Lean Construction Institute
Immersive Education Program

Target Value Delivery

Virtual Course

Douglas Lee and Katie Wells, Brasfield & Gorrie, LLC

October 19, 2020

Lean Construction Institute

Provider Number H561

LCI Training Block: Target Value Delivery

LCIV.TVD

Presenter

Date

2 LU Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

VIRTUAL

Course Description

Staying within the allowable budget and ensuring the team's innovation increases value to the customer and decreases waste are attributes of successful project delivery and can be achieved through Target Value Delivery (TVD). In the *Target Value Delivery* course, you will gain an understanding of the phases and key components of TVD and will discover how the components interact together to improve the process and outcome of the project. This course will provide a repeatable approach to exploring value and empowering your team to optimize the return on investment for the project.

VIRTUAL

Learning Objectives




01.

At the end of this presentation, participants will be able to **define the meaning of Target Value Delivery** and understand the intent of the approach.

02.

At the end of this presentation, participants will be able to define **relevant terminology** required for implementing TVD and understand the **interconnectedness** of the four **phases**, including the actions and outputs of each phase.

03.

At the end of this presentation, participants will be able to identify key **Core Components of TVD** and how they interrelate to improve the project process and outcomes.

04.

At the end of this presentation, participants will discover **set-based design practices**, understand the **impact of sound decision-making**, and the relationship to Target Value Delivery.

1. Introductions Ice Breaker– Breakout Room

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Get to know your group!

Name
Company
Role
Years Lean
A favorite non-work activity

Breakout Discussion
(5 minutes)

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Rules of Engagement

- This is a safe zone
- Everyone has equal status
- Speak up and share your ideas
- Actively listen to others
- One conversation at a time
- Use E.L.M.O.
- Silence phones
- Be focused and engaged
- Stay on time
- Have fun!

Project Elements

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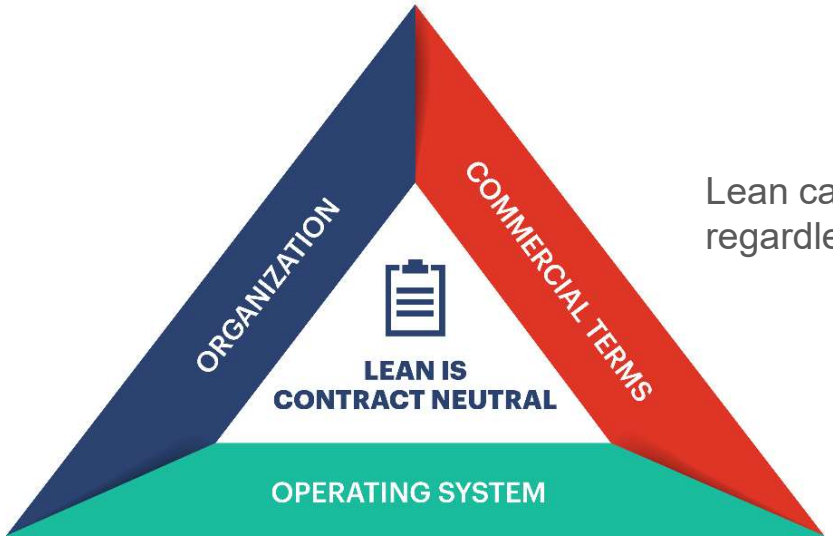
Lean teams organize in a structure that leads to improved outcomes.



Lean can be implemented regardless of commercial terms:

A Lean Operating System is a organized implementation of Lean Principles and Practices combined to allow People to operate in unison to create flow.

Six Tenets of Lean Construction

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

References

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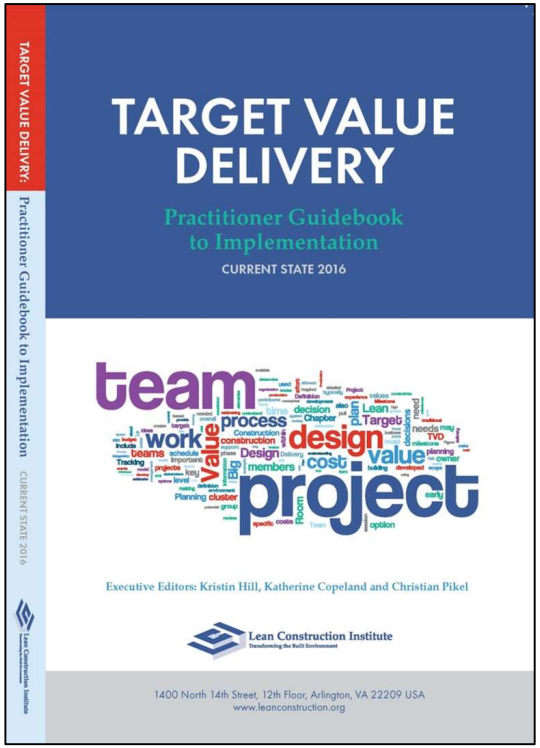

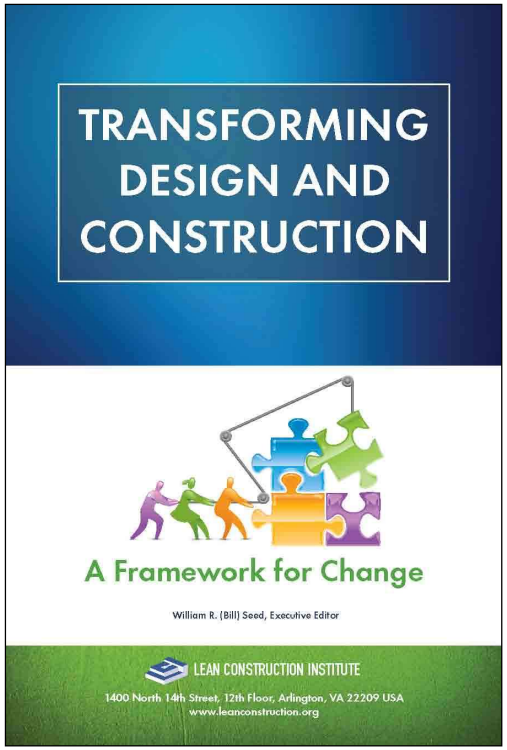

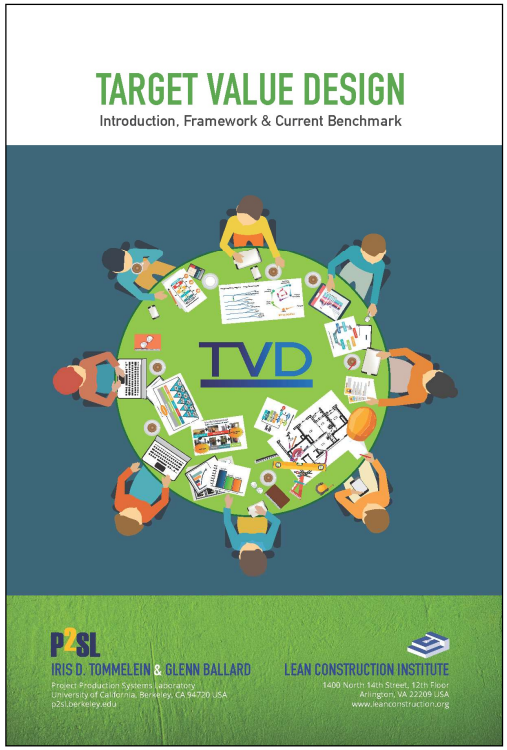

Lean Journey to Mastery

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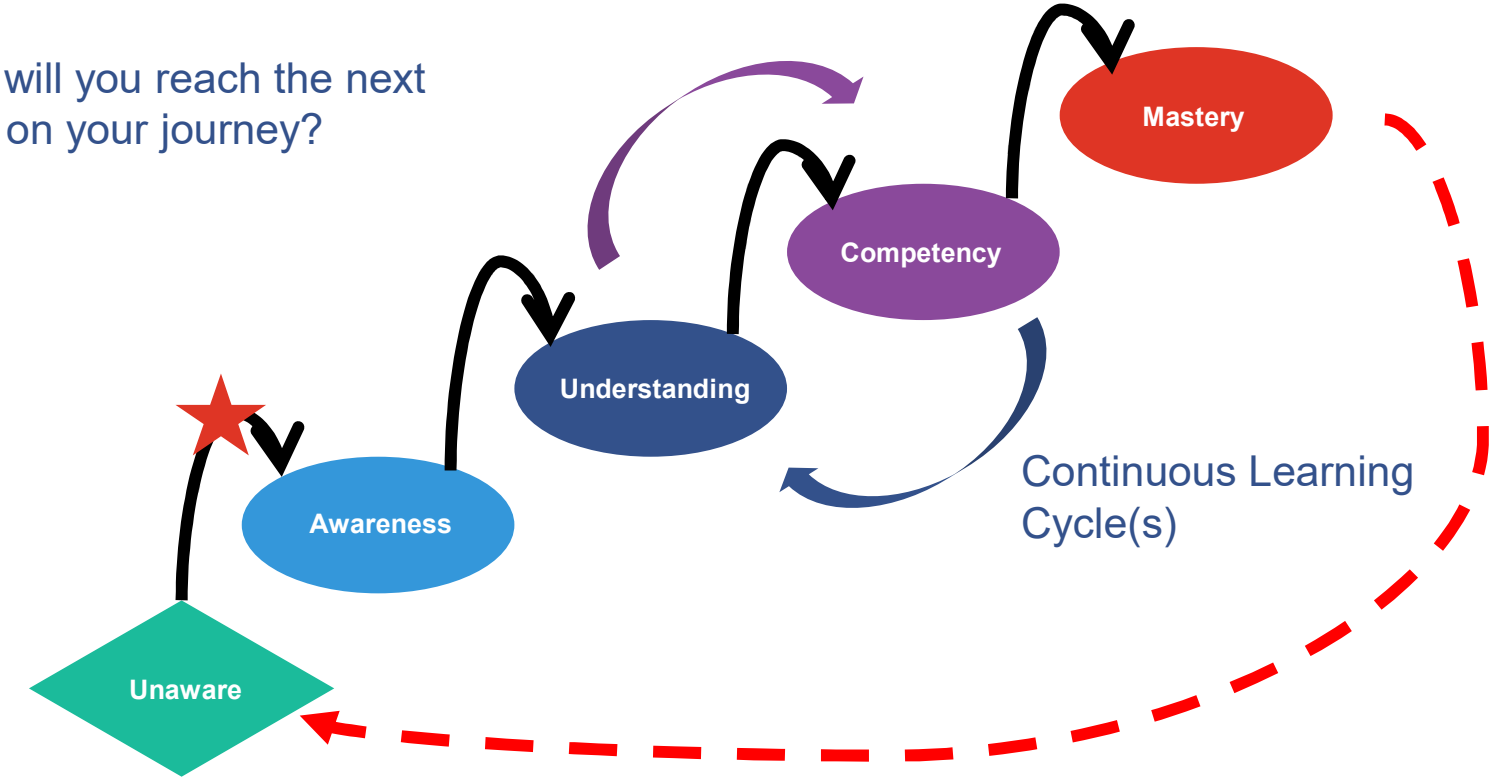
How will you reach the next level on your journey?



