ASHRAE GLOBAL HEADQUARTERS

TRANSFORMING BUILDINGS FOR A SUSTAINABLE FUTURE

ASHRAE®

CELEBRATING 125 YEARS

ASHRAE'S MISSION

To serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.

ASHRAE'S VISION

A healthy and sustainable built environment for all.

ASHRAE GLOBAL HEADQUARTERS

All around the world, hundreds of thousands of existing buildings need modifications and renovations to make them healthier, more energy efficient and more resilient. ASHRAE is leading the way by providing building standards and valuable design information to guide owners through the steps to re-imagine and create their own innovative design solutions utilizing their existing building stock.

ASHRAE is showcasing sustainability best practices and integrated building solutions through the renovation of our new global headquarters located in metro Atlanta. The renovation project for our new global headquarters embraces the transformation of a 1970's era office building from a dated and inefficient building into a significant demonstration project using the latest HVAC and related technologies, by utilizing deep green building and cutting edge retrofit design. This renovation will become a powerful guide for future projects. Project teams will have an example of how to upgrade, modernize and transform any existing building into a highly successful facility.

We are confident that the new ASHRAE global headquarters will become a destination venue for industry representatives, visiting from around the world, who are looking to experience cutting edge engineering and architectural interventions on their projects. Our headquarters will be an important training center and representative of leading-edge system design. We understand that our very public project will be closely watched by the global building industry. We welcome that responsibility and are ready to share our knowledge and research with others, giving future ASHRAE partners the opportunity to achieve greater accountability for their projects.

KEY PROJECT GOALS

- **Demonstrate** how to transform older existing buildings from dated to high-performance workplace environments
- **Showcase** an affordable, net-zero energy strategy
- **Provide** a building environment that sets new standards for worker productivity and wellness through superior visual acuity, daylight, acoustics, thermal comfort and air quality
- **Showcase** an ASHRAE Building EQ A+ rating
- **Demonstrate** the application of ASHRAE's Advanced Design Guide for Net Zero Office Buildings
- **Build** an economically successful and replicable model of deep green retrofit construction

THE CAMPAIGN FOR ASHRAE'S GLOBAL HEADQUARTERS

Transforming Buildings for a Sustainable Future

ASHRAE is building its next global headquarters, providing members of the building community with the opportunity to participate in one of the industry's most closely-watched and highly publicized projects.

Although new construction of Zero Energy buildings makes a lot of headlines, reuse of existing structures is a basic tenet of sustainability—the energy performance of existing buildings must be addressed to substantially impact the 40% of primary energy consumed by buildings. To that end, ASHRAE has acquired an existing 66,700 ft^2 building, originally built in 1978, on 11 acres in the Technology Park area of Peachtree Corners, GA. The Society has begun the process to renovate the building to Zero Energy standards.

As a demonstration project, the renovation decisions and process will be documented in great detail and made available to the industry with total transparency. The project will be the subject of multiple articles and presentations, and the promotional benefits of being associated with the renovation project will be substantial.

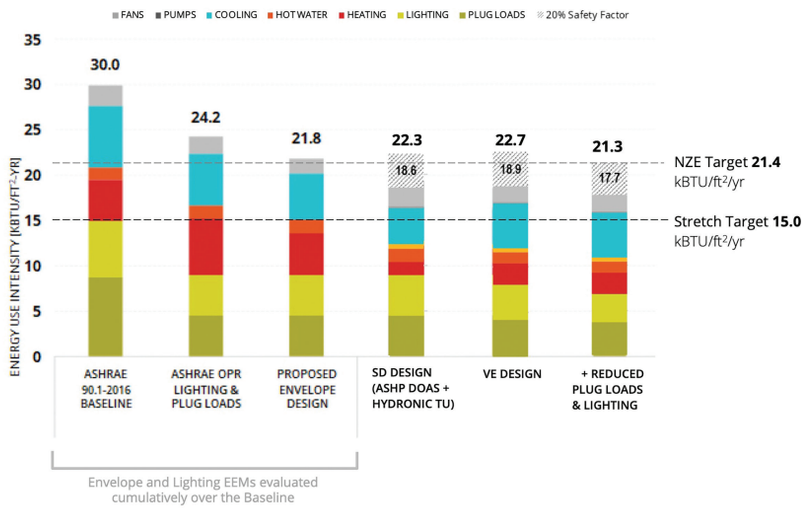
The renovation project budget is approximately $20 million and ASHRAE is seeking partners to invest in its new global headquarters.

