Affordable Design

The U.S. Department of Housing and Urban Development sponsors or cosponsors three annual competitions for innovation in affordable design: The Innovation in Affordable Housing Student Design and Planning Competition; the American Institute of Architects – HUD Secretary's Housing Community Design Awards; and the HUD Secretary's Opportunity & Empowerment Award, co-sponsored with the American Planning Association. 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.

2020 Innovation in Affordable Housing Student Design and Planning Competition: Camino de Jacobo in Santa Fe, New Mexico

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The Jury:
Danielle Arigoni, Director of Livable Communities, AARP
Christie DeSanctis, Director, Business and Conventional Finance Policy
Kathleen Dorgan, FAIA, LEED-AP, Principal, Dorgan Architecture and Planning
Rob Hazelton, CEO, Dominion Due Diligence Group
Elizabeth Plater-Zyberk, FAIA, LEED AP, Professor of Architecture and Director of the Master of Urban Design Program, University of Miami
Joe Ventrone, Vice President, Federal Policy and Industry Relations

Winning Team: Yale University, New Haven
Helen Farley
Kelley Johnson
Eva Leung
Jackson Lindsay

Runner-Up Team: University of Maryland, College Park
Sam Bohmfalk
Margaret Curran
Tochi Ohakawa
Shayne Piltz
Andrew Walker

The views expressed in this article are those of the author 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 seventh annual HUD Innovation in Affordable Housing (IAH) Student Design and Planning Competition challenged multi-disciplinary graduate student teams to respond to an existing affordable housing design and planning issue. The IAH Student Design and Planning Competition is open to graduate students in architecture, planning and policy, finance, and other disciplines. The competition challenges the students to address social, economic, and environmental issues in responding to a specific housing development problem identified by a partnering public housing agency (PHA).

The overarching goal is to advance innovation in the design of affordable housing. The competitors' plans and designs must address the issues outlined by the PHA. The designs should identify improvements that could be implemented at the site, and the plans must promote durability, reduce energy consumption, increase the quality of housing, and enhance the social and economic vitality of the surrounding community.

For the 2020 challenge, HUD partnered with the Santa Fe County (New Mexico) Housing Authority. Teams were challenged not only to innovate but also to preserve and celebrate the unique culture of Santa Fe. They 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. Executive Director, Joseph Montoya, envisioned a development similar to the Santa Fe city center, with a mixture of businesses, housing, and centers of faith all within the immediate area and consistent with an architectural heritage going back to the 1573 Law of the Indies promulgated by the King of Spain.[1]

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 (see exhibit 1). The parcel also adjoins some infill sites and a commercial power center. 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 would like to use low-income housing tax credits and other sources of capital to finance the development.

[1] https://www.huduser.gov/portal/sites/default/files/pdf/The-Laws-of-the-Indies.pdf

Exhibit 1

Site Location and Surrounding Area

Source: www.CPI.NM.com

The competition is designed in two phases. During Phase I, a jury of six practitioners (a planner, builder, realtors, finance specialist, and architects) evaluated the first-round proposals submitted by teams from 32 universities electronically. The jury selected four finalist teams from the 32 proposals to move on to Phase II of the competition. In Phase II, the finalist teams further refined their proposals—addressing complex issues, incorporating more detail, improving their design plans, and conducting additional analyses on the financing needed to create viable housing, following the site visit to Santa Fe. The site visit enabled the finalists to expand on their original proposal and submit a revised final project. Several weeks after the site visit, the original plan would have required the jurors and the four final teams to travel to HUD headquarters in Washington, DC, to present their plans and the awards ceremony. Due to the COVID-19 pandemic, the event was held virtually on April 16, 2020. At this event, finalist teams presented their revised project plans. Following the presentations, the jury selected the team from Yale University as the winner and the team from the University of Maryland, College Park, as the runner-up.

