

Tooker House,
Arizona State University



Environmental

*"The Earth is what we
all have in common."*

**We must be good stewards of the environment—
for the students of today and the students of tomorrow.
Our commitment to mitigating effects from climate change
and conserving natural resources guides all aspects of
how we design, construct and operate ACC communities.**

Resource Management

Like any home, student housing communities are full of people using electricity and water and generating waste. The scale of ACC’s portfolio is much larger, of course: Our properties are home to more than 140,000 residents. This makes tracking and reducing our consumption of natural resources a huge but important task. Adding to the complexity, our properties receive more than 20,000 utility bills from more than 140 providers, and some get one bill for the entire property while others get a separate bill for each unit.

ACC’s asset management and decarbonization team has created and implemented a sophisticated utility expense management platform (UEM) to streamline this reporting process. The UEM automatically scans all utility bills for cost and usage data for energy, water and wastewater. The team then uses a custom dashboard to analyze this data for trends and reduction opportunities. They can analyze not just overall usage, but also how external factors, like time of year and weather, affect consumption.

The team uses UEM data to measure ACC’s carbon footprint. The data also informs our development, revealing when opportunities for resource conservation, such as plumbing retrofits and smart thermostats, will be effective. We work with an energy management, engineering and

consulting firm to identify priority properties for such measures and then conduct ASHRAE Level II energy audits at these sites. We select 25-30 properties each year for implementation of conservation measures and use UEM data to measure their success.

Our goal for 2023 is to deploy as much as \$6 million in resource conservation initiatives that are projected to save an estimated 3,000 metric tons of CO2 and an estimated 93,000 kilogallons of water annually.

Reducing day-to-day resource consumption at our properties delivers a high return on our investment and maximizes our decarbonization efforts.

ACC Resource Conservation Process



TEAM spotlight

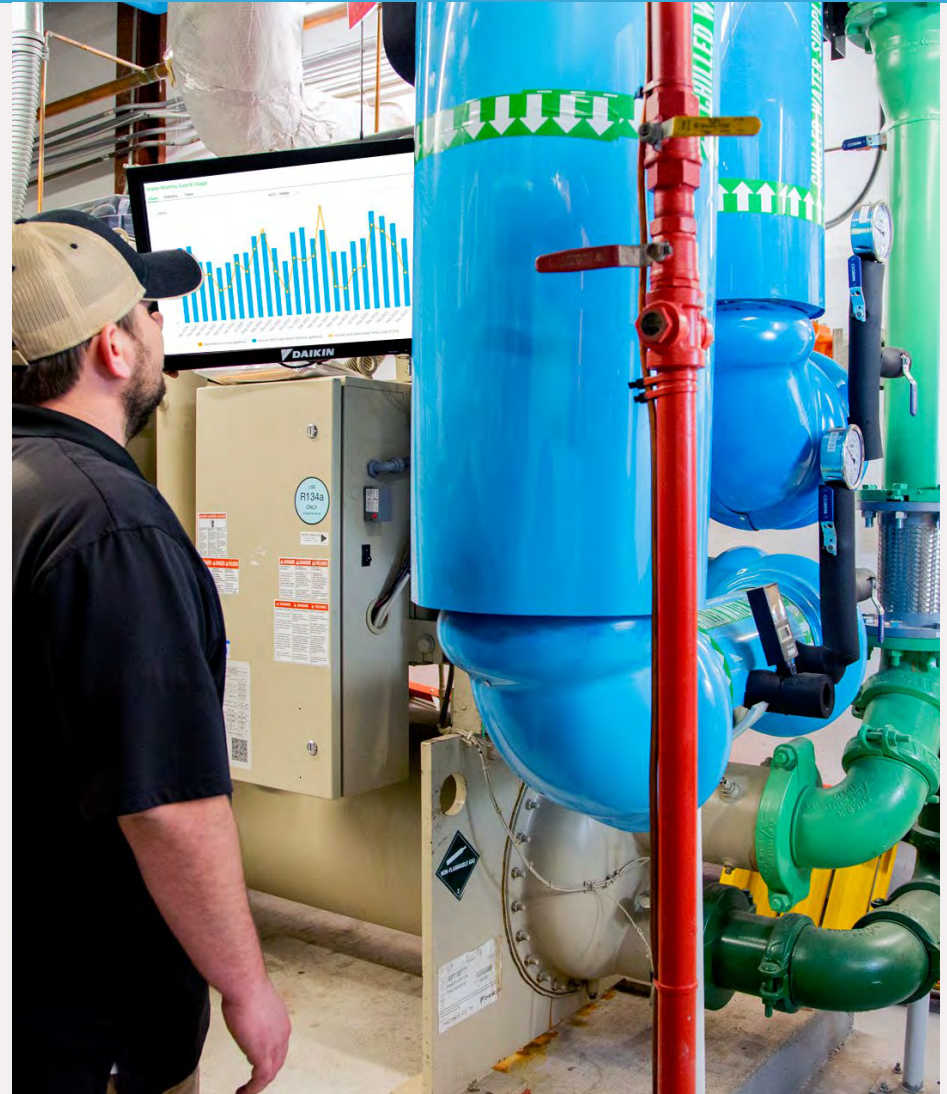
Asset Management & Decarbonization Team

ACC's asset management and decarbonization team is led by Derek Elpers and Lance Beamon and backed by our powerful utility expense management platform. Derek and Lance spent four years working with third-party technology and energy procurement vendors to create and onboard properties into our UEM, and they analyze its data on a monthly, quarterly and yearly basis.



“Our UEM platform gives us the powerful insights we need for daily operations and for long-term planning, such as identifying strategies for meeting our decarbonization goals.”

