



**MINUTES**

**BOARD OF DIRECTORS MEETING**

**VIRTUAL ANNUAL MEETING**

**Tuesday, June 23, 2020**

**Approved by the Board of Directors August 10, 2020.**

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Tuesday, June 23, 2020

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**PRINCIPAL APPROVED MOTIONS**

Board of Directors Meeting

Tuesday, June 23, 2020

No. - Pg.	Motion
1 - 2	That the minutes from the following Board of Directors meetings be approved as a consent agenda: February 2, 2020 February 5, 2020 March 30, 2020 April 14, 2020 May 5, 2020
2 - 3	That the Board of Directors approve the Public Policy Priorities for Society year 2020-21 as shown in ATTACHMENT A.
3 - 3	That the Board of Directors adopt a statement reaffirming its commitment to ASHRAE’s values on diversity and inclusiveness that is in alignment with AASA’s statement.
4 - 4	<p>That ROB Section 2.416.002.1 and 2.416.003.1 regarding Planning Committee Membership and General Requirements be revised as follows:</p> <p align="center"><b>2.416 PLANNING COMMITTEE</b></p> <p><b>2.416.001 SCOPE AND PURPOSE</b> (09-06-21-12C) This committee shall perform ASHRAE's long range and strategic plan activities on a continuing basis.</p> <p><b>2.416.002 MEMBERSHIP</b></p> <p><u>2.416.002.1 Composition</u> (02-01-13-19/04-06-27-08/05-06-26-16/09-06-21-13/12-06-24-12) The members of this committee are as follows:</p> <p>A. Between nine (9) and twelve (12) voting members, including a chair and vice chair.</p> <p style="padding-left: 40px;">a. <u>During the three-year strategic planning cycle, two-years for strategic plan development and one year following the launching the strategic plan, it is recommended that the membership of Planning be at the maximum allowed.</u></p> <p style="padding-left: 40px;">b. <u>During the two-year “gap” of a five-year strategic plan duration, it is recommended that the membership of Planning be at the minimum allowed.</u></p> <p>B. In addition to the chair and vice chair, voting members shall include</p> <ol style="list-style-type: none"> <li>1. one Director-at-Large,</li> <li>2. one Director and Regional Chair,</li> <li>3. one member who is serving on the YEA Committee at the time of appointment, and</li> <li>4. two members in good standing who have not served on the Board of Directors,</li> <li>5. up to five (5) additional members of the Society who are serving or have served as Board members</li> </ol> <p>C. Non-voting members include the Executive Vice President and one Staff Director.</p> <p><u>2.416.002.2 Qualifications</u></p> <p>A. All voting members except the member who represents YEA must hold the grade of Member or higher in the Society.</p> <p>B. All councils should be represented on the voting membership of the committee.</p> <p><u>2.416.002.3 Term of Service</u> (85-06-26-11/86-06-25-09/94-06-26-04)</p>

	<p>A. The term of service for voting members is intended to be three (3) years, subject to ROB 3.300 <i>Election and Appointment Procedures</i>.</p> <p>B. The term of service of the Vice President shall be limited by his or her term in office.</p> <p><b>2.416.003 OPERATION</b></p> <p>2.416.003.1 General Requirements (09-06-21-12C)</p> <p>A. The purpose of this committee is to assist the Board of Directors and the organization to think strategically in planning for the future. These activities include determining methods for soliciting creative ideas from the membership, assessing capabilities, making strategic assessments, formulating strategies and recommending new initiatives to the Board of Directors to adopt as strategic goals on an ongoing basis.</p> <p>B. This committee shall monitor, on a continuing basis, councils' and committees' progress in achieving the Strategic Plan goals. The committee shall provide a report of findings and recommendations at the Winter Meeting of the Society.</p> <p style="padding-left: 40px;"><u>1. The chair of Planning shall appoint an Implementation Subcommittee to assist and guide the Councils in implementing the Strategic Plan</u></p> <p style="padding-left: 40px;"><u>2. The chair of Planning shall appoint a Monitoring Subcommittee to monitor and oversee the Council's work.</u></p> <p>C. This committee shall, on a continuing basis, review all facets of Society operation and make recommendations for changes and revisions.</p> <p>2.416.003.2 Meetings</p> <p>This committee shall meet-two times per year:</p> <p>A. This committee shall meet at the Winter and Annual Meeting.</p> <p>B. Up to 2 additional committee meetings may be held at the discretion of the Planning Committee Chair.</p> <p>(17-01-29-11)</p>
5 - 6	That the BOD include \$14K in the SY 20-21 Budget for the operation of the Building EQ Portal.
7 - 9	That the 2020-21 draft budget for the General Fund, inclusive of council budget, showing a total deficit of (\$412,200) be approved. (ATTACHMENT C)
8 - 9	That the Rule of the Board (ROB) 2.102.002.7 Distribution of ASHRAE/AHRI Exposition Revenue, (99-01-24-15/07-01-28-04/08-01-20-02/08-06-22-05) be waived for Society Year ("SY") 2020-21.
9 - 9	That the 2020-21 draft budget for the Research Fund showing total revenues and expenses of \$3,350,000 be approved (includes \$1.5 million of funding from the Research Reserve Fund) with any funds remaining at the end of the Society year being returned to the Research Reserve Fund. Per ROB 2.102.002.10, the Board of Directors must approve any transfer of funds exceeding 10% of the Research Reserve Fund. (ATTACHMENT D).
10 - 9	That the Board of Directors approve a discretionary capital expenditure budget of \$100,000 for SY 2020-21.

**ACTION ITEMS**

Board of Directors Meeting

Tuesday, June 23, 2020

<b>No. - Pg.</b>	<b>Responsibility</b>	<b>Summary of Action</b>	<b>Status</b>
1 -	Gulledge	Prepare a report on European membership growth, publications, training and the impact of dealing with other organizations for ExCom review. (Carryover from March 22, 2019)	
2 -	Littleton	Include the 'exchange' cost for new/renewed MOUs, to be included in the fiscal impact of future motions. (Carryover from February 5, 2020)	
3 -	Littleton	Report back to the BOD in the spring and provide recommendations on how to accomplish the reallocation of staff resources to support the development of custom codes and related services. (Carryover from February 5, 2020)	
4 - 10	Mehboob, McQuade, Dean	Communicate budget changes to the Council's respective reporting committees as soon as possible.	



