



Publishing and Education Council (PEC)

Thursday, June 25, 2020

7:00 AM - 11:00 AM (EDT)

Voting Members

Farooq	Mehboob	Chair
William	Dean	Vice Chair
Kelley	Cramm	Member
Katherine	Hammack	Member/Director
Ahmed Alaa Eldin	Mohammed	Member/Director
Chandra	Sekhar	Member/Director
Jonathan	Symko	
Cameron	Labunski	Member/Past Certification
Lawrence	Markel	Member/Past ECC
Daniel	Dettmers	Member/Past Handbook
Larry	Fisher	Member/Past PDC
Jin Jin	Huang	Member/Past Publications
Douglas	Fick	Member-at-Large
Ginger	Scoggins	Member-at-Large

Non-Voting Members

Mark	Bettin	Certification Chair
Kurt	Monteiro	Certification Vice Chair
Suzanne	Leveiseur	HB Chair
Michael	Patton	HB Vice Chair
Stanley	Westhoff	Historical Chair
Dean	Borges	Historical Vice Chair
Charles	Henck	PDC Chair
Jeremy	Smith	PDC Vice Chair/Planning
Keith	Reihl	PDC Vice Chair/Operations
Chee Sheng	Ow	Publications Chair
Hugh	McMillan	Publications Vice Chair
Mark	Owen	Staff Liaison

Staff

Sarah Foster
Greg Martin
David Soltis
Kimberly Gates
Eunice Njeru
Tim Kline
Heather Kennedy
Emily Sigman
Karen Murray
Cindy Michaels
Jeff Littleton
Joyce Abrams
Alice Yates
Ayah Said

Guests:

Donald Brandt
Randy Schrecengost
Cynthia Callaway
Mark Fly
Ashley Weekly
Bass Abushakra
Spencer Morasch
James Vallort
Adeeba Mehboob
H. Schopplein
Bill McQuade
Doug Cochrane
Tim Wentz
Tim McGinn
Suzanne Leveiseur
Chad Smith
Darryl Boyce
Doug Cochrane
Emily Porcari
Sarah Maston
Mary McGowan
Hugh Crowther
Mick Schwedler
Stan Westhoff

Additional Distribution:

Jeff Littleton, Executive Vice President, Candace DeVaughn,
ASHRAE Staff Directors, Publications & Education Managers

MOTIONS
Meeting of June 25, 2020

No.	Page	Motion
1	5	Approved draft meeting minutes for February 3, 2020 Orlando, FL as distributed. Passed 12-0-1 CNV
2a	8	Approve and recommend Society implement the Strategic Business Development Ad Hoc Report's initiatives. (Attachment B) Failed 0-0-13, CNV
2b	9	Approved for recommendation that Society review implementation of the Strategic Business Development Ad Hoc Report seven (7) listed action items. (Attachment B) Passed 13-0-0, CNV
3	9	Approved for recommendation to the BOD the Volunteer Oversight for Global Training Center Ad Hoc Report. (Attachment C) Passed 13-0-0, CNV
4	10	Approved print and digital publication of High Performing Buildings (HPB) magazine be discontinued and its content be folded into ASHRAE Journal while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars. Passed 13-0-0, CNV
5	12	Approve changes to the Handbook Committee MOP as shown in <i>Attachment A of the Functional Planning Subcommittee Report to PEC-February 3, 2020.</i> Passed 13-0-0, CNV
6	12	Approved changes to the Training and Education Committee (TEC) MOP as shown in <i>Attachment B of the Functional Planning Subcommittee Report to PEC-February 3, 2020.</i> Passed 12-0-0, CNV
7	20	Confirmed ASHRAE Units Policy (ROB 1.201.002). Passed 12-0-0, CNV

Action Items
Meeting of June 25, 2020

No.	Responsible	Action
1	Staff	Post the approved minutes for February 3, 2020 Orlando, FL on the PEC page of the ASHRAE website and the PEC Basecamp website. Complete.
2	Staff	Standards Committee recommends that Technology Council recommend to Publishing and Education Council that ASHRAE make all standards accessible for viewing over the internet at no cost. Background: In the first recommendation from the Report of the Presidential ad hoc Committee on ASHRAE's Role in the Globalization of Standards, in order to increase the international use and influence of ASHRAE standards, consider changing the business model for standards distribution so that ASHRAE standards are available over the internet at no cost, thus enhancing their availability, while retaining fees for the sale of printed copies of standards. This would bring ASHRAE's policy in line with that of the Internet Engineering Task Force, whose Internet standards are arguably the most widely adopted and successful in the world. (Tech Council vote: 12-10, CNV) PEC staff response: The major standards (particularly those referenced in codes) from which ASHRAE derives most of its standards sales revenue have been posted on the ASHRAE website in read-only format for several years, and the impact of the read-only posting, although not precisely knowable, is deemed to be small, as sales of standards and guidelines in print and PDF remain strong. The remaining standards and guidelines that would be added comprise a relatively smaller revenue stream of print and PDF sales. However, sales of PDFs suggest that the PDF format represents a significant enough improvement over the read-only format that customers will continue to purchase PDFs at some level, and ASHRAE needs to maintain that revenue stream. Therefore, staff recommends that PEC assign to staff an action item to study in detail the potential revenue impact of allowing all remaining standards and guidelines to be added for free availability on the website in read-only format, while still offering print and PDFs for purchase. This provides access for potential increased examination and influence while staying true to PEC's responsibility to obtain revenue to support ASHRAE's mission.

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1. Call to Order

Mr. Mehboob called the meeting to order at 7:00 a.m.

2. ASHRAE Code of Ethics Commitment

Mr. Mehboob reviewed with the council the ASHRAE Code of Ethics.

In this and all other ASHRAE meetings, we will act with honesty, fairness, courtesy, competence, Inclusiveness and respect for others, which exemplify our core values of excellence, commitment, integrity, collaboration, volunteerism and diversity, and we shall avoid all real or perceived conflicts of interests.

(Code of Ethics: <https://www.ashrae.org/about/governance/code-of-ethics>)

(Core Values: <https://www.ashrae.org/about/ashrae-s-core-values>)

3. Introduction of Members and Visitors

Council members and guests introduce themselves to meeting participants.

4. Review of Agenda

Mr. Mehboob reviewed the agenda with the council.

5. Minutes - Meeting of February 3, 2020 Orlando, FL

PEC draft minutes were posted to the PEC Basecamp account upon approval from the chair for review by council members.

It was moved and seconded:

(1) Approve the draft minutes as distributed for the February 3, 2020 Orlando, FL.

Background: PEC draft minutes were posted to the PEC Basecamp account upon approval from the chair for review by council members.

Fiscal Impact: None.

MOTION (1) Approved 12-0-1, CNV

An action was assigned to staff to post the approved minutes on the PEC page of the ASHRAE website and the PEC Basecamp website. **(ACTION ITEM 1)**

6. Review of Action Items - Meeting of February 3, 2020 Orlando, FL

Mr. Owen reviewed actions items from the previous meeting with council members.

<u>No.</u>	<u>Responsible</u>	<u>Action</u>
1	Staff	<p>Post approved minutes of the June 25, 2019 Kansas City, MO on the PEC page of the ASHRAE website and the PEC Basecamp.</p> <p>Complete. February 4, 2020</p>
2	Staff	<p>Provide information concerning remuneration of PDC instructors.</p> <p>Complete. Current remuneration schedule was provided to PDC. (<i>Attachment C - Functional Planning Subcommittee Report</i>)</p>
3	Staff	<p>Make a final selection of datapoints for a PEC Dashboard available for Chair council review and finalize dashboard by the Austin meeting in June.</p> <p>Complete. Dashboard mockup shown in <i>Attachment A of the Fiscal Planning Subcommittee to Report to PEC-February 3, 2020.</i></p>
4	Staff	<p>Include a data point indicating when an eLearning course is launched, when it is updated and how often each reiteration is downloaded.</p> <p>Complete. Staff response: Such a data point is not presently included in a PEC dashboard; the PEC dashboard has too many data points to include that level of eLearning detail. However, it could be included with other such details in an eLearning dashboard. (<i>Attachment B – Fiscal Planning Subcommittee Report</i>)</p>
5	Staff	<p>Create a procedure to coordinate new eLearning courses with new “hot topic” publications.</p> <p>Complete. Current procedure is for Special Publications staff to share a schedule of planned publications with both Professional Development and eLearning staff for the purpose of notifying those committees of publications in development so new courses can be developed in parallel as appropriate.</p>
6	Staff	<p>Coordinate with CTTC to include marketing for eLearning with marketing of the Tech Hour.</p> <p>Complete. Staff (Karen Murray, Eunice Njeru, Mark Owen) has begun coordinating combined marketing of all professional development (free or fee-based) opportunities as part of the response to the COVID19 issue and in developing the virtual conference in place of the Austin meeting.</p>
7	Staff	<p>Send referral response to Membership Promotion Committee’s <u><i>Motion 11 (01/15/2019)</i></u>: <i>That e-learning courses be translated to major non-English languages based on membership demographics. (Attachment B of the PEC Orlando Meeting Minutes-February 3, 2020.)</i></p>

Complete. The eLearning Subcommittee obtained estimated language translation cost per course of \$30k to \$35k per course. A rough cost estimate for completing a single language translation for all our eLearning courses:

Translation cost - \$35k to translate a single course/language times 92 courses/language equals \$3.2M.

Recouping cost – At current cost of \$50 per single eLearning course, 700 subscriptions would be needed per single translated course to break even.

In part because 90% of eLearning users are from the US and Canada, the subcommittee decided that the cost was too high and could not be justified.

8 Staff

Investigate the feasibility and cost to have subtitles included on eLearning courses.

Complete. Obtained quote for average cost of about \$2,500 per course to add subtitles in another language. eLearning Subcommittee to report; will survey members in language speaking countries regarding market receptivity and likelihood of recouping the added cost through added subscriptions.

9 Staff

Report to Fiscal Planning subcommittee expense savings on off-site saving after ASHRAE moves Headquarters to the new building.

Complete. Expenses shown in the *Rental/Storage Space* line of the financial statements reflects costs for ASHRAE’s publications fulfillment vendor, PBD. Those costs will continue when we move into the new HQ.

10 Staff

Investigate applying to include ASHRAE Handbook in UNESCO’s Memory of the World archive.

Ongoing. Staff response: Inclusion in the archive would involve a description of the ASHRAE Handbook and links to ASHRAE Handbook pages on ashrae.org. No immediate obstacles are foreseen.

11 Staff

Develop a survey tool that collects feedback from our grassroots levels, including our international membership, with respect to their product needs (books, ASHRAE Journal articles, apps, and other tools) and to link this information back to TAC council and other relevant sections for their further actions.

Ongoing. Staff response: Staff can do this using a tool available now but has had to prioritize other tasks associated with planning, rescheduling, and re-budgeting for cancelled training events and the virtual conference, along with pivoting to develop content relevant to the COVID-19 pandemic.

7. Review of PEC MBOs

Mr. Mehboob reviewed the PEC MBOs with the council. **(Attachment A)**

MBO #1: Appoint PEC Ad hoc to address Strategic Business Development for potential new revenue streams. *(Responsibility: Strategic Business Development Ad Hoc & staff)*

Final Report due to PEC at the Annual Virtual Meeting in June 2020. **Complete.** *(Ad Hoc reporting)*

MBO #2: Develop Strategy for expanding ALL Instructor core and establish procedures and criteria for instructor appointment and remuneration. *(Responsibility: PDC, Functional Planning Subcommittee, PEC Chair, PEC Vice Chair & staff)*

Oversight by Functional Planning Subcommittee of PEC. PDC will have a report concerning instructor qualifications for June 2020 Virtual Annual Conference. **Complete.** *(PDC reporting)*

MBO #3: Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand. *(Responsibility: Certification Committee, Functional Planning Subcommittee, PEC Chair, PEC Vice Chair & staff)*

Oversight by Functional Planning Subcommittee of PEC. **Complete.** *(Certification Committee reporting)*

MBO #4: Analyze performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3. *(Responsibility: PDC, Publications Committee, PEC Chair, PEC Vice Chair & staff)*

Oversight by Functional Planning Subcommittee of PEC. **Complete.** *(Publications Committee & Functional Subcommittee reporting)*

MBO #5: Develop PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees. This aligns with strategic plan initiative 3. *(Responsibility: All Standing Committees, Fiscal Planning Subcommittee, PEC Chair, PEC Vice Chair & staff)*

Oversight by Fiscal Planning Subcommittee of PEC. **Complete.** *(Fiscal Subcommittee reporting)*

8. Ad Hoc Committee Reports

8.1 Strategic Business Development

Mr. Wentz gave the ad hoc report. **(Attachment B)**

It was moved and seconded:

(2a) That PEC approve and recommend Society implement the Strategic Business Development Ad Hoc Report's initiatives. (Attachment B)

Background: The PEC Chair, Farooq Mehboob, appointed an ad hoc committee to review the current business models and operating practices to determine how revenues/profits could be enhanced.

Fiscal Impact: Positive.

Some council members, while not speaking against the motion, thought the motion to be too board and expressed concerns that accepting the entire report without reading and having detailed discussions for each of the initiatives and/or action items would be ill advised.

Mr. Mehboob disagreed, explaining that the report made recommendations for actions to be taken, but that the BOD was the only body empowered to require that any specific action be taken by other groups.

Mr. Mehboob stated that approval of the motion would simply be reporting the actions PEC would be putting in motion and recommending actions for other groups to take as well. Some members were still not convinced the motion should be passed without amendment. Mr. Mehboob asked members to supply and amended motion.

MOTION (2a) Failed 0-0-13, CNV

It was moved and seconded:

(2b) That PEC approve and recommend Society review implementation of the Strategic Business Development Ad Hoc Report seven (7) listed action items. (Attachment B)

Background: PEC members approved PEC taking the suggested actions in the ad hoc's report and recommend the BOD and other groups within ASHRAE review the suggested initiatives and action plan for possible implementation.

Fiscal Impact: Positive.

MOTION (2b) Approved 13-0-0, CNV

8.2 Volunteer Oversight for Global Training Center

It was moved and seconded:

(3) That PEC approve and recommend to the BOD the Volunteer Oversight for Global Training Center Ad Hoc Report. (Attachment C)

Background: Covid-19 necessitated midyear change in strategy as several training were cancelled and adjustments to programming were made.

Fiscal Impact: Positive.

MOTION (3) Approved 13-0-0, CNV

9. Subcommittee Reports

9.1 Fiscal Planning

Ms. Hammack gave the subcommittee report. **(Attachment D)**

It was moved and seconded:

- (4) Fiscal Planning Subcommittee recommends Publishing and Education Council (PEC) approve that print and digital publication of *High Performing Buildings* (HPB) magazine be discontinued and its content be folded into *ASHRAE Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars.**

Background: At the 2020 Winter Conference in Orlando, staff was assigned an action item to produce a proposal for adapting *High Performing Buildings* (HPB) for maximizing revenue while reducing expenses. Considerations in proposing this action included HPB's mission, business strategy, revenue streams, costs, target markets, competition, staff labor, and fiscal performance.

Options that staff examined included (1) continuing operation as at present, (2) moving to digital only, (3) discontinuing HPB in any format, and (4) incorporating HPB content into *ASHRAE Journal* and HPB newsletter.

Option 1, continuing as at present, is expected to fall short of the envisioned mission and to produce continued financial losses in coming years even after making significant cuts in expenses.

Option 2, publishing digital only, might reduce the loss or even produce a slight positive, if content can be obtained, but authors have not been able to obtain the measured data that is HPB's distinctive value in the market. And staff does not have the capability to obtain this content at present staffing or freelance funding levels. This option would, however, avoid the significant increases ASHRAE has seen in paper, postage and shipping for printed issues.

Option 3, discontinuing HPB in any format, would waste the brand awareness and audience development that has been earned at considerable cost over the last 12 years.

Staff's recommendation is Option 4—incorporating HPB content into *ASHRAE Journal*. Folding the content into our current *ASHRAE Journal* structure would strengthen *Journal* content and lower the labor. And there is an audience for continuing HPB newsletter and website, which can promote *High Performing Buildings* as an ASHRAE brand that serves to bring attention to best practices for creating sustainable buildings. There are very few advertisers who run only in HPB. Staff believes they could be transitioned into *ASHRAE Journal* with editorial on sustainability offered and distributed to an audience of potential customers.

While there may not be enough HPB-type content for four quarterly print or digital issues, incorporating that content when available into *ASHRAE Journal* or into a special section or supplement and keeping the brand fresh with interesting HPB newsletter content will draw the audience component sought in the original mission as well as serve ASHRAE members with excellent content in this area. It will further enhance the value of *ASHRAE Journal* as the premier technical publication for HVACR industry professionals. (*Functional Planning Subcommittee Approved Motion 8-0-0 CNV.*)

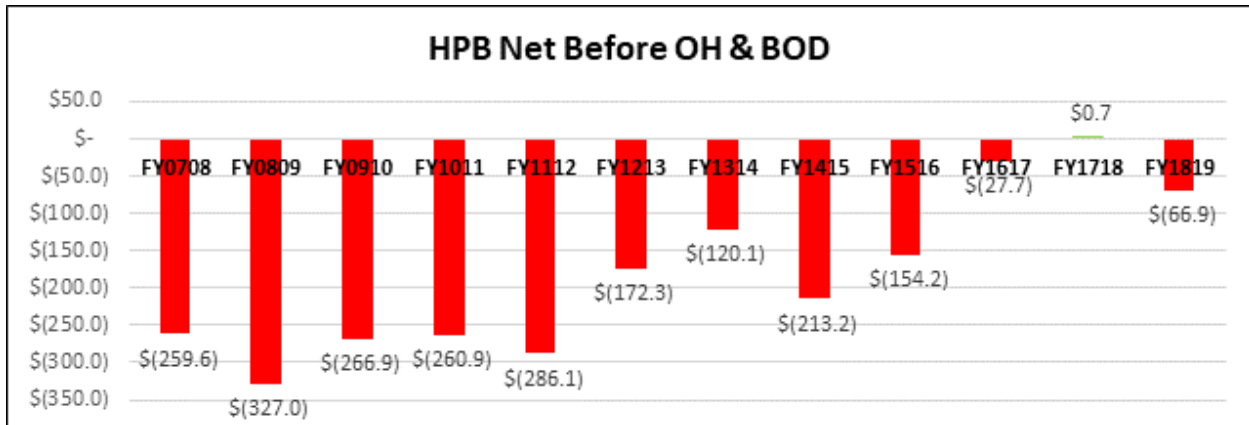
Fiscal Impact: Positive \$75k to \$100k.

HPB's best fiscal performance since inception was FY17-18, which was slightly better than breakeven. Eleven of its 12 years have resulted in losses averaging \$179.5k annually, and the outlook for profitable operation as presently structured is not favorable.

Total revenue for HPB last year was \$211.7k. However, expenses were \$278.6k for a net loss of \$66.9k.

This year (FY19-20) is projected for about \$100k net loss before OH & BOD. The next three budgets are projected for losses of \$75k to \$100k.

Following is a graph of HPB fiscal performance since inception:



MOTION (4) Approved 13-0-0, CNV

The subcommittee had oversight of PEC MBO #5: Develop PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees (in alignment with Strategic Plan Initiative 3, Mr. Owen presented a mock-up of a dashboards for February 2020 and May 2020 shown in *Attachment A & Attachment B of the Fiscal Subcommittee Report to PEC*.

Mr. Owen presented the May 2020 PEC financial statements in detail for subcommittee review. Overall, PEC revenue is down 4% year over year (YOY) and 12% versus budget with expenses down YOY by 9% and 16% versus budget. The net result is \$395k up YOY and \$329k versus budget. The forecast for the end year net is up \$494k YOY and down \$64k versus budget.

The pandemic and economic uncertainty have contributed to a reduction in revenue with lower-than-expected advertising, publication sales and cancelled in-person training events and certification exams. Expense reductions associated with lower printing costs, deferred projects, reduction in staff, and lower costs of online versus in-person The PEC Dashboard,

9.2 Functional Planning

Mr. Symko gave the subcommittee report. **(Attachment E)**

It was moved and seconded:

- (5) **Functional Planning Subcommittee recommends PEC approve changes to the Handbook Committee MOP as shown in Attachment A of the Functional Planning Subcommittee.**

Background: These changes will reflect the reporting and procedural changes that will happen with the new PEC restructure plan to be implemented July 1, 2020. Additional editorial and clean up changes to these documents were also made.
(Functional Planning Subcommittee Approved 8-0-0 CNV)

Fiscal Impact: None.

MOTION (5) Approved 13-0-0, CNV

It was moved and seconded:

- (6) **Functional Planning Subcommittee recommends PEC approve changes to the Training and Education Committee (TEC) MOP as shown in Attachment B of the Functional Planning Subcommittee.**

Background: These changes will reflect the reporting and procedural changes that will happen with the new PEC restructure plan to be implemented July 1, 2020. Additional editorial and clean up changes to these documents were also made.
(Functional Planning Subcommittee Approved 8-0-0 CNV)

Fiscal Impact: None.

MOTION (6) Approved 12-0-0, CNV

Functional Planning Subcommittee was assigned oversight of three PEC MBOs:

MBO #2: Develop Strategy for expanding ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration.

The PDC has completed this objective as shown in *Attachment C of the Functional Planning Subcommittee.*

MBO #3: Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand.

Certification Committee considered subject matter experts would be best positioned to identify which jobs would line up under SP initiatives 1 and 2 as potential new certification prospects. Certification Committee went to TC and SSPC meetings in Orlando to answer questions and be a resource, (SSPC 135, TC 2.1, TC 2.10, TC 2.3, TC 2.5 and TC 7.1). No proposals were received by the March 15 deadline. Additionally, committee members noted that several currently existing certification programs already appear to support SP initiatives 1 and 2, including the BCxP, HBDP, CHD, and OPMP. Certification Committee will report on any proposals developed before the PEC June Conference call.

MBO #4: Analyze performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3.

A Special Publications Evaluation Criteria Form was drafted, reviewed and approved by the Publications Committee as shown in *Attachment D of the Functional Planning Subcommittee*.

Functional Planning Subcommittee received a request from SRC that the following section of the Members Council section of the ROB reviewed by Members Council and Pub & Ed Council with recommendations forwarded back to SRC.

2.103.003.8 Single-year CD (03-07-02-20)

~~A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.~~

SRC requests that recommendations represent current practices as a single-year CD is no longer offered. It was noted that as the section addresses member benefits, Members Council may want to modify this section to incorporate recent changes in the membership model. There may also be modifications to this section from Publishing and Education Council as it references the ASHRAE Handbook.

After discussion with the Director of Publishing & Education, Mark Owen, the subcommittee recommends that it be completely struck from the ROB as such specific listing of the Handbook benefit format is too restrictive. Or that it be changed as follows:

2.103.003.8 ~~Single-year CD~~ Handbook Content (03-07-02-20)

~~A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.~~ The content of each year's Handbook volume will be offered in electronic format.

SRC has also requested PEC review and make their recommended edits shown in *Attachment E, F and G of the Functional Planning Subcommittee*. Time prohibited the subcommittee from reviewing the document during the meeting. The request will be handled in the next society year.

The subcommittee discussed an opportunity for ASHRAE to participate in a new effort by NYSERDA to develop training courses on performance enhancement guidance for New York State Codes. It was decided that Tech Council was the appropriate place to start the process of ASHRAE involvement.

9.3 eLearning

Mr. Mehboob gave the subcommittee report. **(Attachment F)**

Staff reported to the subcommittee subscription revenue for ASHRAE eLearning, for the 2019-2020 fiscal year, is 204.5K (year to date) on a forecast of 225K (May Financials). Most of this revenue is from individual subscriptions, with a few corporate subscriptions.

eLearning is expecting a 60K transfer from the ASHRAE Foundation to continue to fund both new courses and updating existing courses. Additionally, UNEP activities are forecasted to bring in 166K.

Mr. Mehboob reported that a review of eLearning expenses, salaries, and overhead allocations will be conducted to determine their impact on the overall performance of eLearning.

It was reported to the subcommittee ASHRAE eLearning is updating its courses seven courses were updated in 2019-2020. Depending on the availability of financial resources, eLearning aims to update 10 course each year.

Staff presented the subcommittee a draft dashboard, shown in *Attachment A of the eLearning Subcommittee Report to PEC*, shows metrics for frequency of updates, course age, demand, and industry trends to help determine when and which courses should be updated.

Staff also reported eLearning's current Learning Management System (LMS) and eCommerce are being upgraded for course and participant data migration for launch at the end of July 2020.

Members referred a motion to translate eLearning courses into several languages to the subcommittee. (*Attachment A of the eLearning Subcommittee Report to PEC*) After review of the cost associated with translation, fiscal impact per course is estimated at 30K-35K. Alternatively, cost of subtitling is 2.5K per course, per language; 20K-25K, per course, to subtitle in all eight languages proposed. In order to evaluate return on investment, a survey is needed to determine demand courses in the eight countries outlined in the motion. eLearning Subcommittee's recommends PEC respond to Members Council that further study is needed before any decisions can be made.

