ASHB
Association for Smarter Homes & Buildings

Smart Building Council (SBC)

Webinar/Meeting will commence 12:05pm ET

Wednesday, November 4, 2026 | 12 NOON – 1:30 PM (ET)

SBC Chair: Bob Allan (NAVCO Inc.)

Vice-Chair: Harsha Chandrashekar (Honeywell International Inc.)

Vice-Chair: Robert Lane (Robert H. Lane and Associates Inc.)

Vice-Chair: Chris Larry (exp US Services Inc.)



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Agenda
Marta Klopotowska (ASHB)

1. Call to Order, Welcome, Introductions, About the SBC
2. Administrative
3. Research Update
4. Keynote: Foundation First: How Autonomous Commissioning Unlocks the Full Potential of Smart Building Technologies - Saheel Chandrani (PingCx)
5. ASHB Podcast
6. ASHB Whitepapers & Research Library
7. ASHB Journal
8. New Business
9. Announcements
10. Adjournment

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1. Call to Order, Welcome, Introductions, About the SBC
Robert Lane (Robert H. Lane & Associates Inc.)



SBC Chair
Bob Allan
Senior Vice President of Sales, East Region
NAVCO, Inc.



SBC Vice-Chair
Harsha Chandrashekar
Product Approvals & Regulatory Leader
Honeywell International



SBC Vice-Chair
Robert Lane
President & Managing Partner, Robert H. Lane and Associates Inc.



SBC Vice-Chair
Chris Larry
Director of Energy Engineering
Exp US Services Inc.

The ASHB Smart Building Council works to strengthen the large building automation industry through innovative technology-driven research projects. The Council was established in 2001 by ASHB to specifically review opportunities, take strategic action, and monitor initiatives that relate to integrated systems and automation in the large building sector. The Council's projects promote the next generation of smart building technologies and incorporate a holistic approach that optimizes building performance and savings. www.ashb.com/sbc

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2. Administrative
Robert Lane (Robert H. Lane & Associates Inc.)



Approval of SBC Minutes
May 27, 2026

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3. Research Update
Greg Walker (ASHB)



2026 SBC Landmark Research
Smart Building Trends & Technology Adoption

Funders

Contact admin@ashb.com to obtain research findings and to join as a funder.

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3. Research Update
Greg Walker (ASHB)

Annual BACS
Market Sizing North America



ABB
Automated Logic
Carrier
BELIMO
DELTA
DISTECH CONTROLS
Honeywell
Johnson Controls
Schneider Electric
SIEMENS
TRANE

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3. Research Update
Greg Walker (ASHB)



Annual BACS Market Sizing Europe

ABB
BECKHOFF
BELIMO
Carrier
DELTA
Delta Intelligent Building Technologies
DEOS
DISTECH CONTROLS
Honeywell
Johnson Controls
Kieback&Peter
MBS
PRIVA
SAUTER
Schneider Electric
SIEMENS
WAGO

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4. Panel Discussion
Harsha Chandrashekar (Honeywell International, Inc.)

Keynote Speaker

Foundation First: How Autonomous Commissioning Unlocks the Full Potential of Smart Building Technologies

Saheel Chandrani, Co-Founder, PingCx

PingCx



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ASHB SMART BUILDING COUNCIL · KEYNOTE · NOVEMBER 4, 2026

Foundation First

How autonomous commissioning unlocks the full potential of smart building technologies

Saheel Chandrani

Co-Founder, PingCx · Chief Experience Officer, Facility Grid

What we'll cover

Three parts: the combined company, the technology foundation, and a case study with its results

01 **PingCx is now part of Facility Grid**

The combined company, one Lifecycle Commissioning® platform, and the vision going forward

02 **Foundation first**

The technology foundation: why verified building performance is a prerequisite for smart building deployments

03 **Case study: a 46-story, 1M sq ft Manhattan office tower**

Five days, 3,143 automated functional tests, and the resulting impact on compliance, performance and portfolio strategy

KEY DISCUSSION TOPICS

1. Why is autonomous commissioning the foundation for a successful smart building deployment?
2. How can owners use commissioning to drive a portfolio-wide modernization strategy?
3. What does verified performance do for technology integration, operational efficiency and long-term ROI?
4. How does connecting commissioning across the lifecycle, construction through operations to sustainability reporting, future-proof smart building initiatives?