**MINUTES**  
**BOARD OF DIRECTORS MEETING**

Tuesday, June 23, 2020

**MEMBERS PRESENT:**

Darryl Boyce, President  
Chuck Gulledge, Vice President  
Mick Schwedler, Treasurer  
Bill Dean, Vice President  
Dennis Knight, Vice President  
Bill McQuade, Vice President  
Farooq Mehboob, Vice President  
Jeff Littleton, Secretary  
Chris Phelan, Region I DRC  
Jeff Clarke, Region II DRC  
Dunstan Macauley, Region III DRC  
Steve Marek, Region IV DRC  
Doug Zentz, Region V DRC  
Rick Hermans, Region VI DRC  
Michael Cooper, Region VII DRC

Jon Symko, Region VIII DRC  
Trent Hunt, Region IX DRC  
Marites Calad, Region X DRC  
Russell Lavitt, Region XI DRC  
Robin Bryant, Region XII DRC  
Apichit Lumlertpongpana, Region XIII DRC  
Costas Balaras, Region XIV DRC  
Kelley Cramm, DAL  
Van Baxter, DAL  
Katherine Hammack, DAL  
Jaap hogeling, DAL  
Sarah Maston, DAL  
Tim McGinn, DAL  
Chandra Sekhar, DAL  
Ashish Rakheja, DAL

**GUESTS PRESENT:**

Chris Gray	Bill Bahnfleth	Adrienne Thomle	Fabio Clavijo
Tyler Glesne	Tom Phoenix	Kevin Muldoon	Doug Cochrane
Randy Schrecengost	David Underwood	Richard Rooley	Wayne Stoppelmoor
Devin Abellon	Tim Wentz	Ron Vallort	Jonathan Smith
Andres Sepulveda	John Constantanide	Ron Jarnagin	Pat Graef
Ken Fulk	Blake Ellis	Karine Leblanc	Rachel Romero
Wade Conlan	Ginger Scoggins	David Delaquila	Rob Falke
Carl Huber	Ross Montgomery	Rob Risley	Stephen Roth

**STAFF PRESENT:**

Candace DeVaughn, Manager - Board Services  
Chandrias Jacobs, Coord. of Board Services  
Lilas Pratt, Manager - Special Projects  
Joyce Abrams, Director - Member Services  
Vanita Gupta, Director - Marketing  
Kim Mitchell, Chief Development Officer  
Mark Owen, Director of Pubs & Education

Stephanie Reiniche, Director - Technology  
Craig Wright, Director - Finance & Admin. Services  
Alice Yates, Director - Government Affairs  
Dustin Mason, Development Manager  
Margaret Smith, Dev. Mgr. - Foundation  
Jeremy Pollack, Mgr. - Federal Govt. Affairs

**CALL TO ORDER**

Mr. Boyce called the meeting to order at 8:00 am.

**CODE OF ETHICS**

Mr. Boyce read the Code of Ethics Commitment and encouraged attendees to read the full Code of Ethics and Core Values online.

**ROLL CALL / INTRODUCTIONS**

Roll call was conducted. Members and guests in attendance as noted above.

**MEETING OF THE MEMBERS**

Mr. Boyce welcomed everyone to the 2020 Annual Meeting of the Members of the Society and the Annual Meeting of the Board of Directors.

**REVIEW OF MEETING AGENDA**

Mr. Boyce reviewed the meeting agenda; there were no changes or additions.

**APPROVAL OF MINUTES**

Mr. Gullede moved and Mr. Macauley seconded that

1. Minutes from the following Board of Directors meetings be approved as a consent agenda:

February 2, 2020

February 5, 2020

March 30, 2020

April 14, 2020

May 5, 2020

**MOTION 1 PASSED** (Unanimous Voice Vote, CNV).

**REVIEW OF ACTION ITEMS****FEBRUARY 2, 2020**

Action item 1 was reported as ongoing. All other action items were reported as complete.

**AI - 1**

**FEBRUARY 5, 2020**

Action items 1 and 3 were reported as ongoing. All other action items were reported as complete.

**AI - 2 and 3**

**RECOGNITION OF OUTGOING CHAIRS OF COMMITTEES REPORTING TO THE BOD**

Mr. Boyce recognized outgoing chairs and expressed his gratitude for members' time, dedication, and service. Electronic certificates were shown for each outgoing member.

**COMMITTEE AND COUNCIL REPORTS****EXECUTIVE COMMITTEE - APRIL-JUNE CONFERENCE CALLS**

Mr. Boyce reported that the Executive Committee began weekly conference calls to stay on top of the rapidly changing environment caused by the global pandemic. He reviewed information items from the seven (7) conference calls.

**EXECUTIVE COMMITTEE - JUNE 22, 2020**

Mr. Boyce reported that ExCom approved a renewed MOU with the American Society of Healthcare Engineering (ASHE).

ExCom also approved six (6) Public Policy Issues Briefs (PPIBs) as well as the new AASA Manual of Procedures (MOP).

ExCom recommended and Mr. Boyce moved that

2. The Board of Directors approve the Public Policy Priorities for Society year 2020-21 as shown in ATTACHMENT A.

**MOTION 2 PASSED** (Unanimous Voice Vote, CNV).

ExCom recommended and Mr. Boyce moved that

3. The Board of Directors adopt a statement reaffirming its commitment to ASHRAE's values on diversity and inclusiveness that is in alignment with AASA's statement.

It was noted that Society has affirmed its commitment to diversity and inclusiveness and no additional action is required as a result of this motion.

**MOTION 3 PASSED** (Unanimous Voice Vote, CNV).

**PLANNING COMMITTEE**

Mr. Phoenix reported that the 2017-18 and 2018-19 committees were completely focused on developing the new strategic plan. This year, the Planning Committee was charged with how to properly implement and monitor the new strategic plan. In response to that charge, the committee developed a tracking spreadsheet and formed three (3) subcommittees.

The tracking spreadsheet provided a way to track and guide the work of the Councils to implement various aspects of the strategic plan.

Mr. McGinn worked with ExCom to help envision a post-COVID ASHRAE.



Changes were proposed to the Committee MOP as well as the ROB to address the responsibilities of the Committee when a strategic plan is not actively being developed.

Planning Committee recommended and Mr. McGinn moved that

4. ROB Section 2.416.002.1 and 2.416.003.1 regarding Planning Committee Membership and General Requirements be revised as follows:

#### **2.416 PLANNING COMMITTEE**

##### **2.416.001 SCOPE AND PURPOSE**

(09-06-21-12C)

This committee shall perform ASHRAE's long range and strategic plan activities on a continuing basis.

##### **2.416.002 MEMBERSHIP**

###### 2.416.002.1 Composition

(02-01-13-19/04-06-27-08/05-06-26-16/09-06-21-13/12-06-24-12)

The members of this committee are as follows:

- A. Between nine (9) and twelve (12) voting members, including a chair and vice chair.
  - c. During the three-year strategic planning cycle, two-years for strategic plan development and one year following the launching the strategic plan, it is recommended that the membership of Planning be at the maximum allowed.
  - d. During the two-year "gap" of a five-year strategic plan duration, it is recommended that the membership of Planning be at the minimum allowed.
- B. In addition to the chair and vice chair, voting members shall include
  6. one Director-at-Large,
  7. one Director and Regional Chair,
  8. one member who is serving on the YEA Committee at the time of appointment, and
  9. two members in good standing who have not served on the Board of Directors,
  10. up to five (5) additional members of the Society who are serving or have served as Board members
- C. Non-voting members include the Executive Vice President and one Staff Director.

###### 2.416.002.2 Qualifications

- C. All voting members except the member who represents YEA must hold the grade of Member or higher in the Society.
- D. All councils should be represented on the voting membership of the committee.

###### 2.416.002.3 Term of Service

(85-06-26-11/86-06-25-09/94-06-26-04)

- A. The term of service for voting members is intended to be three (3) years, subject to ROB 3.300 *Election and Appointment Procedures*.
- B. The term of service of the Vice President shall be limited by his or her term in office.