9.4 Journal Advertising Sales

Mr. Mehboob gave the subcommittee report. (**Attachment G**)

Mr. Mehboob reported on analysis of current sales revenue compared to previous fiscal years. Staff reported to the subcommittee reviewed a status report on sales, including financial statements for the FY19-20 forecast and the budget outlook for FY20-21, the current rate structure, and new incentives to encourage expanded programs. The Journal remains advertisers' No. 1 choice for the past ten years. Paid advertising share of market (SOM) ratio for the past 12 months is slightly greater than the previous 12 months at 63% of all advertising pages sold— capturing 84% of all HVACR engineering advertisers—from May 2019-April 2020. At the same time, a net loss of 69 paid pages impacted ASHRAE Journal while competitors lost an additional 45 net pages of advertising. This result is attributable to increased market competition and internal channels for advertising dollars. The Journal's SOM has risen from 47% in 2009 to 62% for 2019 calendar year in a three-publication marketplace.

Staff recommended to the Publications Committee that print and digital publication of *High Performing Buildings* (HPB) magazine be discontinued and its content be folded into *ASHRAE Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars. Publications Committee approved and sent the recommendation to the Fiscal Subcommittee for further consideration.

Staff reported to the subcommittee ASHRAE advertising revenue appeared to be trending upward prior to the global pandemic's arrival in the U.S. In February, Journal sales exceeded its FY20 goal and the prior year's revenue.

However, advertising cancellations attributed to the pandemic have occurred. Some advertisers furloughed marketing staff during the crisis, and office closures created logistical problems in gathering information on advertising programs.

9.5 Research Journal

Mr. Mehboob gave the subcommittee report. **(Attachment H)**

The Editor-in-Chief of the *Science and Technology for the Built Environment* (STBE), Dr. Jeff Spitler, reported receiving 69,751 article downloads in 2019, an increase of 43% over 2018. STBE published 129 papers in 2019, with 10 of them open access (OA). The 2018 impact factor is 1.199, ranking 42/63 in the construction and building technology category of Journal Citation Reports (JCR). The impact factor for 2019 is typically reported in late June.

Mr. Mehboob reported that Dr. Spitler will submit recommendations for 4 associate editors to the subcommittee for approval in late June.

Dr. Spitler reported that the COVID-19 pandemic is going to delay or eliminate some conferences and therefore special issues of STBE. The Editorial Board will be asked to help identify non-conference-based topical issues.

Mr. Mehboob also reported that the pandemic has delayed an initiative to expand the editorial review board by recruiting junior and mid-level faculty and recent PhD graduates with recognition given on the ASHRAE website.

10. Committee Reports

10.1 Certification

Mr. Bettin gave the committee report. **(Attachment I)**

Mr. Bettin reported ASHRAE received 10% more certification applications over the previous SYTD. Certification revenue is better by \$4,000 versus last year's actual revenue through May, not including an ASHRAE Foundation contribution.

Certification Committee was assigned the following MBO: "Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 (*promote best practices that enable adaptability, resilience and recovery of buildings and communities*) & 2 (*promote understanding of indoor environmental quality (IEQ) among practitioners*) after surveying members to establish interest and demand." Details of the committee efforts are shown in Please see Attachment A of the Certification Committee's Report to PEC

ASHRAE's ANSI Reaccreditation Application for (CHD, HFDP and OPMP) is in progress.

The Certification Committee anticipates continued accreditation of all seven ASHRAE certification programs under the ISO/IEC 17024 International Standard for personnel certification programs in September 2020.

In response to Covid-19 remote online proctored examinations will begin July 2020 for a safe, secure and convenient way for ASHRAE certification candidates to schedule and sit for certification exam and will expand the market for ASHRAE certification.

Mr. Bettin reported on a that ASHRAE Foundation and Certified HVAC Designer (CHD) volunteers, are creating a study guide for the CHD program entitled *Certification Study Guide: Certified HVAC Designer (CHD)*. The new publication is due to launch in July.

New in 2019-20, Certification Digital Badging continues to be a success. A total of 680 (73%) of 932 badges issued have been accepted by certificants. There have been over 8,800 badge views in various electronic media. As examinees continue to pass their exam and certificants continue to renew their certification, more badges will be issued.

Example:



Ongoing exam development activities in 2019-20:

- BCxP: New exam form launched in March 2020.
- BEMP: New exam form launched in March 2020.
- HBDP: New exam form to launch by August 15, 2020.
- HFDP: New exam form launched in February 2020.

Certification Committee's 2019-2020 MBOs are shown in *Attachment B of the Certification Committee Report to PEC*.

10.2 Handbook

Ms. Levisaur gave the committee report. **(Attachment J)**

Revisions to the Handbook Committee MOP have been completed and approved by the HBC and by the PEC Functional Subcommittee (*Attachment A*). There are no revisions to HBC ROB.

ASHRAE staff is currently testing a solution to allow Internet browsers beyond just Internet Explorer to be used with the ASHRAE Authoring Portal.

Handbook Committee's 2019-2020 MBOs are shown in *Attachment B of the Handbook Committee Report to PEC*.

10.3 Historical

Mr. Westoff gave the committee report. **(Attachment K)**

Mr. Westoff reported on the committee's projects:

- All 125th anniversary projects have been completed except one book to be promoted during the Virtual Conference and to be published in hard cover afterwards.
- A pilot plaque project which will be installed in Orange, Texas later this year.
- The committee has chosen two names for the next Leadership Voices interviews to be filmed in either Chicago or Phoenix. The committee has discussed the importance of including not just Presidential members but also industry innovators and leaders.
- The committee is continuing communication with Regional and Chapter Historians to keep them involved in history at the Society level.
- The committee reviewed a report on the status of PAOE points on the part of chapters by regions and approved suggested changes to PAOE for fiscal year 2020-21 with the goal of continuing to encourage non-participating chapters to reach minimum or par.
- The committee discussed ways to disseminate information for chapters and regions and others to maintain, preserve, and archive documents and materials.
- The committee will consider Basecamp as a potential storage solution for electronic documents and files with a template created for that specific use.

Historical Committee's 2019-2020 MBOs are shown in *Attachment A of the Historical Committee Report to PEC*.

10.4 Professional Development (PDC)

Mr. Henck gave the committee report. **(Attachment L)**

Mr. Henck reported on the following comparison of 2019-20 vs 2018-19 ALI course registrations:

Year	Winter	Annual	Online	In-Company	Chapter	Industry	HVAC I	HVAC II	Global Training Ctr	TOTAL
2019-20 (Orlando/)	1,137		747*	665	200	42	312	250	694	4,047
2018-19 (Atlanta/Kansas City)	747	212	260	955	600	290	548	331	730	4,673

*Does not include Free 1-hour webinar registrants (more than 7,400 to date).

Mr. Henck reported online course registrations increased over 187% in response to the COVID-19 Pandemic with Staff handling a tremendous increase in online course registrations.

Mr. Henck reported the committee will oversee development of HVAC Design Training: Level I – Essentials training offered as comprehensive online modules. Completion expected in late summer.

In response to PEC MBO#2, the PDC provided Instructor Qualifications and Search Criteria to the Functional Planning Subcommittee.

Mr. Henck reported the work continues with the cognizant TC members to review and revise six Self Directed Learning (SDL) courses and the following two new courses are now available in the ALI course catalog:

- *Complying with Standard 90.1-2019* (6-hours)
- *Smart Grid Systems, Applications and Integration with the Built Environment* (3-hours)

PDC 2019-2020 MBOs are included as *Attachment A of the PDC report to PEC*.

10.5 Publications

Mr. Ow gave the committee report. **(Attachment M)**

Mr. Ow reported on April 28, 2020, the committee approved that the proposed children's book *Lucy's Work Day Adventure* move forward to the Director of Publications and Education for publication. On June 9, 2020, the committee voted to conditionally accept PTAR 1 (re: revising the 1998 publication *Application of Manufacturers' Sound Data*) and is forwarding that vote outcome to RAC.

Mr. Ow reported Sarah Foster, *ASHRAE Journal* Editor, and Tani Palefski, *ASHRAE Journal* Associate Editor, will update the Publications Committee Reference Manual to reflect the current practices for peer review of articles submitted to *ASHRAE Journal*. The committee has created a subcommittee to generate a market survey that will be sent to members/customers to determine the market need/demand for a series of simple, straightforward application guides on various HVAC topics as suggested by Presidential Member Tim Wentz in June 2018.

Updates on the Publications Committee MBOs for the 2019-2020 Society year are included in *Attachment A of the Publications Committee Report to PEC*.

The Publications Committee MBOs for the 2020-2021 Society year are shown as *Attachment B of the Publications Committee Report to PEC*.

11. Items Referred by PEC to Other Groups

None.

12. Items Referred from Other Groups to PEC

Mr. Owen reported on referrals to PEC.

- 12.1 EHC recommends that Technology Council recommends to Publication & Education Council that they make the *Residential IAQ Guide* be made available for free download to the public.

Background: The *Residential IAQ Guide* has sold just over 100 (hard copies and downloads) sold since publication for about \$8,000 in income to ASHRAE. ASHRAE members paid \$150,000 to have it developed. SSPC 62.2 has moved to withdraw G24 20XX, because the information is available in the *Residential IAQ Guide*. Making the information in the Residential IAQ Guide would make the information more broadly available for use. For example, the 2009 *Commercial IAQ Design Guide* is now available for free download after initially being sold for \$85 with limited distribution. 18,000+ copies were distributed in the year after being made available for free.

(Tech Council Vote: 13-0-0, CNV)

PEC staff response: The guide has now sold 133 copies since publication in April 2018 for revenue of \$10,102. In the last 12 months, it has sold 41 copies for \$3,741 revenue. Note that the guide was recently made available for free access in read-only format on the COVID-19 resources page of the ASHRAE website. Staff recommends that PEC allow the guide to be made available for free download in the same manner as the commercial IAQ guide, with registration information required from users seeking to download the publication, with an option for users to buy a print edition at a price that at a minimum covers production and administration costs.

- 12.2 Standards Committee recommends that Technology Council recommend to Publishing and Education Council that ASHRAE make all standards accessible for viewing over the internet at no cost.

Background: In the first recommendation from the *Report of the Presidential ad hoc Committee on ASHRAE's Role in the Globalization of Standards*, in order to increase the international use and influence of ASHRAE standards, consider changing the business model for standards distribution so that ASHRAE standards are available over the internet at no cost, thus enhancing their availability, while retaining fees for the sale of printed copies of standards. This would bring ASHRAE's policy in line with that of the Internet Engineering Task Force, whose Internet standards are arguably the most widely adopted and successful in the world. (Tech Council vote: 12-10, CNV)

PEC staff response: The major standards (particularly those referenced in codes) from which ASHRAE derives most of its standards sales revenue have been posted on the ASHRAE website in read-only format for several years, and the impact of the read-only posting, although not precisely knowable, is deemed to be small, as sales of standards and guidelines in print and PDF remain strong. The remaining standards and guidelines that would be added comprise a relatively smaller revenue stream of print and PDF sales. However, sales of PDFs suggest that the PDF format represents a significant enough improvement over the read-only format that customers will continue to purchase PDFs at some level, and ASHRAE needs to maintain that revenue stream.

Therefore, staff recommends that PEC assign to staff an action item to study in detail the potential revenue impact of allowing all remaining standards and guidelines to be added for free availability on the website in read-only format, while still offering print and PDFs for purchase. This provides access for potential increased examination and influence while staying true to PEC's responsibility to obtain revenue to support ASHRAE's mission. **(ACTION ITEM 2)**

13. Old Business

13.1 Units Policy

Mr. Owen reported that the ASHRAE Units Policy is required by the ASHRAE Rules of the Board to be reviewed and reconfirmed annually.

It was moved and seconded:

(7) That PEC confirm and recommend that BOD approve the ASHRAE Units Policy (ROB 1.201.002):

1.201.002 Units Policy (82-07-01-30/84-06-21-39/85-06-27-41/87-01-19-28/88-05-21-37/90-02-14-10/90-06-14-31/91-01-24-51B/92-07-02-39/93-07-01-54/94-01-26-57/94-06-30-32B/95-02-02-38/95-06-29-29/01-06-28-38C/04-06-30-13/07-06-27-22/08-06-25-14/09-06-24-14/11-06-29-07/12-06-27-20)

- 1.201.002.1 The units use or application policy shall include, as a minimum, time-dated directions on the use of SI and I-P in all ASHRAE publications.
- 1.201.002.2 TC 1.6 shall serve as the authority on SI and I-P usage and application.
- 1.201.002.3 Research projects; codes, standards, guidelines and addenda hereto; special publications; Insights articles; Journal articles; and Handbooks shall be prepared using the International System of Units (SI) and/or inch-pound units (I-P) in formats approved by the Publishing and Education Council.
- 1.201.002.4 The Publishing and Education Council shall review annually the approved formats to be used in ASHRAE publications, considering suggestions from members and committees, and shall establish any changes in the approved formats.
- 1.201.002.5 The Publishing and Education Council shall consider this Units Policy annually and shall recommend to the Board of Directors the formats to be used in ASHRAE publications.
 - A. The format for ASHRAE publications shall be dual units, except in cases determined by the Publishing and Education Council, where two separate versions are to be published, where one is rational SI and the other is rational I-P. For selected ASHRAE standards and guidelines, the Standards Committee may approve use of SI units only.
 - B. In dual unit publications, the units used in calculating the work being reported shall be listed first. The alternate system of units should follow in parentheses. Authors shall round off equivalents in the alternate system of units so that they imply the same accuracy as is implied with primary units.
 - C. Exceptions require the approval of the Director of Publishing and Education.
- 1.201.002.6 Handbook volumes shall be published in separate SI and I-P editions.

1.201.002.7 *Science and Technology for the Built Environment*, as ASHRAE’s international research journal may publish papers in dual units or, in cases where the original research being reported was conducted in SI units, in SI units only.

Background: The ASHRAE Units Policy is required by the PEC Rule of Board to be reviewed and reconfirmed at the annually.

Fiscal Impact: None.

MOTION (7) Approved 12-0-0, CNV

14. New Business

14.1 Thank you to out-going council members

Mr. Mehboob thanked out-going PEC members for their service to the council. Certificates of Appreciation will be mailed out to standing committee chairs. The council acknowledged with gratitude Mr. Mehboob’s leadership during the year.

15. Adjourn

Mr. Mehboob adjourned the meeting at 11:58 a.m.

PUBLISHING & EDUCATION COUNCIL - MBOs 2019-2020 SY - Farooq Mehboob, Chair

		RESPONSIBILITY												STATUS	COMMENTS		
		Committees				Subcommittees				Other							
NO.	DESCRIPTION	Certification	Handbook	Historical	PDC	Publications	Functional	Fiscal	eLearning	Journal Advert.	Research Journal	Ad-hoc	PEC V Chair			PEC Chair	Staff
1	Appoint PEC Adhoc to address Strategic Business Development for potential new revenue streams.	-	-	-	-	-	-	-	-	-	-	X	-	-	X	Complete.	Final Report due to PEC at the Annual Virtual Meeting in June 2020. Ad Hoc reporting.
2	Develop Strategy for expanding ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration.	-	-	-	X	-	X	-	-	-	-	-	X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. PDC will have a report concerning instructor qualifications for June 2020 Virtual Annual Conference. PDC reporting.
3	Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand.	X	-	-	-	-	X	-	-	-	-	-	X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. Certification Committee reporting.
4	Analyze performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3.					X	X						X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. In-Progress. Publications Committee and Functional Subcommittee reporting.
5	Develop PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees. This aligns with strategic plan initiative 3.	X	X	X	X	X		X					X	X	X	Complete.	Oversight by Fiscal Planning Subcommittee of PEC. Fiscal Subcommittee reporting.



PEC Ad Hoc on Strategic Business Development

FINAL REPORT – JUNE 15, 2020

AD HOC COMMITTEE MEMBERS

STEVE COMSTOCK

HUGH CROWTHER

BILL DEAN

MARK OWEN

JON SYMKO

MEGAN TOSH

TIM WENTZ

ALICE YATES

Ad Hoc Scope and Background

ASHRAE revenue streams from publications and educational products are being challenged by a rapidly changing market and culture. Our Society needs to review the business models of each of its product and service offerings and identify ways to increase profitability and diversify its portfolio. From this background the PEC Ad Hoc on Strategic Business Development has been created to research, evaluate and recommend opportunities for enhancing PEC revenue.

The ad hoc committee's investigation process includes three steps with respect to the products and services provided by PEC;

1. Determine where we are today
2. Ascertain where we want to be
3. Develop a plan to attain our goal

The preliminary report¹ proposed looking at ASHRAE's products and services through a financial lens, as does most of our industry, using gross margin as one of the guiding metrics. As found in the preliminary report, we are defining gross margin as Revenue minus the direct costs to provide product/service that varies with volume and minus the staff labor directly associated with product/service. As an example, if Handbook revenues are \$100 and it costs \$50 to print the book, \$5 to ship the book and \$25 of staff labor, the gross margin would be $\$100 - (\$50 + \$5) - \$25 = \$20$ with a gross margin percentage of 20%.

Moving to a financial perspective is a fundamental, cultural change for ASHRAE, as we have historically used an accounting process to evaluate products. The first two steps above were addressed in the preliminary report and provide a new perspective of where we are today and where we want to be in the next 3 to 5 years, as illustrated Table 1 below, relative to PEC's products and services.

	Publications	Advertising	Education	Certification	TOTAL
Actual Revenue	\$ 3,042	\$ 4,074	\$ 1,870	\$ 226	\$ 9,212
Actual Gross Margin (\$)	\$ 969	\$ 145	\$ 149	\$ (141)	\$ 1,122
Actual Gross Margin (%)	32%	4%	8%	-62%	12%
Target Revenue Goal	\$ 4,000	\$ 4,100	\$ 2,500	\$ 500	\$ 11,100
Target Gross Margin (\$)	\$ 1,280	\$ 205	\$ 800	\$ 50	\$ 2,335
Target Gross Margin (%)	32%	5%	32%	10%	21%

Note: Revenues shown are x1000.

Table 1

In analyzing the four revenue streams of PEC from a financial basis revealed a completely new perspective of how each revenue stream is performing. Publications is viewed as performing at a high level with a 32% gross margin. As a result, its target gross margin remains at the same level. Advertising is undergoing a dramatic change in virtually every industry as we move from a print to a digital environment. Comparing advertising across industries, it is felt that Advertising is performing at an acceptable level and thus its target also remains virtually unchanged. Inasmuch as both Publications and

¹ A preliminary report, dated Feb. 17, 2020, addressed the first two steps and can be found at <https://unl.box.com/s/lgv8kgw5rfd8vsbrtppmy4f7uu7udtn>

Advertising are performing at an acceptable gross margin, our future strategy will be to grow revenue. Education and Certification are both areas of great opportunity as they appear to be operating below their potential with a gross margin of 8% for Education and -63% for Certification. Education particularly seems to have lots of upside, especially with governments supporting training and education with significant funding. We have accordingly set its target gross margin to be equal to that of Publishing at 32%. Certification is obviously underperforming, notwithstanding the fact that the program was originally presented to the Board as a member benefit and not intended to be a profit center. Even though Certification may well have a low margin under the best of circumstances, the Certification margin can easily be augmented by our education mission. Certification is an important member benefit and we believe that it is possible to significantly improve its performance by reconsidering its business model together with a closer and more dynamic relationship with our education programs. Our review of industry certification programs revealed that most organizations don't make their money on certification, they make money on training and education. Accordingly, we are recommending a target gross margin of 10% for Certification.

To truly understand the choices being made, it is important to go beyond the margin a product or service can create and also consider the development cost and the time to recoup the investment. To assist in the implementation of the financial perspective, we are recommending that Finance Committee use a single analysis form to evaluate all services and products.

Action Item #1 – Recommend that Finance Committee adopt the use of a single analysis form across all ASHRAE products and services to include gross margin dollars, gross margin %, payback and other suitable metrics. An example of such a form can be found in Appendix A.

Action Item #2 – Recommend that Finance Committee reconfigure their accounting system to automatically produce financial data, including gross margin in dollars and percentage, for all products and services.

The Importance of the Transformation

The world has changed fundamentally due to the crisis created by the COVID pandemic. There is no going back to “business as usual”, for either the world or for ASHRAE. We have long held that ASHRAE's future is a digital future. Incoming President Chuck Gullledge will provide his vision for our Society at this annual meeting and his theme makes it abundantly clear that the pace of change is accelerating inexorably towards a virtual future including both design and construction.

In many respects, the COVID pandemic has further magnified the need to transform to a digital future, as evidenced by the fact that this report is being presented in a digital platform at our first virtual annual conference. These abrupt changes have also revealed a significant weakness in ASHRAE's financial platform, as shown in Table 2 below. Approximately 21% of ASHRAE's revenue is found in one revenue item; the yearly Exposition. Any change in the revenue generated by the Expo will have a very significant impact on ASHRAE inasmuch as it has a 100% margin (no expenses). Said another way, a \$1 million dollar miss in Expo revenue automatically translates into a \$1 million dollar miss in gross margin revenue. This is critical as the gross margin dollars are used to offset ASHRAE's general and administrative overhead. A revenue stream that constitutes 21% of total revenue exposes ASHRAE to significant amount of risk, as we are now realizing. The point of this illustration is clear; it is the margin

dollars that are important. Revenue is simply a necessary evil one has to deal with in order to get to margin dollars, which tell the real story of product/service performance.

The global economic crisis is still evolving and its true impact is uncertain. What is certain is that PEC must play an important role in replacing any lost revenue if ASHRAE is to enjoy a strong financial future.

Revenues (x1000) & Margins (SY 18-19)				
Category	Total Revenue	% of Total	Gross Margin \$	Gross Margin %
Membership Dues	\$ 8,151	28%	\$ 1,470	18%
Exposition Income	\$ 5,976	21%	\$ 5,976	100%
Advertising Income	\$ 4,074	14%	\$ 145	4%
Publication Sales	\$ 3,042	10%	\$ 969	32%
Education	\$ 1,870	6%	\$ 149	8%
Certification	\$ 226	1%	\$ (141)	-62%
Meetings & Seminars	\$ 1,589	5%	\$ (846)	-53%
Contributions	\$ 2,405	8%	NA	NA
Other	\$ 1,711	6%	NA	NA
REVENUES	\$ 29,044	100%		

Table 2

The Transformation Process

These unprecedented times have thrust ASHRAE into an entirely new environment highlighted by a global economic crisis. It is well to recall that the Chinese word for ‘crisis’ is comprised of the symbol for ‘danger’ coupled with the symbol for ‘opportunity’. Dynamic leaders always focus on the opportunity, as must ASHRAE, if it is to create a new financial platform that is secure, robust and viable. Many opportunities will manifest themselves during these uncertain times. For example, the need to save on energy costs, an ASHRAE strength, will be greatly amplified as firms, universities and governments struggle with lower revenues and higher expenses caused by the pandemic. The crisis will call for ASHRAE to transform how we view our products and services if we are to unlock their vast economic potential.

Moreover, our members are best served if ASHRAE enjoys a strong, stable financial foundation. Our Ad Hoc has recommended the above gross margin targets to create that foundation. Further, the Ad Hoc has identified three additional transformational changes that, taken together, have the potential to produce the type of financial platform ASHRAE will need in order to accomplish our mission in the future. The transformational changes recommended for PEC’s products and services are:

- Create a market-driven business model of product/service development that focuses on the needs and expectations of clients
- Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value

- Develop a sales strategy to sell ASHRAE technology B2B in a digital world

In order to effectively demonstrate how these proposed changes might be implemented by PEC, we divided the Ad Hoc into four work groups, each of which was tasked to develop a “mini-business plan” on four different PEC revenue streams, as listed below:

- Training and certification
- The digital universe/Advertising
- Building EQ
- Royalties and custom codes

The sole purpose of the four mini-business plans is to demonstrate implementation paths from a financial perspective; that is, how the PEC products and services can improve their gross margin. The four mini-business plans can be viewed separately in Appendix B, C, D and E.

Transformation Implementation Paths

Create a market-driven business model of product/service development that focuses on the needs and expectations of clients

Committing to a business perspective in making decisions requires that the voice of the customer needs to be our prime consideration in the development of PEC products and services. Otherwise, we run the risk of developing a quality product that no one wants to buy. ASHRAE has a long history of making exactly that mistake. Producing what the market wants, not what we like, essentially reverses the flow of decision making in ASHRAE. We must commit to pulling information from industry regarding their needs and expectations and then delivering a product that meets those expectations. An ASHRAE competitive advantage is our ability to generate content, thus this strategy plays exactly into our strengths.

ASHRAE has historically waited for the phone to ring before a sale is made. A cultural shift is required wherein our business perspective will pull information from industry, developing products that meet a specified need or expectation. This new perspective, used by most organizations that compete in a free market system, treats clients as business partners, as opposed to the passive approach we have employed in the past. Using a business perspective and developing products and services based on industry needs does not void the charitable function of our Society. Rather, it recognizes the need to generate revenue in a free market system to allow the charitable work of our Society to proceed forward.

