



---

**CLIMATE ACTION MESSAGE BOOK APPENDIX:**

# Helping you communicate the value of sustainable design

*Please refer to [The Architect's Voice: Advocating for Our Profession](#) for general information; this appendix presents case studies about communicating sustainability's importance and the architect's central role in creating a sustainable future.*

## About The American Institute of Architects

Founded in 1857, AIA consistently works to create more valuable, healthy, secure, and sustainable buildings, neighborhoods, and communities. Through more than 200 international, state, and local chapters, AIA advocates for public policies that promote economic vitality and public well-being.

AIA provides members with tools and resources to assist them in their careers and businesses. It also engages civic and government leaders and the public to find solutions to pressing issues impacting our communities, institutions, nation, and world. Members adhere to a code of ethics and conduct to ensure the highest professional standards.

*This book is built on a message structure designed by and remaining the intellectual property of Spaeth Communications, Inc. and may not be used by parties other than AIA without the express written permission of Spaeth Communications, Inc.*

“The world will not be destroyed by those who do evil, but by those who watch them without doing anything.”

—Albert Einstein

## Introduction

This appendix will prepare you for interactions with clients and civic leaders when discussing the meaningful role architects have in environmental stewardship. It will help you express your dedication to designing a sustainable world via memorable case studies, compelling facts, and reliable statistics. We also showcase how you can make an economical and moral case for sustainability. Now more than ever, we have a responsibility to champion healthy spaces for all.

Each of us needs to seek out opportunities to engage with multiple audiences, and this appendix is intended for use in your conversations with civic leaders, clients, and potential clients in virtually all industries. Help us show them that architects are trusted partners in strengthening society, designing solutions, and transforming communities.

### How should I use this appendix?

1. Review the “Message Design Process” in The Architect’s Voice for the rationale and mechanics of effective messaging.
2. Identify your audience: client, community stakeholder, civic leader, or lawmaker.
3. Choose one of several “Case Studies” to see the rationale and mechanics in action.
4. Build your own effective messaging campaign around your sustainability work.

## Communication philosophy and techniques

The communication philosophy and message design outlined in this appendix stems from The Architect's Voice and builds from the idea that we can influence what our listeners hear, believe, and remember about architects and architecture.

Whether talking with colleagues, clients, or civic leaders, following this guide will strengthen your communications and make your messages effective and memorable.

Organized by four bold statements, this appendix is part of AIA's larger efforts to refine its understanding of how the public perceives the profession.

## Architects Work with Clients:

We are collaborative, approachable partners throughout every design process.

## Architects Strengthen Society:

We demonstrate the critical role architecture and design has in our communities.

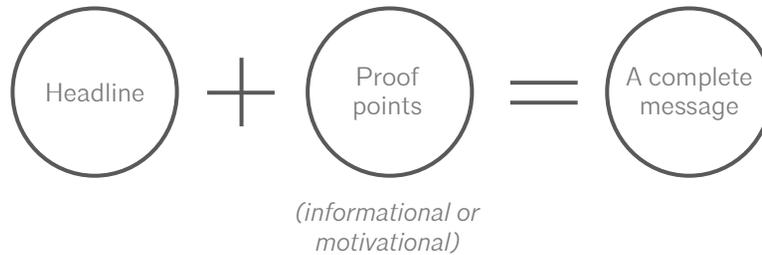
## Architects Design Solutions:

We offer solutions that showcase our passion, creativity, experience and professional education.

## Architects Transform Communities:

We show how architecture improves the lives of individuals and the vibrancy of communities.

## Message Design Process



### Step 1: Choose a key word that conveys your most important message.

Here's a list to get you started:

- |                |                       |                |               |                |
|----------------|-----------------------|----------------|---------------|----------------|
| Accessible     | Cost-effective        | Future         | Investment    | Renewable      |
| Achievable     | Dedicated             | Good listeners | Knowledgeable | Resilient      |
| Affordable     | Deliberate            | Green          | Necessary     | Responsibility |
| Beneficial     | Effective             | Healthy        | Opportunity   | Savings        |
| Caretaking     | Enduring              | Home           | Partners      | Secure         |
| Clean          | Equitable             | Hope           | Passionate    | Stewardship    |
| Climate action | Ethical               | Humanity       | Possibilities | Sustainable    |
| Committed      | Excellence            | Inclusive      | Preservation  | Transform      |
| Common goals   | Experts               | Innovative     | Protect       | Urgent         |
| Community      | Fiscal responsibility | Inspiring      | Relevant      | Value          |



TIP: Always ask yourself, “Does my audience understand the technical or industry terms I’m using?” If the answer is no, you might be using jargon.

---

Jargon is any word or phrase that your listener doesn’t use on a daily basis. It could be an acronym or a word that is specific to one particular industry. Sometimes, jargon is a buzzword or a word that has a new meaning. When using a word or phrase your listener doesn’t use daily, remember to follow it with a short explanation.

Using plain English and layman’s terms can have the strongest impact with any audience. Overly technical jargon and “archi-speak” is off-putting and can alienate clients, civic leaders, and the general public.