##### **2.416.003 OPERATION**

###### **2.416.003.1 General Requirements**

(09-06-21-12C)

- A. The purpose of this committee is to assist the Board of Directors and the organization to think strategically in planning for the future. These activities include determining methods for soliciting creative ideas from the

membership, assessing capabilities, making strategic assessments, formulating strategies and recommending new initiatives to the Board of Directors to adopt as strategic goals on an ongoing basis.

- B. This committee shall monitor, on a continuing basis, councils' and committees' progress in achieving the Strategic Plan goals. The committee shall provide a report of findings and recommendations at the Winter Meeting of the Society.

1. The chair of Planning shall appoint an Implementation Subcommittee to assist and guide the Councils in implementing the Strategic Plan

2. The chair of Planning shall appoint a Monitoring Subcommittee to monitor and oversee the Council's work.

- C. This committee shall, on a continuing basis, review all facets of Society operation and make recommendations for changes and revisions.

#### 2.416.003.2 Meetings

This committee shall meet two times per year:

- A. This committee shall meet at the Winter and Annual Meeting.
- B. Up to 2 additional committee meetings may be held at the discretion of the Planning Committee Chair.

(17-01-29-11)

**MOTION 4 PASSED** (Unanimous Voice Vote, CNV).

#### **BUILDING EQ**

Mr. Knight yielded the floor to Mr. Cochrane.

Mr. Cochrane reported that the Committee has been very busy this year. The Building EQ portal is the first ASHRAE tool where the technology is online.

Students are the future of ASHRAE, and Building EQ allows students to have real world experience.

The program also directly benefits building owners. Building EQ makes bad buildings better and good buildings great.

Building EQ has global reach and is currently being used in 59 countries. English, French, and Spanish are currently being used in the portal. The portal currently has 1,100 users.

DOE has awarded a \$200,000 small business innovation research grant to develop a software tool to directly benefit the Building EQ portal. There are also currently two (2) research projects directly related to Building EQ.

The Committee is prepared to conduct an as-designed rating and assessments on the new headquarters building.

Mr. Cochrane continued that the Committee is developing a survey for portal users to determine what aspects of the portal can be monetized. The Committee has identified the following revenue opportunities - advertising, packages with enhanced features, training courses through ALI, database subscriptions, partnerships with other software, and a licensing feature.

With the current budget recommendations, on July 1, 2020 the portal will be turned off and all data will be lost. The Committee is recommended that a budget of \$14,000 be allocated to keep the portal open. There will be no cost for transportation as the Committee will have only virtual meetings.

The Building EQ Committee recommended, and Mr. Knight moved that

5. The BOD include \$14K in the SY 20-21 Budget for the operation of the Building EQ Portal.

It was discussed that the \$14,000 is the cost to keep the portal operational for the next Society year.

Mr. Cochrane stated that Building EQ represents the mission and vision of ASHRAE. The Society's reputation would be tarnished by the abrupt shutdown of the tool. Many users have used the portal as a primary depository of their building energy performance and benchmarking history. There is still \$115,000 in remaining depreciation on the Building EQ portal.

Ms. Hammack suggested that the motion be postponed until after the full picture of finances is clear.

Ms. Hammack moved and Mr. Symko seconded that

6. Motion 5 be postponed until after the Finance Committee makes its report.

**MOTION 6 FAILED (10:18:0, CNV)**

Ms. Bryant spoke in favor of the motion. Many universities are using Building EQ as their asset management software. Closing the portal would be a big public relations issue. Many universities are mid school year and are actively using the portal in courses. Many great things have come out of BEQ. In a \$30 million budget, \$14,000 is a rounding error; the BOD can find a way to make this program survive.

Mr. Schwedler spoke neither for nor against the motion. He provided background from a finance standpoint. The Finance Committee was planning to recommend \$65,000 in direct reductions which would effectively eliminate the program. This recommendation was brought as an amendment to the budget. Extensive background was provided here that was not available to Finance at the time of the vote. Schwedler applauded BEQ members for reaching out to BOD members and making their passion known.

Mr. Cooper spoke against the motion. This motion is about cash flow and a business proposition. Society has invested well over half a million into the portal. Are we getting our investment back to our Society and our members? We have to know when to cut bait. It is self-evident that tremendous effort has been made by the volunteer leadership and BEQ.

Mr. Mehboob spoke in favor of the motion. We are coming to a point where the program is becoming viable. To cancel the program at this point would be to throw that half a million investment away. No organization can cut its way to growth. Sometimes the investment takes longer to yield a result. Building EQ should be marketed internationally.

Mr. McGinn spoke in favor of the motion. If the intent of the BOD is to phase out the program, it shouldn't be ended without giving users time to decide how to phase out. At a minimum, the portal should be continued to allow adequate time to phase out the program.

Mr. Symko spoke in favor of the motion. There is value in Building EQ. At a minimum, the technology could be sold to recoup some of the investment. Symko suggested that an ad hoc be created to investigate options for selling the portal. The program will not make money with volunteers running it.

Mr. Balaras spoke in favor of the motion. Building EQ provided an excellent presentation; even if some BOD members have not been following up on BEQ, the presentation was an eye opener. We may not

have gotten a return on our investment, but if we put a price tag on the achievements of the program, it has achieved a lot.

Mr. McQuade stated that Building EQ has been a tremendous success technologically, but a failure from a marketing standpoint. If DOE is willing to invest that amount of money are we missing opportunities?

The *Building EQ Marketing Summary of Efforts* (ATTACHMENT B) was provided for the BOD's review.

Ms. Pratt provided additional background on the DOE grant. The purpose of the grant is to improve the use of building sync and data collection tools. The long term goal is to have the same thing happen with lots of different software.

Mr. Mehboob reported that Pub and Ed Council had a Strategic Business Development Ad Hoc which has developed a plan for Building EQ.

Mr. Phoenix stated that he was the first chair of the BEQ Committee. BEQ was never meant to be a money-making venture. Building EQ is an extremely valuable tool and it would be a travesty to just eliminate it at this point. The current committee has done a fabulous job of getting expenses down to a very low dollar amount. Phoenix encouraged the BOD to accept the motion.

Mr. Knight spoke in favor of the motion. Society is not in the business of creating products, we exist to serve the industry and our members; our income is from other revenue streams. If any other committee had been under the same scrutiny, the BOD would be hard pressed to make a positive margin on any programs.

**MOTION 5 PASSED** (28:1:0, CNV).

### **REPORT OF THE TREASURER**

Mr. Schwedler reported that up to \$3.8 million is authorized to go towards the new headquarters building. These funds are in a very cash secure location and not subject to market fluctuations.

This year's budget will end with a surplus, primarily due to the reduction of transportation and the cancellation of the in-person Annual Meeting.

The Society's greatest assets are reserves and the new headquarters building.

The largest sources of revenue are dues, AHR Expo, and publications. Personnel continues to be the largest expense trend.

### **SY 2019-20 FINANCIAL FORECAST UPDATE**

Mr. Schwedler stated that the hope is that the virtual conference will increase the surplus budget. Fundraising for the new headquarters building has been placed below the line.