For this article, the winning student teams and members of the jury shared their thoughts about the competition. The students reflected on the biggest challenges the team faced and how they attempted to address them, opportunities to learn from mistakes, their concept of innovation, elements observed that provided value to the design of the project, and any tradeoffs that had to be made to get a feasible site plan. The Yale teams commented that their "team really tried to work together to create a complete design where the social, financial, and sustainable models all worked together to create a strong community fabric. It was through our many interdisciplinary

conversations that some of our best ideas came through." Jurors commented that Yale's project was "rooted in a communal lifestyle that can enrich the quality of tenants lives, and pays homage to New Mexico with its thoughtful integration of community at many scales," and that the University of Maryland's project design "provides social connection, stability, and support for some of Santa Fe's most vulnerable community members."

The Winning Team: Yale University

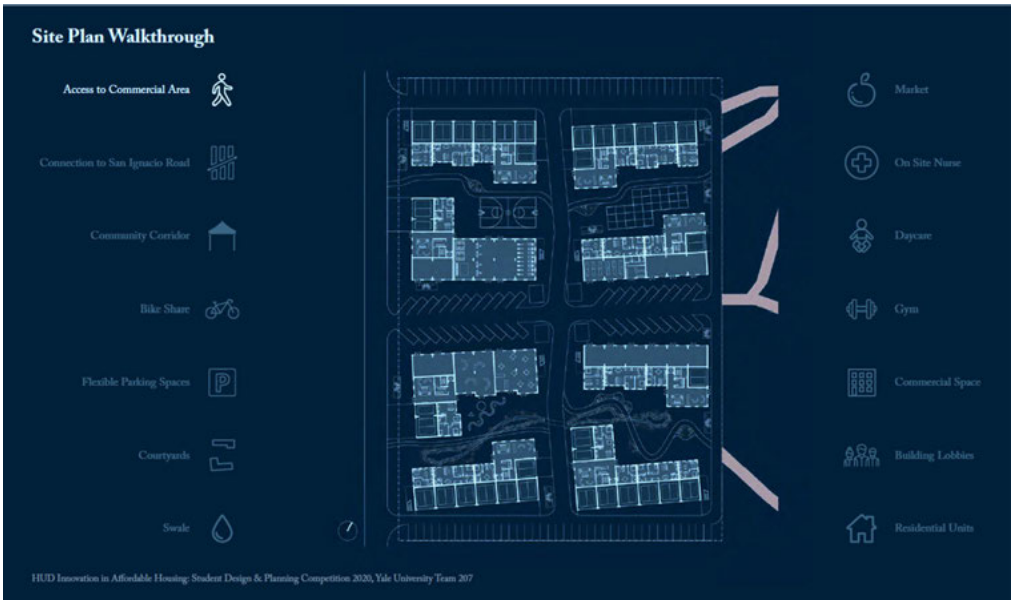
Helen Farley, Kelley Johnson, Eva Leung, Jackson Lindsay, and Miguel Mauricio

The award-winning site plan from Yale University, called *Jacobo Commons—Community at Many Scales*, would create 158 units, 62 percent of them affordable, with 10 percent of the affordable units reserved for households earning less than 30 percent of the area median income (AMI). The remaining 38 percent would be market rate. The total development cost of the project is $44.4 million, $245 per square foot, or approximately $281,000 per unit.

The team's design promotes communal living to enrich the tenants' lives. They wanted their design to reflect the rich history of the indigenous people of New Mexico. Inspired by the pueblos, the project endeavors to develop a strong community among the residents and the surrounding neighbors by creating community paths providing access to the local shopping centers and neighbors (see exhibit 2). Team member Jackson Lindsay commented, "Our team really tried to work together to create a complete design where the social, financial, and sustainable models all worked together to create a strong community fabric."

Exhibit 2

Overview of Jacobo Commons



Note: Some walkthroughs are highlighted on the right.

The design incorporates features to promote better health, economic, and environmental outcomes, such as including flexible spaces for work, community courtyards, community gardens, playgrounds, a gym, and daycare facilities. As a juror commented, "*The courtyard concept provides great integration of space, and community support spaces are distributed throughout the buildings along an access that makes the community more walkable and inclusive.*"

Outdoor Living: The design provides visual variety and open courtyards as inviting spaces while providing views out to the local mountains, especially the Sangre de Cristo range. The buildings themselves step down into the courtyards, replicating Pueblo architecture. The design would allow adults to supervise children at play in the courtyard from their windows (see exhibit 3).

