October 4 2014

EMPOWERING EDUCATIONAL TRANSFORMATION with LEAN
CEFPI Annual Conference in Portland

#cefpi2014
#cefpi2014Lean
@group2arch
Workshop Agenda

Pre game
  • Introduction to Lean

First Half
  • Workshop Part 1

Half time
  • Putting it together

Second Half
  • Workshop Exercise

Post game
  • Team report outs
  • Plus / Delta
Pre Game: Presenters

Craig Webber
- REFP and Architect
- Principal of Group2 Architecture Interior Design
- Educational Leader on SK School Bundle
  @CraigWebberArch

Laura Plosz
- Architect
- Principal of Group2 Architecture Interior Design
- Team Leader on SK School Bundle
  @Lplosz
Pre Game: Experts

Student
• Cole Webber, CEFPI Award Winner

Gov’t of SK Ministry of Education
• Phil Pearson, Project Director, SK School Bundle
• Delaine Clyne, Project Leader, SK School Bundle

School Divisions
• Greater Saskatoon Catholic School Division
• Prairie Spirit School Division
• Regina Catholic School Division
• Regina Public School Division
• Saskatoon Public School Division
Pre Game: Objectives

To Learn About:

• processes for improving educational delivery
• processes for gathering input from stakeholders
• processes for improving educational facility design
• how the Lean 3P process can fit within P3 procurement process
Pre Game: Lean

History
• Toyota Production System
• Healthcare

Concepts
• Lean 3P – Production Preparation Process
• The Student as The Customer
• Student First
• Focus on Value Added
• Eliminate Waste
Pre Game: Lean

Exercises

• Value Stream Mapping
• Fishboning
• Paper dolling
• Try storming
• 7 Ways
• Choose by Advantage
Pre Game: SK School Bundle

By the Numbers
3
39 | P3
3P3
Challenge & Opportunity
Lean Value Stream Mapping
  • Defines how to measure success

Lean 3P
  • Production Preparation Process
  • Describes the facility characteristics required for success

P3 Documentation
  • Public Private Partnership
  • Prescribes the characteristics required for success
  • Encourages innovation by the Proponents
Schedule
- timeline aggressive to achieve shovels in the ground
- requires stakeholder commitment and buy-in

Community & Other Partner Participation
- opportunities to enhance outcomes
- need to be identified quickly

Student Engagement
- focusing on the Student as the Customer
- appropriately engaging
First Half: Workshop Part 1

Group A
  • Value Stream Mapping
  • teams of 4

Group B
  • 7 Ways Shell Development
  • teams of 4

Group C
  • 7 Ways Interior Development
  • teams of 4
First Half: Workshop Part 1

Group A – Value Stream Mapping
- Identify process with steps and times
- Current State
- Value Added
- Non Value Added
Group A – Value Stream Mapping

• Objective: engage stakeholders to improve the physical learning and teaching environment

• 3 Strategies:
  1. Remove barriers to advancements in instruction and learning
  2. Improve student access to range of programs to improve learning outcomes and enhance student engagement
  3. Improve efficiency of physical design to reduce non-learning/non-instructional time
First Half: Workshop Part 1

Group A – Value Stream Mapping

• Outcomes:
  • Improved access to resources
  • Improved relationships
  • Improved relevance of learning
  • Reduce low value tasks
What do you want me to do now?

Activities: Current State Map
Measures captured from resident arrival to departure

Report out: June 14/1

VA = 76.35  LT = 98.35
NVA = 32.00  CT = 76.35
VA% = 18%  NVA% = 22%
Examples of Facility Relationship with Value Streams

- Receiving Suggestions
- Reporting to Safety Manager
- Reporting to School Director
- Discussed at Weekly Meeting
- Decision Making
- Implementation?

