Engineering Educators Bringing the World Together
2025 ASEE Annual Conference & Exposition
Palais des congrès de Montréal, Montréal, QC • June 22–25, 2025 ASEE
Paper ID #45551

The Importance of ”Place” in the Building and Establishment of a New Engineering Program

Dr. Mark A. Pagano, University of Washington

Dr. Mark A. Pagano

Dr. Pagano served as the 6th Chancellor of the University of Washington Tacoma where he championed UW Tacoma’s urban-serving mission through the establishment of Charting our Course, the campus’s 2016-2021 Strategic Plan. He has worked to expand access to higher education in the South Puget Sound and has helped the campus expand the portfolio of programs available in the region including most recently two new programs in Civil and Mechanical Engineering. Before coming to UWT, Dr. Pagano served as provost and vice chancellor for academic affairs at Montana State University Billings. Prior to that, he spent 19 years at Purdue University, where he served as a full professor and a variety of administrative roles. In 2021, Dr. Pagano stepped down from serving as Chancellor and returned to classroom teaching to help establish the new programs in civil and mechanical engineering. Pagano has served in numerous roles across several divisions of ASEE and was named Fellow in 2006. This year he was awarded ”life-time” membership status.

©American Society for Engineering Education, 2025

The Importance of "Place" in the Building and Establishment of a New Engineering Program

Mark A. Pagano, School of Engineering and Technology, University of Washington Tacoma,
and Michael S. Sullivan, Arifacts, Inc. Tacoma, WA USA

***Abstract* – In today's world, "place" is an ever increasing element of almost every known culture and geographic region. Research also shows that place-based education (PBE) can foster a student's connection to place and help them better understand the need to take care of the world. We therefore believe that it should be a critically important factor in the building and establishment of any new engineering program. Place was definitely an important factor in 1989 when the State of Washington committed itself to establishing new regional higher education institutions in an effort to serve place-bound students and their surrounding communities. The University of Washington Tacoma (UWT) campus was established as a result of this state initiative and thus, the campus carefully considered the importance of place as it proposed, designed and implemented two new engineering programs including a new facility to house them over the course of the past six years. Tacoma has long been associated with the rise (and fall) of the timber industry in the Pacific Northwest as well as a turbulent relationship with the local Salish Tribes. A partnership was formed with the local Puyallup Tribe whose first people have been "educating" and "engineering" on the exact location of UWT since time immemorial. The Tribe was instrumental in helping tell the story of "place" as it was integrated into the fabric of the two programs and building design. A second significant example of place is the focus on the history of the Tacoma Narrows Bridge on the walls outside the Civil Engineering (CE) Senior Capstone Design Lab on the third floor of the facility. UWT has the distinction of being the closest four-year program in the world to this famous CE landmark with it being located just six miles directly west of the campus.**

Keywords – place, new engineering facilities, Tacoma Narrows Bridge, Puyallup Tribe, Washington State

I. IHISTORICAL CONTEXT

The University of Washington Tacoma (UWT) is one of three campuses of the University of Washington. It was established in the historic *Union Depot-Warehouse District* in downtown Tacoma in 1990 as a result of the Regional Campus Legislation signed by Governor Booth Gardner in 1989 [1]. Community leaders worked together tirelessly to convince the University of Washington and State officials to site one of the new campuses in this historic, yet blighted, downtown area as a means of both urban revitalization and economic development. The Warehouse District had flourished in the late 19th and early 20th centuries as a result of the country's first transcontinental railroad to reach the Pacific Ocean through the Puget Sound in 1873. After President Lincoln commissioned the railroads to build a northern route to the west coast in 1864, the Northern Pacific was first to achieve the challenge and terminate on the shores of Commencement Bay in downtown Tacoma. The last mile of track was laid down through villages of the Puyallup Indian Reservation along an incline later named the Prairie Line Trail (PLT) which bisects the UWT Campus from south to north.

Fig. 1. Northern Pacific Train Crossing 19th St., Tacoma along the PLT on the UWT campus, ca. 1940s. The building just to the right of the moving train, Snoqualmi, is now the UWT Library. WA State Historical Society, G44.1-130.