For example, your listener might not use words like “biophilic,” “u-value,” or “cantilever” regularly, if ever.

Instead, use “bringing nature into the building” instead of biophilic, “insulating capacity” versus u-value, and “horizontal beam” as an alternative to cantilever.

## How to handle negative statements and questions

When responding to questions that you perceive as negative, don’t repeat the negative word or concept. Instead, respond positively and try to use some of the key words listed earlier.

For example, the negative word in the following question is “expensive.” Rather than repeating “expensive,” your answer might focus on how architects have expertise as “problem solvers” when it comes to “sustainable solutions.”

**Question:** Won’t the green changes you’re recommending be too expensive?

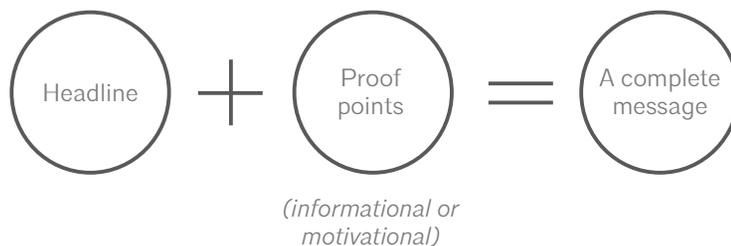
**Response:** On the contrary. We are expert problem solvers with sustainable solutions. For example, my firm had a client who planned on renovating two buildings directly next to each other, and the original plan was to have the buildings operate on two separate HVAC systems until a cooling tower would be built/installed 15 or 20 years from now. Having two separate HVAC systems for two buildings that are 25 feet apart is wildly inefficient, by cost and energy. After a long conversation with them, they saw how it was more affordable in the long run and said, “We were astounded at how much we could save over the long term both in costs and energy!”

## Step 2: Use *headlines* developed from the key word list

## Step 3: Support your headline using *proof points*

## Step 4: Put it all together by *designing your message*

Headline + Proof Point (Informational or Motivational).



Here's an example:

### HEADLINE:

Architects are committed to sustainable and resilient design.

### PROOF POINTS:

(Informational) According to Dodge Data and Analytics' World Green Building Trends 2018, retrofitting buildings strengthens the local economy. Compared to new construction, a greater proportion of a retrofit's budget typically goes to labor, creating more jobs for the dollars spent. Among owners, 94% believe that their buildings are more valuable after a green retrofit.

### OR

(Motivational) Gulf Shores State Park in Alabama used sustainability certifications to manage requirements and guide the team to accomplish a project that inspires Alabamians. The project, developed from funds received through the BP oil spill settlement, inherently needed to incorporate sustainability to achieve the state park's mission of caring about nature's recovery from a man-made natural disaster. Resiliency was another goal because of the frequency of storms that hit Alabama's coastline. The project became the pilot for Fortified Enhanced Construction and a world-recognized model of sustainability. The park has served families and tourists for generations, so it was important to restore it to a vision of natural beauty. One visitor said, "The park is our favorite vacation destination—we have been coming together as a large family for over 40 years."



#### CASE STUDY 1

## Architects work with clients

The following stories and examples illustrate how architects are collaborative, approachable partners through every step of the design process.

#### HEADLINES

- Climate change affects every person, every project, and every client.
- Green buildings make green pockets.
- Better buildings are good for the economy, improve air quality, and save money!
- Resiliency and renewable solutions can transform spaces and increase morale.
- Our goal is to be transparent and approachable through all stages of a project.
- We are committed to being collaborative partners.
- Architects engage clients; they are committed to what the clients want and need.

#### PROOF POINTS

---

Proof points prove the claims you make in your headlines. They include Informational Proofs (facts and statistics) and Motivational Proofs (stories and quotes). Here are some examples.

---

#### Green Buildings Make Green Pockets

(Motivational/Informational) We have a client who purchased and repositioned a building in the San Francisco Bay Area urban center. The local jurisdiction mandated that the project achieve LEED Silver certification; however, the client wasn't focused on sustainability—her priority was renting. Our team got really excited about anything to do with resiliency. We saw that the client loved numbers and wanted to market her building well, so we provided her with all the exciting metrics her building was achieving environmentally (30% more air circulation, 50% reduction in water use, and 15% reduction in energy use). She used these metrics for marketing and got a great response; renting it went well. The building leased in record time to a whole-building tenant that was a tech company. The client jumped on board when she saw how green it was—she was able to charge higher rent for a sustainability-certified building! Now she gives me a hug every time she comes into our office, and this is her headline when she tells the green story: “Green buildings make green pockets!”

—Gail Napell, AIA, Gensler

#### Modeling for the Win

(Motivational) During schematic design, energy modeling was performed on a proposed school building layout. School administrators preferred that the school be located parallel to the street. During design modeling, the team reviewed alternate placement of the building on the site. By optimizing the building rotation 17 degrees to the street, 30% energy savings could be realized. The cost savings associated by slightly orienting the

building could be put towards hiring much-needed teaching staff for the school.