Examples on how to implement a transformational change in a market-driven business model follow:

- Royalties and Custom Code Work Group

This work group notes that ASHRAE is often asked for “*assistance in development and review of state and local building codes including those from smaller communities that may only have one person who is responsible for all building codes*”. Examples are also available in larger communities, such as Vancouver, British Columbia that eventually found it necessary to develop their own software to assist its plan reviewers check for compliance with ASHRAE Standard 90.1. Most communities that adopt ASHRAE standards modify or adapt them to local conditions, climate or culture, necessitating the need for assistance in reviewing and developing these modified codes. This is clear evidence of global, market-driven needs that should be the driver

of ASHRAE product and service development. ASHRAE's current focus is very internal; working only on the promotion and adoption of ASHRAE Standards. While ASHRAE has created some custom codes, including for Kuwait, a more fully develop program would enable ASHRAE to take greater advantage of this market demand. A more detailed explanation can be found in the Royalties and Custom Code mini-business plan, Appendix B

A rare opportunity exists that makes this market-driven approach even more attractive. The current pandemic will undoubtedly cause many communities across the world to re-evaluate and adapt existing codes and standards to provide greater protection for building occupants from pathogens, such as SARS-CoV-2. ASHRAE needs to be on the leading edge of this sea change, which could provide significant revenues across our product lines. Further, this market-driven approach leverages some of ASHRAE's competitive advantages, including our "go to" reputation in the standards writing arena, our 57,000 member 'sales force' spanning 132 different countries, and the fact that we are often the first organization contacted inasmuch as we wrote the standards. One hindrance for short-term opportunities and revenues is the severe fiscal situation facing most state and local governments. This needs to be carefully considered as ASHRAE balances its important mission with revenue needs.

A separate Presidential Ad Hoc committee was formed by President Boyce to *"provide assistance, through fee-based consulting services, for code and standards support services and identify a mechanism to provide services"*. The Board approved the plan put forward by the Code/Standard Jurisdiction Support Services Ad Hoc. The report approved by the Board is attached in Appendix F. The Presidential Ad Hoc recommended a separate staff person to coordinate these services. This could easily grow into a separate, revenue-seeking department with ASHRAE volunteers as paid consultants, authorized dealers, partner organizations or any number of similar organizational structures.

This Work Group fully supports the work of the Jurisdictional Support Ad Hoc and recommends that their recommendations be implemented in accordance with the transformational changes identified in this report, as identified below:

- A financial review be conducted, including anticipated gross margins, using the form found in Appendix A. The gross margin goal set by the Work Group for this revenue stream is 30 – 35%.
- Create a portfolio or "bundle" of services to sell that enhances the value of products across ASHRAE silos. In this particular case, it would be logical to create a portfolio of services that includes standard/code development, standard/code review, education, training, and certification and/or badging. This would require this market-driven service to be in close communication and collaboration with Tech Council, Pub/Ed Council, Government Affairs Committee, and the Certification Committee to name just a few of the major players within ASHRAE.
- Much of the product and services can be provided online, opening up opportunities for selling B2B in a digital world. There are organizations in this area that may serve as partners, such as ICC and IAPMO, both of which already have a relationship with ASHRAE. Both ICC and IAPMO develop model codes and ASHRAE does receive approximately \$50,000 to \$65,000 in royalties from ICC. In exploring the B2B digital opportunity it would probably be well to continue the relationship with ICC to enhance that revenue stream, while also attempting to create a similar business opportunity with

IAPMO. The B2B digital approach has its greatest opportunities outside of North America, where less competition exists. Notable successes have already occurred in Kuwait and negotiations are underway with other countries outside North America.

Action Item #3 – Adopt a product/service planning process that is market-driven. The process should be developed by a cross-Council team and include marketing. To leverage ASHRAE strengths, the process should include the appropriate path(s) within ASHRAE to optimize the development and marketing of the product/service identified by the process.

Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value

Another one of ASHRAE’s competitive advantages is that it produces a very wide diversity of technical products, much more so than many other non-profit organizations. Additionally, these products are of very high quality and enjoy a significant branding advantage due to the high regard with which ASHRAE products are held. These competitive advantages are not leveraged well, however, in that most of ASHRAE’s products and services are “stand alone”. Our competitive advantage could be magnified many times over by creating portfolios or “suites” of complementary products. For example, packaging training, education, standard sales along with a certification program adds value to the portfolio that is greater than the sum of its parts.

PEC is uniquely situated to cut across all parts of ASHRAE and eliminate the “silo effect” that has prevented ASHRAE from realizing the full market value of its products and services. Coupled with our recommendation to transition to a financial perspective will allow us to analyze sales and margin figures for portfolios instead of a single product or service. Producing portfolios will also open new opportunities and markets to ASHRAE, which is critical to our need to greatly expand our revenue streams. Additionally, coupling the concept of product portfolios with the transition to a business-oriented perspective will make PEC the driver of product development, based upon client needs.

- Building EQ Work Group

This Work Group noted that the Building EQ product was generated internally, without the benefit of market-driven input, and would then also serve as a good example of what happens when a non-market driven product is brought to market. However, there is sufficient evidence that Building EQ does have strong market potential, particularly among large, campus-style owners such as universities, municipalities, military, healthcare and other similar entities. A preliminary survey of potential organizations in the large, campus-style market reveals over 32,000 potential clients just in the United States. Many, many more would exist internationally, of course. We know this market segment has a very real need for energy savings, consistent energy audits that allow comparisons amongst existing building stock on their campus, an ability to measure and eliminate the “energy gap” between design and actual performance, and a method of quickly and accurately identifying energy saving measures. Building EQ is not currently configured to create a custom portal to meet these needs, assuming a custom portal is the product the market wants.

The path towards a financial revival for Building EQ is fairly straightforward under the new transformational changes recommended in this report. That path includes the following steps:

- Conduct an extensive market survey focusing on the needs and expectations of the organizations within the large, campus-style market with respect to energy audits, comparing existing buildings within their existing stock, and identification of energy saving measures within a customized online portal. Finding the needs of the customer is a critical first step.
- Analyze how Building EQ would have to be modified to address the needs discovered in the survey.
- Develop a portfolio of ASHRAE products and services to license, for an annual fee, to create a custom, online market to meet the needs of the client. Those products and services are likely to include:
 - Educational offerings in energy audits, Standards application and other similar topics.
 - Training for the users of Building EQ, individuals conducting the energy audits, and other similar topics.
 - Books, guidelines and standards relating to the Building EQ program
 - Certification or badging for those client employees using Building EQ
 - Outreach services for those clients that live in states or communities that require building benchmarking and/or disclosure. This outreach effort would ensure that their custom portfolio meets the statutory provisions of the regulations.
- Market the customized portal to the appropriate clients, instead of “waiting for the phone to ring”.

By building a portfolio or “bundle” of products it is possible to amplify the value such that the whole is much more valuable than the sum of the parts. Using a portfolio approach, as outlined above, and assuming we gain only a 1% market share in the United States, coupled with a \$2,000 annual license fee, we could generate an estimated \$261,000 a year in gross margin at a rate of 41%. These estimates are for illustration purposes only and would need to be fully vetted by the Building EQ committee. A more detailed explanation can be found in the mini-business plan for Building EQ, found in Appendix C.

- Training and Certification Work Group

Training & Certification are two key components of Pub/Ed Council (PEC) that, while evaluated independently, are intertwined for ASHRAE members and customers. Certification, if properly leveraged, should create a demand for training as well as other ASHRAE products, such as Standards, guidelines and other similar products. As individuals pursue certification to distinguish themselves from their peers and companies support certification of their employees, training grows beyond the opportunity to learn technical content or skills and is supported by our educational and publishing products.

Through the lens of this relationship between Training & Certification ASHRAE could offer a wide variety of products and services as a bundle or portfolio to increase margins along the whole product line.

Opportunities to increase the training and certification revenue streams include:

- Micro-credentialing - The potential of certification in the engineering community globally is unrealized. More sales could be achieved by reaching out to those who desire a credential but cannot invest the time or money required to earn a certification under the current program. Micro-credentials, or badges as they are referred to in some industries, offer the benefits of recognition but with a lower effort on the part of ASHRAE and consumers when compared to Certification. The global market has a high demand for third-party recognition of expertise, mastery, qualifications, and competencies. ASHRAE can offer this third-party recognition in related topic areas. To achieve success, micro-credentials should be less costly to develop than ASHRAE's current Certifications, quicker to bring to market, and easier to administer (especially outside of North America). Micro-credentials do not need to be ANSI accredited certifications.
- Training Portfolios - Developing the relationship between credentialing and training, a suite of training courses can be offered as a package to those seeking a specific credential. These training portfolios could be focused on a particular topic, such as commissioning, or around a goal, such as training a recent graduate for an entry-level consulting engineering job. Portfolios would be supported by employers who wish to upskill their organization though also available to individuals. Training portfolios with a certification opportunity at the end also provide an opportunity for networking for members. Courses can be taught live as well as on-demand, offering interaction between participants and adding value to the attendee.
- Subscription Services – A subscription model for training courses offers a lower price point per time period to customers while providing a constant stream of revenue for ASHRAE. A subscription training option could offer web-based on-demand instruction that is interactive and more sophisticated than current online offerings. Online instruction is increasingly critical in society and offers training opportunities to global communities less able to travel to central locations. Additionally, the ability to provide training courses in multiple languages grows as ASHRAE relies less on travel to deliver instruction. As mentioned in discussion of training portfolios, subscription-based training can offer the opportunity for participants to interact and learn together, either through social media or live sessions. Many ASHRAE members and volunteers attribute their attachment to ASHRAE to networking and fostering the human connection – especially in online instruction – is essential to providing value consistent with ASHRAE's brand and offering a robust product.

A more detailed description of the Work Group's recommendations are contained in the mini-business plan found in Appendix D.

Action Item #4 - Align products and services across ASHRAE boundaries while simultaneously developing suites or portfolios of products to meet market needs. Alignment shall include addressing pricing and costs, along with coordinating regional and Society delivery of products and services.

Action Item #5 – Extend and further develop a PEC business model that includes governmental and non-governmental entities to deliver ASHRAE products. The business model should include the ability to scale our educational offerings, create revenue streams by licensing or selling ownership of products, hiring an ASHRAE contract officer, the investigation of potential partners.

Develop a sales strategy to sell ASHRAE technology B2B in a digital world

Our incoming president, Chuck Gulledge, has a clear vision of the digital future of ASHRAE and our Society's role in that digital future. The worldwide reaction to the current pandemic has only accelerated the move to digital platforms across our industry, which hold tremendous opportunities for those willing to take a risk and seize the opportunities that manifest themselves.

- Digital World/Advertising Work Group

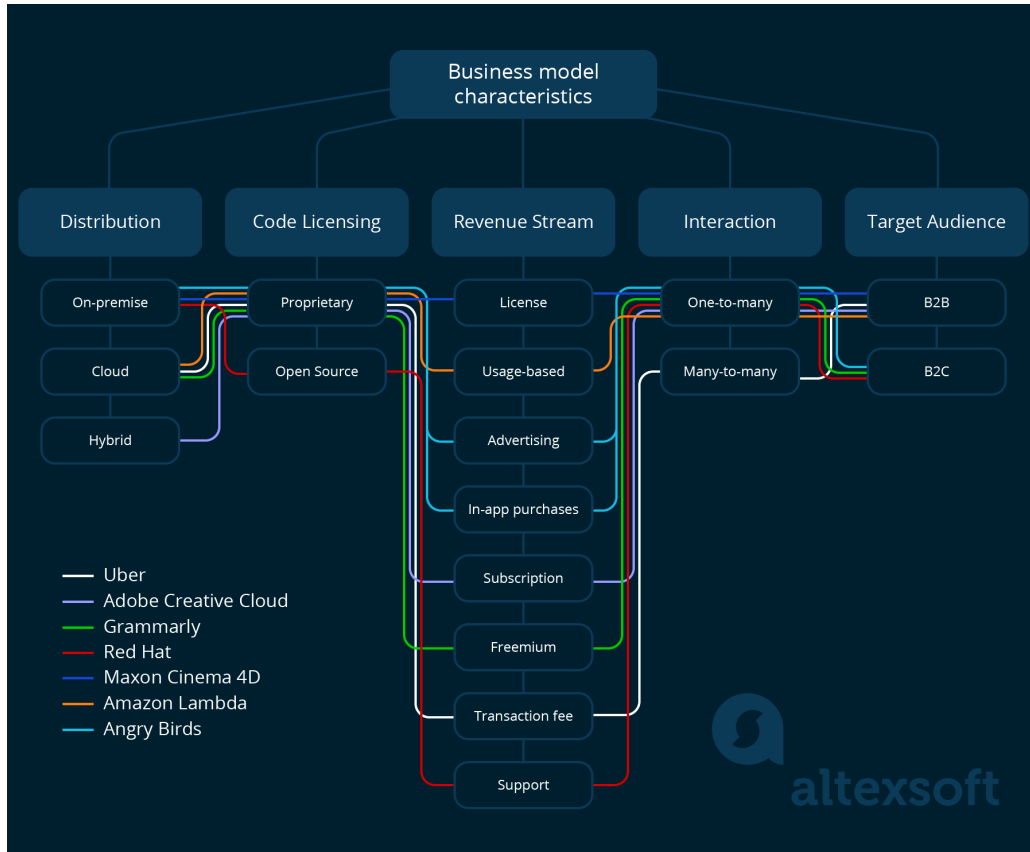
More and more ASHRAE technology will be delivered to the marketplace digitally. Today, most of ASHRAE's technology and effort is delivered in written form (a book or PDF) online. This misses out on the great opportunity of a full online experience. For example, an interactive tool that reviews a design or specification for a project to check compliance with Standard 90.1 would be a very powerful tool that promises to have great value in the marketplace. The challenge is how does ASHRAE get compensated for delivering its valuable technology "via the web"?

- Advertising - Table 3, which follows, further demonstrates that advertising is one of PEC's success stories and the goal is to have it maintain its revenue and margin going forward. Although advertising at ASHRAE is a well-established piece of machinery and has delivered great results for the organization for a long time, trends are undergoing a great deal of change as the team adjusts from a print to a digital environment. Right now, the Journal being in print is an advantage as most of our competitors have exited the market and a magazine that is delivered to the membership is considered a very high quality pathway to the marketplace. Advertising is looking at other channels which can be digital. Examples include expanding geographic markets, Podcasts and Vodcasts, native advertising, sponsored editorial content and expanding digital advertising. It should be noted that COVID has had a direct, negative impact on advertising, which is a marketplace issue and beyond our control. PEC should recognize that changes are required for advertising to maintain its level of success; changes PEC should lead and support.
- Digital Business Models – Table 3, which follows, also shows that ASHRAE already uses a number of different business models in generating revenue in a digital platform.

DIGITAL REVENUE STREAM	DESCRIPTION	PRODUCT OR SERVICE	SUCCESS
Paid Apps and Software	Charge once to install software. Revenue is generated by selling updates or technical support. Challenge is competing with open source or free products.	ASHRAE phone apps Psychrometric Analysis CD, Duct Fitting Database	Low Med
In App Advertising	Free software use but sell advertising space in the application	Advertising in digital newsletter, Digital Journal Handbook Online Web advertising	High High Medium High
Freemium	Basic features are free. Paying a fee allows access to premium features.	Building EQ	Low
Usage Based License	Based upon a 'pay as you go' model. Common with B2B.	Building EQ	Low
Subscription	Pay user fee either monthly or annually. A "free service period" used to let customer try product before committing. Once free period is up the fee starts.	Std 90.1 Portal Technology Portal	Low Low
Licensing	License ASHRAE digital products to someone else for use in their products. Partner with a company who will compensate ASHRAE when the software is used.	Enterprise content licensing for Handbook, Stds, Journal etc	High
Sponsorship	Allow other companies to access your sphere of influence by placing their digital technology into our digital technology.	Not used by ASHRAE	
Free with in-App Purchases	Provide physical and virtual goods for sale. Works well with e-commerce models	Not used by ASHRAE	
Transaction fee	Charge a commission based on transactions	Not used by ASHRAE	
Support	Charge for special services required by customers (e.g., custom codes)	Not used by ASHRAE	

Table 3

The graphic below shows multiple business cases companies often use to generate revenue from digital based technology. As can be seen, there are a lot of variables. ASHRAE will likely be more successful if it focuses its efforts on a few methodologies rather than a shotgun approach. If a methodology does not prove out, it can be retired and a new approach taken.



Business Model Graphic

Learning how to be compensated for deploying ASHRAE technology is critical to our success. Failure to do this will mean other organizations will gather our technology deployed in books and other old school means, repackage it in digital format and deliver it to the market cutting ASHRAE out of the process.

The methodology ASHRAE selects will be heavily influenced by the technology ASHRAE is trying to deploy and the target audience. The following recommendations streamlines ASHRAE’s current digital revenue model using the business model characteristics shown in the graphic above as a starting point.

- Distribution – Focus on cloud solutions as this is where the market is going.
- Code Licensing – Proprietary offers the most control for ASHRAE but open-source will help disseminate our technology.
- Revenue streams – Will depend on product offering and sales channel. See Table 2 above.

- Interaction – ASHRAE will probably focus on the ‘One to Many’ approach (e.g., Microsoft), as opposed to ‘Many to Many’ (e.g., eBay).
- Target Audience – ASHRAE will probably utilize a ‘B2B’ business approach as it fits best with our client base, as opposed to a ‘B2C’ business to customer approach often used by retail.

Action Item #6 – Create a digital business plan for PEC by identifying 3 to 5 digital product strategies that are in response to market needs and try them, thus allowing PEC to learn which strategies work and which do not.

Action Item #7 – Implement a professional development program to allow staff to develop the skills and knowledge necessary to guide PEC volunteers on how to leverage and apply a digital format.

Summary

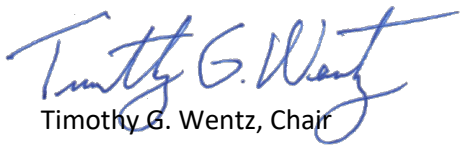
The Ad Hoc has identified four transformational changes ASHRAE must make if it is to be competitive in the market-place and take advantage of its competitive advantages. Those transformational changes are:

1. Change from an accounting basis to a financial basis in evaluating all ASHRAE products and services.
 - a. Action Item #1 – Recommend that Finance Committee adopt the use of a single analysis form across all ASHRAE products and services to include gross margin dollars, gross margin %, payback and other suitable metrics. An example form can be found in Appendix A.
 - b. Action Item #2 – Recommend that Finance Committee reconfigure their accounting system to automatically produce financial data, including gross margin in dollars and percentage, for all products and services.
2. Create a market-driven business model of product/service development that focuses on the needs and expectations of clients
 - a. Action Item #3 – Adopt a product/service planning process that is market-driven. The process should be developed by a cross-Council team, including marketing. To leverage ASHRAE strengths, the process should include the appropriate path(s) within ASHRAE to optimize the development and marketing of the product/service identified by the process.
3. Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value
 - a. Action Item #4 – Align products and services across ASHRAE boundaries while simultaneously developing suites or portfolios of products to meet market needs. Alignment shall include addressing pricing and costs, along with coordinating regional and Society delivery of products and services.
 - b. Action Item #5 – Extend and further develop a PEC business model that includes governmental and non-governmental entities to deliver ASHRAE products. The business model should include the ability to scale our educational offerings, create revenue streams by licensing or selling ownership of products, hiring an ASHRAE contract officer, the investigation of potential partners.

4. Develop a sales strategy to sell ASHRAE technology B2B in a digital world
 - a. Action Item #6 – Create a digital business plan for PEC by identifying 3 to 5 digital product strategies and that are in response to market needs and try them, thus allowing PEC to learn which strategies work and which do not.
 - b. Action Item #7 – Implement a professional development program to allow staff to develop the skills and knowledge necessary to guide PEC volunteers on how to leverage and apply a digital format.

The future is very bright for ASHRAE. To take full advantage of the many opportunities in front of us, and leverage our many competitive advantages, ASHRAE will have to change fundamentally with respect to its products and services. Aligning these fundamental changes with ASHRAE's strengths will amplify our competitive advantages and result in a robust, dynamic financial platform to serve its members and humanity for many years.

Respectfully submitted.



Timothy G. Wentz, Chair

Investment Calculation											
Company/Entity:	ASHRAE		0.0 years Example								
Currency:	0	1	2	3	4	5	6	7	8	9	10
INVESTMENT											
Total Investment	15										
Depreciation time (years)	4 years										
Discount rate	14%										
Pay Back (Years)	2.0 years										
Net Present Value	7										
Residual value	0										
P&L (Additional Sales and cost increase or savings due to investment)											
Gross Margin from sales			25	50	75						
Gross Margin 1		0	25	50	75	0	0	0	0		
GM1%			100%	100%	100%						
External Additional Costs		-50	-20								
Staff Cost		-40	-10								
Depreciation		-4	-4	-4	-4	0	0	0	0	0	0
Profit/Loss		-94	-9	46	71	0	0	0	0	0	0
Operating Cash Flow											
Profit/Loss	0	-94	-9	46	71	0	0	0	0	0	0
Depreciation	0	4	4	4	4	0	0	0	0	0	0
Change in Working Capital											
Investments	15	0	0	0	0	0	0	0	0	0	0
Net Operating Cash Flow	15	-90	-5	50	75	0	0	0	0	0	0

Calculation made by:	Reviewed by	Approved by
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Royalties and Custom Codes: Business Plan

Statement of the Opportunity

ASHRAE is often asked for assistance in development and review of state and local building codes including those from smaller communities that may only have one person who is responsible for all building codes. Requests are also received for training and education for code enforcement bodies. ASHRAE's primary focus is the promotion of and adoption of current standards and guidelines without modifications. In the alternative, we ask that portions be adopted that are technically equivalent. We do not currently have a mechanism in place to quickly and efficiently handle and assist with custom code development, custom code review requests or the related requests for training and education at a large scale.

The recommendation below would be a starting point for providing the custom code development services. However, given the coronavirus pandemic and the ensuing economic and fiscal challenges, we recommend that the proposal below be tabled until governments' fiscal situation is healthier; the market opportunities for these services during this pandemic have receded, since they were initially explored.

Recommendation Summary:

A separate Board Ad-Hoc Committee was established by President Darryl Boyce in August 2019 to develop a recommendation on "whether there is a need for ASHRAE to provide assistance, through fee-based consulting services, for code and standards support services, and identify a mechanism to provide services, if applicable." This Ad-Hoc Committee is chaired by Board Member Katherine Hammack.

The PEC Strategic Business Development Ad-Hoc supports the work of the Code/Standard Jurisdiction Support Services Ad-Hoc Committee and recommends implementing the plan approved by the Board of Directors in February 2020. That plan provided for an additional staff person who would coordinate these services, which would largely be provided by ASHRAE members, who would be paid a fee for their services. Ideally, the staff person would have sales experience and knowledge of building energy codes and related products and services.

Business Analysis

1. Margin analysis

- Goal to be 30-35% Gross margin
- Revenue take can be 12-15% of overall revenue (This is in line with other agency type fees as supported by a member of this AD-Hoc who pays an Educational Service Center 13.5% fee for their use of their unique position as a state entity)

2. Likely Competitors

As described in the Board Ad-Hoc Committee on Fee-Based Consulting Services Report presented to the Board in January 2020, competitors include model code developers ICC and IAPMO. These organizations have a much larger staff dedicated to developing

custom codes, with accompanying products (education courses/additional documents) and have ongoing relationships at the local level.

Most custom code developments requested by ASHRAE have been coordinated with the ICC and relate to 90.1. This arrangement has worked well because ICC has the staff to carry out development of custom codes and ASHRAE benefits from receiving royalties from sale of these custom codes. ASHRAE has not benefitted similarly from custom code royalty revenues from IAPMO; however, IAPMO's model codes that reference ASHRAE standards bring business to ASHRAE through other business lines.

Other competition may include ASHRAE members and other companies at which ASHRAE members may be employed. Below is a sampling of some of these organizations:

- **Individual Consulting Services for Code Development Services** - ASHRAE members may be involved in providing these services; however in general, Codes consulting services typically do not write codes, but rather help communities with interpretation and enforcement.
- **Rocky Mountain Institute:** They advise governments on code development¹; rather than charging a fee, they have sponsors that fund these services (Architecture 2030; Rockefeller Brothers Fund, Signify, The Under2Coalition, The Heinz Endowments; The City of Pittsburgh)
- **International Energy Conservation Consultants, LLC:** offers services including code development, design and diagnostic services, training and education.
<https://www.ieccode.com/>

One thing to note here is ASHRAE's ability to use their position as the "go to" organization as well as 57,000 members as a "sales" force. ASHRAE is recognized as a powerful distribution force of knowledge and has the advantage of sometimes being the first to be contacted by international, federal, state and local agencies. Once contacted, it is very easy to collaborate with these other organizations for shared revenues or of using a fee based template as described above.

3. Sales forecast

- Any forecasts based on historic data and recent requests are subject to extreme uncertainty due to the impacts of COVID-19 on jurisdictional budgets; it has been reported that some states and cities may need to declare bankruptcy.
- Recent custom code requests are detailed in the BOD Ad-Hoc report, and include small communities such as the City of Lafayette, Colorado; Washington, DC, and most recently the State of New York.²

¹ On the Rocky Mountain Institute, they advertise that they advise "cities, regions, and states to institute innovative policies and codes encouraging the building sector to implement carbon-free solutions."