Target Value Delivery (TVD)

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A disciplined management practice to be used throughout the project to ensure:

- The facility meets the operational and performance needs and values of the users.
- The project is delivered within the allowable budget, schedule, and intended scope.
- That innovation is promoted throughout the process to increase value and eliminate waste.

Target Value Delivery (TVD)

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Target Value Delivery encompasses

Target Value Design

+

Target Value Production
(Construction)

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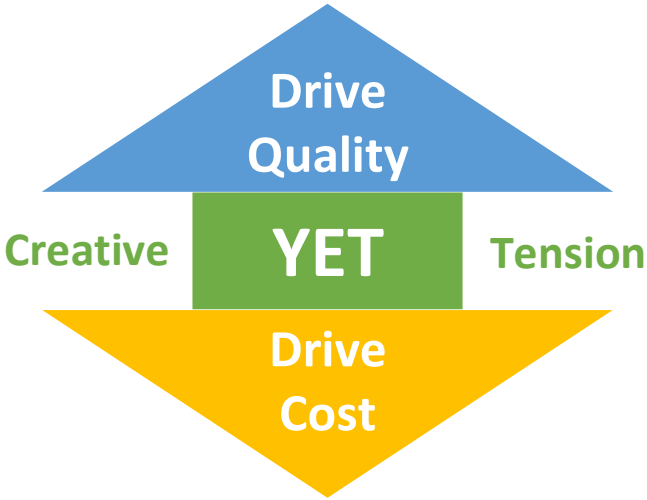
Application

Target Value Delivery is to be applied **holistically** to obtain maximum value.

Regardless of the project delivery framework, the **owner, designers, builders, and key trades** must be fully engaged from the onset.

It generates a **creative tension** between driving up quality YET driving cost down.



Traditional vs. Target Value Delivery

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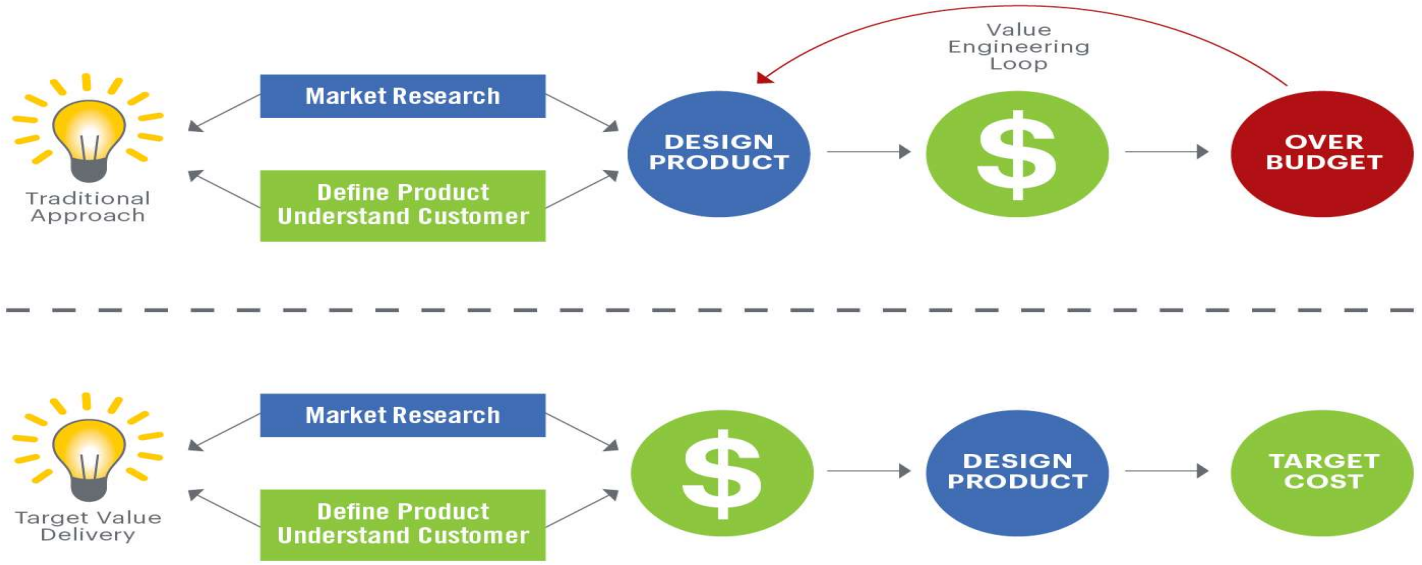
Cost is an *output* of design



Cost is an *input* of design

Courtesy of HKS Architects

2. Discussion Question – Breakout Room

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Discuss how this approach might improve project outcomes

Breakout Discussion
(5 minutes)
Several groups share a key takeaway
(1 min each)

Target Value Delivery (TVD) Overview

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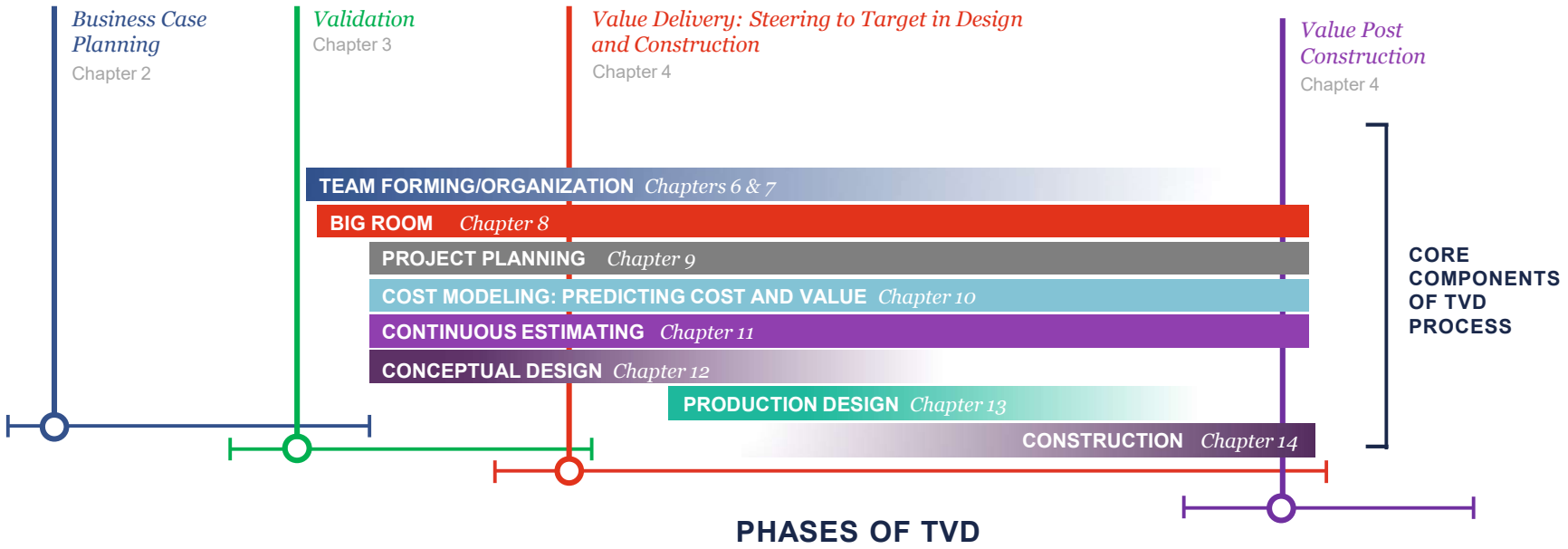

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TVD Phases

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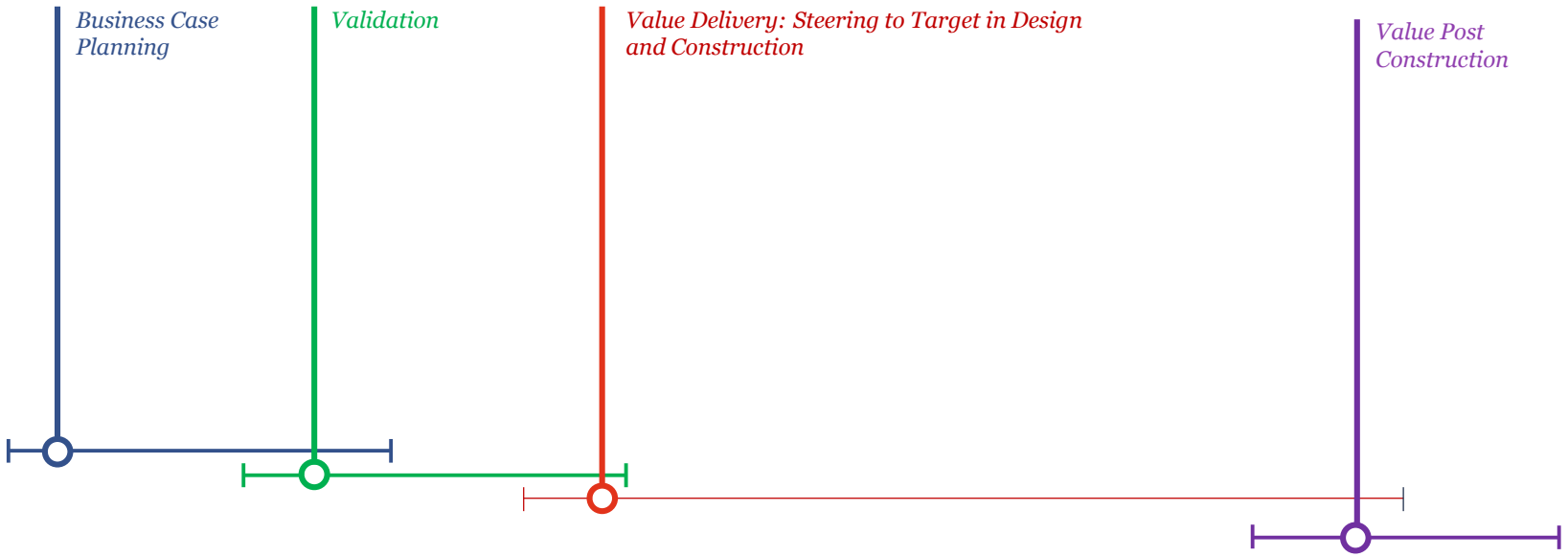

