The renovation of Alter Hall, the central space for the university’s core mission of teaching and learning, marks the full integration of sustainability into the life of Xavier University. From the beginning the Sustainability Advisory Group of the Alter Hall Renovation Team (ART) worked alongside ART and with InPosse, a sustainability consultant from Philadelphia, to ensure that sustainability was incorporated into the conceptual design and overall planning for the facility. In this way, decisions about the building’s demolition, construction, and HVAC (heating, ventilation and cooling) systems reflect the inclusion of sustainable priorities. While teaching and learning remained the central focus of the planning of Alter Hall, sustainability concerns shaped all the discussions about space, configuration, natural lighting, temperature, landscaping, water and energy use, and choice of technology for the building.

One of the themes that emerged from the planning process was that we wanted the building and the story behind it to communicate hope, that an institution could design, build and use a building that demonstrates human capacity for restoring the health of the environment while working, learning and growing. Students who graduate from Xavier in the next decade face a daunting set of challenges and one of the roles that our institution can play is to give them a sense of hope and examples of ways to meet environmental problems on a scale that makes a difference. Guiding Principles for Construction of a New Academic Building developed in an earlier iteration of planning for a new Alter Hall were used as inspiration throughout the planning. They are:

1. The building will serve the education of the whole person – body, mind, and spirit.
2. The building will express and foster right relationship between human persons, creation, and God.
3. The building will contribute to the health and wellbeing of Xavier’s neighborhood, city, and region, including greater biodiversity, a deeper understanding of culture and place, and additional outlets for beauty and personal expression.

The renovated Alter Hall will build on the success of the Hoff Academic Quad and Fenwick Place projects that were designed and built to meet LEED Silver requirements. Because of the previous commitment to sustainability, Xavier now has a number of newer buildings with increased energy and water efficiency. In addition, physical infrastructure upgrades (from changing lighting and building management systems to more efficient heating and cooling distribution piping to a new more efficient Central Utility Plant) were important stepping stones for this latest project. For example, the new Central Utility Plant which lowers energy consumption for the majority of campus, will also be used to heat and cool the renovated Alter Hall. This achievement is also due to the dedication of the planning and building team to work for aggressive targets, and to the commitment of everyone in the planning process to make hope come alive.

The projected energy use of Alter is approximately 45,000 BTUs per square foot, half the campus average.

The most salient way in which the plans have achieved this objective is by pursuing an aggressively low energy consumption target. Current Xavier university buildings use an average of 104,000 BTUs per square foot. The Campus Sustainability Plan calls for an average use by 2030 of 73,000 BTUs per square foot. The projected energy use of Alter is approximately 45,000 BTUs per square foot, half the campus average. This is a remarkable achievement given the functional nature and projected occupancy of the building and extended hours of use. This consumption level is at or below a number of other landmark green college buildings in the country. In addition, the building has improved shading and improved glazing for windows to reduce solar heating while providing daylighting, and a reflective roof to reduce heat island effect. But, to realize low energy consumption numbers for Alter Hall will require the cooperation and education all users of the building. Please look for brief information sessions in late summer 2015 about operable features of the building and how users can maximize the ambitious low energy target for Alter Hall.

The second most salient way in which the plans have achieved a significant sustainability objective is through re-use of materials, conscientious disposal of demolition waste from the old building, and local sourcing of materials for the new construction. As is clear, we are keeping the frame of the building, saving much in terms of materials, landfill waste, and cost. The concrete debris that was generated as Kelley Auditorium and other parts were demolished has been recycled for reuse in other nearby building projects. As with so much of building design, there are constant trade-offs between values, cost, and building goals. As an example, the old flooring of Alter Hall contained vinyl asbestos floor tile. In order to recycle the concrete, the asbestos flooring would have to be removed. The cost of removing it from the north and south ends of the building was approximately $50,000. Members of the team considered whether it was prudent to spend this amount to abate the vinyl asbestos so that the concrete could be recycled. In the end,
Xavier decided to separate the asbestos from the concrete allowing a greater portion of the building demolition to be recycled.

A third salient success is the landscaping around Alter Hall, which will be composed mostly of native plants that are better suited to our dry, hot summers. Thus there will be no need for irrigation around Alter. This will have multiple benefits, including reduced water usage, increased habitat for birds and insects, including butterflies and bees which are endangered due to decreasing habitat and increasing pesticide and herbicide use. For all these reasons, the renovated Alter Hall will likely be built to a LEED Gold level (but not certified due to additional costs of that process), one level higher than any other building on campus.

Other landscaping decisions also achieve multiple goals. One of the unique educational components of the renovated Alter Hall will be a rain and bog garden on the south side of the building along the St. Ignatius stair that connects the Academic Mall to the Hoff Quad. A portion of the rain water will be captured from the roof and then diverted from the storm sewer system to support native plants, creating a wetland habitat. The rain garden and bog will be included in a variety of science classes for labs and independent research. The garden will be a reminder to all of us as residents of the Ohio River valley region that we live in a region abundant with water but that one of the historical legacies we bear is past use of our waterways as waste receptacles. The more water is absorbed around campus and elsewhere, the less likely sewage will spill over into the combined sewer systems that pollute Duck, Mill and other creeks on their way to the Ohio River.

Finally, we are recycling some of the old marble toilet partitions for counter tops; limestone window sills for use in the rain garden; and slate blackboards and display cases. In a variety of ways and for a variety of reasons, the committee sought to make the building flexible and long lasting so that it might be of use for another 50 years. Repurposing will be easier to accomplish (unlike in the old Alter Hall) and there are a wider variety of classroom sizes and configurations to allow for adaptation to what is likely going to be a highly dynamic higher education marketplace for decades to come.

For all these reasons, the renovated Alter Hall will likely be built to a LEED Gold level (but not certified due to additional costs of that process), one level higher than any other building on campus.

If you have questions about the building or ideas for making sustainability a more integral part of student learning please feel free to reach out to any member of ART or the Sustainability advisory group. We would love to hear from you.

ART members: Lynda Kilbourne, co-chair, Bob Sheeran, co-chair, James Snodgrass, Gary Lewandowski, Annette Marksberry, Shelly Webb, Steve Herbert, Shannon Byrne, Kathleen Smythe

Sustainability advisory group: Alexandra James (sustainability student intern), Ann Dougherty, Dave Lococo, Nancy Bertaux, John Fairfield, Kathleen Smythe with help from Tim Brownlee and Hema Krishnan