² Notably, the State of New York's request was post-COVID-19.

- Royalties: We generally earn between \$5,000 to \$14,000 plus some residuals for each custom code with the ICC. It may be wise to continue this arrangement as annual revenues from the ICC over the past 8 years have averaged \$50,000 to \$65,000, with outlier years of \$148,000 (2012) and \$219,000 (2018).
- International opportunities: ASHRAE has created custom codes for Kuwait using the expertise of ASHRAE members, with revenues totaling about \$150,000. Most recently, a project with KFAQ cost \$154,000 and ASHRAE netted \$46,000. We have also been approached to handle all of the implementation of codes in Turkey.

4. Up-Front Investment

- The Board Ad-Hoc Committee’s recommendation, which passed, is to allow an additional staff person to coordinate these services. Then the other responsibilities would largely be provided by ASHRAE members, who would be paid a fee for their services. Ideally, the staff person would have sales experience and knowledge of building energy codes and related products and services. We could also consider reallocating the work to an existing staff person with technical experience.
- Volunteers can work on certain specific projects if time allows. But to fully scale this fee-based codes service, a separate department focused on revenue growth would need to be created.

4. Possible organizational structure

- It is recommended establishing this program as a pilot, which could then grow into a separate revenue-seeking department, with connections to the Technology, PEC and Government Affairs Departments, contingent upon available budget funds.
- Create “dealers” or “authorized” marketers to be the worker bees and ASHRAE be the facilitator
- RFQ/RFP to be done to set up authorized dealers and then with GAC in active Regions or chapters that create opportunities provide revenue sharing with them
- Develop a database of members that could do this work and staff would establish a quick turnaround mechanism to determine ability to take on a project with specific deadlines. This can be done before launching the enterprise through the RFP/RFQ process.

5. Resources needed within and outside of ASHRAE

- See discussion under “up-front investment” above.

6. Time to Market

- ASHRAE is already doing this work on an ad-hoc basis. (Time: done)
- Create an explicit marketing statement that ASHRAE is conducting this work, and establishing a lead “sales agent” to handle the contract arrangements would highlight ASHRAE’s capabilities and identify members with the necessary expertise and interest to implement. (Time: 1 month)
- Develop RFP/RFQ as in Pt.#4 (Time: 3 months)
- Fully implement enterprise (Time: 6-9 months)
- Due to virus, silver lining is the opportunity to set up organization before the onslaught of requests for services

Fiscal Situation Faced by State and Local Governments as a Result of COVID-19

- States are facing an unprecedented crisis with the COVID-19 pandemic. This includes low tax revenues, record high unemployment, and increasing health costs. Total state budget shortfalls across the U.S. over the next 3 years are expected to reach \$650 to \$765 billion. Source: Center on Budget and Policy Priorities: <https://www.cbpp.org/blog/projected-state-shortfalls-grow-as-economic-forecasts-worsen>
- Cities across the U.S. anticipate \$360 billion of lost revenue between 2020 and 2022. A May 2020 study by the National League of Cities found that a 1 percentage point increase in unemployment results in a 3.02% budget shortfall. National League of Cities: <https://citiesspeak.org/2020/05/14/cities-anticipate-360-billion-revenue-shortfall/>
- Unlike the federal government, states cannot run deficits in their operating budgets. This will likely result in major cuts to infrastructure and education, which states are primarily responsible for funding. It will also mean a freeze in hiring, layoffs, and depleted “rainy day” funds. Even by the end of the first quarter of 2020, state pension funding levels had fallen to the lowest point in 30 years. Council on Foreign Relations: <https://www.cfr.org/backgrounder/how-coronavirus-will-harm-state-and-city-budgets>
- State income tax revenues are likely to decline in the last quarter of state fiscal year 2020 because of the delayed income tax filing deadline. In a normal year, states usually collect 13-15% of their annual revenue in April because of tax season. Source: The Urban Institute: https://www.urban.org/sites/default/files/publication/101962/state-revenue-forecasts-before-covid-19-and-directions-forward_0.pdf
- Projections as of May 29 show multiple states, including California, Colorado, and New Mexico, where revenues are expected to decline by more than 20% for fiscal year 2021. Source: National Conference of State Legislatures (NCSL): <https://www.ncsl.org/research/fiscal-policy/coronavirus-covid-19-state-budget-updates-and-revenue-projections637208306.aspx>.

Building EQ Mini-business plan
April 27, 2020
Rev 5

These unprecedented times, created by the worldwide COVID-19 pandemic, have thrust ASHRAE into an entirely new environment highlighted by a global economic crisis. It is well to recall that the Chinese word for 'crisis' is comprised of the symbol for 'danger' coupled with the symbol for 'opportunity'. Dynamic leaders always focus on the opportunity, as ASHRAE must do if it is to take a leadership role in our industry. This will call for ASHRAE to think outside the box to unlock the vast potential of our products and services. Viewing products and services in an integrated, external fashion, with an eye on market demands and trends, will require some risk but stands to create a new financial foundation that will serve ASHRAE far into the future. This new perspective needs to be embraced by volunteer leaders and staff alike.

Even though the Building EQ program reports to ExCom and not to Pub/Ed Council (PEC), the great potential of Building EQ, along with its reliance on an online portal, makes it an excellent test case to explore ways in which ASHRAE can increase revenue in an online environment. In many respects, the Building EQ program is ASHRAE's first foray into delivering online technology for a fee. More and more of ASHRAE's technology will need to be offered online, driven by market demand, making it critical for our Society to understand how to generate online revenue. Our industry's future is digital and we must learn how to compete and prosper in that environment.

Additionally, the Building EQ program has great potential to market products across Council "lines", such as educational products, certification and publications. Creating a "suite" of products that have great market value is a new concept for ASHRAE and again illustrates the importance of Building EQ as a test model for this integrated methodology. This makes a powerful and compelling argument to include Building EQ in our report to PEC.

1. Margin analysis – The financial method of looking at products and services

Gross margin, as used in this report, is defined as follows.

$$\text{Gross Margin} = \text{Revenue} - \text{Direct costs to produce product} - \text{Direct staff labor}$$

The Ad Hoc committee report to PEC, dated February 1, 2020, recommended the following analysis of products and services based upon a gross margin perspective:

- a. For products and services with low margins, make recommendations on how to lower cost or raise price (or both)
- b. For products with acceptable margins make recommendations on how to increase sales

- i. Are we already high in market share or is there room to grow?
- c. Investigate other revenue streams (new products and services) based on what we see other organizations offering and emerging needs in the marketplace)

The current margin analysis, along with a predicted margin analysis, is found in Section 5 below.

2. Likely competitors – And how to separate from them

There are a few direct competitors with Building EQ as an energy rating tool. ENERGY STAR® Portfolio Manager, run by the Environmental Protection Agency (EPA), is probably the most direct competition of Building EQ although ENERGY STAR exclusively uses OPERATIONAL (OR “in operation”) rating based on utility invoices and primarily provides only benchmarking information. ENERGY STAR is free to use, which has effectively set the market value of online energy rating programs using an operational basis. The power of the Building EQ program for a single user is its use of an ASHRAE Level 1 energy, the creation of an accurate energy benchmark, and the creation of a roadmap to recommend measures to improve energy efficiency. The energy benchmark serves as the foundation for understanding how a building uses energy and the impact of planned changes in either function, operation or maintenance. Additionally, by comparing the client’s building to a similar building in a similar climate zone, the client has a clear understanding of the comparative energy savings potential for their building.

Building EQ also differentiates itself by offering both an In Operation (operational) rating and an As Designed (asset) rating in the same program. The difference between these two ratings is the “energy gap”, defined as the difference between the amount of energy actually used by the building and the amount of energy the building was designed to use. Identifying and eliminating the energy gap is a fundamental step in achieving a Net Zero Energy Building (NZEB), according to ASHRAE.

It is always possible for independent engineers or energy modelers to identify the energy gap, Differentiating the Building EQ program is the concept of “powered by ASHRAE”, tying the rating to ASHRAE’s integrity and sterling reputation. Further, the Building EQ program can identify the energy gap in a faster, more consistent fashion using ASHRAE’s unparalleled Standards and guidelines. This opens up opportunities for selling educational products, publications, standards and certifications; the guiding concept behind offering a “suite” of products aimed at producing a desired outcome – energy savings. Building EQ also provides a roadmap of low cost/no cost energy efficiency measures (EEMs) that can produce an immediate payback, another differentiator.

Focusing on the energy savings potential of Building EQ is another method of separating Building EQ from its competitors. Building EQ has proven that it can drive energy savings, which is often one of the largest expenses any organization faces. The current pandemic is bound to open up a number of opportunities for Building EQ, as organizations struggle to reduce expenses in an environment of declining revenues. The output (the Building

Performance Score) of the Building EQ program is also enhanced by its alignment with ASHRAE Standard 211, thereby separating its rating from ratings not in alignment with Standard 211. The ASHRAE brand and integrity will give Building EQ another competitive advantage in the industry, reinforcing the mantra often espoused by Jack Welch, formerly CEO of GE, *“If you don’t have a competitive advantage, don’t compete”*. Building EQ clearly has a number of competitive advantages, if it can learn how to effectively leverage and market them to the right clients.

3. Sales forecast – Charting the right path

Building EQ has the potential to add significantly to the revenue stream of the Society, as well as the Society’s stature and standing in the industry. Because of the market price for the basic use of online portal is \$0, Building EQ runs the risk of living the old joke, *‘I’ll lose money on each sale, but make it up in volume’*. Using the financial tools recommended by PEC, evaluating Building EQ should focus on increasing price, lowering cost and investigating new revenue streams, depending on the level of the gross margin.

- Increasing price. As described above, the price to enter a project into the Building EQ portal is \$0, a price set by the market leader, ENERGY STAR. Current revenues of approximately \$2,000 a year flow from the following:
 - One-time verification fee for credentials - \$0 for BEAP/BEMP, \$15 for members with a PE and \$25 for non-members with a PE
 - Several of the reports have a fee associated with them – Narrative audit report (\$200), spreadsheet audit report (\$50) and the disclosure report (\$50).

It does not appear practical to increase any of the current prices to any great extent, although there appears to be a consensus to keep the minimal fees in place.

- Decreasing expenses. The existing expenses are already fairly lean. The current direct expenses include the following:
 - Only one staff person is partially assigned (1/3 position) to Building EQ (\$60,100). Due to the technical nature and requirements of Building EQ it does not appear cost savings are available on this line item.
 - The Building EQ committee is allowed three face-to-face meetings per year but has historically only used two of those. Cutting back to two face-to-face meetings would produce approximately \$5,000 in savings on transportation reimbursement (from \$15,000 to \$10,000).
 - The development costs (\$30,000) represent the yearly changes in the portal and the Building EQ program, as requested by the users. Thus, the Building EQ portal is a constantly evolving product that is trying to constantly adapt to user expectations. The energy audit feature of Building EQ has been the most attractive part of the portal to most users, making a reduction in development costs uncertain. However, if Building EQ is to gain traction in

the industry it is important that it quickly adapts to client needs and expectations.

- A major cost of Building EQ is maintaining and hosting the server (\$12,800). Building EQ is in the process of updating its server to a faster, more secure platform. This was a requirement of the Department of Defense, who is anticipated to be a major client in the future.
- Promotion (\$10,000) is another significant cost of the Building EQ program. As Building EQ is a relatively new player in the industry, some level of promotion is imperative. Whether this number could be reduced slightly and generate greater market presence is something that can be investigated. To date, the Building EQ committee has primarily used internal ASHRAE resources to promote the program.

It does not appear that there are a lot of opportunities to reduce expenses, at least to the level where it would significantly improve the gross margin of the product.

Due to the current pandemic and possible financial repercussions for ASHRAE, it may be necessary to place Building EQ in hibernation for a short period of time. A part-time staff member could be assigned to maintain Building EQ, allowing the program to “tread water”, saving \$25,000 to \$30,000 per year. Eliminating Building EQ entirely would save the Society only about \$50,000 to \$60,000 per year while obviously eliminating a potentially large revenue stream. Further, eliminating Building EQ would remove our ability to use Building EQ as a test model to learn how to generate revenue online. The issue of how to generate revenue online is bound to reappear frequently within ASHRAE as our industry moves to a digital future.

Based upon the above analysis, the best path forward to improve Building EQ’s gross margin is incorporating new revenue streams. Fortunately, there are tremendous opportunities in this area.

- Increase revenue streams. The great potential of Building EQ is in discovering and taking advantage of new revenue streams. Various ideas for increasing revenue streams for Building EQ have been proposed by both the PEC Ad Hoc and by the Building EQ committee. A partial listing includes:
 - Data base subscriptions – Once the data base becomes robust enough, it would be possible to sell subscriptions to the aggregated data. Individual data would have to be protected, but the aggregated data would have value.
 - License the portal to cities, municipalities, universities, countries and other entities in a campus or community environment. The license would allow a customized portal unique to that client that may include customized features and a unique database allowing them to compare their buildings within their campus or community. A similar approach would be to franchise Building EQ

to clients or suitable partners to achieve the same result. Additional costs would be required to produce these unique portals.

- One strategy would be to give the client a free trial and then charge a monthly fee for the service
- Another strategy would be to give the client limited access to a portal for free but charge for the full suite of features (Freemium web revenue model)
- Create advertising opportunities within the portal for appropriate companies and services.
- Embed Building EQ in vendor or partner software. This approach uses the 'Powered by ASHRAE' marketing theme that should give us a competitive advantage. Modeling or design software that calculates energy use could use Building EQ as a "bolt-on" product to produce an instantaneous Building EQ rating based upon the design as it is then envisioned. This would have a lot of value if Building EQ became a contract requirement. Some nascent efforts along these lines have been made with Architecture 2030 ZeroTool.
- Tie training and certification more closely with Building EQ into a "suite" or portfolio of products. This could also include creating a "digital badge" for Building EQ technicians for those who successfully complete Building EQ training. Another option would be to certify buildings instead of people, a market segment ASHRAE has heretofore avoided.
- Tie Building EQ more closely to Net Zero Energy buildings with a greater emphasis on accomplishing the last step, 'eliminate the energy gap'. Use Building EQ to certify NZE building design and operation.

4. Up-front investment

The Building EQ program is currently undergoing a complete restructuring to transition to a 100% online portal. It is believed that virtually all of ASHRAE's products will follow this path in the future. The restructuring cost approximately \$200,000 and is now complete and fully paid. Additional up-front investment to restructure the portal to allow for the customization of a portal would be necessary, although those costs would be easily recoverable in the annual fee. Those costs are estimated in the following section.

5. Possible organizational structure – A new vision for Building EQ

Building EQ's transition to an online portal has already produced some encouraging figures on the growth of portal use. For example, the number of portal users has risen from 893 to 1,076 since the beginning of the Society year, a 20% increase. Similarly, the number of projects has risen from 510 to 680 (33% increase) and the approved projects has increased from 28 to 51 (82% increase) since the beginning of the Society year. Like all new products, growth will be incremental until a critical mass is achieved.

One option to change the structure that holds great promise is to create unique, customized Building EQ portals for organizations, communities, universities and governments. There are a very large number of clients in this potential market sector, all of whom are very large and would find a likely license fee from \$1,000 to \$10,000 reasonable and affordable. These large clients predictably have very large utility bills and would most benefit from Building EQ's ability to save energy costs. Potential market sector targets in the US alone include the following:

- 310 cities above 100,000 population
- 50 States
- 5,300 universities and colleges
- 5,690 medical centers
- 440 Military bases in the US
- 135 US military bases outside the US
- 20,065 mid-market business in the US - \$100 Million + in annual revenue

A license fee format should be investigated, along with a list of likely benefits for the fee. Potential license benefits may include:

- Customized portal unique to the licensee
- Customized database allowing client to generate specific baselines unique to their campus/municipality
- Unlimited number of submissions allowed
- Unlimited number of reports allowed
- Technical support service provided
- SME (Building EQ) support provided
- Building EQ specific training provided
- Building EQ badging provided after successful completion of training
- Summary of energy savings by building and overall for campus/municipality

The abbreviated US market sector identified above contains approximately 32,000 potential clients. Just to illustrate the process, we are assuming a 1% market share, a \$2,000 annual license fee, approximately \$250,000 per year in additional costs, and an 8-year ramp-up to full deployment. These assumptions, which are not the product of a financial investigation, generates the following gross margin analysis:

	SY 19-20	SY 24-25	SY 28-29
Revenue	\$ 2,000	\$ 320,000	\$ 640,000
Direct Expenses			
Staff Labor	\$ 60,100	\$ 60,100	\$ 60,100
Promotion ¹	\$ 10,000	\$ 10,000	\$ 10,000
Development ²	\$ 30,000	\$ 130,000	\$ 230,000
Outside services ³	\$ 12,800	\$ 37,800	\$ 62,800
Transportation for members	\$ 15,000	\$ 15,000	\$ 15,000
Travel for staff	\$ 500	\$ 500	\$ 500
TOTAL DIRECT EXPENSES⁴	\$ 128,400	\$ 253,400	\$ 378,400
Gross Margin \$	\$ (126,400)	\$ 66,600	\$ 261,600
Gross Margin %	-6320%	21%	41%

1 The signage for the portal is projected to cost \$200 to \$300. Invoice not yet received.

2 Original capital cost of \$200K spent on development of portal Dec '16 to Dec '17

3 Outside services includes hosting and maintenance for the year. Migrating to new server this year

4 Total direct expenses do not include depreciation, BOD overhead, marketing IT, Exec staff, etc.

The 1% market share and \$2,000 license fee are used for illustration purposes only, as is the estimate on additional costs for the unique portals. Actual market share target, license fee and projected costs would be determined by the Building EQ committee. It should also be noted that the above numbers are for the US only. The global market would be many times larger, as would the resultant revenue stream, particularly for those countries that do not have a building labeling program.

The COVID-19 pandemic will undoubtedly create a great deal of financial stress in academic institutions, as well as many other businesses and organizations. The newspapers are already filled with examples of layoffs, furloughs and budget cuts for these organizations. For these large institutions, reducing energy costs will be a critical step in recovering from the pandemic. The Building EQ program's alignment with Standard 211 Level 1 energy audits and the ability to produce low cost/no cost Energy Efficiency Measures (EEMs), coupled with a reliable, accurate energy baseline in alignment with Standard 90.1's baseline, will be an essential tool for facility managers globally. The ability to accurately measure the energy use of buildings, record the resulting energy savings, and to compare buildings within a campus is a very desirable product that is otherwise not available on the market. Likely licensing partners may include the following:

- APPA – The ASHRAE-APPA coordinating committee has worked diligently to make Building EQ one of the high-profile joint projects between the two organizations and has included Building EQ into the new ASHRAE-APPA Work Plan found in their joint MoU. Several campuses (Western Michigan, Milwaukee School of Engineering,

University of Central Florida, Florida Institute of Technology, etc.) already use Building EQ extensively. APPA represents over 1,300 university and college campuses across North America and Integration of Building EQ into the APPA network would radically increase its use and enable the new revenue streams mentioned above. The universities APPA represents are under extreme economic pressure due to the COVID-19 pandemic and the elimination of the energy gap is one certain path forward to achieving cost savings on virtually every campus.

- ASHE – Talks between the American Society of Healthcare Engineers (ASHE) and the ASHRAE-APPA coordinating committee have just begun. ASHE has 12,500 members who design, construct, operate and maintain hospitals. Many of their hospitals have their own campuses or are a part of a university campus and thus are likely corporate users of Building EQ. Discussions have begun on the possibility to integrate Building EQ into ASHE’s ‘Energy to Care’ online portal.
- Universities – Individual campuses are another likely partner with the Building EQ program. For example, the University of Nebraska – Lincoln has recently begun work on developing a campus-wide initiative to create a Net Zero Energy campus. The rough draft of the implementation plan includes mandating Building EQ In Operation for all existing buildings on campus and mandating Building EQ In Operation and As designed for all new buildings on campus. The University has 153 buildings on its City campus and would be an early adopter in the Big Ten conference. The same opportunities identified with APPA would also apply to individual universities.
- Department of Defense – The Department of Defense primarily operates out of a campus-like setting for many of its military bases and thus would have the same operational issues that are facing APPA and individual universities. Our migration to a new server, Azure, will provide a much faster, secure and stable platform and will allow us to serve the Department of Defense and other similar clients with high security requirements.
- EP-100 Global Energy Productivity Campaign – EP-100 is an international platform of leading companies that are making a voluntary commitment to improve their energy productivity, which looks at energy use through a financial lens. EP-100 is delivered through a consortium consisting of the Climate Group, the Alliance to Save Energy, and the World Green Building Council. The companies that have committed to the goals of the group are all very large companies (Hilton, Cree, Schneider Electric, etc.) that operate a large number of buildings in countries around the world. Partnering with this type of organization would involve using Building EQ as an energy measurement tool that could be used to document their energy commitments.
- Existing portal developers – An investigation may reveal other organizations that already use similar portals successfully. It may be possible to partner with an existing portal developer that has the kind of experience, reach and support that the Building EQ program would require.

6. Resources needed within and outside of ASHRAE

The primary resources needed by the Building EQ program is patience and imagination. Net Zero Energy buildings are not yet a market driver and the concept of eliminating the “energy gap” is not well understood or accepted. However, the desire for energy audits is not only increasing, but also becoming mandatory in many municipalities. For the first time in a long time, ASHRAE has a product that is in front of the market. The drive to reduce energy costs will accelerate significantly during the economic recovery from the pandemic. Thus, patience is called for as the market catches up to our product and we learn how to generate revenue in the digital world. ASHRAE’s Building EQ program is ideally situated to take advantage of this future market expectation, while simultaneously addressing its own financial security. Imagination is called for to discover new revenue streams that were not anticipated when Building EQ was first formed. It is well to repeat that one aspect of Building EQ’s importance is found in its ability to serve as a test model to help ASHRAE learn how to generate revenue as it transitions to a virtual, online technology platform.

Secondary resources needed by the Building EQ program include stronger integration within ASHRAE regarding training, certification, publishing and marketing, to name just a few. There are too many “boundaries” in ASHRAE and they must be overcome to provide a truly integrated approach to products and services. This would require a minor allocation of time from those internal divisions. Some form of liaison between these groups might also be necessary.

7. Time to market

Inasmuch as the transition to an online portal is now complete, many of the above recommendations could be brought to market fairly quickly. Some time and resources would have to be invested to create the new customized portal. However, the Building EQ portal itself already exists and is fully functional. Thus, the time to market would be minimal. The Time to Market question also depends on Building EQ generating a sufficiently robust database, and a significant number of users, to make the program attractive to a wider range of users. That does take some time but evidence exists that Building EQ is on track to making that happen.

Training & Certification

Mini-Business Plan
 May 28, 2020

Introduction

Training & Certification are two key components of Pub/Ed Council (PEC) that, while evaluated independently, are intertwined for ASHRAE members and customers. Certification, if properly leveraged, should create a demand for training. As individuals pursue certification to distinguish themselves from their peers and companies support certification of their employees, training grows beyond the opportunity to learn technical content or skills.

Through the lens of this relationship between Training & Certification, this mini-business plan seeks to identify missing opportunities, consider products ASHRAE could be offering, and evaluate how to increase margins.

Margin Analysis

Gross margin, as used in this report, is defined as follows:

$$\text{Gross Margin} = \text{Revenue} - \text{Direct costs to produce product} - \text{Direct staff labor}$$

The gross margin calculations for Certification for the previous Society year (SY18-19) is shown below:

	Certification SY 18-19	
Revenue	225.7	
Direct Expenses		
Direct staff labor		162.8
Promotion		8.9
Shipping/Postage		4.9
Travel		5.4
Dev/Outside Services		178.6
Credit Card Charges		6.1
Other/Misc.		0.3
TOTAL DIRECT EXPENSES⁴		367.0
Gross Margin \$	\$ (141.3)	
Gross Margin %	-63%	

The gross margin calculations for Education for the previous Society year (SY18-19) is shown below:

	Education SY 18-19	
Revenue	1,870.2	
Direct Expenses		
Direct staff labor		464.6
Promotion		31.7
Materials		109.6
Shipping/Postage		33.0
Meeting/Training Costs		715.6
Travel		17.6
Dev/Outside Services		267.2
Credit Card Charges		53.5
Other/Misc.		28.9
TOTAL DIRECT EXPENSES⁴		1,721.7
Gross Margin \$	\$ 148.5	
Gross Margin %	8%	

The Ad Hoc committee report to PEC, dated February 1, 2020, recommended the following analysis of products and services based upon a gross margin perspective:

- a. For products and services with low margins, make recommendations on how to lower cost or raise price (or both)
- b. For products with acceptable margins make recommendations on how to increase sales
 - i. Are we already high in market share or is there room to grow?
- c. Investigate other revenue streams (new products and services) based on what we see other organizations offering and emerging needs in the marketplace)

Likely Competitors

While other organizations, such as USGBC and IWBI, offering training courses and materials that complement achievement of professional credentials, few organizations offer content as technical and specific as ASHRAE. HVAC manufacturers offer training programs of varying degrees of length and depth, but these courses are not as accessible as what ASHRAE can offer and lack the prestige of being non-commercialized.

