

Spartan Village Sustainable Strategies

1. Site selection: The project site was previously occupied by industrial facilities and houses, many of which were abandoned or in not the best condition. The proposed development is in keeping with the neighborhood area plan as recently amended and will have an overall positive impact to adjacent areas.
2. Neighborhood involvement: The planning process of the project included design charettes with the neighborhood. Representatives of the neighborhood attended project design meetings and construction meetings.
3. Land disturbance activities were permitted in accordance with North Carolina Department of Natural Resources and the Environment.
4. Demolition activities are being conducted in compliance with the Guilford County Environmental Affairs regulations.
5. Asbestos containing materials: The site is covered throughout with existing buildings, many of which contained hazardous materials. Each of these was carefully abated and the new buildings will contain no asbestos or lead, as well as high VOC products.
6. Community connectivity: The site is served by local bus service and by UNCG's Spartan Chariot service and the City of Greensboro bus service.
7. Alternative Transportation: The location of the project in an urban setting alone encourages the use of alternative transportation. There are multiple bus routes passing through the site, including campus bus routes, and many amenities are within walking distance. In addition to that, the project includes both interior and exterior bicycle storage, both covered and uncovered. There are multiple entry and exit points, connected to engaging courtyards and streetscape, all of which encourage students to walk. Elevators do not occur at the front door of the building, making it desirable for residents to use the stairs.

The amount of parking has been minimized (below that required by local zoning) and designated areas will be provided for the university's Zipcar program.

8. Development density: The project includes four story buildings to realize effective density. At the request of the neighborhood, the scale of the building reduces as buildings approach adjacent residential areas.
9. Natural Habitat: While much of the site was covered with existing buildings and hardscape, there are also many significant trees. These were noted and analyzed and healthy trees were saved wherever possible. A significant number of trees are being

planted throughout the new courtyards and along the streets and will provide shade and wildlife habitats which exceed the current amount. Buffer plantings will promote wildlife habitats. Over 180 native or drought tolerant tree species are being added. All landscaping will not require the use of irrigation beyond the first year.

10. Storm water: The project contains multiple biocells which both slow storm water runoff to prevent erosion and filter the water before allowing it to enter rivers and streams. This reduces the amount of nitrogen and phosphorous being released downstream and will improve water quality when compared to the existing site. These biocells also include a diverse group of plantings which further encourage birds and wildlife to inhabit the site.

11. Heat Island: The buildings and much of the hardscape will include light-colored materials on flat roof areas and sidewalks. These serve to reflect, rather than absorb, light and heat and prevent the creation of a harmful microclimate.

12. Energy Modeling: All systems which consume energy were modeled to determine which provided the best balance of cost and energy savings. These include heating, cooling, hot water production, lighting and water consumption. This was done in conjunction with the design of the building envelope to ensure that the heating and cooling were efficiently produced and retained. Modeling the building generated the following recommendations:

- High efficiency heat pumps for heating and cooling.
- Central, high efficiency instantaneous hot water heaters for domestic hot water.
- Low flow toilets, shower heads and sink faucets.
- Exterior wall framing details which maximize the amount of insulation and eliminates thermal bridges and cold spots.
- Enhanced window glazing which minimized heat gain and prevents heat loss.
- Energy star rated appliances.

13. On site renewable energy: UNCG is pursuing implementation of solar thermal systems to provide domestic hot water for the buildings.

14. Commissioning: Heating, cooling, ventilation, plumbing and electrical systems will be commissioned by a third party to confirm proper operation according to design and university requirements.

15. Refrigerant Management: The refrigerant specified for the heating and cooling system has zero Ozone Depletion Potential and low Global Warming Potential.

16. Water consumption: All water fixtures to be used on the project are classified as low flow to reduce water consumption. In addition, permanent irrigation is not included in the project as a water conservation measure.
17. Lighting: The lighting design was carefully considered to place artificial light sources only where necessary. All fixtures inside the building are fluorescent or LED to minimize the amount of heat produced as well as the energy consumed. On the exterior, all fixtures will be cutoff to keep light on the surfaces for which it is intended and keep the sky and surrounding areas dark. Lighting of parking lots has been carefully designed in keeping with minimizing trespass from site and protection of nocturnal ecosystems.
18. Waste Reduction: Six houses were relocated for re use by Builders of Hope. Six houses were used by the City of Greensboro Fire Department for practice. Architectural Salvage, a nonprofit organization, removed many architectural features of the existing houses for future reuse. Through these efforts an estimated 400 tons were diverted from the landfill.
19. Waste Reduction, post occupancy recycling: The University will implement a recycling program at the site to include paper, plastic, glass, metals and electronics.
20. Materials management: The demolition contractor will recycle demolition materials as appropriate. A construction waste recycling program will be implemented at the site to minimize the waste to landfill tonnage.
21. Building Materials: Exterior materials have been selected to be long-lasting and to minimize future replacement or maintenance, both of which consume resources and contribute to landfill. Brick will never require replacement; fiber-cement panels contain recycled materials, last longer than wood and, when prefinished, minimize the need to paint. All of the exterior cladding materials are locally produced, including their raw materials.
22. Indoor air quality: These buildings will provide a smoke free environment in accordance with university policy ([UNCG Smoking Policy: II:C:011](#)). Interior materials were chosen to be low-VOC, durable and made from recycled materials whenever possible.
23. Interior comfort: All units will have individually controlled systems and operable windows to allow residents to customize their environment. Each room also has ample daylight and views to increase student's connection to the outdoors.

24. Green Housekeeping: In addition to reducing harmful off gassing from building materials, the University is committed to using cleaning products which do not harm the environment locally or downstream.
25. LEED Accredited Professionals: The design and construction team includes no less than six LEED Accredited Professionals.
26. Education: Students will be educated about the above features of the building through tenant instruction manuals to both increase awareness and to ensure that they are good stewards of the building.