A Decade of Innovation: Reflecting on the Past 10 Years of the HUD Innovation in Affordable Housing Student Planning and Design Competition

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Introduction

The U.S. Department of Housing and Urban Development's (HUD's) Innovation in Affordable Housing (IAH) Student Planning and Design Competition has successfully organized more than a decade of competitions. The competition continues to serve as a platform for innovation and knowledge exchange, driving progress in the field of affordable housing and empowering public housing authorities to tackle housing challenges effectively. With each competition, valuable insights and ideas to shape the future of affordable housing have come about, emphasizing the importance of equitable access to housing and the integration of smart technologies and sustainable practices. Moving forward, these initiatives will continue to play a crucial role in advancing affordable housing solutions and building resilient communities across the United States.

This article explores the competition's evolution—from 2014 through 2023—and its key objectives, achievements, challenges, and lessons learned, highlighting the transformative power of creativity and collaboration in addressing housing inequality. Moreover, in reflecting upon the past 11 years, the competition's impact becomes evident and extends far beyond the bricks and mortar of housing structures to how HUD conceptualizes, designs, finances, and implements affordable housing initiatives. From innovative design concepts to groundbreaking financing models, the

competition has catalyzed a wave of innovation, highlighting the importance of sustainability, community engagement, and inclusivity.

Background

The Innovation in Affordable Housing Student Planning and Design Competition was launched in January 2014 by the Office of Policy Development and Research (PD&R) under the leadership of the late Rachelle Levitt. The IAH competition encourages research, innovation, and community planning in affordable housing and enhances future practitioner capacity. This competition requires collaboration among graduate students from various disciplines, such as design, finance, public policy, and planning, to promote awareness of affordable housing at a multidisciplinary level. By initiating and funding this competition, HUD and PD&R hope to inspire a new generation of professionals to advance the design and production of sustainable and livable housing for low- and moderate-income individuals.

The competition invites multidisciplinary teams to participate, with a minimum of three students and a maximum of five plus one faculty advisor. Each team must have members representing three different graduate-level programs; one must be from an architectural or design-related program and one must be from a non-architectural program.

Over the past decade, students have been tasked with designing and reimagining housing for various groups, including seniors, veterans, families, and migrant workers. HUD encourages students to prioritize building a sense of community, connectivity, inclusion, long-term financial viability, and resilience while incorporating creativity and innovation in both site design and financial solutions.

The year 2024 marks the 11th anniversary of the IAH competition and the 11th time HUD has partnered with public housing agencies (PHAs) from all over the country to provide a real-world affordable housing challenge for student teams to reimagine and propose plausible solutions. During Phase I of the two phases of the competition, HUD invited student teams nationwide to submit proposals (site plans and designs) to address the challenges set up by the partnering PHAs and the competition guidelines. The students are asked to apply innovative design strategies while being thoughtful of the cultural and social context of the partnering community. The teams provide a schematic design-level site plan, floor plans, and section and building massing. Teams include a narrative explaining their rationale, demonstrating an understanding of the community, planning and zoning requirements, resident needs, financing, and community services. Their design must include a preliminary pro forma supporting their financial calculations and fund leveraging. In general, teams are encouraged to think outside the box.

A jury of subject matter experts reviews the submitted proposals for innovative, creative approaches and original thinking. The jury considers each proposal against review criteria, including the following:

- Environmental impacts (i.e., the design's durability, impact on residents' health, water and energy efficiency, environmental resilience, and lifecycle costs).

- Financial impacts (i.e., the design's affordability or funding sources, the leveraging of various financial instruments such as tax credits, cash flow and creative alternatives, and innovative financing).
- Social implications (i.e., the design's effect on access to employment and services; accessibility; social networking; creating a sense of place, control, and comfort; and redressing past social injustices).
- Innovation (i.e., the design's integration of new ideas into the neighborhood and community relative to the restrictions and opportunities of the site).
- Redress for historical injustices (i.e., the design's ability to advance social, racial, or economic equity).

On the basis of those criteria, the jury selects four student teams. In Phase II of the competition, in March, the four finalist teams are invited to visit the partnering PHA site to refine their proposals and include local context. In mid-April, after the site visit, the jurors and the four final teams travel to Washington, D.C., for the final competition event at HUD headquarters. At this event, the finalists present their revised project designs to the jury and an audience and answer juror questions on their design. After the student presentations, the jury deliberates and selects the competition's first-place winner and runner-up teams.

The winning team receives $20,000, the runner-up team receives $10,000, and the remaining two teams receive $5,000 each.

Past Challenges

The Innovation in Affordable Housing competition has facilitated more than a decade of challenges and innovative solutions, each addressing the most pressing housing concerns. Since its beginning in 2014, the competition has evolved to engage various stakeholders, including students, professionals, and interdisciplinary teams, and participants have been tasked with designing and planning affordable housing units that prioritize sustainability, community engagement, and cost-effectiveness. Themes such as energy efficiency, inclusivity, and resilience have been central to these competitions, reflecting the ongoing priorities in the affordable housing landscape. By encouraging collaboration and creativity, the competitions also foster a culture of innovation, driving progress in the field and empowering communities to address housing needs effectively. With each competition, participants contribute valuable insights and ideas to shape the future of affordable housing, emphasizing the importance of equitable access to housing and the integration of smart technologies and sustainable practices. Moving forward, these initiatives will continue to play a crucial role in advancing affordable housing solutions and building resilient communities across the United States.

Year 1

For the competition's inaugural year, HUD partnered with the Housing Authority of Bergen County (HABC), New Jersey. HABC wanted to create affordable housing for disabled veterans on a 1.5-acre

project while preserving a historic house used as an American Legion headquarters, known as the Peter DeBaun House.

On May 6, 2014, the jurors selected a student team from The Ohio State University as the winner of the competition for their design to upgrade the first floor into a community living room that could be partitioned to accommodate small-group meetings, private meetings for social workers, and a gym (exhibit 1). The second floor design was upgraded to include an open office area for various services to allow for interaction between coworkers, including Veterans Affairs social workers and coordinators (as specified in the HUD-Veterans Affairs Supportive Housing program best practices). The student team presented the seven dimensions of wellness as a mechanism to support the target residents. Their transportation plan included partnering with New Jersey Transit and the Bergen County Line (Emerson light rail) and Zip Car to connect the site to other areas. They incorporated the residents' needs via public engagement strategies (e.g., town hall meetings) and engaged residents via design charrettes to incorporate and celebrate the DeBaun House's history and honor the community's veterans.

Exhibit 1

Site Plan from The Ohio State University Student Team Proposal

Source: The Ohio State University Team Presentation

The inaugural runner-up team, made up of students from New York University and Columbia University, was chosen for their multilayered design approach to addressing the residents' needs by creating a rehabilitation and activity center in the renovated DeBaun House and a resident-maintained vegetable garden on site (with produce used by the community's café), both of which provide resources within the veteran community and engage the larger community in the development (exhibit 2).