—Dan Hart, FAIA, PE, Parkhill, Smith & Cooper

### School District Realizes Enormous Savings – Cuts Utility Costs in Half

(Motivational/Informational) Between 2004 and 2014, we designed and built eight 1,000-student elementary school prototypes for Lee County. While identical in size and function, the 2014 version uses approximately half the energy consumed by the first. Even though cost per student station was the driving force behind building as inexpensively as possible, we worked with the facilities department and turned its attention to life cycle cost compared to the initial cost. The improvements were not credited to one specific item; rather, improvements resulted due to a combination of an improved thermal envelope, LED lighting, magnetic bearing chillers, and other items that made the difference in the overall utility bills.

—Ryan Richards, AIA, RG Architects

(Informational) Among building owners, 94% believe that their buildings are more valuable after a green retrofit.

(Informational) According to a 2019 Gallup study, “Most Americans report worrying ‘a great deal’ or a ‘fair amount’ about global warming.”

(Informational) According to December 2019 Pew research, “Amid increased concern about global climate change, most U.S. adults prioritize developing alternative energy sources for

the country such as solar or wind power rather than increasing U.S. exploration and production of fossil fuels (77% vs. 22%).”  
Creative Energy in East Austin

(Motivational) Architects for UpCycle collaborated with their client to turn an old, abandoned warehouse in East Austin, a former city recycling center, into an office space that changes how the client works and fosters community interaction. Sustainability was made an inherent part of the project because of both parties’ desire to do what was right for the community. The architects focused on bringing more daylight into the space both for literal energy savings and user wellness, increasing productivity and supporting the up-and-coming area’s creative energy. They achieved this by creating a pop-up along the middle of the warehouse that brings light into the whole, formerly dim warehouse. It’s now everyone’s favorite place to be in the building. The tenant has called the space a new model for how he conducts business and remarked that the brighter, more inviting space has changed this company’s culture by opening employees’ eyes to new possibilities. After hours, they are able to use the main lobby for community events because of how the design faces the street.

““ The existing condition was a starting-off point. That inspired our client’s approach, so we redeveloped the building to maintain its character.”

—Travis Albrecht, AIA, Gensler

### Romantic Spot Invites the Outdoors to Campus

(Motivational) The rooftop of the new John W. Olver Design Building claims the title of “Most Romantic Spot” on the University of Massachusetts campus. What began as a conventional steel building in the first plans evolved into an

example of how architects can choose better materials to reduce embodied carbon and emissions. An advocate on the client side felt passionate about using timber and spoke up for the more sustainable choice. Faculty and students now have similar reactions when they visit the building, commenting that they love the brightness of the space that “smells like a pine forest” and appreciate the inviting warmth of the wood columns. The chair of the architecture department said his favorite place in the building is the open balcony, where he can watch people come in the building and see their faces light up as they look up at the wood trellis.

—Tom Chung, AIA, and Josiah Stevenson, FAIA, Leers Weinzapfel Associates

(Informational) Every dollar saved in energy cost can increase the market value of a building by \$18.32, assuming a capitalization rate of 5.5%, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

(Informational) Heschong Mahone Group found that adding skylights increased store sales by 31 to 41%, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

(Informational) By moving to an open office with integrated daylight, Lockheed Martin was able to increase contract productivity by 15% and believes the increased productivity helped them win a \$1.5 billion defense contract, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

## QUOTES

---

✓ Remember: Quotes are another way to help validate your headline. Quotes are statements from reputable sources. They can be drawn from noted experts, other members, colleagues, the media, public figures in your community—and sometimes even you. Use good quotes, either in full or excerpted form, in brochures or other communication pieces and in presentations.

---

(Motivational) After moving into her new home, Kerrie Lane, owner and operator of a cleaning service and resident of South Jersey, received her first electric bill: a staggering \$1,100. Kerrie knew she needed to do something to make her electric bills affordable. “I’m 60 years old, so I’m getting up there. I do a physical job for a living, but I can’t do it forever. So, receiving manageable bills was very important to me,” she said. “My first electric bill in this house was \$1,100. I knew I needed to correct this situation and make it manageable, and installing solar panels gave me the consistency that I was looking for.”

(Informational) Residential home construction company De Young Properties in California built its first net-zero energy building in 2013—meaning it has the potential to produce as much clean energy as it would consume on a yearly basis. De Young began redesigning its traditional home prototype in 2008 to find a way to build comfortable, energy-efficient homes at an affordable price. “We wanted to build better homes. We didn’t want to just build the same home that my

grandfather used to build, because we felt that it was important to continue to progress,” said Brandon De Young, executive vice president of the company, which has three decades of history. “Basically, you either have to sacrifice your comfort for your energy bill or your energy bill for your comfort. And we saw that there was an opportunity here to try and give the best of both worlds to our homebuyers.”