— Derek Elpers
Senior Director of Asset Management



Emissions Reduction & Energy Conservation

Our short-term goal is to reduce ACC's portfolio-wide greenhouse gas emissions by 15% by 2025, using 2022 as our baseline year.

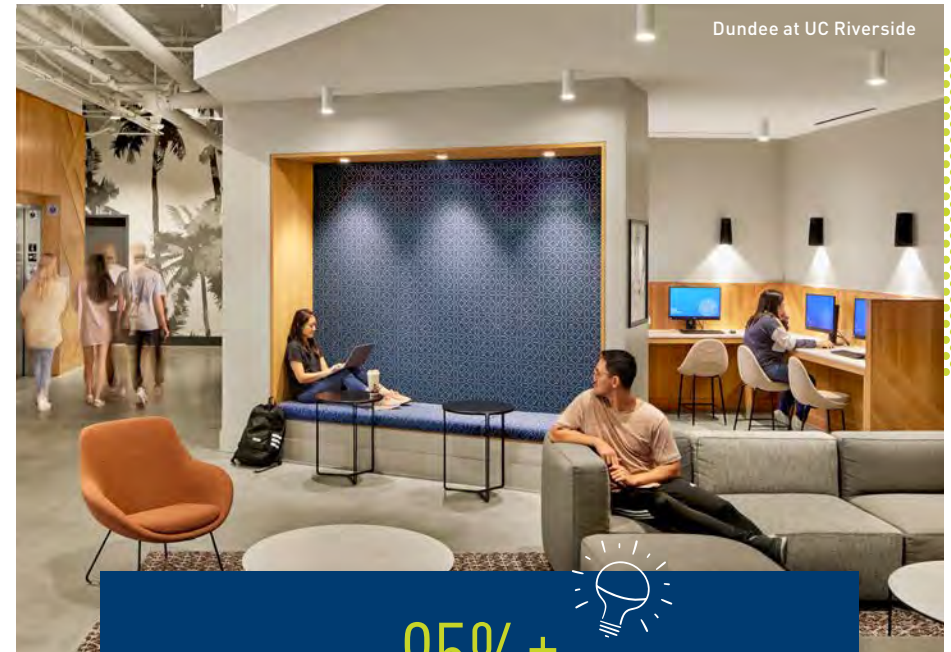
To reduce our Scope 1 and 2 emissions, our focus is on reducing energy consumption across our portfolio and sourcing more energy from renewable energy sources. Our Scope 3 emissions come primarily through solid waste and business travel. In response to a changing work environment, we are conducting more of our meetings virtually and encouraging eligible team members to work from home. The [Waste Diversion section](#) of this report covers our waste reduction challenges as we begin to craft strategies for the industry.


Building Automation Systems

In 2022, we continued expanding our installation of building automation systems (BAS) with seven new BAS properties, bringing our total to 27 properties. These systems automatically control and monitor our properties' thermostats, lighting, HVAC systems and water, turning them into smart buildings. Data is stored in the cloud, and our team can analyze this data and adjust properties' settings from a single location. This enables us to keep residents comfortable while operating our properties efficiently, reducing energy consumption and lowering costs. It also improves the lifecycle of our equipment and related facilities.

LED Lighting

More than 95% of our owned portfolio is now equipped with LED lighting, which uses 75% less energy and lasts 25 times longer than incandescent lighting. ACC's development standards include LEDs for all new projects, and in 2022 we completed our nine-year retrofitting initiative of older



95%+ 
of our owned portfolio is now
equipped with LED lighting

properties. We also audit all acquisitions for LED retrofit opportunities. Our return on investment for retrofit projects has consistently exceeded 14%.

Green Lease Components

While student housing is our primary business, we have more than 500,000 square feet of retail space in our portfolio, serving more than 200 retail tenants. To encourage the on-site retailers at our properties to join us in conserving resources, we will be introducing green lease components to expired and renegotiated contracts with these businesses. We are also educating and supporting retailers in their efforts to make their operations more sustainable.

RESOURCE CONSERVATION MEASURE *spotlight*

Smart Thermostats

Typical student apartments can be vacant up to 40% of an average day, and even more on breaks and holidays. To help students conserve energy while they are not at home and optimize their use when they are, in 2022 we piloted a smart, occupancy-based thermostat program at the Summit at Drexel University in Philadelphia.

We installed smart thermostats in all 351 units of the Summit, which tie into the property's building automation system. The system uses both motion and infrared sensors to detect when a room is unoccupied and automatically switches off heating or cooling. It also prevents excessive increases or decreases in temperature by placing a reasonable limit on how hot or cold a unit can get.

The system includes an interface that enables the facilities team to analyze per-unit energy usage, occupied vs. unoccupied time and efficiency performance. After collecting a year's worth of data, the system's return on investment exceeds expectations (see sidebar).

"This system is effective because it saves both consumption as well as time," said Lance Beamon, ACC's director of asset management and member of the utility and decarbonization team. "It monitors energy-use efficiency for individual units, consolidates everything into a single user interface and sends staff automatic alerts when maintenance is needed—usually before our residents even realize anything is wrong."

However, successfully implementing any new system requires time and resources to familiarize residents and staff members.

Crest at Pearl, University of Texas at Austin



Based on plans and projections, one-third of ACC's portfolio will be using smart thermostat systems by 2025.