Exhibit 2

Site Plan from the New York University and Columbia University Student Team Proposal

Source: The New York University and Columbia University Presentation

On June 29, 2016, a groundbreaking ceremony was held to mark the beginning of construction on affordable homes for veterans named Emerson Veteran Supportive Housing. The new homes were to be built on the land behind the American Legion headquarters (the DeBaun House) and consisted of 14 single-story, one-bedroom units in seven duplex-style buildings. Per the housing authority's website, "the design was developed by Arcari & Iovino Architects in connection to a U.S. Department of Housing and Urban Development competition.… Funding for the project will come from the N.J. Housing and Mortgage Finance Agency, the Housing Development Corporation, and Bergen County HOME." Each unit is air-conditioned; has a kitchen, living room, and dining room; and comes equipped with washing machines, dryers, and handicap-accessible bathrooms.

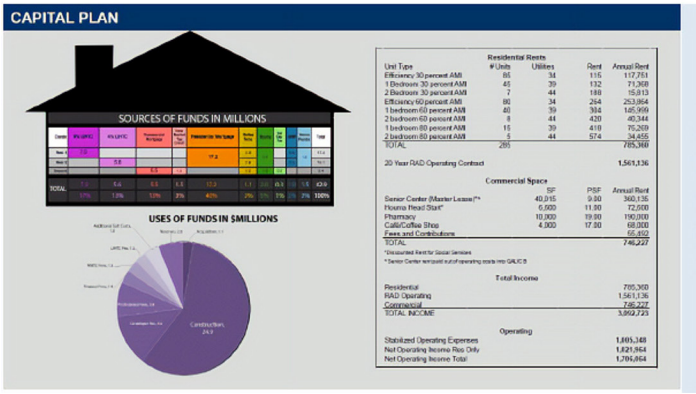
Year 2

In 2015, HUD partnered with the Houma-Terrebonne Housing Authority (HTHA) in the state of Louisiana. HTHA manages Bayou Towers, an 11-story senior housing development in Houma. First occupied in 1971, Bayou Towers contain 300 dwelling units; however, the aging infrastructure led HTHA to consider a gut rehab of the existing structure or build a new structure to ensure that seniors in Houma have access to safe, affordable rental housing. The students entering the competition that year were asked to consider the needs of the residents, local zoning restrictions, and funds-leveraging opportunities.

The New York University team was announced as the winner for its innovative financing scheme, which included using a mixed-use strategy that incorporated retail for income purposes, creating a positive community-wide impact (exhibit 3). The construction plan also included an early childcare center, a variety of onsite services and activities to address the needs of the community, walkable streetscapes to create inviting outdoor spaces, a pharmacy, a local coffee chain, direct access to the adjacent park, and a new gazebo. Each unit was equipped with a recessed balcony and operable shutters. The team's energy efficiency measures included solar panels for domestic hot water on the roof and a passive house approach to the building envelope, which fed into maximizing thermal insulation, installing low u-value windows, and specifying energy recovery ventilation.

Exhibit 3

Financing Scheme from the New York University Team Proposal



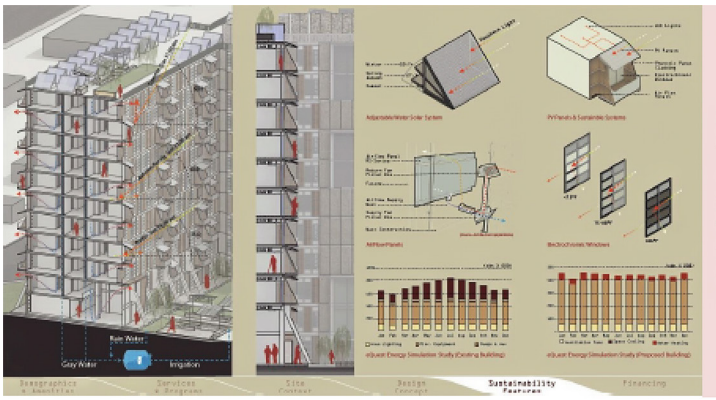
The proposed income profile was comprised of residential rent, HUD Rental Assistance Demonstration (RAD) Program operating funds, and commercial rent.

Source: The New York University Presentation

The runner-up team was the student team from the University of California, Los Angeles. The team designed a gut rehab of the existing Bayou Towers structure with an emphasis on rebuilding with energy efficiency coupled with strong healthcare partnerships (exhibit 4). The plan also emphasized a progression of indoor and outdoor spaces, areas for family and community events, and an intergenerational center through a partnership with Nicholls State University. Further, the team combined an onsite healthcare suite with a tele-healthcare suite, wherein the residents can communicate with doctors and nurses via video conferencing. The jurors believed that the team demonstrated a deep understanding of the senior population and its needs, reuse of materials, and an innovative modular façade design.

Exhibit 4

Energy Efficiency Features Proposed by the University of California, Los Angeles, Student Team



Active features include a water filtration system to conserve water for irrigation and flush toilets; solar panels on the roof for DHW; and PV on balconies to generate enough electricity to power LED hallway lighting.

Source: The University of California, Los Angeles, Presentation

On August 29, 2021, Hurricane Ida made landfall off the coast of Louisiana and caused severe damage to Bayou Towers. The building sustained significant roof damage, and the insurance adjusters determined that residents could not return to live in the units. As of April 23, 2023, the housing authority is waiting for the Federal Emergency Management Agency to complete its assessment on whether Bayou Towers is more than 50 percent damaged—if so, it will be eligible for demolition.

The housing authority submitted a Section 18 Demolition application to the HUD New Orleans Field Office. HTHA intends to demolish Bayou Towers; the property is set to be sold as clear, vacant land.

Year 3

The Housing Authority of the City of Santa Barbara (HACSB), California, partnered with HUD for the 2016 competition. The site, Monteria Village, is a 56-unit multifamily housing development built in 1973. The complex has 28 rental housing units: 20 three-bedroom units, 4 four-bedroom units, and 4 five-bedroom units. All units are townhouse-style apartments contained in seven two-story buildings. The challenge was to develop a site plan to improve and expand quality housing options for families living in the complex. HACSB was interested in team proposals for either gut rehabilitation (for a deep energy retrofit plus new amenities) of the existing buildings or new construction. The secondary interest of HACSB was to incorporate the provision about social amenities for the residents into the solution.

The winning team from the University of Texas at Austin focused on family, lifelong education, and holistic sustainability. The team proposed new construction focusing on the importance of social networks and leveraging existing community amenities, such as the Family Opportunity Center and nearby public transportation. Their design included new features, such as an education center and an outdoor common area. The new development would include 65 new units and incorporate sunscreens and trellises, entry arbors and gates, private terraces, and patios, which support the goal of providing a strong connection to the community's social heart (exhibit 5). Some units would have built-in flexibility that would allow for combining units for larger or extended families. Also noteworthy is an integrated purification system that reuses gray water and stormwater runoff.

