

Affordable Design

The U.S. Department of Housing and Urban Development sponsors or cosponsors three annual competitions for innovation in affordable design. This Cityscape department reports on the competitions and their winners. Each competition seeks to identify and develop new, forward-looking planning and design solutions for expanding or preserving affordable housing. Professional jurors determine the outcome of these competitions.

2017 Innovation in Affordable Housing Student Design and Planning Competition: Woodhill Homes, Cleveland, Ohio

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U.S. Department of Housing and Urban Development

Winning Team: Rutgers University

Jane Allen, Chelsea Moore-Ritchie, Sharone Small, Kim Tryba, Christine Winter

Runner-Up Team: University of Michigan at Ann Arbor

Bader Bajaber, Melissa Bloem, Emily Burrowes, Laura Devine, Prashanth Chamarti Rajendra Raju

The Jury

Beverly Bates, Michael Bodaken, Uwe Brandes, Linda Mandolini, Joe Reilly

Observations From the Field

Jeffery Patterson, Executive Director and CEO, Cuyahoga Metropolitan Housing Authority

The views expressed in this article are those of the compiler and do not represent the official positions or policies of the Office of Policy Development and Research, the U.S. Department of Housing and Urban Development, or the U.S. government.

Introduction

The Innovation in Affordable Housing (IAH) Student Design and Planning Competition, now entering its fifth year running, invites teams of graduate students from various disciplines to submit plans in response to a housing design and construction issue identified by a selected housing authority. The goals of the competition are to encourage research and innovation in affordable

housing design that strengthens the social and physical fabric of low- and moderate-income communities and to foster crosscutting teamwork within the design and community development process. This article reflects on lessons learned from this year's event and identifies opportunities for furthering engagement with public housing authorities (PHAs) on these issues. The article features feedback from the jury, discussions with the second- and first-place winning student teams, and observations from Jeffery Patterson, Executive Director and CEO of the Cuyahoga Metropolitan Housing Authority (CHMA), on the importance of creating better communities through a sustained commitment to creative design.

The IAH Student Design and Planning Competition welcomes graduate students in urban planning, architecture, engineering, finance, and many other disciplines to submit proposals. The competition challenges the students to address social, economic, and environmental issues in response to a specific housing problem developed by a public housing agency. The U.S. Department of Housing and Urban Development (HUD) partnered with CMHA in Cleveland, Ohio, to develop program requirements to assist students with developing their proposals. The site—Woodhill Homes—is a 478-unit multifamily development on the outskirts of downtown Cleveland. Although its proximity to the city should generate more economic opportunities for Woodhill Homes residents, the property is isolated from the surrounding neighborhoods, and inadequate transportation options hinder access to the urban core. CMHA challenged students to submit proposals that not only address the redevelopment needs of the property, but also to find solutions for enhancing connectivity with the surrounding neighborhoods.

Woodhill Homes is one of the oldest public housing developments in the country. The distinction of being among the first also brings with it major challenges that the students were asked to address—a decaying landscape that is further hampered by harsh winters, stormwater damage, vandalism, and outdated building materials. The students' task was to develop a site plan that addresses badly needed renovations to the buildings around the development and in each unit. As is the case every year, students also had to account for the social and environmental needs of the residents, survey the regulatory environment, consider the conditions of the local housing market, and be familiar with the long-range comprehensive plan. Competition guidelines also required that teams submit proposals responsive to five general elements of design: (1) planning context and analysis, (2) building solutions and technology, (3) equitable development solutions, (4) site-specific illustrations for new development or redevelopment, and (5) operations and finances.

The competition is designed in two phases. In phase I, a jury of five practitioners, planners, and architects evaluated first-round proposals. This year, 35 teams representing 175 students from various professional graduate schools submitted proposals. From these submissions, the jury selected 4 finalist teams. In phase II, these finalists refined their plans—addressing complex issues, incorporating more detail, improving floor plans, and conducting additional analyses following a site visit to CMHA and nearby Woodhill Homes. Lessons learned from this visit were meant to help students improve their final proposals. Several weeks after the site visit, all jurors and finalists traveled to Washington, D.C., for the awards ceremony event at HUD headquarters on April 18, 2017. At the event, the student teams presented their revised project solutions in front of the jury and an audience. After an intense deliberation, the jury selected the team from the Rutgers University as the winner and the team from the University of Michigan at Ann Arbor as the runner-up.