Sales Forecast

Growth is targeted for both Certification and Training and the opportunities for training and micro-credentialing options provided in this plan present options for how additional growth is achieved. Because Certifications are currently not profitable, the evaluation of these opportunities is focused on increasing price, lowering costs, and investigating new revenue streams.

Increasing Price

Current price of all certifications:

1. \$395 per member, \$545 per non-member for initial application
2. \$195 per member, \$295 per non-member renewal fee every three years

By comparison, a LEED AP with specialty is \$400 for USGBC members, \$550 for non-members and costs \$85 to maintain annually. A WELL AP costs \$660, though is often discounted to \$299 for the initial exam and costs \$125 to renew every two years.

Current price of training opportunities:

1. eLearning - \$42 per member, \$55 per non-member per course
2. Online Instructor-Led training - \$229 per member
3. All courses
 - a. \$1,675 to \$9,250 for instructors and domestic transportation for companies
 - b. Additional \$2,075 for ten copies of materials, or \$1,780 for permission to print up to fifty copies
 - c. Total cost to Chapters is lower, beginning at \$4,960 for a one-day course including the rights to print materials for up to one hundred attendees
4. Self-Directed learning - \$142 per member, \$178 per non-member
5. Group learning
 - a. \$88 per book, minimum of ten for companies
 - b. \$66 per book, minimum of ten for Chapters and universities

All prices listed above are in USD as published on the ASHRAE website. It does not appear practical to increase any of the current prices to any great extent. Prices listed above cover a wide range of price points and are on par with prices offered by other organizations.

Decreasing Expenses

Nearly half of the current expenses for the Certification program are for outside services. It is recommended these costs come down for the Certification program to break even.

Training expenses are primarily attributed to the travel and cost of hosting the training event.

It does not appear that there are a lot of opportunities to reduce expenses, and as such the best path forward is incorporating new revenue streams. The new revenue streams proposed below offer income opportunities without the major costs currently associated with Certification and Training.

Increase Revenue Streams

Micro-Credentialing

The potential of certification in the engineering community globally is unrealized. More sales could be achieved by reaching out to those who desire a credential but cannot invest the time or

money required to earn a certification under the current program. Micro-credentials, or badges as they are referred to in some industries, offer the benefits of recognition but with a lower effort on the part of ASHRAE and consumers when compared to Certification.

The global market has a high demand for third-party recognition of expertise, mastery, qualifications, and competencies. ASHRAE can offer this third-party recognition in related topic areas.

To achieve success, micro-credentials should be less costly to develop than ASHRAE's current Certifications, quicker to bring to market, and easier to administer (especially outside of North America). Micro-credentials do not need to be ANSI accredited certifications.

Training Portfolios

Developing the relationship between credentialing and training, a suite of training courses can be offered as a package to those seeking a specific credential. These training portfolios could be focused on a particular topic, such as commissioning, or around a goal, such as training a recent graduate for an entry-level consulting engineering job. Portfolios would be supported by employers who wish to upskill their organization though also available to individuals.

Training portfolios with a certification opportunity at the end also provide an opportunity for networking for members. Courses can be taught live as well as on-demand, offering interaction between participants and adding value to the attendee.

Where a certification or micro-credential is not offered with an associated exam at the end of a package of training courses, consideration should be given as to how attendees are recognized and how their adequate completion is evaluated.

Subscription Services

A subscription model for training courses offers a lower price point per time period to customers while providing a constant stream of revenue for ASHRAE. A subscription training option could offer web-based on-demand instruction that is interactive and more sophisticated than current online offerings. Online instruction is increasingly critical in society and offers training opportunities to global communities less able to travel to central locations. Additionally, the ability to provide training courses in multiple languages grows as ASHRAE relies less on travel to deliver instruction.

As mentioned in discussion of training portfolios, subscription based training can offer the opportunity for participants to interact and learn together, either through social media or live sessions. Many ASHRAE members and volunteers attribute their attachment to ASHRAE to networking, and fostering the human connection – especially in online instruction – is essential to providing value consistent with ASHRAE's brand and offering a robust product.

Up-Front Investment

Training and Certification are currently ongoing programs that simply need to grow. Initial investment in online product offerings and infrastructure will present some small cost, but it is expected to be considerably smaller than the investment required for travel.

As online instruction is expanded and micro-certifications can be achieved remotely, it is important to have confidence that the people earning recognition are in fact the people achieving it. It is recommended that the practices used for the 2020 Virtual Conference be evaluated for appropriate implementation to remote training and certification opportunities.

Possible Organizational Structure

As training and certification are both already offered by ASHRAE, these organizations are likely to grow & change within the current structure. The potential need for more ASHRAE staff is outlined in the Resources Needed section. Evaluation will be needed to determine how an increased offering of on-demand online content impacts the functioning of ASHRAE staff, if this is not already under evaluation as part of the response to the COVID-19 pandemic.

Resources Needed

Within ASHRAE

A stronger relationship within ASHRAE between training, certification, publishing and marketing, is needed to keep products and offerings in sync. This would require a minor allocation of time from those internal divisions. Some form of liaison between these groups would also be necessary.

Outside of ASHRAE

Commercial firms outside of ASHRAE could help deliver educational products to ASHRAE customers through a variety of potential relationships. ASHRAE could sell ownership of educational products but maintain the revenue stream and branding, or ASHRAE could partner with a commercial firm, similar to the eLearning model.

Non-commercial partners included governmental organizations. The Pub-Ed team is already active in this area (several in-person courses have been delivered for Department of Defense branches, as well as GSA, and some New York state courses). However, many of the contracts for the training are much larger than ASHRAE instructors readily available, and ASHRAE should consider how we can scale our course offerings. Could we employ a train the trainer model and realize some type of “licensing” revenues from these (similar to a “powered by ASHRAE” model). Given that government contracts and proposal submissions can be extremely complex, ASHRAE may want to consider hiring a contract officer if we get into large contract vehicles.

Time to Market

Inasmuch as training and certification are already taking place, many of the above recommendations could be brought to market fairly quickly. Some short start up times for implementing some of the proposed changes would be required, and modest start up times for developing new programs proposed. Not all existing online content will repurpose neatly into the new revenue streams proposed and therefore may require as long as a Society Year to develop at the quality desired.

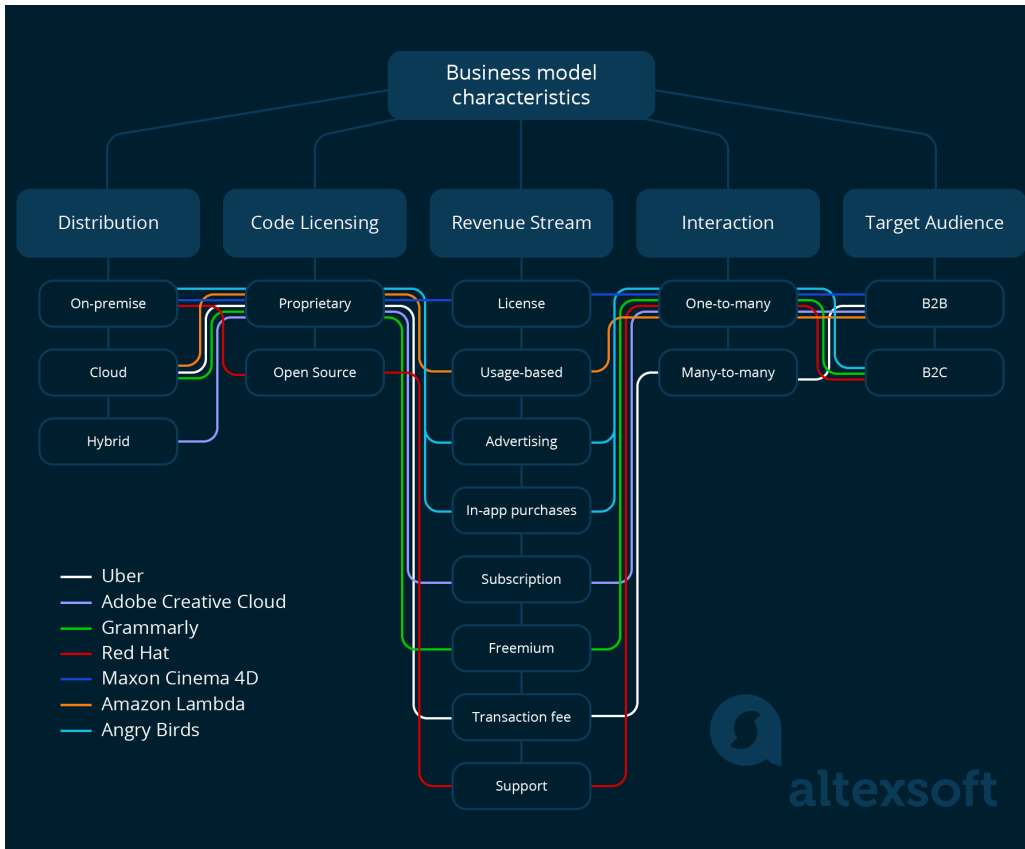
Revenue from Digital Products

Common Digital Product Revenue Generating Approaches

More and more ASHRAE's technology will be delivered to the marketplace digitally. Today, most of ASHRAE's technology is delivered in written form (a book or PDF). Delivering the technology online in the form of a PDF or browser experience represents most of the effort today. For example, getting an online copy of a standard which is really just a digital book. Other technology is delivered as "blogs" on the ASHRE website.

This misses out on the great opportunity of a full online experience. For example, an interactive tool that reviews a design or specification for a project to check compliance with Standard 90.1 The challenge is how does ASHRAE get compensated for delivering its valuable technology "via the web"?

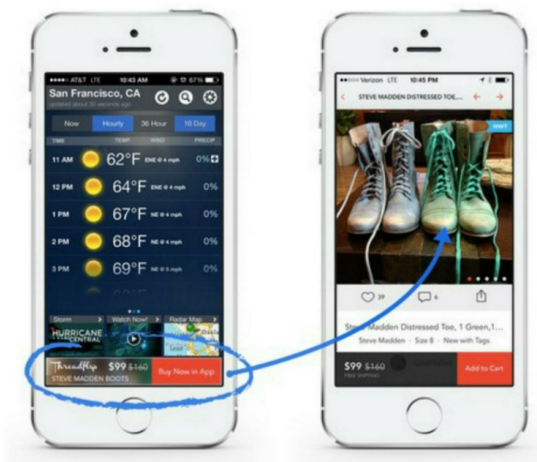
The image below shows multiple business cases for how companies in general generate revenue from digital based technology. As can be seen, there are a lot of variables. ASHRAE will likely be more successful if it focuses its efforts on a few methodologies rather than a shotgun approach. If a methodology does not prove out, it can be retired and a new approach taken.



Revenue Streams

Since the focus of this report is review, this particular business model characteristic will be discussed in detail. Here is the description of the various common revenue streams;

- **Paid Apps and software**
 - o Charge once to install software
 - o Most common approach
 - o Can generate more revenue by charging for updates and technical support
 - o Challenge is competing with free and open source products (e.g. BEQ vs. EnergyStar)
- **In App Advertising**
 - o Free software use but sell advertising space in the application



- **Licensing**
 - o License your digital tech to someone else use in their product
 - o Partner with a company/organization who will compensate ASHRAE when the software is used e.g. ICC sponsoring ASHRAE for some form of Standards compliance tool
- **Sponsorship**
 - o Allow other companies to access your sphere of influence by placing their digital technology in our digital environment
- **Free- With In- app Purchases**
 - o Provide physical and virtual goods sales
 - o Works well with e-commerce models
- **Subscriptions**
 - o Pay per user fee either monthly or annually
 - o E.g. sell access to online Standards library
 - o “Free service period” used to let customer try product before committing. Once period is up the fee starts
 - E.g. Amazon prime
- **Freemium**
 - o Basic features are free

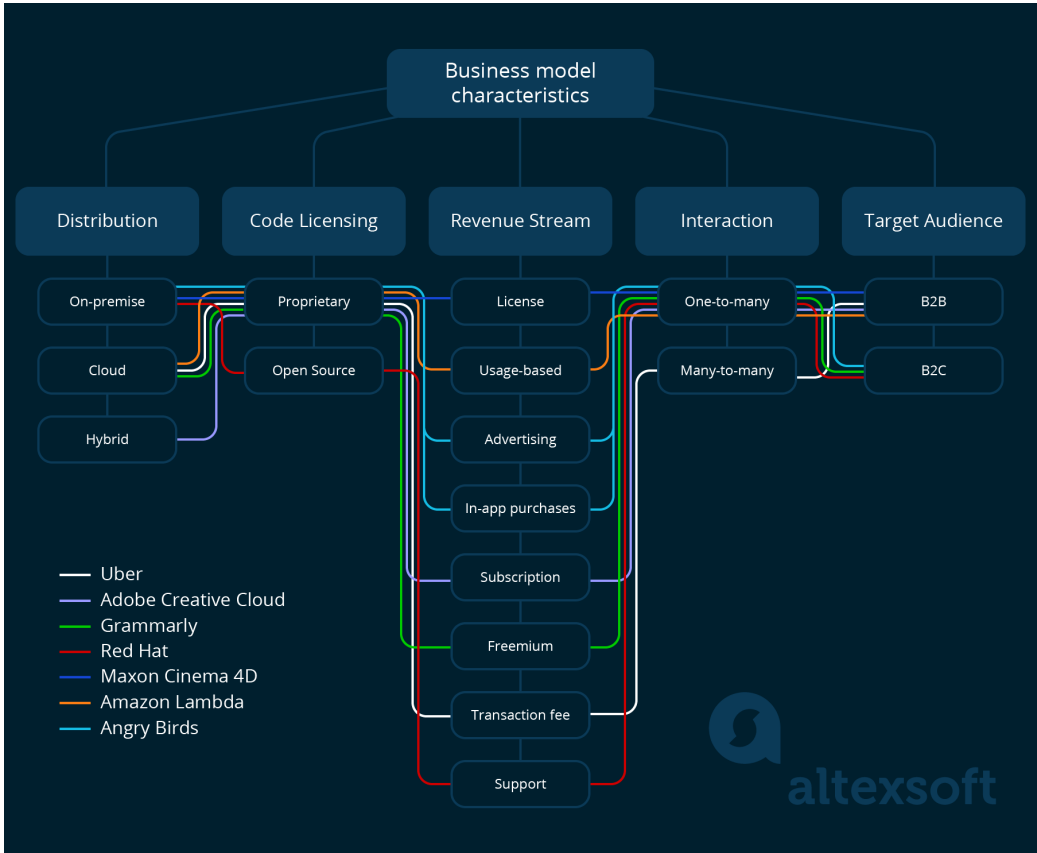
- Paying a fee allows access to premium features
- E.g. Spotify
- **Transaction Fee**
 - Charge a commission based on transactions
 - E.g Uber, Airbnb, eBay
- **Usage based license**
 - Based on “pay as you go”
 - Common with B2B
- **Support**
 - Charge for special services required by customers

Digital Product Revenue Streams used by ASHRAE

ASHRAE already provides some technology digitally. Below is a list of those activities and an estimate of how successful they have been so far at generating revenue.

DIGITAL REVENUE STREAM	PRODUCT OR SERVICE	SUCCESS (low-med-high)
Paid Apps and Software	ASHRAE phone apps	low
Paid Apps and Software	Psych CD, Duct fitting CD	Med
In App Advertising	Advertising in digital newsletter, Digital Journal	High
In App Advertising	Handbook Online	Med
In App Advertising	Web advertising	high
Freemium	Building EQ	Low
Usage Based License	Building EQ	Low
Subscription	90.1 Portal	Low
Subscription	Technology Portal	Low
Licensing	Enterprise content licensing for Handbook, Stds, Journal etc	High

Recommended Digital Technology Strategy



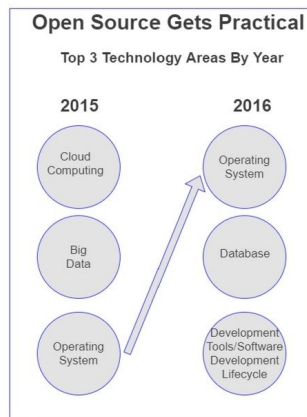
[should highlight paths on image above]

The methodology will be heavily influenced by the technology ASHRAE is trying to deploy and the target audience. The following covers suggestions on streamlining the ASHRAE digital revenue model using the Business model characteristics shown above as a starting point.

Distribution

- Focus on Cloud solutions as this is where the market and digital technology is going

Code Licensing



- Proprietary offers the most control for ASHRAE but open source coding will help disseminate the technology the furthest offering the most impact.
- ASHRAE will likely offer data bases and development tools which are already shifting to predominately open source.
- The choice will depend on the specifics of the technology being deployed

Revenue Stream

- Will depend on product offering and sales channel
- **Paid (purchased or subscribed) apps and software**
 - o Sell apps and other software tools
 - o Handbook Online
 - Free to first-year members
 - Print is an extra
- **In App advertising**
 - o Sell advertising space around blogs and other knowledge dissemination
 - o Will shortly launch -SuperheatCalc App - 20,000+ free downloads
 - Will try selling advertising in app
- **Freemium**
 - o Sell upgrades for online tools
- **Licensing**
 - o Work with industry software houses to sell ASHRAE “Technology Modules”
 - o E.g benchmarking tool sold to Autodesk
 - o Syndication of content
 - Feed “Industry News” tailored to a customer’s needs
 - AP news
- **Sponsorship**
 - o Allow other thought leaders access to ASHRAE sphere of influence by showing their digital technology on ASHRAE website and other digital technology

Interaction

- One to many is the most common (e.g. Microsoft)

- Many to many is like Uber or Ebay where the product links “buyers” to “sellers”
- ASHRAE will likely focus on one to many

Target Audience

- B2B or (Business to Business) means business approach
 - o fits best with who ASHRAE serves
- B2C (business to customer) means a retail approach
 - o Future products may reach directly to the customer

Summary

Learning how to be compensated for deploying ASHRAE technology is critical to our success. Failure to do this will mean other organizations will gather our technology deployed in books and other old school means, repackage it in digital format and deliver it to the market cutting ASHRAE out of the process.

Starting with the suggestions on a Digital business plan, PEC needs to identify 3 to 5 digital product strategies (could already be ongoing) that are in response to market needs and try them. Then learn from the models that work and equally important, retire the models that do not.

The wisdom on how to leverage the cloud to deliver ASHRAE technology is not likely a skill that members can bring consistently to PEC. Therefore, PEC staff needs to continue to develop the knowledge of how to leverage digital format to help guide the council in its actions.

Recommendations

1. Establish a business case for Digital technology as proposed above
 - a. Build necessary digital technology revenue capabilities up in staff
2. Link digital technology advertising strategy to current advertising program
3. Use a product/service planning process that covers how revenue will be generated from the on line product as part of the product development and not as an afterthought
4. Where digital technology is part of a product portfolio offering, cross link revenue strategies
 - a. E.g. - Advertise training and printed material in digital tool

Advertising Revenue Strategies

Current Strategies and Trends

Advertising is one of PEC success stories and the goal is to have it maintain its revenue and margin going forward. The following is a list of current advertising activities.

- **Print advertising**
 - o Journal
 - o Success- high
- **Digital Advertising**
 - o HPB, website, handbook
 - o Success high
- **Webinars**
 - o Commercial webinars
 - o Success- high
- **Print advertising**
 - o Journal
 - o Success- high

Recommended New Approaches to Try

- **Expand geographic markets**
 - o Advertising machine is set up to allow access for advertisers to North American market. Expand to include access to markets in Middle East, Asian subcontinent, Asia/Oceania, Europe
- **PODcasts and VIDCasts**
 - o Offer similar to webinars to allow thought leaders to tell their story
- **Native Advertising**
 - o Offer service to create case studies and other products to organizations
- **Sponsored Editorial Content**
 - o [Add description]
- **Expand Digital Advertising**
 - o Handbook on line
 - o Apps
 - o

Advertising Summary

Advertising at ASHRAE is a well-established piece of machinery and has delivered great results for the organization for a long time. As trends change the team adjusts such as a move from print to digital. Right now, the Journal being in print is an advantage as most of our competitors have exited and a

magazine that is delivered to the membership is consider a very high -quality pathway to the marketplace. Advertising is looking at other channels which can be digital. The feeling from staff is that the adjustments under normal circumstances would maintain the advertising revenue and margin going forward. It should be noted that COVID has had a direct negative impact on advertising that is a market place issue and beyond our control.

PEC should recognize that changes are required to advertising for it to maintain its level of success and PEC needs expect and support change.

Recommendations

1. Let advertising program continue without imposing changes but monitor closely
 - a. Expand digital advertising wherever possible
2. Offer Podcasts and Vidcasts as platform to generate revenue
3. Test Native advertising as a revenue stream
 - a. Consider commercialism issues, staff and volunteer resources
4. Develop an advertising program that targets specific geographic areas outside of North America
 - a. Set pricing accordingly
 - b. Coordinate with local ASHRAE groups (ie regions)
 - c. Consider products and services that will resonate with the region.



Business Case for Codes/Standards Jurisdiction Support Services

STATEMENT OF THE OPPORTUNITY

ASHRAE is often asked for assistance in development and review of state and local building codes including those from smaller communities that may only have one person who is responsible for all building codes. Requests are also received for training and education for code enforcement bodies. ASHRAE's primary focus is the promotion of and adoption of current standards and guidelines without modifications. In the alternative, we ask that portions be adopted that are technically equivalent. We do not currently have a mechanism in place to quickly and efficiently handle and assist with custom code development, custom code review requests or the related requests for training and education at a large scale. Most custom code developments have been coordinated with the ICC and relate to 90.1. However, we also have custom codes for Standards 62.2, 154, and 170 (into FGI Guidelines), as well as the Practical Guide to Seismic Restraint. There is also the potential for custom codes, with training opportunities, related to 15, 34, 55, 62.1, 90.1, 90.2, 90.4, 100, 154, 188, 201, and 202.

Member Opportunities

This presents opportunities for ASHRAE members both as paid and volunteers for the following:

1. Providing advice related to ASHRAE standards.
2. Presenting (roadshow) to jurisdiction officials materials to describe ASHRAE's resources. Could be presented by local Chapter volunteers.
3. Contracting work for the development of custom codes.
4. Contracting work for updating and/or creation of new education and training materials in support of the custom codes.

Hiring Additional Staff

- Other similar organizations (ICC, IAPMO) have a much larger staff that are dedicated to developing custom codes, with accompanying products (education courses/additional documents) and have ongoing relationships at the local level.
- In order to coordinate and improve the reach and effectiveness of potential business for the development of custom codes, *we propose hiring additional staff*. The priorities of the staff

would be as shown below. ***As a pilot, we propose adding one additional staff person dedicated to spear heading development of custom codes and related services effective in the next Society Year (20-21), who would:***

1. Create a package of services and materials for those jurisdictions that have passed climate mandates and deadlines.
 - a. All relevant ASHRAE standards that can support the mandate.
 - b. Other forms of technical guidance and tools (AEDGs, standards user's manuals, etc.)
 - c. Educational courses that are relevant to jurisdictional officials and to the buildings industry in that jurisdiction.
 - d. Identify local Chapter volunteers that can provide advice related to ASHRAE standards.
 - e. Presentation (roadshow) for jurisdiction officials designed to describe ASHRAE's resources. Could be presented by local Chapter volunteers.
2. Spearhead and develop the following:
 - a. A business model for contracting ASHRAE expert members to support this work is needed. Jurisdictional support services cannot rely solely on volunteers that are busy with day jobs.
 - b. A method to engage volunteers to support this work.
 - c. An understanding of jurisdictional funding opportunities is needed.
3. Identify and respond to requests for custom codes and related training opportunities.
4. Establish and maintain relationships with officials the local level to better understand possible back channels to get standards adopted.
5. Target jurisdictions likely to do energy modeling and point out the weaknesses of the performance path in the IECC and highlight the benefits of using 90.1 with Appendix G. ASHRAE should provide full support to those jurisdictions that want to adopt 90.1, 90.2, 100, etc. as an energy 'code'.
6. Target jurisdictions with other needs, such as water system safety (Standard 188, and eventually Standard 514), and those developing resilience ordinances and requirements.
7. Work with Publications to provide a standard/code document in the name of the jurisdiction.
8. Special distribution and sales agreements with the jurisdiction covering both the standard/code and user's manual (if available). Thought should be given to these business models.
 - a. Code officials education and training options should be developed and included.

Cost Analysis

1. Cost for new staff position at approximately \$45,000 to \$50,000 (if this is added as a coordinator position) plus cost of employee benefits. Added cost of benefits is between \$12,600 to \$14,000.