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TVD Phases Overview

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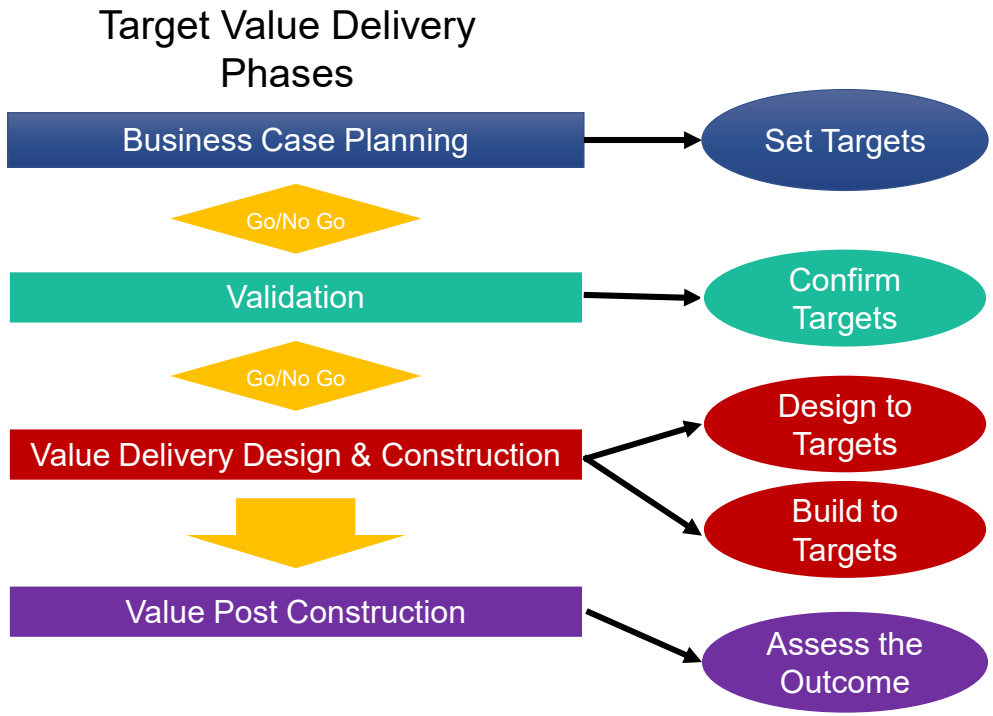
Targets may include cost, time and quality as defined by the Value Definition



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Phase 1: Business Case Planning

The **Business Case**:

- Is the operational use/benefit proposition
- Is the owner-provided purpose
- Sets the Allowable Cost
- Includes Value Definition statements
- If not given the proper attention ongoing misalignments emerge as the project unfolds

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TVD Cost Terminology

ALLOWABLE COST

DEFINITION

The amount the owner is willing to spend for the total project.

Business Case Planning Phase

EXPECTED COST

DEFINITION

The best estimate that the team projects the project will cost

Validation Phase

TARGET COST

DEFINITION

The team goal for the total project.

Validation Phase

ACTUAL COST

DEFINITION

The final cost at the end of the project.

Value Delivery Phase

Set the Targets

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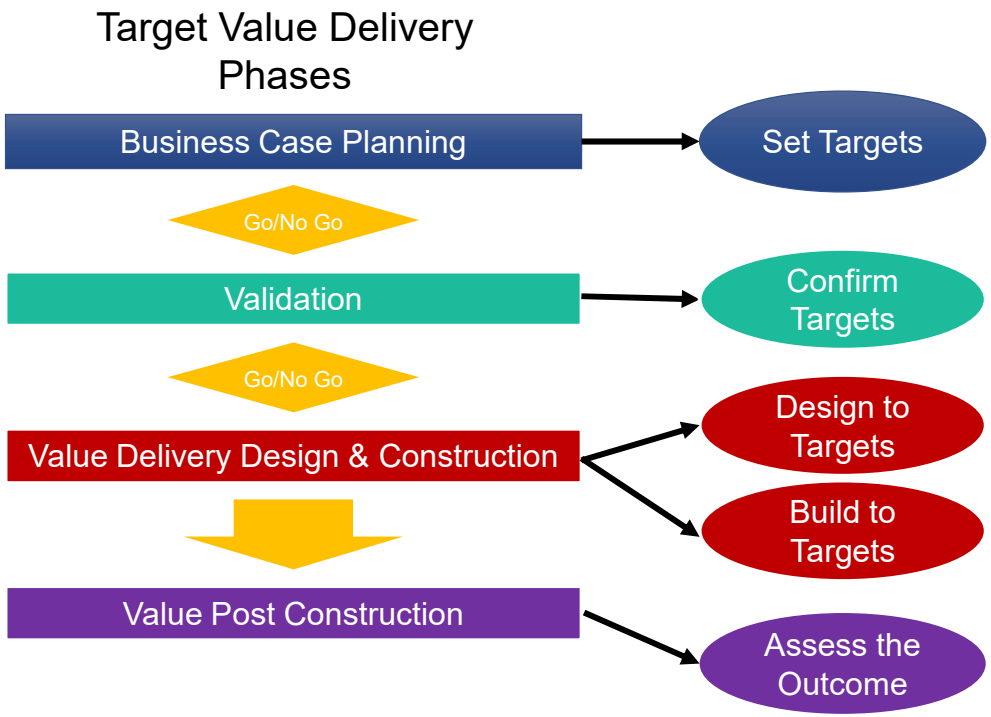
The output of the **Business Case Planning Phase** includes:

- Value Definition Statements
- Allowable Cost
- Time Frame
- Other Relevant Information

The last action of the phase is to make an informed **Go/No Go decision** about the viability of the project.



Phase 2: Validation

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Validation:

- The project team (including the owner) begins to determine whether the project is viable based on the outputs of the Business Case Planning Phase.

- The project team should enter this phase with a clear understanding of the business case.
- The output of validation is team alignment and understanding regarding:
  - Scope Definition
  - Value Definition & Conditions of Satisfaction
  - Expected Cost
  - Target Cost

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Validation Phase

≥

ACTUAL COST

DEFINITION

The final cost at the end of the project.

Value Delivery Phase

Confirm the Targets

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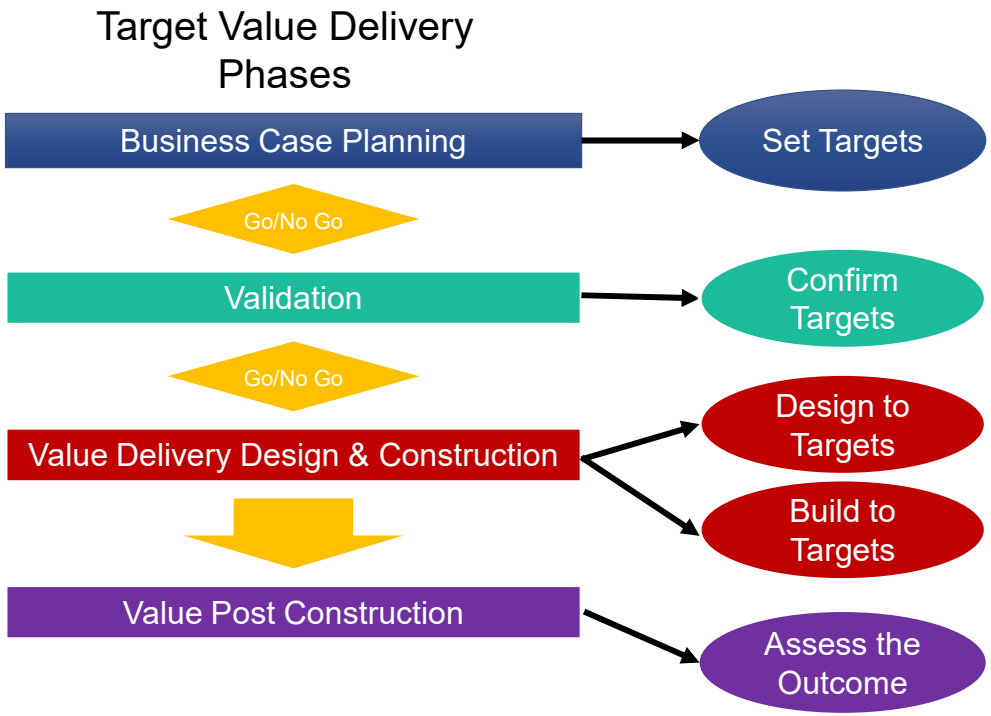
Output of the Validation Phase includes:

- Team alignment and understanding of the Targets.

The last action of the phase is to make an informed Go/No Go decision about the viability of the project.



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Phase 3: Value Delivery Defined

Value Delivery: Steering to Target in Design and Construction

- The work progresses in small batches toward intermediate milestones through the design and construction of the project.
- The work is continually evaluated to the scope, target cost, value definition & CoS - the outputs of the Validation Phase.
- Teams explore innovative ways to achieve goals and add more value.

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TVD Cost Terminology

ALLOWABLE COST

DEFINITION

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Business Case Planning Phase

≥

EXPECTED COST

DEFINITION

The best estimate that the team projects the project will cost

Validation Phase

≥

TARGET COST

DEFINITION

The team goal for the total project.

Validation Phase

≥

ACTUAL COST

DEFINITION

The final cost at the end of the project.

Value Delivery Phase

Design & Build to the Targets

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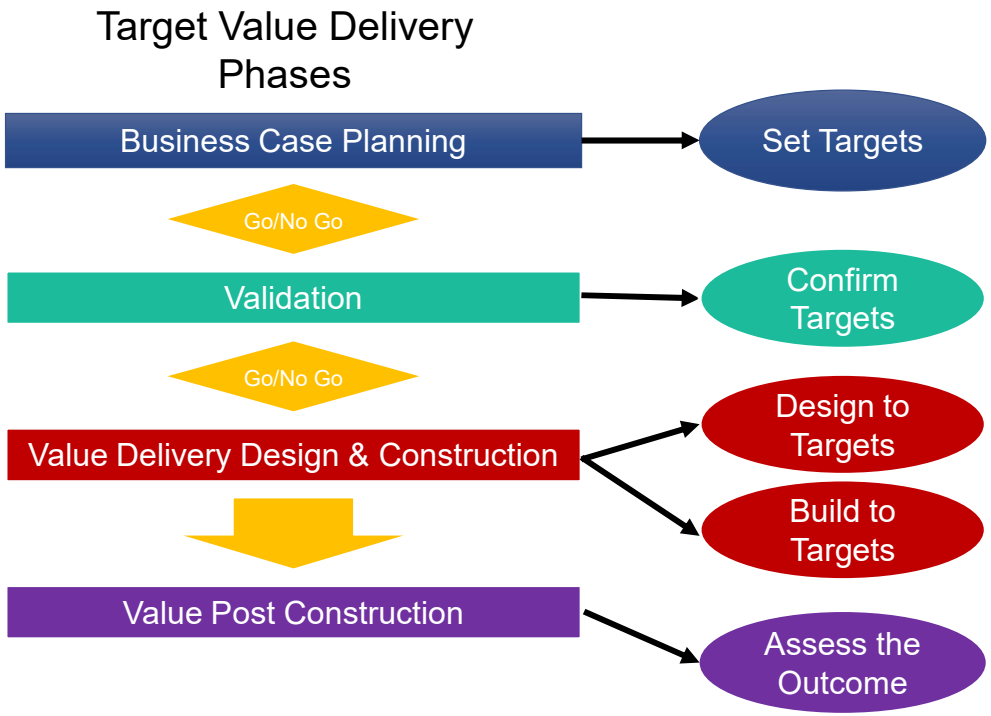
The output of the Value Delivery Phase includes:

- Turnover of the actual finished project.
- The Actual Cost of the project.