Exhibit 3

Placement of the Courtyard at Jacobo Commons

Healthy Living and Connectivity: The public outdoor area consists of a series of active spaces, including a basketball court and playground. The paths (see exhibit 2) create connections to local walking and bike trails to the east and south of the site. The project features a community garden and dedicated space to host local farmers' markets. The paths would create access not only to the trail network in the adjoining lot but also to the cluster of retail stores across the lot. Two courtyards open up to the neighborhood off of the central axis, providing public recreation spaces for the surrounding families, and encouraging walking and biking to and from the site.

On the Environment: The team designed the hardscaped surfaces to be as porous as possible, with permeable pavers on the streets and a bioswale in the southern courtyards to help with stormwater retention and on-site filtration (see exhibit 4). The building uses solar energy for heat through the colder months, and in the hot summer months, window frames block solar rays. The Yale team kept Santa Fe's climate in mind in striving to achieve energy and water requirements on-site. The

jury was impressed with the green, energy-efficient construction with passive cooling, solar energy, and geothermal heating (see exhibit 5).

Exhibit 4

Jacobo Commons Water Drainage and Retention

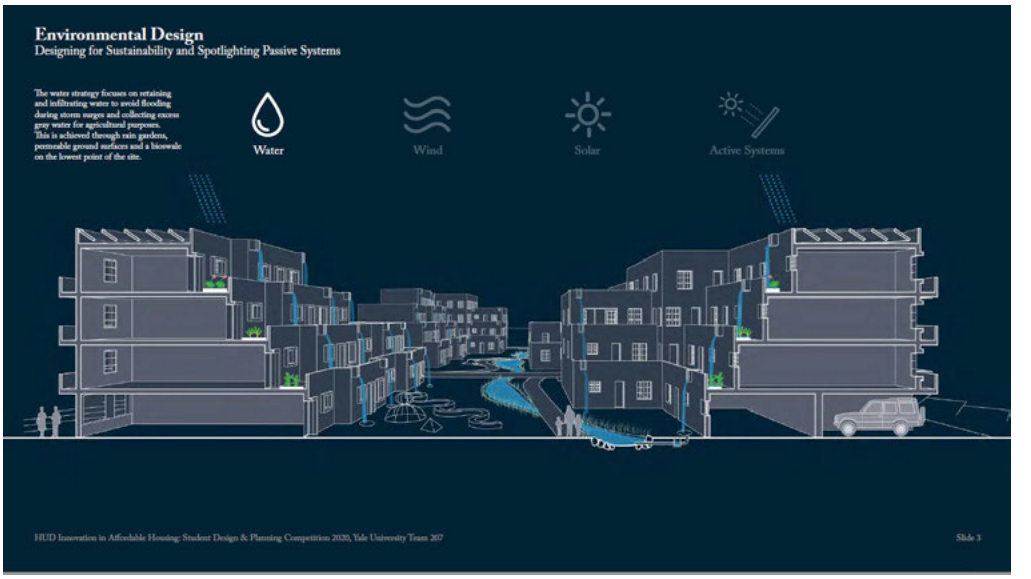
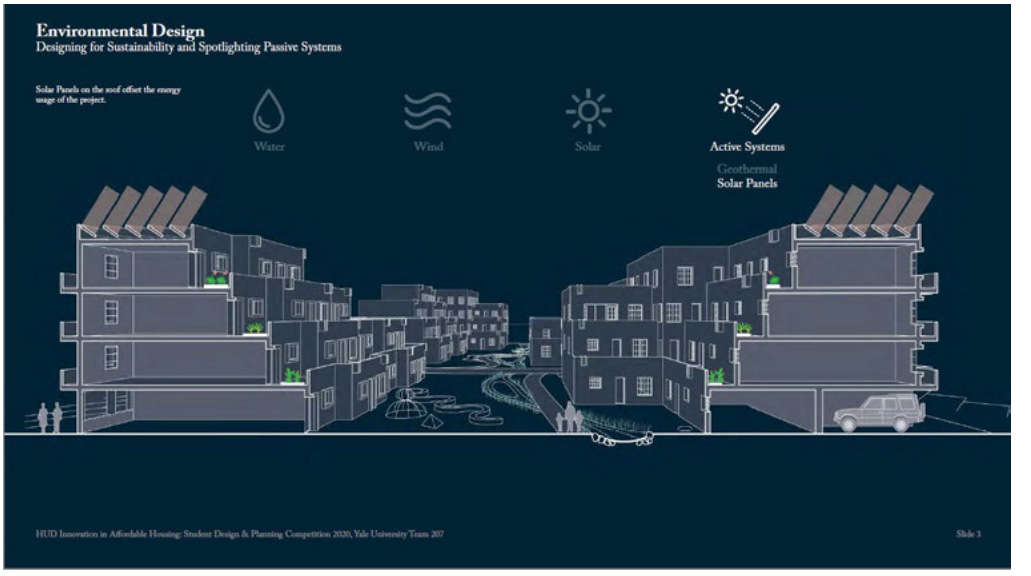


