



SUSTAINABLE HIGHLIGHTS

SUSTAINABLE SITE

Nestled in the valley between the valley residence halls and the center of Campus, the new dining facility building sits on a 3-acre site, where biodiversity is promoted through a high ratio of open space to building footprint. The landscaping was designed to be drought tolerant and require little to no irrigation, reducing the use of potable water. Storm water runoff is routed through infiltration system located under the north parking area and into sedimentation basins before flowing into the nearby retention area.

WATER EFFICIENCY

A 39% reduction in potable water and sewage usage was achieved by careful selection of water efficient plumbing fixtures, faucets and flush valves.

ENERGY EFFICIENCY

Commissioning of all HVAC, lighting and domestic water systems was conducted to ensure that all systems operate as designed. All equipment was selected to cause minimal damage to the atmosphere. The designs for HVAC and lighting systems employ efficient equipment and technologies, resulting in a projected use of 23% less energy than the baseline established by American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) standard 90.1 issued in 2007. Based on the US Environmental Protection Agencies Greenhouse Gas Equivalencies Calculator, the new systems save enough energy to equal 343 metric tons of carbon dioxide from being released into the atmosphere. This is equivalent to 182.6 tons of coal burned, or the CO2 sequestered by 324 acres of forests grown in one year.

MATERIALS AND RESOURCES

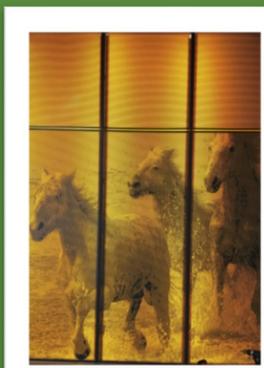
Western Michigan's Facilities Team challenged the design team with identifying and specifying at least 20% of the construction materials to contain recycled content and/or be harvested and manufactured regionally (within 500 miles). The construction management team managed this process and was able to verify and track the materials in order to ensure that the items met the requirements outlined in the specifications. The actual numbers exceeded expectations, where approximately 38% of the materials used during construction were regionally extracted and manufactured, supporting the local economy.

INDOOR ENVIRONMENTAL QUALITY

An indoor air quality (IAQ) plan was implemented during construction to reduce any adverse effects on the IAQ once the building was occupied. The HVAC system was designed to meet the minimum IAQ requirements, as well as maintain temperatures and humidity in accordance with ASHRAE standard 55-2007. Low-emitting and low VOC (volatile organic compound) materials such as paints, carpets, sealants, adhesives, and casework were employed in order to provide a healthy indoor environment. No smoking is permitted onsite.

SUSTAINABLE DINING

It is estimated that the facility will serve approximately 4,000 meals per day. Particular attention was paid to the selection of the food service equipment and how it would effect the food preparation. The team looked at proportion size, the size of the plates, how the food it cooked all the way down to what happens to the waste products. The installed "On Demand" hood ventilation or Me-Link controls save approximately 50% of the energy required when the fans are only used when needed instead of 24/7, dishwashers that have energy recovery units that use the steam generated during operation to pre-heat the water for further operations and a The Food Pulper and Water Extraction System that can reduce the typical food and scrap volume by 87% and save about 83% of the water by extracting and re-using the water generated during the reclamation process.



Western Michigan University Valley Dining Center

Kalamazoo, Michigan



A STUDY IN SUSTAINABILITY

The Western Michigan Valley Dining Center was designed to be a link between the valley housing and the center of campus, a hub of activity, providing both nourishment and campus connectivity. The 61,152 square foot, two story Valley Dining Center is across from the Goldsworth Valley Pond near the Valley III residence halls. The building sits just south of the Harrison-Stinson residence halls. It will serve all 12 freshman residence halls in the Valley, and also will be open to the public. It has capacity to seat 1,000 people. The facility will feature nine "micro-restaurants," serving everything from comfort food, deli and salad options, Italian, Latin and Asian cuisine and, of course, dessert. Taller ceilings, a variety of seating options and open food preparation stations are among the proposed features. One area would be specifically geared toward students with food allergies or other special dietary needs, The ground level of the facility will also have a convenience store and a café with snacks, light meals and "to go" beverages.

