FOOTREST
EXTENSION
DES0289
SHARPS DISPOSAL
CST0975
MOBILE CART
CLINICIAN
ZONE
PATIENT
ZONE
GUEST
ZONE
3'-0"
MIN CLEARANCE
PRT0001
PRINTER
DSP0123
SANITIZER
MAGAZINE
RACK
ROBE
HOOK
11'-11 7/8" TYP.
GLV0049
GLOVE BOX
DPH0126
SCOPE SET
DSP0050
SCOPE TIPS
C3c
PARTITION TYPE SYMBOL, SEE INTERIOR
PARTITION TYPES ON PAGE 2.3.d.7



2 TYPICAL EXAM ROOM - EAST ELEVATION
NTS



3 TYPICAL EXAM ROOM - SOUTH ELEVATION
NTS



4 TYPICAL EXAM ROOM - WEST ELEVATION
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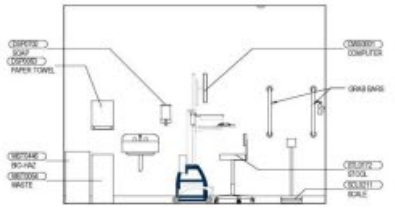
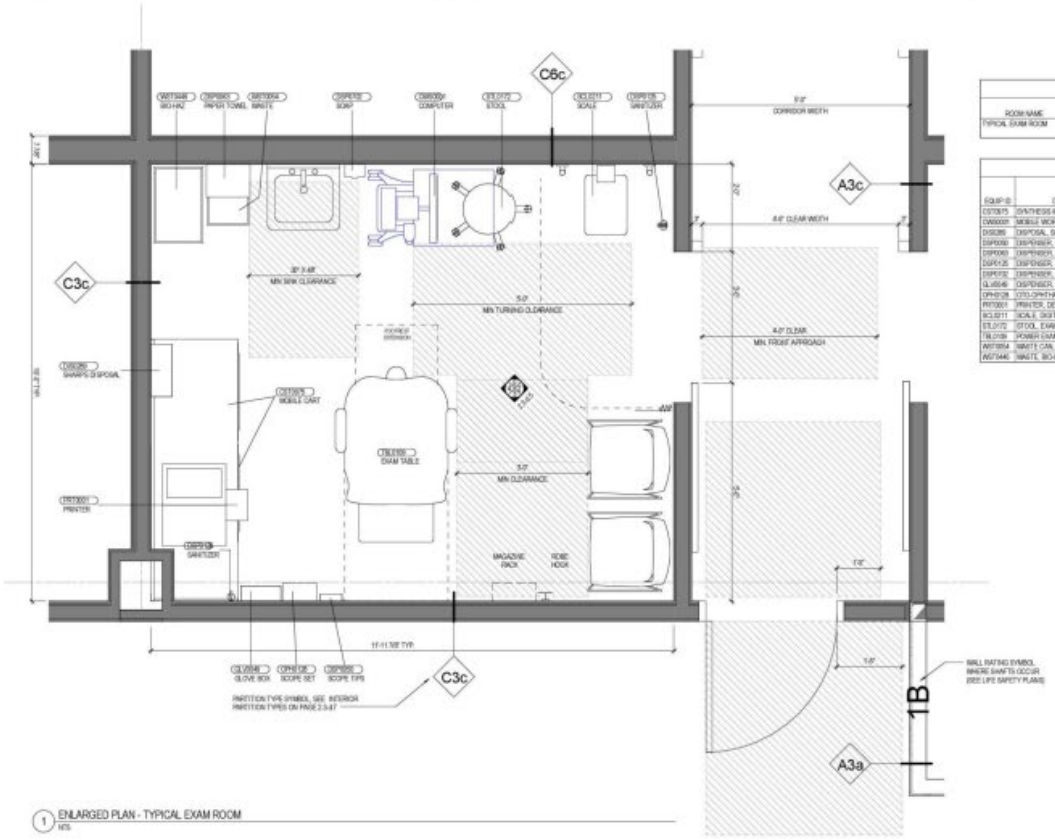