"The new ASHRAE headquarters belongs to close to 57,000 members around the world. Together, we have the opportunity to use the Society's global platform to make a strong statement about renovating the existing building stock to superior energy and wellness standards."

– Jeff Littleton, ASHRAE Executive Vice President

Path to NZE Update
Full DD Energy Analysis Update to follow

ANNUAL SITE ENERGY USE



CHANGES TO THE 100% SD DESIGN

- Insulation removed at overhang
- 3" New Roof Insulation in lieu of 4": R-30 assembly
- Existing Atrium to remain
- Skylights removed
- Detailed thermal zoning added to model based on latest floor plan
- Internal gains & diversities updated based on latest floor plan
- HVAC updated to match latest design

TAKEAWAYS

- 50% increase in heating energy
- 25% increase in cooling energy
- Atrium alone accounts for 15% of EUI
- With 20% safety factor, current design is above NZE target

HOW THE BUILDING WILL WORK

The renovated facility will provide a state-of-the-art working environment for over one hundred of ASHRAE's Atlanta-based employees and provide extensive training and meeting space for ASHRAE members and many others.

The retrofitted new headquarters building will embody ASHRAE's long-held values of sustainability. The project is intended to demonstrate the economical renovation of an existing building to an efficient, high-performance, net-zero energy facility.

The building is organized into two wings over three floors and is divided by a dynamic atrium-like central spine. Once renovated, the top floor of the facility will serve primarily as an efficient and incredibly well daylit office environment for ASHRAE staff, featuring wonderful views to the woods and lake on the south side of the property. Rooftop skylights with diffusers will provide ample daylight into work areas.

The middle level is divided into two primary function areas with the east wing serving as a training center for visitors and participating ASHRAE members and the west wing containing further workplace spaces and common amenities. The lowest level will be used for shipping and receiving, mechanical spaces and storage. The site will eventually feature a photovoltaic array that will allow the building to rely on renewable energy to be a net-zero building on a net annualized basis.

Demonstrating World Class Engineering

Any high-performance building starts with solid engineering principles and right-size equipment to reduce energy usage.

Who is Involved?

The project involves a deep cross section of ASHRAE member leadership through its board members and the building committees assigned to oversee the project. Architecture for the project is being designed by a partnership between Houser Walker Architects, a highly respected local Atlanta green design firm, and McLennan Design, a nationally recognized restorative design firm based in Seattle. Engineering for the project is being led by Integral Group out of Atlanta, industry leading engineers for energy efficient, net-zero buildings. The design team also includes Integral Group, Collins Project Management, Skanska and Epsten Group.

ABOUT ASHRAE

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its close to 57,000 members worldwide together focus on building systems, energy efficiency, indoor air quality, refrigeration and sustainability. Through research, standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today.

Working from its headquarters building in northeast Atlanta, ASHRAE has provided – for its membership as well as for the profession as a whole – technical resources, professional development, conference and professional communities. ASHRAE contributes resources to members through its technology portal, ongoing research and technical committees. Its resources for members include an industry bookstore and continuing education offerings through e-learning, instructor-led training, self-directed and group learning opportunities and materials. ASHRAE additionally affords to its members multiple certification programs, ensuring competence in all areas of the industry.

"This is a historic moment for ASHRAE. For some 125 years, ASHRAE has served as a catalyst for the advancement of building technologies. It has driven the creation and development of entire industries that support the built environment. The new ASHRAE global headquarters provides an opportunity for companies and individuals to acknowledge that contribution and give back – to support a Society that has labored selflessly for the betterment of the built environment. Together we can do something very, very special!"

– Darryl K. Boyce, P.Eng., 2019-20 ASHRAE President

"ASHRAE is sustainability. It is important that we make responsible decisions for the generations to come."

– Jason Alphonso, ASHRAE member

"As the leading society in thermal systems and comfort, ASHRAE plays a pivotal role in global climate change and sustainability."

– Filza H. Walters, ASHRAE member

SUSTAINABILITY

ASHRAE LEADS THE CHARGE

A sustainable future for the earth may well be in our hands.