As seen in Figure 1, trains continued to use the route through campus as late as 2006. As the railroad took hold and cross-continental traffic increased, Tacoma's waterfront transformed into a bustling international metropolis. With this development came the need for warehouses and markets to spring up along both sides of the track near the terminus. This was so that wares from the east coast could be unloaded and sold to the growing population in Tacoma, and timber milled in large quantities in the Pacific Northwest could be transported eastward. As the expansion continued, almost forty saw mills sprang up along the Tacoma shoreline. Then, after the turn of the century, Tacoma began to expand into the manufacture of timber products such as shipbuilding, furniture, and other finished wood products including doors, windows, and cabinets. These products were transported across the world by wooden ships from the Tacoma Port and through the new railroad. Tacoma soon had the distinction of being heralded *The Lumber Capital of the World*.

These early developments cemented Tacoma's reputation as America's premiere "Timber-town" as it moved into the mid-twentieth century. However, the region's association with timber is much older. About 14,000 years ago, receding glaciers covered much of the Puget Sound. As the continent warmed, the glaciers melted and coniferous forests began to thrive and produced an almost continuous, lush, bountiful forest across the region. The vast lowland forests contained extremely large coniferous and deciduous trees, many of which lived for more than 500 years. The four most dominant tree species are western cedar, Douglas fir, western hemlock, and Sitka spruce.

The presence of this vast timber resource provided an ideal environment for the first inhabitants of the region, the Coast Salish People, which includes the Puyallup Tribe [2]. The UWT campus is now situated at the center of these ancestral lands. These traditional homelands extend from the shores and islands of the South Puget Sound along Commencement Bay and the Puyallup River up to "The Mountain", now referred to as *Mount Rainier* by non-Native people. The Puyallup People were master woodworkers and crafted some of the finest canoes in the world from the abundant cedar available in the region. Family groups lived in huge, comfortable plank houses, built from fir timbers. Dwellings were wrapped in thick, insulating cedar planks to provide shelter during the long, cold, and wet winters. Fish traps from sturdy Douglas fir poles were constructed across the rivers and helped them trap enough salmon to last through the winter. Baskets were made from flexible cedar root and bark and were used to gather and store berries, roots and nuts. Clothing and hats were crafted from cedar bark and helped protect people from sun, wind, and rain [3]. These practices provide salient examples of sustainable habits for all current students studying at UWT.

Therefore, since the campus is situated in such a rich cultural and historical setting, we felt a deep responsibility to share this story and "sense of place" with each and every student who passes through our doors. We endeavor to weave in the story throughout their time on campus. It begins by having the Chair of the Puyallup Tribal Council speak during students' first convocation each fall to introduce the rich history of the place. Then the Chair or another Tribal Elder congratulates students on successful completion of the first part of their life journey and blesses them and wishes their continued success as they embark on the next part of their journey during graduation ceremonies.

A second strong sense of place that comes particularly from studying engineering in the Pacific Northwest is the fact that the UWT campus has the distinction of being the nation's closest four-year civil engineering program to one of the world's most famous civil engineering landmarks, the *Tacoma Narrows Bridge*. Therefore, when the opportunity arose for UWT to pursue the adoption of two new traditional engineering programs, Mechanical and Civil, to serve place bound students in the South Puget Sound, it was obvious that every effort should be made to immerse the new programs, including the facilities, in the history and strong sense of place of the region so that students could then also be immersed in the knowledge and significance of place as they complete their engineering degrees.

II. Impetus for Engineering Program Development

The Pacific Northwest is not only known for its expansive, lush forest and superb natural beauty, but it is also known for its thriving technology development and expansive aeronautical manufacturing facilities. The area is home to Microsoft, Google, Amazon, Boeing, SpaceX and Blue Origin just to name a few. However, what most people do not realize is that the state has an ongoing deficit for technical talent. Each year, there is a significant shortage of new engineers, computer scientists, and information technology professionals to fill positions in the region's high tech industrial sector as shown in Figure 2 above.