The importance of green buildings lies not just in mitigating a facility's effect on the environment, but also in the ability to improve the health of the people who occupy them every day. To that end, WMU is actively working in a number of areas to advance human health in the context of the built environment.





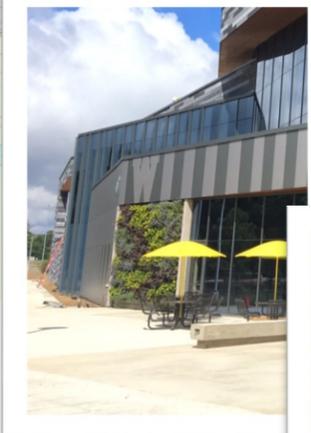
Tray-less Dining and Right Size Proportioning

The Valley Dining Center will serve guests plated meals, and will have some options that are self-serve. Many of the food selections will be customized to the guest order. Within these serving options is the choice to select additional portions. Food waste is minimized and the appeal of the meal is enhanced when food is attractively served and appropriate in portion size. Additionally, allowing the guest to select the ingredients used in their customized order, creates greater satisfaction with the food choice and decreases food waste.

The smaller plates also assist in the campuses food-waste management, food leftovers by weight account for the single largest component of the waste stream of campus dining facilities according to the EPA. There is a profound disconnection in our culture about what happens to our food waste once we are finished with our meals, and many are completely ignorant of the waste cycle and the staggering amount of waste our society produces through our eating practices.

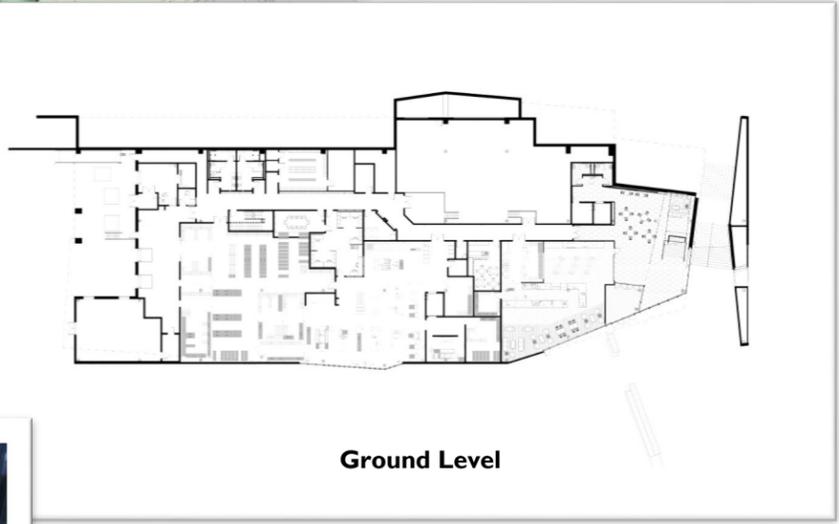
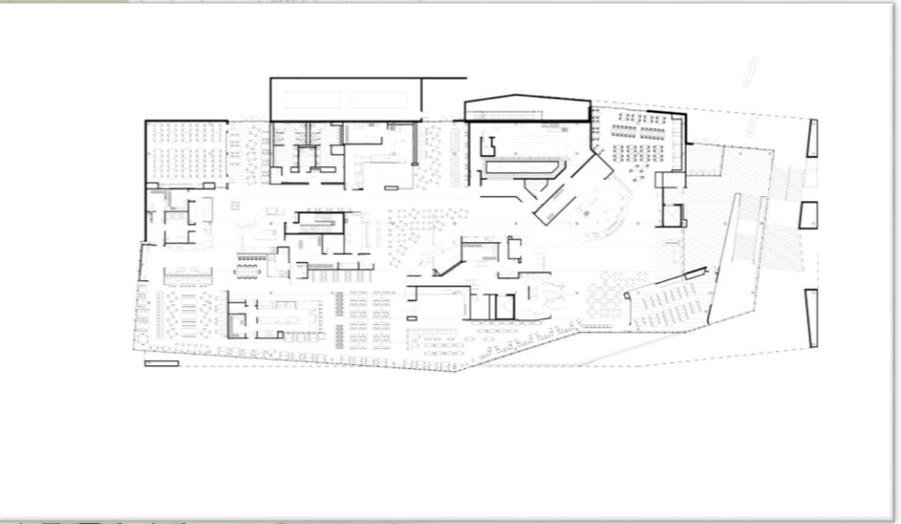
Allergen Free Area