By the year 2040, the world population will increase by another 1.8 billion people. By that same year, there will be a 48 percent increase in the consumption of marketed energy. By 2050, 70% of the world population will live in urban areas. Airborne threats such as carbon emissions, greenhouse gases, infectious airborne diseases and flammable refrigerants can affect the health of our ever growing population.

ASHRAE is committed to creating solutions to ensure clean air, sustainability, energy efficiency and indoor air quality. ASHRAE and its members are the leaders in a critical industry, and at ASHRAE headquarters we are hard at work making the earth a better, healthier place to live. From supporting research to producing practical design tools, ASHRAE devotes its energies to the creation of a healthy and sustainable built environment for all.

ASHRAE's commitment to furthering energy efficiency guidance in achieving net zero energy buildings makes a possibility a reality. ASHRAE's new global headquarters will showcase the latest equipment, systems and technology for visitors to see sustainability in action.

ASHRAE's new global headquarters will be the hub for the development of building solutions for a healthier world. Please consider your participation in making sustainability a reality.

NAMING OPPORTUNITIES

While showcasing individual systems and products can go a long way in bringing attention to a brand, the exposure that comes from securing naming rights is unmatched. ASHRAE's new global headquarters will have numerous opportunities for naming, such as:

- Full Facility (Individual Only)
- East Wing
- West Wing
- Atrium
- Deck
- Entry PV Arcade
- Training and Conference Rooms
- North Lobby
- Lakeside Lobby

Updated available naming opportunities will be provided on request.

Systems Donations

The feasibility of high-performance building retrofits typically depends on systems solutions that are fully integrated and address several project goals. While there are myriad systems approaches that can reduce a building's Energy Use Index (EUI), only a handful can do so while maintaining a positive project proforma.

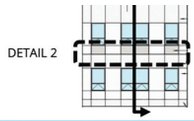
The ASHRAE headquarters renovation strives to become a model for market-based system solutions that work to lower the EUI of an existing building while also maintaining a focus on occupant comfort.

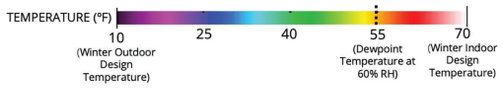
Examples of Systems that could be showcased are:

- PhotovoltaicS—Roof Mounted, Canopies, Carports
- Radiant Ceiling Panels
- Water-to-Water Heat Pump Units
- Duct and Pipe Systems
- Pumps, Heat Exchangers and Hydronic Specialties
- DDC Control Systems
- Security and Fire Alarm Systems
- Dedicated Outdoor Air Systems
- Dashboard/Energy Management Systems
- Lighting Control Systems
- LED Lighting Fixtures
- Power
- Water-Reducing Plumbing Fixtures
- Hot Water Heaters
- Electric Car Charging Stations