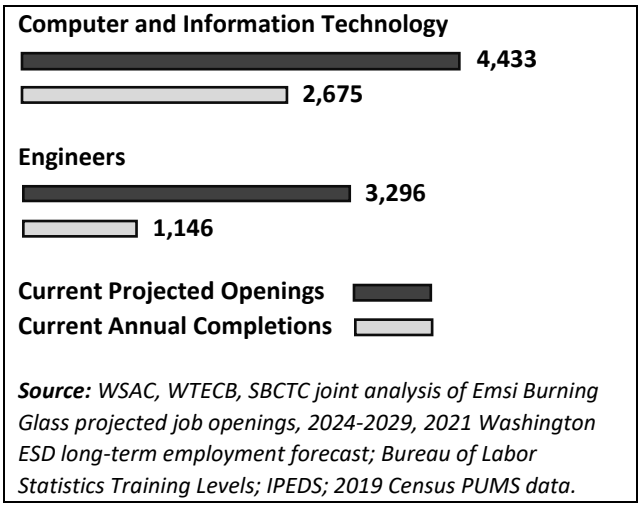

Fig. 2. Projected Openings vs. Production of Computer and Engineering Degreed Professionals in Washington State from 2024-2029.

Thus when a new regional campus was launched in the South Puget Sound in 1990, it was immediately evident that one of its missions should be to serve this growing demand. Soon after the campus was opened, a second key act of the state legislature was to establish an *Institute of Technology* on the new campus situated in Tacoma. This State action proposed by then Governor Gary Locke was passed into law by the State Legislature in Senate Bill 6153 [4] just a decade after the campus was established. When the Institute was launched in 2001, it offered only a bachelor's degree program in computing and software systems. However, the new Institute was given a statewide mission with 15 community and technical college partners to more quickly help address the growing technical talent shortage. The goal was to increase bachelor's and master's graduates to fuel the growth of the state's high-tech industry and provide every Washington citizen, especially those in the South Puget Sound, convenient access to a degree to prepare them for a career in the field. A second unique charge of the Institute was to reach out to women and other underrepresented groups.

III. NEW ENGINEERING PROGRAMS IMPACT

The Institute of Technology flourished during its first 25 years and grew from its first program with thirty students to ten BS, MS, and PhD programs with over 1,000 students. In fall of 2018, the Institute was even elevated in status to the *School of Engineering and Technology* (SET). UWT's campus master plan included a new academic building to be added to the campus footprint near 2020 which would facilitate expansion of its growing business school and new degree programs in several engineering disciplines including mechanical, industrial and civil (none of which existed yet). Therefore, before embarking on the authorization and funding for the new building, consultants were brought in to help prioritize which programs should be the first priority. After several months of detail study, it was determined that mechanical engineering should be first with civil close behind so that the two programs could capitalize on the synergies between the two. Data was gathered, proposals were drafted and in one historical legislative session, both new engineering programs and an accompanying facility to house them were approved by the 2019 Washington State Legislature.

IV. Decision to Build with Cross-Laminated Timber

As early plans were launched for a new campus building, a serendipitous conversation helped set the fate for a significant turning point in UWT's future building philosophy. Governor Jay Inslee [5] stopped by the campus to welcome the new chancellor who had arrived in early 2015. There was no specific agenda for the engagement other than a simple meet-and-greet conversation between the two men. During the conversation, Governor Inslee inquired about whether or not the campus had plans for any new buildings. The new chancellor replied that the only plan was a new academic building which was currently pretty far down the University of Washington's state capital request list to be added around 2020. Governor Inslee, who is an avid environmentalist was keenly interested in jump starting Washington's flailing timber industry by developing sustainable forestry practices along with new environmentally sound construction methods that would utilize the sustainably-developed timber. One such method was the production and use of cross laminated timber (CLT) and/or glulam beams. He was interested in finding a high traffic and highly visible building project to showcase this new technique. A bustling urban college campus would be just the place to put such a unique project.

