



Center of Visual Expertise

TURNER LATHROP CASE STUDY

Construction Safety

It is well recognized that the construction industry represents some of the highest risk work that is conducted across all industries. According to Injury Facts published by the National Safety Council, in 2018 (the last year published) the construction industry experienced the most workplace fatalities at 1,018. A workshop conducted by the Center for Construction Research (CPWR) and NIOSH in 2013 identified a number of unique characteristics of the construction industry that contributes to the challenges of safety in the construction industry. These include a mobile and transient workforce, distinct craft cultures and norms, the role of the construction foreman, multi-employer worksites, and many others.

COVE: Center of Visual Expertise is excited to have partnered with Turner Lathrop to pilot the application of visual literacy to a construction project. Often thought to primarily apply to more static risk manufacturing environments, visual literacy is also relevant to more dynamic risk environments where work flow and the work environment is constantly changing. Seeing the Whole PICTURE® matters whether we are examining a production line or a concrete pour. What we see, what it means, and what we do as a result can result in a safe day at the construction site.



ABOUT TURNER LATHROP

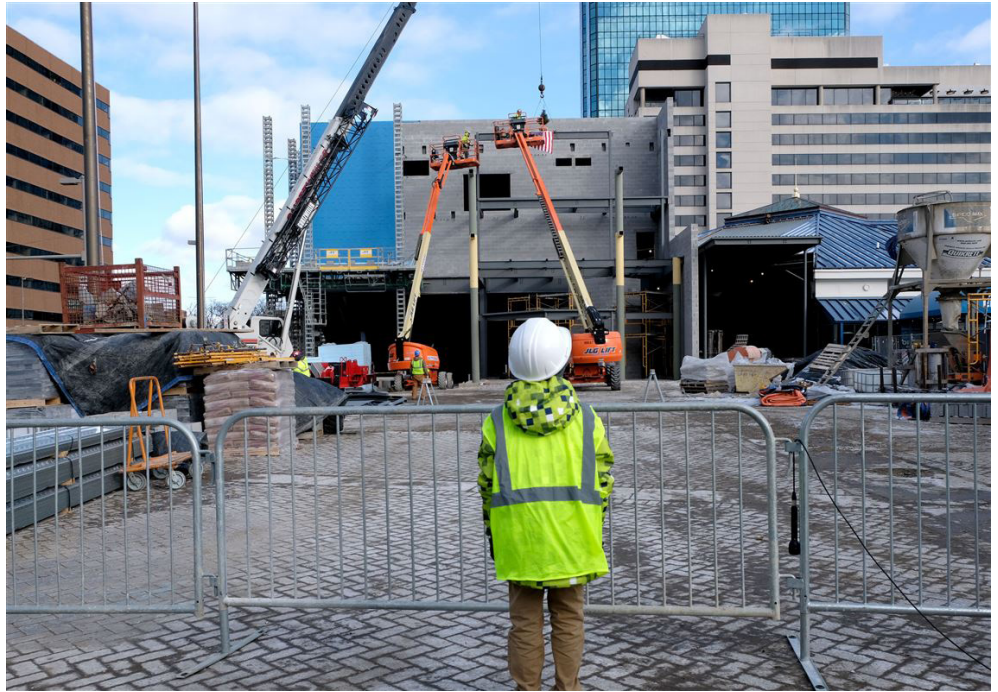
Turner is a North America-based, international construction services company and has earned recognition for undertaking large, complex projects, fostering innovation, embracing emerging technologies, and making a difference for their clients, employees and community.



In 1986, Lathrop was acquired by nationally recognized and New York based Turner Construction Company as a wholly owned subsidiary.

Turner Lathrop and COVE History

Turner Lathrop became interested in visual literacy in March of 2018. Lathrop's Regional President and Turner's SVP of EHS met with COVE and TMA staff to learn about visual literacy and how it applies to the complexity of managing safety on a construction site. After some discussion and consideration, it was decided that the COVE and Lathrop team would conduct a pilot on a regional project.



The scope of the pilot project was considered to be the following:

- The pilot would begin on a project from the start. We would not begin a visual literacy pilot on a project that was already underway.
- The project would be a one year or less project so that the impact of visual literacy could be quickly assessed.
- Key project metrics would be evaluated throughout the project in order to understand the contribution of visual literacy to project success.

Project Selected

The Imagination Station Project was selected in June of 2019 and is located in downtown Toledo. The project was the construction of a theater connected to Imagination Station, a children's science and technology center. The duration of the project was estimated to be 12-15 months and encompassed much of the complexity of a normal project. This included

demolition, significant below grade foundation work, steel erection, concrete, electrical and work activity adjacent to one the busiest streets in downtown Toledo. Part way through the project, construction activity was also occurring on the street in front of the project which was independent of Imagination Station Project.

Deployment Approach with Visual Literacy

COVE worked with Turner Lathrop to design a deployment model which would be appropriate for a construction project. COVE began by training the Lathrop Project Team on the principles of visual literacy through its Foundations of Visual Literacy Workshop at the Toledo Museum of Art. At the conclusion of the workshop, COVE staff worked with the project team to design the deployment approach. The project team felt that the key stakeholder in the project were the subcontractors foremen who provide leadership to the workers on the project. The project team also felt that it was important that the contractors working on the site have some familiarity with visual literacy and our expectations for them as they worked on the site. With significant worker turnover on the site as the project progressed, it was important to find an effective and consistent mechanism to deliver visual literacy training to the workers as they engaged with the project.