The project moves to the Value Post Construction Phase.



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Phase 4: Value Post Construction

Understanding value post construction is important:

- For the owner, value is realized only after the facility is constructed and serving its intended purpose.
- This is when the business case and target values established during Validation are reviewed for actual outcomes.
- For owners and teams, learning from project to project is critical to improving outcomes.
- This supports owners being able to continue organizational momentum to continuously improve for higher-value, lower-cost facilities.

Assess the Outcome

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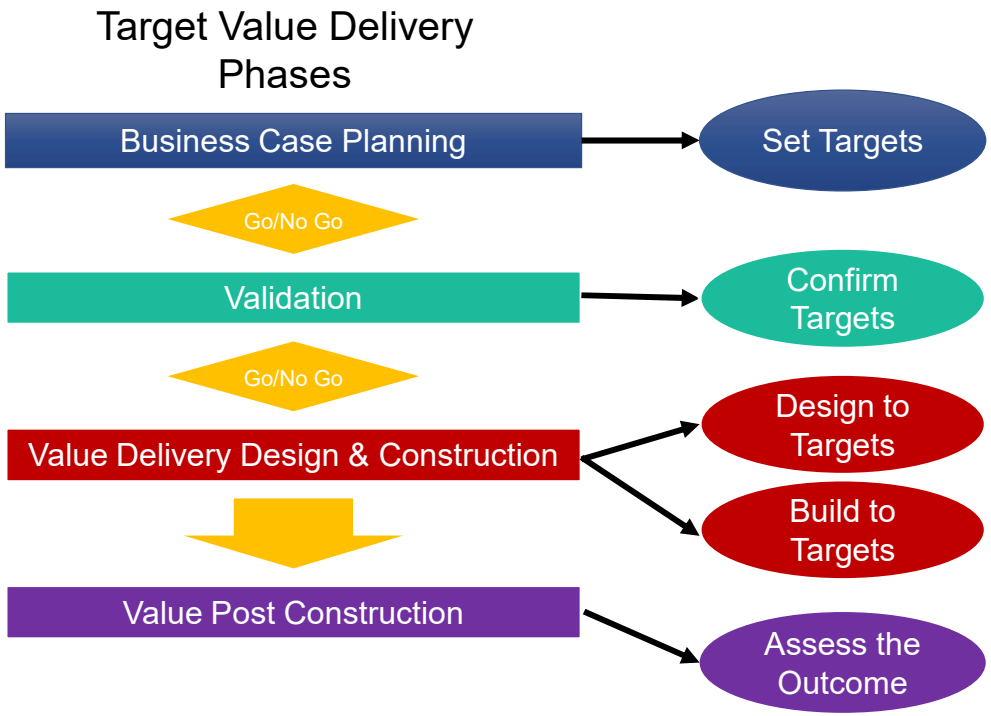
The output of the **Value Post Construction Phase** includes:

- Assessing the outcome to the business case plan expectations.



3. Discussion Question – Breakout Room

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Discuss how the TVD phases, actions and outcomes are different than traditional approaches.

Breakout Discussion
(5 minutes)
Several groups share a key takeaway
(1 min each)

TVD Core Components

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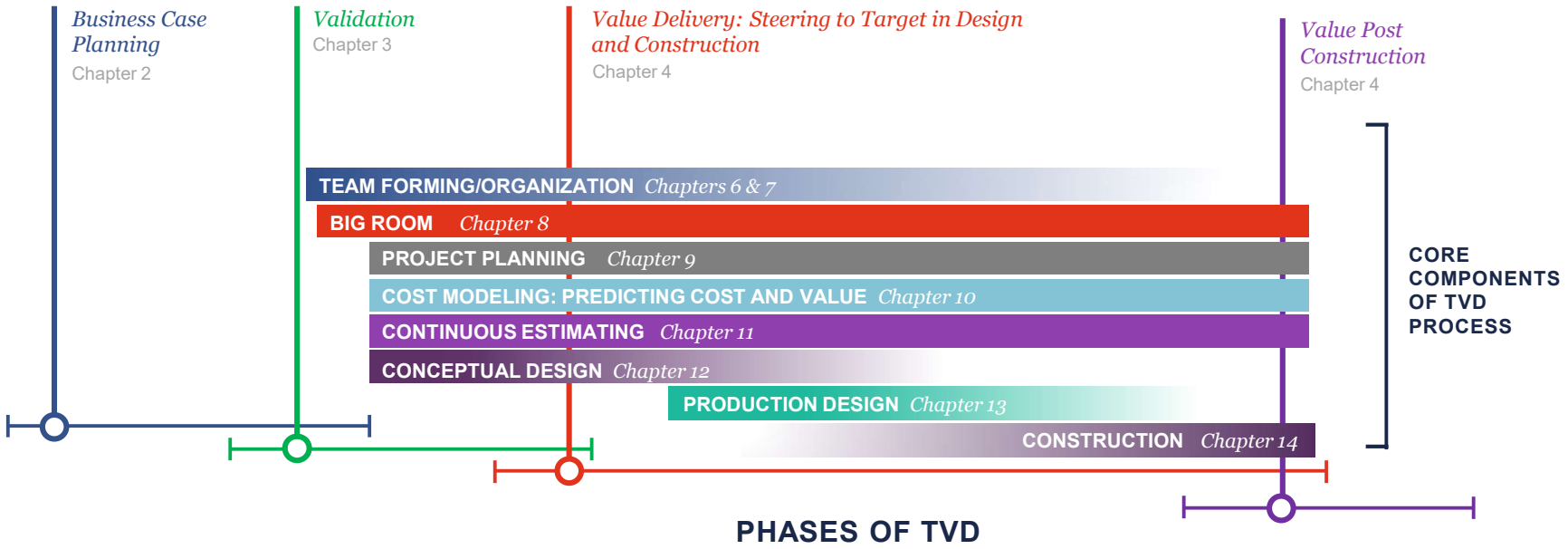

Image courtesy of InsideOut Consulting & Southland Industries

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Team Forming

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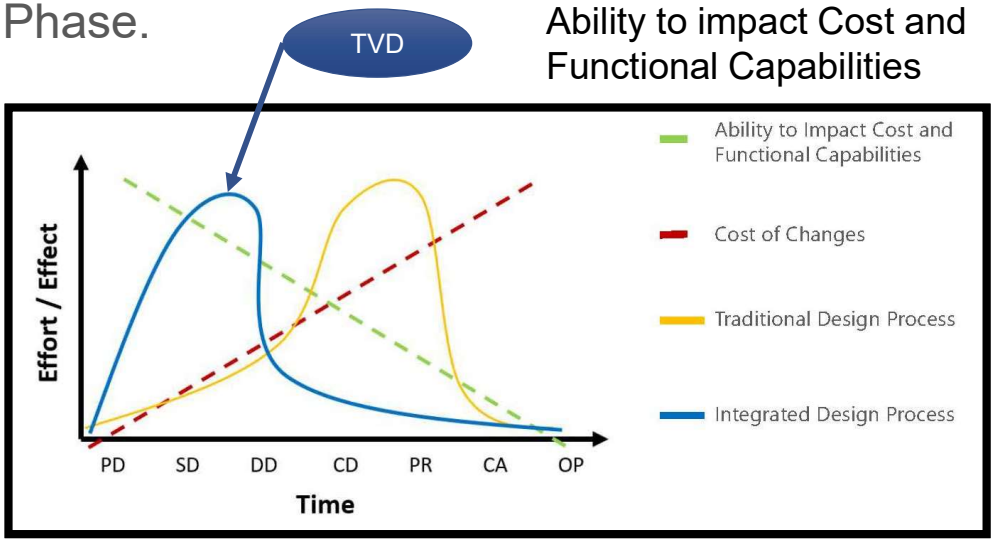
Early Team Formation

Identify the designers, builders and key trade partners that will drive the reliable planning and delivery of the project as quickly as possible commencing the Validation Phase.



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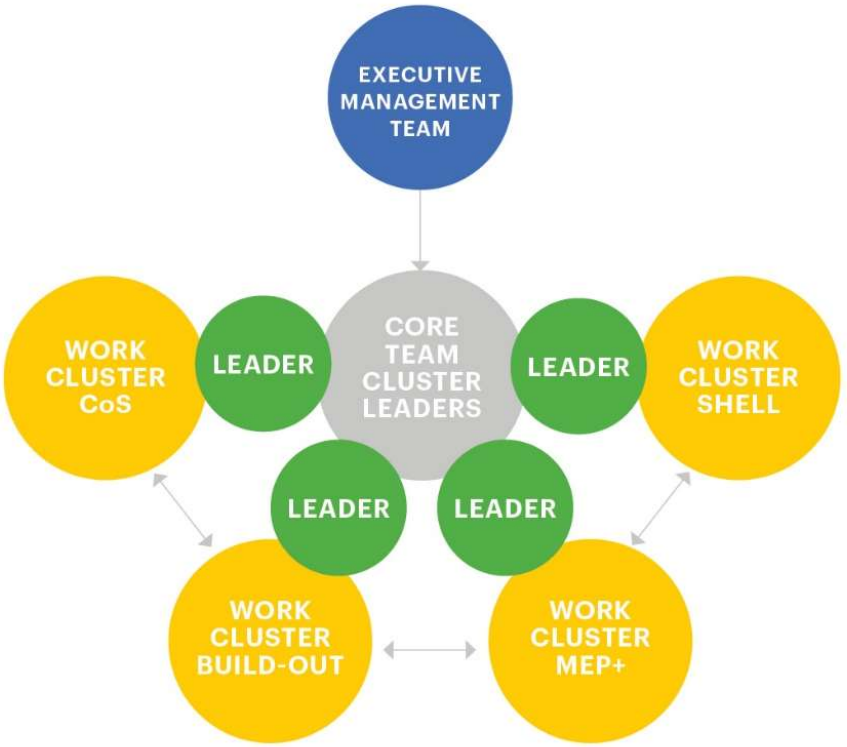
Work Cluster Organization

Executive/Senior Management:
- Not involved in day-to-day of team
- Resolve conflicts

Core Team:
- Day-to-day leaders of the team

Work Clusters:
- Leader
- System oriented
- Cross discipline
- Stakeholder representation
- Form as need

Work Cluster Leader:
- Coordination between work cluster & core team



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Big Room

Big Room is:

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A project approach of bringing key individuals together to:

- Collaborate
- Plan
- Update
- Solicit resources
- Invite feedback
- Demonstrate accountability
- Schedule events

In order to:

- Speed communication & decision-making
- Reduce siloed thinking or approaches.
- Compare the project's current state to the published goals or Conditions of Satisfaction.