Exhibit 5

Jacobo Commons Building Solar Panels



On Innovation: The team opted for durable, sustainable, resilient adobe block and plaster construction materials, which resulted in a highly energy-efficient building with higher construction costs. They proposed master metering of the buildings to allow the housing authority to capitalize on the saving achieved. Head Juror Rob Hazelton was particularly inspired by the team's forethought, noting that the team "included a Year 15 exit strategy of converting portions of the property to a Limited Equity Co-op, providing a method for tenants to build sweat equity or pay-in over their resident tenure to achieve future homeownership." The team designed housing to allow for intermingling between different age groups, households, and incomes. In their final presentation, they noted that care was given to creating mixed housing so no one group— such as singles, households with children, elderly units, or market rent units—was isolated.

Jurors observed that Jacobo Commons would offer a blueprint for communities that place a strong emphasis on the preservation of local architectural traditions in places where people would want to live and retire, while adhering to the goal of extending housing options for residents regardless of income.

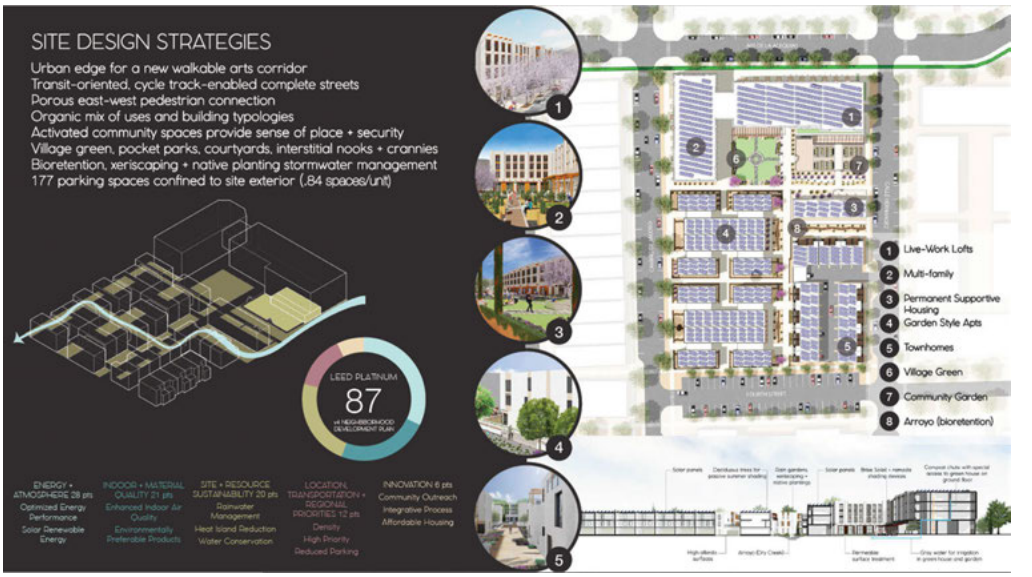
The Runner- Up Team: University of Maryland, College Park

Sam Bohmfalk, Margaret Curran, Tochi Ohakawa, Shayne Piltz, and Andrew Walker

The University of Maryland, College Park's *Nueva Acequia* was selected as the runner-up this year. Their development plan proposed a mixture of multifamily residences, townhomes, garden-style apartments, and permanent supportive housing for 210 units (see exhibit 6). The total cost of construction is $47,338,693, or $257 per square foot. The team proposal addressed three goals: (1) increasing the availability and affordability of housing, (2) extending a pathway to homeownership, and (3) reducing homelessness. Drawing from the Taos Pueblos tradition of shared irrigation systems, Nueva Acequia is designed with shared community resources to provide residents with economic opportunity, diversity, health and wellness, and sustainability.