Summit Smart Thermostat Pilot 2022 Savings (Compared to 2019)

739,226 kWh
Electricity (equal to annual
electricity use of 62 homes)

\$110,000
Decrease in
electricity costs

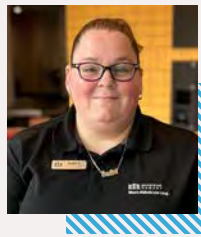
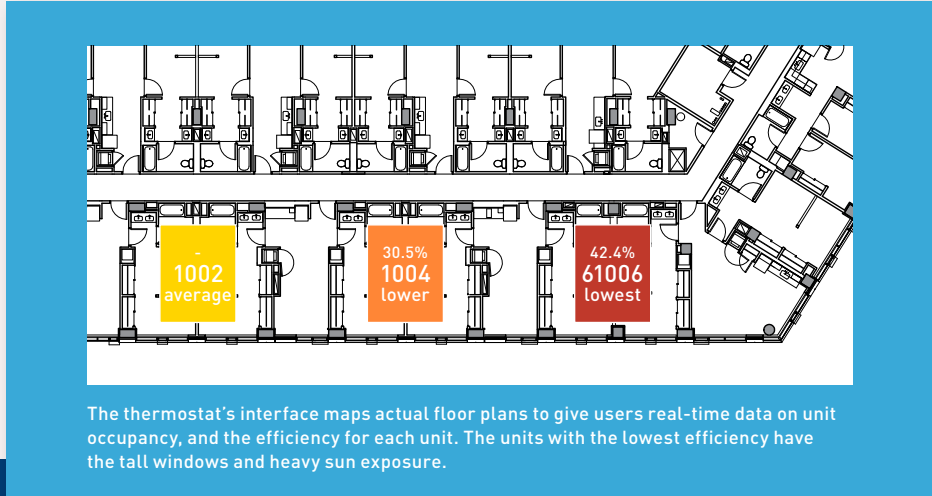
“The smart thermostat system is definitely worth it,” said Zain Wilson, ACC area community energy engineer. “There are hiccups just like any other new system. But now that everyone acclimated to it, it has become an invaluable tool.”

Based on the Summit team’s experience, Wilson points to three keys to successfully implementing this system at other ACC communities: clear communication with residents, comprehensive training with staff and designating one point of contact for addressing issues with residents, staff and customer service.

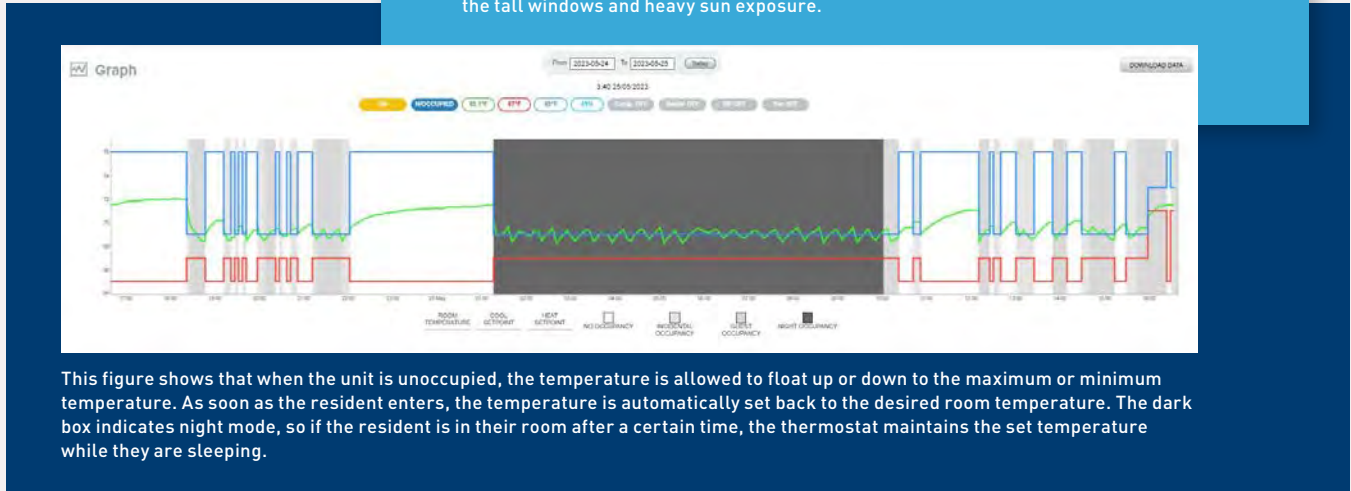
At the Summit, maintenance technician Jackie LaCross embraced the role of system administrator by studying the manual, learning the alert codes, interacting with the interface and having a thorough understanding of the property’s units and HVAC systems.

“This system became my priority,” said LaCross. “I became a smart thermostat specialist and then made sure that the rest of the facility’s team was constantly being updated. By the end of the year, the customer service people recognized my voice when I called.”

Based on the pilot’s success, ACC has already expanded this service to three other properties, including Disney’s College Program Housing at Flamingo Crossings Village, which has had an estimated 250,000 kWh reduction after only three months of data. Additionally, ACC has identified 13 other properties that are candidates for the smart thermostat system for 2023 installations. ACC is also completing ASHRAE Level II energy audits on an additional 16 properties in 2023 for consideration in 2024. That will mean that more than a third of the portfolio will be using the system by 2025.



— Jackie LaCross
Maintenance Technician





Renewable Energy

Following ACC's Energy Procurement Policy, we are actively scaling our use of renewable energy such as solar and wind across ACC's portfolio. In addition to reducing GHG emissions, pricing for renewable energy continues to decrease as more vendors invest in the market. In 2022, we began sourcing renewable energy at five additional properties, bringing our total renewables purchasing to an estimated 27.5 million annual kWh at 14 properties in 2023.

On-site Photovoltaics

We also have partnered with Black Bear Energy, solar energy market specialists, to identify and evaluate opportunities for additional photovoltaic installations throughout the ACC portfolio. By using rooftops, parking structures or surface lots to install photovoltaic systems, we are able to save energy cost and reduce portfolio emissions.