01

PingCx is now part of Facility Grid

The combined company, one Lifecycle Commissioning® platform, and the vision going forward

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PingCx joined Facility Grid in 2026

Same engine, same team, now the Validate pillar of a three-product Lifecycle Commissioning® portfolio

THEN · 2024

PingCx

A standalone autonomous commissioning platform for building automation systems, built for owners, Cx providers and controls contractors.

NOW · 2026

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PingCx is the engine behind FG Validate, one of three products that follow a building from construction through operations to sustainability reporting.

FG CONSTRUCT

Build with confidence.

- QA / QC and pre-verification testing
- Standardized Cx workflows across trades
- Timeline monitoring and close-out tracker
- Handover package

FG VALIDATE

Verify with evidence.

- Powered by PingCx: autonomous functional testing of any BACnet BAS
- 750+ pre-written tests, custom libraries
- Quality scores, owner dashboards, work orders
- Azure cloud or on-prem; SOC 2 certified

FG SUSTAIN

Perform with precision.

- ASHRAE 211 Level 1 / 2 / 3 audits at scale
- Carbon emissions and compliance reporting
- A verified record that stays with the building
- Pathway from findings to funded measures

2024	1,600+	~65M sq ft	750+	SOC 2
PingCx founded	projects	under Lifecycle Cx	pre-written tests	certified platform

One platform across the building lifecycle

Commissioning connected from construction through operations to sustainability reporting, with one record that stays with the building

DESIGN & CONSTRUCTION

FG Construct

Commission during construction

- QA / QC and pre-verification testing
- Standardized Cx workflows across trades
- Close-out tracker and handover package
- Documented turnover evidence for the owner

OPERATIONS

FG Validate, powered by PingCx

Verify performance in operations

- Autonomous functional testing of 100% of connected equipment
- Retro-Cx, Re-Cx and ongoing Cx on a schedule
- Quality scores, owner dashboards, work orders
- Unified points list for subsequent technology deployments

REPORTING & COMPLIANCE

FG Sustain

Report and demonstrate compliance

- ASHRAE 211 Level 1 / 2 / 3 audits at scale
- Carbon emissions and compliance reporting: NYC LL97, BEPS, benchmarking
- Findings linked to test evidence rather than assumptions
- Pathway from findings to funded measures

The record stays with the building: turnover test evidence becomes the operating baseline, and seasonal results provide the basis for audits and carbon reporting.

02

Foundation first

Why smart building technology depends on the performance of the building systems beneath it, and the role of autonomous commissioning

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Smart building technologies share a common foundation

When the sequences, sensors and schedules beneath them are unverified, each layer above inherits the deficiency

SMART BUILDING TECHNOLOGY	Analytics and FDD · digital twins · AI agents · energy management · tenant experience · grid and demand response
DATA LAYER	Points, naming conventions, trends, integrations: Haystack, Brick, BACnet objects, APIs
BUILDING AUTOMATION	Sequences of operation, setpoints, resets, schedules, interlocks, overrides
PHYSICAL SYSTEMS	Sensors, actuators, dampers, valves, VFDs, plant and terminal equipment

Autonomous commissioning verifies the two lower layers against design intent and standardizes the data layer in the process.

CONSEQUENCES OF AN UNVERIFIED FOUNDATION

- Analytics platforms learn a skewed building as the baseline condition and fails to flag existing issues
- Digital twins model sequences that are not running as designed
- Optimization and AI routines act on inconsistent sensor data
- Operators apply manual overrides, and the new platform reports on the overridden state
- Modernization budgets address symptoms while root causes remain in the control sequences

Why the foundation is often unverified

Manual recommissioning depends on skilled labor, so it is performed infrequently and on a sample of equipment, with results extrapolated to the rest of the building

Labor-heavy

Testing each system, sequence and program by hand takes significant consultant, engineering and technician hours.

Resource-constrained

Skilled commissioning technicians are in short supply, which caps how often a large building can be tested at all.

Operational impact

Manual testing in an occupied building must be scheduled around tenants and ongoing operations, and is often deferred.

MANUAL SAMPLING

10–20%

of equipment tested. Results are extrapolated to the rest of the building.