This has not been a normal business year and the resilience that our members have shown has been extraordinary.

**PROPOSED SY 2020-21 BUDGET**

Mr. Schwedler reported that proposed budget is fueled significantly by travel reductions. We have learned a lot and if we apply the lessons moving forward, we will be stronger.

The Finance Committee leaned heavily on staff to address the three years of deficit budgets.

The budget reflects reduced revenue for advertising. Member dues have been called down 10% for 2020-21 and 5% for the next two years. The Committee feels that this estimate is fiscally responsible.

BOD travel has been reduced \$200,000 and the Committee will provide suggestions to achieve this recommendation for BOD consideration.

Lean assessments already implemented for the current fiscal year have been carried forward to the next fiscal year. One exception was the reduction to the EHC travel budget; for the 2020-21 budget, Finance recommended an increase in the travel budget.

A fee will be charged for Leadership Academy.

Mr. Schwedler thanked the BOD for reconsidering the European office expense. The budget reflects a \$40,000 reduction in expenses.

JEPC provided the Finance Committee with a report on the 2021 AHR Expo. Currently, there is close to 200,000 and 250,000 square feet is under contract. The budget reflects revenue from 350,000 square feet to be fiscally responsible, which is significantly reduced from what was hoped.

Only beer and wine will be served at BOD events.

Snacks will be eliminated from staff meetings.

There is a freeze on staff salaries.

Finance Committee realized that presidential initiatives had not been included in previous budgets. Mr. Gullledge was asked to provide a budget estimate for his presidential initiatives. Moving forward, Finance will coordinate with the President-Elect in January to obtain an accurate estimate.

A number of CRCs will be virtual or hybrid which resulted in a net savings of \$350,000.

All centralized trainings will be virtual.

Tuition reimbursement for staff will be suspended until further notice.

There will be a one-year suspension of travel expenses related to Leadership U.

The Finance Committee intends to request a waiver to ROB 2.102.002.7 which addresses the funding of research. Research is funded from RP and the AHR Expo revenues which may be lower. In order for research to take place funding needs to be secured. Finance will be bringing forward a motion for the RP match to come from the research reserve fund.

DL expense has been reduced because travel will likely be reduced through the beginning of the next calendar year.

Mr. Schwedler thanked all Finance Committee members and staff. He expressed his thanks at having had the privilege to chair the Finance Committee.

#### **FINANCE COMMITTEE REPORT**

The Finance Committee recommended, and Mr. Schwedler moved that

7. The 2020-21 draft budget for the General Fund, inclusive of council budget, showing a total deficit of (\$412,200) be approved. (ATTACHMENT C)

**MOTION 7 PASSED** (Unanimous Voice Vote, CNV).

The Finance Committee recommended, and Mr. Schwedler moved that

8. The Rule of the Board (ROB) 2.102.002.7 Distribution of ASHRAE/AHRI Exposition Revenue, (99-01-24-15/07-01-28-04/08-01-20-02/08-06-22-05) be waived for Society Year ("SY") 2020-21.

Mr. Schwedler stated that research funds could be put at risk if there are reduced revenues from the AHR Expo or a cancelled AHR Expo.

**MOTION 8 PASSED** (Unanimous Voice Vote, CNV).

The Finance Committee recommended, and Mr. Schwedler moved that

9. The 2020-21 draft budget for the Research Fund showing total revenues and expenses of \$3,350,000 be approved (includes \$1.5 million of funding from the Research Reserve Fund) with any funds remaining at the end of the Society year being returned to the Research Reserve Fund. Per ROB 2.102.002.10, the Board of Directors must approve any transfer of funds exceeding 10% of the Research Reserve Fund. (ATTACHMENT D).

**MOTION 9 PASSED** (Unanimous Voice Vote, CNV).

The Finance Committee recommended, and Mr. Schwedler moved that

10. The Board of Directors approve a discretionary capital expenditure budget of \$100,000 for SY 2020-21.

Mr. Schwedler stated that leaving the budget this low seemed fiscally irresponsible.

**MOTION 10 PASSED** (Unanimous Voice Vote, CNV).

Mr. Schwedler reported that the general reserve fund is fluctuating but the Committee feels that it is sound.

The fiscal planning spreadsheet and instructions have been sent to the Councils, as well as all committees that report to the BOD and ExCom. The spreadsheet takes into account direct and indirect revenues and expenses. Finance Committee is encouraging bodies to use this spreadsheet when making motions.

Mr. Schwedler expressed his deep appreciation to Finance Committee members, staff, staff directors, and the BOD for their fiduciary responsibility.

Ms. Maston asked how adjustments are going to be communicated.

Mr. Schwedler suggested that Chairs of the Councils share those portions of the budget that impact their respective Council.

Council Chairs will communicate budget changes to their respective reporting committees as soon as possible.

AI - 4

## **PRESIDENTIAL AD HOC COMMITTEE AND TASK GROUP REPORTS**

### **BOD STREAMLINING AND LEAN ASSESSMENT**

Ms. Bryant reported on behalf of the Task Group. The full report has been posted on Basecamp, will be distributed via email, and is included here in ATTACHMENT E.

The goals of the Task Group's recommendations are a leaner regional structure and a more compact BOD, focused on strategic direction rather than management functions.

Yearly leadership themes result in the Society reinventing itself and is not a good use of staff and volunteer time.

Shorter conferences and a reinvented Annual Conference are also recommended.

Strengthened membership input, automated roster management, and optimized time commitment at Conferences is recommended for TCs, TGs, TRGs, and MTGs.

Details on the Task Groups recommendations will be provided this week to allow the BOD time to review. The Task Group will be available for additional discussion and to answer questions at the July 1<sup>st</sup> BOD meeting.

### **HEADQUARTERS BUILDING**

Mr. Boyce yielded the floor to Ms. Scoggins. Ms. Scoggins thanked the Ad Hoc members for their time and dedication. The group has worked together for two and a half years and participated in Friday afternoon conference calls every other week. This has been a very involved Committee with diverse experiences and backgrounds.

The Ad Hoc is coming to the end of its time, as the building is about two (2) months away from the completion date.

Construction has not been impacted by COVID-19. The scheduled move-in date is October 12.

Progress photos are available on [ashrae.org/newhq](http://ashrae.org/newhq).

Mr. Gulledge congratulated Ms. Scoggins and her team. BOD members were encouraged to watch the *Society Sneak Peek* which will have very interesting information on the new building.

### **EPIDEMIC TASK GROUP**

Mr. Knight reported. Having been on the BOD for five (5) years this is the happiest report he has ever given, but also the saddest because this will likely be the last time he will significantly address the BOD.

There was no hesitation from the members of EHC or the related TC chairs, everyone was willing to pitch in and help. Mr. Bahnfleth did an excellent job chairing and leading the group. Knight thanked staff for their support. Everybody was 100% committed to this project and this was an interdisciplinary group of experts.

When AIA receives HVAC questions, they are forwarded to the Task Group to be answered.

The Task Group created over 350 pages of guidance.

As of today, the group has received 508 specific questions and has participated in over 43 media events and interview requests. More media impressions than we have ever seen.