5 TYPICAL EXAM ROOM - NORTH ELEVATION
NTS



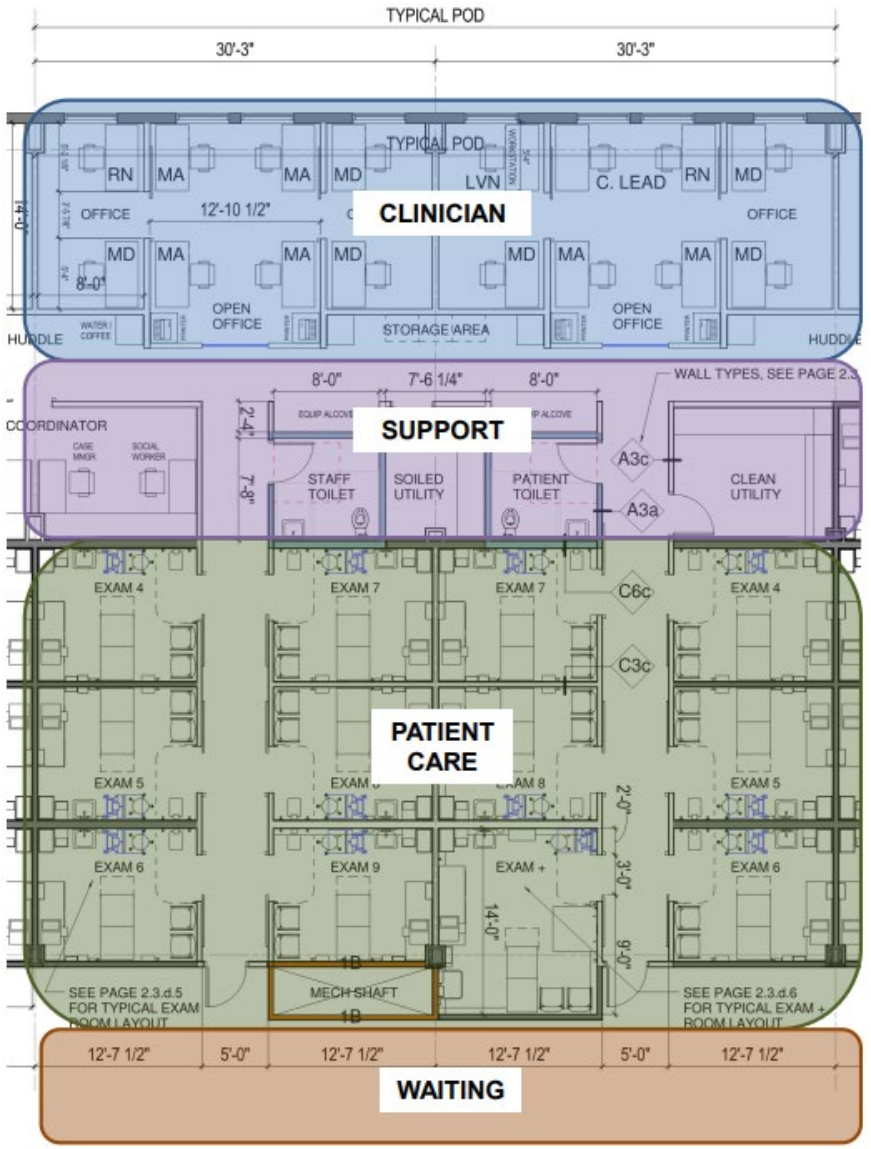
1 ENLARGED PLAN - TYPICAL EXAM ROOM
NTS

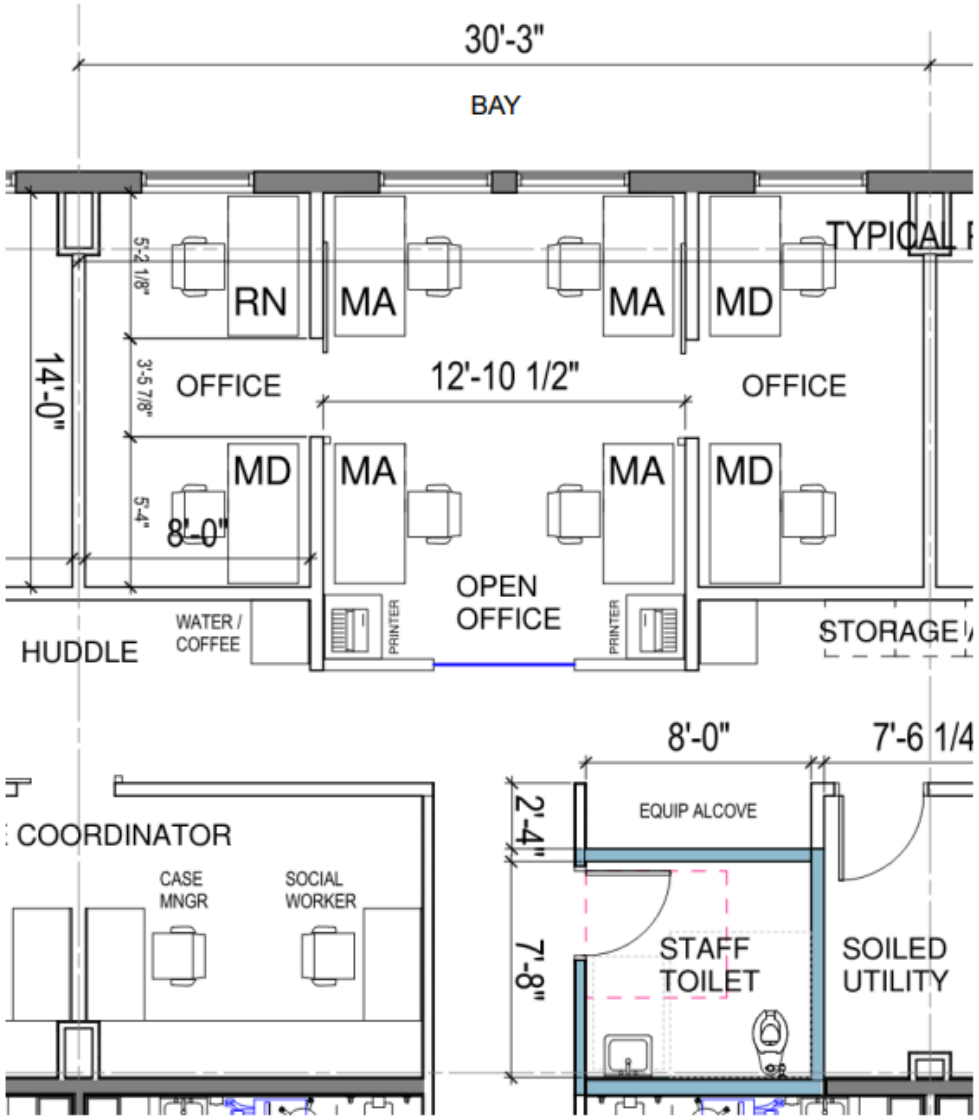
FINISH SCHEDULE - TYPICAL EXAM ROOM

ROOM NAME	AREA	FLOOR		WALLS				CEILING		CASEWORK		NOTES
		FINISH	BASE	NORTH	EAST	SOUTH	WEST	MATL	FINISH	CABINET	COUNTERTOP	
TYPICAL EXAM ROOM	178 SF	Resilient Flooring, Plank or Tile	Rubber Base	Painted Level 4 Finish	Painted Level 4 Finish	Painted Level 4 Finish	Painted Level 4 Finish	2'x4' ACT	White	Mobile Cabinet	Plastic Laminate	Aurora Barn Door - Stain Grade Wood, 2'x4' Direct/Indirect Lighting, Polyurethane Seat/Back Side Chair

EQUIPMENT SCHEDULE - TYPICAL EXAM ROOM

EQUIP ID	DESCRIPTION	QTY	MANUF	MODEL	L	D	H	WT	ELECTRICAL: VOLT	PLUG-IN OR HARDWIRED	NEMA CONFIG	EMERGENCY POWER	DATA	COMMENTS
CST0075	SYNTHESIS MOBILE CABINET	2	MIDMARK CORP	M314.000.KDN	27"	15"	39"		65	-	-	-	-	
DMS0001	MOBILE WORKSTATION	1	-	-	-	-	-		120	PLUG-IN	-	-	YES	
DSC085	DISPOSAL, SHARPS	1	STERICYCLE	C-32RES-S303	14 1/2"	5 3/4"	15 1/4"		-	-	-	-	-	
DSP0050	DISPENSER, OTOSCOPE TIPS	1	WELCH ALLYN, INC.	52408	9 1/4"	5"	9 1/4"		-	-	-	-	-	
DSP0060	DISPENSER, PAPER TOWEL	1	GEORGIA PACIFIC	56628	11 3/4"	4 1/2"	15 1/2"		-	-	-	-	-	
DSP0125	DISPENSER, HAND SANITIZER	3	ECOLAB IN. AMERICA	9262-2357	5"	3"	5"		-	-	-	-	-	
DSP0130	DISPENSER, SOAP WALL MTD	1	ECOLAB IN. AMERICA	9262.2115	5 1/2"	3 3/4"	10 3/4"		-	-	-	-	-	
GLV0040	DISPENSER, GLOVE TRIPLE	1	MARKET LAB INC.	ML7333	10"	4 1/4"	10"		-	-	-	-	-	
OPH0126	OTO/OPHTHALMOSCOPE, BKT	1	WELCH ALLYN, INC.	77419/11713/26020	9 1/4"	5"	9 1/4"		-	-	-	-	-	
PRT0001	PRINTER, DESKTOP	1	TBD	TBD	22 1/2"	17 1/2"	12 1/2"		120	PLUG-IN	-	-	YES	
SCL0211	SCALE, DIGITAL ADULT FLOOR	1	SECA CORP	769-1321-894	11 3/4"	16 1/2"	52 3/4"		-	-	-	-	-	
STL0172	STOOL, EXAM W/ BACKREST	1	MIDMARK CORP	273-001	0"	0"	24"		-	-	-	-	-	
TBL0139	POWER EXAM TABLE	1	MIDMARK CORP	Ritter 233.059	84 1/2"	30"	27"	325	115	PLUG-IN	NEMA 5-15	-	NO	
WST0014	WASTE CAN, SWING TOP	1	RUBBERMAID	FG397125BEIG	11 3/4"	16"	27"		-	-	-	-	-	
WST0446	WASTE, BIO-HAZARD	1	RUBBERMAID	1883507	13 1/2"	21"	28 1/2"		-	-	-	-	-	


TYPICAL POD
30'-3"
30'-3"
CLINICIAN
RN
MA
MA
MD
LVN
C. LEAD
RN
MD
OFFICE
12'-10 1/2"
OFFICE
MD
MA
MA
MD
MD
MA
MA
MD
8'-0"
OPEN OFFICE
STORAGE AREA
OPEN OFFICE
HUDDLE
HUDDLE
SUPPORT
8'-0"
7'-6 1/4"
8'-0"
WALL TYPES, SEE PAGE 2.3
COORDINATOR
STAFF TOILET
SOILED UTILITY
PATIENT TOILET
CLEAN UTILITY
A3c
A3a
PATIENT CARE
EXAM 4
EXAM 7
EXAM 7
EXAM 4
C6c
C3c
EXAM 5
EXAM 5
EXAM 6
EXAM 9
EXAM +
EXAM 6
14'-0"
MECH SHAFT
SEE PAGE 2.3.d.5 FOR TYPICAL EXAM ROOM LAYOUT
SEE PAGE 2.3.d.6 FOR TYPICAL EXAM + ROOM LAYOUT
WAITING
12'-7 1/2"
5'-0"
12'-7 1/2"
12'-7 1/2"
5'-0"
12'-7 1/2"


30'-3"
BAY
TYPICAL
RN
MA
MA
MD
5'-2 1/8"
3'-5 7/8"
14'-0"
OFFICE
12'-10 1/2"
OFFICE
MD
MA
MA
MD
5'-4"
8'-0"
OPEN
OFFICE
WATER /
COFFEE
PRINTER
PRINTER
HUDDLE
STORAGE
8'-0"
7'-6 1/4
COORDINATOR
CASE
MNGR
SOCIAL
WORKER
EQUIP ALCOVE
2'-4"
7'-8"
STAFF
TOILET
SOILED
UTILITY

2.3.m Materials Management

The current SMF medical supplies distribution method is direct to each clinic. Each clinic manages inventory, cost center, turnover, and storage. For larger buildings deliveries are received at a designated "back of house" location in route to clinic drop points. Most vendors deliver direct to clinics, at reception stations, during hours of operation.

For the purpose of this validation the existing standard practice of supplies delivery direct to clinic locations has been planned. Each clinic either has a dedicated or share clean utility room as a store room. PAR levels for most supplies will be kept within the patient care exam or procedure rooms. The frequency of deliveries may vary by department but will be tuned to PAR level storage available in each clinic.

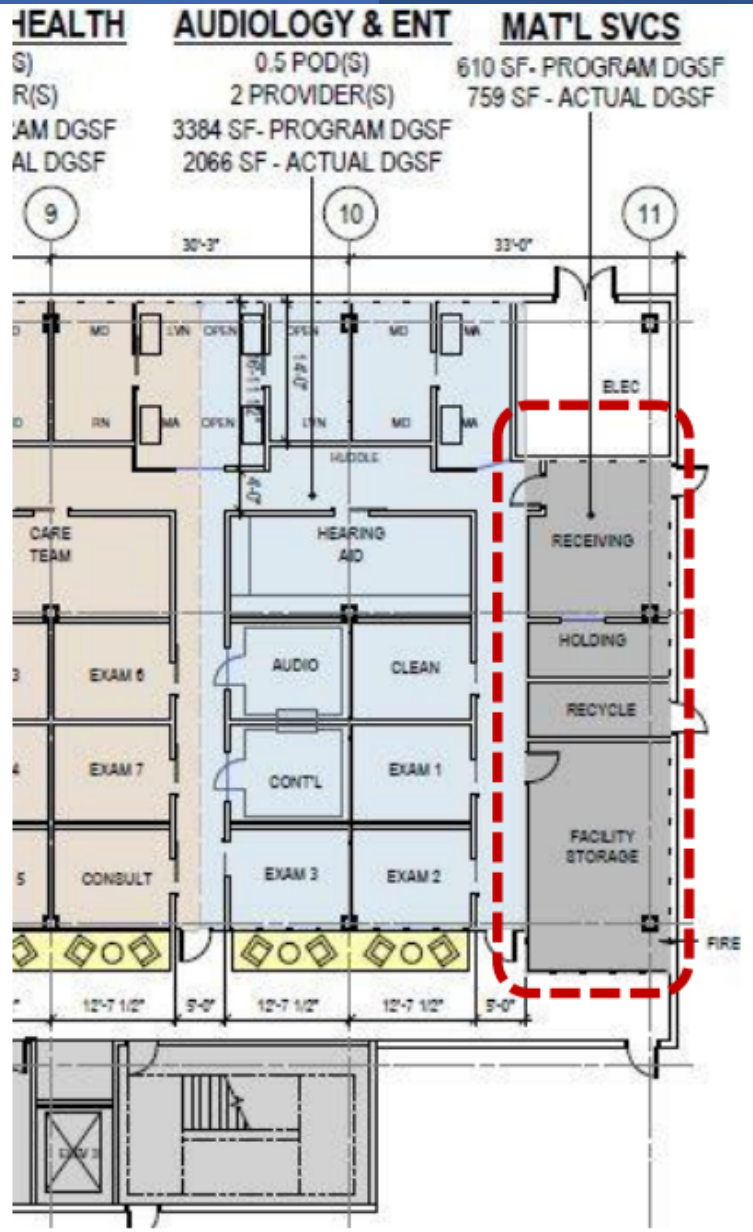
As an alternate, leadership at SMF did explore centralized clean supplies storage on each floor with dedicated staff for distribution. This approach would seek to reduce multiple clean utility rooms and stocking sequences. Current standard work and cost center accounting does not support this centralized approach.