### **Solar Panels Increase Summer Fun**

(Motivational) Lisa and Jerry Chretien, a couple from Cape May County, New Jersey, decided to lease solar rooftop panels. High utility bills and the desire to live cleaner and greener lives inspired them to make the decision. Since going solar in June 2018, the Chretiens’ electric bills have decreased, especially in the summertime. “As soon as we would open the pool and turn on the air conditioners in May, our electric bills would run close to \$800, sometimes more,” Lisa Chretien said. “Saving money, especially with kids in college, has been a big help and a big saving. And there are a lot of incentives; tax-wise you get a break. It has just been a plus all the way around.”

(Motivational) “We’re not looking for the buildings to be stagnant in time. It’s really about extending their life and their ability to serve new purposes.”

—Jill Gotthelf, AIA, Walter Sedovic Architects

(Motivational/Informational) “There is increased demand for green living. More than 80% of buyers now say energy-efficient features are important in selecting their home,” said Sarah Mikhitarian, Zillow senior economist. “We are increasingly finding that these attributes are important to prospective homebuyers. This is part of the reason that there is a premium associated with it. The other piece is that there is true value provided by solar panels—namely, future energy savings. For homeowners who know they consume a lot of power, those future savings are worth spending a bit more money up front.”



## CASE STUDY 2

# Architects strengthen society

The following are stories and examples of how architects demonstrate the critical role of design in communities.

### HEADLINES

- Sustainable design creates a healthy, resilient, and regenerative future.
- As a profession, we have the responsibility to prioritize and support climate action.
- Architects are creating more resilient communities.
- The biggest design organization in the world is taking on the biggest design problem in the world.
- Architects and civic leaders are committed to designing a healthy future for us all.

### PROOF POINTS

#### Island Communities Work to Secure Our Sustainable, Resilient Future

(Motivational) The Kalinago, the Indigenous people of Dominica, are among the poorest people in the Western Hemisphere, with a long history of weathering all types of hazards, both natural and man-made. The Kalinago people have no formal shelters and many buildings are informal shacks at best, yet not a single life was lost to Hurricane Maria in 2017. Their culture reflects resilient practices across all aspects of life—from what crops are safe to plant to where and how to build communities. Rediscovering these historic threads

of resilience has been key to developing new master plans for the territory under the Kalinago Institute for Resilience and Regeneration (KIRR), which was founded by architects along with leading experts and community leaders—including Nichie Louis Patrick Hill and Dr. Michael McDonald, members of the Kalinago council of chiefs. KIRR’s mission is to create a thriving Kalinago Territory as a low-carbon, resilient region where citizens can live and excel within the carrying capacity of its ecosystems for multiple generations into the future.

Central to the master plan is a series of community centers with four parts: a central community resilience hub with shelter capacity; affordable housing with communal gardens; an agroforestry landscape linked to a circular timber and homebuilding economy; and a scalable infrastructure for services including communications, transport, banking, and 3D printing. Based on the karbet, a communal lodge traditionally situated in the center of each settlement, the new shelters are built with indigenous hardwood trees such as Balat and incorporate contemporary storm shelter performance standards of the ICC 500 (2014 International Code Council). The structures are built with a continuous load path resistant to heavy storm winds and equipped with heavy wooden shutter systems to secure the building in times of distress, while their long anchoring elements create overhangs that provide shade.

(Informational) According to a United Nations report on heritage and resilience, adaptation and reuse promote cultural heritage and social cohesion, which the United Nations cites as critical to community resilience.

(Informational) AIA is a stakeholder in the newly announced congressional initiative to achieve a net-zero carbon future for the United States. The House Energy and Commerce Committee has announced its commitment to this ambitious goal that will affect future legislation. The goal is to achieve net zero% carbon pollution and a 100% clean economy by 2050. AIA is working in partnership with committee members to shape legislation to achieve these goals.

(Informational) At the local level, more than 65 communities have formed more than 150 interest groups to address active design, community resilience, urban planning, and other sustainability topics. In Texas alone, more than 250 volunteers were trained to assess more than 4,000 structures for safety and habitability following Hurricane Harvey:

- 42 local COTE groups
- 33 disaster assistance committees
- 22 health and well-being committees
- 18 active design committees
- 18 2030 commitment roundtables
- 11 building performance committees
- 7 resilience and climate adaptation committees
- 6 materials committees

(Informational) According to Gallup and Pew surveys in recent years, as many as two-thirds of Americans say the government is doing too little to protect the environment, the highest number in 12 years and well above the low point of 46% measured in 2010.

(Informational) According to a January 2020 Pew Research survey, 64% of U.S. adults say that protecting the environment should be a top priority for the president and Congress, while 52% say the same about dealing with global climate change.

(Informational) From the Morgan Stanley Institute for Sustainable Investing (conducted through the Brunswick Insight survey February 2019), 85% of U.S. individual investors now express interest in sustainable investing, while half take part in at least one sustainable investing activity, showing that investors want to measure the environmental and social impact of their money.

### **Engaging the Business Community**

(Informational) We created a green building code for all private developments in Dallas by working with a task force of up to 100 stakeholders over a period of three months in 2008. Recommendations were market-based, focusing on energy efficiency, water conservation, and the heat-island effect. Ultimately, our designs attracted new business due to clean and healthy buildings.