Big Room is:

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Big Room is a commitment to a project, the team and to working together!

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Collaborative Planning

Collaborative Planning

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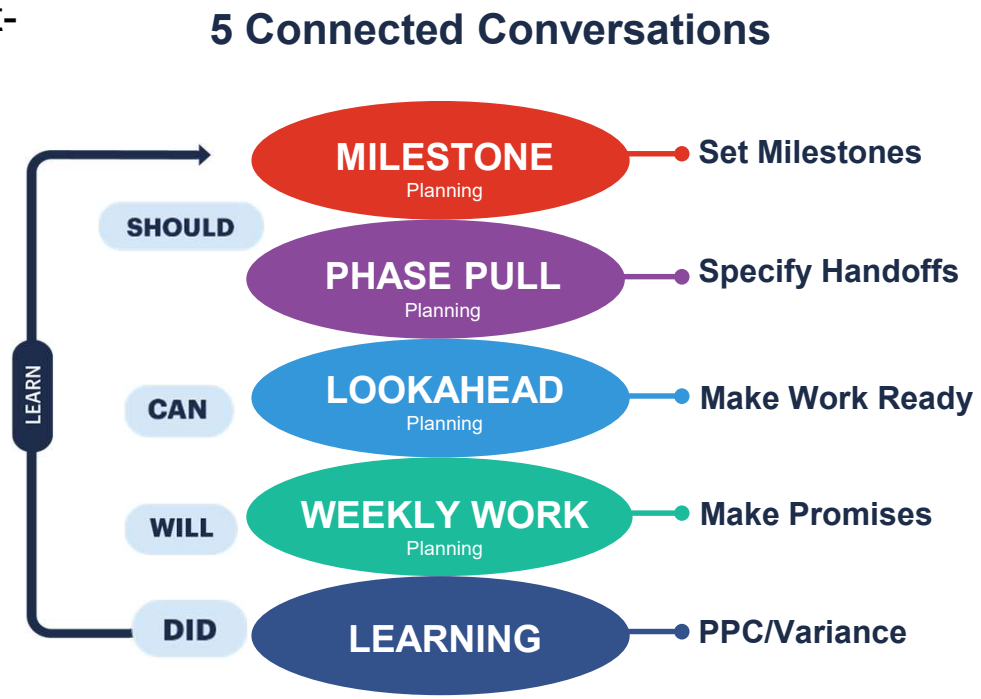
The Last Planner System® is a commitment-based system integrating 5 connected planning conversations:

1. Milestone Planning (Should)
2. Phase Pull Planning (Should)
3. Lookahead Planning (Can)
4. Weekly Work Planning (Will)
5. Learning (Did/Learn)



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Cost Modeling

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Cost Modeling Approach

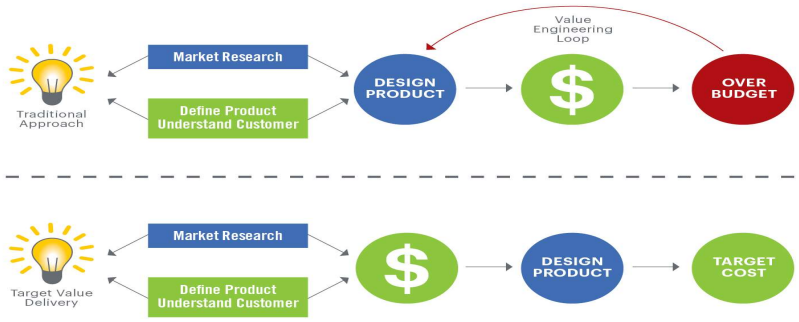
Traditional cost prediction:
Produces a cost estimate number based on a given scope of work.

Cost is an *output* of design.

TVD cost modeling:
Scope evolves as the team explores and works to find a combination of design sets that provide value and meet the CoS.

Cost is an *input* to design.

Cost is an *output* of design



Cost is an *input* of design

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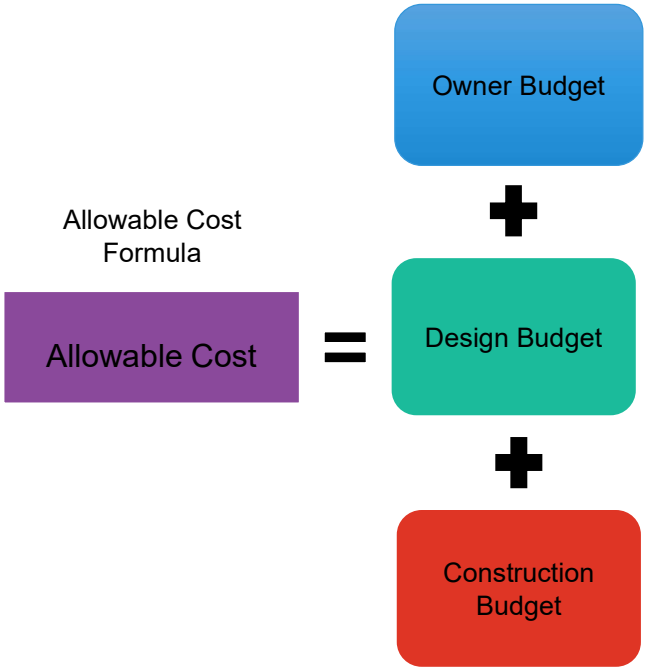
Initial Cost Model

- Begins in the Business Case Planning Phase with conceptual benchmarking estimating to determine the Allowable Cost.
- This informs the development of the initial project Cost Model.
- Developed before the design team makes the first quantifiable decision.



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Goals of Cost Modeling

Predict "most likely outcomes" of not just cost but value realization:

- At any given time in the project
- Based on current understanding of core project requirements
- From value decisions already made.
- Variables for decisions that still to be made

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Goals of Cost Modeling

Visual system indicating:

- Most likely project outcomes
- Potential variances and risks
- Impact that remaining decisions could still have

For the **duration of the project**:

- Remains active and transparent to the team
- Is continuously updated
- Becomes more informed as the project evolves

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Continuous Estimating

TVD Continuous Estimating

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Once the Cost Model is developed, the team moves into Continuous Estimating practices.

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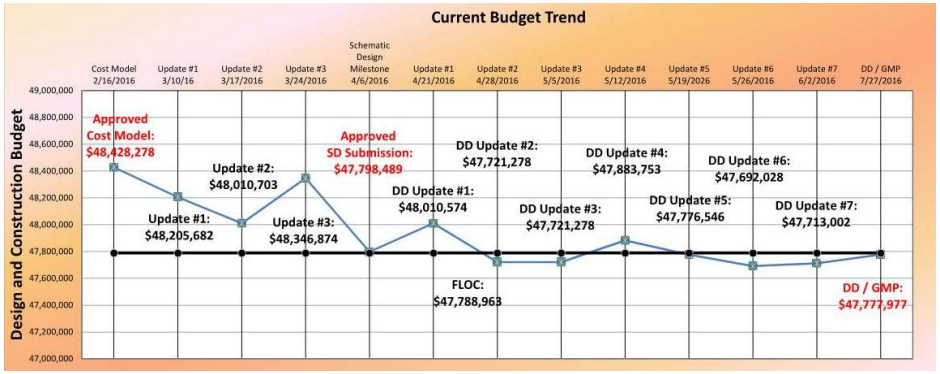

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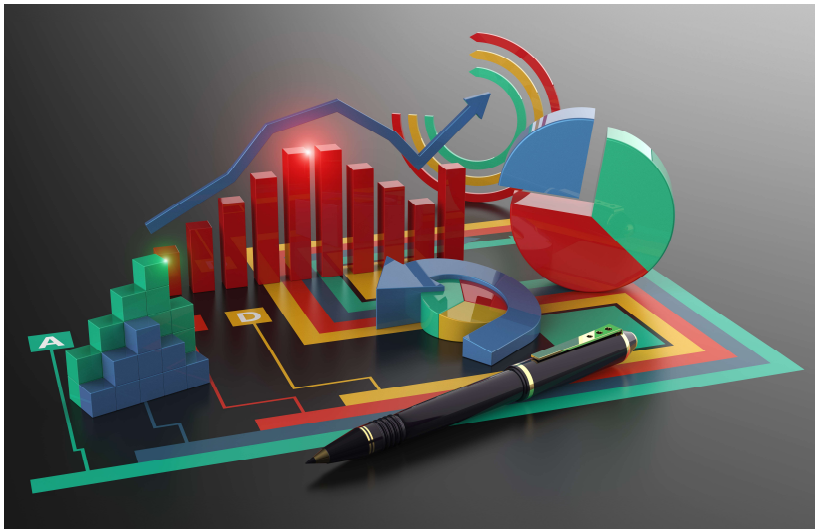
Continuous Estimating

TVD requires an ongoing process of continuous cost estimating, *not after-the-fact* estimate and *value engineering cycles.*

This entails creating systems that track performance against each of the CoS and the Cost Model.



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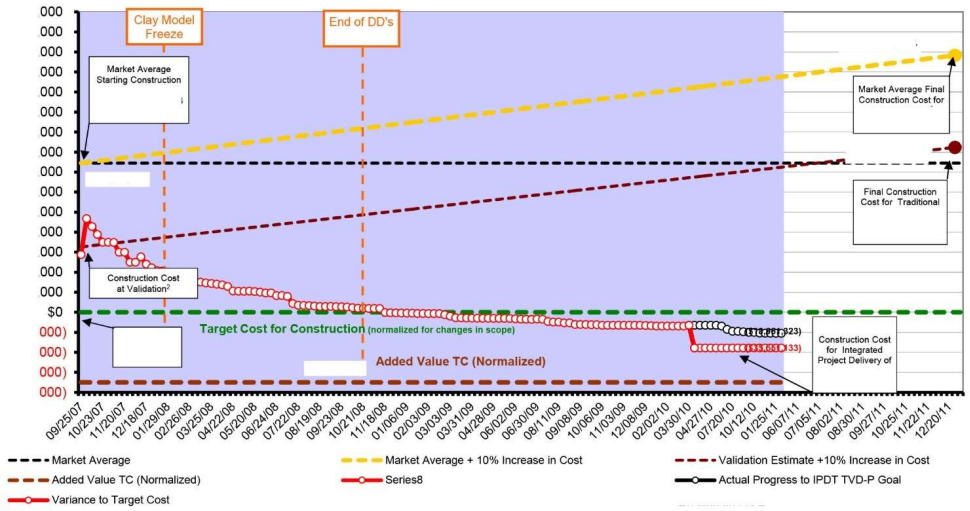
Current Working Estimate

Early in Validation teams:

- Develop a **Current Working Estimate** (CWE) format for continuously tracking the **current state** of the projected costs of the project at **regular and frequent intervals.**

Cathedral Hill Hospital Current Working Estimate



4. Discussion Question – Breakout Room

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Discuss how the skillset required for estimating is different than traditional approaches.