In the remainder of this article, the members of the jury and winning student teams offer their thoughts about the competition. First, jurors share the elements of the winning site plans that represented innovative solutions and address whether the proposed solutions could be implemented at Woodhill Homes. The students then reflect on recommendations from the jury, the biggest challenges faced, and how they attempted to address them. They also identify opportunities to learn from mistakes, ideas of what innovation is, elements observed that provided value to the design of the project, and any tradeoffs that had to be made to get to a feasible site plan. This article concludes with insights from the Executive Director and CEO for the CMHA on this year's competition.

Jury Comments

Beverly Bates, Michael Bodaken, Uwe Brandes, Linda Mandolini, Joe Reilly

This year's jury consisted of a diverse group representing members of the construction industry, academia, advocacy, and housing finance. As in previous competitions, jurors were instructed to select the proposals that offer the best examples of innovative design and to encourage the students to think outside the box, keeping in full view the feasibility of their ideas. Also, because Woodhill Homes is one of the more challenging projects that we have seen thus far, their task was compounded by the fact that two outstanding proposals were put forward. We asked the jury to focus on the following three criteria.

- **Innovation**—The teams were constantly reminded that this award is called “Innovation in Affordable Housing” for an important reason; we want students to come up with new ideas around design, building technologies, or methods that have not been attempted before. These ideas and the solutions offered should be highlighted in all aspects of the site plan.
- **Financing**—Perhaps the most complex aspect of the Woodhill Homes case is assigning a reasonable price tag to the project. Both the Rutgers and Michigan teams needed to be clearer on how they calculated per-unit construction and operating costs; for instance, accounting especially for green features that may have higher upfront costs than expected. Another major consideration

is the feasibility of tax credit investment, given the conditions of the local housing market and difficulty with securing 4-percent tax credit financing. The teams' pro formas should also consider the long-term return on investments for the residents and the community as a whole.

- **Site needs and communitywide considerations**—As discussed throughout this article, the existing Woodhill Homes site needs major infrastructural upgrades. The students were charged with addressing site and building circulation, deteriorating building materials, parking, and impervious street surfaces that would cause flooding during rainstorms, among other challenges. However, the students were also strongly encouraged to be specific about how their plans enhance social cohesion, create a sense of community, and connect residents to opportunities beyond the Woodhill Homes neighborhood.

These criteria explain why the jury chose the Rutgers team as the winner of this year's competition. Among the most innovative aspects of their proposed site plan is the addition of Morris Lofts—a 40-unit building that residents could use for all types of activities, including a space for arts, rooms for training and community development activities, and a place where social workers and other practitioners could help residents address a variety of personal needs. The proposed site plan also includes a place for children and youth activities, as well as a recreational room designated for older adults and seniors. The proposed programs are created around resident empowerment; for instance, the plan includes the addition of a coordinator to work with the residents looking for job opportunities in the City of Cleveland's robust medical industries.

On the financial side, the jurors commended the Rutgers team for how they considered the use of both 9-percent and 4-percent tax credit financing—the former used for the building of Morris Lofts and the latter for unit renovations in existing buildings. Although the jury was not totally convinced that bringing tax credit syndicates onboard was realistic, the idea of combining various sources of income to include healthy contributions from private industry, the Federal Home Loan Bank program, the Ohio Housing Development Assistance Program, and the Gordon Gund Foundation, it concluded that the team had done its homework. For that, the jurors noted that the Rutgers team's plan was outstanding on the merits of its pro forma.

The aspect of the Rutgers team that most impressed the jurors was the integration of social service delivery into the design that transformed underutilized spaces into shared, commune-like areas to encourage more interaction between residents. To fully understand how the team's proposal envisioned this plan to reduce social isolation requires that one note how all the buildings in the Woodhill Homes property are closed off from one another, either by a street barrier that prohibits entry or by a physical structure like a large dumpster, iron or wooden fence, or raised terrain, making it difficult or unsafe to cross over from building to building. The jury noted that the team seemed to take great care in focusing on how the existing physical conditions contributed to the lack of social capital. The team was particularly sensitive to how the Woodhill community could get involved in reviving the property to its historic prominence, such as restoring art pieces and other important artifacts from the post-1930 Works Progress Administration (WPA) era.¹

¹ For example, the community center in the CMHA was built in the late 1930s during the height of the federal public works programs. Woodhill residents often participated in the various onsite activities that the center offered. The Inner Museum Conservation Association worked closely with the housing authority to preserve WPA-era artwork. To this day, historic preservation is a centerpiece of the community center, a functioning place for community engagement for all ages.