Being judicious, yet a bit hasty, the new chancellor (also an engineer) immediately replied, "Yes, of course we would." This was exactly the right answer and set the stage for the next few years of planning. It was also a key factor in prompting the campus to reflect deeply on the region's history, both good and bad, and to commit to move forward in a positive way focusing only on sustainable building practices. This might be enhanced by returning to the environmental stewardship the *First People* who inhabited this site practiced and how these traditions of "Place" might be folded into the new programs and building. It turned out US Congressman Derrick Kilmer [6], responsible for UWT's home district, was also a CLT proponent and became a vital supporter once he learned of the plans. Now with the Congressman and Governor behind the initiative, interest accelerated and the prospect of state funding for the two new programs and a new building to house them became a reality.

V. Fitting into the Campus Architectural Ambiance

Once the building project proposal and the CE and ME program proposals were complete and submitted into the UW system, deliberation began about how the new CLT building would be used to highlight "place" including the significant cultural history, first inhabitant's respect for the environment, and the rise and fall of the timber industry in the region. Since all of the existing campus buildings had a backstory of their past, it was clear a backstory would be needed for the new building too. When the State approved the campus location, they helped fund the purchase and refurbishment of all the buildings in the blighted Warehouse District into modern classrooms, offices, laboratories, and student spaces. An architectural competition was held to determine which firm could provide the most innovative and cost effective plan for the transition. Charles Moore, of the Santa Monica, CA firm, Moore, Ruble and Yudell won the bid and set out to design the extensive refurbishment necessary to meet higher education standards and seismic codes. Unfortunately, existing buildings could not be reconstructed in a more sustainable fashion but could be refurbished responsibly.

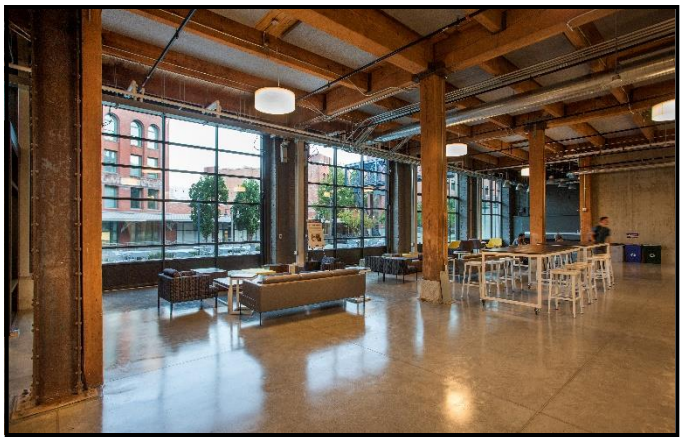

Fig. 3. Tacoma Paper and Stationary Building Ground Floor Student Study Space and Lounge, Photographer: Jeff Caven

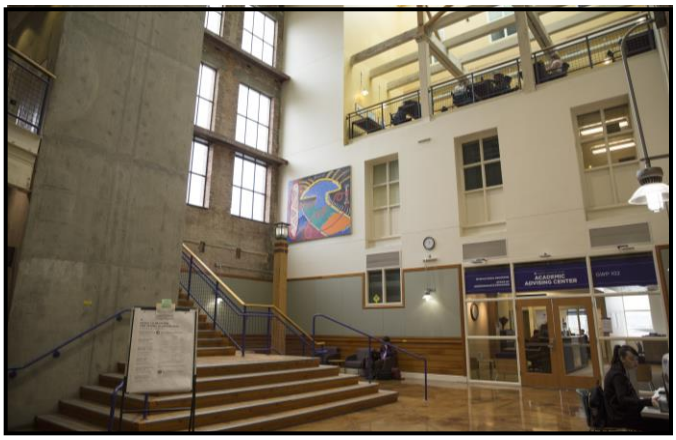

Fig. 4. Garretson Woodruff Pratt (GWP) Main Lobby Housing Academic Advising and the Office of Global Affairs, Photographer: UWT taff

Fig. 5. Outside Façades of the Harmon Building and the Mattress Factory (UWT Student Services building), Photographer: UWT Staff

The results are shown in Figures 3, 4, and 5 above. The refurbishment was extensive and has served the campus well during the first several decades of use. Each historic warehouse was remodeled and made seismically sound in a manner which gave the new campus its own unique vibe. Spaces were modern but also retained their historic, blue-collar, industrial feel of their past use. Atriums and large openings were utilized to provide an

open ambiance; however, each building retained its original architectural form and ghost signage was saved when possible.