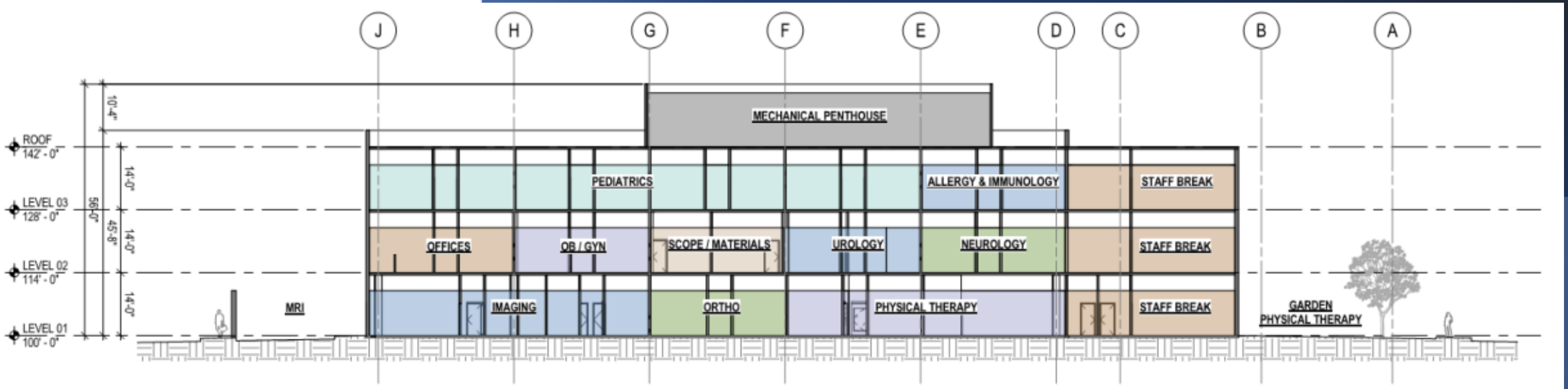
On the first floor, all materials will be received at grade level into a receiving room. From this location vendors or staff will distribute supplies via a service elevators to the location of need. Storage of building maintenance items, recycling, and soiled holding has been collocated with receiving area.

Planned:
- Distributed Clean Utility Rooms in patient care areas
- Distributed Soiled Utility Rooms in patient care areas
- Receiving Room at grade
- Service elevator
- Waste enclosure in parking lot
- Soiled holding room within building
- Recycled holding room within building

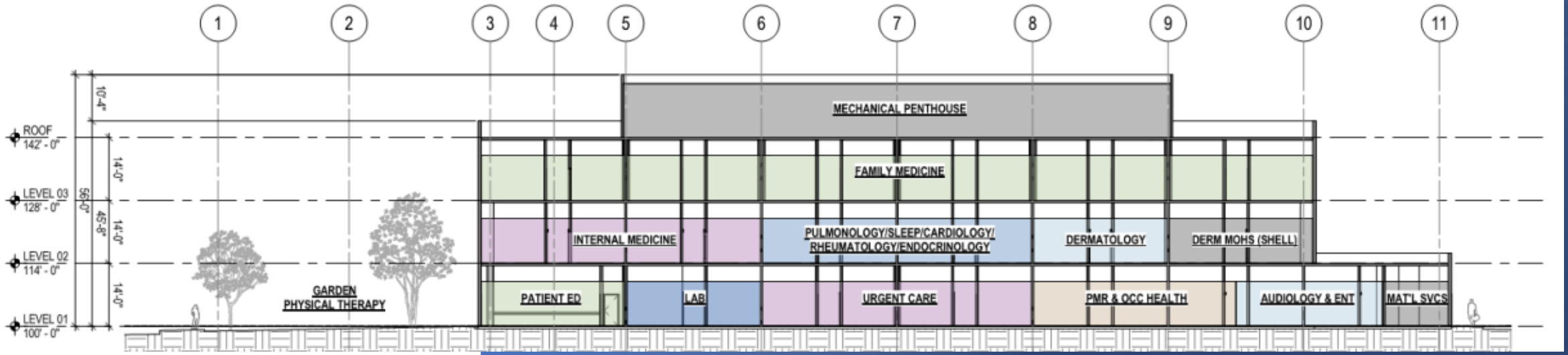
Further Study:
- Delivery and collection frequencies related to size of storage and utility rooms

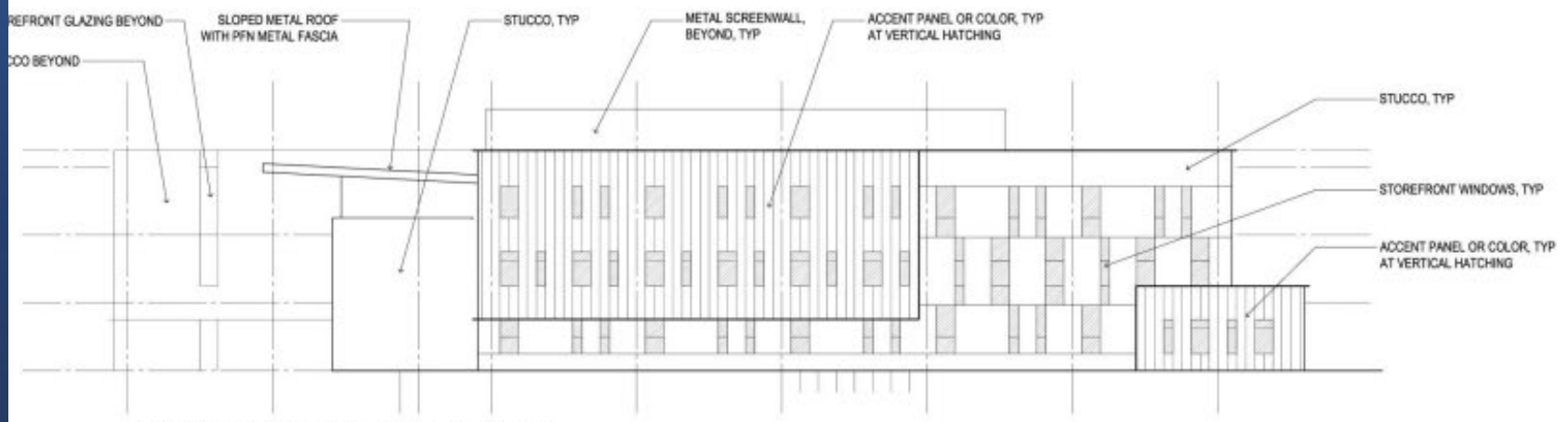
Not Provided:
- Loading dock





1 BUILDING SECTION - WEST WING
NTS

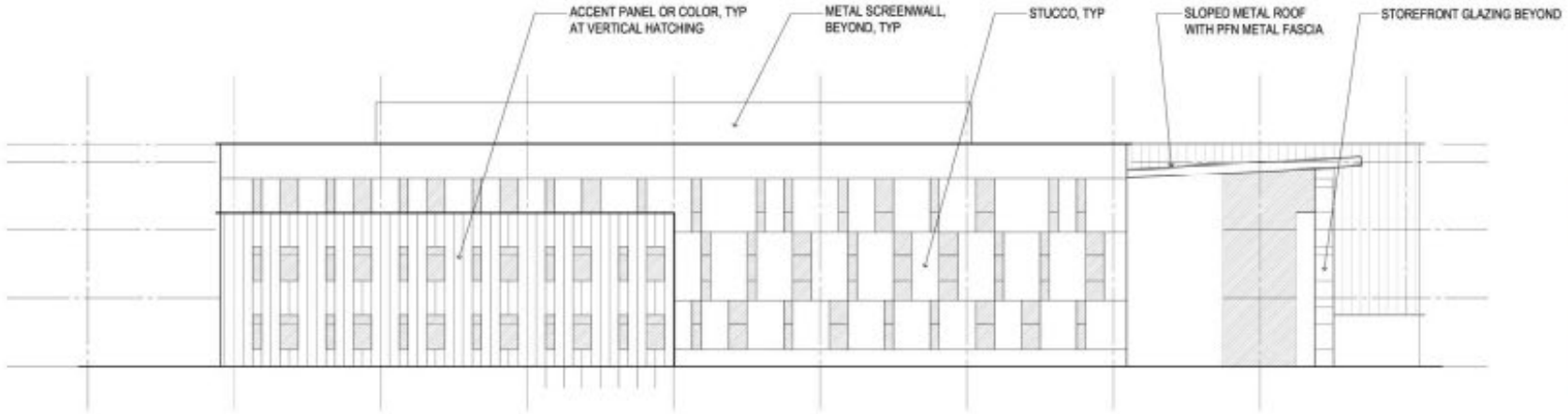




WOODCREEK OAKS ELEVATION (WEST)

Total Wall Surface Area by Façade:

West	11,038 SF
North	11,273 SF
East	11,038 SF
South	11,273 SF
Total	**44,622 SF**



BLUE OAKS ELEVATION (NORTH)

Total Wall Surface Area by Façade:

Stucco Target	**Stucco Provided**
60%	60%
Storefront Target	**Storefront Provided**
30%	27%
Accent Target	**Accent Provided**
10%	13%