Exhibit 5

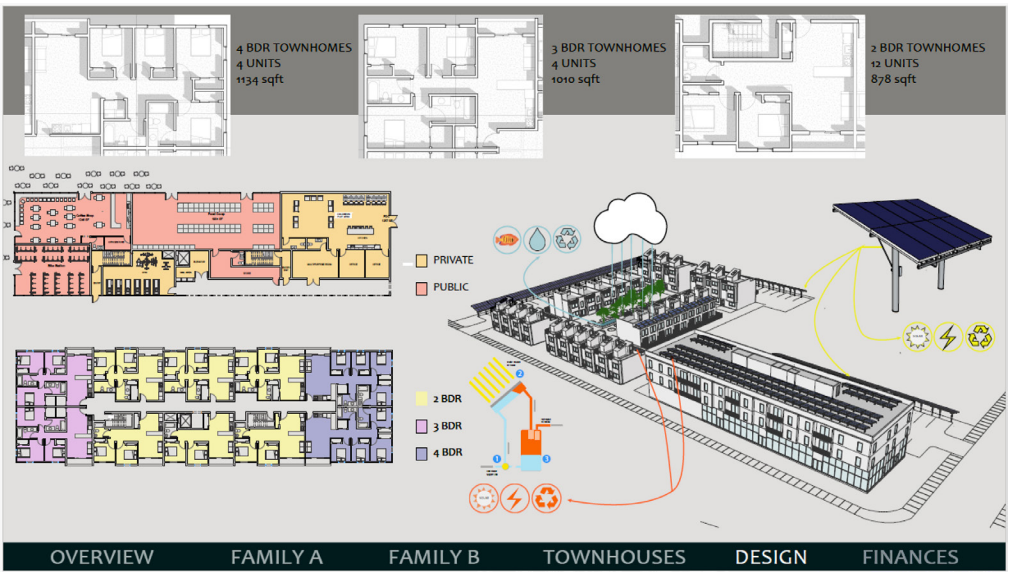
A Cross-Sectional Representation from the University of Texas at Austin Student Team Proposal

Source: University of Texas at Austin Presentation

The runner-up team from the University of Maryland, College Park, presented a proposal for new construction on the site, consisting of two-, three-, and four-bedroom units (exhibit 6). The plan emphasized energy-efficient, durable materials incorporated into the site's buildings. To reduce operating and maintenance costs, the team proposed a passive cooling system featuring clerestory roofs and windows to remove heat during the summer. Each unit included a pallet wall for plants and herbs. A two-pronged approach to financing the project—using either 9- or 4-percent Low-Income Housing Tax Credit (LIHTC) funds, combined with other grant funding allowed the student team more flexibility in addressing the site's specific challenge of expanding affordable housing options for families living on site. The team focused on preserving and creating affordable rental housing that emphasized lifestyle opportunities through community, health, affordability, and education. The proposal built on the existing amenities—such as proximity to primary schools and college or university campuses, the beach, and public transportation—while actively addressing existing site challenges, including poor aesthetics, lack of defensible space, and awkward site design.

Exhibit 6

Site Plan Overview from the 2016 University of Maryland, College Park, Student Team Proposal



Source: The University of Maryland, College Park, Team Presentation

HUD staff interviewed current PHA staff about their thoughts on the designs proposed during the 2016 competition. They were impressed with the teams' emphasis on environmental and mitigation efforts but thought that some ideas were a little far reaching, such as rooftop gardens. The staff thought a few of the ideas did not consider the local context, and some of the financial schemes were hard to achieve.

On April 20, 2021, the housing authority issued a request for proposal (RFP) to solicit creative ideas on the redevelopment and revitalization of Monteria Village. The RFP included the 2016 competition designs and plans from the winning and runner-up student teams.

Year 4

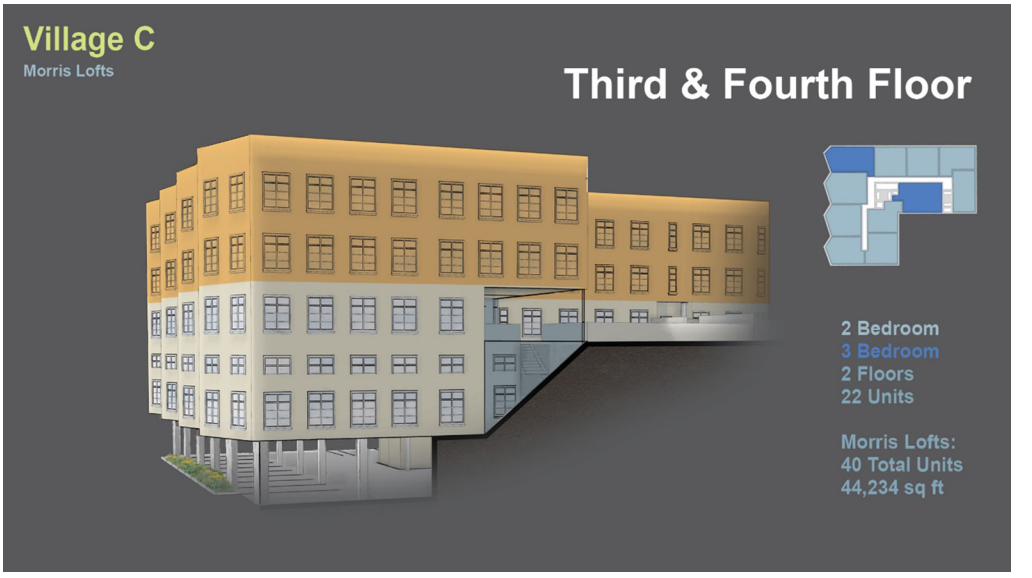
Cuyahoga Metropolitan Housing Authority (CMHA) was HUD's partnering agency for the IAH competition in 2017. CMHA wanted to redevelop an existing public housing project, Woodhill Homes, in an urban environment with a focus on family housing. Woodhill Homes is a 478-unit multifamily development on the outskirts of downtown Cleveland, Ohio. Although its proximity to the city should generate more economic opportunities for Woodhill Homes residents, the property is isolated from the surrounding neighborhoods by a street barrier or a physical structure such as a large dumpster, an iron or wooden fence, or raised terrain, making it difficult or unsafe to cross over from building to building. Inadequate transportation options hinder access to the urban core. The primary goals set for the students were to improve connectivity to the urban grid, expand upon proposed mass transit, and increase housing density. The PHA anticipated that these goals would be accomplished through the design and development of infill housing options, renovation

of existing buildings, and improvement of the site plan to tie the project more effectively to the surrounding neighborhood.

The team from Rutgers University was the winner, with a design focused on community empowerment, sustainability, and connectivity (exhibit 7). Their design addressed the substantial elevation changes encountered on the site with the proposed grid development and a new building, Morris Lofts, to be built into the topography to passive house standards, increasing the density and adding backyard space. Morris Lofts would be a 40-unit building that provided shared space for arts, training, and community development activities. The student team's proposal uniquely transformed underutilized spaces into shared outdoor gathering areas to encourage more interaction between residents.