AUTONOMOUS

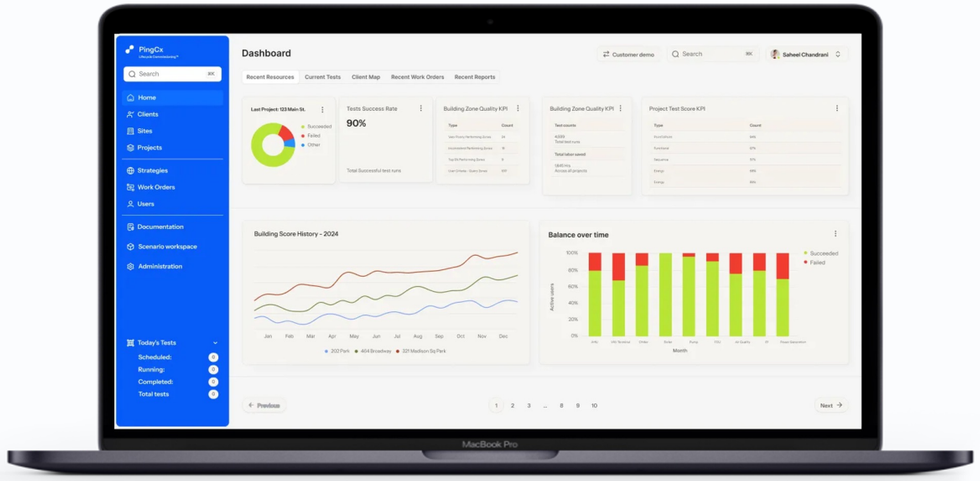
100%

of connected equipment tested on every run, with the same test logic, during normal operations.

Autonomous commissioning, defined

Software that operates on the BAS network as a user and performs functional tests the way a commissioning engineer would, on a repeatable schedule

1. **On the network as a user**
   An administrative user on the BAS, performing the tasks a technician performs at the workstation, automatically and repeatably.
2. **Import**
   BAS and HVAC databases and documentation are imported; no gateways, no new sensors, no renaming.
3. **Homogenize and plan**
   A parser and tagging engine normalize the points; test scenarios are selected, customized to the sequences and scheduled.
4. **Execute and analyze**
   Commands are sent, responses monitored and compared to design documents, specs and sequences of operation; every override is released.
5. **Report**
   Role-based results for the engineer, the contractor and the owner, with the point, the step, the value and a screenshot behind every finding.



Any BACnet BAS, native Tridium Niagara support

Zero hardware impact, no naming-convention dependency

SOC 2 certified; Azure cloud, hybrid or fully on-prem

Test and restore: equipment left as it was found

Commissioning is a lifecycle, not an event

One engine across four commissioning modes, grounded in the standards the industry already trusts

1 · INITIAL CX

New construction and major renovations

FG Construct readiness workflows plus automated functional testing at turnover; a handover package the owner can trust.

2 · RETRO-CX

First-time commissioning of existing buildings

Every sequence tested in days; failed-only punch lists and quality scores become the RCx report and the work orders.

3 · RE-CX

Periodic re-commissioning, each heating and cooling season

The same scenarios re-run on schedule and compared against the original baseline to prove savings persist.

4 · ONGOING CX

Continuous review and optimization of performance

Scheduled test-and-restore across the portfolio; verified corrections, and drift identified before it appears in utility data.

ASHRAE Guideline 0-2019 commissioning process, and **ASHRAE Standard 202** functional testing (Section 5.4.1)

Automated point mapping with **Project Haystack**, **Brick** or any site naming convention

BCxA best practices; test sequences follow published standards such as ASHRAE 90.1 economizer verification

03

Case study: a 46-story, 1M sq ft office tower in Manhattan

Five working days, 3,143 automated functional tests, and the outcomes for the owner

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The building

A well-managed Class A tower by conventional measures: LEED-certified, ENERGY STAR 87, with a history of audits and retro-commissioning. The chief engineer nevertheless suspected that issues remained undetected.