"Solar is not just an investment in the future of our planet, but also an investment in the financial resiliency of business. By embracing solar, ACC has the opportunity to decarbonize their portfolio, generate long-term energy savings and be a leader in on-site renewable energy—attracting environmentally responsible tenants who are also looking to make a positive impact in the world."

— Drew Torbin
President and Founder, Black Bear Energy



< Plaza Verde at University of California, Irvine

2022 Energy Use Intensity (kWh)

	Source	2019	2020	2021	2022
Per Unit	Electric Power	8,085	7,054	7,599	8,301
Per SF	Electric Power	7.71	6.61	7.13	7.74
Per Unit	Natural Gas	4,327	3,574	3,650	3,560
Per SF	Natural Gas	3.01	2.46	2.53	2.47

2022 Greenhouse Gas Emissions*

Total 2022 Market-based Emissions: 154,127 Metric Tons CO2e

SCOPE 1

Direct emissions from ACC-owned or controlled sources.

ACC sources: Natural gas and propane

2022 Market-based Scope 1 Emissions: 19,681 Metric Tons CO2e

SCOPE 2

Indirect emissions from the generation of purchased energy.

ACC sources: Electric power, chilled water and steam

2022 Market-based Scope 2 Emissions: 124,424 Metric Tons CO2e

SCOPE 3

Indirect emissions (not included in Scope 2) that occur in ACC's value chain, including both upstream and downstream emissions.

ACC sources: Solid waste and business travel

2022 Market-based Scope 3 Emissions: 10,021 Metric Tons CO2e

* All data tracked by ACC's utility expense management system and analyzed by third-party consultants. Learn more in our [ESG Policy Document](#).

This energy use intensity data reflects pandemic-related occupancy fluctuations in 2020 and 2021. We will use 2022 as the baseline year for measuring our conservation goals. This reporting is based on local utility policy and available data, and in most cases includes resident-controlled emissions. This may be subject to future changes based on trends in the definition of operational control.

55 H Street at Georgetown University



COMMUNITY *spotlight*

Plaza Verde II University of California, Irvine



The University of California system has pledged to become carbon neutral by 2025, becoming the first major university system to accomplish this achievement. As a longtime partner of the UC system, ACC is committed to helping them meet this goal.

Our latest step toward this aim is the development of Plaza Verde II, the fifth phase of our strategic housing plan at the University of California, Irvine. We designed this community to LEED Gold standards. This all-electric building brings the Plaza Verde community up to four residential buildings, all of which (along with a neighboring parking garage) have rooftop photovoltaic arrays to help achieve net-zero carbon, benefiting from electric grid transformation. It is also the first ACC-developed community to test EV charging stations.

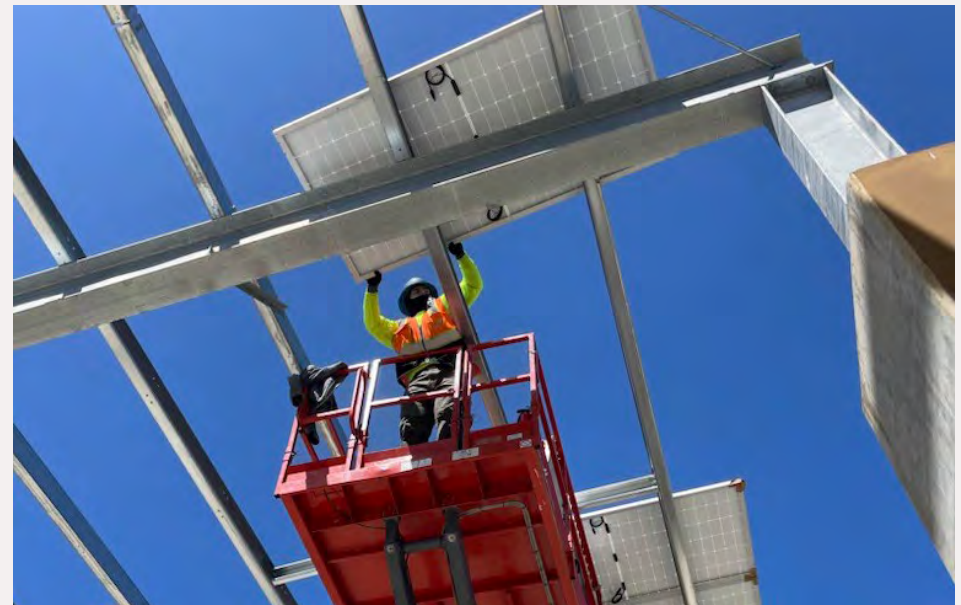
The preplanned infrastructure of Plaza Verde's first phase, completed in 2019, enabled higher density for Phase II—approximately 256 beds per acre. This efficient design houses 1,077 residents in a mix of apartment-style floor plans that accommodate varying student needs and budgets. All units are designed to be priced at rents approximately 30% below market rates.

Plaza Verde I is also LEED Gold certified, consuming 72% less energy and using 50% less water than a standard building. Since 2004, ACC has partnered with UC Irvine to master plan, develop and manage on-campus properties for over 7,600 residents.

- Architect: KTGy
- General Contractor: Morley/Benchmark
- LEED Consultant: Cadmus Group
- MEP Engineer: TAD Consulting and Candela Engineering

“When I chose UCI, one of its selling points was its dedication to clean energy and sustainability, which aligned with my values.”

— Carissa Bucio
Community Assistant, Plaza Verde



Waste Diversion

We are committed to curbing the increasing amount of waste that goes to landfill from our properties. Our solid waste intensity has increased each year for the past few years, driven primarily by modern consumer trends and the package delivery culture. Our targeted waste reduction efforts will need to include every aspect of business: how we operate, how our communities are designed and how our buildings serve residents. And every change matters. For example, by the end of 2022 we transitioned 100% from paper leases to electronic documents.