Mr. Bahnfleth stated that this was an unprecedented effort. A lot has been done to date but there is more work still to be done. The Task Group is in the middle of a “cleaning up” phase and preparing to move forward.

Mr. Boyce stated that this is a very proud moment.

The Task Group’s full report is included in ATTACHMENT F.

#### **NEW AD HOC COMMITTEES AND TASK GROUP**

##### **Vision 2030 and Beyond: Buildings of the Future**

Mr. Boyce reviewed the groups charge.

Mr. Gulledge stated that the group is a beautiful transition from Mr. Boyce’s theme to his and the digital landscape along the journey.

##### **Proactive Diversity Task Group**

Mr. Boyce reported that the purpose of the Task Group is to develop detailed programs to eliminate all forms of discrimination and social injustice through all levels of Society, and to the extent that we can affect change in the greater society as well.

Mr. Gulledge reported that there will be a session at the first BOD meeting on July 1<sup>st</sup> to begin the discussion. The Task Group will lead that discussion. The Task Group was formed to identify how society membership can be made a more inviting and inclusive place to be.

#### **INFORMATION ITEMS**

##### **REPORT OF THE PRESIDENT**

Mr. Boyce reported that being Society President this year was not business as usual. The first half of the Society year he traveled about 107 days. After the Winter Meeting, he traveled to visit two (2) Chapters, traveled to India and participated in ACREX.

The first week of March, he visited Chapters in Region VIII, returned home on March 13 and began quarantining. Boyce was able to meet with a few Chapters and participate virtually in workshops and events.



**APPOINTMENTS UPDATE - VACANCIES FILLED SINCE JANUARY 2020**

Mr. Gulledge reviewed changes to appointments since January 2020. There were no comments.

**STANDARDS ANALYSIS SHEETS**

Mr. Boyce reviewed the Standards Analysis Sheets. There were no comments.

**EXECUTIVE SESSION**

Executive session was called at 11:27 am.

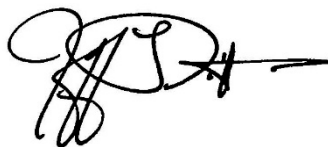
Open session reconvened at 11:52 am.

**RECOGNITION OF AND REMARKS FROM OUTGOING BOARD MEMBERS**

Mr. Boyce recognized and thanked outgoing BOD members. Outgoing members addressed the BOD, providing advice to incoming members and expressing gratitude at the opportunity to serve the Society.

**ADJOURNMENT**

The meeting adjourned at 12:20 pm.

A handwritten signature in black ink, appearing to be 'J. Littleton', with a horizontal line extending to the right.

Jeff H. Littleton, Secretary

**ATTACHMENTS:**

- A. Public Policy Priorities
- B. Building EQ Marketing Summary of Efforts
- C. Draft Budget for General Reserve
- D. Draft Budget for Research Funds
- E. Report of the Society Streamlining and Lean Assessment Task Group
- F. Report of the Epidemic Task Force

## ASHRAE's Public Policy Priorities – Proposed SY 2020-2021

**Background:** ASHRAE's Government Affairs Committee, with support from ASHRAE staff, have been continuously working to maintain the Society's reputation as the leading source for expertise in the built environment and a resource for policy-makers in the development of legislation and regulations affecting the public, the HVAC&R community, and the engineering profession. This effort has consisted of keeping ASHRAE members, Society positions, and technical developments highly visible among policymakers, primarily through "Government Outreach Days."

**Action-Oriented Objective for SY2020-21:** ASHRAE's objective is for lawmakers to view the association as an "indispensable partner" when it comes to crafting policy and legislation. During Society Year 2020-2021, ASHRAE will focus on the following Public Policy Priorities:

- Support Sustainable Building Practices to Mitigate Climate Change  
Buildings and their heating, ventilation, air conditioning and refrigeration (HVAC&R) systems directly and indirectly contribute to GHG emissions. Buildings are responsible for more than 35% of global final energy use and nearly 40% of energy-related greenhouse gas emissions worldwide. ASHRAE supports energy efficient building design practices, including net zero energy buildings, and the use of sustainable technologies on a global basis to help reduce GHG emissions. In addition to government adoption of robust energy standards such as ASHRAE Standard 90.1-2019, 90.2-2018 and 90.4-2019 and the 2018 IgCC for new construction, ASHRAE supports policies and programs to improve the energy performance of existing buildings, including through adoption of ASHRAE Standard 100-2018 and building benchmarking and labeling requirements.
- Promote Healthy Buildings and Reduce Indoor Environmental Risks  
Supporting the health and well-being of building occupants is the most important element of the indoor environment. Indoor air quality and environmental health must extend beyond simple "acceptable" conditions to the optimization of air quality, thermal comfort, ventilation, filtration, lighting and acoustics, and the influence of these on productivity, learning and health. ASHRAE has included Indoor Environmental Quality as an initiative in its 2019-2024 Strategic Plan. Importantly, ASHRAE supports policies that reduce the risk of disease transmission through building systems, including HVAC and water systems. To reduce the risk of SARS-CoV-2 transmission in building systems, ASHRAE has assembled an extensive library of resources, including guidance documents, webinars, training sessions, and standards. ASHRAE is happy to share its technical expertise to policy makers and elected officials to help fight this pandemic. ASHRAE has already supported several government entities in providing and disseminating technical resources, including the U.S. Department of Energy, the Army Corps of Engineers, and the International Energy Administration.



CELEBRATING **125** YEARS

- Advance Design and Construction of Resilient Buildings and Communities

Resiliency is an increasingly important societal, economic, and technical issue that will have major impact on how buildings are designed, renovated and operated. ASHRAE has included Resilient Buildings and Communities as an initiative in its 2019-2024 Strategic Plan. ASHRAE must establish a leadership role in advancing new practice paradigms and raising awareness about the importance of resilient buildings and communities. ASHRAE is committed to developing, publishing and maintaining a Resilient Building/Community Standard, accompanying Design Guide(s) and design tools, and educational programs. Additionally, it is critical that policy makers understand that building energy codes and standards are an essential element of resilient buildings.

- Ensure the Orderly and Safe Phasedown of High-GWP HFC Refrigerants

ASHRAE supports the global phasedown of the production and consumption of Hydrofluorocarbons (HFCs) refrigerants that have high-Global Warming Potential (GWP), including through legislation, regulations, and policy. As governments commit to using lower GWP refrigerants, ASHRAE wants to ensure the safe application of these refrigerants, including through the adoption of ASHRAE Standard 15-2019, *Safety Standard for Refrigeration Systems*, and Standard 34-2019, *Designation and Classification of Refrigerants*, and continued support for the ASHRAE Position Document on Refrigerants and their Responsible Use.

- Support Adoption of the Latest Edition of ASHRAE's Energy Standards into Building Codes

ASHRAE has an opportunity to make significant progress with the adoption of more recent versions of Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings, which has provided the minimum requirements for the energy-efficient design in the United States for over 40 years. Although its adoption in the U.S. by States is required by the Energy Conservation and Production Act (ECPA), most States have not adopted the 2016 version of the standard. ASHRAE will increase advocacy efforts to adopt the latest version of 90.1, as well as advocate for effective enforcement of energy efficiency codes and standards. We will also prioritize the adoption of ASHRAE Standard 90.2 for residential energy performance requirements and Standard 90.4 for energy performance of data centers.