The proposals for both of the two new engineering programs and the new building were approved during the 2019 Washington State Legislative Session and the project quickly got underway. By the time the architect and builder were selected for the new CLT building, the world was deep into the pandemic and travel was difficult. Once travel was possible in June 2020, the new architect, Architectural Research Office (ARO) from New York, NY and the Builder, Anderson Construction from Seattle, WA were invited to campus to better understand the historical setting and to gain a "hands on" feel for how best to begin the project and align it with the existing campus footprint. The architect and builder both spent several days on site before commencing on the preliminary design work.

It is believed the attention the design/build team gave to the history and "place" aspects of the project paid great dividends. While the attention was significant, the process was also remarkably quick. After only a few iterations, preliminary designs were approved in early spring 2021 and construction began later that summer. The "move in" took place in January 2023 and the results are outstanding. The name given to the facility is *Milgard Hall* due to a significant lead gift from a prominent Tacoma family who had already named UWT's business school. Milgard Hall clearly expresses UWT's "urban-serving university" mission and provides a new welcoming space for interactions between the campus and the surrounding community who was actually responsible for getting the campus sited in downtown Tacoma in the first place. The facility houses CE and ME laboratories, an outdoor Science Court, classrooms, and flexible collaborative spaces designed to cultivate cross-collaboration between the Milgard School of Business, the engineering programs, and the Global Innovation and Design (GID) Laboratory which is also located in the facility [7].

The use of CLT mass timber assures a low-carbon renewable resource and supports the commitment to the use of sustainable design processes and materials moving forward which extenuates place. Less energy is used in mass timber fabrication than for most other common structural materials and it also provides the openness and warmth prevalent throughout the existing campus. The exposed glulam structural materials provide a reminder of the region's timber legacy and can be used as key educational elements for students using the building [7].

The spaces in the building are all arranged so that they empty out into a common "Connector," which creates opportunity for an open circulation area which encourages interaction among the primary units occupying the building. This large "Connector" extends all the way through the building and connects to the already established natural path through campus. The west exit from the corridor spills out onto the revitalized *Prairie Line Trail* which once was the north-south artery of the Northern Pacific Railroad directly through the busy historic Warehouse District in the heart of downtown Tacoma [7].

Exterior materials used for Milgard Hall blend with the modern urban fabric of downtown Tacoma and the surrounding historic campus contexts. Local brick is used on the north and east sides of the building, which house classrooms and offices.

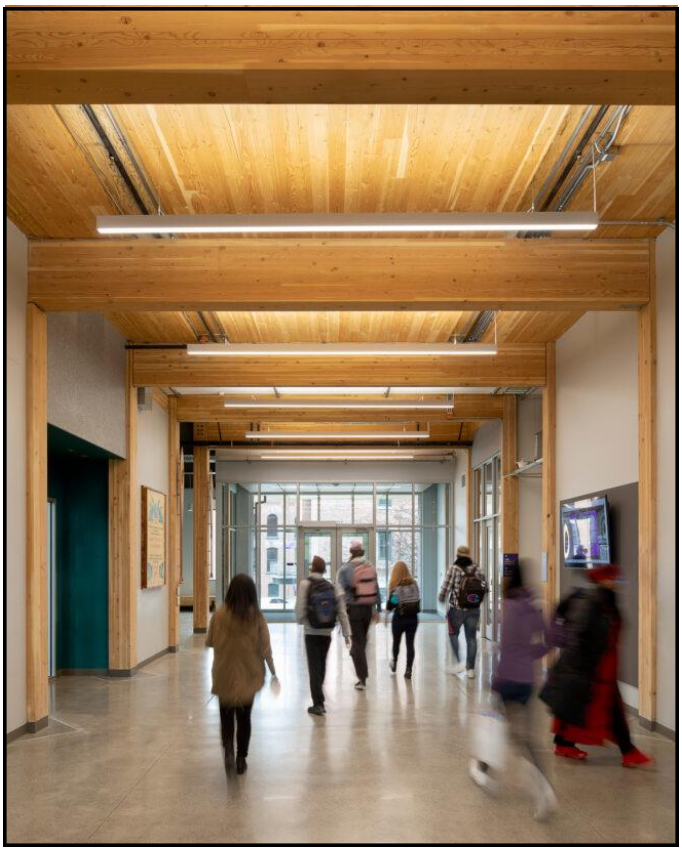

Fig. 6. Ground Floor Connector in Milgard Hall facing East, Photographer: Jeremy Bittermann / JBSA.