Exhibit 7

The Proposed New Building



Source: Rutgers Team Presentation

The runner-up was the student team from the University of Michigan; they also proposed an innovative design centered around environmental sustainability and a healthy community (exhibit 8). They proposed a mixed-income community (by including a few market-rate units in the portfolio), a community garden, new planters, trees, recycled materials, and parking alongside pedestrian and bike paths. Their green infrastructure included bioswales, permeable pavement, native plants and trees, and low-impact and recycled materials. The landscape would allow residents to have private space with front yards.

Exhibit 8

Site Plan from the University of Michigan Student Team Proposal

Source: The University of Michigan Team Presentation

In 2021, HUD awarded a $35 million Choice Neighborhoods Implementation grant to CMHA and the City of Cleveland; an additional $10 million grant was awarded on April 12, 2023. Residents of Woodhill Homes began to move out in the summer of 2022. The plan includes the six-phase redevelopment of Woodhill Homes into high-quality, mixed-income apartments.

The transformation plan included new housing, streets, public space, and programming for the community. Changes include creating infrastructure to link people, places, and opportunities; targeted placemaking; public space enhancements; and opportunities for employment, ownership, entrepreneurship, and wealth building. For example, they proposed creating a healthcare center to remove a barrier to high-quality preventive health care.

In May 2021, HUD staffers interviewed CMHA Executive Director James Patterson about his experience with the competition. Director Patterson spoke of needing a new perspective, and the students presented designs that his staff would have never thought about. In addition, he thought that some designs were more realistic than others, but they provided ideas to consider.

Year 5

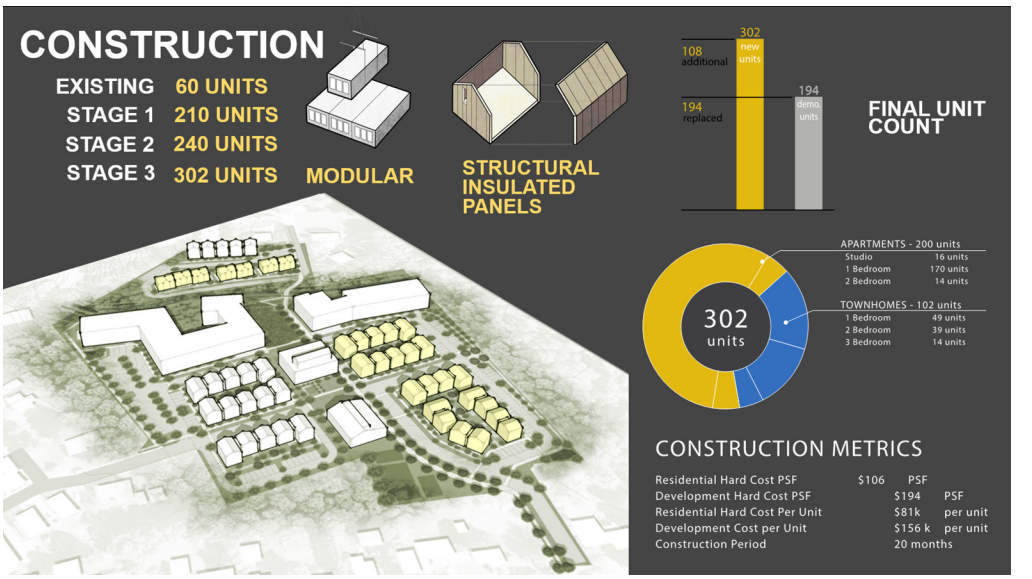
In 2018, HUD partnered with the Dover Housing Authority (DHA) in New Hampshire. DHA wanted to incorporate innovative design techniques for community engagement strategies for seniors, veterans, and persons with disabilities for properties managed by the housing authority. They needed to consider the environment (e.g., using durable and resilient materials that could

withstand natural disasters and require little maintenance), several design approaches (e.g., designs to improve the health, safety, and well-being of residents), and energy- and water-efficient appliances (e.g., to help preserve natural resources and lower energy costs). Students were asked to allot space in their design for 154 new dwellings located between two existing DHA projects—Edgar Bois Terrace apartments on Niles Street and Nile Park apartments on Union Street. The site containing these two properties and the buildable area between them was considered by the City of Dover to be a single parcel; the intent was to dramatically increase the housing density of the site.

The winning student team, from the University of Maryland, College Park (UMCP), named their proposed development "Beacon Crossing." It would be a new construction with an updated functional space for the existing community center, including a youth center, a food co-op, and a new community garden with a greenhouse to provide food throughout the year (exhibit 9). The three pillars of the student team's design were to (1) enhance access to community supportive services, (2) create a connected community to encourage social interaction and engagement, and (3) improve the health and well-being of all those living in the community. Also noteworthy is the integration of green, sustainable materials throughout the community, such as a new purification system that reuses gray water and stormwater runoff.

Exhibit 9

Site Plan from the 2018 UMCP Student Team Proposal



Source: University of Maryland, College Park, Presentation

The runner-up, the student team from the University of Colorado Denver, created a sense of place with public spaces, a dog park, and outdoor activity areas, adding to the availability of public amenities and hoping to draw in residents from surrounding neighborhoods (exhibit 10). Sustainable design and building practices were included, such as passive house principles, natural daylighting, building orientation, and photovoltaic panels on the east and west wings of the site.

Exhibit 10

Site Plan from the University of Colorado Denver Student Team Proposal

Source: The University of Colorado Denver Team Presentation

HUD staff interviewed DHA Executive Director Allan B. Krans Sr. about the teams' proposals. He thought that the teams were successful in addressing the issues outlined by the PHA; however, certain particulars needed to be included, including possible access points to the site, and the financial schemes provided were unrealistic. Although impressed that the four finalist teams provided differing designs, he noted that for new construction, he would have liked the teams to focus more on energy conservation techniques and internet accessibility. Nonetheless, he appreciated the competition, which served as a morale booster for his staff in witnessing more than 20 students thoroughly engaged with improving affordable housing.

Year 6

The sixth housing authority to partner with HUD was the San Antonio Housing Authority (SAHA) in 2019. SAHA wanted student teams to design a new mixed-use development for low- and moderate-income residents along the San Antonio Riverwalk. The sites provided an exciting opportunity for teams to create living and retail spaces that reinforce essential services, ensuring that residents are not isolated from the surrounding community and are proximate to employment opportunities. The site, an undeveloped, approximately 2.5-acre corner lot at the intersection of Brooklyn Avenue and North St. Mary's Street, was zoned for high-density development, requiring new constructions to allow at least 5.5 hours of solar access in the winter solstice and 7.5 hours in summer. SAHA wanted the teams to plan for approximately 100 new mixed-income dwellings with a mix of studio, one-bedroom, two-bedroom, and three-bedroom units, with one-half having two bedrooms. The minimum area requirement for each dwelling based on bedroom count is regulated by several different governmental agencies.

The winning team, from the University of Maryland, College Park, proposed a mixed-use, mixed-income project containing 177 affordable units and 13,000 square feet of commercial space (exhibit 11). Their approach included five priorities: diversity, connectivity, wellness, sustainability, and growth. The proposal also included a range of building types and housing options with various services and amenities. Live/work units, grocery, and a BiblioTech branch, Bexar County's first digital public library, were proposed.

