



Team AtoZ

# WESTART



## Georgia Institute of Technology Small Multifamily

### Project Summary

Atlanta's West End neighborhood is a historic area developed in the mid-19th century. Initially prosperous, West End has witnessed a slowdown in recent decades. However, access to public transportation and the ongoing development of the Beltline – a trail-park circling city – presents new opportunities to revitalize and regenerate this community.

**Westart** is a multi-family building consisting of 36 dwelling units. It is designed mainly for local residents wishing to improve their housing quality with limit budget. The goal of this project is to design a building to provide a high living quality at low total cost, bringing a sustainable, affordable and equitable Net Zero Home to the residents of West End.



### Relevance of Project to the Goals of the Competition

Our team of 9 GT students come from different majors and backgrounds, but we share the same interests in building science and wish to practice it professionally. We will design Westart in an independent study course for the Spring 2017 semester to exemplify environmentally responsive building appropriate to Westside Atlanta. This project will complement the building performance related coursework that many in the team are taking, and introduce team members from other disciplines to building physics and performance-based building design. As high-performance housing, Westart meets DOE Zero Energy Ready Home criteria, satisfies housing needs for residents and accommodates the affordability for local people.

### Design Strategy and Key Points

**Westart** is designed as a multi-family building which satisfy local affordability and housing needs, while also supporting the overall energy system strategy and reducing building maintenance and management burdens. Based on site conditions, building shape is optimized to maximize rooftop photovoltaic output. A study of the community conditions will support an Evidence Based Design decision-making process to ensure the design responds to the neighborhood. An Integrated Design methodology will be applied throughout the design decision-making process so that the final design is consistent with the design objectives.

### Project Data

- o 1261 Lucile Avenue Southwest, Atlanta, Georgia
- o Historical area
- o DOE Climate Zone 3A
- o 933 square feet for 2B2B unit accommodating for 4-people family
- o 463 square feet for 1B1B unit accommodating for 2-people family

### Technical Specifications (Preliminary Value)

- o Wall Insulation: R-36.8
- o Roof Insulation: R-40.6
- o Window Performance: Double pane, Low E
- o HVAC specifications: Ductless VRF System
- o Domestic Hot Water: Solar Water Heater with Back-up Electric Heating