TYPICAL ROOM FINISH SCHEDULE - SUTTER WEST ROSEVILLE MOB

	FLOOR		WALLS			CEILING		
ROOM TYPE	MATERIAL	BASE	FINISH 1	FINISH 2	FINISH 3	MATERIAL 1	MATERIAL 2	MATERIAL 3
Break Room	LVT	4" Rubber	Painted, level 4	Custom Graphic Wall Covering Accent		ACT - Tight Fissure	Gyp Soffit	
Clean Utility	Sheet Vinyl	4" Rubber	Painted, level 4			ACT - Tight Fissure		
Coffee	Porcelain Tile w/ 25% Pattern	4.5" Rubber Millwork	Painted, level 4	Glass Tile backsplash		ACT - Tight Fissure	Gyp Soffit	
Conference	Carpet w/ 25% pattern	4" Rubber	Painted, level 4	Accent paint		ACT - Tight Fissure	Gyp Soffit	Decorative pendant light
Consult	Carpet	4" Rubber	Painted, level 4	Accent paint		ACT - Tight Fissure		
Corridors - Public	Carpet w/ 25% pattern	4.5" Rubber Millwork	Painted, level 4	Accent paint		ACT - Tight Fissure	Gyp Soffit, wayfinding	Decorative pendant light, wayfinding
Corridors - Clinic	Carpet w/ 25% pattern	4" Rubber	Painted, level 4	Accent paint		ACT - Tight Fissure		
Dressing Room	Carpet	4" Rubber	Painted, level 4	Accent paint		ACT - Tight Fissure		
Electrical	Sealed Concrete	4" Rubber	Painted, level 4			N/A		
Elevator	Porcelain Tile	N/A	FRL			Wood		
Elevator Equipment	VCT	4" Rubber	Painted, level 4			N/A		
Exam Rooms	LVT	4" Rubber	Painted, level 4	Accent paint	FRL Wainscot - 2 Walls	ACT - Tight Fissure		
IT	Sealed Concrete	4" Rubber	Plywood			N/A		
Lab	Sheet Vinyl w/ 25% Pattern	4" Rubber	Painted, level 4	Plastic Wall Protection Wainscot		ACT - Tight Fissure		
Lab - Draw Rooms	Sheet Vinyl w/ 25% Pattern	4" Rubber	Painted, level 4	FRL Wainscot - 2 walls		ACT - Tight Fissure		
Lobby - Floor 1	Porcelain Tile w/ 25% Pattern	4.5" Rubber Millwork	Painted, level 4	Accent paint	Decorative focal wall	ACT - Tight Fissure	Gyp Soffit	Decorative pendant light
Lobby - Floor 2, 3	LVT & Carpet Pattern	4.5" Rubber Millwork	Painted, level 4	Accent paint	Decorative focal wall	ACT - Tight Fissure	Gyp Soffit	
MA	Carpet w/ 25% Pattern	4" Rubber	Painted, level 4	3 Form wainscot accent wall (3D)		ACT	Gyp Soffit- match floor pattern	Decorative pendant light for wayfinding
MRI	Sheet Vinyl w/ 25% Pattern	4" Rubber	Painted, level 4	Accent paint		ACT- Tight Fissure	Wood Soffit	
MRI Control	Sheet Vinyl	4" Rubber	Painted, level 4			ACT		
MD/Care Coordinator Office	Carpet	4" Rubber	Painted, level 4	Accent paint		ACT		
Patient Toilets	Sheet Vinyl	6" Cove	Painted, level 5 Semi-Gloss	FRL Wainscot - All walls		Gyp Board	Semi-Gloss Paint	
Physical Therapy Gym	Rubber Flooring w/ 25% Pattern	4" Rubber	Painted, level 4 Semi-Gloss	Accent paint Semi-Gloss	Mirrors, Ballet Bar	ACT - Tight Fissure	Gyp Soffit	
Physical Therapy Treatment	Rubber Flooring w/ 25% Pattern	4" Rubber	Painted, level 4 Semi-Gloss	Accent paint Semi-Gloss		ACT - Tight Fissure		
Procedure	Sheet Vinyl	6" Cove	Painted, level 5 Semi-Gloss	Plastic Wall Protection Wainscot		ACT - Tight Fissure		
Public Toilets	Porcelain Tile	Schluter	Porcelain Tile Wainscot, all walls	Painted, level 5 Semi-Gloss		Gyp Board	Semi-Gloss Paint	
Receiving	VCT	4" Rubber	Painted, level 4	Plastic Wall Protection Wainscot		ACT		
Reception	Carpet	4" Rubber	Painted, level 4	People Management	3form/Interlam Design Feature	ACT - Tight Fissure	Wood Soffit	Decorative pendant light
Scope/Sterile Work	Sheet Vinyl	6" Cove	Painted, level 5 Semi-Gloss	Plastic Wall Protection Wainscot		ACT - Ceramaguard		
Shower	Porcelain Tile	Schluter	Porcelain Tile Wainscot, all walls	Painted, level 5 Semi-Gloss		Gyp Board	Semi-Gloss Paint	
Soiled Utility	Sheet Vinyl	6" Cove	Painted, level 4 Semi-Gloss	FRP - full height 4 walls		ACT - Tight Fissure		
Staff Toilets	Sheet Vinyl	6" Cove	Painted, level 5 Semi-Gloss	FRL Wainscot - All walls		Gyp Board	Semi-Gloss Paint	
Stair	Rubber Flooring	4" Rubber	Painted, level 4			Gyp Board		
Storage	VCT	4" Rubber	Painted, level 4			ACT		
Sub-Wait	Carpet	4.5" Rubber Millwork	Painted, level 4	Accent paint		ACT - Tight Fissure	Wood Soffit	
Trash	VCT	4" Rubber	Painted, level 4 Semi-Gloss	Plastic Wall Protection Wainscot		ACT		
Vestibule - Floor 1	Walk-Off Carpet Tile	4.5" Rubber Millwork	Painted, level 4			Wood Ceiling		
Waiting	LVT & Carpet Pattern	4.5" Rubber Millwork	Painted, level 4	Accent paint		ACT - Tight Fissure	Wood Soffit	Decorative pendant light
Work Room	Carpet	4" Rubber	Painted, level 4	Accent paint		ACT		

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.

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.

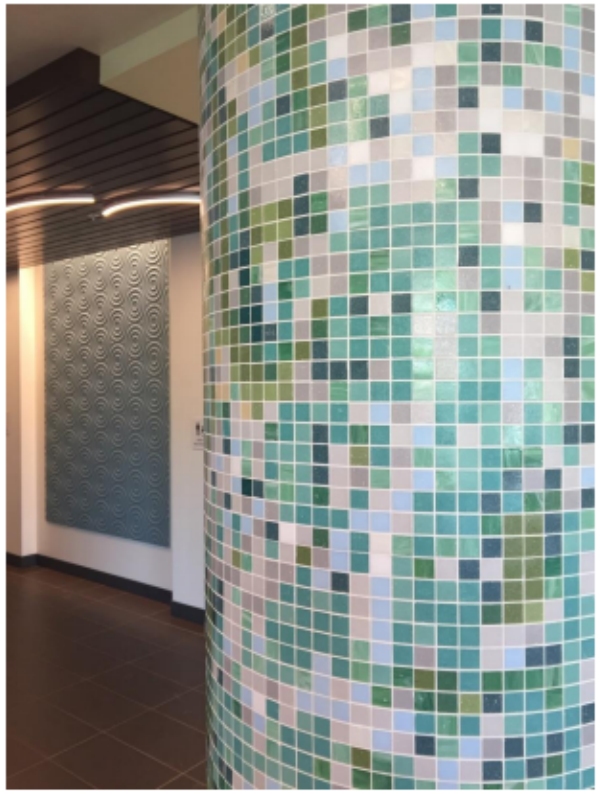
Waiting Areas:

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.

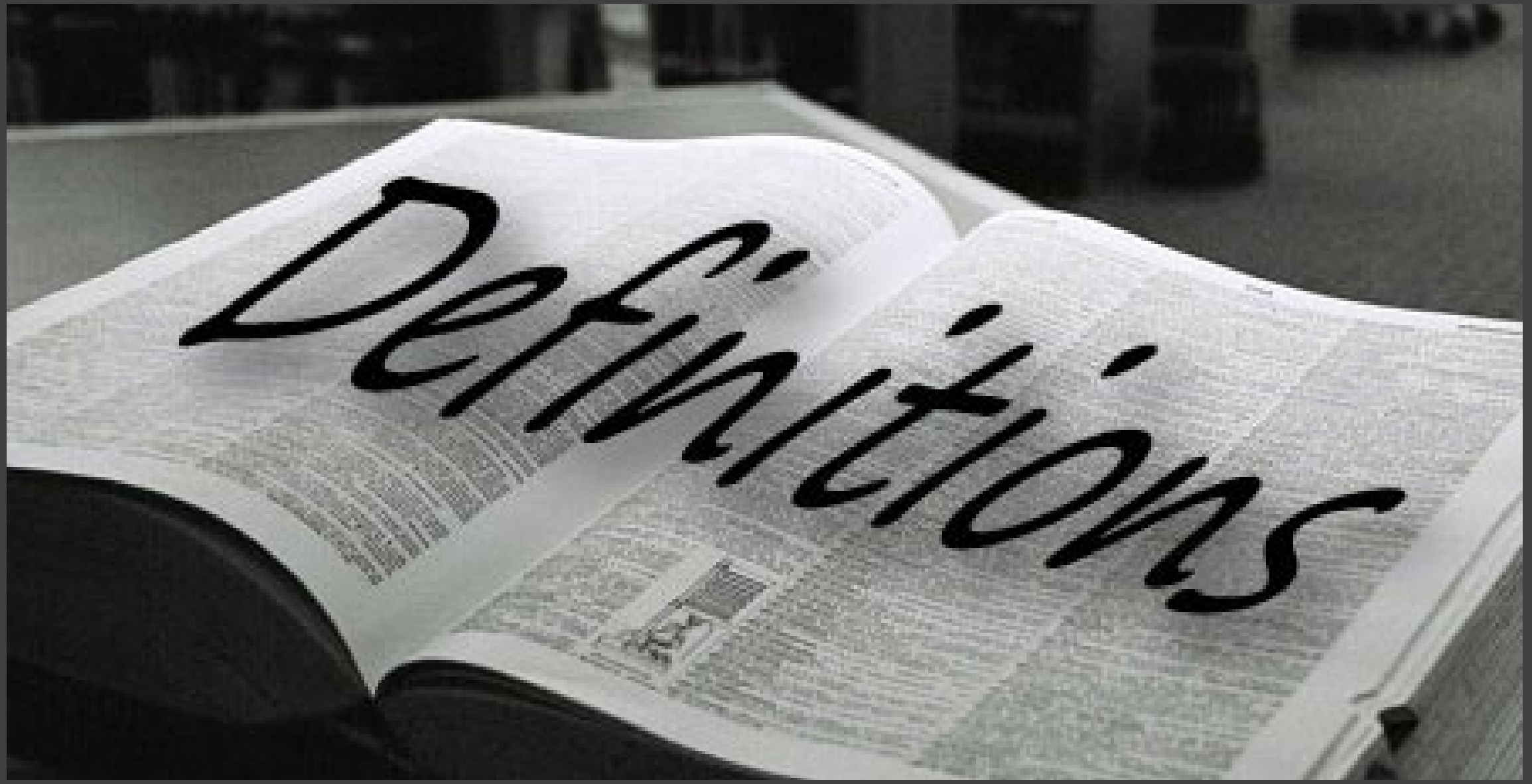
Coffee Area:

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



Category	Budget
Construction	$ 102, 567, 854
Professional Services	$ 15,694,353
Equipment	$ 15,660,600
Project Contingency	$ 14,600,000
IT/Telecom	$ 5,224,050
Furniture/Signage	$ 4,343,90[illegible]0
Site Entitlements / Development Permits	$ 2,278,518
Total Project Budget	**$ 160,369,275**


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.

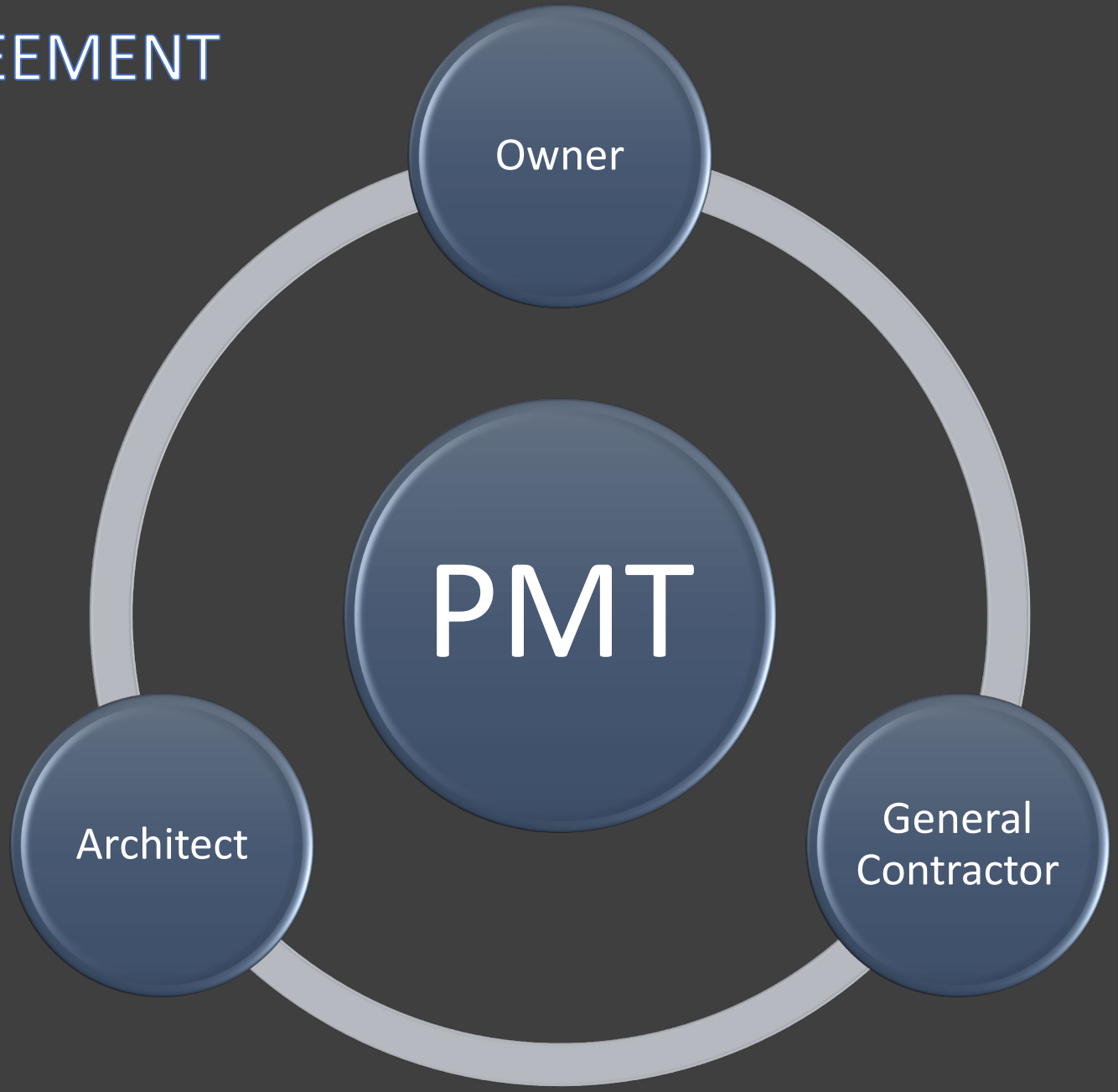
- **Incentive Threshold (IT):** An amount set below the ART that will be compared to Final Actual Costs to determine the savings for calculation of the Incentive Amount

Senior Management Team (SMT): Representatives from profit pool firms who have a fiduciary responsibility to those firms

Project Management Team (PMT): Day-to-day project managers from each firm that is represented in the profit pool

*sometimes referred to as the Core Team

TRI-PARTY AGREEMENT



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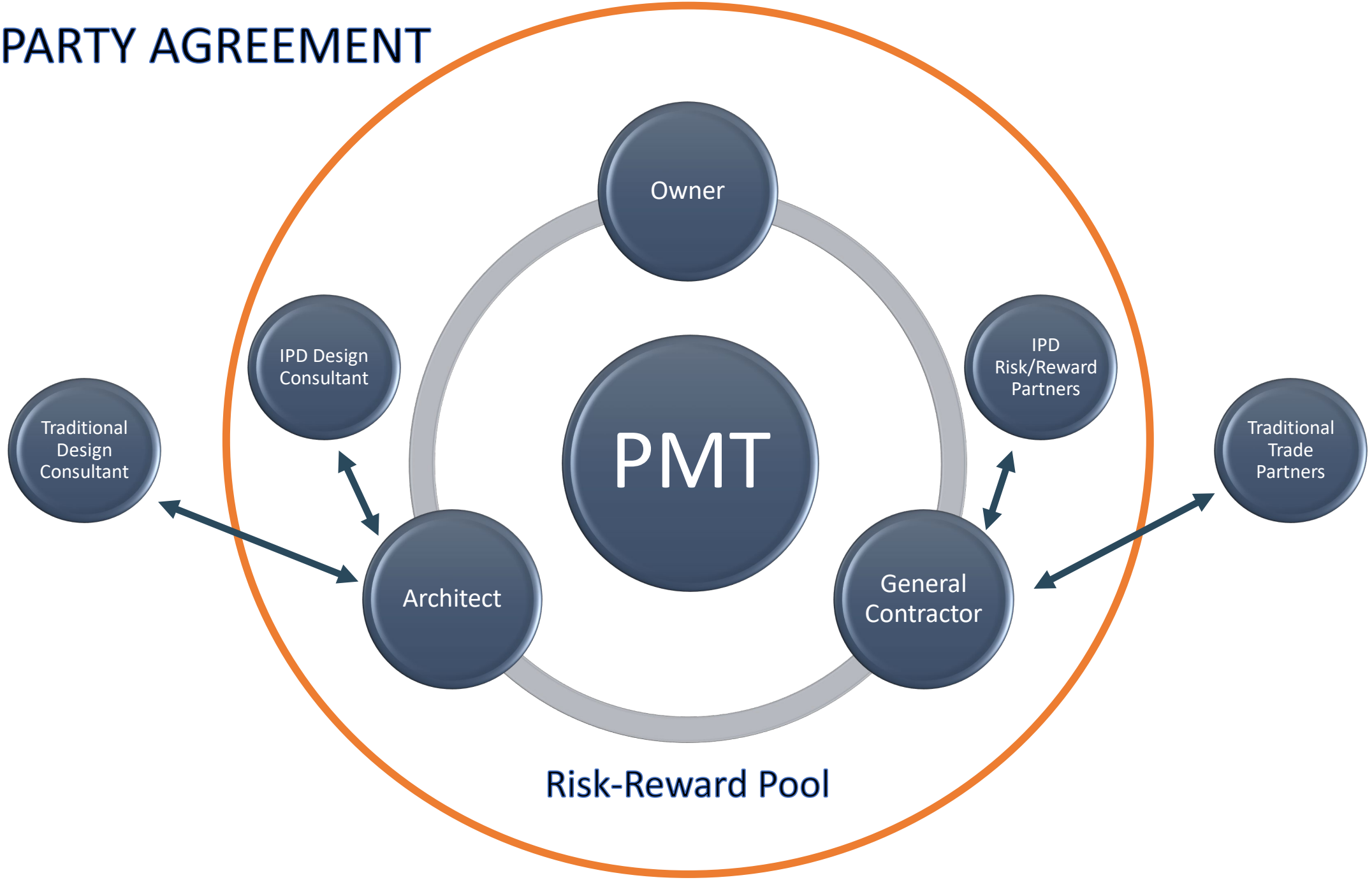