Exhibit 11

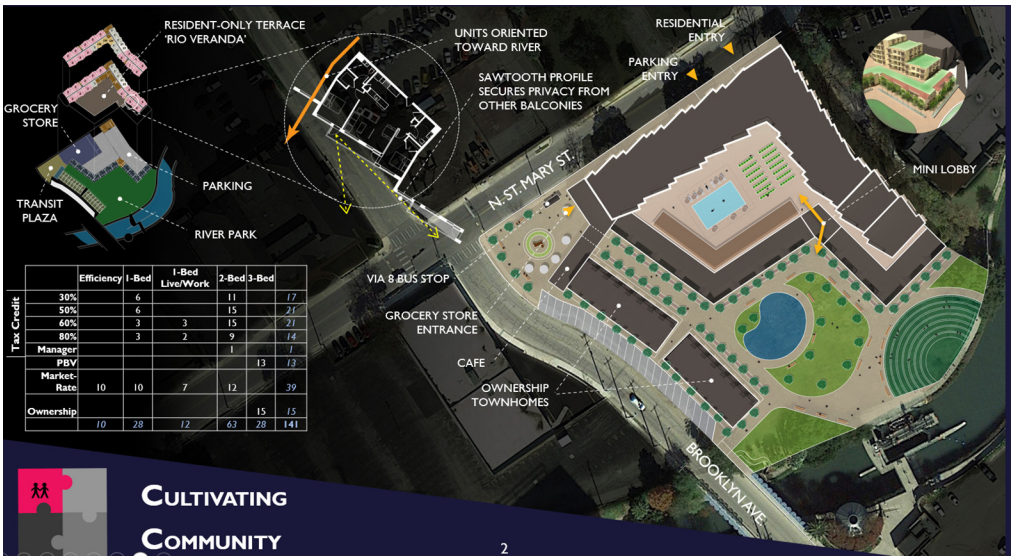
Site Plan from the University of Maryland, College Park, Student Team Proposal

Source: The University of Maryland Team Presentation

The runner-up, the University of California, Berkeley, designed a diverse mix of programs and housing types, including a five-story building atop a two-story podium, which defines the edge of the site and provides steps down to the San Antonio Riverwalk. Their design includes townhomes for ownership, a 7,000-square-foot transit plaza, a grocery store, and a pedestrian path to the river (exhibit 12). The team's sustainability aspect included the homes being built according to passive house principles.

Exhibit 12

Site Plan from University of California, Berkeley, Student Team Proposal



		Efficiency	1-Bed	1-Bed Live/Work	2-Bed	3-Bed	
Tax Credit	30%		6		11		17
	50%		6		15		21
	60%		3	3	15		21
	80%		3	2	9		14
	Manager				1		1
	PBV					13	13
	Market-Rate	10	10	7	12		39
	Ownership					15	15
		10	28	12	63	28	141

Source: The University of California, Berkeley, Team Presentation

During the HUD interview with SAHA staff, they spoke highly of the students' innovative ideas and how the competition helps them to view alternative ways to develop property. As such, they would like their staff to participate in the selection process in future competitions so they can better understand the student designs. SAHA also discussed the intricacies of developing affordable housing, including obtaining the approvals needed from the city, the PHA board, and the housing authority's executive director. As of March 2021, the site remains undeveloped for those reasons. However, the site has increased in value, making the PHA reconsider whether to develop the land or sell it as is; SAHA staff may sell the land to help fund the redevelopment of an existing public housing site with a funding gap of $70 million. In fact, one of the student teams proposed selling the land, allowing the housing authority to build more affordable units.

Year 7

For the 2020 competition, HUD partnered with the Santa Fe County Housing Authority in New Mexico. The County of Santa Fe purchased a vacant lot of 6.6 acres of land in the fastest-growing part of the city of Santa Fe, which has a very uncoordinated pattern of development in that area. The parcel also adjoins some infill sites and a commercial power center. Student teams were challenged to be innovative but also to preserve and celebrate the unique culture of Santa Fe. The teams were asked to design a new mixed-use development for low- and moderate-income residents, with a particular focus on expanding housing for women with children, with the usual planning constraints: zoning requirements, local economic conditions, financial feasibility, the built environment, and the larger social needs of the community.

The developer of the power center is working on zoning that will allow for more pedestrian-oriented, high-density mixed-use, and mixed-income residents. The land is zoned to allow for up to 29 units per acre, the highest allowable density in the city of Santa Fe. The housing authority preferred using low-income housing tax credits and other sources of capital to finance the development.

The proposal submitted by the winning student team, from Yale University, included a design for "Jacob Commons"—a 181,000-square-foot multifamily development with 62 of the 158 mixed-income units reserved as affordable, 10 percent reserved for households who make less than the 30-percent Area Median Income, and 38 percent reserved as market rate. The project's site plan reflects New Mexico's rich Indigenous history while also promoting sustainability, durability, and healthy living through the use of outdoor space (exhibit 13). The team's design also promoted communal living to enrich the tenants' lives. Inspired by the pueblos, the site plan visually reflected the rich history of the Indigenous people of New Mexico. It endeavored to develop a strong community among the residents and the surrounding neighbors by creating community paths that provide access to local shopping centers and neighbors.

Exhibit 13

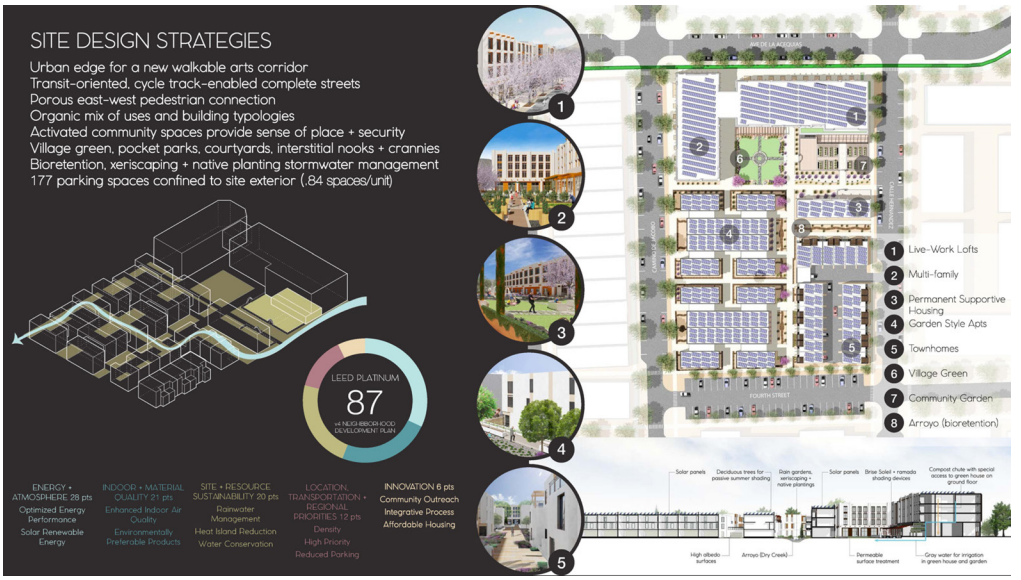
Site Plan from the Yale University Student Team Proposal

Source: Yale University Team Presentation

The runner-up team, from the University of Maryland, College Park, proposed "Nueva Acequia," a mixture of multifamily residences, townhomes, garden-style apartments, and permanent supportive housing for 210 units (exhibit 14). The team proposal addressed three goals: (1) increase the availability and affordability of housing, (2) extend a pathway to homeownership, and (3) reduce homelessness. Drawing from the Taos Pueblos tradition of shared irrigation systems, Nueva Acequia was designed with shared community resources to provide residents with sustainability and opportunities for economic opportunity, diversity, and health and wellness. The design provided flexible live/work units and space for both a youth education center and a daycare center with an enclosed outdoor play area.