We also equip residents and team members with the infrastructure to dispose of their waste properly, such as conveniently located trash bins and chutes. However, individual action is only the first step



By the end of 2022 we transitioned 100% from paper leases to electronic documents.

Solid Waste Intensity (lbs)*

	Source	2019	2020	2021	2022
Per Unit	Solid Waste	1,669	1,544	1,696	1,742

*50 markets reporting.

toward diverting waste from landfill. Additional steps are dependent on the larger local and national recycling infrastructure. Cities decide what they will recycle based on what they can afford to collect, sort, and then find a market for. The market for recyclables fluctuates with the economy; for example, in 2022 the paper recycling market held strong while the markets for plastic and metal recycling started to soften. In the more than 65 markets where ACC has a presence, only 50% provide recycling services. And quantifying our waste problem is a challenge, as we only have access to recycling or landfill data for 85 of our 150 owned properties.

This variability makes it difficult to create a uniform waste diversion program across our portfolio. We must instead tackle waste diversion challenges at the property level, and focus on the parts of the waste-stream cycle that we can influence while supporting market development of better community recycling and waste programs. That means collecting recyclables in a clean and uncontaminated manner, reducing hard-to-recycle plastic wherever possible, and getting help from our residents on ways to minimize cardboard. Our waste program must simplify everyday waste management for our residents, and provide our team members with the protocols, services and equipment needed to address it.



Path/ACC pilot program

Tackling Plastic Pollution

In the U.S., it's estimated that only 5% of plastic waste gets recycled into new products. Plastics are expensive to collect, sort and sell; markets for plastic waste are limited; and it's cheap to manufacture new plastics. And people are often confused about which plastics are recyclable and which are not. Recycling unknown plastics is referred to as "wishcycling," and more often than not the practice merely contaminates otherwise unsoiled recyclables.

We are on a mission to gradually eliminate single-use plastics from our properties' model refrigerators. Last year, we piloted a program to replace plastic water bottles in these fridges with PATH bottles. These certified refillable, 100% recyclable aluminum water bottles can eliminate over 5,500 lbs of plastic waste annually. Unlike plastic, aluminum can be infinitely recycled.

Water Conservation

We are continually seeking ways to conserve water at ACC properties. In 2022, we completed 23 plumbing retrofit projects, and will continue retrofits across our portfolio. Our targeted return for these retrofit projects has consistently been above 20%, with an average project payback of just under two years.

Completed Plumbing Retrofits

	2022	Total
No. Projects/Properties	23	52
Dollars Invested (Project Cost)	\$2,198,000	\$4,651,000
Dollars Saved (Annual)	\$1,115,000	\$2,924,000
Gallons Saved (Annual)	90,548,000	256,000,000

Water Use Intensity (gallons)¹

	Source	2019	2020	2021	2022
Per Unit	Water	52,647	45,288	52,390	52,940
Per SF	Water	36.37	32.38	36.18	36.61

¹Includes irrigation, excludes wastewater



Our baseline specifications for all new ACC properties include:

- low-flow plumbing fixtures and aerators
- efficiency toilets
- native plant landscaping
- advanced irrigation controls and other water conservation features



COMMUNITY *spotlight*

Flamingo Crossings Village

Although Florida is surrounded by water, drought conditions and wildfire risks have intensified across the state over the last year. To mitigate the effects of climate change and extreme weather over the long term, we integrated water conservation features throughout our Flamingo Crossings Village community in Orlando. ACC built Flamingo Crossings Village to provide purpose-built housing for participants in the Disney Internships & Programs.

Flamingo Crossings Village has the capacity to house 10,440 residents in 41 all-electric buildings. The community features an extensive underground exfiltration storm water system (one of the largest in the Southeast) rather than a standard, land-intensive detention pond system. This enabled us to use only 50% of the acreage originally projected for the community. Large artificial turf lawns mitigate irrigation, all of which is sourced from reclaimed water provided by Orange County.

And an Aqua Miser toilet flush system prevents massive leaking and reduces water consumption.

The property also uses corrugated metal pipes in place of traditional high-density polyethylene plastic pipes. This saved 19,484 cubic yards of stone, resulted in about 2,000 fewer truck deliveries and saved more than \$500,000 in stone costs. It is a perfect example of implementing cost-effective development strategies that overlap with ACC's goals for conserving energy and vital resources.

Additional green features include recycling infrastructure, high-efficacy LED lighting throughout, ENERGY STAR® appliances and a smart thermostat system that uses occupancy sensors to conserve energy.

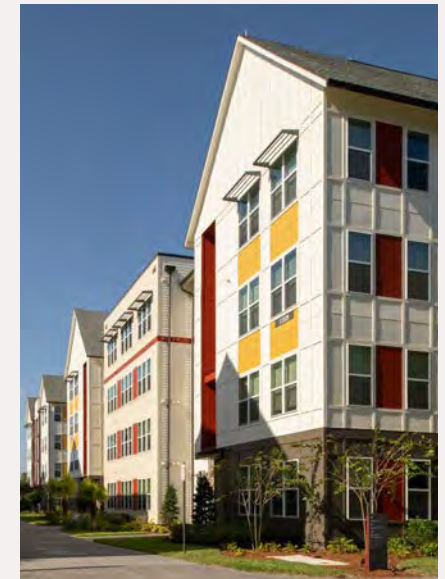
- Architect: Niles Bolton
- General Contractor: FaverGray
- Engineer: Kelly, Collins & Gentry, Inc.



