Implementing Lean Principles and Visual Management Technologies in Facilities Management Systems

Audrey Schultz, Ph.D.
Associate Professor, Pratt Institute
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Learning Objectives

1) Bring to the forefront that an added function of Lean Visual Management Transformation might be the missing Key Component in order to Succeed.

2) Introduce the challenges that occurred during a Facilities Managements Lean Transformation Journey.

3) Inform the industry that it’s not just about Lean Construction Push/Pull Production Systems. ‘Lean Facilities Management’ is the next generation of Lean in the Built Environment: Lean FM, Why Not?

4) Present Lean Visual Management Technologies that were Implemented in Facilities Management Systems that will benefit all Built Environment Workplaces.
Background Project: Research Thesis

• A North West England University’s Estates and Property Services (E&PS) Department was directed to cut £1 million from their operating budget.
• Transformation labeled ‘Lean Approach’ with ‘Value Added’ directives.
• Lean Facilities Management Division of a Lean Construction Corporation awarded 3rd Party Outsourced Tender for new Off-site High Profile Facility.

• Employees perception of Transformation and Downsizing added Unhealthy Attitudes and Cultural Indifferences.
# E&PS Lean Practice Concepts

## Lean Terminology in Transformation Documents

<table>
<thead>
<tr>
<th>Added Value</th>
<th>Process Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Improvement</td>
<td>Transparency</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Waste</td>
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## Lean Concepts and Visual Management Technologies Implemented or Not

<table>
<thead>
<tr>
<th>Continuous Improvement Plan</th>
<th>Monthly Performance Indicators, KPI's and Service Level Agreements (Standards).</th>
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<tbody>
<tr>
<td>→ Lacked a consistent continuous improvement plan.</td>
<td>Multi skilled workers, handyperson/porters and reception/helpdesk support team.</td>
</tr>
<tr>
<td>→ What was already put in place would continue to be “as is”.</td>
<td>→ Successful for reception/helpdesk support team.</td>
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<td>→ Not successful for handyperson/porters.</td>
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<table>
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<tr>
<th>Lean Leaders and One Point of Contact</th>
<th>Process Mapping/Value Stream Mapping</th>
</tr>
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<tbody>
<tr>
<td>→ Original transformation documents assigned a lean board.</td>
<td>→ Did activity once, never continued to improve upon original value stream, for 4 1/2 years +.</td>
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<tr>
<td>→ Did not continue and current management and executive leadership seem not to remember this had happened, nor have they instituted it.</td>
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<tr>
<td>→ One Point of Contact for all work orders, customer issues, reactive repairs, by reception/helpdesk support team.</td>
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<tr>
<td></td>
<td>New Process and Procedures</td>
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<td></td>
<td>→ Continued improving services based on the Transformation Project Initiation Document (PID) Facilities Product Delivery Programme (FPDP).</td>
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Challenges

- All FM Services Transformed.
- Service Level Agreements (SLA’s) were developed.
- Key Performance Indicators (KPI’s) created.
- Attempted to Value Stream Map all FM Services.

- Budget Cuts and Staff Reduction.
  - Construction department resolved.
- Cultural Issues Developed.
  - Employees did not Trust Management.
- E&PS Employees were not Educated in Lean Terminology.
Therefore…

Visual Management Artefacts were designed and introduced with and without success.

1) Lean Visual Management Workshop Blitz.
   • Visual Transformation.
   • Visual Management.
   • Three Activities:
     ▪ A3 Activity, Value, Workplace Barriers.

2) Visual Management Library.

3) Lean Visual Workplace Management Project Delivery Cycle.
What Happened Next…

- Gemba Walks.
- Talking the Language of Lean and Visual Management.
- White Board Communications.
  - Was not sustained.
- Student Accommodation CAFM Access.
### Lean Concepts and Visual Management Technologies Implemented after Lean Visual Management Workshop Blitz Artefact

#### Visual Communications
- Speaking the Language of Lean and Visual Management.
- Reading books on Visual Workplace, Visual Thinking.

#### Visual Controls, Visual Office, Machine and Guarantees
- Data/Phone Cables.

#### Visual Order, Establish a Visual Foundation
- Gemba Walks, Go See, Pattern of Work.
- Colour Coded Cabinet Doors with coordinated coloured Key Chains, using Colour Coded Dots.
- Identifying through Labels.

#### Visual Displays, Performance Metrics and Standards
- A3 Report.
- Visual Display Boards.
- Student CAFM Net Accommodation Instructional Sheet.
Lean Visual Workplace Management Project Delivery Cycle

**Planning**
- Location: Determine Department; Copy of Floor Plan, Label Areas & Laminate; Develop Aims & Objectives; Do an A3 Activity Report; Set Up First Planning Meetings.

**Track Progress**
- Track and Measure Cost, Time, Motion (+);
- Keep Records of Progress; Implement Design;
- Take Pictures Before, During & After
  - How?, Why?, When?, Where?

**Project Controls**
- Cost Control: Determine Budget
- Schedule: Set Milestones & Activities
- Determine: Length of Project & What are you going to Track?
  - How?, Why?, When?, Where?

**Keep Records**
- Keep all Documents; Notes; Pictures; Files;
  - Document; Document; Document!
- Set Up Project Files; Access for All
- Operator Note Books, Diaries, Time Cards.
- Track entire process and progress.