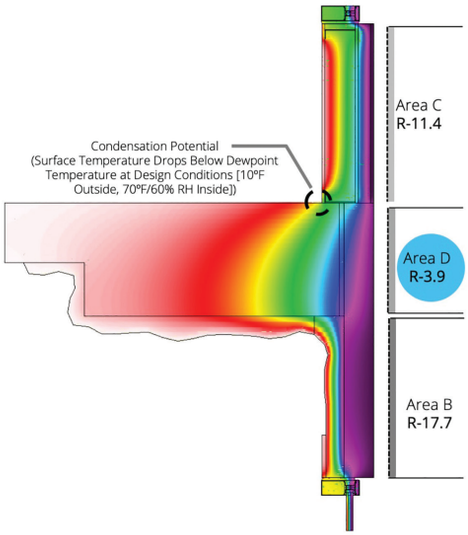
THERM Analysis: Option A, **Detail 2**

Analysis Details

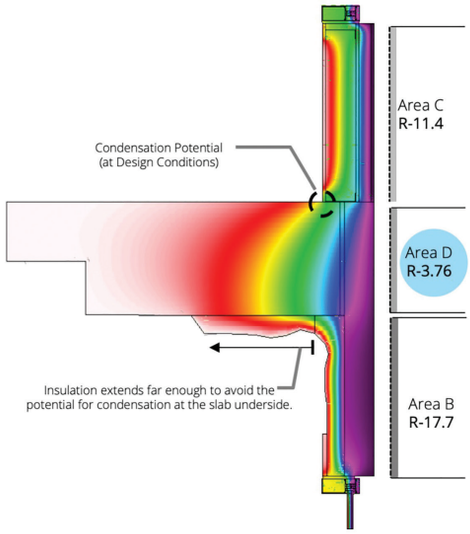




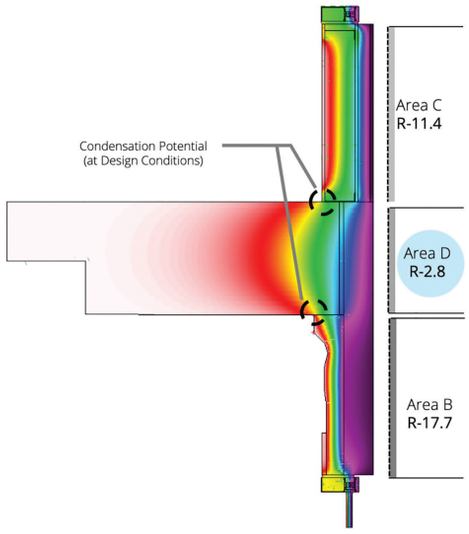
Option 1: Proposed Insulated Slab



Option 2: Partially Insulated Slab Underside



Option 3: Uninsulated Slab Underside



EXTERIOR ENVELOPE DONATIONS

The success of any high-performance building renovation depends on the effectiveness of the exterior envelope in providing robust R-values, minimized thermal bridging and reduced air infiltration while at the same time providing natural daylighting and potentially natural ventilation.

To keep renovation costs in-check, the exterior façade system needs to be simple, durable and quick to install, while at the same time achieving the aesthetic requirements of the owner or developer. There are very few products on the market that check all these boxes, and as high-performance building renovations become the standard, developers, contractors and architects will be seeking best-of-class products that can deliver.

The ASHRAE global headquarters project presents a prime opportunity for manufacturers and product vendors to showcase and demonstrate their products in a first-of- its-kind built example.

Examples of Exterior Envelope products that could be showcased include:

- Thermally Broken Storefront Systems
- Insulated Glazing Units
- Insulated Metal Panel Façade Systems
- Skylights
- Operable Windows

INTERIOR DONATIONS

The modern workplace depends on heightened occupant comfort in terms of acoustics, lighting, air quality and the psychological needs addressed by form and aesthetics.

Examples of Interior Envelope products that could be showcased include:

- Carpet
- Tile
- Ceiling Systems
- Interior Partitions
- Wall Finishes
- Workstations
- Furniture
- Appliances

"ASHRAE's role in creating technical standards and guidance is critically important for all aspects of the HVAC&R industry. That technical expertise reflects the wisdom and experience of countless volunteers. Those individuals and companies that support ASHRAE enable the Society to continue to harness industry wisdom and accelerate our transformation to a more sustainable built environment."

