



Team MiamiOH SMF

FREEDOM'S PATH TO ZERO

Miami University of Ohio

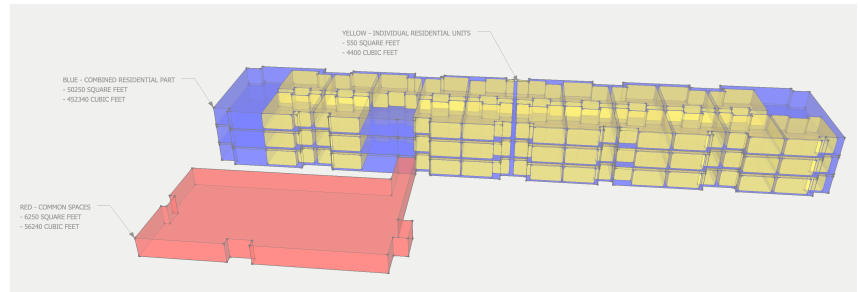


1. Miami University of Ohio

2. Contest Category: Small Multifamily (SMF)

3. Project Summary

Freedom's Path to Zero is a multifamily housing complex that seeks to house homeless U.S. veterans. Currently, there is high demand for housing by this clientele, so they can live somewhere comfortable, be close to medical care, and have a high quality of life. Our project has concentrations in accessibility, universal design, durability, performance-cost balance, degrees of privacy (from personal to communal space), and individual control of interior environment through compartmentalization. Through meeting DOE Zero Energy Ready Home requirements and Passive House standards, *Freedom's Path to Zero* will provide veterans not only with housing, but also a net zero energy, sustainable community.



4. Relevance of Project to the Goals of the Competition

The veteran's housing will set an example among the military communities of best building practices: a Net-Zero and Passive House approach that can be applied both now and into the future. The project integrates innovative design solutions with renewable technologies for a resulting low-energy, affordable housing complex.

5. Design Strategy and Key Points

Our approach in designing multifamily housing for veterans is focused around compartmentalization in order to increase sound insulation, increase fire resistance, and decrease ductwork between units. We are looking at each unit as its own space with its own mechanical equipment- therefore, allowing it to be customizable for every resident and to have simplified maintenance. This is especially beneficial for the expected residents of *Freedom's Path to Zero* since many veterans may have amplified sensitivities and responses to their environment. The design relies on Passive House building principles and the "perfect wall" assembly. Key passive and active strategies include: PV roof array, solar thermal array, optimized site orientation, and a tight envelope with high R-value insulation.

6. Project Data

- Location: Chillicothe, OH
- Climate Zone: 5A
- Sq. Footage: 550 ft² per unit
- Bedrooms: 60 (1 bedroom per unit)
- Bathrooms: 60 full baths, 2 public restrooms
- Stories: 3