Metal panels are used on the south and west walls corresponding to the engineering lab spaces visible from the Prairie Line Trail. Milgard Hall is sited to maximize access to daylight and views and serves to connect students, faculty, and visitors with the surrounding neighborhood, and to local history [7]. The design of the new space definitely achieves the immediate positive impacts intended. The open floor plan and warm feel of the CLT beams is demonstrated in the hallway shown in Figure 6 above.

VI. Creating the Historical Displays and Puyallup Land Acknowledgement

As the detail design of the building got underway and site prep started, work on the cultural and historical exhibits that would tell the storied history of place in more depth began in earnest. Because of the focus on timber as the primary structural material, it was decided to place the Timber History Display in the gathering space adjacent to the primary east entrance to the "Connector" where it was determined the highest number of people would enter the building. There it would be difficult for first time visitors not to notice the display and then have their curiosity take over. During the layout process for this work, it became clear a permanent *Puyallup Land Acknowledgement* should also be placed at the main entrance to the display space due to its importance to the overall story of place. As the project progressed, the land acknowledgement as well as other cultural elements fashioned by the same Puyallup artist became integral parts of the display area. Each element became its own smaller section that wove together a rich version of the overall story.

It was determined that the display on the history of the construction, failure, and then reconstruction of the Tacoma Narrows Bridge would be best placed along the walls in the corridor outside the Civil Engineering Senior Design Lab on the third floor of the building. This was done because rather than the public at large, this display would be primarily focused on present and future engineering students who would study in these spaces. The hope is that it will further ground them in the importance of the "place" and will provide a lasting effect on the significance of this disaster on bridge design for decades or even centuries to come along with a focus on the city's resilience. The "place" where they learned their engineering craft will stay with them during their entire career no matter where they practice.

Once all three locations were set, work began to compile the content and fashion the detailed designs of each component.

A. Timber History Display

The Timber History Display was focused around four major subsections: 1) The *Trees* or the timber resources which covered this land, 2) The *First People* to use these resources, 3) The establishment of the timber industry in the region and its effect on Tacoma, and 4) The pivot to a more sustainable building environment moving forward. The research for the narrative content and visuals was a vibrant partnership led by the authors and The Puyallup Tribe but included other key contributors as well such as several local artists and museums. A complete list of partners and contributors is provided in the acknowledgement section of this paper. ARO, the building's architect also brought in a graphic arts firm, Studio Matthews to help with the layout and supervise the fabrication. The carver from the Tribe's cultural center accompanied two authors to the site early in the process when only a few CLT beams were present. He blessed the site and the construction process and promised he would finish the blessing and celebration during the opening of the building, which he did in April of 2023.

The background research and creation of the narrative and image selection was completed over the 2021-2022 academic year. All of the partners then reviewed the final draft and it went to fabrication in late 2022. Installation was completed in February 2023 just after the building was opened to campus. The finished result has the Land Acknowledgement mounted adjacent to the entryway into the space with two beautifully carved Salish paddles adorning the CLT beams framing this entrance. The exhibit is then featured across two walls. The west wall contains the sections on the timber resources and the First People's use of these resources. The north wall features a timeline which covers the history of timber in the region and its effect on Tacoma and the Tribe. Near the latter part of the timeline, the story is told about how UWT came about and the story concludes with a description of the hope that the facility will serve as a testament to more sustainable timber resource use moving forward. The west wall also features a full-scale mural of an old-growth conifer forests in Western Washington in the late 19th century by Darius Kinsey, one of Washington's most accomplished photographers. It looks as if a person could walk right into the forest and sets the tone for the entire exhibit.