Breakout Discussion
(5 minutes)
Several groups share a key takeaway
(1 min each)

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Conceptual Design

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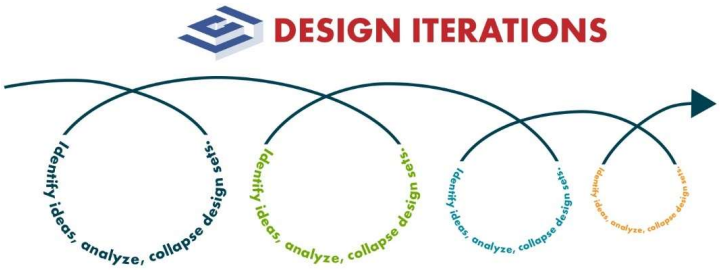
Conceptual Design

The work during Conceptual Design is to:

- Identify ideas.
- Analyze holistically.
- Collapse into design sets.
- Decide.

The work clusters research and develop sets to a minimum level of detail needed to drive to a decision.

Decisions are based on whether there is sufficient value added to substantiate the cost and schedule impact along with the alignment to the CoS and other project criteria.



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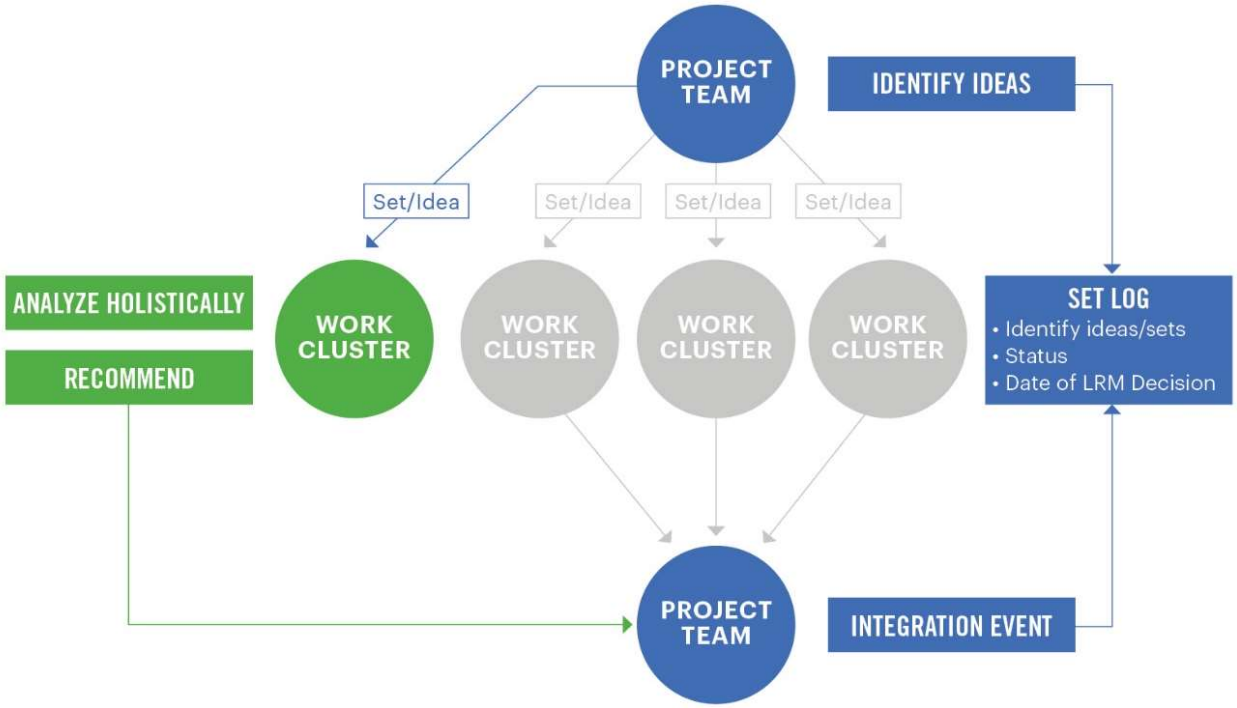
Work Cluster Flow



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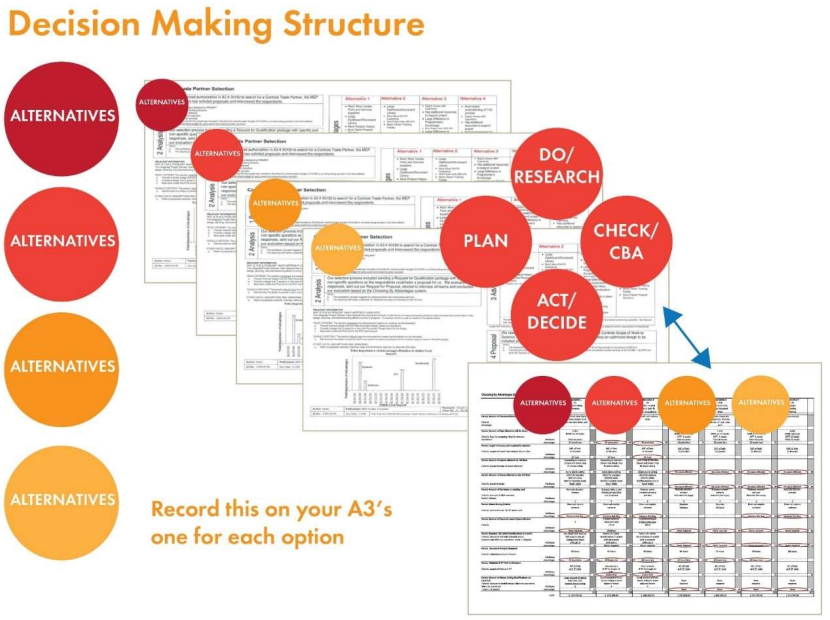
Integration Event

Integration events:

- Planned gatherings of the team
- To analyze set recommendations
- In the context of the whole project.

Work clusters do the pre-work and analysis of alternatives so that they can provide recommendations to the larger group.



Decision Flow Model

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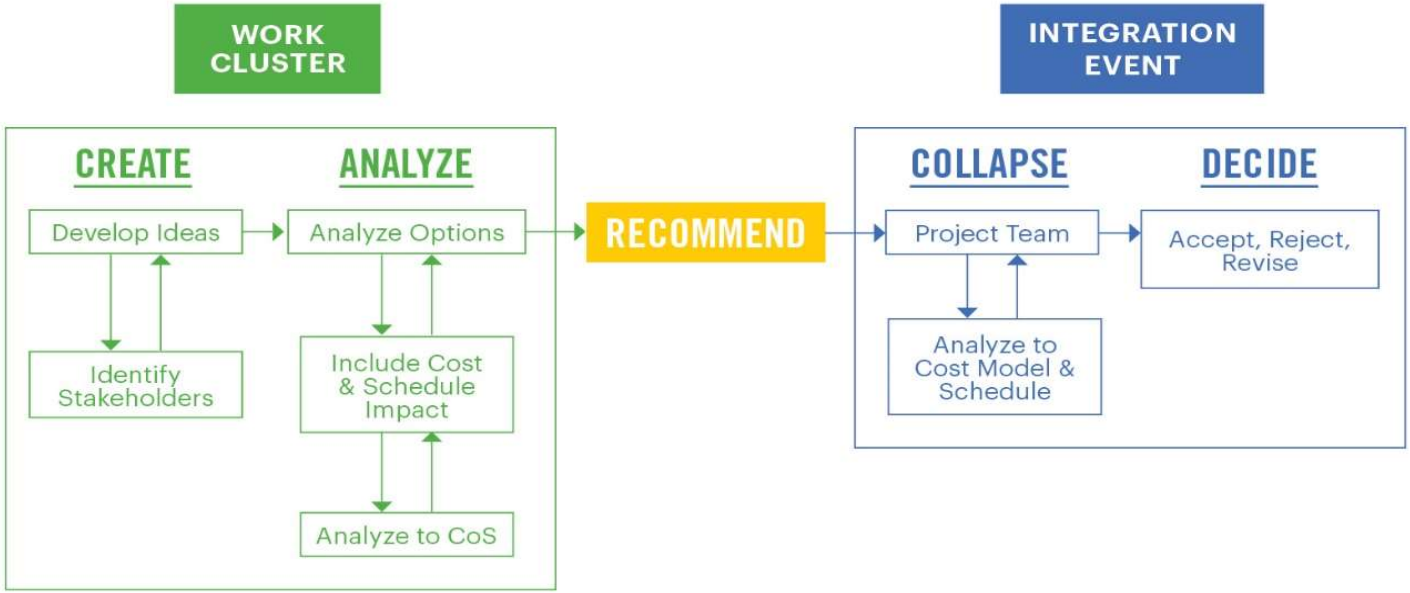

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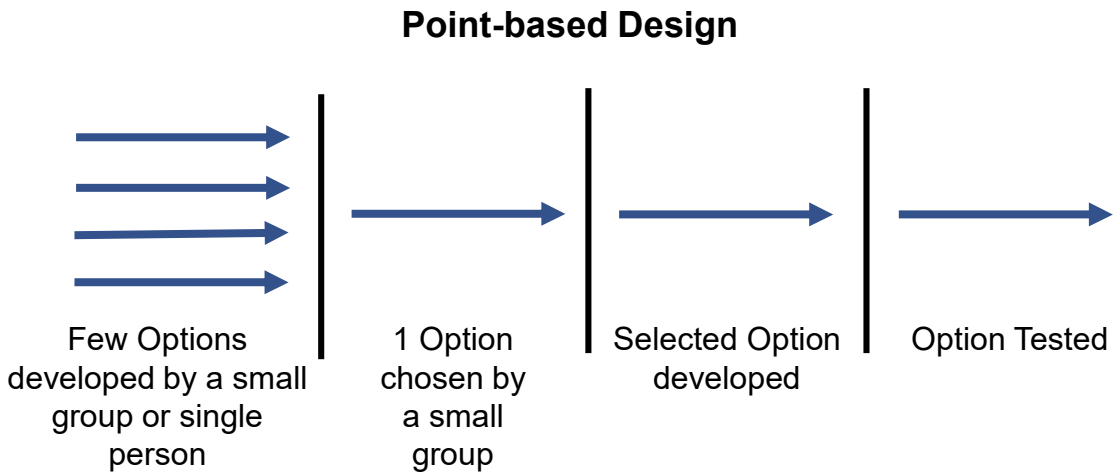
Set-based Design

Method that keeps requirements and options flexible for as long as possible during the development process, in order to find by means of set intersection, the best combination that solves the problem as a whole.