Process time: 12 hr, 12 hr, 7 days, 1 hr, 24 hr, 9 days
Work time: 5 min, 5 min, 10 min, 30 min, 30 min, 5 min

STOP
Lack of standardized reporting procedure

STOP
No dedicated personnel or procedure to ensure safety suggestions are implemented

STOP
Waiting time before suggestions are reported

STOP
Overload of safety suggestions
First Half: Workshop Part 1

Group B – 7 Ways Shell Development
- 7 ways to solve 1 problem
- Provided first 3 solutions
- Develop 4 more
First Half: Workshop Part 1

Group C – 7 Ways Interior Concept

• 7 ways to solve 1 problem
• Provided first 3 solutions
• Develop 4 more
• Fit within ‘Shell’
First Half: Workshop Part 1

Get started

- Go to your Group’s area
- Find your teammates (colour & number)
- Get supplies from Group Leader
- Grab a table
- Reference examples as needed
- 30 min
Half Time:

**Group Insight**
- Common issues/understandings

**Connections**
- Results from other processes
- Relating the exercises

**Next Steps**
- Group A – Future State
- Group B – Choose by Advantage & Quality Metrics
- Group C – Choose by Advantage & Quality Metrics
Half Time:

Group A – Value Stream Mapping
  • Video from SK School Bundle
Examples of Value Streams

Dan Florizone (@dandeputy)

12/29/2013, 8:40 PM
As a parent, value is measured by the time my children have with their teacher. Anything that detracts is waste - and should be eliminated.
Second Half: Workshop Part 2

Group A
  • Future State
  • Tally times
  • Identify facility impacts
  • Prep for Report Out
Second Half: Workshop Part 2

Group B – 7 Ways Shell Development

• Video
7 Ways
7 Ways

3P
Setting Parameters

• More than blue sky
• Bound by cost
• Bound by area and/or
• Bound timeframe
• Two-way purpose
WAY 1 - STEALTH BOMER

WAY 2 - BIG BOX

WAY 3 - POD

WAY 4 - WRAPPER

WAY 5 - THREE STOREY

WAY 6 - TWIST TIE
7 Tetris Massing
Way 6 Twist-tie - Advantages

- Linear distribution allows for future evolution
- Interconnection allows for enhanced sharing potential (sectional and zoned)
- Grouping by age internal and external
- Maximize use of shared functions
- Responsive to changing divisional distribution
- Exterior micro climates
- 2 schools vs 3 areas
Half Time:

Group C – 7 Ways Interior Concept
  • Video
Choosing by Advantage

- List the advantages of each ‘Way’
- Develop list of criteria (4-6)
- Rate each ‘Way’
Second Half: Workshop Part 2

Choosing by Advantage - Example

• Buying a bike
• Set criteria
• List advantages of each ‘Way’
Second Half: Workshop Part 2

Groups B & C – Next Steps

• Choose by Advantage
• Develop criteria with group
• Rank each ‘way’
• Choose the best
• Develop Quality Metrics
• Prepare for report out
Back to it

• Go to your Group’s area
• Get additional supplies (if needed)
• Reference examples as needed
• Prep for report out
• 40 min
Post Game

Group Report Outs
  • A, B & C

Putting it together
  • Lean 3P
  • 30 & 60 Day Reviews

Using the Outputs
  • Quality Metrics

Plus / Delta
Post Game: Group Report Outs

Process
Outcomes
Learnings
Post Game: Putting it Together

Lean 3P

• Value Stream Mapping
• 7 Ways Shell Development
• Fishboning
• 7 Ways Interior Concept
• Scale models
• Full scale mock ups
Jan

Before 3P

- Site Investigations
- Partnering Workshop
- Value Stream Mapping
- Student, Teacher, & Parent Interviews
- 7 Ways Workshop - Shell
Jan

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• Site Investigations
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Examples of Facility Relationship with Value Streams
Examples of Facility Relationship with Value Streams

http://www.youtube.com/watch?v=9aGuLuipTwg&feature=player_detailpage
Examples of Facility Relationship with Value Streams

90 + = ?!
The Participants

Up to 100 participants for the Lean 3P event:

• require a broad cross section of perspectives

• require a majority of ‘front line’ voices (students, teachers)

• need ability to commit to full participation

• **MUST** commit to all 5 days
Lean 3P Process
Model B
Main Level
Model B
Second Level
30 Day Review
30 Day Review
Post Game: Using the Outputs