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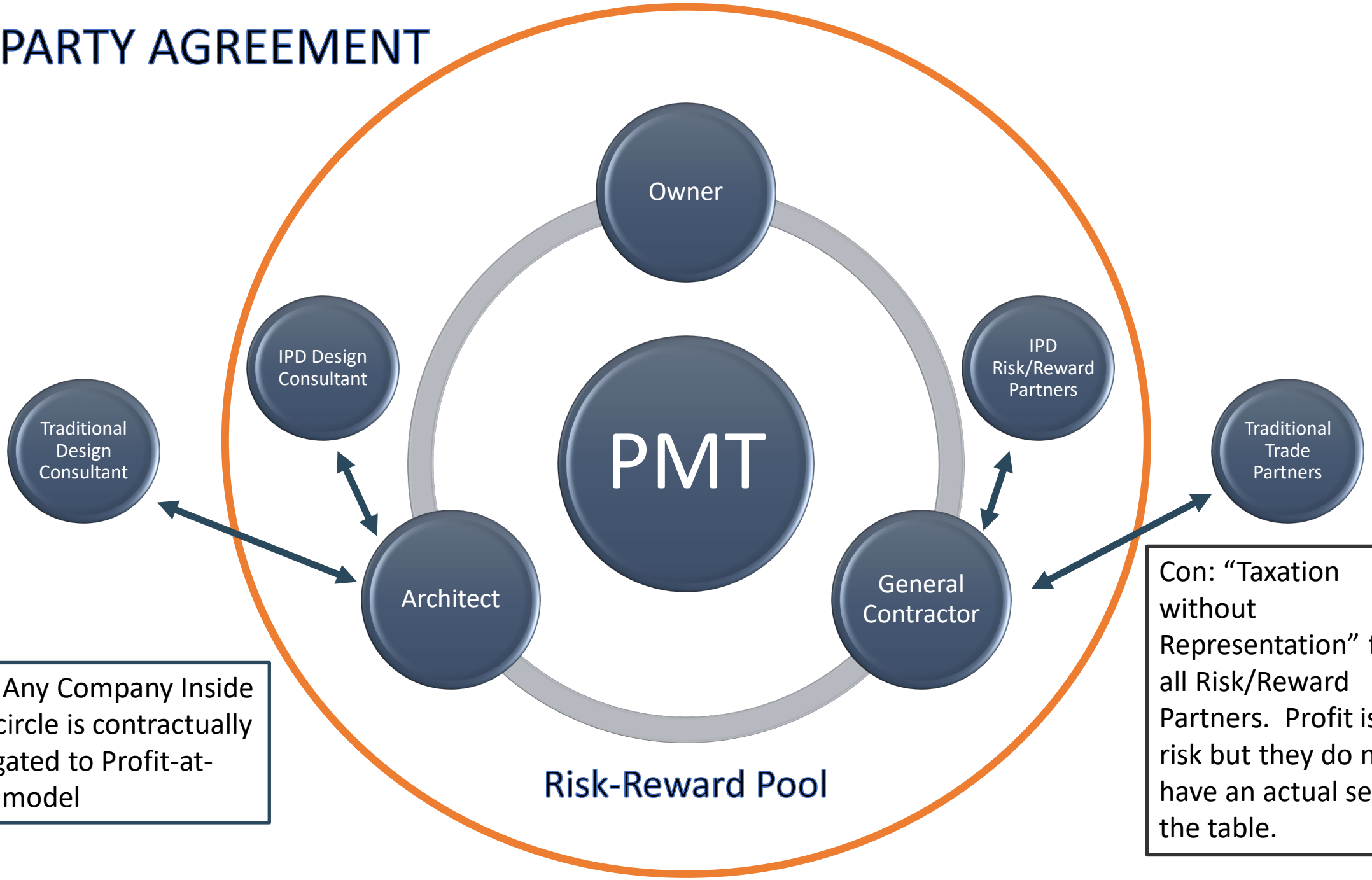
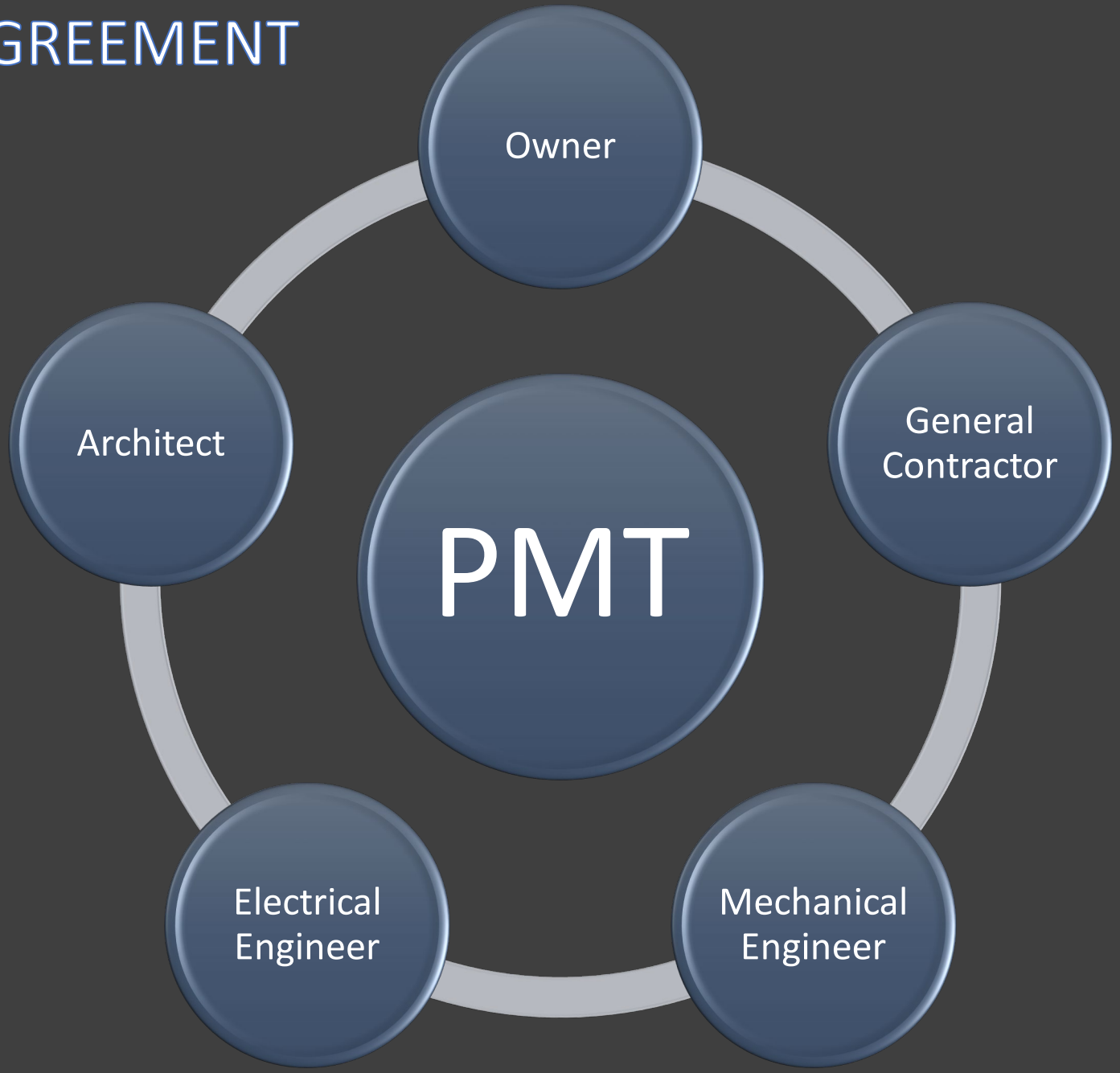


Pro: Any Company Inside the circle is contractually obligated to Profit-at-Risk model