46
stories, Midtown Manhattan

990k
sq ft, Class A office

19k
BACnet points

87
ENERGY STAR score before the project

STARTING CONDITIONS

- Niagara front end over JCI Metasys and FX controllers, plus several tenant BAS implementations; limited standardization in naming or programming
- Chief engineer new to the building, reporting that systems were not operating properly and that staff relied on manual overrides
- Operators making 15+ manual overrides a day to maintain comfort
- Incumbent controls contractor at capacity with service work

PROJECT GOALS

- Baseline analysis of how the systems were operating
- A thorough seasonal recommissioning of the BAS
- A unified points list across base-building and tenant systems, ready for future technology deployments

Five days from connection to findings

Three phases with the chief engineer in the loop, then one unattended run across every connected system, during normal operations

PHASE 1 · 1 DAY

Integrate and unify

Connected to the Niagara front end, imported the BAS databases, unified point naming across base-building and tenant systems, secure remote connectivity.

PHASE 2 · 2 DAYS

Build the test plan

Analyzed equipment types, selected scenarios per system, customized sequences to the building's specifications, scheduled the run with the chief engineer.

PHASE 3 · 2 DAYS

Run and report

Executed the automated functional tests, monitored responses in real time, generated the analysis and the findings for the service provider.

3,143
automated functional tests, 100% of connected equipment

71%
passed; 3% partial, 26% failed

2 d 4 h
of tool runtime, unattended

30+ days
of consultant, technician and Cx labor required for the same scope performed manually



Covered: 3 chillers, 5 CHW pumps, 2 CW pumps, 3 cooling towers, 4 boilers, 8 air handlers with VFDs, ~600 VAVs and powered induction units, sumps and meters.

Findings from 3,143 tests in an ENERGY STAR 87 building

Twelve recommendations in three categories, all within controls and sensor scope, requiring minimal capital

Energy

Automated control limitations

- Air handlers locked out of economizer mode by rigid outside-air temperature thresholds
- Supply-air reset limited by hard-coded 55 °F / 95 °F setpoints
- Winter warm-up sequences engaging unnecessarily, with no reset
- Floor dampers manually overridden due to unstable automatic control

Comfort

Sensor and measurement issues

- Discrepancies of more than 20 °F between outside-air temperature sensors
- Return and mixed-air sensors not representative of the zones they serve
- VAV boxes remaining in purge mode until manually reset
- CFM readings inconsistent with load, causing dampers to control to incorrect targets

Safety and scheduling

Devices and schedules

- A freeze-stat safety device found bypassed
- Powered induction units running continuously instead of following floor occupancy schedules
- Control methodology varying floor to floor, producing inconsistent VAV setpoint behavior
- Limited scheduling coordination between systems

Verified evidence, available to every stakeholder

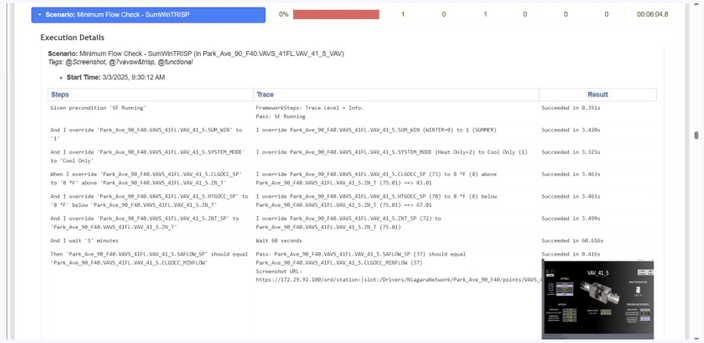
Each finding records the point name as it exists in the BAS, the override applied, the value read back, the expected range, the timestamp and a screenshot

FEATURE SUMMARY, AIR HANDLERS BY FLOOR

Feature Summary

Test	Success Rate	Tests	Succeeded	Failed	Pending	Ignored	Skipped	Duration
Feature: Floor9.S1_R5_AC Units_Averaging~	100%	1	1	0	0	0	0	00:02:14.3
Feature: Floor9.S1_R5_AC Units_OAT~	50%	2	1	0	1	0	0	00:04:35.3
Feature: Floor9.S1_R5_AC Units~	80%	39	16	1	3	0	19	00:03:20.0
Feature: Floor9.S2_R6_AC Units_Averaging~	100%	1	1	0	0	0	0	00:00:54.9
Feature: Floor9.S2_R6_AC Units_OAT~	50%	2	1	1	0	0	0	00:01:15.5
Feature: Floor9.S2_R6_AC Units~	68%	34	23	7	4	0	0	01:42:07.8
Feature: Floor9.S3_AC Units_OAT~	100%	2	2	0	0	0	0	00:01:13.9
Feature: Floor9.S3_AC Units~	62%	21	13	5	3	0	0	00:14:32.0