2. Potential of reallocation of existing staff time across the Society (Technology, Government Affairs, and Publications) department as part of coordination efforts and dependent on the proposed project. Net zero cost on paper.
3. Loss of Standards Sales would be case specific because it would be based on the standard, the region, the standard version (E.g., 2014, 2016, 2019), and the business model of the new document. For example, if the custom code was based on 90.1 there could be loss of sales could be \$0 in a state like Alaska but it could be as high as \$50,000 in the state of New York.
4. Potential for an increase in income in either or both standards sales and custom code sales. Based on past agreements with ICC this could be income generators of potentially \$15,000 to \$20,000 per custom code or higher since there would be no middle man.
5. Potential for an increase in sales of educational courses or training. If we did 3 training courses a year with a good turnout that could potentially net \$60,000 to \$75,000.
6. Potential to affect our custom code activities with the ICC when a jurisdiction asks to customize the IECC and 90.1. This may also affect future royalty agreements with ICC. (We generally earn between \$5,000 to \$14,000 plus some residuals for each custom code with the ICC). **Note: We have asked what ICC charges but at this time are unwilling to share. The royalties we've received from ICC during the last 8 years have averaged \$50k to \$65K, with outlier years of \$148K (2012) and \$219K (2018).**
7. If we wanted to develop a database similar to what ICC has done for Washington State then there would be an initial up front cost for that. It's possible we could add on to an existing piece of software like in the Technology Portal. Would estimate a minimum of \$100,000 up front cost.
8. This would allow for us to develop more custom international codes. The latest project with KFAS netted \$44,000 to ASHRAE.

Projected Expenses and Income

Expenses

	Planned
<i>Totals</i>	\$656,250
Salary	\$50,000
Travel	\$10,000
Health/medical	\$15,000
Contracted services*	\$581,250
*75% of income	

Income

	Planned
<i>Totals</i>	\$775,000
Code assistance	\$200,000
Custom code sales	\$15,000
Custom training classes	\$60,000
NYSERDA	\$250,000
KFAS	\$150,000
Other	\$100,000

Contracted services is monies paid to an ASHRAE member.

[RETURN TO REPORT](#)



Report from
Presidential Ad Hoc
Codes/Standards Jurisdiction Support Services

Members

Katherine Hammack, Chair

Rick Hermans

Apichit Lumlertpongpana

Jeff Clarke

Steve Marek

Staff

Stephanie Reiniche

Alice Yates

1. It is recommended that ASHRAE add one additional staff person (Coordinator) dedicated to spear heading the development of custom codes and related services in the next Society Year (20-21) as detailed in the Attached Business Case([Attachment A](#)).

Background: The Ad-Hoc reviewed its charge, looked at examples of requests received to date, and examined what services were available in the marketplace. The information considered by the Ad-Hoc is included below for the Board's consideration. It was determined that there is a need to do a pilot program. The details are included in the business case. There is currently a new request at headquarters from KFAS that could potentially fund a staff person for one year, that may make the first year of the program cost neutral.

Fiscal Impact: \$50,000 salary plus \$14,000 anticipated benefits cost

Information Items:

Review of Ad-Hoc Charge.

Charge 1 - Determine if there is a need by jurisdictions (e.g., localities, states, governmental bodies) what is the extent of services needed?

Examples of where jurisdictions requested code development services.

1. Recently Lafayette, Colorado's code office reached out for assistance in development of a building code. This was part of a submission for grant to develop the code. This would have resulted in staff review to determine if what was developed would not conflict with ASHRAE Standard 90.1. Unfortunately, the code office was not awarded the grant. One issue is that smaller jurisdictions don't have the finances available to pay for code development.
2. Washington, DC asked ASHRAE to publish the DC Energy Code, which was 90.1-2016 including a number of amendments. DC would have paid ASHRAE to do this. However, due to resource constraints and ASHRAE's relationship with the ICC, ASHRAE instead reached out to ICC to request that ICC develop the custom code for DC. When ICC does this, ASHRAE still receives royalties on the ICC document sales, but if ASHRAE had the capacity to publish the code directly, ASHRAE would receive greater revenues.
3. The Conference of Mayors asked ASHRAE for a model ordinance that could be adopted by local governments for improving the energy efficiency of existing buildings. We shared Standard 100 with the Conference of Mayors, but they wanted more specificity and assistance. It is unclear whether this group would be willing to pay ASHRAE for this type of assistance.
4. The Smart Cities Council asked if ASHRAE had a "Smart Building Standard¹." Smart Cities Council would likely not pay for development of this code, but they suggested that many communities with whom they work have been interested in such a code.

Extent of Services Needed.

1. Create a group of ASHRAE members capable of providing services and training to jurisdictions, this will be billable work.
2. Initial consultation to identify code related potentials. Staff and member driven services.
3. Adapt 90.1 energy code to meet jurisdictional requirements, start with producing a code enforceable document that could be adjusted to meet several different energy saving potentials by say 2030. Contract service.
4. Create learning institute class to be included in the help.
5. Create learning institute class for carrying out the code
6. Create specific user manual
7. ASHRAE should provide full support to those jurisdictions that want to adopt 90.1, 90.2, 100, etc. as an energy 'code'.
8. ASHRAE should create a package of services and materials for those jurisdictions that have passed climate mandates and deadlines.
9. ASHRAE should develop and provide free of charge an ordinance frame to support the adoption of 90.1 as an energy 'code'.
10. ASHRAE should create a dedicated staff position that coordinates these services for jurisdictions.
11. ASHRAE should explore opportunities to *adapt* standards to meet the unique needs and goals of various jurisdictions.

¹ ASHRAE has a Smart Building Systems Technical Committee 7.5.

Charge Number 2 - Identify organizations that are already providing these types of services:

1. The **ICC** currently offers code development resources. Their program can be found here: <https://www.generalcode.com/>.] ASHRAE's publication department and ICC do work together to develop custom codes. A prime example is with New York State (a custom IECC/90.1 code). This is done when 90.1 is involved. ASHRAE receives money for this.
2. **IAPMO** offers some code development resources. Their program can be found here: <http://cqcengage.com/iapmo/CDBG>
3. **NASEO** (<https://www.naseo.org/jobs>) NASEO - has a place where RFPs can be announced for the public to bid on developing assessments of current practices (energy storage) in a particular state and how it will affect the landscape. The current posting shows a request for an energy storage assessment in Iowa.
4. **APPA Services** (<https://www.appa.org/standards-codes-landing-page/>)– This what APPA provides: Engaging the education sector in standards and codes activities requires a consensus-based process that is impartial and brings together a diverse range of stakeholders and subject matter experts. The APPA Standards and Codes Council establishes Work Groups to develop APPA standards and to make recommendations and propose changes to codes and standards established and maintained by other standards development organizations.

The ASCC works on behalf of APPA's members to ensure the needs of educational institutions are heard on changes coming from the International Code Council (ICC), the National Fire Protection Association (NFPA), and ASHRAE. The council monitors the ISO TC 267 Work Group regarding the development of international standards for Facility Management.

We are engaging in activities with APPA.

5. **IFMA** – There were no listings or information on their website related to codes/standards development services.
6. **Alliance to Save Energy** – No services provided.
7. **BOMA** – No services provided.
8. **ASME** – No services provided
9. **NIBS** – No services provided
10. **American Iron and Steel** – No services provided.
11. **American Wood Council** – No services provided.
12. **American Society of Civil Engineers** – No services provided
13. **ACCA** – No services provided.
14. **NAHB** – They have code adoption kits <https://www.nahb.org/nahb-priorities/construction-codes-and-standards/code-adoption.aspx>
15. **ASPE** - No services provided
16. **International Institute of Refrigeration** – No services provided.
17. **IIAR** – Has a government portal but it doesn't appear to provide code development services - https://www.iiar.org/iiar/government_and_code/government_portal/wcm/government_agency/government_portal.aspx?hkey=b6d6bcb2-8563-494d-9610-65bf14af8e5b
18. **SMACNA** – No services provided.
19. **NBI** – Doesn't have services but they do have some alternative type publications. <https://newbuildings.org/hubs/codes-policy/#tools-guides>
20. **NFPA** – No services provided.

Individual Consulting Services - One ASHRAE member, Darren Meyers, offers code development services. <https://www.ieccode.com/code-development/>

Of note no one posts the costs for the services, if offered.

Charge Number 3 – Assess the potential for overlap and/or conflict with ASHRAE’s current operations. That is, if ASHRAE were to offer such services to assist state and local governments in developing their building codes, how would it impact? A. Standards development, including but not limited to, overlap and conflict with the work of standards committees and B. Consulting services provided by our members?

The Ad-Hoc reviewed existing procedures used for the development of code change proposals by the Code Interaction Subcommittee (excerpts of the procedures are included for information) as it relates to code development. For general information code change proposals and positions on other organization code proposals are approved by the relevant SPC and then CIS. All proposals and positions must be technically equivalent to our standards. A similar approach with GAC is used in terms of the positions and proposals must be technically equivalent to our standards. Based on available data there didn’t appear to be things that would conflict with consulting services provided by our members.

12.1 Code Development Procedures

This section establishes procedures for processing code change proposals by the Code Interaction Subcommittee (CIS). CIS provides a means for ASHRAE to represent the interests of ASHRAE members and to promote uniform adoption of ASHRAE SCDs by U.S. Model Building Codes and other codes. CIS will focus on national model codes and parts of codes that affect ASHRAE member interests, including, but not limited to the Mechanical Code, Building and Fire Code provisions related to fire and smoke control and Building Code provisions related to HVAC and Energy issues. All ASHRAE Code Interaction shall be processed by and through the CIS.

12.1.1 ASHRAE Prepared Code Proposals and Comments

CIS will submit code proposals and comments on code proposals which provide a single, simple and direct prescriptive method for minimum compliance with the data or practice contained in a Design, Method of Test or Classification Standard. When possible, the information contained in the Code proposal shall be identical to the SCD from which it is prepared. If CIS determines the information should not be identical, the information shall be technically equivalent to the information in the SCD and shall be in an easy to follow format.

Where practicable, CIS shall primarily rely on the cognizant committee to ensure the proposal is consistent with an ASHRAE SCD but may also decide to disapprove a proposal if it is not consistent with the related SCD. Code proposals require approval by the majority of CIS voting members and, when practicable, more than 50% of the designated SPC or SSPC, GPC or SGPC, or TC voting membership (hereafter referred to as the “cognizant committee”) responsible for the preparation of the source SCD. The cognizant TC for a standard can be requested by CIS to be the cognizant committee when no SPC, SSPC, GPC, or SGPC is active. When working under a compressed timeline, requiring CIS to submit proposals and comments without formal approval of the cognizant committee, a timely report of this action must be made to the Standards Committee Chair and the Chair of the cognizant committee.

All official ASHRAE proposals and supporting comments that contain material from copyrighted ASHRAE material shall be submitted by ASHRAE Staff. Individuals who submit copyrighted ASHRAE material without obtaining permission shall be in violation of ASHRAE copyright policy.

CIS is responsible for ensuring appropriate attendance at code hearings to promote adoption of ASHRAE code change proposals through the code development process.

12.1.2 Code Proposals Not Submitted By ASHRAE

CIS shall also respond to code proposals submitted by others, when they affect or conflict with current or pending ASHRAE SCDs, the ASHRAE Handbooks or when directed by ASHRAE leadership. Where practicable, CIS will submit these code changes to the designated cognizant committee for their input on how to respond to each code change proposals. The recommended ASHRAE position on proposals will be one of the following:

1. Strongly Support – The content is identical to the affected SCD and is significantly impactful (ASHRAE Staff encouraged to so comment)
2. Support – The content is identical to the affected SCD and not significantly impactful or the content is technically equivalent to the affected SCD and is significantly impactful (ASHRAE Staff may so comment)
3. Oppose – The content is not identical to the affected SCD and is not significantly impactful (ASHRAE Staff may so comment)
4. Strongly Oppose – The content is not identical to the affected SCD and is significantly impactful (ASHRAE Staff encouraged to so comment)

Responses to code proposals not submitted by ASHRAE require approval by the majority of CIS voting members and, when practicable, more than 50% of the designated cognizant committee. When working under a compressed timeline, requiring CIS to submit responses without formal approval of the cognizant committee, a timely report of this action must be made to the Standards Committee Chair and the Chair of the cognizant committee.

12.1.3 Code Development Involvement Request

If any SPC, SSPC, GPC, SGPC, or TC wishes to become involved with ASHRAE code development, the chair of the committee may submit a request for involvement to the chair of CIS and the staff liaison which contains justification for such. If a standing committee is present, it shall be responsible for the development of all proposals and comments related to the Code Development, unless CIS determines it should assume those responsibilities.

Any cognizant committee whose subject of interest corresponds to provisions of building codes that may be the subject of CIS code proposals shall appoint a liaison to the Code Interaction Subcommittee or CISTG, subject to approval by the CIS Chair. The liaison is responsible for providing code proposals and comments to code proposals from the cognizant committee to CIS for consideration.

In addition, the Ad-Hoc considered an approach that would have a Codes Consultant Board perhaps similar to how the Appeals Board is set up. Below is an excerpt from PASA indicating how the Appeals Board is established. This could potentially serve as a model for establishing a Codes Consultant Board. If this is done some questions to consider should include:

1. Determine the expertise needed on the Board.
2. Determine how members will be added to the Board or if the model below will work.
3. Define a scope of work.
4. Determine a fee structure that covers the cost to the requester and monies paid to the volunteer or to offset staff cost.

B7 APPEALS BOARD

B7.1 An Appeals Board and a chair of the Board shall be appointed by the ASHRAE President, with the approval of the Board of Directors. The Appeals Board shall have 15 members. The Appeals Board shall consist of past members of the BOD, past members of the Standards Committee or Technology Council, and/or persons who are knowledgeable about the ANSI Standards development process.

B7.2 Terms of Membership

Terms shall be staggered so that approximately one-third of the membership of the Appeals Board is appointed each year. Members shall be appointed for a term of three years commencing on July 1, and shall be eligible for reappointment for one additional 3-year term, for a total of two consecutive terms. A member of the Appeals Board may serve beyond the normal two-term limitation if the member is serving as chair, provided the term of chair is contiguous with the six-year tenure as a member. The total maximum length of service under such circumstances would be nine years.

B7.3 Vacancies

A vacancy in the membership of the Appeals Board shall be filled for the remainder of the term by an individual appointed by the ASHRAE President.

B7.4 Conflict of interest

A member of the ASHRAE Appeals Board shall act at all times in a manner that promotes confidence in the integrity and impartiality of ASHRAE's processes and procedures and should avoid a conflict of interest or the appearance of a conflict of interest in connection with all ASHRAE Appeals activities. Should the Appeals Board Chair have a conflict of interest with any appeal he/she shall select another member of the Appeals Board to serve in his/her place with respect to consideration of that appeal.

If a materially affected party (either the appellant or the respondent) asserts that it believes a member of the ASHRAE Appeals Board has a conflict of interest, that materially affected party is required to state the reason(s) for its belief. That information shall then be forwarded to the member of the ASHRAE Appeals Board identified as having a possible conflict for that person's response. If that member disagrees with the assertion, then the Chair of the ASHRAE Appeals Board shall make a final determination as to whether a conflict of interest exists.

Members of the ASHRAE Appeals Board who are disqualified from a particular discussion shall not participate in the arguments, deliberations or decisions.

B7. 5 When appeals of jointly sponsored standards are being considered by ASHRAE as lead sponsor or by ANSI, the joint sponsor shall assist in preparing or responding to appeals in its field of expertise.

Charge Number 4 – If a need exists which is not currently met in the marketplace and which does not conflict with ASHRAE’s current operations: Define a delivery method for provided these consulting services (business plan) potentially considering the following: a. Additional paid staff, B. Staff leveraging members (who are paid for their services, and C. Contracting with other service providers. Assess the potential for overlap and/or conflict with ASHRAE’s current operations.

The Ad Hoc determined that a need does exist in the marketplace that wouldn’t conflict with ASHRAE’s current operations. A proposed business plan is included. One thing that the Ad Hoc also considered was past projects in particular the Kuwait 90.2 project.

Global Training Center Report for the period 1 January 2020 – June 2020

**Prepared for Publishing and Education Council
June 2020**

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Global Training Center Report for the period 1 January 2020 – 30 June 2020

May 2020

1. Performance Summary for the period 1 January 2020 – 30 June 2020

6 additional courses were presented between 1 January and 30 June 2020, bringing a total revenue of **\$ 56,284.80** and a gross profit of **\$ 39,741.32**.

Overall, 16 courses were presented between 1 July 2019 and 30 June 2020. Achieving a total revenue of **\$ 142,881.20** and a gross profit of **\$ 73,260.42** before allocation of overheads.

Overheads during the year total **\$ 44,699.95**. Overheads include Dubai Office yearly fixed costs. Does not include variable costs charged throughout the year.

Net profit for the year ending June 30, **\$ 28,560.47** after allocation of overheads.

1.1 Effect of Covid-19 on GTC activities for the period 1 January 2020 – 30 June 2020.

Due to the government restrictions imposed in the UAE and other countries since early March, around 5 courses have been postponed or cancelled. For a quick turnaround, an archived Healthcare training with a live Q&A session was held in April. The High Ambient Temperature training, initially scheduled early March for UN Ozone Officers, was rescheduled to June.

As a result of the pandemic, a Web Delivered Training Plan was set by Steve Comstock and Ayah Said and reviewed by the GTC Volunteer Oversight Committee. This plan goes into effect July 1, 2020. Reviewed plan is outlined in the attachments section at the end of the report.

2. Metrics for the period 1 January 2020 – 30 June 2020

2.1 Training Summary 1 January 2020 – 30 June 2020

In addition to courses conducted during the second half of the year (January – June 2020), the below table includes training conducted during the entire year to give an overall view of the training performance. The below profit does not account for \$ 44,699.95 in overheads.

	Date	Training	Location	Reg. No.	Total Revenue	Total Cost	Gross Profit	Comments
1	Sept 4-5, 2019	HVAC Design: Level I - Essentials (MENA)	Egypt	18	\$ 6,300.00	\$ 5,710.50	\$ 589.50	DE Chptr fees
2	Oct 13-15, 2019	HVAC Design: Level I - Essentials (MENA)	KSA	19	\$ 8,415.00	\$ 7,056.55	\$ 1,358.45	Host: SCE*
3	Oct 16-17, 2019	HVAC Design: Level II – Applications (MENA)	KSA	17	\$ 5,700.00	\$ 4,512.79	\$ 1,187.21	Host: SCE*
4	Oct 27-29, 2019	HVAC Design: Level I - Essentials (MENA)	UAE	29	\$ 21,643.84	\$11,353.32	\$ 10,290.52	GTC
5	Oct 30-31, 2019	HVAC Design: Level II – Applications (MENA)	UAE	27	\$ 11,039.56	\$ 5,132.32	\$ 5,907.24	GTC
6	Nov 3-5, 2019	HVAC Design: Level I - Essentials (MENA)	KSA	12	\$ 8,910.00	\$ 6,800.77	\$ 2,109.23	Host: SCE*
7	Nov 6-7, 2019	HVAC Design: Level II – Applications (MENA)	KSA	13	\$ 5,400.00	\$ 3,037.68	\$ 2,362.32	Host: SCE*
8	Nov 16-18 2019	HVAC Design: Level I - Essentials (MENA)	Kuwait	26	\$ 9,828.00	\$ 5,737.83	\$ 4,090.17	Host: KSE** &Chptr
9	Nov 18, 2019	Designing for IAQ: Complying with Standard 62.1 (MENA)	Kuwait	10	\$ 3,900.00	\$ 2,138.64	\$ 1,761.36	Host: KSE** &Chptr
10	Nov 21, 2019	Variable Refrigerant Flow Systems (MENA)	Kuwait	35	\$ 5,460.00	\$ 1,596.90	\$ 3,863.10	Host: KSE** &Chptr
11	Feb 23-25, 2020	HVAC Design: Level I - Essentials (MENA)	KSA	28	\$ 10,920.00	\$ 5,686.83	\$ 5,233.17	Host: SCE*
12	Feb 26-27, 2020	HVAC Design: Level II – Application (MENA)	KSA	33	\$ 6,900.00	\$ 3,584.23	\$ 3,315.77	Host: SCE*
13	Mar 1, 2020	The Future of Refrigerants: Challenges & Opportunities (MENA)	UAE	34	\$ 5,859.80	\$ 3,029.42	\$ 2,830.38	GTC
14	Apr 14, 2020	Designing & Operating High-Performing Healthcare HVAC Systems	Online	44	\$ 5,605.00	\$ 350.00	\$ 5,255.00	Archive/live Q&A
15	Mar 2-4, 2020	HAT Training/Conference	UAE	0	\$ 13,500.00	\$ 2,143.00	\$ 11,357.00	GTC/UNEP
16	June 10 & 17, 2020	HAT Training/Conference	Online	349	\$ 13,500.00	\$ 1,750.00	\$ 11,750.00	GTC/UNEP

TOTAL	694	\$ 142,881.20	\$69,620.78	\$73,260.42
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*Saudi Council of Engineers

** Kuwait Society of Engineers

2.2 Registration Fees

The base registration fee per registrant for face-to-face training during the period remained at (Fees charged when courses are organized in Dubai; from which all other discounted fees, etc. are derived from).

1-Day Course	\$311 (\$405 Non-members)
2-Day Course	\$524 (\$641 Non-members)
3-Day Course	\$757 (\$948 Non-members)

Average revenue per registrant ranged from **\$156 to \$763**.

Average cost per registrant ranged from **\$46 to \$566.73**.

The base registration fee per registrant for online training during the period was (Based on one organized webinar where fees per person were charged).

3-Hour Course	\$135 (\$ 176 Non-members)
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Variations in average revenue and cost per registrant as a result of different registration fees is due to the following factors:

1. Member/Non-member pricing
2. Attendees from developing economies
3. Chapter/ developing economy chapter hosts
4. Group discounts
5. Multiple course registration

3. Business Model

3.1 Web-based Training

The following presents the transition in value propositions of the business model from face-to-face training to a focus on virtual training to meet the needs of our customers during this time.

The Web delivered Training Plan outlined in the attachment section, offers through the Global Training Center, a short-term solution to meet market demand for training in the absence of opportunities for face-to-face instruction and a longer-term approach that expands the ASHRAE education portfolio in Asia and Africa and can be a launch model for the North and South American markets and European market.

Web-based instructor led training is currently being implemented, with the first batch of online courses scheduled in July 2020.

3.2 Certification Tie-in

The following presents a new element to the value proposition which will expand our services and increase direct and indirect revenue.

In Middle East and RAL, PDH are not a driver for training. Also, individuals and employers look for an outcome benefit from the training. It is a cultural characteristic of the market. There is an expectation that ASHRAE training will lead to a credential. ASHRAE is held in such high regard in Middle East and RAL in general, a “stamp” from ASHRAE as to an engineer’s knowledge means a great deal.

The problem with current ASHRAE certifications is the training is too expensive, it is too cumbersome to administer, and the lead times are too long.

One major thing that ASHRAE can do to improve fiscal performance of the GTC is to align training with easy to administer certification that can be administered easily with training offerings at affordable pricing.

3.3 Expanding GTC responsibilities

Expanding responsibilities would be another element to our value proposition which will also expand our services, increase direct and indirect revenue and eventually help reach more governments.

The GTC is recognized as an asset by UNEP and UNIDO as they seek to interact with industry in Article 5 countries in the RAL. The GTC can address UNEP and UNIDO needs by offering training in conjunction with these UN agencies and can provide administrative support for UNEP and UNIDO activities that align with ASHRAE interests.

Also, as training is promoted to engineering societies in the Middle East, ASHRAE standards awareness can be heightened, leading to adoption of ASHRAE standards in the region.

There are opportunities present for ASHRAE to become more widely known in entire region, specifically in Africa, where UNIDO and UNEP have a strong presence and where those agencies can rely on ASHRAE resources to promote technological development. Time and support is needed to nurture this governmental outreach.

4. Attachments

4.1 Web Delivered Training Plan

**Web Delivered Training Plan
Dubai Global Training Center
Presented to GTC Volunteer Oversight Committee
May 13, 2020**

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The following plan offers through the Global Training Center a short-term solution to meet market demand for training in the absence of opportunities for face-to-face instruction and a longer-term approach that expands the ASHRAE education portfolio in Asia and Africa and can be a launch model for the North and South American markets and European market.

This plan is a kick-start to the initiative with refinements made as lessons are learned and initiatives can be fleshed out through operational experience

Objectives

1. Even-out revenue stream throughout a 12-month year.
2. Offer virtual learning option to offer a training that has no associated travel cost and attendance flexibility.
3. Position ASHRAE to continue training activity in the event of future travel restrictions.
4. Offer virtual learning options that ensures quality, peer reviewed ASHRAE content is being offered to members/non-members in the Region-At-Large.

Products

Two web delivered training options to be created:

1. Regularly schedule web-based Instructor Led training on various topics
2. Transition HVAC Design training to an eLearning/instructor led blended learning experience

ASHRAE Webinar Training: Web-Based Instructor Led Training on Topical Issues

1. Organize as a webinar
2. Schedule on a monthly basis
3. Product – Pull from two inventories of product
 - a. Repurpose archived versions of webinars to reduce cost
 - b. Present and record live Middle East customizations, breaking full day to two half days.
4. Each webinar is 3 hours long.
5. For the already archived versions, include a Middle East Instructor online to summarize key points; answer questions; lead access to an online quiz halfway through (also serves as break) and a final exam at conclusion. Results are shown not by name but as an aggregate.
6. Receive certificate attendance and certificate for successful completion of exam if passing score is earned.
7. Start July continue through December. After December could repeat.
8. The series consists of 6 individual topical seminars (several in presented as two parts).

