

## Continuous Improvement Using Lean Principles

December 2018 Update

### Memorial Union Building (MUB) Basement Cleaned Up, Safer

Anything above the minimum amount of resources needed to provide value to our customers can be considered waste. There are 8 forms of this non-value-added waste—motion, movement, waiting, correction, over processing, overproduction, inventory, and untapped knowledge. The Memorial Union and Dining Services formed a team to conduct a 5S workplace organization (sort, set in order, shine, standardize, and sustain) in the Memorial Union basement, and they were able to reduce or eliminate most of these wastes.



The new sign for the MUB basement door.



Before

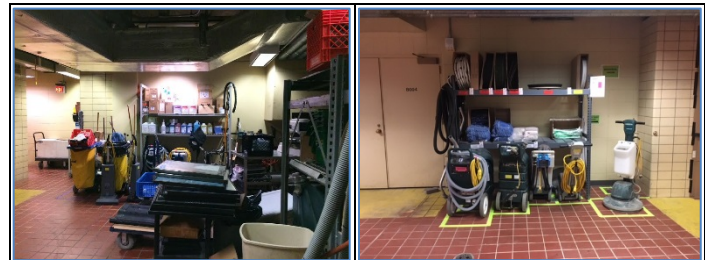
After

The before picture shows the cluttered basement, and the after picture shows the basement clear of all items.

Items are no longer stored in the basement. This eliminated the wasted time and effort of people having to go down steep stairs and maneuver through duct work and machinery to store or find items. This space is now only accessible to building maintenance employees.

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All unnecessary items were rehomed, and all retained items were given a specific location which resulted in an overall decrease in the square footage of storage areas. Items are located where the work takes place. In addition, staff are able to find items and use the space more efficiently, resulting in staff capacity and space savings, shorter end-to-end process time, and greater productivity.



Before

After

All needed items have a designated location.

A simple example of motion and movement waste reduction was the relocation of portable bar storage from the basement to the ballroom, where the bars are used most often. This reduced the time to set up a bar by 14.4 minutes, resulting in a \$260.54 reduction in set-up labor costs annually. This type of simple yet elegant waste reduction, when applied to thousands of processes, can add up to significant savings.



Fewer chemicals are kept on hand, reordering is simplified, and chemical storage is safer.

Chemicals are now stored in a safer location, and a labelling and reordering system has been established. This has eliminated excess inventory, ordering items

for equipment we no longer have, and products we don't need. This not only reduced inventory costs, but also created staff capacity savings through a simple, streamlined order process.

Most importantly, the 5S revealed safety issues that have since been eliminated, and compliance has been significantly improved. Designated locations for items helped to clear walkways and maintain clearance for sprinkler systems, warning signs were installed for fire doors and low ceilings, sharp edges were covered, and tripping hazards were removed. To ensure the improvements are sustained, weekly audits by MUB employees identify issues, and follow up is reviewed, addressed, and monitored at their daily huddle.



Many safety features have been added.

## Lean Outreach and Connections

- Faculty Fellow in the Office of Continuous Improvement.** Rick Berkey, professor of practice in the Pavlis Honors College, was appointed as a faculty fellow in the Office of Continuous Improvement (OCI) for the 2018-2019 academic year. Rick will focus on strengthening the continuous improvement culture in academic affairs, applying continuous improvement thinking, methods and tools to faculty research and teaching.
- Archer Selected as Examiner for 2018 Malcolm Baldrige National Quality Award.** OCI director Ruth Archer, PhD, is on the [Board of Examiners](#) for the 2018 Malcolm Baldrige National Quality Award—the only presidential award for performance excellence. Examiners are competitively selected from leading experts in U.S. business, health care, education and nonprofit organizations.
- Morgan brings Lean Product and Process Development to Blue Marble Enterprise.** James Morgan, PhD, is collaborating with the advisor for the [Blue Marble Enterprise](#), Glen Archer, PhD, to pilot Lean product and process design as part of engineering education. Morgan is the co-author with Dr. Jeff Liker of *Designing the Future: How Ford, Toyota, and other world-class organizations use Lean product development to drive innovation and transform their business*.
- OCI Assisted with Strategic Plan Development.** Ruth Archer facilitated a discussion for the School of Forest Resources and Environmental Science (SFRES) on their strategic plan. The dean of SFRES, Dr. Andrew Storer, wanted to ensure all voices were heard.
- Coleman-Kaiser presented at 2018 Engineering Lean & Six Sigma (ELSS) conference.** Associate Vice President for Administration Theresa Coleman-Kaiser was invited to present at the 2018 ELSS conference. This conference has a Lean in Academia track as part of its annual program. Her topic was [Striving for Calm Minds: Developing Students, Improving Universities](#).
- Jeff Hebbard Spoke to Copper Country Lean Group.** Jeff Hebbard, '86, Chief Operating Officer for TIDI Products, LLC, spoke to the Copper Country Lean Group about *Lessons Learned from 20 Years of Lean Application*. Thirty-six people attended his community presentation. While at Michigan Tech, he also served as the guest speaker for the 2018 Lean facilitator graduation ceremony.



A team of SFRES faculty and staff discuss a draft of their strategic plan.



Coleman Kaiser presenting a case study on Michigan Tech's framework for providing an immersive Lean experience for students.

## Continuous Improvement Events as of November 6, 2018

Managed through OCI				
Executive Team Area	Active as of 6 Nov 18	Completed since last report 1 Jul–6 Nov 18	Completed FY19 YTD 1 Jul–6 Nov 18	Completed FY18 Full Year
Academic Affairs	1	2	2	5
Finance & Administration	2	0	0	13
Research	0	0	0	3
Student Affairs & Advancement	1	0	0	2
University Relations & Enrollment	0	0	0	0
<b>Total</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>23</b>