Additionally, ASHRAE will continue to encourage the adoption of energy efficiency standards around the world. Standard 90.1 has already been adopted in Brazil while ASHRAE standard 90.2 has been adopted by Kuwait and the Kingdom of Saudi Arabia.

- Strengthen the HVACR Workforce

The HVACR industry is facing a serious shortage of skilled employees, which impacts ASHRAE's ability to accomplish any of its other Public Policy Priorities. ASHRAE supports policies that strengthen science, technology, engineering and math education at all levels; better align education and training programs with building design necessities; require quality certification programs that deliver better building performance; and promote and make available technical and career training in the HVACR industry.

# Building EQ Marketing Summary

## Section 1: Graphics/Presentations/Videos/Surveys/Website

2017

### Label Report Design

Originally designed by Marketing and implementation portal contractor



### Video – Marketing generated

Paid for out of Building EQ budget



- Hiring actors
- Filming
- Writing
- Props
- Editing
- Promotion

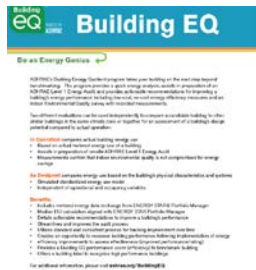
# 2018 Brochure Created by Marketing



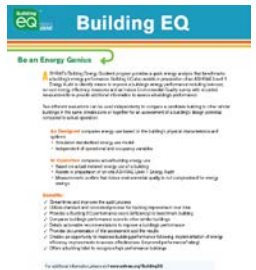
## Fact Sheets (4 Total)

Marketing created then maintained by BEQ staff Liaison

### Benchmarking Fact Sheet



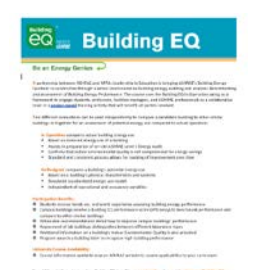
### Technical Fact Sheet



### Government Affairs Fact Sheet

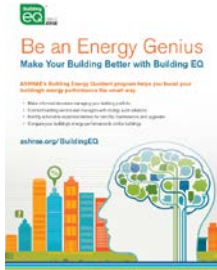


### University Fact Sheet



# Ad

Created by Marketing



# 2020

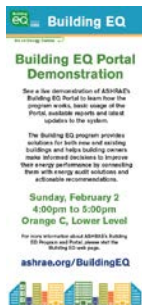
## University Flyer

Created by Marketing, and content provided by Building EQ Committee



# Signage

Produced by Marketing, content provided by Building EQ staff liaison



## Section 2: Emails/Social/ASHRAE 365 App/Press Releases

### Emails:

- **Building EQ New Features** – six emails sent from 9/11/18 through 6/11/2019
- **Building EQ User Tips** – eight emails sent from 1/8/2019 through 10/15/2019
- **GGAC Building EQ** – sent on 4/16/18
- **Building EQ AD Launch** – sent on 3/22/18
- **Building EQ Hard Launch** – two emails sent on 12/13/17 and 1/4/18
- **Building EQ Portal Training** – three emails sent on 11/2/17 and 11/7/17
- **Building EQ Soft Launch** – three emails sent between 10/18/17 through 11/2/17
- **We had emails on the portal tips, there should be emails from 2018 and 2019 here**

**Total # of Emails: 24**

### Social Posts:

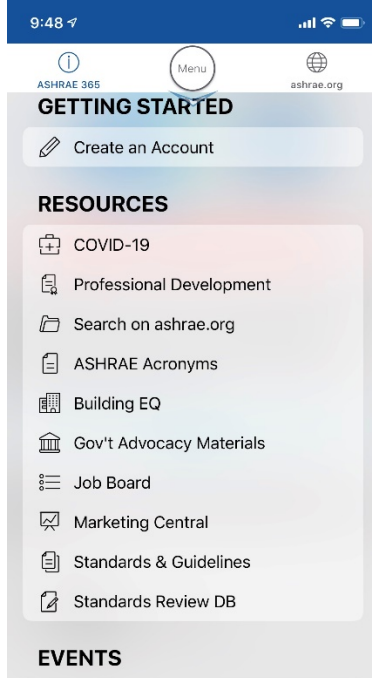
- **Building EQ Program** – October 15, 2019
- **Launch of the As Designed rating of its Building EQ Portal** – April 18, 2019
- **Building Energy Quotient Program** – March 22, 2018
- **Building EQ Portal** – September 12, 2018
- **New Building EQ Portal announcement** – December 15, 2017
- **Social media posts monthly for the *Tip of the Month* once the portal launched**

### Website

- Monthly updates following portal launch of Building EQ website section throughout 2018-2019
- Revamp Building EQ section of website for new ashrae.org in February 2018
- Quarterly updates to ashrae.org/buildingeq for the Notes and Tips 2018-2019
- Updated page in 2020

## App Push Notifications

- Added Building EQ section under “Resources” for the new app in 2018 as part of launch



- New Building EQ Portal Feature Notification - [October 2018](#)
- Mentioned in a notification as a new and updated page on the website - [February 2019](#)

## Press Releases

- **ASHRAE Announces Launch of Building Energy Quotient Portal ‘As Designed’ Rating** - April 17, 2018
- **ASHRAE Announces Launch of Building Energy Quotient Portal** - December 8, 2017
- **ASHRAE Announces Special Limited Pricing Offer; Changes to In Operation Methodology for bEQ Program** - July 29, 2014
- **ASHRAE bEQ Program Qualifies for Florida Rating System under Energy Bill** - June 26, 2014
- **Building Energy Labeling Program Expanded** - May 21, 2013
- **Building Labeling Program Helps Building Owners Save Energy** - March 1, 2012
- **What’s Your Building EQ? Pilot Program Buildings About to Find Out!** - May 24, 2010
- **Pilot Building Energy Labeling Program Launched by ASHRAE with Leading Owners, Designers** - December 12, 2009



**ASHRAE  
GENERAL FUND**

BOD Minutes - Tuesday, 2020 June 23

	DRAFT
	Budget
	FY 2021
<b>REVENUES</b>	
31 Membership Dues Earned Income	\$ 7,157.9
32 Publication Sales Income	3,861.0
34 Advertising Income - Display	2,834.8
34 Advertising Income - Classified	12.0
34 Advertising Income - On-line	960.0
35.1 Meetings/Conferences Income	2,435.5
35.2 Certification Registration	286.0
35.3 Education Registration	2,110.0
37 Special Project Income	24.5
38 Contribution Income	44.7
41.1 AHR Exposition Income	4,300.0
41.2 Contributions and Matching Gifts	121.5
41.3 Exposition Income - Other Countries	-
44 Reserve Transfers	200.0
46 Miscellaneous Income	400.1
<b>TOTAL REVENUES</b>	<b>\$ 24,748.0</b>
<b>EXPENSES:</b>	
51 Salaries	8,768.7
52 Payroll Taxes, Benefits, Personnel	2,574.1
61 Publishing and Promotion	3,293.9
64 Meetings/Conferences/Trainings	2,965.1
66 Travel	1,675.1
68 Awards, Certif, Logo Cost of Goods Sold	137.0
71 Research Projects & Grants	174.0
73 Special Projects	214.5
76 Public Relations	75.6
78 Occupancy & Insurance	702.4
82 Office Expense and Organizational Dues	1,715.9
84 Outside Services	2,064.3
88 Other Expenses	725.3
90 Depreciation	785.0
91 Allocation of Overhead & BOD	(724.7)
<b>TOTAL EXPENSES</b>	<b>\$ 25,146.2</b>
SURPLUS (DEFICIT) before reserve income	\$ (398.2)