Food borne allergies are on the rise, seldom are facilities able to make special accommodations for those with sensitivities. That is no longer the case with the allergen free area designed specifically to handle these issues with surfaces that do not absorb contaminants and enhanced ventilation requirements. The isolation of food preparation in the allergen free area eliminates cross contact with allergen containing ingredients and food.



Community Engagement

30% of the contractors working on the project were from the Kalamazoo, Portage and Allegan areas and 38% of the building materials were harvested, reclaimed or extracted and manufactured within 500 miles of the site, decreasing the delivery distance and cost and reducing greenhouse gas emissions and supporting the local economy.



Cook to Order and Grazing Stations

Nearly everyone knows about the infamous "freshman 15," but there's so much more than this assumed weight gain, the staff at the universities dining services are concerned with. A main concern for the dining staff is to prepare thousands of meals each day that not only satisfy the taste concerns of students but also they hold the important responsibility of doing so in a nutritious, thoughtful manner. The arrangement of different stations within the facilities can play a large role in a student's food selection. If a student has to pass the fruit selection on the way towards the exit, as opposed to the dessert stand, he or she is far more likely to select the healthier option, rather than walk back to the desserts.

Sustainable Programs

Green Housekeeping and Integrated Pest Management policies have been put in place to protect the health of the building occupants and prevent harm to the environment. In addition to a centralized recycling center in the building, there are also recycling containers in the offices, kitchen and each hospitality area.

Interior Lighting

The interior lighting system is designed to reinforce the architectural theme of transparency by enhancing the visual connection between the interior and exterior of the building. Each room has individual lighting controls, including task lighting at each individual workstation, allowing building occupants to supplement

Live Wall

The live wall serves as a way to enhance the visual appeal of the building as well as improve air quality. Building occupants are greeted by a lush green environment that encourages a soothing atmosphere.

Rain Garden

This garden which takes advantage of rainfall and stormwater runoff in its design and plant selection. is a small garden which is designed to withstand the extremes of moisture and concentrations of nutrients, particularly Nitrogen and Phosphorus, that are found in stormwater runoff.

The Main Stair

The building's main stair enables occupants to easily travel between the building entrance and an employee's destination floor or common use area. Laced directly to the main entrance and lobby, the main stair is can be accessed from both levels and serves as a focal point with the stairway landings located in common areas. These areas are flooded with natural light during the day and strategically lit in the evenings.

The design team was very deliberate in its decision to turn the elevators away from the entrance on the first floor in order to discourage occupants from automatically using them to move throughout the building. Studies have shown that people tend to be willing to walk up one flight of stairs or down two, but don't normally want to walk up two flights. This was a large driver when deciding how the stairs and elevators would be placed, which significantly impacted the design of the rest of the building.

Walking Paths

Extensive walking paths integrated throughout the site are available for building occupants that wish to spend time outside throughout the day. Relaxing areas for breaks have also been strategically placed along the paths.

Green Roof

The green roof performs a variety of environmental functions that allow it to prolong the life of the roof below, lower the building's energy through its thermal properties, and handle storm water management. Aesthetically, the green roof serves as a focal point. The space is a valuable amenity with its cooler temperatures, lush green carpet and a variety of colorful flowers.