2023 Student Housing Business Innovator Award, Best Implementation of Mixed-Use or Live/Learn



Watch the video





Resident Sustainability Engagement

Although we are decreasing our use of resources at scale through propertywide conservation measures, residents’ daily habits are an important part of the equation.

Residents care deeply about sustainability: According to ACC’s 2022 Resident Pulse Survey, 71% of residents said it was “very important” or “important” for there to be environmentally sustainable features (recycling, energy efficient appliances, green energy) in the community they live in. We empower residents to reduce their environmental impact—and their utility costs—by providing them with the infrastructure and education to do the right thing.

Saving energy and water also saves our residents money. In the majority of our apartment communities, it is the residents in their units who are responsible for approximately 80% of the electricity consumed at that property. We need their cooperation to reduce overall electrical consumption.



As we develop new properties and embrace new sustainable technology, we try to call attention to eco-friendly features students can use and learn from, such as efficient mechanical systems, waste management solutions and water-saving fixtures. Through our residence life programs and For the Greener Good campaign, we help students cultivate sustainability-minded habits that will serve them the rest of their lives.

CAMPAIGN spotlight

FOR THE Greener Good

It's important that sustainable behavior becomes a daily habit, and not something that we only practice on Earth Day. Through ACC's For the Greener Good campaign, we educate residents about daily habits they can adopt to reduce their environmental impact. These have the added benefit of decreasing utility and transportation costs for many residents.

Our resident assistants (RA) serve as the primary ambassadors and educators for this effort and design social media campaigns and creative on-site events. For example, our Tour for a Tree campaign planted a tree in the name of every prospective resident who toured our properties during the week of Earth Day 2022. Thirty-one ACC properties participated, resulting in 386 trees planted through the National Forest Foundation.

In our second year of For the Greener Good, we:

- Shared tips for conserving water and energy
- Educated residents on their community's sustainability features
- Informed residents of new conservation measures in their community
- Encouraged residents to walk, bike, carpool and take public transit
- Piloted the replacement of plastic water bottles in our model units with refillable aluminum bottles



Watch the video



Building Design & Development

We believe in planning and building green from the start. Our rigorous sustainability evaluation process begins well before procurement. Investing time and energy up front helps us deliver the best outcome: a community that’s in the right place, at the right cost, with the right features to minimize environmental impact.

For each new ACC project, our process includes engaging sustainability consultants to understand environmental regulations and university requirements, conducting a climate risk assessment, performing a comprehensive site analysis, holding eco-charrettes with university and city stakeholders, and studying the

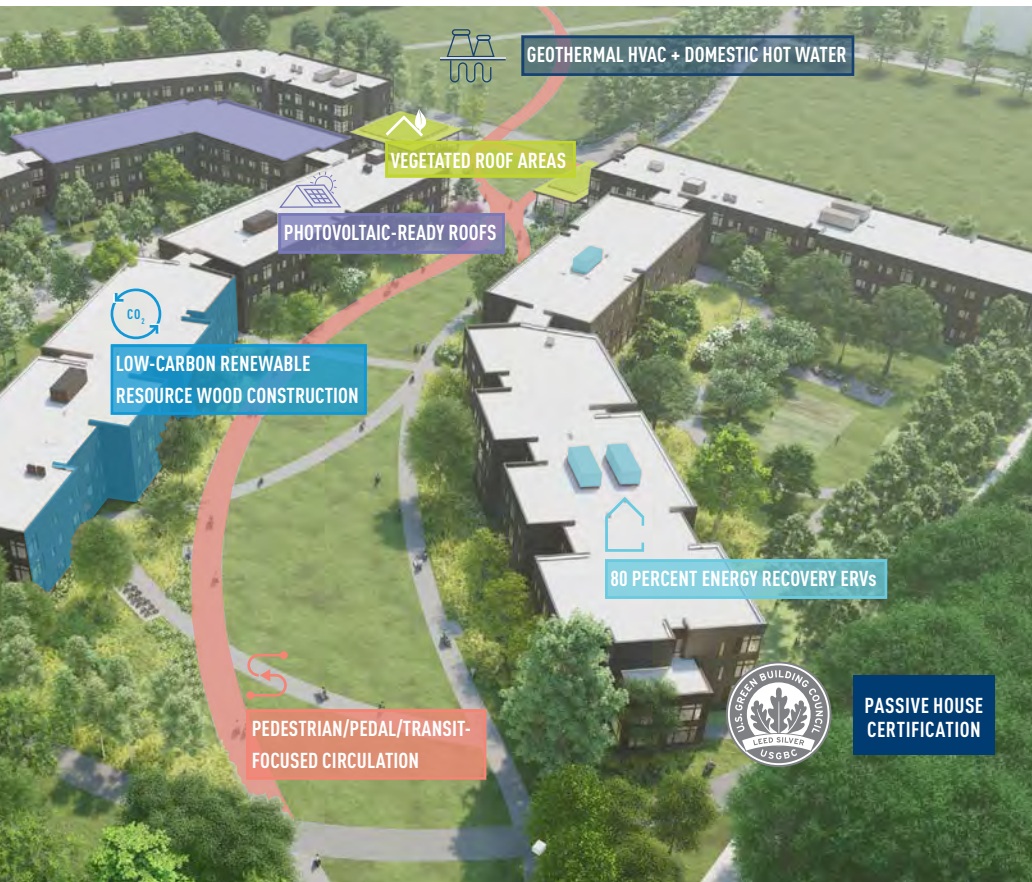
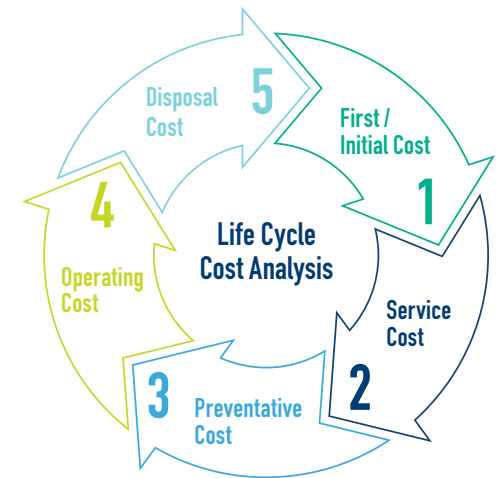
local market and similar ACC properties to identify the most effective sustainability features.