**ASHRAE  
RESEARCH FUND**

	DRAFT
	Budget
	FY 2021
<b>REVENUES</b>	
31 Membership Dues Earned Income	\$ 150.0
38 Contribution Income	1,500.0
41.2 Contributions and Matching	200.0
44 Reserve Transfers	1,500.0
46 Miscellaneous Income	-
<b>TOTAL REVENUES</b>	<b>\$ 3,350.0</b>
<b>EXPENSES:</b>	
51 Salaries	460.7
52 Payroll Taxes, Benefits, Personnel	152.6
61 Publishing and Promotion	32.5
64 Meetings/Conferences/Trainings	19.4
66 Travel	96.5
68 Awards, Certif, Logo Cost of Goods Sold	37.5
71 Research Projects & Grants	1,700.0
76 Public Relations	0.3
82 Office Expense and Organizational Dues	64.7
88 Other Expenses	61.1
91 Allocation of Overhead & BOD	724.7
<b>TOTAL EXPENSES</b>	<b>\$ 3,350.0</b>
SURPLUS (DEFICIT) before reserve income	-

**Board of Directors Task Group**

# **Society Streamlining and Lean Assessment**

***“Planning for a More Streamlined ASHRAE”***



## TASK FORCE ASSIGNMENT (Part 1)

Work to be based on and driven by the **2019 to 2024 Strategic Plan**:

1. Eliminate **Redundancy**
2. **Adapt** to the Future of ASHRAE with Flexibility
3. **Optimize** Volunteer Time
4. **Minimize** Time to Convert Concepts to Products
5. **Reduce** Financial Costs to Society



## TASK FORCE ASSIGNMENT (Part 2)

With these in mind, the following **Task Force Goals** were established:

- A. **Reduction** of Bureaucracy
- B. **Streamlining** of Decision Making
- C. **Optimization** of Volunteer Time

only achieved successfully through...



## TASK FORCE ASSIGNMENT (Part 2)

With these in mind, the following **Task Force Goals** were established:

- A. **Reduction** of Bureaucracy
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- C. **Optimization** of Volunteer Time

only achieved effectively through...

## THE RESTRUCTURING OF OUR SOCIETY



# THE GRASSROOTS SIDE OF SOCIETY

In referencing the elements of past relevant studies and the to-date work of this Task Force:

- The Regional Structure of ASHRAE needs to be **leaner**, with a more **compact** Board of Directors, focused on **strategic direction**, rather than management functions.
- **Yearly Leadership themes** need to be part of a consistent and intermediate-term planned course, such that members, volunteers, and staff are **not significantly changing course** each year.
- Annual and Winter conferences could become **shorter** and the Annual Meeting reinvented to become more effective to our **overall** membership.
- **Formal Training** for involved membership needs to be **addressed** to improve volunteer time and resource execution.
- Our regions will require better and more effective **support** to adapt to **proposed regional changes**.



# THE TECHNICAL SIDE OF SOCIETY

In referencing the elements of past relevant studies and the to-date work of this Task Force:

- **Membership input** from TC/TG/TRG/MTG groups can to be **strengthened** and structured.
- Roster management for TC/TG/TRG/MTG groups can to be **automated** to reduce staff costs.
- **Project management** of Project and Committee work needs to significantly improve.
- **Collaboration** between Technical Groups can be increased.
- Technical Group time commitment at conferences can be **optimized**.
- The **working relationships** between PubEd Council and the Technical Groups can be **improved**.





# Thank you!

More details to follow  
on 1 July 2020.



## Epidemic Task Force

### Report to the ASHRAE Board of Directors

Motions: None

#### Information:

The Epidemic Task Force was established the first week of March 2020.

Formed to deploy ASHRAE's technical resources to address current pandemic and future epidemics:

- HVAC System Operation During Building Shutdown
- How to Return the HVAC System to Normal Operation
- Operating of Heating/Cooling System in Home
- Riding Mass Transit and Airlines
- Upgrading filters and use of air cleaners
- Healthcare Facilities, Commercial, Residential, Schools and Universities, Residential, Transportation
- Air conditioning and heating
- Ventilation Systems
- Exhaust Systems
- Filtration and Disinfection
- BAS and Access Control Systems
- Elevator Control
- Water Systems

#### ETF Objectives:

- Response to COVID-19 pandemic
  - Short term
- Reopening/2nd wave
- Plan for the Future
- Lessons learned
- Research
- Standards and guidance
- Enhanced focus on resilience

#### Structure

- 17 core members, including staff liaison and three staff directors
- Interdisciplinary: experts in engineering, building operations, medicine and public health
- Steering committee for teams focused on specific areas ~120 team members
- Coordinate with ASHRAE technical and standards committees, other organizations
- Weekly meetings of task force, most teams have weekly meetings

#### General Information:

Dedicated website: [COVID-19 \(Coronavirus\) Preparedness Resources](#)

Updated Position Document approved and posted on Infectious Aerosols

New Emerging Issues Brief on COVID-19 Airborne Transmission

10 plus new documents addressing over 350 pages of guidance created by the teams and posted to the website

Have answered over 500 specific questions submitted to the RTF through the [covid-19@ashrae.org](mailto:covid-19@ashrae.org) email address

Participated in more than 43 media events and interview requests including publications such as The Wall Street Journal, Bloomberg and Fast Company

Over 100 of the latest papers reviewed and summarized and included under our scientific heading of the website.

Liaisons participated in the AIA's COVID-19 task force and assisted the AIA with developing their building assessment tool and tier re-opening guidance

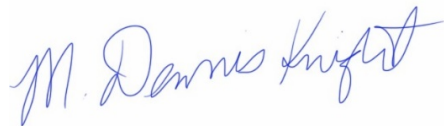
The following courses have been offered or are coming up soon:

REGS	DATE	COURSE	INSTRUCTORS
250	7-Apr	Designing and Operating High-Performing Healthcare HVAC Systems	Dan Koenigshofer
120	11-Jun	Introduction to Ultraviolet Germicidal Irradiation (UVGI) Systems	Bill Bahnfleth
37	18-Jun	Hospital HVAC: Infection Mitigation, Comfort, Performance	Dan Koenigshofer
3,260	21-Apr	(Free) Reducing Infectious Disease Transmission with UVGI	Bill Bahnfleth
1,751	16-Jun	(Free) Re-Opening Our Schools: Activities and Recommendations	Raj Setty
1,272	29-Jun	(Free) Managing Your HVAC Systems to Help Mitigate the Spread of SARS-CoV-2 in Buildings	Wade Conlan, Dennis Knight, Sarah Maston
706	21-Jul	(Free) Analysis of Airflow Patterns and Flow Path of Airborne Contaminants	Kishor Khankari

287,000 unique hits to the website with dwell times of approximately 5 minutes per visit.