DETAILED TEST RESULT, VAV MINIMUM-FLOW CHECK



Chief engineer

A complete view of system capabilities and limitations, without the need to re-verify findings manually

Service contractor

812 failed tests organized as a work list by trade, ready for pricing

Property management

Clear priorities for system improvements, ranked by impact and effort

Owner

A performance baseline for the portfolio, and a standardized dataset for subsequent technology deployments

Impact: compliance, performance and return

Six monetized findings, all controls changes and sensor work, and a three-month payback on the engagement

$234k / yr
potential annual energy savings identified (12,000 MMBtu), per U.S. DOE Better Buildings

1,949 t
of CO_2 per year across the six calculated findings, relevant to LL97

$150k
in NYC Local Law 87 penalties avoided

3 months
payback on the engagement

ESTIMATED ANNUAL ENERGY IMPACT, SIX CALCULATED FINDINGS

Finding	$ / yr	t CO_2 / yr
PIUs running without setback	$84,450	638.8
Outside-air temperature sensor discrepancies	$60,000	432.6
Economizer lockout below 45 °F	$50,640	592.3
Hard-coded supply-air setpoints	$18,600	109.9
AC units hard-coded into economizer mode	$11,826	138.4
VAV purge mode without reset	$9,358	37.3
Total, six calculated findings	$234,874	1,949.3

The principal finding: a building with an ENERGY STAR score of 87 and a history of audits still had untested sequences with undetected deficiencies.

From pilot to portfolio

The owner’s subsequent steps, and why the second building required less setup than the first

U.S. DOE Better Buildings 2026 Better Project Award

Recognized at the Better Buildings & Better Plants Summit for impact that can be replicated across other buildings.

Portfolio-wide rollout

The owner’s 2025 sustainability report states that the platform is being expanded across its office portfolio: 19.2M sq ft, 26 New York properties.

BUILDING TWO: THE SAME METHOD, REPEATED

26 floors, 1.15M sq ft, 19,832 points, Niagara over JCI FX with tenant systems. Seasonal recommissioning, repeated each heating and cooling season.

2,719
automated tests, 100% of connected equipment

~1 day
of tool runtime, unattended

15+ days
of field labor avoided

Winter 2026 owner’s report: 86% passing across applicable tests, $130–158K / yr in savings opportunity, and $32–40K / yr of LL97 penalty exposure avoided, each figure with its assumptions and confidence stated.

Setup effort decreases substantially after the first building: the points list, scenarios and schedule already exist, so subsequent buildings begin at the testing phase.

Summary

Foundation first, carried across the building lifecycle: Construct, Validate, Sustain

DESIGN & CONSTRUCTION

FG Construct

Commission during construction

Standardized Cx workflows and pre-verification testing deliver a documented handover; the turnover evidence starts the building's verified record.

Roadmap: turnover evidence becomes the operations baseline.

OPERATIONS

FG Validate, powered by PingCx

Verify the foundation first

Test 100% of connected equipment through the existing BAS in days, not a capital program; every later deployment builds on the tested points list.

Case study: 1M sq ft tested in five days; now extending to 19.2M sq ft.

REPORTING & COMPLIANCE

FG Sustain

Keep it verified and demonstrate it

Seasonal Re-Cx re-runs the scenarios against the baseline so savings persist; audits and LL97 / BEPS reporting rest on test evidence, not assumptions.

Case study: $150K LL87 penalty avoided; 1,949 t CO_2 / yr relevant to LL97.

One verified record stays with the building, and every technology above the BAS inherits that foundation.

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Thank you

Thank you to the ASHB Smart Building Council for hosting. Questions and discussion are welcome.

Saheel Chandrani

Co-Founder, PingCx · Chief Experience Officer, Facility Grid

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5. Smarter Homes & Buildings Podcast
Chris Larry (EXP)



ashb.com/podcast

Join industry experts and leaders from around the globe as they discuss everything smart home and intelligent buildings.

Apple Podcasts

Spotify

ASHB is looking for guests and hosts for future pre-recorded episodes. Contact admin@ashb.com for more information.