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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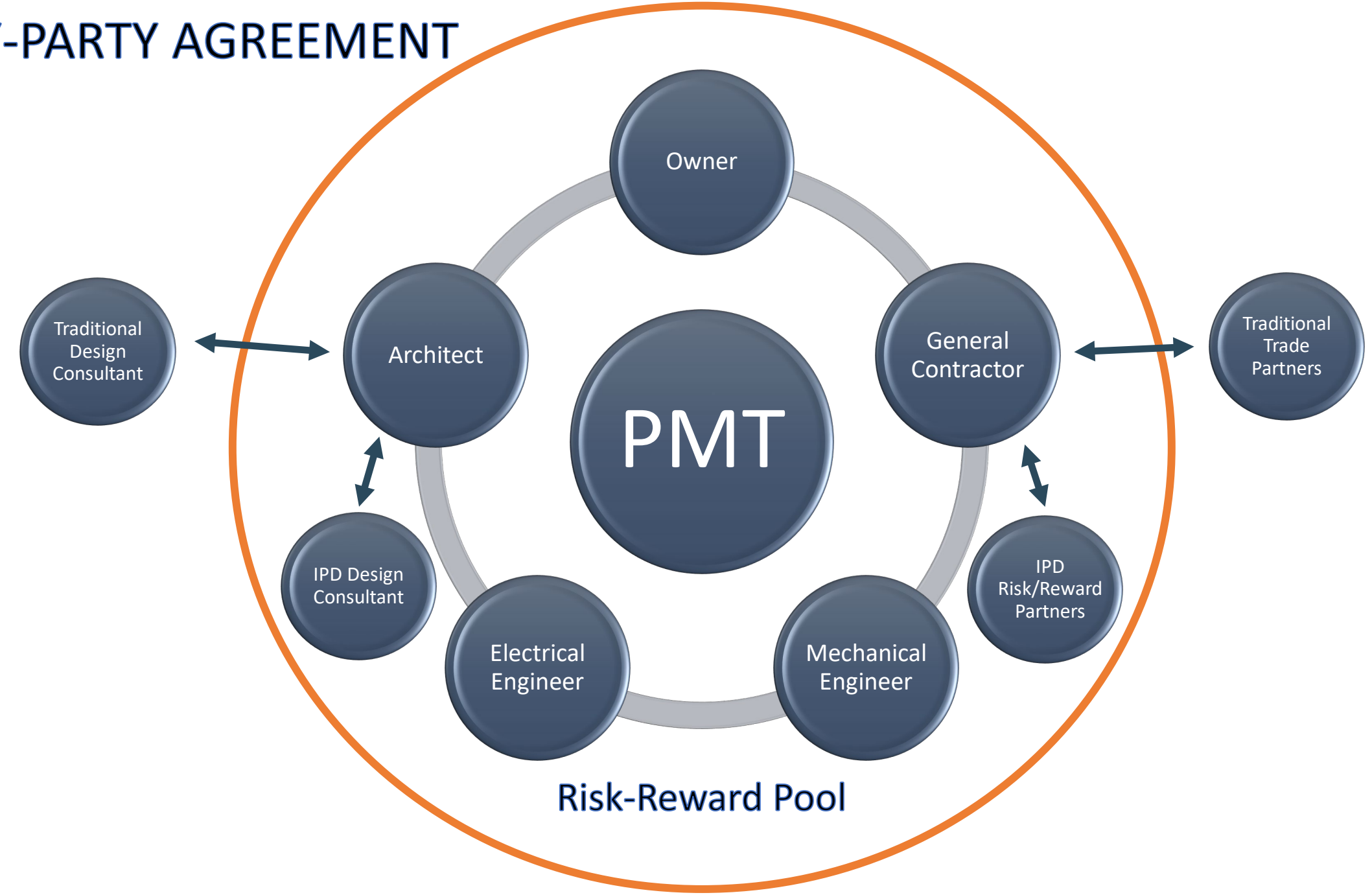

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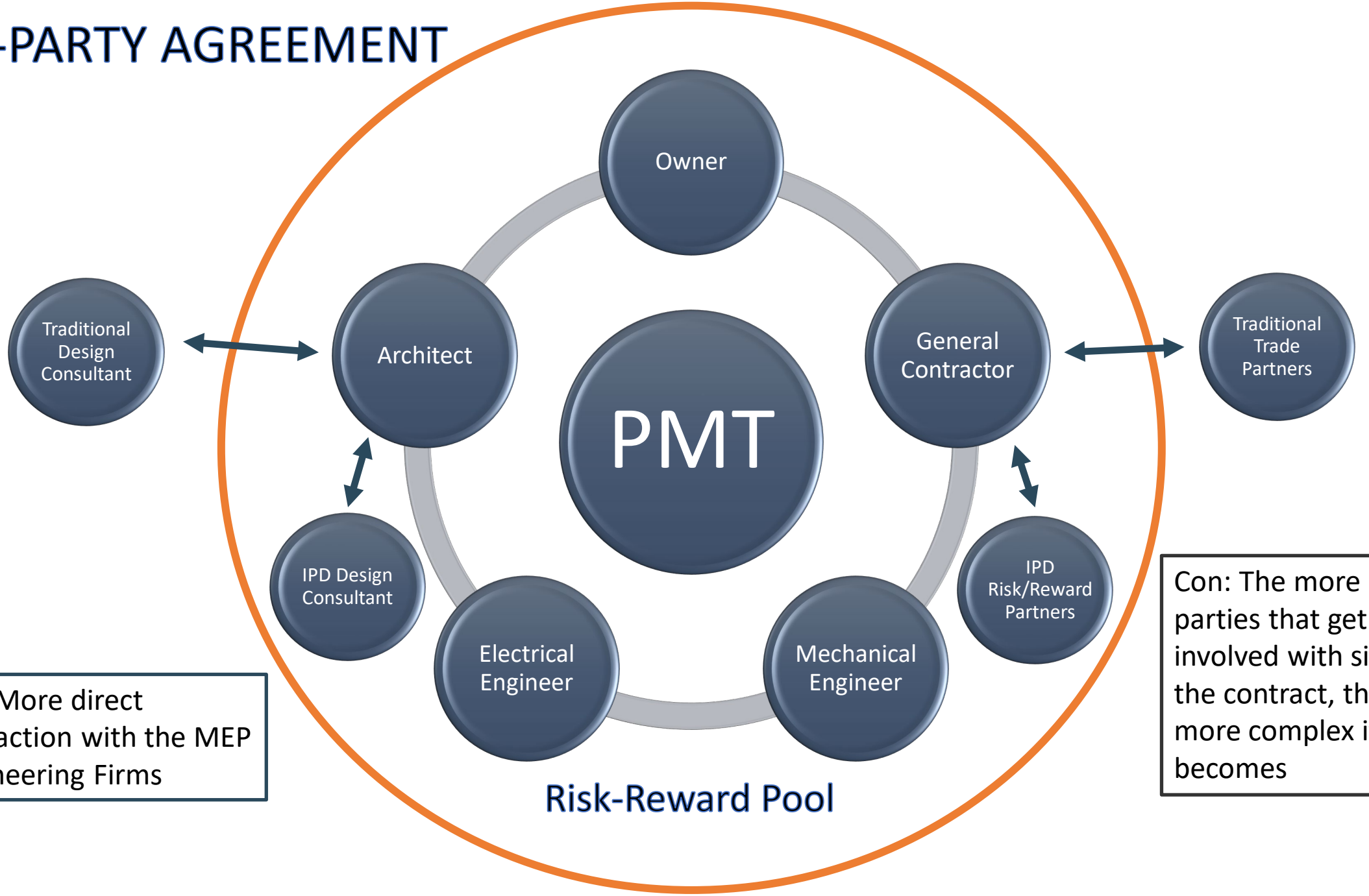
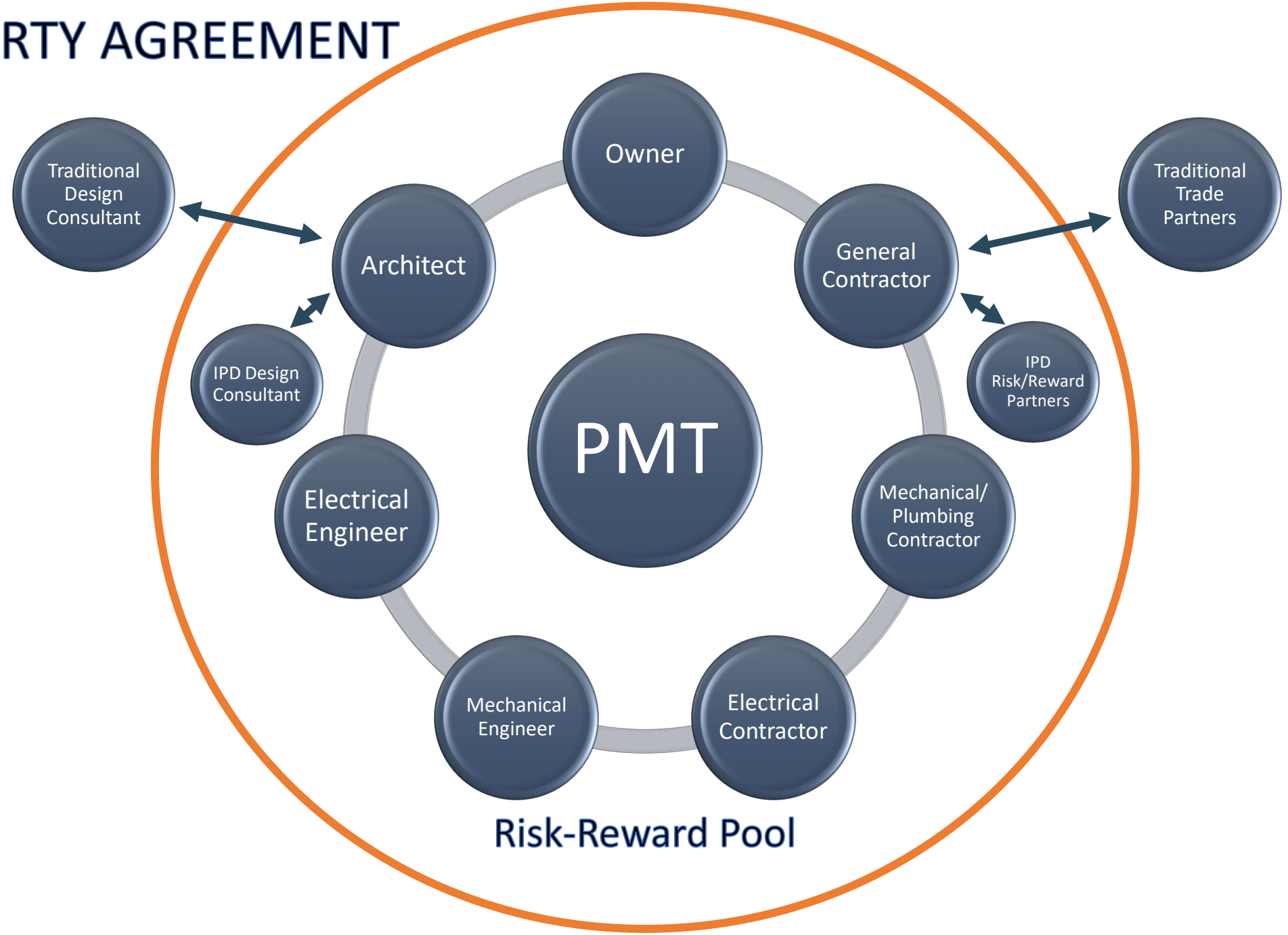