Nearly 600 million media impressions!!!!!!

Thanks to the Members & Staff – See Attached



Submitted By: M. Dennis Knight, P.E., FASHRAE

June 23, 2020



# ASHRAE Epidemic Task Force Full Roster

Team Members/Contributors	Company	Outside Organization
<b>Epidemic Task Force</b>		
Bill Bahnfleth	Penn. State University	
Luke Leung	Skidmore Owings & Merrill (SOM)	
Max Sherman	Lawrence Berkeley Laboratory	
Stephanie Taylor	Taylor Healthcare Consulting	
Jason DeGraw	ORNL	
Traci Hanegan	Coffman Engineers	
Steve Martin	NIOSH	
Rick Hermans	Retired	
Jim Ridenhour	Fluor	
Dennis Knight	Whole Building Systems	
Wade Conlan	Hanson Professional Services	
Wayne Stoppelmoor	Schneider Electric	
Jay Kohler	Consultant	
Walid Chakroun	Kuwait University	
Steve Hammerling	ASHRAE	
Stephanie Reiniche	ASHRAE	
Alice Yates	ASHRAE	
Vanita Gupta	ASHRAE	
<b>Communications Team</b>		
Dennis Knight	Whole Building Systems	
Vanita Gupta	ASHRAE	
Alice Yates	ASHRAE	
Stephanie Reiniche	ASHRAE	
Steve Hammerling	ASHRAE	
Bill Bahnfleth	Penn. State University	
Jeff Littleton	ASHRAE	
<b>Grassroots Team</b>		
Rick Hermans	Retired	
All 15 Directors & Regional Chairs	Various	



# ASHRAE Epidemic Task Force Full Roster

Healthcare Team		
Traci Hanegan	Coffman Engineers	
Jeremy Fauber	HEAPY	
Michael Sheerin	TLC Engineering Solutions	
Paul Supan	American Dental Association Liaison	
Jerry Ivey	Willis-Knighton Health System	
Wayne Stoppelmoor	Schneider Electric	
Roger Lautz	Affiliated Engineers Inc. (AEI)	
Melvin Glass	EMC Engineers	
Tim Earhart	Retired Consulting Engineer	
Frank Mills	Frank Mills Consulting	CIBSE
David Eldridge	Grumman/Butkus Associates	
Rick Hermans	Retired	
Laurence Wilson	WSP	
Zaccary Poots	Toro-Aire Inc	
Mark Meteyer	Erdman	
Steven Welty	Green Clean Air	
Robert Block	Robert M. Block	
Mike Cummiskey	Public Health Dentist	
Residential Team		
Max Sherman	Lawrence Berkeley Laboratory	
Rick Karg	Residential Energy Dynamics	
Iain Walker	Lawrence Berkeley Laboratory	
Steve Emmerich	National Institute of Standards and Technology	
Chandra Sekhar	National University of Singapore	
Valerie Leprince	PLEIAQ	
Brent Stephens	Illinois Institute of Technology	
Lew Harriman	Mason Grant	
Commercial, Retail Team		
Luke Leung	Skidmore Owings & Merrill (SOM)	
Josephine Lau	University of Nebraska Lincoln	
Marwa Zaatari	enVerid Systems	
Amy Jiron	US DOE	
Marcus Bianchi	NREL	



# ASHRAE Epidemic Task Force Full Roster

Brian Gilligan	GSA	
Nicholas Rajkovich	University of Buffalo	
Bill Livingood	NREL	
Paul Torcellini	NREL	
Christian Callaghan	WeWork	
Peter Simmonds	Building and Systems Analytics	
David Winn	Jacobs Engineering Group	
Jennifer Isenbeck	Sodexo – Univ. of Tampa Facilities	
<b>Schools Team</b>		
Rick Hermans	Retired	
Bruce Lindsay	Brevard Public Schools	
Raj Kapoor	Star Consultants Inc.	
Keith Hammelman	Cannon Design	
David Norvell	University of Central Florida	
Chuck Kovac	Daikin Applied	
Corey Metzger	Resource Consulting Engineers	
Raj Setty	Setty and Associates International	
Frank Mills	Frank Mills Consulting	CIBSE
John Nix	John Nix Consulting	
Kyle Hasenkox	Rocky Point Engineering	
Itzak Maor	Smart Buildings Technology	
Eric Haley	Baskervill	
Julia Keen	Kansas State University	
<b>Transportation Team</b>		
Jason DeGraw	ORNL	
Donald LeBlanc	National Research Council Canada	
Augusto San Cristobal	Bronswerk Marine	
Jim Bushnell	HVAC Consulting Services	
Byron Jones	Kansas State University	
Haven Cassidy	Denver International Airport	
<b>Building Readiness Team</b>		
Wade Conlan	Hanson Professional Services	
Dennis Knight	Whole Building Systems	
Nate Boyd	University of Central Florida	



# ASHRAE Epidemic Task Force Full Roster

Sarah Maston	Green Footprints Commissioning, Inc.	
Justin Garner	Engineered Air Balance Co., Inc.	AABC
Troy Byers	Commissioning Consultants, LLP	ACG
Kent Walters	Control Management, Inc.	
Jon Sheppard	Atlantic Testing	NEBB
Heather Platt	Dewberry	
Mike Amstadt	Mead & Hunt	
Megan Sterl	Montana State University - Bozeman	
John Hamilton	TABB	
Ray Bert (corresponding)	AABC, ACG	AABC, ACG
Tiffany Suite (corresponding)	NEBB	NEBB
<b>Filtration, Air and Surface Disinfection Team</b>		
Steve Martin	NIOSH	
Wane Baker	Trane	
Jason DeGraw	ORNL	
Sam Guzman	American Ultraviolet Company	
Dean Saputa	UV Resources	
Kathleen Owen	Owen Air Filtration Company	
Steven Welty	Green Clean Air	AIHA Healthcare Infectious Diseases Committee
Matt Middlebrooks	Filtration Group HVAC	
<b>Advocacy/Developing Economies Team</b>		
Walid Chakroun	Kuwait University	
Alice Yates	ASHRAE	
<b>Resource Inventory Team</b>		
Wade Conlan	Hanson Professional Services	
Mat Coalson	Hanson Professional Services	
Becca Coalson	ecoPreserve. LLC	
Jennifer Leach	United Energy Products	
Jon Cohen	ChemTreat	
Jason Alphonso		
<b>Literature Review/Scientific Background Team</b>		
Stephanie Taylor	Taylor Healthcare Consulting	
Steve Martin	NIOSH	
Pawel Wargocki	Technical University of Denmark	



# ASHRAE Epidemic Task Force Full Roster

External Organization Contacts		
Bill Bahnfleth	Penn. State University	
Liaisons		
Frank Mills	Frank Mills Consulting	CIBSE
Alexander Zhivov	US Army Engineer Research and Development Center	USACE