Set-based design supports teams driving innovation while reducing development costs. Agile and Lean intersect at Set-based design.

Point-based Design



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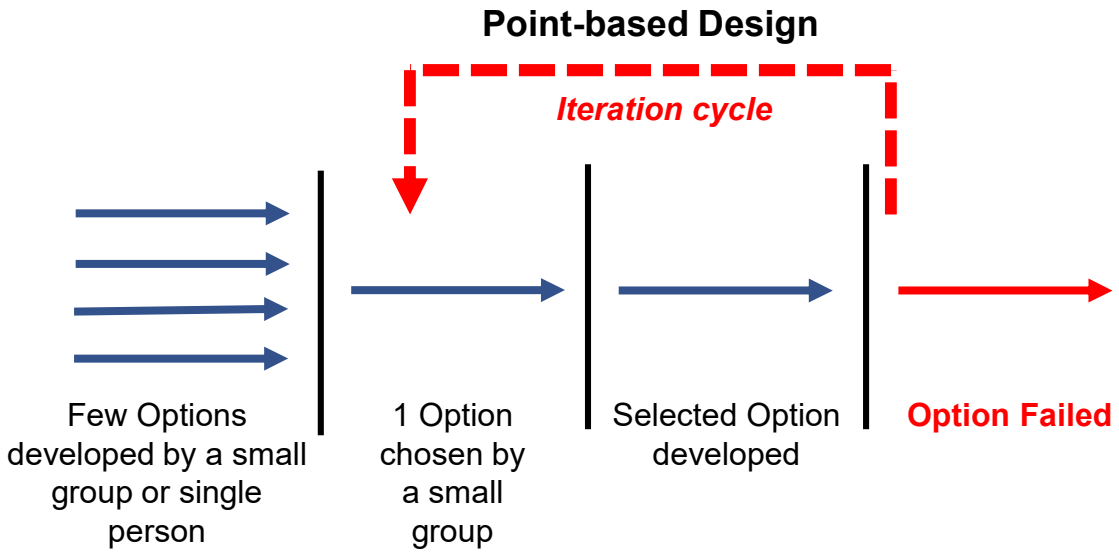
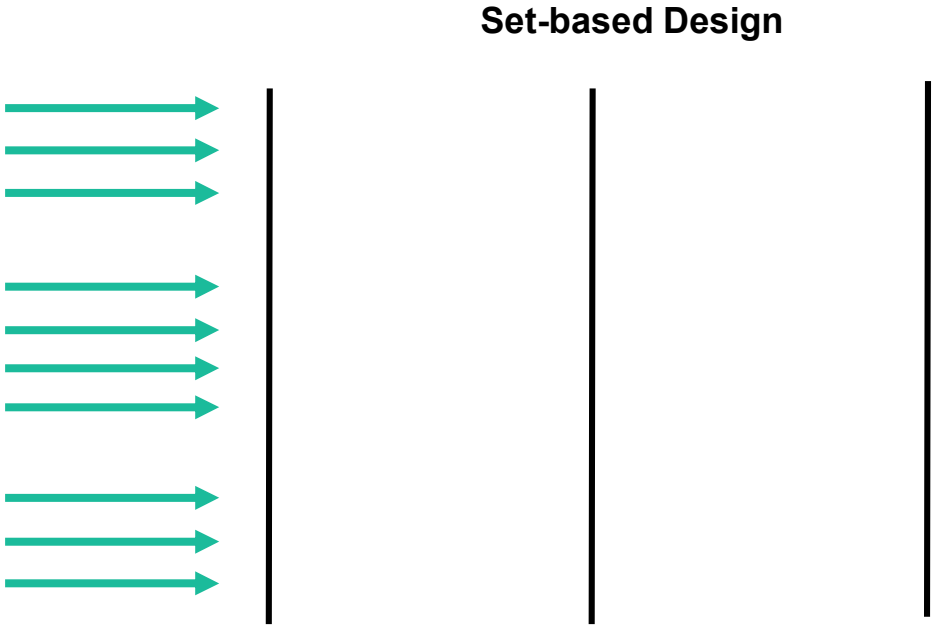
Point-based Design



Set-based Design

Many options developed by a diverse group for subsystems.



Courtesy of HMC Architects

Set-based Design

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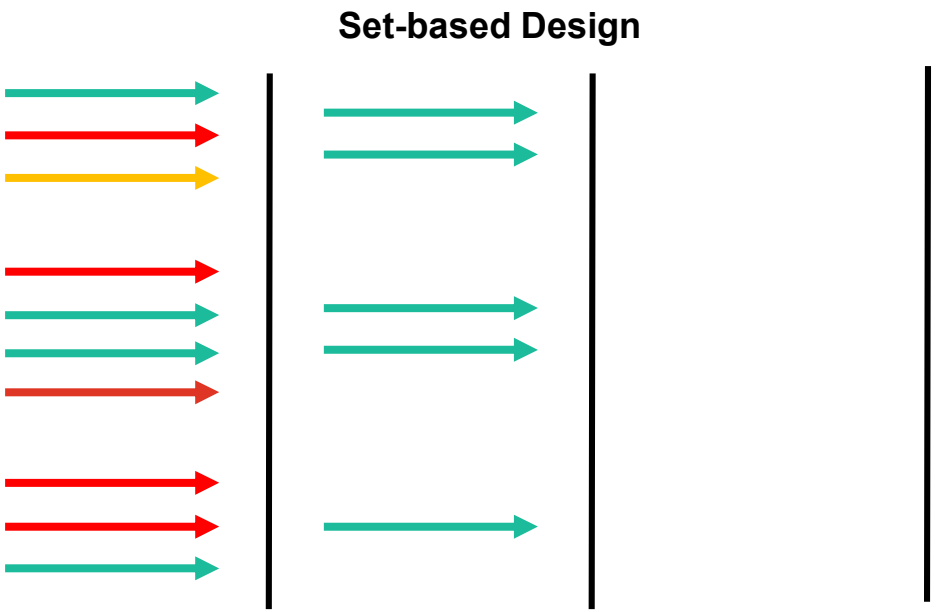
Many options developed by a diverse group for subsystems.

Evaluate against risks and in consideration of the project as a whole.

Weaker options are eliminated.



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Set-based Design

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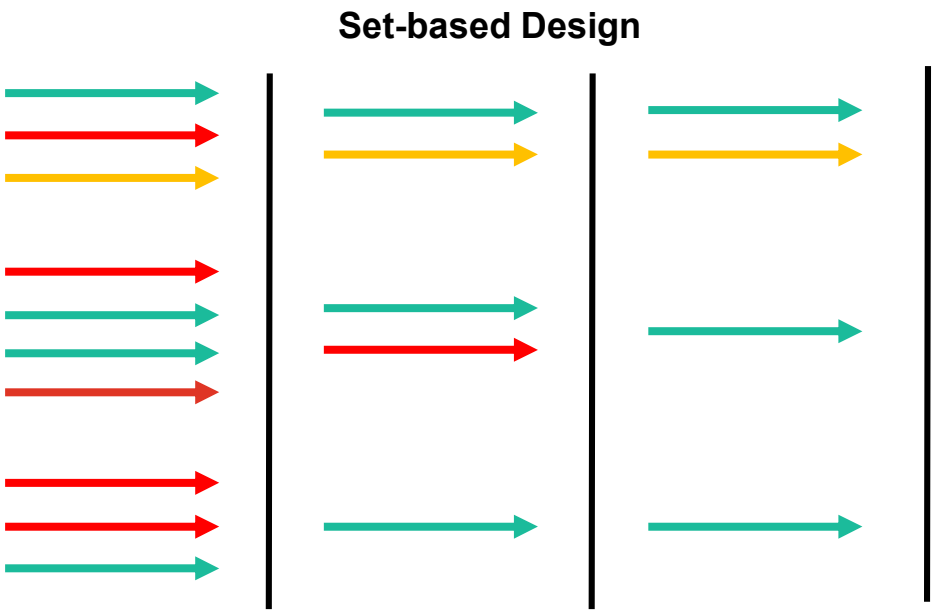
Options are continually evaluated and narrowed.



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Set-based Design

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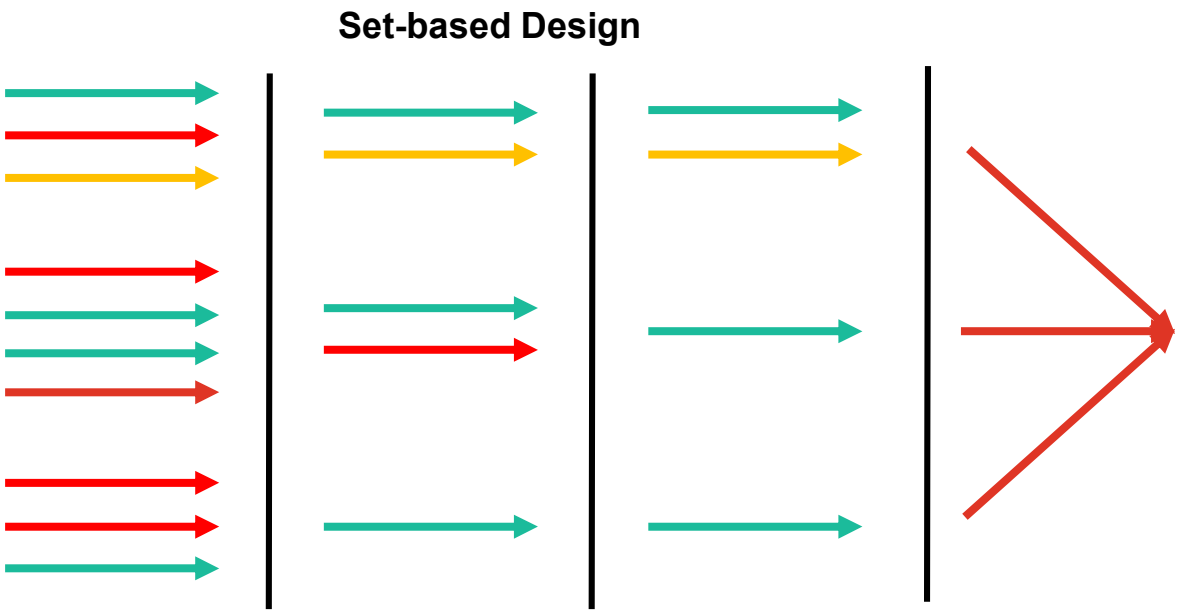
Weaker options are eliminated.