Quality Metrics
• Yard stick for design evolution

30 & 60 Day Reviews
• Consistent Voice
• Evaluating design progression

P3 Procurement
• Scored Elements
3P Lean Quality Metrics

• Based on input gathered from:
  • Partnering Session
  • Student, Parent and Teacher Interviews
  • Lean 3P Best Educational System
  • Lean 3P Preliminary Report Out & Discussion

• Common Themes, Ranked
  • Compiles commonalities
  • Indicates sources and (some) weightings
  • Review sheet
## Lean 3P Process

<table>
<thead>
<tr>
<th>Common Themes, Ranked</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Diversity</strong></td>
</tr>
<tr>
<td>Flexibility of Learning Environments Layout: Layout to accommodate other large openings (e.g., garage doors) or add walls between adjoining classrooms and to corridor/learning commons.</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Variety of Types of Learning Spaces: Provide a variety of learning environments ranging from flexible to traditional, including flexible/fixed/variable, flexible/fixed/variable, flexible/fixed/variable, flexible/fixed/variable, flexible/fixed/variable.</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Provide for Teacher Collaboration Room: Provide for individual teacher space within teacher collaboration spaces rather than using dedicated classrooms. Locate centrally within learning pods in order to enhance supervision; a way of supporting all levels of collaboration.</td>
</tr>
<tr>
<td>Innovative</td>
</tr>
<tr>
<td>Support inquiry-based learning: Provide ‘flex’ areas in each learning pod/room to support flexible, varied, and other subjects. Support with space for portable storage units.</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Centralized Shared Space: The central space is to include the gymnasium, gym support areas, service, multi-purpose rooms, special needs washrooms, daycare, and family resource centre at a minimum. These spaces are to be available to public students, Catholic students, and the community.</td>
</tr>
<tr>
<td>Student First</td>
</tr>
<tr>
<td>Meeting and Rotating Space: For the various resources that come to meet with students, located near to the students’ home-based learning environment, the right people in the right places to support students.</td>
</tr>
<tr>
<td>Innovative</td>
</tr>
<tr>
<td>Outdoor Learning Environment: Represents a rooftop garden or outdoor area on the ground plane that is accessible/adjacent to an indoor learning environment, includes an appropriate form of outdoor seating.</td>
</tr>
<tr>
<td>Student Well</td>
</tr>
</tbody>
</table>
| Student Services Open: Provide the view of the Student Services Open on the Mail Level.
Kit of Parts

MORE
TRADITIONAL

LESS
TRADITIONAL

JOINT USE
Kit of Parts

MODEL A
<SASKATOON>

MODEL B
<REGINA>

MODEL B
<MARTENSVILLE>
<WARMAN>
The 30 Day Review

Two Tasks:

1. Were any major themes missed?

2. Do the architectural layouts respond to the metrics?
The 30 Day Review

Step 1: Review of the common themes

Step 2: Review of the architectural layouts in relation to metrics

Step 3: Group discussion over large scale layouts

Step 4: Feedback from the groups
30 Day Review
30 Day Review - Students
Jan

After 3P

- 3P Lean Quality Metrics
- Evolution: Standard Design to Kit of Parts
- 3P Lean Architectural Layouts
- 3P Lean 30 Day Review
Apr - May

- Phase 1 Report
- Modify ‘Standard’ School Designs for:
  - Sites
  - Pedagogy/Programs
- Develop documents describing each joint use school
- Phase 2 Report
June – Sep

• Develop documents for procurement of:
  • full design services (Design)
  • construction (Build)
  • financing (Finance)
  • maintenance (Maintain)
• Develop documents for procurement of:
  • full design services (Design)
  • construction (Build)
  • financing (Finance)
  • maintenance (Maintain)

Construction Start Summer 2015
Open Fall 2017
Examples of Value Streams

Dan Florizone (@dandeputy)

1/9/2014, 8:32 PM
@rubrecht73 We should never allow a person/student be seen only as a number/statistic. Every child by name, by strength, and by need.
Post Game: Plus/Delta

What was useful/interesting?
What could be improved?
Video links can be found at group2.ca