Recent Recordings:

- From Invisible to Actionable: Unlocking Real-Time Energy Insights in Buildings
- Seeing the Unseen: How Water Visibility Is Changing Facility Management
- Building Cybersecurity, Cybersecurity 101 - Tools and Methods

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6. ASHB Whitepapers
Ken Wacks (Ken Wacks Associates)

ASHB
Research Program

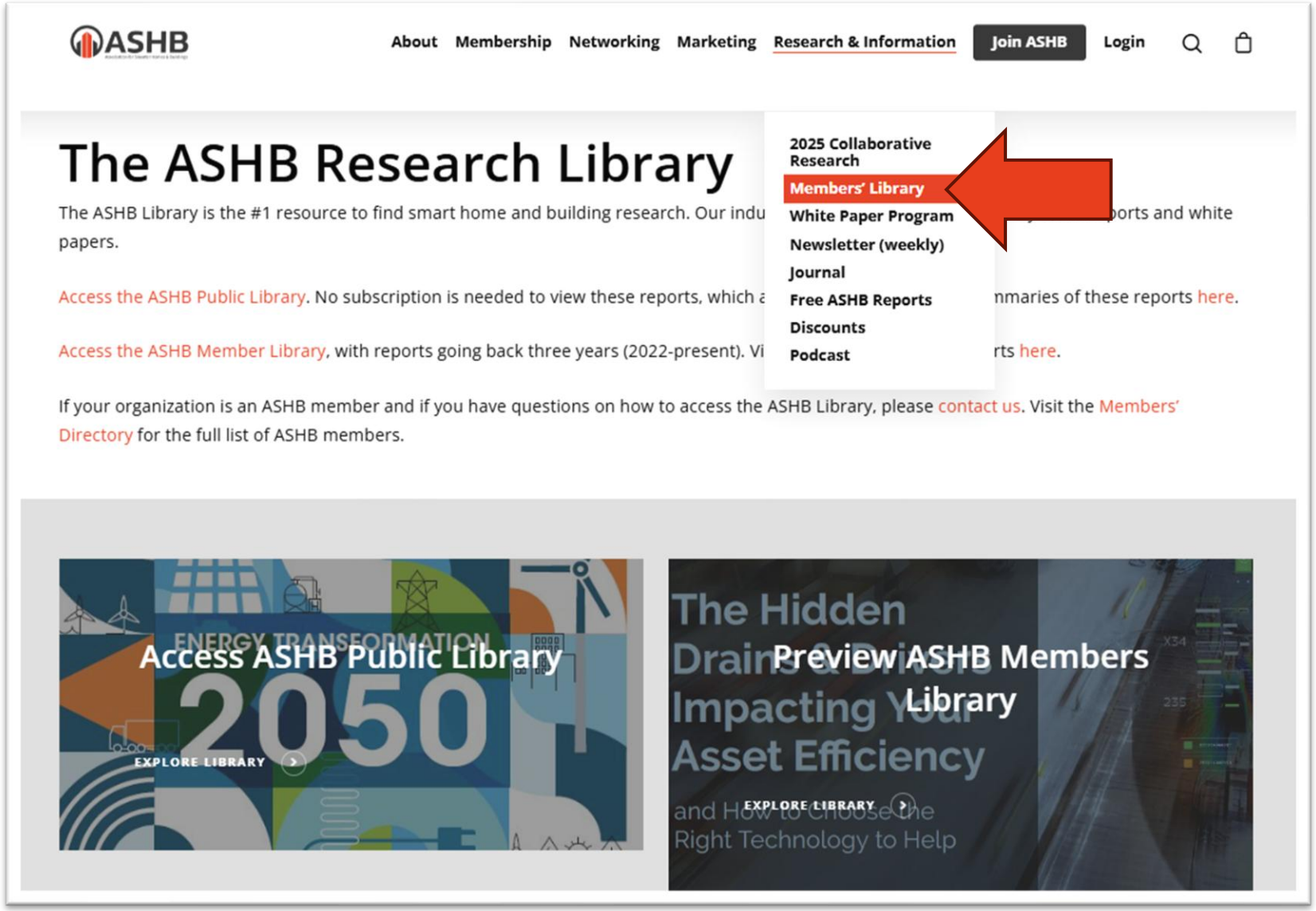
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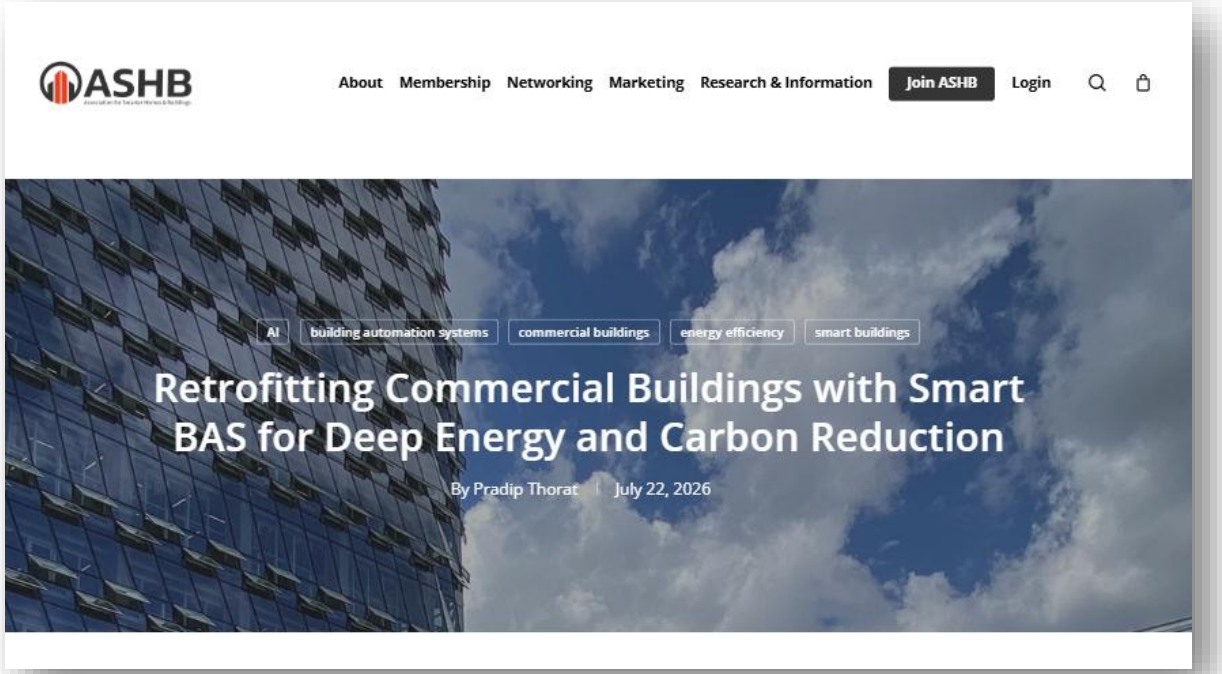
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6. ASHB Research Library
Ken Wacks (Ken Wacks Associates)