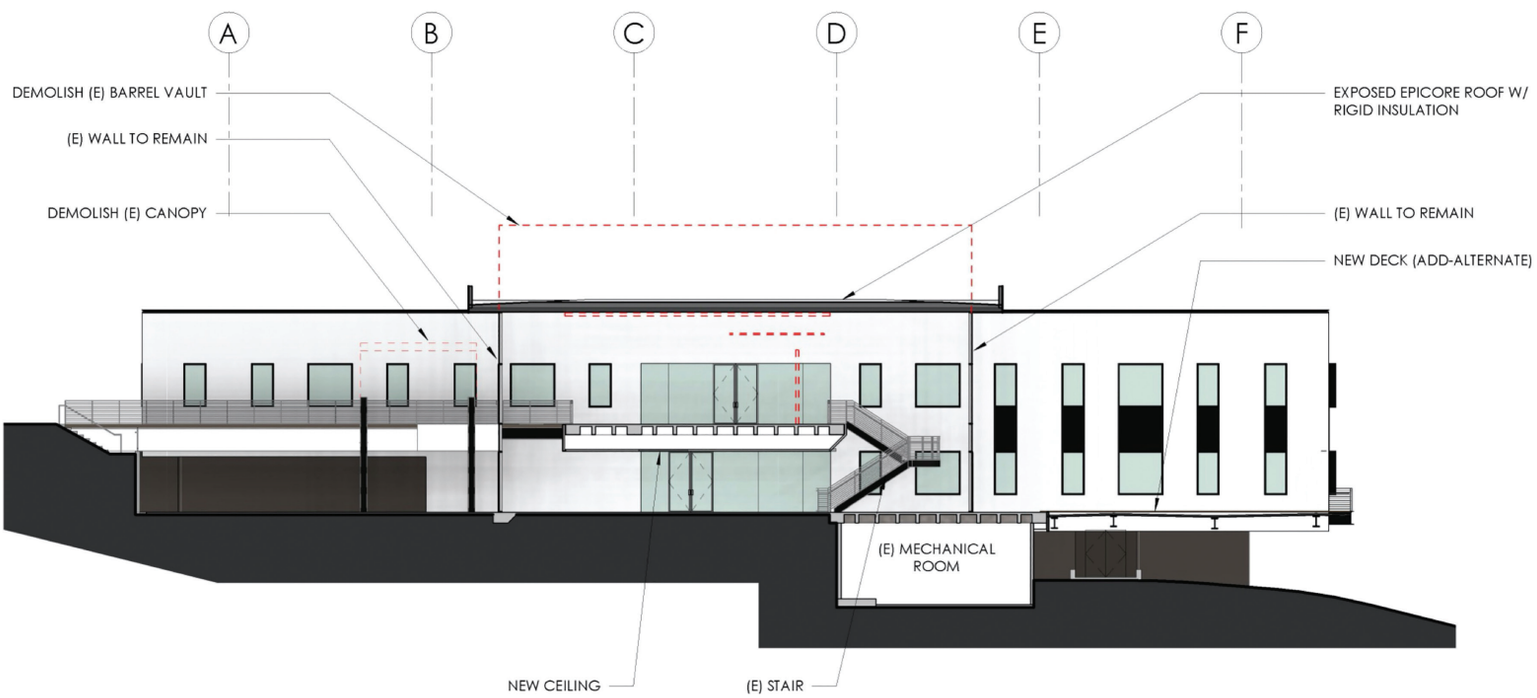
–Ginger Scoggins, P.E., ASHRAE Building Ad Hoc Committee Chair

OPPORTUNITIES FOR CORPORATE INVOLVEMENT

ASHRAE's new global headquarters building project provides our generous corporate supporters with high-visibility opportunities for recognition, as well as other benefits. These benefits include prominent building displays, donor wall recognition, naming rights, features in national and international ASHRAE publications and case studies, web presence, social media presence and a special commemorative publication about the project. Special tours, events and a public ribbon cutting ceremony will also allow for person-to-person contact for donors with the public and our vast array of members.

If your corporation would like to consider becoming a part of ASHRAE's new HVAC&R showcase and demonstration project, or if you would simply like more information, please contact Jeff Littleton, Executive Vice President, ASHRAE, 678.539.1100, JLittleton@ashrae.org or Kim Mitchell, Chief Development Officer, 678.539.1103, KMitchell@ashrae.org. Together we can create an exciting and replicable model of what the next-generation workspace will be, as well as serve ASHRAE members and our industry in the best ways possible for years to come.

Lobby Section



Members of the ASHRAE Building Ad Hoc Committee

Ginger Scoggins, P.E., LEED-AP
Committee Chair

Darryl K. Boyce, P.Eng.
2019-20 ASHRAE President

Kent Peterson, P.E.
Presidential Member

Donald Brandt

Michael Cooper, P.E.

Blake Ellis, P.E.

Technical Advisory Subcommittee Members

Tim J. McGinn, P.E., Subcommittee Chair

Jeff Clarke

Chad E. Moore, P.E.

Daniel H Nall

Shanti D. Pless

Paul A. Torcellini

Dennis J. Wessel, P.E.

Michael R. Vaughn, P.E., Staff Liaison

"ASHRAE is driven by dedicated individual volunteers. Corporate support of those volunteers is critically important. High-level corporate support and endorsement of the new Society headquarters provides an opportunity to project leadership across the global HVAC&R industry."

– Jeff Littleton, ASHRAE Executive Vice President

ASHRAE'S MISSION

To serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration and their allied fields.

ASHRAE'S VISION

A healthy and sustainable built environment for all.

www.ashrae.org/newhq