Exhibit 14

Site Plan from the University of Maryland, College Park, 2020 Student Team Proposal



Source: University of Maryland, College Park, Team Presentation

In the summer of 2021, the Santa Fe County Commission approved a $600,000 architectural contract with the local design firm Autotroph to draw up designs for the project to be presented to the New Mexico Mortgage Finance Authority for the agency's 4-percent LIHTC program. Furthermore, County Manager Katherine Miller said that Autotroph will use the Yale team's proposal as the basis for its design work.

The HUD team interviewed outgoing Housing Authority Executive Director Joseph Montoya about his thoughts on the competition and future plans for the site. He wanted to partner with the IAH competition because it presents a way to show the challenges that PHAs have that are not the same nationwide and showcase the differences between low- and high-density areas and western and eastern states. Further, Montoya wanted to take the opportunity to engage with young minds to see how they would develop the land the PHA had just purchased. The housing authority was able to purchase the land below market price because the previous landowner's intention was for the land to be used for affordable housing, which is viewed in Sante Fe as a social justice issue. The housing authority wanted to work with the other nearby landowners to create a larger area for shopping and recreation.

At the time of the IAH competition, the housing authority already had an architect looking into developing the land. That person was available to listen to the ideas presented by the student teams. The architect reviewed the proposals and used some of the students' ideas to influence the final design (e.g., walk and bike paths). He also noted that aspects of the designs were sometimes inappropriate for their development; for example, the design incorporated services for elders or created financial pro forma based on bringing in a health clinic. He stated that he would like students to build for the local context.

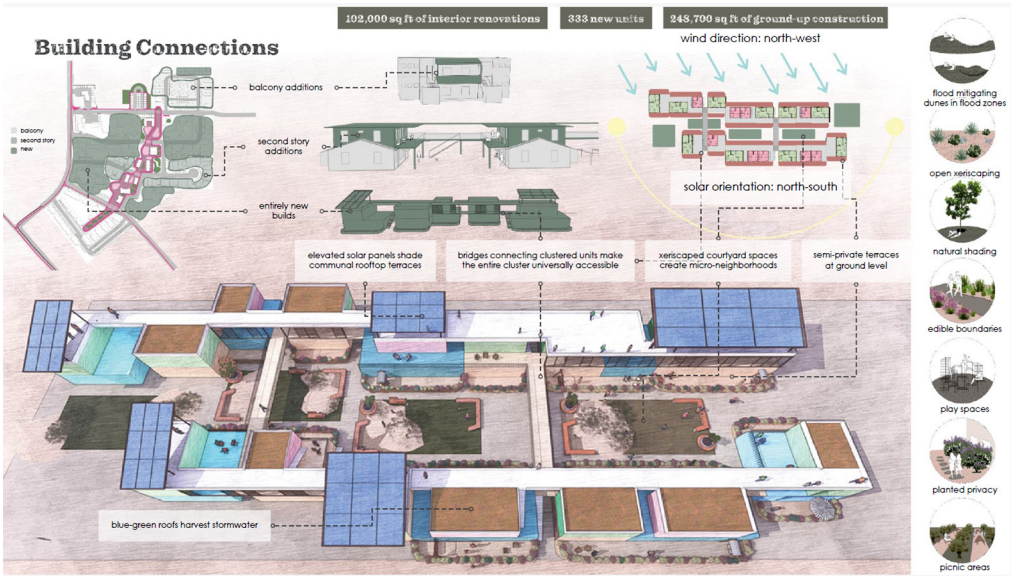
Year 8

HUD partnered with the Fresno Housing Authority (FHA) in California in 2021—the first year that HUD partnered with a rural site, which provided a unique challenge with an added layer of complexity. The students were tasked with finding innovative solutions to create a single, cohesive community from five contiguous properties in the city of Firebaugh. The sites proposed for the competition were on contiguous properties; however, they were separated by unappealing fencing, leaving residents without the option for community connectedness. The sites serve low-income families, seniors, and farmworkers. Hence, the students were asked to redesign more than 210 units of workforce housing for farm laborers, migrant workers, senior citizens, and low-income families. Current residents indicated that an ideal design plan would remove the fencing, add green space and recreational elements, and improve the infrastructure necessary to support a car-centric, rural community.

The first-place winner was the student team from Pratt Institute and New York University. Their design, "A Breathable Connected Community," addressed the intergenerational and agricultural needs of Firebaugh (exhibit 15). The teams proposed three ranges of development, from minor upgrades to full rebuilds. Their designs created micro-communities using architectural features within buildings to encourage interactions between residents and to facilitate time outdoors. The jurors praised the team's financing, innovation, and environmental sustainability, including self-sustaining energy, water, and waste systems.