We follow LEED green building standards for all new properties, regardless of whether we pursue an official LEED certification. And our operating standards for all properties are designed to minimize environmental impact.

We apply these same principles to our acquisitions, with a due diligence process that also includes auditing regulatory compliance and identifying conservation measures. We look for carbon offsetting and carbon neutralizing opportunities including on-site generation, green power and renewable energy credits. For properties we purchase that are not designed to ACC’s environmental standard, we are committed to spending the necessary capital to increase efficiency and drive down energy usage.

LCCA Assessment

We use a life cycle cost analysis (LCCA) for our decision-making around new and existing communities. By using LCCA, we can ensure our properties will provide the lowest ownership costs, while also meeting our requirements for quality and function.



< Meadows Graduate Housing at Princeton, Opening January 2024. See case study on page 30.

Climate Resilience & Risk Evaluation

Climate change may increase the frequency of natural disasters and severe weather conditions that impact our operations. In 2022, ACC filed for claims for damage from winter storms and wind damage.

We conduct a thorough climate risk assessment on all existing properties as well as any new projects before investment or acquisition. This assessment analyzes factors such as the environmental and physical condition of the property and its exposure to climate-related risks such as fires, floods and drought.

We use the results to guide investment and planning decisions such as:

- Additional property insurance policies (flood, earthquake)
- Building envelope material options
- Consultant selection
- Site design and planning
- Development schedule
- Supply purchase timing
- Operations budgeting

ACC's asset management and ESG teams work together to identify measures for mitigating climate risk. These go through our climate investment evaluation process, with review and budgeting allocation from the risk management team and approval by our executive team and ownership entity.

We also have a detailed climate reliance plan, which includes precautions such as ensuring properties' utilities are not disrupted or disconnected during extreme weather.



Green Building Standards

Our design approach is focused on minimizing environmental impact both during construction and everyday operation. We employ sustainable systems that have a high return on investment, proven track record of effectiveness and will be easy for our staff to implement. Our work is also guided by the industry's preeminent green building standards:

LEED

Our development standards are designed to meet the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) standards. We integrate LEED into our work at all levels, from site planning to materials selection to operations. Our team is experienced with both the New Construction and Multifamily Midrise rating systems and is prepared to manage the certification process on any building where LEED recognition is desired. ACC is also a member of the USGBC.

ENERGY STAR®

We use our buildings' ENERGY STAR scores to benchmark their energy efficiency and identify needed improvements and opportunities to implement resource conservation measures.

Passive House

We are increasingly following Passive House design, which reduces heating and cooling needs through naturally efficient design features such as high envelope performance, high-albedo or white TPO roofs, second skin/louvres and heat-reflective glass windows.

Healthy Building Practices

We incorporate many standards of Well and Fitwell, certification systems focused on improving, enhancing and safeguarding the health and well-being of building occupants. Our design approach is also informed by feedback received in the Thriving College Students Index Survey.

Local Standards

We also meet or exceed all applicable code and environmental standards established by local, municipal and state authorities. We believe that building green is not only good for the environment but also good for business, and we use our LCCA approach to evaluate the ongoing savings potential of conservation measures. And by conducting post-occupancy evaluations and analyzing data from our utility expense management platform, we can continually refine our sustainability standards based on community best practices.

ACC has an industry-leading 45 projects that are LEED certified or tracking LEED certification, including 26 projects that are tracking or certified LEED Platinum or Gold.¹

[View ACC's LEED Certified Communities](#)



Tooker House, Certified LEED Gold, at Arizona State University

¹ As of March 31, 2023



Plaza on University at University of Central Florida

Our residential furniture supplier's designs incorporate environmentally conscious laminate materials with at least 30% verifiable recycled content.

Materials Selection

We prioritize materials suppliers that share our approach to sustainability. Whenever possible, we promote the use of recycled, recyclable or renewable materials for manufacturing, packaging and shipping, and our day-to-day operations incorporate environmentally friendly practices.

Furniture Sustainability

Unlike other housing, student housing communities typically come furnished. When choosing furniture, we prioritize durability, which decreases both environmental impact and replacement costs. We also look for furniture that uses sustainable materials.

Our residential furniture supplier has an average replacement rate of 1% per year. Their designs incorporate environmentally conscious laminate materials with at least 30% verifiable recycled content; Forestry Stewardship Council-certified wood fibers, low-VOC recycled steel, composite wood and particle boards; and Greenguard certification for low chemical emissions. Their shipping methods also use minimal packaging.



Green Transportation

Walkability

Proximity to campus is a core investment criterion when we develop or acquire communities. Walkability helps students reduce transportation costs and maintain a healthy lifestyle while reducing emissions from single-occupancy vehicles.

PUBLIC TRANSIT ACCESS



97%

of ACC-owned communities are located ½ mile or less from public transit access.

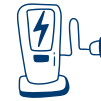
BIKE RACKS



79%

of ACC-owned communities have bike racks.

EV CHARGING



27

We have 27 EV chargers across our owned portfolio and continue to survey our resident portfolio for EV demand.