—Zaida Basora, FAIA, AIA Dallas

### **Welcoming Daily Visitors**

(Motivational/Informational) The Columbus, New Mexico, U.S. Land Port of Entry has become a coveted assignment for customers and border patrol officers. The design brings in the local color palette and uses indigenous plants to create a welcoming environment that speaks to the values of America, including respect for the land. Architectural features include a wide covered walkway, solar panel-topped roof, and south-

facing windows built largely of the same rusted steel as the border wall. Hundreds of children cross from Palomas each weekday to attend school in Columbus. The new design also rerouted cargo traffic into a new, broadly shaded dock where U.S. Customs and Border Protection can more comfortably inspect tractor-trailers. The \$85.6 million project, finished in 2018, replaced a tired customs building dating to 1989. The project team exceeded the initial goal of LEED Gold by achieving LEED Platinum still within budget.

“*This project brings a sense of order and a sense of welcome as you cross the border on a daily basis. That’s to really humanize it, to make it a feel-good experience.*”

—Elizabeth Chu Richter, FAIA, Richter Architects

“*We tried to humanize and clarify that experience so that along the way you are greeted with a pleasant space, natural light, a certain amount of beauty.*”

—David Richter, Richter Architects

(Informational) A LEED Gold certified office refurbishment that enhanced indoor ventilation for 150 employees saw an annual savings of \$85,000 per year due to a 44% reduction in absenteeism because of better worker health, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.



### CASE STUDY 3

## Architects design solutions

The following are stories and examples of architects as knowledgeable, well-rounded experts who offer creative solutions.

### HEADLINES

- AIA is dedicated to climate action.
- AIA and its members are dedicated to designing a sustainable, healthy, and equitable world together.
- We are expert problem solvers with sustainable solutions.
- Architects are equipped with the necessary skill set to achieve a zero-carbon, resilient, and healthy built environment.
- We can achieve sustainable design in a cost-effective way.
- Sustainability, beauty, and design can exist together.

### PROOF POINTS

#### Changing the Timeline for Valuable Savings

(Motivational) My firm had a client who planned on renovating two buildings directly next to each other, and the original plan was to have the buildings operate on two separate HVAC systems until a cooling tower was installed two decades from now. We convinced the client to speed up the process of implementing certain sustainable systems—mechanical and electrical—to conserve energy sooner than planned. Having two separate HVAC systems for two buildings that are about 25 feet apart is wildly inefficient, by cost and energy. By prioritizing

the cooling tower, the client was able to save a significant amount of energy, and the overall cost was lower in the long run. They said, “We were astounded at how much we could save over the long term both in costs and energy!”

—Julian Owens, Assoc. AIA, Jacobs

#### Remodeled Office Feels Like Home

(Motivational) We are proud of our conversion of a 1960s building into an office building that feels like home. The 5,500 square-foot office is one mile from the beach in San Diego, but the original 1960s building design resulted in chilly winters and hot summers. With the remodel, we were able to design optimal window positioning to take advantage of natural light and breezes. Our electric and gas bills were reduced by over 75% after remodel—from \$1,500 to \$450 for monthly power bills. It was built to take advantage of the natural surroundings and doesn’t have heaters, air conditioning, or fluorescent lights. We have found that people want to work longer and harder in this clean, natural-feeling building.

—Al Whitley, AIA, VDCI

#### River Pilots Find a New Home Away from Home

(Motivational) Our client, the River Pilots Association, is the boat pilots who are trained to command large tankers and supply ships on the Mississippi from the Gulf of Mexico to south of New Orleans, a three- or four-hour journey. They navigate the ever-changing river currents and topography, successfully transporting products and goods for the nation. They work three weeks on, three weeks off, hence the need for a building to house pilots in the three weeks they are working. This includes

providing amenities—basically a full-service dormitory with kitchen, workout space, sleeping rooms, etc. Seven years ago, they floated a metal building on a barge and put it on piers. In seven years, they went through three generators, 10 HVAC units, massive leaks, and black mold, and the river pilots were having to be shipped down to the mouth and wait on boats every day. This led to cost overruns, poor employee morale, and massive time delay for the products. We were hired to solve these problems. We decided to use FRD panels never before used for readying buildings for occupancy. We developed details for a positive pressure for HVAC, and we reduced mechanical service so that day-one generation was all that was required. We installed solar panels and created wall assembly. The project won a USGBC Gold Medal project award. We've heard the river pilots say that they can't wait to return to duty because of the new living conditions.

—Terri Hogan Dreyer, AIA, Nano LLC

(Informational) The adage “water is the new oil” hits home in the design and construction industry, where 12% of U.S. potable water consumption is attributable to buildings and at least 36 states face potable water shortages, according to the Environmental Protection Agency. At the same time, many cities' aging infrastructures are challenged by stormwater demands, magnified by more frequent flooding and tidal surges. As a result, design for potable water conservation, a more resilient infrastructure, and onsite rainwater management is now a mainstream priority in many parts of the U.S. and the world.