Exhibit 6

Overview of Nueva Acequia Site with Building Typology



Source: University of Maryland presentation, April 16, 2020

The plan would establish an on-site wrap-around services center where residents could go to get assistance with job searches, health care, and homelessness prevention. Nueva Acequia would also provide flexible live-work units that can be used for work-live, live-live, or work-work, where families might also operate small businesses. The plan also includes space for both a youth education center and a daycare center with an enclosed outdoor play area.

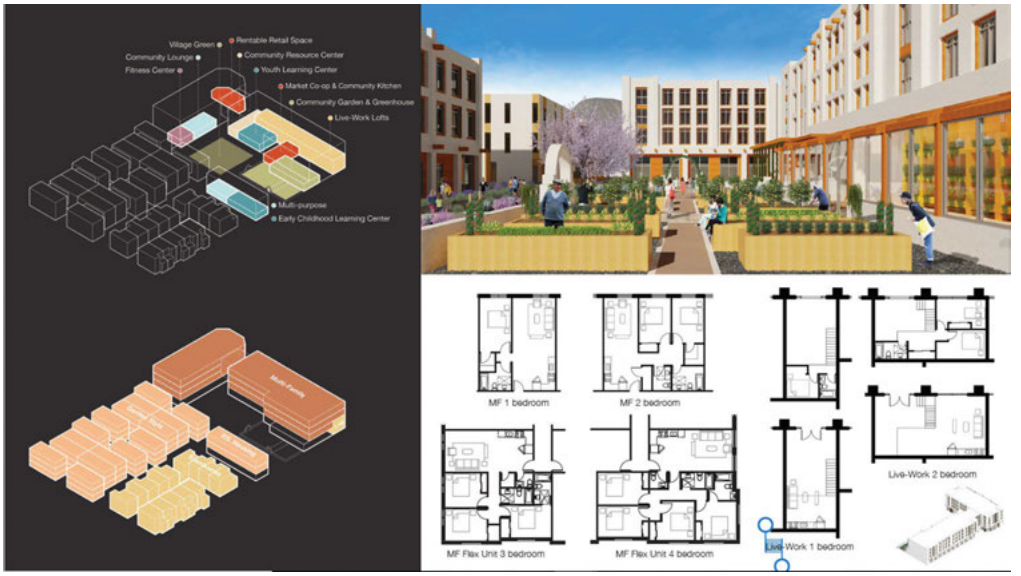
On Building: Nueva Acequia's architecture merges contemporary design with the Pueblo tradition. The structures would be wood-frame with layered wood-and-stucco veneers. Production techniques would allow all buildings to achieve standards beyond the established International Energy Conservation Code. The project will use low-e windows[2] positioned to provide maximum sunlight, decreasing the use of lighting, and reducing the need for air conditioning.

On Health and Wellness: The community would feature both a fitness facility and a Green Living Center utilizing innovative indoor vertical farming techniques that save water and space (see exhibit 7). The center leads to a terrace with community garden plots available to the residents. The community is buffered on three sides by complete streets, prioritizing pedestrians over cars. The streets bridge the currently disconnected neighborhoods to the east and west. Head Juror Rob Hazelton congratulated the team on providing the community with a resident-only fitness center for the community, giving residents a way to maintain a healthy lifestyle.

[2] A low-e glass (or low emissivity) window is a windowpane coated in microscopic layers of metallic oxides, invisible to the naked eye. It allows natural light to come through while minimizing the infrared and ultraviolet (UV) rays from coming through. This controls radiant heat (infrared light) as it enters and leaves a room, keeping your house warmer in the winter by reflecting certain segments of the sun's light spectrum back into the home, and cooler in the summer by reflecting particular sections outside.

Exhibit 7

Services Available at Nueva Acequia



Source: University of Maryland presentation, April 16, 2020

On Environment: The facility would have industrial composting to reduce waste. Solar panels and optimized building performance would lower the community's electricity costs by 55 percent. The landscaping further minimizes the impact on the environment by creating a stormwater-retention dry creek, fully permeable surface treatments, low water xeriscaping,[3] and native vegetation.