Options are continually evaluated and narrowed.

Final options selected.

No iterative cycles!



Courtesy of HMC Architects

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Production Design

Transition to Production Design

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Final design concepts:

- Are accepted by the project team, including owners and users
- Have been validated as aligning with the CoS and cost model.

The team now has a high confidence that the design can be achieved at or below Allowable Cost.

Allowable Cost

The amount the owner is willing to spend for the total project.

≥

Actual Cost

The final cost at the end of the project.

Production Design

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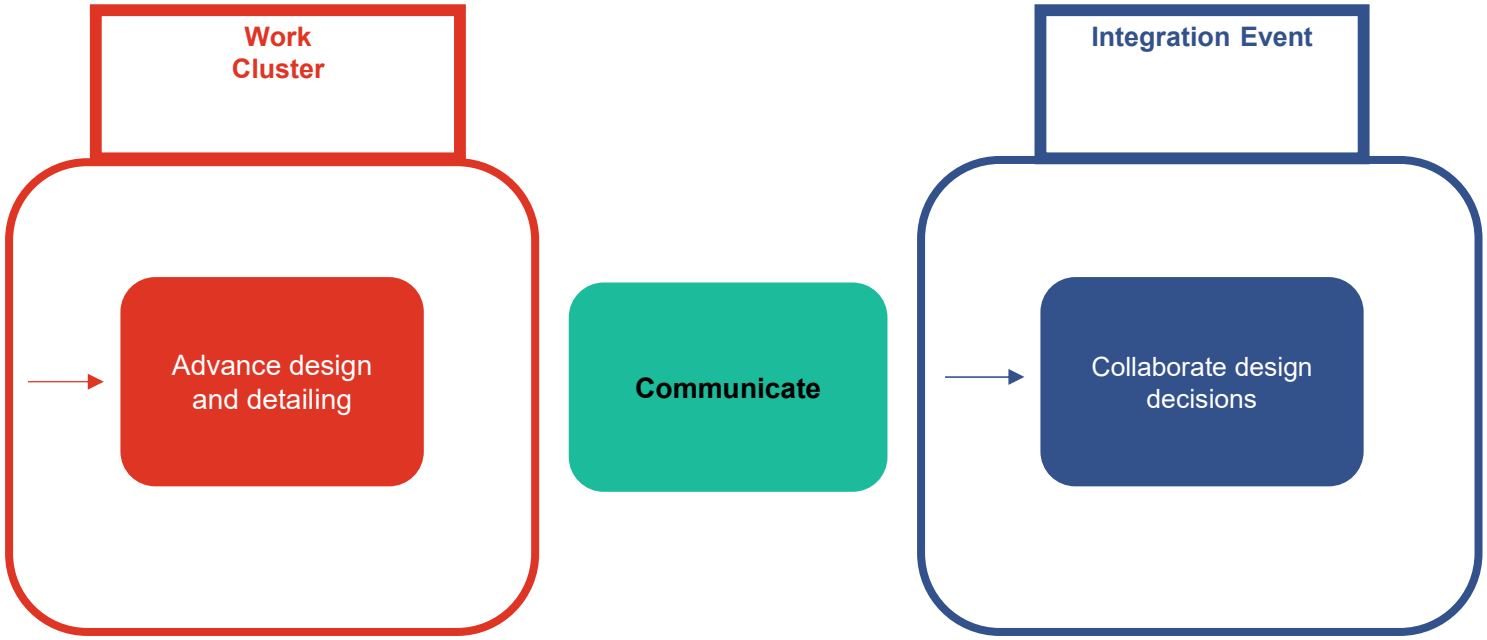

Production Design

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During Production Design:

- The phase pull plan guides the offline work
- Project values, including cost, continue to guide
- Ideation continues
- Prefabrication opportunities continue to emerge
- BIM coordination is sequenced according to the needs of the
- Coordination events should be held often
- Production design often transitions to construction through the release of packages per the milestone plan

5. Discussion Question – Breakout Room

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Discuss how the skillset required for design is different than traditional approaches.

Breakout Discussion
(5 minutes)
Several groups share a key takeaway
(1 min each)

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Construction

Construction

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As Production Design starts to release work to the field, the focus transitions to supporting the Last Planners® in execution of the work and measuring actual execution against targets.

TVD is supported by and Lean practices and approaches including:

- Prefabrication
- Team tracking of labor productivity
- Last Planner System®
- Continuing to implement a Big Room approach
- Eliminating waste in the construction process
- Reimagining the role of the designer during construction
- 5S Implementation

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Value Post Construction

Value Post Construction

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- For the owner, value is realized only after the facility is constructed and serving its intended purpose.
- The business case and values are reviewed for actual outcomes.

Measuring Outcomes

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Business outcomes

- Final cost of design & construction
- Final schedule
- Operational performance of finished building
- Quality & use

Project process outcomes

- Project quality, safety & appropriate integration of stakeholder input

Value outcomes

- Revisit the value-based decisions team made throughout process

Group Discussion Question – Chat Box

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New Actions?

What new actions or ideas that you learned today can you take back to your project?

Chat Box
3 minutes

Lean Journey to Mastery

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How will you reach the next level on your journey?

Target Value Delivery: Classroom & eLearning (release 2019)
Lean in the Design Phase: Classroom & eLearning
Mindset of an Effective Big Room: Classroom & eLearning (release May 2019)
Last Planner® System in Design: Classroom & eLearning (release 2019)
Conducting Gemba Walks: Classroom

Introduction to Lean Project Delivery: Classroom, eLearning & Webinar
Introduction to Last Planner® System: Classroom & eLearning
Lean in the Design Phase: Classroom & eLearning
Introduction to Lean in Design-Build: Classroom
The Business Case for Learn: Classroom

More on Learning

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Books:

Events:

- Local Community of Practice
- Congress (October)
- Design Forum (May)

eLearning:

Learn on your own time without taking time off project work.

Start learning now:

www.LeanConstruction.org

eLearning Courses

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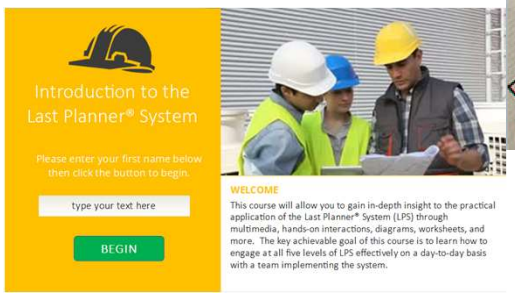
- Introduction to the Last Planner System®
- Introduction to Lean Project Delivery
- Lean in the Design Phase
- Effective Big Room
- Target Value Delivery
- Last Planner System® in Design



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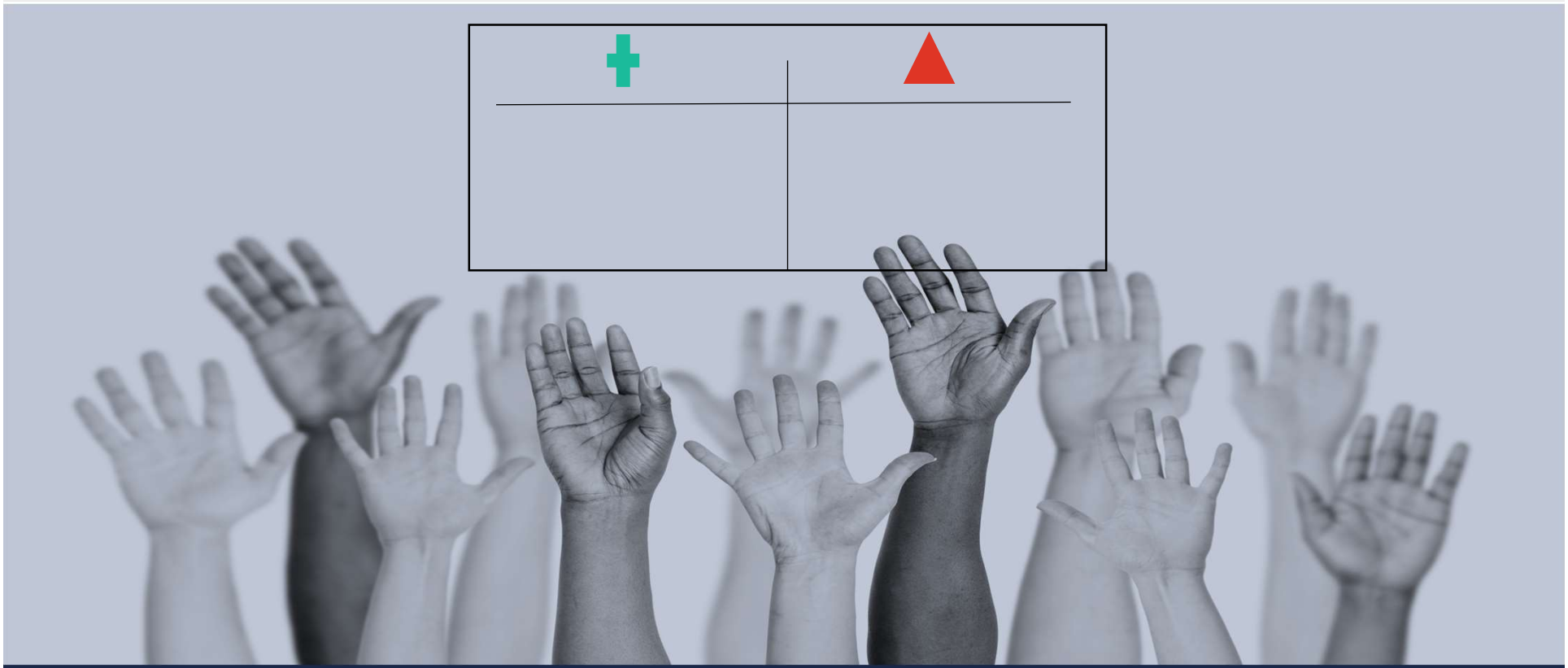
Questions & Plus/Delta



LCI Contact Information

Lean Construction Institute
Immersive Education Program

Membership:	Ilene Goldberg	iGoldberg@leanconstruction.org
eLearning:		eLearningdiscounts@leanconstruction.org
LCI Website:		www.leanconstruction.org

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This concludes The American Institute of Architects Continuing Education Systems Course

Lean Construction Institute info@leanconstruction.org