When the Michigan team presented its proposed site plan during the awards ceremony in April, the jury noted their outstanding visual presentation. Many of the visuals centered on the plan's environmental sustainability concept and healthy community design, which incorporated a community garden, new plants and trees, and recycled materials. Central to Michigan's project, and cited as a very bold approach, was the presentation of a parking plan alongside a pedestrian walk and bike pathway. Although jurors lauded the idea of a car-sharing program and other considerations around mobility, they questioned how parking or an auto-centered plan would align with the demographic characteristics of this population. Still, the jurors thought that the team's theme of providing improved access to the city through transit rerouting and street connectivity was one of the most commendable features of the proposed program.

In addition to the design concept, jurors thought that the Michigan plan was audacious. The students flirted with the idea of creating a mixed-income community by including a few market-rate units in the portfolio. Although the jurors were concerned that the team risked losing valuable tax incentives and whether Woodhill would serve as a viable place where the market could work, they did applaud the students for taking on the idea and presenting it well. The \$7.6 million the Michigan team proposed for new construction would go toward the establishment of a Women's Health Center, partly mortgaged with a HUD Federal Housing Administration (FHA) 221(d)(4) program loan.² A grocery cooperative would be phased in, which was a very popular idea among the jury, because access to food sources appeared to be an issue.

As they did the Rutgers team, the jury commended the Michigan pro forma—apart from the parking and mixed-income plan—citing the students' reasonable financing proposal that consisted of public and private investors, grants, and loans. A proposed 1-percent energy bond would go a long way in addressing the team's proposed energy-efficient and green features, such as the bioswale, low-impact materials, the green buffer, the garden shed, and permeable asphalt. The Michigan team was also similar to the Rutgers team in its plan to better utilize existing space. The plan proposes the addition of a community gazebo and a cistern, private backyards that open to a communal area, and a converted pedestrian path with imbedded street controls to slow auto traffic.

The Runner-Up Team: University of Michigan at Ann Arbor

Bader Bajaber, Melissa Bloem, Emily Burrowes, Laura Devine, Prashanth Chamarti Rajendra Raju

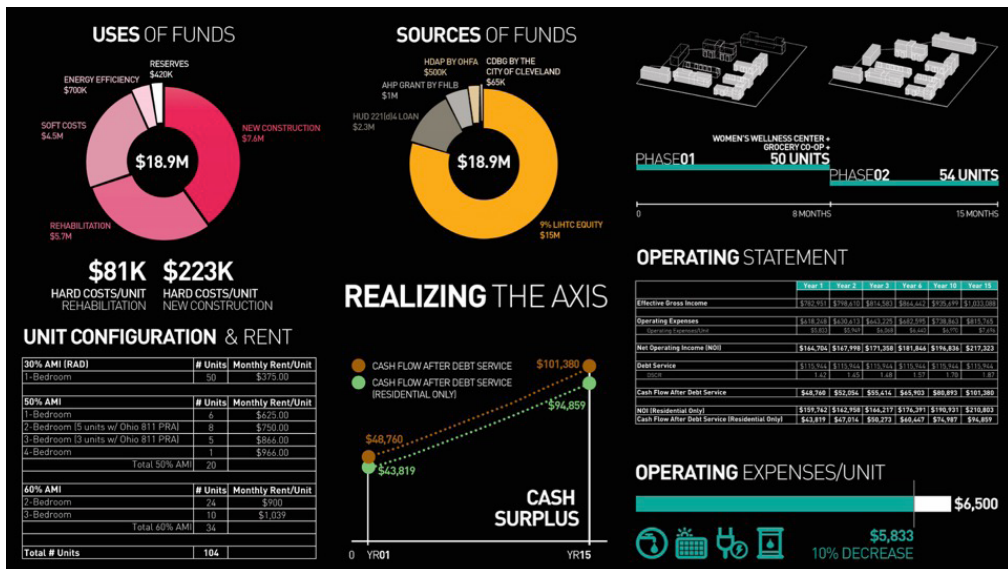
The runner-up team from the University of Michigan at Ann Arbor presented a plan that incorporates both new construction and the infill of existing buildings. The plan, called Axis Woodhill, aims to create a green mixed-income community that connects the residents "back to the grid" by expanding transportation options while acknowledging that residents often rely on the automobile because existing transit options are limited.