Exhibit 15

Site Plan from the Pratt Institute and New York University Student Team Proposal

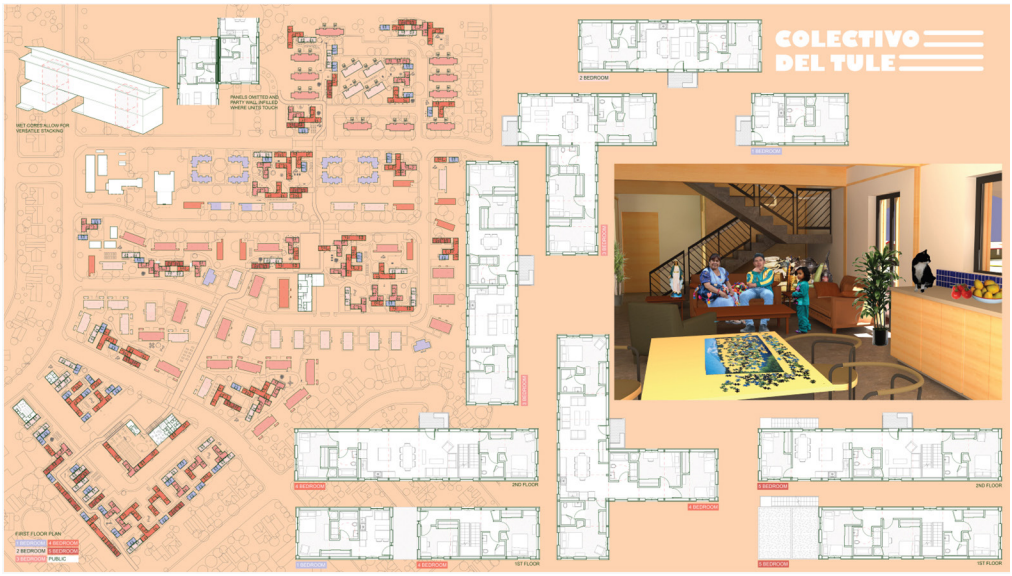


Source: Pratt Institute and New York University Team Presentation

The runner-up team, from the University of Michigan and Harvard University, proposed "Tachi Creciente," a 414-unit complex across the five developments (exhibit 16). The development created an integrated, green, and service-enriched community promoting social cohesion, health and wellness, digital inclusion, educational achievement, and workforce development. All units were equipped with outdoor living spaces and designed to rethink the single-family home typology, maintaining a residential feel while adhering to the City of Firebaugh's growth strategy. Furthermore, the design encompassed walkable and bikeable green corridors and incorporated sustainable design practices for climate-smart communities.

Exhibit 16

Site Plan from the University of Michigan and Harvard University Student Team



Source: University of Michigan and Harvard University Team Presentation

FHA Chief Real Estate Officer Michael Duarte recently reported that they were days away from starting construction on the La Joya Commons project, and they were looking to redevelop the project area in phases. Although they are not using a specific student proposal, they believe that they learned a lot from each presentation, which will influence their overall approach.

Year 9

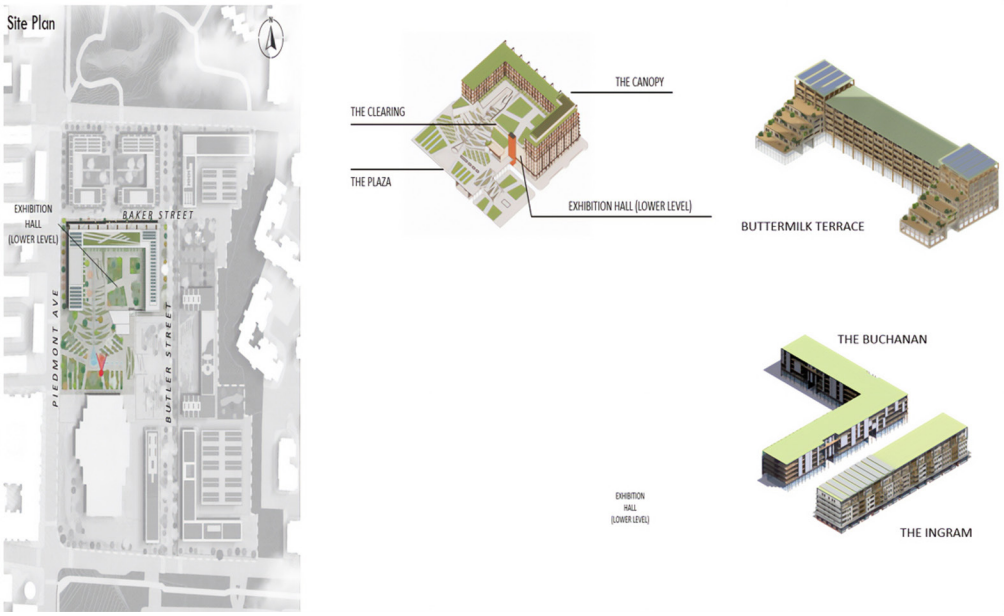
In 2022, HUD partnered with the Atlanta Housing Authority (AHA) in Georgia. This year's design centered around the Boisfeuillet Jones Atlanta Civic Center building complex and the land it sits on. Student teams were asked to find solutions to convert the 13.12 acres of developable land into affordable housing in a mixed-use and mixed-income setting while preserving the cultural, historical, and social significance of the Civic Center.

AHA asked the students to advance innovation in the design of affordable housing, with solutions that could be implemented on site to promote durability, reduce energy consumption, increase the quality of housing, and enhance the social and economic vitality of the surrounding community.

The winning team, from the University of Maryland, designed a site plan dubbed "Rise of Pines," addressing the need for a mixed-use and mixed-income community in the heart of Atlanta. Rise of Pines proposed 1,394 residential units across seven structures: three cross-laminated timber highrise buildings and four wood-frame mid-rises (exhibit 17). The Rise of Pines structures are designed to be compatible with the EarthCraft program for multifamily homes and to be certified Platinum under the LEED for Neighborhood Design v4 guidelines. Solar panels and geothermal heat pumps, supported by tax credits, would reduce the project's carbon footprint.

Exhibit 17

Site Plan from the University of Maryland Student Team Proposal



Source: University of Maryland Team Presentation

The runner-up team, from the University of California, Berkeley, designed "Civic Oaks," creating 748 new residences, approximately 80,000 square feet of office space, 500,000 square feet of green and open space, and 14,600 square feet of retail space to enhance the culture and unique flavor of Atlanta's Old Fourth Ward neighborhood (exhibit 18). Their vision includes subdividing the current "super-block" complex into smaller, neighborhood-scale streets. The team considered community opposition to highrise construction and created a medium-height ensemble of buildings. Civic Oaks incorporates various housing types and unit sizes, from studios to three-bedroom units, condominiums, townhomes, and live/work lofts. An exposed amphitheater in the central plaza would serve as a centerpiece for the community, housing a combination of cultural, educational, and art programs intended to promote community health.

Exhibit 18

Site Plan from the University of California, Berkeley, Student Team Proposal

Source: University of California, Berkeley, Team Presentation

In a recent interview, AHA's Trish O'Connell, chief real estate officer for Planning and Development, mentioned to HUD's Dr. Regina Gray, director of the Affordable Housing and Technology Division, how the students put effort in their design to think about how people would live in the units, how they would circulate and created access to green spacing, both internal and external. She was impressed with the deep thinking that students put into their designs, including the planning for stormwater management and the materials that should be used.

Recently, AHA is working with developers and other stakeholders to reimagine the site. The proposal incorporated ideas from the University of Maryland's winning design. AHA anticipates groundbreaking at the site before the end of the year, which will include new restaurants, retail and office space, and about 1,500 housing units—approximately 30 percent will be reserved as affordable.

Year 10

For the 10th year, in 2023, HUD partnered with the Chicago Housing Authority (CHA). The design challenge was to maximize the number of affordable units on a 0.45-acre, underdeveloped CHA-owned site located at 420–430 West North Avenue, Chicago, IL 60610. The site sits within a thriving neighborhood and currently contains two vacant, low-rise, six-unit public housing buildings past their useful life. The priorities are to densify and add amenities on the site to ensure congruity with the surrounding neighborhood and alignment with the City of Chicago's Climate Action Plan; retrofitting and electrification goals are additional priorities.

The winning proposal, "Garden City," from the University of Illinois Chicago team was anchored on four principles: community, opportunity, health, and accessibility. They purposely designed a two-tower design to foster a sense of community and provide direct access to outdoor spaces, created passive heating, and designed a streetscape that blends in with the surrounding neighborhood (exhibit 19).