Marketing and Sales

- Marketing messages focus on this is training; not a presentation.
- Messages reinforces there are learning objectives and PDH earned.

- Focus on ASHRAE quality, peer reviewed, commercially unbiased. Training is high-quality, peer reviewed, delivered by experts, regional and global application, and experience.
- Sales are for an entire semester (offered through first half of scheduled sessions) or one off.
- Company discount offered and promoted to companies.

Execution Timeline

Main Tasks	Proposed Timeline
1. Determine potential topics from existing GTC courses and online US courses	14-20 May 2020
2. Assign instructors for live webinars and/or US archived webinars with live Q&A	21-26 May 2020
3. Schedule 2-3 webinars starting early July 2020	21-26 May 2020
4. Set up registrations	27 May – 1 June 2020
5. Update and review presentation content	27 May – 17 June 2020
6. Promotion	1 June – 4 July 2020

Expected Cost & Revenue

Course topics will be chosen from existing inventory, therefore, no additional cost for content development. Main cost will be instructor honorarium.

- \$ 425 for presenting a 3-Hour webinar (50% less than presenting a 6-hour face-to-face training).
- \$ 350 for live Q&A during archived webinars.

Additional cost may be required if the need for new course topics arise. Expected 20-30 attendees per webinar for a fee of \$100 each. Discounted rate for 5 people purchasing an entire package up to 50% off. Total revenue should be in the range of \$2,500 to \$3,500.

HVAC Design Training as Blended Learning Series

Benefits: Allows for a more flexible training schedule; enables additional learning applications; and provides peer-to-peer learning opportunities.

1. Schedule the training as a webinar. This will be a live webinar first time it is presented.
2. This live seminar will be broken up into multiple 3-hour sessions.
3. All the Middle East instructors are assigned a segment.
4. PowerPoints are reviewed to determine if animated features can be added; overall improvement to slides since this will now be online.
5. Add interactive exercises in the course using LMS technology
6. Add quizzes in the course every 1.5 hours to serve as break. Let attendees see aggregate results.
7. Questions handled with moderator support to assist the instructor.
8. (For future archived version presentations live instructor handles live Q&A, and archived Q&A is removed.

9. Let attendees communicate with each in a “Chat Room”.
10. Assign instructor to be available in the chat room at specific times.
11. Schedule final exam at conclusion.
12. Receive certificate attendance and certificate for successful completion of exam if passing score is earned.
13. Offer this live seminar in September. It will cover a period of 6 weeks. Each week a new 3 hour segment is segment presented. (Might need to be expanded in number of sessions to include the interactive time)
14. Several virtual meetings of instructors will be required starting in June to plan the webinar series.
15. See attachment A for EARLY DRAFT of Content Breakdown. Match needs to occur first with specific Middle East content. Some US topics not relevant for Middle East.

Execution Timeline

Main Tasks	Proposed Timeline
1. Review HVAC Level I outline and determine final breakdown	To be determined
2. Assign instructors	To be determined
3. Schedule 2-3 HVAC Level I sessions	To be determined
4. Set up registrations	To be determined
5. Update and review presentation content	To be determined
6. Promotion	To be determined

Expected Cost & Revenue

To be determined. Further development is required to estimate costs. Project needs defined scope.

Market Positioning and Competitive Landscape

Due to the cancellation of events, travel and government restrictions imposed in many countries, online offerings have increased dramatically. Some offerings are from companies and associations. Most alternatives are offered by ASHRAE chapters with sessions that are not training but compete with training, are not driven by business models, and deliver uneven levels of quality.

ASHRAE chapters in the RAL and are organizing a minimum of two **free** webinars per week. And promotion is not just to chapter members but to the entire RAL. Also, speakers at the free chapter seminars are sometimes GTC instructors using ASHRAE developed materials.

This poses a direct effect on Society operations for the following reasons.

- ASHRAE RAL chapters are organizing webinars that are then promoted on a regional level to RAL members. This makes content accessible not only locally, but to a bigger geographic area, the GTC is meant to serve.
- The webinars are either part of the RAL regional lecturers’ program, presented by members of the chapter or presented by sponsoring companies.

- Duration of the webinars can extend up to 2 hours which is not that different from ALI's 3-hour courses.
- Webinar topics are similar to those offered by ALI and are offered for free and some are even presented by ASHRAE GTC instructors.
- Some GTC instructors are also RAL regional lecturers, that present GTC topics and in some cases use GTC presentations.
- Offering too many free technical content can deter registrants from paying for ALI courses in the future.
- Society has a process by which presentations are prepared, reviewed, and edited to ensure content is accurate, neutral and free from commercialism. ASHRAE is known worldwide for its trustworthy, quality content. However, this process may not be followed by chapters which compromises the ASHRAE brand.

In summary, events promoted outside a chapter are typically reserved for Society action since benefit can accrue to the entire Society not just one chapter and the Society has additional resources and experience to ensure quality.

Potential Solutions

The following are potential solutions:

1. Reinforce that GTC instructors may not use ASHRAE developed training materials except for GTC scheduled events.
2. Focus marketing and promotion of GTC offered training with these key messages:
 - a. The ASHRAE GTC offers in-depth training with learning objectives not a presentation.
 - b. ASHRAE Learning Institute certificate is available along with PDHs.
 - c. ASHRAE training is peer reviewed, free of commercial bias, delivered by experts, regional and represent global application and experience.
3. Unless an ASHRAE training course is scheduled through the Global Training Center, the chapter cannot organize training which is promoted outside its chapter membership and geographic area.
4. Chapter use of webinars for broadcasting of presentations of 45 minutes or less are excluded from regional promotion, but any such promotion must include reference to the training offered by the Global Training Center.

The objective of this plan is to have the Society through the Global Training Center fill the void of high-quality training that has been created due to the covid pandemic and which is expected to have a lasting impact on how ASHRAE can best serve the educational needs of its members.

Proposed Content Break Down – Level I as Blended Course

(Note: European Course Outline Used / To be done is comparison with Middle East Customized Course and to work from that outline. This is a placeholder.)

ASHRAE's HVAC Design: Level I - Essentials:
Tools for High Performance Building Designers

Day 1

Fundamentals

- Fan/Pump Laws
- Refrigeration Cycle
- U-Factor Calculations
- Roofs and Windows

Questions and Answers/Quiz

Load Calculation

- Manual Load Calculations
 - Human Comfort, Standard 55
 - Thermostat Set Points, Weather Data
 - Heating Load
 - Cooling Load
 - Ventilation

Questions and Answers/Quiz

Day 2

Psychrometrics

Questions and Answers/Quiz

System Selection

- Criteria for Selection
 - Zoning
 - Over-/Under sizing
 - Life-Cycle Cost
 - System Integration

Questions and Answers/Quiz

Day 3

Design Process

Basic Design of Air Systems

- Building Pressurization
- Duct Design and Sizing
 - Leakage
 - Insulation
- Pressure Drop Calculations
- Diffuser Selection
- Fan Selection

Questions and Answers/Quiz

Day 4

Basic Design of Hydronic Systems

- Pump Selection
- Pipe Sizing
- Pump Configurations/Arrangements
- Piping Configurations/Arrangements
- Steam Design

Questions and Answers/Quiz

HVAC Equipment

- Air Moving Equipment
 - Fan Coil Units
 - Air Handling Units
 - Rooftop Units

- Cooling
 - Compressors
 - DX Condensing Units
 - Chillers

- Heat Pumps (water/air cooled)
- Cooling Towers (fluid/dry coolers)
- Heating
 - Boilers (non-condensing and condensing)
 - Indirect/Direct Gas Burners
 - Unit Heaters
 - Heating Coils (hot water/steam)
- Humidification
 - Electric
 - Gas
 - Steam-to-Steam

Questions and Answers/Quiz

Day 5

HVAC Systems

- Constant Volume Systems
- VAV Systems
- DOAS
- Chilled Beams
- Underfloor Air Distribution
- Chiller Plant Design
- Boiler Plant Design
- Water Source Heat Pumps
- Ground Source Heat Pumps

Questions and Answers/Quiz

Design Considerations for VRF Systems

BAS Integration and Building System protocols

Questions and Answers/Quiz

Day 6

Codes and Standards

Commissioning and Standard 180

Introduction to Technical Sale

Project Management

- Project Team
- Project Scheduling
- Documentation
- Multi-Disciplinary Team

Questions & Answers/Quiz

Course Review Comments by Instructor

Final Exam

Global Training Center Report PEC Meeting 25 June 2020

Prepared by Ayah Said, Manager – GTC



Overview

1. Performance Summary for the year 2020
2. Performance Comparison 2018-2020
 - 2.1 Financial Performance 2018-2020
 - 2.2 Training Numbers & Geographic Reach 2018-2020
3. Business Model – Steps Moving Forward
 - 3.1 Web-based Training
 - 3.2 Expanding GTC Responsibilities
 - 3.3 Certification Tie-in

Covid-19 necessitated midyear change in strategy

- Cancelled/postponed 5-6 trainings
- Unable to schedule or react to the face to face opportunities that had been presented between March – June 2020.
- Adjusted by doing the following:
 - Held an online archived Healthcare training with live Q&A in April 2020 which earned a net of \$5,255.
 - Held the High Ambient Temperature (HAT) webinar in English, earning a net of \$11,500.
 - Held the High Ambient Temperature (HAT) webinar in French, earning a net of \$11,500.
 - Developed and Scheduled for early July, the “Re-occupation after Lockdown” training with Europe/Middle East focus. Expecting to net \$5,000 next year.
 - Scheduled a full semester of online training to be held between July – December 2020.
 - Plan to present the HVAC Design Level I (MENA) training online as “HVAC Design Web-Training series” early 2021.



1. Performance Summary for the year 2020

- A total of 16 courses presented during the year July 2019 – June 2020 achieving the displayed financials
- All instructors have maintained a performance rating above the required 4.0.
- Effect of Covid-19
 - 5-6 training events have been cancelled due to the government restrictions imposed in the UAE and other countries since March 2020.
 - A web delivered training plan outlining short and long-term solutions has been set and reviewed by the volunteer oversight committee.

Performance Ending May 2020



*Total Revenue accounts for \$40.0k Transfer from Foundation and Miscellaneous Income

Total Revenue expected to slightly increase by end of the year.

**Total Expenses include all fixed and variable costs for the year.

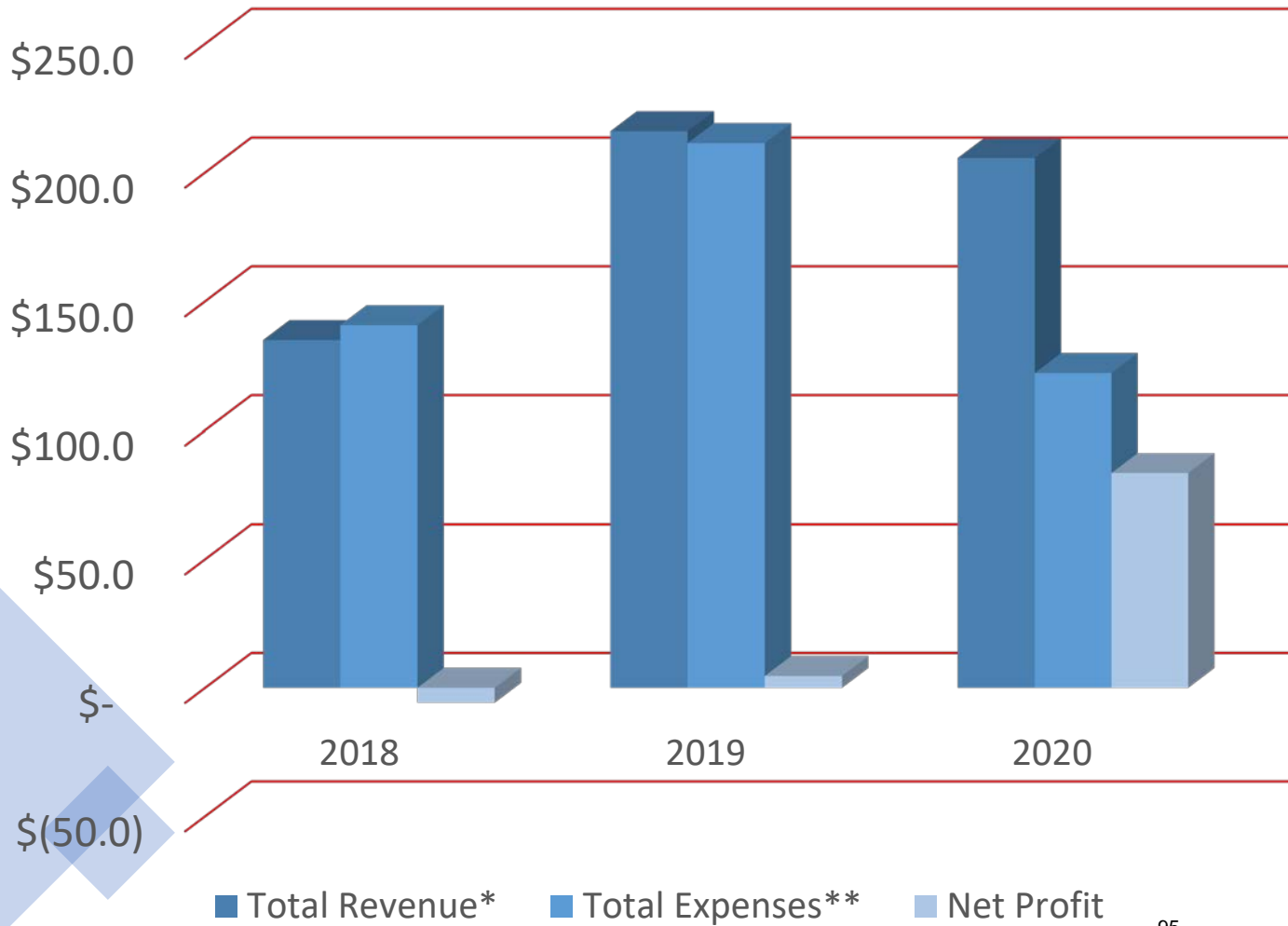
Expenses expected to increase in FS ending June 2020



2. Performance Comparison 2018-2020

2.1 Financial Performance 2018-2020

Financial Performance 2018-2020

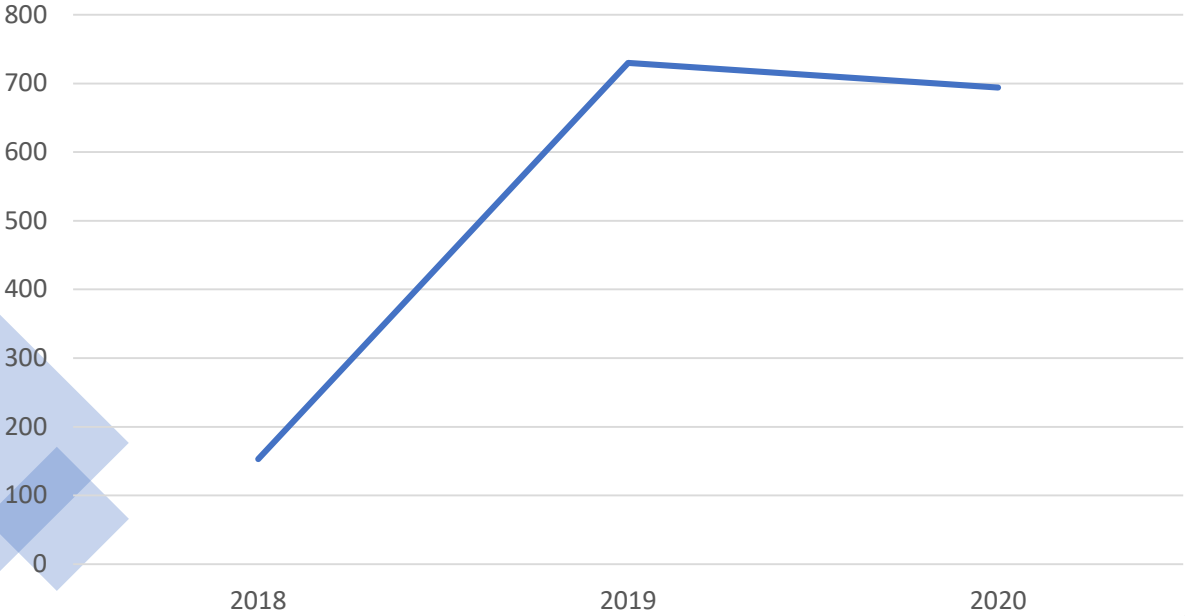


	2018	2019	2020
Total Revenue*	\$ 134.9	\$ 216.0	\$ 205.6
Total Expenses**	\$ 140.7	\$ 211.4	\$ 122.1
Net Profit	\$ (5.8)	\$ 4.6	\$ 83.5

2.2 Training Numbers & Geographic Reach 2018-2020

- GTC has trained 1,500+ individuals over the past 3 years. And conducted training in 11 cities in 8 countries in the Region-At-Large.
 - 153 in 2018
 - 730 in 2019
 - 694 in 2020

No. of People Trained 2018-2020



Geographic Reach 2018-2020





3. Business Model – Steps moving forward

3.1 Web-based training

A web delivered training plan has been set and reviewed by the Volunteer Oversight Committee.

- **Short-term solution** involves scheduling 3-Hour web-based instructor led training between July – December 2020

Training will be offered on a monthly basis as part of “GTC Web-Training Series”

- Registration fees have been reduced to increase training access across regions served by GTC. However, overall costs will be reduced/eliminated as well.

- **Long-term solution** to present the HVAC Design Level I (MENA) training online as part of “HVAC Design Web-Training Series” over a period of 6 weeks. Expected to begin early 2020.



3.1 Web-based training (Continued)

With unlimited online content available due to restrictions on and fear of face-to-face meetings, even more focus needs to go towards **marketing** to ensure value of ASHRAE training is continuously communicated.





3. Business Model – Steps moving forward (Continued)

3.2 Expanding GTC Responsibilities

GTC is seen as an asset to organizations such as UNEP and UNIDO to interact with Article 5 countries in the Region-At-Large.

Providing support to activities that align with ASHRAE standards or aligning ASHRAE training alongside such organizations, presents the opportunity expand our reach and ultimately adoption of ASHRAE standards.

3.3 Certification Tie-in

Offers an opportunity to expand our value proposition. PDH is not valued enough in the region to be the only driver for training.

Important to align training with easily administered certifications at affordable pricing.

Questions ?



Fiscal Planning Subcommittee Report to PEC Meeting of June 15, 2020

In Attendance:

Members

Katherine Hammack, Chair
Suzanne Leviser
Stanley Westhoff
Charles Henck
C S Ow
Farooq Mehboob
Jon Symko
Ginger Scoggins
William Dean
Mark Owen, Staff Liaison

Guests

Hugh McMillan
Sarah Maston
Kurt Monteiro
Michael Patton
Donald Brandt
Tim McGinn
Mark Bettin
Dean Borges
Tom Phoenix

Jeff Littleton
Greg Martin
Cindy Michaels
Heather Kennedy
Emily Sigman
Sarah Foster
Tim Kline
Karen Murray
Julie Harr

Motions for PEC Action

- Fiscal Planning Subcommittee recommends Publishing and Education Council (PEC) approve that print and digital publication of *High Performing Buildings* (HPB) magazine be discontinued and its content be folded into *ASHRAE Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars.**

Background: At the 2020 Winter Conference in Orlando, staff was assigned an action item to produce a proposal for adapting *High Performing Buildings* (HPB) for maximizing revenue while reducing expenses. Considerations in proposing this action included HPB's mission, business strategy, revenue streams, costs, target markets, competition, staff labor, and fiscal performance.

Options that staff examined included (1) continuing operation as at present, (2) moving to digital only, (3) discontinuing HPB in any format, and (4) incorporating HPB content into *ASHRAE Journal* and HPB newsletter.

Option 1, continuing as at present, is expected to fall short of the envisioned mission and to produce continued financial losses in coming years even after making significant cuts in expenses.

Option 2, publishing digital only, might reduce the loss or even produce a slight positive, if content can be obtained, but authors have not been able to obtain the measured data that is HPB's distinctive value in the market. And staff does not have the capability to obtain this content at present staffing or freelance funding levels. This option would, however, avoid the significant increases ASHRAE has seen in paper, postage and shipping for printed issues.

Option 3, discontinuing HPB in any format, would waste the brand awareness and audience development that has been earned at considerable cost over the last 12 years.

Staff’s recommendation is Option 4—incorporating HPB content into *ASHRAE Journal*. Folding the content into our current *ASHRAE Journal* structure would strengthen *Journal* content and lower the labor. And there is an audience for continuing HPB newsletter and website, which can promote *High Performing Buildings* as an ASHRAE brand that serves to bring attention to best practices for creating sustainable buildings. There are very few advertisers who run only in HPB. Staff believes they could be transitioned into *ASHRAE Journal* with editorial on sustainability offered and distributed to an audience of potential customers.

While there may not be enough HPB-type content for four quarterly print or digital issues, incorporating that content when available into *ASHRAE Journal* or into a special section or supplement and keeping the brand fresh with interesting HPB newsletter content will draw the audience component sought in the original mission as well as serve ASHRAE members with excellent content in this area. It will further enhance the value of *ASHRAE Journal* as the premier technical publication for HVACR industry professionals.

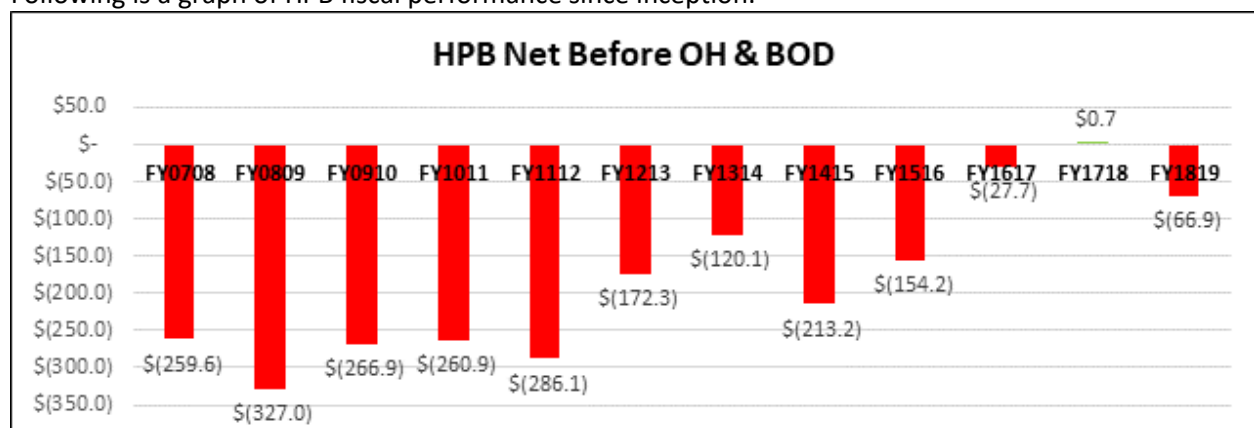
Fiscal Impact: Positive \$75k to \$100k.

HPB’s best fiscal performance since inception was FY17-18, which was slightly better than breakeven. Eleven of its 12 years have resulted in losses averaging \$179.5k annually, and the outlook for profitable operation as presently structured is not favorable.

Total revenue for HPB last year was \$211.7k. However, expenses were \$278.6k for a net loss of \$66.9k.

This year (FY19-20) is projected for about \$100k net loss before OH & BOD. The next three budgets are projected for losses of \$75k to \$100k.

Following is a graph of HPB fiscal performance since inception:



Functional Planning Subcommittee Approved Motion 8-0-0 CNV.

Information Items

1. To fulfill PEC MBO #5: Develop PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees (in alignment with Strategic Plan Initiative 3, Mr. Owen presented a mock-up of a dashboard to be updated and distributed monthly to PEC as shown in *Attachment A*.

2. Mr. Owen presented the May 2020 PEC financial statements in detail for subcommittee review. Overall, PEC revenue is down 4% year over year (YOY) and down 12% versus budget. However, expenses are also down YOY by 9% and by 16% versus budget. The net result is \$395k up YOY and \$329k versus budget. The forecast for the end year net is up \$494k YOY and down \$64k versus budget. Contributing to reduced revenue are lower-than-expected advertising and publication sales along with cancelled in-person training events and certification exams, factors attributed largely to the pandemic lockdown and economic uncertainty. Expense reductions associated with lower printing costs, deferred projects, non-replacement of retiring staff, and less cost for producing training online versus in person led to higher-than-expected surpluses. The PEC Dashboard, updated to end May actuals, is shown in *Attachment B*.