COVE and the Project Team Arrived at a Three Step Training Approach:

1. Project Team members were trained prior to the start of the project through the Foundations of Visual Literacy Workshop which is two days in length and included design of the project deployment approach.
2. Training was designed by COVE specifically for subcontractors foremen that was conducted in waves based on the upcoming activity on the site. This training was two hours in length and focused on the core knowledge of visual literacy and the tools used to improve our visual acuity.
3. It was decided that the best opportunity to train workers on site was through the worker orientation training that occurred as workers first arrived to conduct work activity. The worker orientation training was modified to include 15 minutes of visual literacy training focused on how to apply the Elements of Art to decompose an environment and see things that normally just fall into the background. The worker orientation training was provided by Turner Lathrop staff.

COVE and Turner Lathrop staff also established reinforcing mechanisms in order to remind everyone on the site to utilize their visual literacy skills and established new practices to capitalize on this new skill and capability. This included:

1. Posters that were placed around the jobsite as a reminder of the tools taught for improving visual literacy.
2. Visual literacy exercise as part of the weekly project meetings with the subcontractor representatives.
3. Badge cards provided to subcontractor foreman as job aides and reminders of the visual literacy tools.

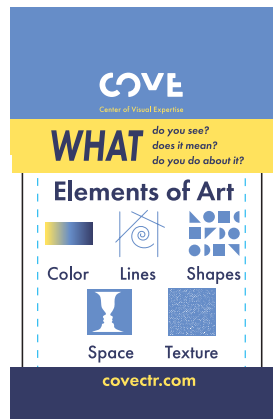
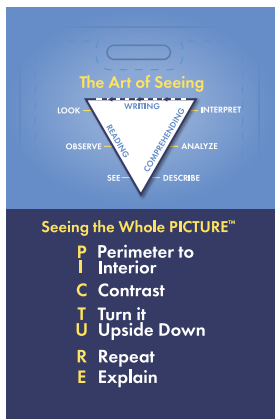


IMAGE 03
EXAMPLE OF SITE POSTER AND BADGE CARDS

“Turning It Upside Down”

Demolition of a glass enclosed walkway over a major street in downtown Toledo was one of the early steps in the preparation to begin the Imagination Station project. Karl Woltz, Turner Lathrop Project Manager, recalls how visual literacy training impacted his assessment of the completion of the demolition of the walkway.

“Once the demolition of the walkway was completed, there was a considerable amount of glass that fell to the street below. We proceeded to sweep up the glass off the street as part of the clean-up activity. In surveying the street to make sure we cleaned up all of the glass before the street reopened, everything looked good. Recalling my visual literacy training and the importance of seeing things from a different perspective, I walked to the other end of the street and looked back at the demolition site.

To my surprise, from a different perspective, I saw glass glistening on the street despite our best efforts to clean it up. We swept up more glass and finally achieved our goal of removing all of the glass from the street before it reopened eliminating the risk that the glass could result in property or personal injury.”

A key component of Seeing the Whole PICTURE®, a process created by the Toledo Museum of Art and utilized by COVE, is looking at things from different perspectives. By “Turning It Upside Down” we don’t mean literally turning something upside down, but rather changing perspectives and looking at it again from a different view. It is amazing what we can then see that we missed before. Karl’s story is a great example of by changing his view, he was able to see something that he couldn’t see from a single perspective.

Project Outcomes

Turner Lathrop experienced no injury incidents on the project following the launch of visual literacy training. While it is difficult to directly link visual literacy as the sole contributor to the performance of a lagging indicator, the fact that no injury incident occurred at least reinforces that positive performance on the project was delivered.

Turner Lathrop reports that through the institution of a weekly visual literacy exercise with subcontractor foreman, an estimated 220 additional observations were recorded with approximately 20% further researched as a safety concern.

Ten subcontractor foreman received visual literacy training directly from COVE and approximately 420 contractor employees working on site received visual literacy training through the contractor orientation process.

Turner Lathrop project team members have become advocates for expanding the application of visual literacy to additional projects in order to further refine the deployment approach.

Lessons Learned

The principles of visual literacy and relevant tools can be taught in a unique environment such as a construction site with success.

Subcontractor foreman were interested and engaged. We can do a better job of engaging contractor leadership above the subcontractor foreman in order to provide further understanding and leadership reinforcement within their organizations.

The strength of pre-visual literacy safety processes are important to evaluating impact of visual literacy through leading metrics.



Find out more about this leading edge and innovative approach to a fundamental safety problem. Contact our team, schedule an overview or read more at:

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About COVE: Center of Visual Expertise from the Toledo Museum of Art

COVE has developed a rigorous approach to helping people at Seeing the Whole PICTURE®. This methodology comes from years of study and teaching in the world of art. While the connection between the art world and industry may not be immediately obvious, we have developed a deep understanding of the application of Visual Literacy to safety through our partnership with the Campbell Institute at the National Safety Council and our industry partners, including Owens Corning, Cummins, United Rentals, and others.