The students agreed that the most daunting task was balancing the need for new upgrades with addressing units that were in the worst shape. Constructing new units would likely add to the

² The 221(d)(4) mortgage program is a 40-year, fixed-rate, fully amortizing loan insured by FHA and is used to support multifamily housing construction or rehabilitation projects, with total project costs more than \$2 million.

total project costs. To offset those costs, the team would include market-rate units that would attract moderate-income families, creating a mixed-income community. The students maintained that proposing a new mixed-use, mixed-income community with sustainable features was a novel and innovative idea. Anticipating the jury's criticism, the team admitted that the inclusion of market-rate units would be controversial, but that the investments would yield long-term positive outcomes for the residents and the community.

The team's proposed car-sharing program that included 55 additional parking spaces would add to the controversy. The students argued that, based on their research and contrary to what some might assume, low-income families do rely on cars as much as they would a traditional bus or transit route, particularly given the limited choices that the existing transportation system currently offers. However, the students acknowledged that efforts to improve transit access are well under way and had been a prominent fixture of the city of Cleveland's comprehensive plan. They cited projects sponsored by the Opportunity Corridor Partnership³ and Thrive 105-93,⁴ for instance, to address street connectivity and access to job opportunities and cultural attractions for Woodhill residents. Still, the students maintained that public housing should not be isolated and that the people residing in this community do not hold values that are distinct from those living outside of it. The idea of creating a mixed-income community, for example, was a bold step, but they argued that sustainable features, safe pedestrian-friendly spaces, and health and wellness are as valued in low-income communities as in any other.



³ For example, improvements are under way along East 105th Street, which is a major thoroughfare in Cleveland that leads to the downtown core. In addition, the East 55th and Woodhill Red Line rail stations are near the Woodhill community; these stations also expand access to many job opportunities close to the city, where the medical industry has thrived in recent years.

⁴ The Cleveland City Planning Commission established Thrive 105-93 as a comprehensive community-development plan that centers on the goals of sustainability, access to jobs, healthy community living, and public safety. The plan focuses on improving access and mobility for Woodhill and for residents in close-by neighborhoods.



The Winning Team: Rutgers University

Jane Allen, Chelsea Moore-Ritchie, Sharone Small, Kim Tryba, Christine Winter

The team from Rutgers University took home first prize for their site plan for Woodhill Homes, called "Beyond the Threshold." Although the plan is a proposal for infill housing, new construction is involved. The feature of the project that most differs from the Michigan proposal is simplicity. The presentation of the plan was concise and easy to understand, which garnered praise from the

jury. The plan focuses on community empowerment through social cohesion. The team—consisting mostly of urban planners and architects with a background in social work—suggested that increasing the density of the building would not only solve the need for more units but would also offer a better view of downtown. The reconfiguration plan boasts features such as pitched roofs and green facades (or “living walls”); private backyards and walkways that connect each building (or “village”) to enhance resident interaction; improved lighting; and upgraded heating, ventilation, and air-conditioning (HVAC) systems that reduce heating costs in the winter and cooling costs in the summer. Additional passive design features include high-performance windows and continuous insulation employed throughout the building envelope.

The centerpiece of the Rutgers proposal is the incorporation of social-based solutions throughout the plan. Acknowledging the human aspect of the design, the students highlighted the new community center where free Internet service would be offered. Onsite resident coordinators would provide direct assistance to single mothers—about 97 percent of the population at Woodhill Homes—who seek affordable childcare and better access to jobs. The students, some of whom are single mothers, seem to fully understand the challenges that Woodhill residents face and spent much of their time developing a plan that enables more direct interventions from social workers and community development advocates. The idea of creating a community where the residents work together in a common space with common goals was not lost on the team—the design reflects these goals. Organized in a U shape, the proposed grounds have green, energy-efficient features throughout, including a new community garden and upgraded playground for children, safely tucked away in a formerly underutilized space. The design added front and back porches to encourage more interaction and site flow among the residents. Green facades would cover all buildings, and the positioning of the buildings would provide relief from hot temperatures in the summer. Energy-efficient appliances would be included in each unit, reducing heating costs in the winter. The jury noted the careful attention paid to the needs of Woodhill residents and the community where they reside.