(Informational) AIA ratified the Resolution for Urgent and Sustained Climate Action and has adopted the Framework

for Design Excellence. AIA is now creating a plan for the organization that will shift a significant portion of its work to climate action.

(Informational) America's existing building stock generates more than two billion tons of greenhouse gas emissions per year.

(Informational) According to a March 2020 Pew Research survey, over 60% of Americans consider global climate change a major threat to the country, up from 44% in 2009. Respondents who took the survey in the latter part of the month—after the March 13 declaration of a national emergency due to the coronavirus—were about equally concerned about climate change as those interviewed earlier in the month.

### Thoughtful Design Brings Big Savings

(Motivational/Informational) In 2008, LPA designed an 8,535 square-foot Environmental Nature Center (ENC), which focuses on providing quality education through hands-on experience with nature. It was certified as the first LEED Platinum building in Orange County, California, and has operated at net zero since it opened. In 2019, the ENC added on a 10,380 square-foot preschool, supporting its mission to deliver quality, nature-based education for young children. Developed through a thoughtful design approach, the combined projects created over four acres of dedicated open space within a suburban community. Taking advantage of the coastal climate, the buildings are oriented to allow for natural ventilation, significantly reducing initial and long-term costs. Neither building uses a mechanical cooling system. Low-energy ceiling fans and the building form enhance air movement when needed. Radiant floor heating provides low-energy, mild heating as required. Active and passive sustainable

approaches were key in minimizing the energy demand for the preschool. The south-facing roof of the preschool accommodates solar panels, which are designed to provide 105% of the net energy for the preschool's electrical needs.

“The aspect about the Environmental Nature Center and Preschool of which I am most proud is the simplicity of the design approach. This campus achieves LEED Platinum certification through simple gestures and strategies, proving that sustainable design can be cost-effective.”  
—Rick D'Amato, FAIA, LEED AP, LPA Design Studios

### Modeling Public Policy Through Design

(Motivational/Informational) The redeveloped Keller Center Harris School of Public Policy seeks to embody the best outcomes possible in its forward-thinking sustainable design. The dean of academic student affairs, Jeremy Edwards, says parents and new students walk in and say, “Wow, I feel like something important is happening here.” One of the key design and cost-saving features was the choice to add alternative, European-style interior panels to the windows rather than replacing them with triple-glaze fiberglass. After a rigorous performance analysis, it was revealed that the interior storm window style added an extra layer of insulation through the limestone and equaled about \$800,000 in savings.

“Some of the forward-thinking design concepts we integrated include the all-gender bathroom with a hybrid design that can adapt to future rulings. If laws change, the school can just remove a panel while still maintaining privacy, eliminating a lot of material waste other buildings will face.”

—Gabriel Wilcox, AIA, LEED AP, Farr Associates

“The building can ‘go to sleep at night’ with less heat loss thanks to an innovative internal blind system that came about from a collaboration across multiple groups and using daylight modeling in developing the skylights.”

—Doug Farr, FAIA, Farr Associates

“The quality of the space and its success in awards proves you can do very energy-efficient adaptive reuse. We brought sustainability, beauty, and design together—showing clients, ‘We can do it on your schedule and budget, just give us the chance.’”

—Gabriel Wilcox, AIA, LEED AP, Farr Associates

(Informational) High performance design features can significantly reduce utility costs through energy and water efficiency. They can save on average 14% in operational costs over five years for new construction and 13% over five years for green retrofits and renovations, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

(Informational) A variety of design strategies can work together to lower operational costs in high performance buildings, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

- Preventing heat gains on windows through envelope shading strategies, such as external shading or electrochromic glass, significantly cuts down on energy use and peak cooling load.
- Designing to increase natural daylighting can significantly reduce electric light use.

- Decoupling heating/cooling from ventilation using a dedicated outdoor air system can reduce mechanical cost 23% annually.
- Using passive cooling techniques such as night flushing thermal mass can reduce cooling energy consumption between 12 and 54%.
- Operating a building under a mix-mode ventilation sequence can reduce energy consumption up to 31%.
- Using an energy efficient HVAC system, such as heat pumps with ground source.

(Informational) A cost analysis of a hypothetical six-story, 31,000 square-foot office building in Philadelphia concluded that reductions in initial cost due to duct size, chiller size, air handling unit size, plenum depth, integrated thermal and fire suppression piping leads to a cost savings of \$2 per square foot, according to the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

“The most logical thing we can do to decrease our impact on the planet is to reuse what already exists.”

—Jean Carroon, FAIA, Goody Clancy

“Until recently, retrofits were making buildings maybe 20% better. But now it’s realistic to ask, ‘How do we get an existing building all the way to net zero?’”

—Larry Strain, FAIA, Siegel & Strain Architects

“When AIA identified evidence-based approaches to design for well-being, they called attention to the expanding body of research addressing the built environment’s effect on occupant health. This data has enabled me to engage my firm, our consultants, and our clients in conversations to develop strategies for greater well-being in the buildings and spaces we use every day.”