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7. ASHB Journal
Ken Wacks (Ken Wacks Associates)



The ASHB Journal aims to educate and inform the ASHB membership and industry at large on emerging research, issues, challenges, and opportunities in the smart home and building sectors.

New articles are posted to the ASHB website, included in the weekly NewsBrief, and circulated on Twitter and LinkedIn.

Send proposals to admin@ashb.com

Recent posts:

- **Retrofitting Commercial Buildings with Smart BAS for Deep Energy and Carbon Reduction**
- **Ken Wacks' Perspectives: CES 2026: From AI and flying machines to typewriters**
- **From Passive Monitoring to Energy Intelligence: Controlling the Invisible Drain in Commercial Buildings**

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8. New Business
Robert Lane (Robert H. Lane & Associates Inc.)

New SBC Business?



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9. Announcements
Chris Larry (EXP)

IFMA World Workplace
November 18-20 | Anaheim, CA

The Buildings Show
December 2-4 | Toronto, ON

Light + Intelligent Building
January 12-14 | Dubai, UAE

AHR
January 25-27 | Chicago, IL

BICSI Winter Conference & Expo
February 14-18 | Orlando, FL

DTECH
March 1-4 | Atlanta, GA



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10. Adjournment
Robert Lane (Robert H. Lane & Associates Inc.)

Next SBC Meeting: February 2027

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