2023 Interface Innovator Awards

North District Apartments at the University of California, Riverside won the 2022 SHB Innovator Award for Best New Development: On-Campus. The community has an 85 bike score and is ¼ mile from RTA public bus stops.

55 H Street at Georgetown University won the 2022 SHB Innovator Award for Best Use of Green & Sustainable Construction/Development: On-Campus. The community is less than a mile from Capitol Hill and just two blocks from Union Station, Washington, D.C.’s transportation hub.

2022 Resident Pulse Survey – Green Transportation

- 69% of residents say walking is their primary form of transportation.
- Cars/carpooling came in second, at 47%.*

Only 20% of residents are “very likely” or “likely” to purchase or lease a plug-in electric car or truck in the next five years. Vehicle cost was cited as the top factor.

*Respondents were asked to choose and rank all of the transportation modes they use.

However, 62% of residents say access to EV charging is “very important” or “important” in choosing where to live during the next five years.

ACC will continue to prioritize walkability when selecting locations for our communities. And we’ll continue adding EV charging to prepare for the increased adoption of these vehicles as barriers to ownership decrease.

PROJECT *spotlight*

Meadows Graduate Housing Princeton University



Meadows Graduate Housing at Princeton is the first Passive House-designed project for ACC and Princeton, and one of the largest Passive House projects in the nation. Passive House is a global certification for “passively” keeping buildings at a comfortable temperature year-round with minimal energy inputs.

This student housing is part of the 107-acre expansion of the Princeton Campus across Lake Carnegie called Graduate Junction.

The all-electric Meadows community conserves energy through high-performance building systems and a highly efficient building envelope with increased heat recovery ventilation, deep sun shading, triple glazed windows and enhanced exterior insulation.

The energy the community does use for heating and cooling is thermal, sourced from 150 geo-exchange well bores located through the adjacent softball stadium.

- Architect: Mithun
- General Contractor: Hunter Roberts
- Passive House Consultant: Thornton Tomasetti
- MEP Engineer: Bala Consulting Engineers



PROJECT *spotlight*



The 676-bed graduate community tracking LEED Platinum, opening Fall 2024

West Campus Graduate Residence Massachusetts Institute of Technology

The West Campus Graduate Residence at MIT is a prime example of maximizing sustainability and biodiversity within an urban environment. ACC designed this community, which will open in Fall 2024, as an infill project on an extremely challenging, narrow site in Cambridge, Mass. Yet we found a way to fit a 335,000-square-foot community and several green spaces filled with native plants and 150 new trees. These spaces not only connect residents with the west campus community, but also contribute to MIT's sustainability objectives.

Green roofs and terraces cover approximately 80% of available roof space and feature six inches of custom soil and plants designed to support on-site stormwater management. At ground level, stormwater



management strategies include infiltration chambers to capture runoff from the roof and central plaza, along with sections of bioretention swale containing plants and soils designed to retain water. These features all contribute to an ecologically productive and biodiverse neighborhood.

The community is designed to achieve LEED Platinum certification, achieved primarily through energy savings gained in reduced energy use, PV panels and high performance building envelope with minimal thermal bridging.

- Architect: Kieran Timberlake
- General Contractor: JMA
- Sustainability Consultant: Steve Winter Associates
- MEP Engineer: Cosentini

Developmental & Operations Standards

We develop and operate ACC communities in a way that minimizes environmental impact and fosters students' comfort, health and financial well-being. This is an ongoing process, as, like any ecosystem, our communities evolve and adapt over time.

We set sustainability standards up front and use our strong relationships with team members and residents to consistently implement our standards and gather feedback for refining them. We conduct thorough reviews of our operating and maintenance procedures for major mechanical systems, and our in-house engineer oversees building and preventive maintenance programs and trains our on-site facilities staff. Additionally, we conduct a post-occupancy evaluation after the first year of operating a new community to measure the accuracy of our sustainability modeling and identify issues.

These practices, along with our continual data analysis, also help us identify opportunities for conservation measures and sustainable features.

Sustainable Communities: *Our Ecosystem Approach*

Environmental Specifications

We apply ACC standards to all communities, requiring a core set of sustainable fixtures and ongoing maintenance practices.

Education and Outreach

We build daily sustainability habits among residents and team members.

Sustainable Features

Using insights from our pre-development evaluation and ongoing data analysis, we select sustainable components tailored to the local environment.

Conservation Measures

We use our UEM platform to identify and evaluate resource-saving installations and improvements.

ACC's Environmental Initiatives

Energy

- ENERGY STAR® appliances
- Motion/occupancy sensors — in both offices and auxiliary spaces
- LED lighting throughout the community and units
- Programmable and zoned thermostats in common areas
- Timers on hot tubs and fire pits
- HVAC commissioning, testing, adjusting and balancing (increases efficiency)
- Building automation systems
- Touchless main entry doors and fixtures

Water

- Low-flow plumbing fixtures and aerators
- 1.28-gallons-per-flush efficiency toilets
- Native plant landscaping
- Advanced irrigation controls on photocell and timers
- Recessed sprinkler heads (avoid leaks through tampering or accidental damage)
- Braided toilet and sink lines (minimize leaks)

Waste

- Touchless hand dryers
- Recycling programs
- Durable, long-lasting floors and countertops
- Design for box disposal in package rooms
- Water bottle filling stations required at drinking fountains

Post-occupancy Evaluation

- 12-month accounting of waste, water and energy compared to design forecast
- Resident survey and analysis
- Employee stakeholder survey and analysis
- Spatial on-site metrics and analysis
- Decarbonization and ECM recommendations
- Measured environmental factors (light, acoustics, temperature, indoor air quality)