—Ashley Grzywa, AIA, Bonstra Haresign Architects



#### CASE STUDY 4

## Architects transform communities

The following are stories and examples of architects helping clients improve the lives of individuals and enhancing the vibrancy of communities.

#### HEADLINES

- Our goal is net-zero emissions in the building sector by 2050.
- Architects are committed to sustainable and resilient design.
- Retrofitting buildings strengthens the local economy.
- Existing buildings are some of our greatest opportunities.
- Architects can help to transform your communities for the better.
- Architects act as stewards of the environment.
- Our work can spark the vibrancy of a community and improve the lives of its members.

#### PROOF POINTS

##### School Finds New Life for Veterans

(Motivational) City leaders and architects in Philadelphia turned a derelict school into an energy-efficient and affordable housing unit. Spring Garden School in North Philadelphia had been vacant since 1984; every surface had some type of graffiti, and the initial reaction was to tear it down. It has now been renamed the Lural Lee Blevins Veterans Center. The school building is on the national registry, so the city wanted to preserve the building and the neighborhood. The city bought

the school building as an option to bring about affordable housing, and the community was very supportive of renovation because it was the last blighted structure in the neighborhood. To see it brought back to life was a blessing to the community. It was also important to make it affordable because many of the residents were being pushed out of the neighborhood. Classrooms make a good size for an apartment in a renovation. Karen Hunter was in the U.S. Army for 17 years and got hurt; she is now a resident of the renovated building. Her pantry formerly was a classroom supply closet.

##### Rescuing a Former Food Desert

(Motivational) Altius Farms partners with the adjacent community to provide a food co-op and opportunities for other local proprietors to gain attention and business. Altius Farms has helped to transform Denver's RiNo neighborhood by turning a previously vacant lot and longtime food desert into a robust, plentiful, and educated community with ready access to locally grown produce and community education opportunities.

—Rachael Johnson, AIA, Smith Group

##### Small Town Insurance Headquarters Recommits to the Community

(Motivational) Ohio Mutual Insurance developed a strategic plan that was driving success, but they faced increased demand for talent. However, the company struggled to attract applicants, and candidates cited the aging facility among reasons for declining offers of employment. The organization feared that they would be forced to abandon their community and relocate to a nearby metropolis. Creative renovations helped transform the workplace into a collaborative, agile environment with

increased physical benefits for employees and significantly increased the conversion rate of applicants. The project saved the embodied carbon in the existing building and helped renew the organization's commitment to the community.

—Tim Hawk, FAIA, WSA Studio

### **Military Elevates Sustainability Resilience Benchmark Standards**

(Motivational) One of my projects was with the federal government on redeveloping an Air Force base that was damaged from weather. Through creative design solutions, we were able to cut military spending while delivering high-quality projects. Additionally, the design created a healthier, safer, more accessible environment for people in service to live.

—Mark Levine, AIA, Pond

### **Vibrant Main Street Returns**

(Motivational) Draper Street is the historic, century-old main street of Kingsburg, California. One property had the most visibly vacant second floor on Draper Street, and architects worked with the city manager to discuss how to bring this property back to life. After going through 20 versions over the course of nine months, architects developed a remodel that followed the flow of the original walls. The main issues in the city are heat and drought, so the building design included double-hung windows and water efficiency-driven plumbing fixtures. They built lofts on the second story and then shops emerged on the first floor as the community developed. The city manager says the change is so dramatic that no one remembers the 50 years of vacancy now.

(Informational) 57% of existing building stock in the U.S., or over 40 billion square feet, was constructed after World War II, including many outdated buildings with insufficient urban design, poorly performing envelopes and systems, and large floor plates. The demand for vibrant and livable neighborhoods is contributing to urban-scale revitalization.

(Informational) According to Dodge Data and Analytics' World Green Building Trends 2018, retrofitting buildings strengthens the local economy. Compared to new construction, a greater proportion of a retrofit's budget typically goes to labor, creating more jobs for the dollars spent. Among owners, 94% believe that their buildings are more valuable after a green retrofit.

(Informational) According to the Environmental Protection Agency, residential and commercial building operations generate a full fifth of all U.S. greenhouse gas emissions, including 11% of direct emissions and a third of all emissions from electricity.

(Informational) According to the Department of Energy, America's commercial building stock comprises some six million buildings, totaling around 90 billion square feet, almost half of which are more than 40 years old. Over the lifespan of the existing stock, standards of sustainability, particularly energy efficiency, have evolved.

(Informational) In the U.S., approximately 95% of all buildings are more than a decade old. Of all U.S. commercial buildings, 82% were built before 2000, prior to modern versions of building energy codes governing their design and construction.

### Renovate to Educate

(Motivational/Informational) In 2013, Mundo Verde, a public charter school in Washington, D.C., was assigned a shuttered 90-year-old brick building to renovate for its new home. The design team's core mission was to focus on curriculum-integrated sustainability. This award-winning 47,000 square-foot revitalization, including a new 11,000 square-foot annex, exemplifies environmental stewardship through site repair and reduced resource consumption. Environmentally responsible decision making focused on materials, energy, and water. Mundo Verde's retrofit gives a new lease on life to what its lead architect calls a beautiful execution of an original school typology. It also demonstrates that environmental and financial responsibility can be compatible. The renovation achieved LEED Gold certification (in addition to its embodied carbon savings) and the annex achieved LEED Platinum, all for about half the construction cost of comparable regional public schools attaining lower levels of sustainability.