On Financing: The community is financed with low-income housing tax credits (LIHTC) and mixed gap funding, including Rental Assistance Demonstration (RAD) conversion vouchers. The addition of RAD vouchers, in particular, is expected to increase the supply of affordable housing units and also include a diversity of housing types that will be made available to residents at various income levels. At 16 years, a portion of the units can be purchased by the tenants who have lease to purchase agreements. The homes will be available for purchase at an affordable price. Joe Ventrone, a juror representing the National Association of Realtors, remarked that he "loved the project's unit mix and financing package." Collectively, the jurors felt that Nueva Acequia featured a sustainable design that included housing, studios, live-work space, fitness spaces, and community areas supporting seniors and young families alike. The team featured 14 townhouse condominiums, which in year 15 present potential homeownership opportunities for residents.

[3] Landscaping that uses native, drought-resistant plants arranged in efficient, water-saving ways.

Thoughts from the Jury

Rob Hazelton, Danielle Arigoni, Christie DeSanctis, Kathleen Dorgan, Elizabeth Plater-Zyberk, and Joe Ventrone

The jury for the 2020 IAH Student Design and Planning Competition faced the difficult task of deciding which of the four outstanding student site plans best exemplified an innovative design. The members were asked specifically to consider how well the student teams successfully and convincingly addressed the following critical elements—

- If the proposed design is reasonable and feasible in its design and planning, demonstrating knowledge and understanding of codes and zoning.
- Whether the proposed design is resilient and environmentally responsive to local climate and site conditions (for example, healthy, energy efficient, water efficient, resource efficient, and low impact). Also, whether the proposal contains an economic life cycle analysis.
- If the proposed solution is affordable (cost effective to construct and operate).
- If the design innovates in a way that integrates the design into the neighborhood and community.
- Does the design promote social responsiveness, such as creating a sense of neighborhood or cohesive community, facilitating access to employment and services, addressing accessibility, demonstrating the opportunity for social networking, control, and comfort?
- Is the approach innovative in all aspects of the solution (for example, planning, design, construction, environmental concerns, and durability)?
- Is the design innovatively addressing the needs of singles and women with children?
- Were innovative approaches employed to integrate the design into the neighborhood and community?

The jurors found two of the four teams' proposals addressed nearly all of the issues discussed above clearly and with forethought. After eliminating two of the four presentations, the jurors emphasized that the deciding factor was how well the students identified and discussed innovation in their site plans. Narrowing the competition down to the University of Maryland and Yale University teams, the jury set about identifying elements of the site plans they thought were particularly innovative while keeping an eye on the critical elements listed previously. They quickly decided that the Yale University site plan was both inviting for the residents and provided innovative financing.

The Executive Director of the Housing Authority of the County of Santa Fe commended the students' hard work and their contribution toward finding innovative solutions to the affordable housing challenge that Santa Fe confronts: "Beyond the exceptional work and expertise that HUD staff, consultants, and jurors brought to the table, it was a joy to work with young, positive professionals who passionately pushed some exciting ideas. We will definitely be questioning some of our original assumptions and viewpoints with a fresh outlook as we move forward."

Acknowledgments

The U.S. Department of Housing and Urban Development (HUD) thanks the award-winning student teams from Yale University and the University of Maryland, College Park, for sharing their thoughts and for all the hard work they put into their submissions for this year's competition. We also thank the remaining two teams that were selected to participate this year: The University of Michigan, Ann Arbor, and the University of California-Berkeley. HUD greatly appreciates the 2020 Innovative Affordable Housing jury members' dedication and hours devoted to the awards selection process. Finally, HUD thanks Schatz Publishing Group LLC for planning and logistics efforts under the constraints of the COVID-19 pandemic. Their hard work and flexibility made this year's competition a success.

Author

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Postscript

The competition is thoroughly documented on the web.

To learn more about the award: https://www.huduser.gov/portal/challenge/home.html.

To read about the 2020 design guidelines: https://www.huduser.gov/portal/challenge/competition_2020.html.