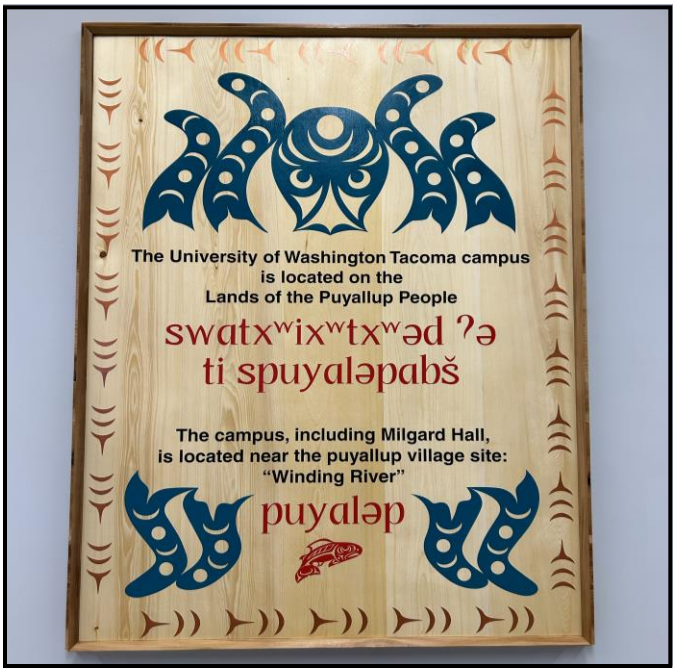

Fig. 7. Puyallup Land Acknowlgement Adjacent to Timber History Display.

Fig. 8. East Wall of Display featuring Darius Kinsey Mural and Forests.

Fig. 9. North Wall of Display Featuring Timber History Timeline.

B. Tacoma Narrows Bridge Display

The Tacoma Narrows Bridge Display is situated across three wall panels just outside the third floor CE Senior Design Lab. This display features three separate sections. The first section covers the impetus for the bridge and the history leading up to its construction in the late 1930's with completion in July 1940. The second section focuses on the tragic demise of the bridge during the wind storm of November 7, 1940 just a few months after the bridge opened. Rare photographs and QR code links to video taken on the day of the collapse are featured. The third section covers the story of the community rallying together to rebuild the bridge. This second bridge opened in October 1950. This bridge has withstood the test of time and is still used today. A third bridge was added due to increased traffic flow as development to the west has continued and it opened in July 2007. The original bridge on opening day in 1940 is shown in Figure 10, and the two newer bridges are shown in Figure 11.

Fig. 10. Tacoma Narrows Bridge on Opening Day, July 1940. Photo Courtesy Tacoma Public Library.

Fig. 11. The two Tacoma Narrows Bridges as they Appear Today. Photo Courtesy of Washington State Department of Transportation.

VII. CONCLUSION

Now that the Milgard Hall building is open and in use, reactions to the Timber History and Tacoma Narrows Bridge Interpretive Displays and the Puyallup Land Acknowledgement have been outstanding. Students, other occupants of the building, and faculty and staff from across campus have expressed appreciation for the telling these important stories and making them a permanent part of the campus fabric. UWT worked in partnership with the *Harbor History Museum* in Gig Harbor, WA to complete the background research and select the images. Each was carefully selected to enlighten students of the significance of this bridge, how the catastrophe permanently influenced bridge design across the world, as well as how the community was adversely affected by the disaster, and finally, the recovery and rebuilding of the two new bridges.

Engineering faculty have begun to infuse the two displays and the CLT design of the building itself into appropriate coursework. The Timber History Display has been integrated into ME Senior Capstone Design and content from the Tacoma Narrows Bridge Display into both Engineering Ethics and ME Senior Capstone Design. As the second display has just been completed in early spring 2025, it is anticipated that both displays will now be utilized much more in other areas of the curricula so that more detailed results can be reported on at future educational meetings. A photo of the hallway where the three panels of the exhibit are located is shown in Figures 12.