Exhibit 19

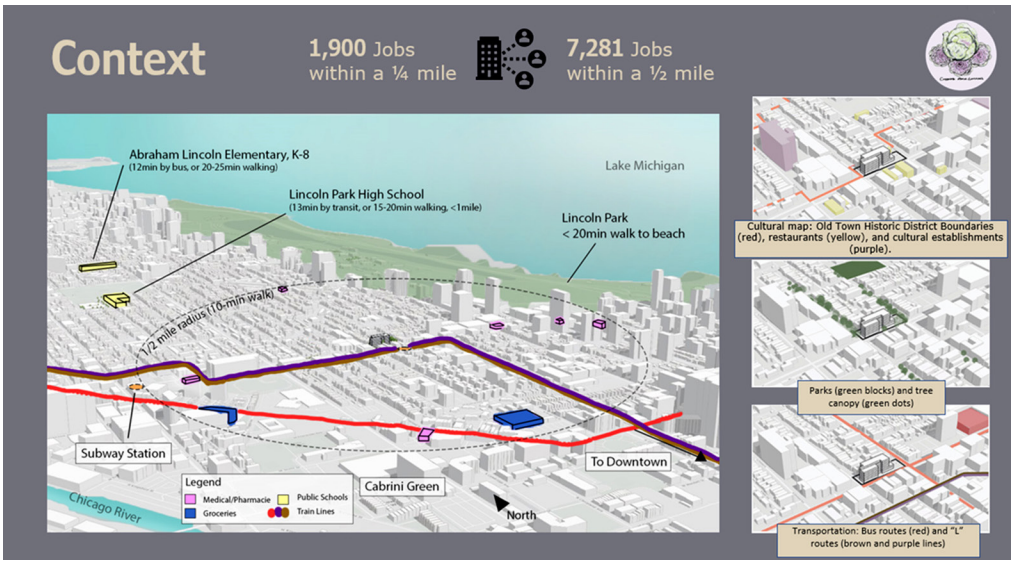
Site Plan from the University of Illinois Chicago Student Team Proposal

Source: University of Illinois Chicago Team Presentation

The runner-up team from the University of Texas at Austin considered the short- and long-term impacts of the development on the environment, the neighborhood, and its residents. With "Cabbage Patch Commons," they envisioned housing as a human right and a foundation for opportunity, and they endeavored to incorporate that perception in their work by thinking beyond physical design and into social and programmatic elements (exhibit 20).

Exhibit 20

Site Plan from the University of Texas at Austin Student Team Proposal



Source: University of Texas at Austin Team Presentation

Staff from CHA are using the student designs to evaluate their options, and the proposals and pro formas have been helpful and informative. The UIC team presented their design to the housing authority's executive team and separately at an Earth Day event.

Year 11

For the 2024 competition, HUD partnered with the Madison Community Development Authority in Madison, Wisconsin. An article detailing the results of the competition is found elsewhere in this publication.

Conclusion

The Innovation in Affordable Housing competition has grown and expanded to include the growing challenges facing public housing agencies. Over the years, the competition has addressed the needs of older adults, multigenerational families, veterans, and migrant laborers and addressed longevity, climate change, and issues around equity and equitable development. Staff from the Office of Policy Development and Research reached out to staff from each of the partnering PHAs to learn about improvements needed to refine the competition as HUD helps PHAs with the issues they are facing with affordable housing.

Since the inception of the IAH student competition, PHAs have used student designs to evaluate proposed designs from construction firms or include them to solicit bids for development. Although many of the PHAs have not developed the sites featured in the competition, the PHA staff interviewed said that they valued the insight the student designs brought to light. It was the

students' outside-the-box thinking they needed to view the site from different angles. As HUD approaches the 2025 competition, providing PHAs from across the country with creative ideas for developing affordable housing remains a top commitment. HUD is dedicated to nurturing the interdisciplinary essence of community development and encouraging students to collaborate and work seamlessly across various academic and career disciplines.

PHA staff suggested some changes to the competition's process, including using local stakeholders as members of the jury to ensure that the local context (e.g., zoning requirements, city and state ordinances, and local preferences) are included in the designs that are selected. The PHAs also asked that pro formas include references for the assumptions the teams used to create their funding idea. PHAs suggested that the students create realistic funding stacking and reduce their overreliance on grant funding. Finally, PHA staff would like to have a briefing with the final four teams to ask pointed questions of interest to the PHA. The presentations and the question-and-answer session during the final presentation were helpful, but they left PHA staff with unanswered questions.

The IAH Student Planning and Design Competition has thrived on collaborative efforts, forging partnerships with various stakeholders to drive innovation and address housing challenges effectively. Over the past decade, these collaborations have played a pivotal role in the competition's success, fostering creativity, leveraging resources, and maximizing impact. HUD's collaboration with federal, state, and local government agencies has facilitated the alignment of policies, funding, and resources to support innovative housing initiatives. Engaging local communities and grassroots organizations has been instrumental in tailoring housing solutions to meet the specific needs and preferences of residents. Collaborations with community development corporations, resident associations, and advocacy groups have ensured that projects are culturally sensitive, inclusive, and responsive to community priorities. These collaborative efforts have fostered a culture of innovation, partnership, and shared responsibility, leading the HUD IAH Student Planning and Design Competition to achieve significant outcomes and make a tangible difference in addressing the nation's housing needs. Collaboration and partnerships will remain essential to sustaining and scaling the competition's impact, driving progress, and building resilient and inclusive communities for all.

For future challenges, the competition organizers envision a continued emphasis on sustainability—both environmental and economic. This objective entails the integration of green building practices, renewable energy solutions, and resilient design principles into affordable housing projects. By harnessing the power of innovation and technology, the competition seeks to minimize environmental impact while maximizing energy efficiency and cost-effectiveness. Furthermore, the competition recognizes the imperative of ensuring equitable access to affordable housing for all individuals and families, regardless of socioeconomic status, race, or background. This goal entails a proactive approach to addressing systemic barriers and disparities within the housing market, including discriminatory practices, housing segregation, and lack of access to financing and resources.

By centering equity and inclusion in its initiatives, organizers of the competition aim to create housing solutions that uplift and empower marginalized communities, fostering social cohesion and economic opportunity. In addition, the competition organizers remain steadfast in their

commitment to fostering partnerships and collaboration across sectors. Recognizing that no single entity or organization can solve the complex challenges of affordable housing, the competition coordinators seek to forge alliances with government agencies, nonprofits, the private sector, and local communities. By leveraging the collective expertise, resources, and networks of diverse stakeholders, the organizers aim to amplify the impact of the competition and drive meaningful change at scale. As society navigates the uncertainties and complexities of the future, the HUD IAH Student Planning and Design Competition remains steadfast in its mission to catalyze innovation, foster sustainability, and promote equity in the realm of affordable housing.

Acknowledgments

The author would like to thank our contractors (Steven Winters Associates and Schatz Publishing Group), the student teams, the jurors, and the staff at our partnering PHA.

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