

Turning a Natural Disaster into an Opportunity at Temple University's Ambler Campus

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Temple University takes pride in its identity as an urban university with deep roots and commitment to its north Philadelphia neighborhood. Just 16 miles north of its main campus, the university also maintains a 187-acre campus in the heart of suburban Montgomery County. Many people wonder how the Ambler campus contributes to Temple University's mission. I believe that the campus is an integral part of Temple's mission. We are all connected; we are all one Temple.

As a top-tier research university, the core of Temple's mission and values are the creation and dissemination of knowledge. The Ambler campus is an arboretum, a field station, and a hub of experiential learning that allows students to participate in research studies, environmental restoration, and design-build projects. It also features gardens, walking trails, and other natural areas. The campus contributes to Temple's initiatives in health, wellness, research, and sustainability.

In 2010, Temple issued its first Climate Action Plan, focusing on goals to help combat climate change including reducing carbon emissions, improving energy efficiency, and building more resilient infrastructure. The updated 2019 plan included a goal of securing the designation of the Ambler campus as a research field station, providing the facilities to support both basic and applied research in sustainability disciplines. The plan included goals for increasing the number of

sustainability-related courses and departments offering sustainability courses as well as increasing co-curricular and non-credit learning experiences to accompany the academic curriculum. The Ambler campus is key to achieving these goals.

In 2020, the Ambler campus was designated as a field station, serving as a platform for experiential education, outreach, and training, especially for students interested in environmental fields. In response to the rapid growth of interest in these topics, the College of Science and Technology recently launched a new major, Ecology, Evolution and Biodiversity, joining existing offerings in environmental studies, environmental science, ecological restoration, environmental design, sustainability, among others. The proximity of the Field Station to an urban area is important to creating access and promoting diversity in environmental fields where students from underrepresented populations have lacked access to advanced field training.

On September 1, 2021, the Ambler campus was struck by a devastating EF2 tornado. What could have been seen only as a tragic event has elevated the Ambler campus' importance as a site for research and planning for our collective futures in a way that no one could have imagined. Prior to the tornado, the Field Station staff and students had made significant progress in documenting the contents and conditions of the Temple Forest

Observatory, which is a part of the Smithsonian Institution's Forest Global Earth Observatory (ForestGEO). It is uncommon for an old-growth forest in this region of the country to experience a tornado strike. It is even more rare for it to have occurred in an area that has been so well documented.

For these reasons, the decision was made to withhold human intervention in this area. As a result, the forest is now an invaluable space for studying natural recovery and regeneration. Our students have the opportunity to learn and practice research methods while contributing to knowledge with real-world implications.

Just across the street, the campus hosts the cultivated gardens and other maintained areas that make up the Ambler Arboretum of Temple University. More than 500 trees were lost from its collection when the tornado hit. Within these areas, we have the chance to plan and replant for a future climate that is already different than when the lost trees were planted 60 to 100 years ago. Students in the horticulture and landscape architecture programs have been able to take their knowledge out of the classroom and be a part of the campus restoration. Well over 100 new trees have been planted during these recovery efforts thanks to the dedication of our students, staff, and an army of volunteers.

While the Field Station and the Ambler Arboretum focus on applied research and planning for today and future generations, Temple Ambler is also reimagining the use of its building infrastructure. The campus is working closely with the Tyler School of Art and Architecture, the College of Science and Technology, College of Engineering, Criminal Justice Training Programs, and other university units to develop the Ambler Research + Collaboration Building, a shared space for design-build projects, research, and other cross-disciplinary projects. These facilities and environments are invaluable for training our students to be the next generation of scientists, engineers, horticulturalists, and designers of a sustainable built environment.

Temple Ambler, however, is not just important for its value as a site for experiential

learning and research. There is a growing body of evidence that spending time in nature leads to better health. Stress and anxiety can reduce the brain's ability to capture and process information by as much as 80 percent. Studies show that spending as little as 20 minutes in nature can reduce the levels of the stress hormone, cortisol.

Temple Ambler is a part of the growing number of universities joining the "Nature Rx" movement and offering programs and opportunities for students and the larger community to get outside and enjoy nature and improve their mental and physical health. The campus continues to add amenities, such as a low ropes challenge course, to make more options available for Temple students and the public to engage in physical activity and co-curricular activities.

In an analysis of more than 20 years of peer-reviewed studies, researchers at Stanford University concluded that environmental education has positive impacts including improved academic performance and enhanced critical thinking and inspires personal growth, life-building and leadership skills, civic engagement, and positive environmental behaviors. The campus, in collaboration with the Field Station, Arboretum, and Temple Ambler EarthFest, offers a number of citizen-science opportunities for the general public as well as environmental education programs for children and families.

Temple Ambler contributed to its community and served as an experiential learning laboratory since its founding as the Pennsylvania School of Horticulture for Women (PSHW) in 1911. Tracing back to its roots as the PSHW where women were trained in agricultural techniques to support food shortages during World War I, Temple Ambler continues to host courses in sustainable food systems. The food crops course offered through the Tyler School of Art and Architecture grows more than 600 pounds of fresh vegetables that are donated to a local food pantry each year. Community members turn to the campus for programs and advice regarding their own gardens and trees.

There is no question that the tornado brought loss to the Ambler Campus. At the same time, it has provided new opportunities to learn and grow from the experience. As we find ourselves saying around campus, we are making lemonade from the lemons that the tornado served us. The tornado has brought attention from the local and national media to this rare opportunity to train students and contribute to knowledge about ecology and climate change.

The tornado also provided an opportunity to contribute to the body of knowledge about disaster preparedness and response. As you can read about in this journal, the Ambler Campus community participated in a study of Temple's response to the tornado. Our community reported being unprepared for the tornado.; this work has helped us to learn about the gaps in our response. As climate change continues to generate more extreme

weather patterns and events, I hope that the knowledge gained from this study will help us to improve our own preparation for future natural disasters and that our experience can benefit others.

I believe that the value of the Ambler Campus lies in its diverse programs and environments and how they enhance and complement what is available on main campus. Chief Seattle said that "Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect." We are connected. And our proximity means that students don't have to choose — they can have the best of both worlds.