Fig. 12. The Completed Tacoma Narrows Bridge Interpretive Display on the Third Floor of Milgard Hall

Since both displays are now complete, the authors have begun to explore results of how "place-based education" (PBE) has been used previously and in what particular circumstances. Assessments results and impacts are also being reviewed. From early results, it is clear that PBE fosters students' connection to place and seems to create vibrant partnerships between the schools and their communities as well as boosting student achievement and environmental, social, and economic vitality. In short, place-based education helps students learn to take care of the world through understanding where they live and taking action in their own communities [8], [9], which by the way, is exactly what this project set out to accomplish at the onset.

VIII. Acknowledgments

We wish to thank partners who helped collect and prepare the materials that make up the *Timber History* and *Tacoma Narrows Bridge* displays featured in this paper. Local historian and preservationist *Michael Sullivan* tirelessly helped compile content for both displays. His contributions were extraordinary.

We also wish to thank our key partners from the Puyallup Tribe:

- *Cultural Center, Connie McCloud and Brandon McCloud*
- *Communications Department, Michael Thompson and Andrea Bob*
- *Historic Preservation Department, Charlotte Basch and Brandon Reynon*
- *Language Department, Amber Hayward, and Zalmai Zahir*
- *Native Artists, "Muck" Michael Hall (Carver) assisted by: William Johnny and Yell-xla-bate-soot and Jack George (Graphic Artist)*

We were also supported by the following museums, libraries, and Publications:

- *Whatcom Museum, Jeffrey Jewell*
- *Washington State Historical Museum, Jennifer Kilmer*
- *Harbor History Museum, Stephanie Lile and Jean Hannah*
- *Tacoma Public Library, Ilona Perry*
- *University of Washington Libraries*
- *Tacoma News Tribune, Matt Driscoll*
- *Grit City Magazine*

The following local artists contributed to the display:

- *Heidi Bohan (Illustrator and author)*
- *John Tylczak (Photographer)*
- *Ryan Moriarty (Photographer)*
- *Claudia Riedener (Ceramist)*

From the School of Engineering and Technology:

- *Raj Katti, Dean, Joel Larson, Administrator*
- *Faculty of the Civil Engineering Program*
- *Troy Dunmire, ME Laboratory Manager*

The architect, builder, designers, and graphic arts firm:

- *ARO Architects, Kim Yao and Dominic Griffin*
- *Anderson Construction, Susan Bouthillette*
- *Studio Matthews, Samantha Segar, Marta Bernstein, and Eli Kahn*
- *Rotator, Lance Kagey*
- *Richlite Company, Rodney Baum*
- *Image Mill, Mike Biderman*
- *Washington State Department of Transportation*
- *Tacoma Public Utilities*

References

[1] Revised Code of Washington: RCW 28B.45.012

[2] The Puyallup Tribe (https://www.puyalluptribe-nsn.gov/)

[3] UWT Timber History Exhibit narrative, Milgard Hall vestibule, 2023.

[4] Washington State (2001-2003 SB 6153, "Technology Institute")

[5] Governor Jay Inslee (https://governor.wa.gov/)

[6] Congressman Derrick Kilmer (https://kilmer.house.gov/)

[7] "Brick Campus Classroom Educational Façade Higher Education Laboratory LEED Mass Timber: University of Washington Tacoma Work", ARONow Newsletter, May 2023, ARO Architecture Research Office, 170 Varick Street 7th Floor New York, NY

[8] Cruz, A.R., Selby, S.T. & Durham, W.H. 2018, "Place-based education for environmental behavior: a 'funds of knowledge' and social capital approach", Environmental education research, vol. 24, no. 5, pp. 627-647.

[9] Harrison, S. 2010, "'Why are we here?' Taking 'place' into account in UK outdoor environmental education", Journal of adventure education and outdoor learning, vol. 10, no. 1, pp. 3-18.

Authors' Background

Name	Title	Research Field	Personal website
Mark A. Pagano	Professor of Mechanical Engineering and Immediate Past Chancellor, University of Washington Tacoma	Mechanical Engineering Design, Thermal systems, Academic Leadership, Engineering Ethics	NA
Michael S. Sullivan	Retired Instructor of PNW History at UWT and Public Historian and Preservationist	Pacific Northwest History, Historic Preservation, Architectural Conservation	https://tacomahistory.live/