



ASSOCIATION OF  
PUBLIC &  
LAND-GRANT  
UNIVERSITIES

**KANSAS STATE**  
UNIVERSITY



## LEVERAGING OUR STRENGTHS AND PARTNERSHIPS

CECE

INNOVATION AND ECONOMIC PROSPERITY AWARDS PROGRAM

2023  
CASE  
STUDY

IEP CATEGORY - PLACE

# **Kansas State University**

## **Addressing Housing Needs Through Student-Based Programming**

## IDENTIFYING THE CHALLENGE

A 2021 Kansas Statewide Needs Assessment outlined the negative impact on economic growth that a lack of affordable housing can have on communities, especially in rural communities in Kansas, and that additional housing is needed for workforce development.

Leveraging new and existing institutional partnerships with its established extension infrastructure across all 105 Kansas counties, K-State is leaning into its land-grant mission to answer the call for a comprehensive economic growth and advancement solution through K-State 105. In alignment with K-State's larger Economic Prosperity Plan and the Kansas Board of Regent's strategic plan, K-State 105 deploys K-State's cutting-edge research and development and statewide partnerships to solve problems, support community and economic development, and encourage connections between urban and rural areas. One of the K-State 105 priorities is improving the housing systems in Kansas to support economic prosperity. Innovative approaches to the housing systems are essential to advance economic prosperity.

## NET POSITIVE STUDIO

Net Positive Studio, a lab within K-State's College of Architecture, Planning and Design, is part of a network of organizations that are working together in innovative ways to address the housing systems issue. Net Positive Studio demonstrates housing models that can support affordability through sustainable design and construction practices. The purpose of the studio is to foster the quality of life and well-being by improving social connections and connections to nature and minimize required maintenance. The design of the home is intended to support connections to community. Before the designs are realized into actual structures, a series of training organizations use the design and jobsite to teach essential construction practices in the region.

K-State's College of Architecture, Planning, and Design (APD) through their program Net Positive Studio, Manhattan Area Technical College (MATC), Flint Hills Job Corps (FHJC), Flint Hills Renewable Energy and Efficiency Cooperative (FHREEC), and Fort Riley Home Builders Institute (HBI), and Manhattan Area Habitat for Humanity (MAHFH) have approached workforce housing challenges in collaboration by building an award-winning, innovative prototype home that can create financial stability through homeownership. The model is designed to lower the cost of workforce housing in the region.

Through this partnership, Net Positive Studio has been able to create a learning environment for students at KState to design a model house that includes sustainability considerations



and lowers the cost of ownership by thinking intentionally about design, energy use, and construction methods that lower the cost of home ownership over the life of the house. In return, K-State students are then able to see how design questions are put into practice by construction science and management practice.

One of the reasons our region has difficulty with affordable housing is that the labor pool of available construction firms is rather shallow. MAHFH facilitates a connection between K-State students and HBI, FHJC, and MATC students that are studying construction sciences and management. The local construction training programs takes the design plans and uses the jobsite as a classroom space to learn innovative construction science and management practice. The HBI, FHJC, and MATC students learn essential construction skills and help build a workforce ready construction crew for the region. This has a positive indirect outcome of preparing the housing workforce in innovative construction science and management practices and situates learning within the specific construction and housing context of the Flint Hills.



*The Net Positive Studio in the College of APDesign at KSU has designed two prefabricated WSHP homes since the partnership was launched in 2020. The studio employs APDesign's 7000 ft<sup>2</sup> shop space to construct panels for on-site installation.*

Students being trained in construction science have the unique opportunity to learn skills that are specific to our region's housing system. MATC construction technology prepares students in the construction trades to be workforce ready. Flint Hills Job Corp provides on-the-job training, and Fort Riley's Home Builder Institute helps transition soldiers develop construction skills and build deep connections to the region as they process out of the military. This helps soldiers gain invaluable skills and prepares them for civilian life in our community. In addition to the transition program, HBI hopes to retain military talent in the construction industry and in the region. HBI estimates that on average, approximately, 15-18% of the 203 program graduates stay local to contribute to the local workforce.

Most of these houses are constructed in Ogden, KS. Ogden is located between Fort Riley,



a large military installation, and Manhattan, KS, home of K-State's main campus. This work of building sustainable houses and deepening the strength of the construction industry in Ogden helps bridge key communities within our larger region. Without a healthy regional focus, the housing and construction industry will not be able to support new innovative approaches to improving the housing system.

For example, historically, the market for green housing technologies has not been very strong in the Flint Hills. The partnership facilitated between K-State and construction training organizations has supported the growth of the new green industry in our region. Without coordinated, regional approaches to housing, a private industry that supports green technologies would not be able to survive. For example, another element that connects his partnership to building place through economic engagement and workforce development is the connection to the Flint Hills Renewable Energy & Efficiency Cooperative (FHREEC). Net Positive Studio design and larger partnership to support a sustainable workforce house has helped create and strengthen a market for sustainable technologies.

FHREEC works with MAHFH to install solar panels of the houses that Net Positive Studio designed. This also creates real world experience for MATC, HBI, and FHJC students to learn how to properly install green technologies on homes. Once the students graduate, they bring these new green construction skills to private construction companies. This helps lower the cost for construction firms to adopt sustainable building practices and build from designs that include green technologies.

## LINKS TO FURTHER INFORMATION

### Supporting Information:

- [Kansas Housing](#)
- [The Net Positive Studio](#)

### Articles:

- [Welcome home: Architecture students use research to design affordable, sustainable housing](#)
- [University-community Habitat for Humanity partnership wins international award](#)



## ABOUT APLU

The Association of Public and Land-grant Universities (APLU) is North America's oldest higher education association. APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. The association's membership consists of public research universities, land-grant institutions, state university systems, and affiliated organizations.

APLU's mission is to expand access and improve student success to deliver the innovative workforce of tomorrow; advance and promote research and discovery to improve society, foster economic growth, and address global challenges; and build healthy, prosperous, equitable, and vibrant communities locally and globally.

Based in Washington, DC, the association's work is furthered by an active and effective advocacy arm that works with Congress and the administration as well as the media to advance federal policies that strengthen public universities and benefit the students they serve.

## ABOUT THE IEP PROGRAM

APLU and its [Commission on Economic and Community Engagement \(CECE\)](#) established the Innovation and Economic Prosperity (IEP) Program to help higher education institutions codify, elevate, and advance their campus enterprise supporting economic and community development.

The **IEP Designation Program** recognizes institutions that have demonstrated a meaningful, ongoing and substantial commitment to economic and community development, growth, and economic opportunity.

The **IEP Awards Program** recognize exemplary and innovative projects in university-based economic and community engagement:

- Talent and workforce development
- Innovation, entrepreneurship, and tech-based economic development
- Place development through public service, outreach, and community engagement

Learn more at: [www.APLU.org/IEP](http://www.APLU.org/IEP)