**Team Charter**
- Write & Compose Team Charter;
- Project Purpose; Benefits; How will Project be Measured; Timeframe & Expectations; Get Team Buy-In & Signatures, Post Charter for all to See.

**PDCA**
- Plan, Do, Check, Act; Systems Thinking;
- Continuous Improvement, Check In;
- Project Status Updates; Look a Heads;
- What have we Achieved So Far? And
- What else do we Need to Achieve?
Stores Proposed Visual Tape Planning Method
Method for Value Based Lean Visual Management in Facilities Management, or LVM in FM

- Appoint a Lean Visual Manager, or Champion.
- Continuous Improvement Cycle, PDCA.  
  - Difficult to Sustain.
- One Point of Contact.
- Multi-Skilled Workforce.
- Library on Lean Visual Management.
- Value Stream Mapping.  
  - PDCA.
- Value Based Facilities Management.
Method for Value Based LVM in FM

Visual Communications

- Value Creativity.
- Establish a Lean Visual Knowledge based Workforce.
- Speak the Language of Lean and Visual Management.
Method for Value Based LVM in FM

**Visual Controls, Visual Office, Machine and Guarantees**

- Design to Talk.
- Colour Coded Data/Phone Cables/Clip Boards, Project and Administrative Files.
- Reception/Helpdesk Staff 24/7/52
- CAFM, CMMS, BMS Systems.
- Intelligent Call Monitoring Phone System.
- IPD, Smart Phone or Tablet use for O&M.
- Furniture Re-use and Recycling Program.
Method for Value Based LVM in FM

Visual Order, Establish a Visual Foundation

• Gemba Walks, Go See.
• Colour Coded Furniture, Keys, Key Chains & Cabinet Doors.
• Patterns of Work.
• Visual Safety Solutions.
• Security Panic Buttons and Door Release Buttons.
• Identifying through Labels, Black Type on Yellow Background = best visual colour combination.
Recipe for Value Based LVM in FM

Visual Displays, Performance Metrics and Standards

- A3 Reports.
- Visual Problem Solving.
- Visual Display Boards.
- Benchmark Systems.
- Service Level Agreements.
- Key Performance Indicators.
- Monthly Performance Reports.

- Restructure Security Systems.
- Comply with Customer Funded Work Policy.
- Reduce Planned Preventive Maintenance (PPM).
- Set New Standards of Work, Processes, and Procedures.
- Student CAFM Accommodation System With Instructions.
Underlying Issue is Cultural

- Lack of Direct and Consistent Management Style.
- Employees Mistrust Management.
- Set in their Ways, Old School vs. New.
- People Fear Loss.
- People Hate Change!
- Poor Communications with No Transparency.
- Too Much Change Going On.
Underlying Issue is Cultural

• All Management (and Employees) must be involved.
• All Supervisors, and Leadership must Understand Change Management.
• Appoint a Change Management Champion.
• Identify Lean Visual Management Champions.
  ➢ LVM Champion at Workplace Level.
  ➢ LVM Leader at Middle Management Level.
  ➢ LVM Principal at Senior Leadership Level.
• Engage Employees in the Process.
• (Everyone) Must Learn New Process and Procedures.
What Did I Learn?

• According to Mann (2010) office workers are not used to being accountable for their work activities as someone on the manufacturing line maybe.

• Employees do not like change and will “express resistance to that which is new and unknown” (Vicher, 2012, p.128).

• “The amount of rework and non-value-adding activity in office (type) processes may contribute to the tendency for office workers to resist increased accountability that comes with lean and lean management systems” (Mann, 2010, p. 107).
What Else Did I Learn?

“It is very important to remember that making changes to someone’s work space and procedures, and not managing these changes will mean that the individual is likely to oppose, and in some cases even sabotage the proposed changes” (Bicheno & Holweg, 2009, p. 203).

Yes They Did!!!
What Else Did I Learn?

• The continuation of E&PS’s lean journey momentum seized. Everything stayed as it was in May 2012.

• According to Kurt Lewins (Cameron & Green, 2015) three step frozen theory of change, once you unthaw the existing ‘as is’ state, you create the new proposed state and only when the new ‘to be’ state is developed you refreeze it.

• The research concludes that E&PS may never get to refreeze themselves again, since new ‘mind sets and habits’ (Cameron & Green, 2015, p. 36) have not been established.

• They are and will always be in constant flux.
What Did I Learn?

• Most of the technologies are being implemented in manufacturing, IT, and construction industry with value added realisation.

• The main fundamentals of FM are linked to a social system composed of people, place, and process, technology, governed by work standards, service level agreements, and key performance indicators. This can all be tracked and openly communicated through the integration of visual technologies.

• This is where FM can get noticed, establish themselves as a visual technical industry.
Final Outcome Statement

The success of any (FM) services department depends largely on employees and customer expectations, plus their willingness to take the baton and follow thru with it.
Visual Workplace Management Building System
Questions & Discussion
Contact Us

Dr. Audrey Schultz
Pratt Institute, NY
aschul47@pratt.edu

THE SECRET OF CHANGE IS TO FOCUS ALL OF OUR ENERGY, NOT ON FIGHTING THE OLD, BUT ON BUILDING THE NEW.
SOCRATES
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