“As the building recommences its useful life as both a place and a subject of learning, I predict that 500 young minds constantly looking for ways it could become even more sustainable are going to make some amazing discoveries.”

—Todd Ray, FAIA, formerly with Studio Twenty Seven Architecture

### Total Carbon Takedown

(Motivational/Informational) DPR Construction's transformation of a two-story urban building into a zero-carbon office cost no more than a standard Class-A tenant improvement. It also became the first office building in San Francisco to achieve

net-zero energy certification with the International Living Future Institute. DPR slashed both types of operating and embodied emissions for a total carbon achievement. Instead of spreading over time, as savings in operating emissions do, embodied emission savings are immediate, which make them especially valuable in the carbon-reduction race. But because they're difficult to quantify, they're often ignored in sustainability planning. To help change that, a group of experts in life cycle assessment (LCA) has used the DPR renovation as a case study. Using LCA software to pull material quantities from the project's digital model and correlate them with environmental metrics, the study evaluates the carbon savings of the decision to renovate rather than build new.

“The ability to repeat this work for similar building stock throughout the country implies the possibility of real progress in meeting the nation's carbon challenge. We can now say to a building owner or client, ‘Look, take your modest, low-performance building and consider this investment. The payoff is completely worth it, and the story is terrific, too.’”

—Eric Ibsen, chief design officer at Forge

### Hospitality Goes Green

(Motivational/Informational) Starwood Capital Group's I Hotel completed its inaugural property in 2015 at a cost of \$200 million, renovating a 1.05 million square-foot, 426-room 1970s behemoth in Miami's South Beach. To combat South Florida's big solar load on its buildings, architects used paving material with a high solar reflectance index to cover 80% of the hotel's roof, and rooftop pools do double duty as an amenity and as a shading device for the roof beneath. Additional improvements

include high-performance glazing, sensor-controlled LED lighting, low-flow plumbing fixtures (which also help save energy on water heating), and low VOC paints, adhesives, sealants, and finishes. In addition, 84% of construction waste was diverted from landfill. Examples of strategies used at South Beach include selecting fabrics that combine natural and recycled materials with durability and equipping each room with a filtered water station to eliminate plastic bottles. As a testament to the success of that encouragement, 40% of the hotel's guests report that their stay has influenced their sustainability practices at home.

“Instead of sitting on Collins Avenue with its arms crossed, the hotel now opens its arms in a gesture that invites the public in. The impact of the renovation on the building's urban context is central to its recycling and restoration story.”

—Kobi Karp, AIA, principal at Kobi Karp Architecture and Interior Design

(Informational) In an October 2019 Pew Research survey, 62% of Americans said that global climate change was affecting their local community a great deal or some. Those who said this were asked which of several possible effects were impacting their area. Most considered long periods of hot weather (79% of those asked) and severe weather patterns such as floods or storms (70%) to be major ways that climate change has affected their local community.

(Informational) In a 2018 Pew Research survey, 59% of Americans said climate change was affecting their local community either a great deal or some. Some 31% of

respondents said the effects of climate change were affecting them personally, while 28% said climate change was affecting their local community but that its effects did not impact them in a personal way.

### Alabama Leads the Way with Sustainable State Park

(Motivational) Gulf Shores State Park in Alabama used sustainability certifications to manage requirements and guide the team to accomplish a project that inspires Alabamians. The project, developed from funds received through the BP oil spill settlement, inherently needed to incorporate sustainability to achieve the state park's mission of caring about nature's recovery from a man-made natural disaster. Resiliency was another goal because of the frequency of storms that hit Alabama's coastline. The project became the pilot for Fortified Enhanced Construction and a world-recognized model of sustainability. The park has served families and tourists for generations, so it was important to restore it to a vision of natural beauty. One visitor said, “The park is our favorite vacation destination—we have been coming together as a large family for over 40 years.”

(Informational) After implementing a green retrofit, 93% of survey participants reported an increase in the ability to attract talent and 81% reported an increase in the ability to retain talent, according to a Deloitte survey in the Economic Impact of High Performance Buildings Project Study by the University of Washington Integrated Design Lab.

### QUOTES

“The greenest building is one that's already built.”  
—Carl Elefante, FAIA, 2018 AIA President

## Conclusion

We hope this appendix prepares you for interactions with clients and civic leaders when discussing the meaningful role architects have in environmental stewardship. It's important for architects to be leaders in their communities, and to seek out opportunities to show their value and unique skillset.

For more examples of architects' contributions in designing solutions, working closely with clients, strengthening society, and transforming communities, refer to The Architect's Voice at [aia.org/messagebook](https://www.aia.org/messagebook).