Pro: More direct interaction with the MEP Engineering Firms

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

POLY-PARTY AGREEMENT



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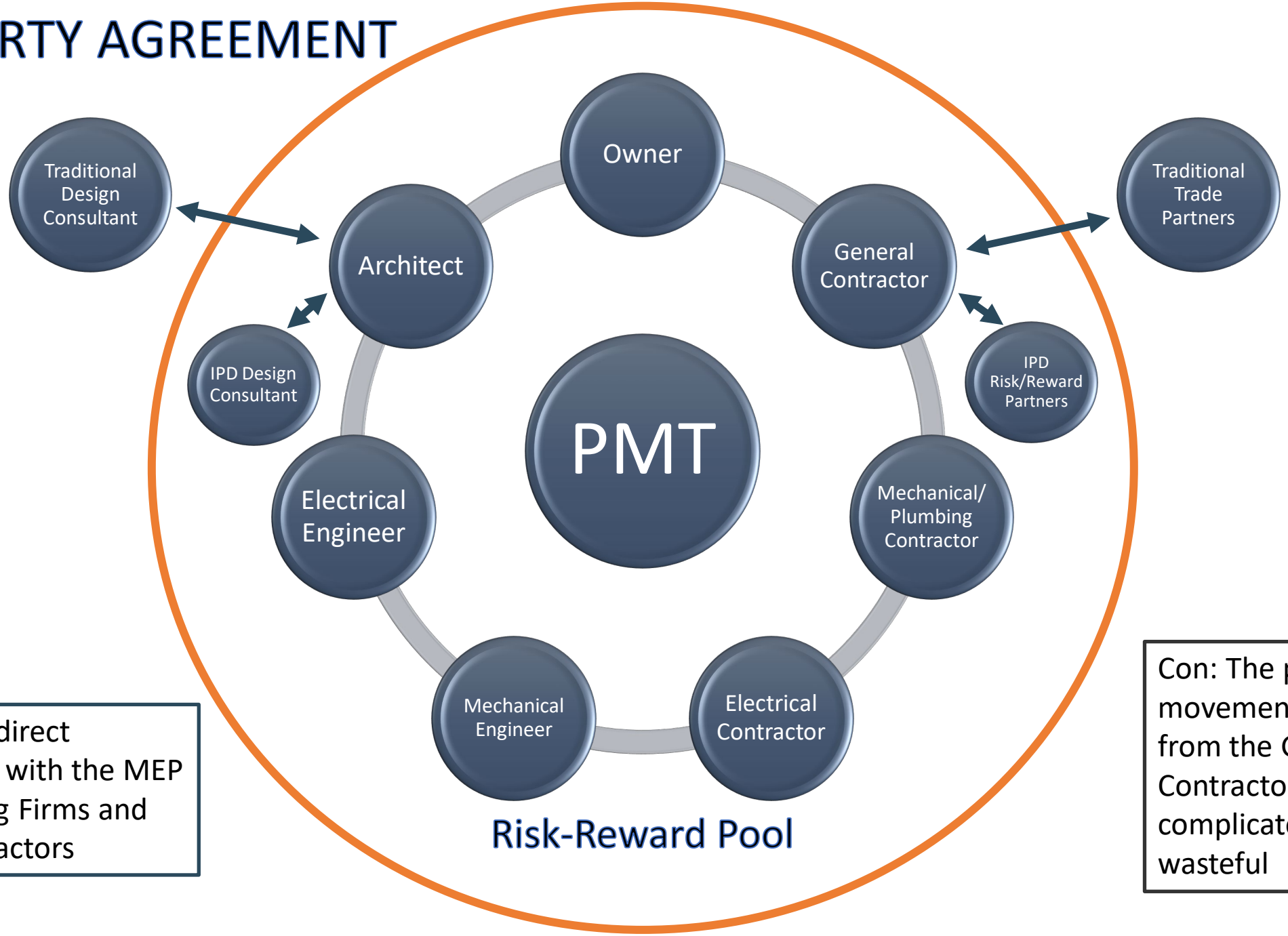
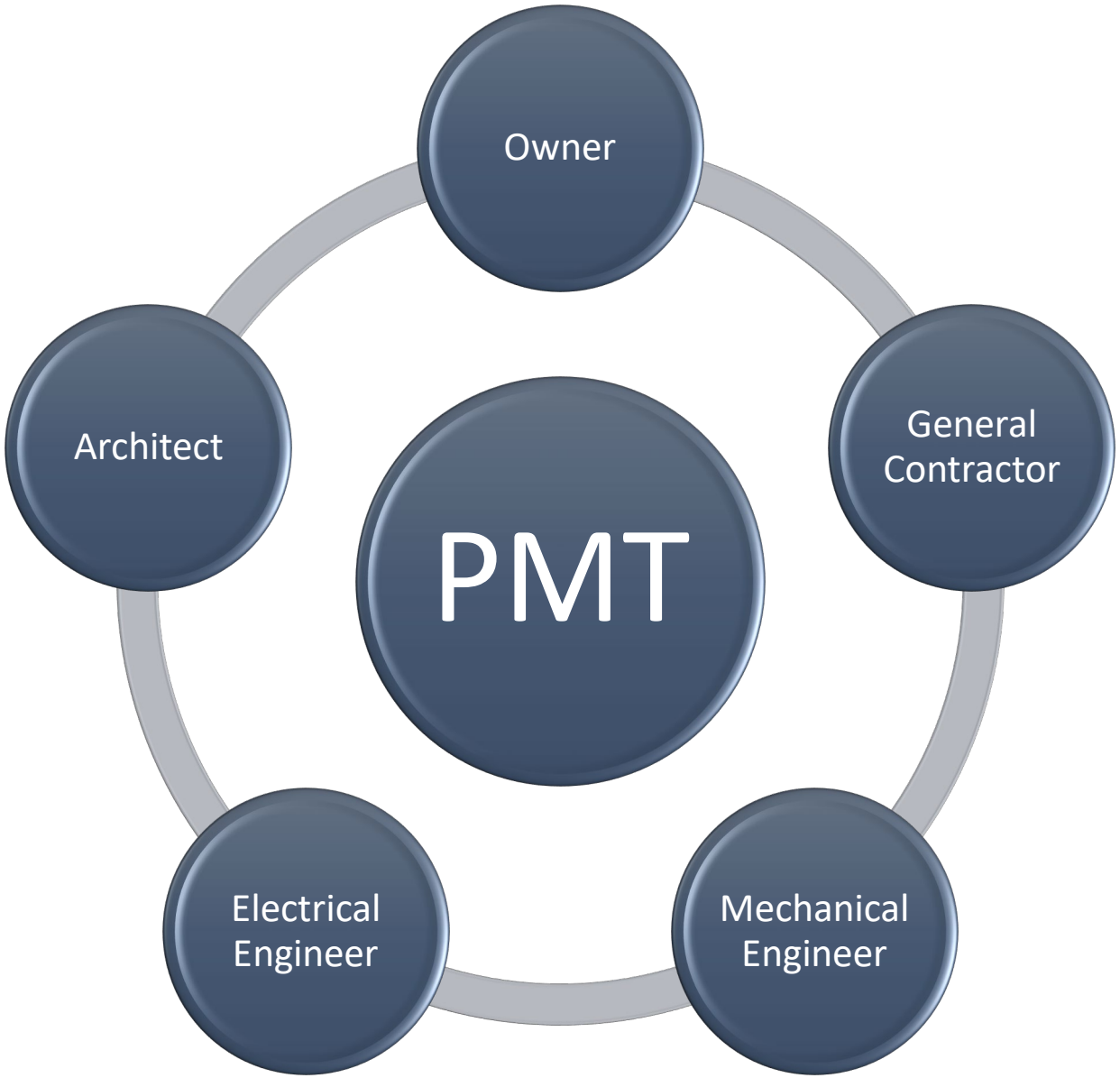
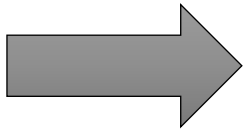
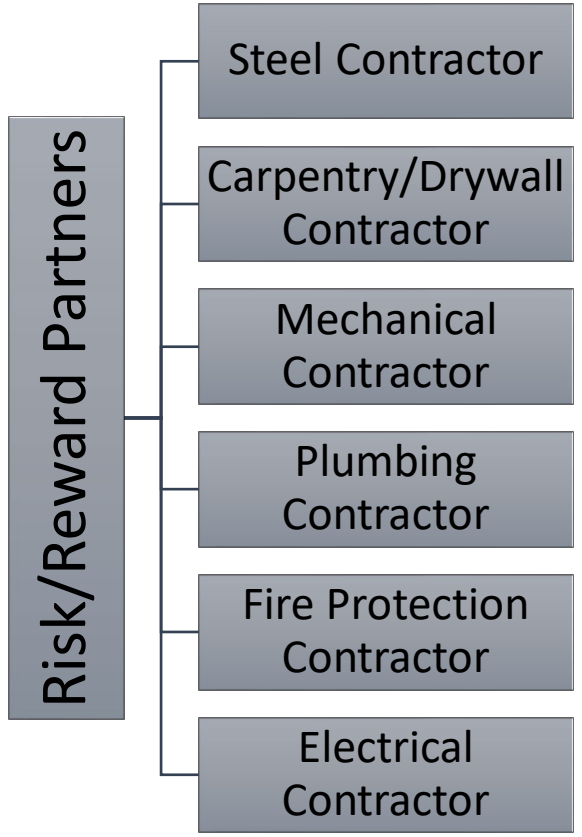


Pro: More direct interaction with the MEP Engineering Firms and MEP Contractors

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







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

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	

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)

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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	$ 287,500	100.00%	$ 196,150	$ 483,650

Risk/Reward Essentials

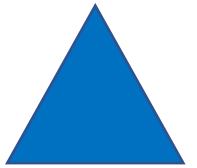
Labor Rates

Material Rates

Overhead Percentage

Profit Percentage

(What did we find was valuable?)



(What would we adjust for next time?)


WHAT'S
NEXT?

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Vice President

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847-714-7481