Conclusion: Moving Forward—Observations From the Field

Jeffery Patterson

When the four finalist teams of the 2017 IAH Student Design and Planning Competition arrived at CMHA, the students were welcomed by Jeffery Patterson, Executive Director and CEO. During his speech, Patterson challenged the students to take in the view beyond the villages of Woodhill Homes. He suggested that Woodhill offers some of the best sights and views of the city, as elevated slopes raise the development above the surrounding cityscape. Although Woodhill is relatively close to prestigious academic institutions like Case Western Reserve University and Cleveland State University, and to St. Joseph's and other medical centers, the community is cut off from the rest of the city due to poor access to jobs and transportation options. Expanding access to economic opportunities and reducing social isolation have been among Patterson's top priorities for many years. Progress towards these goals has been met, working with the City of Cleveland—the housing authority's top partner—and other public and private entities, such as the Cleveland Neighborhood Progress Community Development Financial Institution, local community development corporations, affordable housing advocates, banks, and philanthropic organizations. For instance, when an area hospital closed its doors nearly a decade ago, jobs were lost, and the residents of Woodhill suffered. The community partners, however, created enough capital to renovate the building and reopen the hospital, offering additional job opportunities for residents to rejoin the workforce.

Challenges remain, due primarily to poor connectivity. When asked how the ideas from the teams could be vetted and implemented into the Woodhill property, Patterson acknowledged that most of the teams' recommendations for a new development might not be financially feasible. However, Woodhill Homes is a Rental Assistance Demonstration (RAD)⁵ community that has already

⁵ The RAD program gives PHAs an opportunity to preserve affordable housing stock by leveraging public and private debt and equity. PHAs enter into new long-term contracts with private syndicators to finance rehabilitation or construction projects.

undergone capital improvements—an improved water drainage and recycling system, upgrades to building materials, and an updated HVAC system in every building. He commended all the finalist teams for their sustainable development proposals that encourage walking and reduce the carbon footprint. Increasing density is a popular goal because more affordable units are needed at Woodhill. Patterson appreciated certain aspects of the teams' plans, such as recognizing the historical significance of Woodhill by maintaining as much of the initial design facades as possible, and reusing building materials that enhance durability. Patterson believes that improvements to the physical landscape should respect the cultural traditions of the community and surrounding neighborhoods. These neighborhoods share a common history, too, so ideas about increasing connectivity and open up these communities to improve social cohesion are ideal.

To Patterson, innovative practices not only involve transforming the buildings to make them look more aesthetically pleasing and less like traditional public housing while preserving the historic character; innovation also means diversity in unit design. Intergenerational housing, as he refers to it, allows for the units to adapt to household and lifestyle changes and for different types of families: single parent-headed households, young professionals, seniors, children aging out of foster care, veterans, and persons with disabilities. Enhanced onsite social services that create opportunities for self-sufficiency and aging in place are also innovations that Patterson identifies as necessary for Woodhill Homes. These services should be offered on site to reduce reliance on cars and as an alternative for those families who need access to childcare services as they look for work, address health and wellness needs, or transition to homeownership. Patterson commends HUD for encouraging future generations of young practitioners to continue offering their ideas through this competition for years to come.

Acknowledgments

The U.S. Department of Housing and Urban Development (HUD) thanks the award-winning student teams from Rutgers University and the University of Michigan at Ann Arbor for sharing their thoughts and for all the hard work they put into their submissions for this year's competition. HUD also greatly appreciates the 2017 Innovative Affordable Housing jury members' dedication and hours devoted to the awards selection process. HUD also thanks Steven Winter Associates for its planning and logistics efforts, the work that made this year's competition a success, and the notes and writings that made a valuable contribution to this article.

Postscript

The competition is thoroughly documented on the web.

To learn more about the award: [huduser.gov/portal/challenge/about.html](https://www.huduser.gov/portal/challenge/about.html).

To read about the 2017 award guidelines: https://www.huduser.gov/portal/challenge/past_competitions.html.

To learn more detail about the winning submissions: https://www.huduser.gov/portal/challenge/past_competitions.html.