Respectfully submitted,

Katherine Hammack, Chair
PEC Fiscal Planning Subcommittee
June 20, 2020
jh/MO/KH

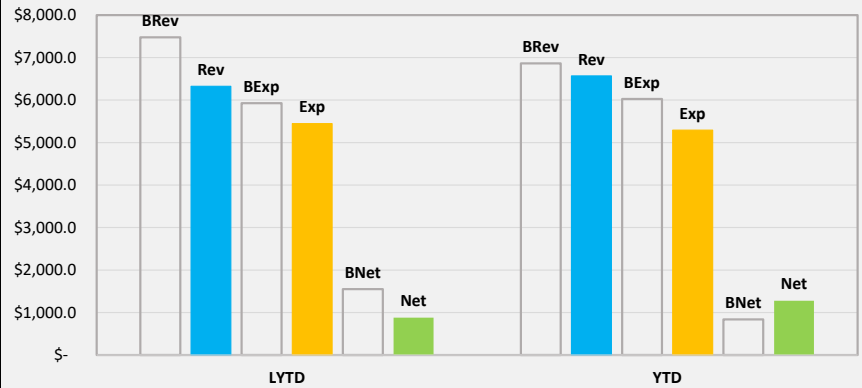


Pub/Ed DASHBOARD

February 2020

Item	LYTD	YTD	Diff
BRev	\$ 7,476.1	\$ 6,863.2	-8%
Rev	\$ 6,326.4	\$ 6,568.3	4%
BExp	\$ 5,925.8	\$ 6,026.6	2%
Exp	\$ 5,445.4	\$ 5,292.8	-3%
BNet	\$ 1,550.3	\$ 836.6	\$ (713.7)
Net	\$ 881.0	\$ 1,275.5	\$ 394.5

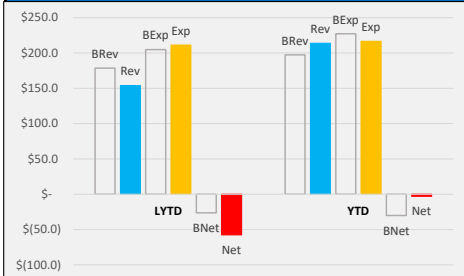
PubEd Council TOTAL



NOTES:

BRev = Budgeted revenue; Rev = Actual revenue; BExp = Budgeted expense before OH&BOD; Exp = Actual expense before OH&BOD; BNet = Budgeted net; Net = Actual net; LYTD = last fiscal year to date; YTD = current fiscal year to date; Diff = Difference between LYTD and YTD, either percentage or dollars. Data source = Financial statements (roll-ups for PEC, Certification, Handbook, Journal, Special Pubs, and Professional Development). Values = US\$ x1000.

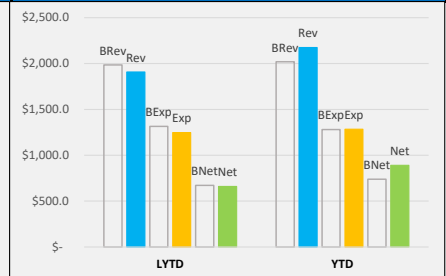
Certification



Handbook



Special Pubs

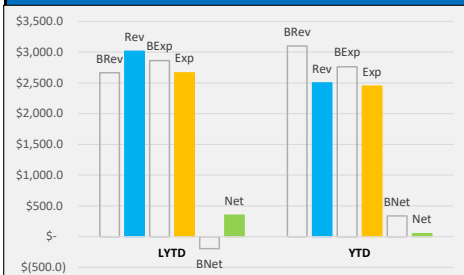


Item	LYTD	YTD	Diff
BRev	\$ 178.6	\$ 197.2	10%
Rev	\$ 153.9	\$ 213.7	39%
BExp	\$ 204.8	\$ 227.3	11%
Exp	\$ 211.3	\$ 216.6	3%
BNet	\$ (26.2)	\$ (30.1)	\$ (3.9)
Net	\$ (57.4)	\$ (2.9)	\$ 54.5

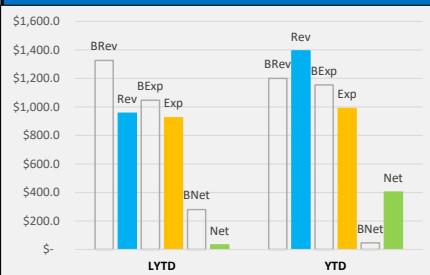
Item	LYTD	YTD	Diff
BRev	\$ 318.2	\$ 273.8	-14%
Rev	\$ 280.7	\$ 274.3	-2%
BExp	\$ 336.4	\$ 364.9	8%
Exp	\$ 297.5	\$ 265.9	-11%
BNet	\$ (18.2)	\$ (91.1)	\$ (72.9)
Net	\$ (16.8)	\$ 8.4	\$ 25.2

Item	LYTD	YTD	Diff
BRev	\$ 1,985.7	\$ 2,018.6	2%
Rev	\$ 1,907.2	\$ 2,175.6	14%
BExp	\$ 1,314.0	\$ 1,279.7	-3%
Exp	\$ 1,246.9	\$ 1,285.0	3%
BNet	\$ 671.7	\$ 738.9	\$ 67.2
Net	\$ 660.3	\$ 890.6	\$ 230.3

AJ-HPB/Advertising



ALL/eLearning



Royalties



Item	LYTD	YTD	Diff
BRev	\$ 2,665.7	\$ 3,099.3	16%
Rev	\$ 3,017.2	\$ 2,500.8	-17%
BExp	\$ 2,861.8	\$ 2,763.7	-3%
Exp	\$ 2,665.7	\$ 2,451.3	-8%
BNet	\$ (196.1)	\$ 335.6	\$ 531.7
Net	\$ 351.5	\$ 49.5	\$ (302.0)

Item	LYTD	YTD	Diff
BRev	\$ 1,326.9	\$ 1,200.8	-10%
Rev	\$ 957.4	\$ 1,393.9	46%
BExp	\$ 1,046.9	\$ 1,154.7	10%
Exp	\$ 925.1	\$ 990.2	7%
BNet	\$ 280.0	\$ 46.1	\$ (233.9)
Net	\$ 32.3	\$ 403.7	\$ 371.4

Item	LYTD	YTD	Diff
BRev	\$ 539.7	\$ 607.1	12%
Rev (Net)	\$ 605.4	\$ 686.7	13%

(No direct expenses; Rev = Net.)

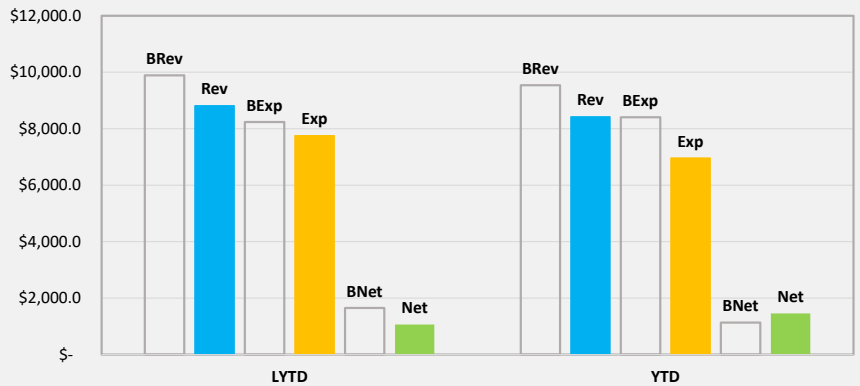


Pub/Ed DASHBOARD

end May 2020

Item	LYTD	YTD	Diff
BRev	\$ 9,886.4	\$ 9,538.2	-4%
Rev	\$ 8,817.6	\$ 8,422.1	-4%
BExp	\$ 8,233.8	\$ 8,406.6	2%
Exp	\$ 7,753.5	\$ 6,962.4	-10%
BNet	\$ 1,652.6	\$ 1,131.6	\$ (521.0)
Net	\$ 1,064.1	\$ 1,459.7	\$ 395.6

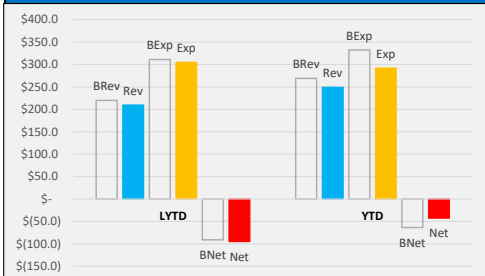
PubEd Council TOTAL



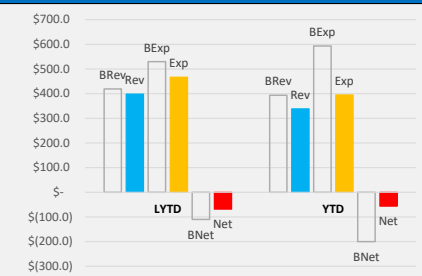
NOTES:

BRev = Budgeted revenue; Rev = Actual revenue; BExp = Budgeted expense before OH&BOD; Exp = Actual expense before OH&BOD; BNet = Budgeted net; Net = Actual net; LYTD = last fiscal year to date; YTD = current fiscal year to date; Diff = Difference between LYTD and YTD, either percentage or dollars. Data source = Financial statements (roll-ups for PEC, Certification, Handbook, Journal, Special Pubs, and Professional Development). Values = US\$ x1000.

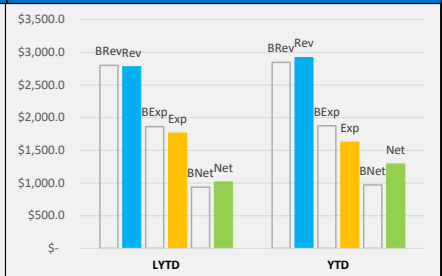
Certification



Handbook



Special Pubs

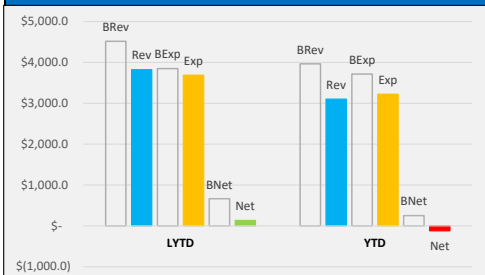


Item	LYTD	YTD	Diff
BRev	\$ 219.9	\$ 268.9	22%
Rev	\$ 209.9	\$ 249.5	19%
BExp	\$ 311.0	\$ 332.5	7%
Exp	\$ 305.1	\$ 292.2	-4%
BNet	\$ (91.1)	\$ (63.6)	\$ 27.5
Net	\$ (95.2)	\$ (42.7)	\$ 52.5

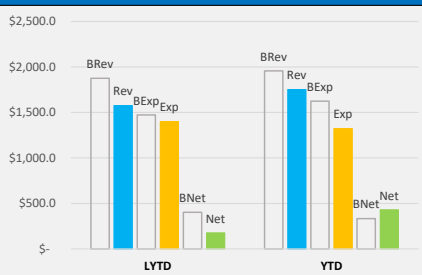
Item	LYTD	YTD	Diff
BRev	\$ 419.3	\$ 393.3	-6%
Rev	\$ 398.7	\$ 338.4	-15%
BExp	\$ 529.5	\$ 593.5	12%
Exp	\$ 467.3	\$ 394.9	-15%
BNet	\$ (110.2)	\$ (200.2)	\$ (90.0)
Net	\$ (68.6)	\$ (56.5)	\$ 12.1

Item	LYTD	YTD	Diff
BRev	\$ 2,800.3	\$ 2,847.6	2%
Rev	\$ 2,779.5	\$ 2,919.1	5%
BExp	\$ 1,863.0	\$ 1,876.2	1%
Exp	\$ 1,763.8	\$ 1,627.2	-8%
BNet	\$ 937.3	\$ 971.4	\$ 34.1
Net	\$ 1,015.7	\$ 1,291.9	\$ 276.2

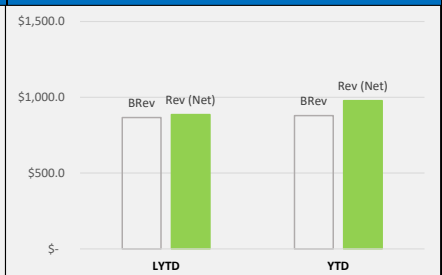
AJ-HPB/Advertising



AL/eLearning



Royalties



Item	LYTD	YTD	Diff
BRev	\$ 4,514.3	\$ 3,963.5	-12%
Rev	\$ 3,820.9	\$ 3,103.4	-19%
BExp	\$ 3,849.8	\$ 3,712.7	-4%
Exp	\$ 3,687.4	\$ 3,224.2	-13%
BNet	\$ 664.5	\$ 250.8	\$ (413.7)
Net	\$ 133.5	\$ (120.8)	\$ (254.3)

Item	LYTD	YTD	Diff
BRev	\$ 1,876.2	\$ 1,957.6	4%
Rev	\$ 1,575.6	\$ 1,751.8	11%
BExp	\$ 1,473.9	\$ 1,624.0	10%
Exp	\$ 1,400.4	\$ 1,321.7	-6%
BNet	\$ 402.3	\$ 333.6	\$ (68.7)
Net	\$ 175.2	\$ 430.1	\$ 254.9

Item	LYTD	YTD	Diff
BRev	\$ 866.9	\$ 878.8	1%
Rev (Net)	\$ 886.7	\$ 977.6	10%

(No direct expenses; Rev = Net.)



PEC Functional Planning Subcommittee Report to PEC Meeting of June 17, 2020

In Attendance

Members

Jon Symko, Chair
Kelley Cramm
Katherine Hammack
Cameron Labunski
Daniel Dettmers
Larry Fisher
Jin Jin Huang
Farooq Mehboob
William Dean
Mark Owen, Staff Liaison

Guests

Donald Brandt
Tim McGinn
Sarah Maston
Katherine Hammack
Chuck Gullede
Tom Phoenix
Bill Klock
David Arnold

Cindy Michaels
Heather Kennedy
Tim Kline
Karen Murray
Emily Sigman

Motions for PEC Action

1. **Functional Planning Subcommittee recommends PEC approve changes to the Handbook Committee MOP as shown in *Attachment A*.**

Background: These changes will reflect the reporting and procedural changes that will happen with the new PEC restructure plan to be implemented July 1, 2020. Additional editorial and clean up changes to these documents were also made.

(Functional Planning Subcommittee Approved 8-0-0 CNV)

Fiscal Impact: None.

2. **Functional Planning Subcommittee recommends PEC approve changes to the Training and Education Committee (TEC) MOP as shown in *Attachment B*.**

Background: These changes will reflect the reporting and procedural changes that will happen with the new PEC restructure plan to be implemented July 1, 2020. Additional editorial and clean up changes to these documents were also made.

(Functional Planning Subcommittee Approved 8-0-0 CNV)

Fiscal Impact: None.

Information Items

3. The subcommittee was assigned oversight of **MBO #2: Develop Strategy for expanding ALL Instructor core and establish procedures and criteria for instructor appointment and remuneration.**

The PDC has completed this objective as shown in *Attachment C*.

4. The subcommittee was assigned oversight of **MBO #3: Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand.**

Certification Committee considered subject matter experts would be best positioned to identify which jobs would line up under SP initiatives 1 and 2 as potential new certification prospects. Certification Committee went to TC and SSPC meetings in Orlando to answer questions and be a resource, (SSPC 135, TC 2.1, TC 2.10, TC 2.3, TC 2.5 and TC 7.1). No proposals were received by the March 15 deadline. Additionally, committee members noted that several currently existing certification programs already appear to support SP initiatives 1 and 2, including the BCxP, HBDP, CHD, and OPMP. Certification Committee will report on any proposals developed before the PEC June Conference call.

5. The subcommittee was assigned oversight of **MBO #4: Analyze performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3.**

A Special Publications Evaluation Criteria Form was drafted, reviewed and approved by the Publications Committee as shown in *Attachment D*.

6. The subcommittee received a request from SRC that the following section of the Members Council section of the ROB reviewed by Members Council and Pub & Ed Council with recommendations forwarded back to SRC.

2.103.003.8 Single-year CD (03-07-02-20)

A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.

SRC requests that recommendations represent current practices as a single-year CD is no longer offered. It was noted that as the section addresses member benefits, Members Council may want to modify this section to incorporate recent changes in the membership model. There may also be modifications to this section from Publishing and Education Council as it references the ASHRAE Handbook.

The subcommittee discussed the wording with input from the Director of Publishing & Education, Mark Owen. Functional Planning Subcommittee recommends that it be completely struck from the ROB as such specific listing of the Handbook benefit format is too restrictive. Or that it be changed as follows:

2.103.003.8 ~~Single-year CD~~ Handbook Content (03-07-02-20)

~~A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.~~ The content of each year's Handbook volume will be offered in electronic format.

7. The subcommittee discussed an opportunity for ASHRAE to participate in a new effort by NYSERDA to develop training courses on performance enhancement guidance for New York State Codes. It was decided that Tech Council was the appropriate place to start the process of ASHRAE involvement.

Respectfully submitted

Jon Symko, Chair
PEC Functional Planning Subcommittee
June 20, 2020
jh/JS

Approved by Publishing and Education Council 2020-XX-XX
[Approved by Products Date 2020-XX-XX](#)

ASHRAE HANDBOOK COMMITTEE

MANUAL OF PROCEDURES

1.0 HANDBOOK CONTENT AND PHILOSOPHY

1.1 ASHRAE is the recognized authority on current engineering procedures and practices in the fields of heating, ventilation, air conditioning, and refrigeration (HVAC&R). The Society publishes the *ASHRAE Handbook* primarily to provide technical information and data for the design engineer. The information is directed at those who understand engineering principles and need its procedures, design data, and review of recent industry practices. Typical users include consulting engineers, plant engineers, equipment vendors, contractors, government officials, and engineering students.

1.2 The Handbook is published each year in print and electronic formats, in a four-year, repeating sequence of volumes as follows:

Fundamentals

Refrigeration

HVAC Applications

HVAC Systems and Equipment

All four volumes of the Handbook are also published each year in a combined electronic form. The Handbook, both electronic and print, is published in two editions. One edition contains Inch-Pound (I-P) units of measurement and the other contains the International System (SI) of units.

1.3 The general content and philosophy of the volumes are as follows:

1.3.1 **Fundamentals** covers the basic principles and data for the entire technology of the industry, including the following:

- Theories and engineering concepts
- Data on general subjects applicable to many specific fields
- Data on basic working materials
- Methods of calculating heating, cooling, and ventilation loads
- Data and procedures for relatively unchanging subjects such as pressure losses in fittings and duct and pipe sizing

1.3.2 **Refrigeration** covers refrigeration equipment and systems in a particular application, process, or cold storage facility and addresses current design for specific applications.

1.3.3 **HVAC Applications** describes the use of heating, ventilation, and air-conditioning to provide desired conditions in a particular building occupancy or to accomplish a specific purpose in particular applications.

1.3.4 **HVAC Systems and Equipment** describes both the combinations of equipment and the components or assemblies that perform a particular function either individually or in combination.

2.0 COMMITTEE RESPONSIBILITIES

2.1 The Handbook Committee (HBC) is responsible for preparing and publishing the *ASHRAE Handbook*. This committee formulates editorial policies and establishes the overall philosophy and guidelines for the *Handbook* to ensure a well-rounded, authoritative publication consistent with the mission of ASHRAE. The HBC or its representative shall reply in writing to all comments received that pertain to *Handbook* content or procedures. The HBC assigns the preparation of chapters to appropriate Technical Committees (TCs).

2.1.1 The TCs establish the scope of the chapter(s) assigned to them and select reviewers and revisers. The reviewers suggest deletions and additions. The revisers organize the material and rewrite it within the guidelines established by the HBC and as described in the Authors and Revisers Guide. The volume subcommittees shall determine if the guidelines have been followed and shall have authority to change or delete material if the TC is unwilling to do so. The final arbiter in a dispute is the HBC; the procedure is described in Section 3.6.

2.1.2 The Manual of Procedures (MOP) for Technical Committees, Task Groups, and Technical Resource Groups states:

“5.5. Handbook

5.5.1. Each TC/TG/TRG is charged with the responsibility of reviewing Handbook chapters within its field of interest and with making appropriate recommendations to the Handbook Committee and the responsible TC, TG, or TRG for a specific chapter(s).

5.5.2. The TC/TG/TRGs are responsible for the technical content of these chapters, but review and revision must be coordinated with the publication schedule established by the Handbook Committee. The most authoritative reference for TC/TG/TRG handbook responsibilities and procedures is the Handbook Authors and Reviser’s Guide.

5.5.3. MTGs review Handbook chapters within its field of interest and make appropriate recommendations if this responsibility is part of its scope.”

2.1.3 The HBC, in cooperation with the Handbook Editor, shall prepare and maintain an Authors and Revisers Guide (ARG).

2.1.3.1 The Functional subcommittee and Handbook Editor will review the ARG annually for minor edits and updates, and each four years do a major revision of the ARG if needed.

2.1.4 This committee shall develop procedures for recommending updates to the strategic plan on a continuous basis. As a minimum, the committee shall submit a report to the council at a time determined by the Board Planning Committee. The report includes the current status of each activity that supports the fulfillment of the committee’s assignments under the strategic plan. The committee shall report to the council all recommendations for changes to the strategic plan as provided by the committee’s constituents before the annual conference.

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2.2 Subcommittees for Handbook Volumes

- 2.2.1 Each volume subcommittee has responsibility for preparing a specific *Handbook* volume.
- 2.2.2 Subcommittee members help find individuals or groups to review chapters. TCs are the primary sources for chapter authors, reviewers, and revisers.
- 2.2.3 The HBC volume subcommittee member works with each reviewer to transmit comments, criticism, and suggestions to the responsible author or reviser so the chapter will reflect current practice.
- 2.2.4 At their first ASHRAE annual conference, the incoming volume subcommittee chair meets with the incoming volume subcommittee
 - (a) to review duties and responsibilities of the subcommittee,
 - (b) to review and finalize chapter assignments, and
 - (c) to review and discuss commentary forms for each chapter as prepared by the prior volume subcommittee liaisons.
- 2.2.5 At the following ASHRAE winter conference, the incoming volume subcommittee uses the chapter revision history maintained by Handbook staff to determine the status of each chapter regarding its timeliness and currency. The volume subcommittee uses its collective judgment, taking into account the stability of each chapter's content. The volume subcommittee members (liaisons) inform each TC of the status of their chapter(s) as determined. Adjustments to status may be suggested by the respective TCs, in conjunction with the liaison, for possible change.

2.3 Other Subcommittees

- 2.3.1 The Executive Subcommittee of the HBC consists of the chair of the HBC, the chairs of the volume subcommittees, and the Director for the HBC. The chair of the HBC is the chair of the Executive Subcommittee. This subcommittee is concerned with activities of the HBC in the current Society year.
- 2.3.2 The **Review/Training** Subcommittee has the newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee is responsible for training incoming HBC members and the authors and revisers of Handbook chapters **and reviewing the training materials for TC subcommittee chairs chapter lead authors, Handbook and committee members, and reviewing the relevantrelevant handbook chapters.**
- 2.3.3 The Functional Subcommittee has the second newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee is responsible for annually reviewing and recommending updates as needed for the Rules of the Board (ROBs), Manual of Procedures (MOP), and the Authors and Revisers Guide (ARG).
- 2.3.4 The Electronic Media Subcommittee has the third newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee investigates **software and electronic tools to make members and associates perform the work quicker, better, and more efficiently and improve ASHRAE's services and makes recommendations regarding electronic content development and delivery.** ~~makes recommendations regarding electronic content development and delivery.~~
- 2.3.5 The Strategic Planning Subcommittee has the HBC's vice chair as its chair, and other members as appointed by the HBC chair. This subcommittee recommends objectives to further the Society's goals for the Handbook and makes plans for the committee's future operation.

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Assigned to Kevin Gallen and Nick Shockley

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2.3.6 Other standing or temporary committees may be appointed or dissolved by the current HBC chair.

2.4 Committee Personnel

- 2.4.1 The HBC chair is usually the retiring subcommittee chair for the volume most recently published. The chair
- (a) presides at all HBC meetings and
 - (b) prepares the agenda for these meetings in consultation with the Handbook Editor.
- 2.4.2 The HBC vice chair usually is the chair of the subcommittee responsible for the volume published in that fiscal year. The vice chair presides at HBC meetings in the absence of the chair.
- 2.4.3 The chair for each volume subcommittee
- (a) assigns volume subcommittee members as liaisons to TCs for specific chapters,
 - (b) monitors and keeps the Handbook Editor informed of the progress on chapters being prepared, and
 - (c) regularly reports to the HBC on all matters pertaining to the assigned volume.
- 2.4.4 The HBC members
- (a) act as liaisons between the Editor and revisers,
 - (b) arrange for adequate review of their assigned chapters,
 - (c) monitor progress of the review and revision process, and
 - (d) submit final, TC-approved manuscripts to the Editor.

2.5 Staff Support

- 2.5.1 The Handbook Editor and staff support the HBC. The Editor prepares and distributes meeting notices, agendas, minutes, and any other material required for committee use.
- 2.5.2 The Handbook Editor and supporting staff
- (a) edit TC- and HBC liaison-approved chapter manuscripts, sometimes substantially, and
 - (b) suggest new chapters that conform to Section 1.0, Handbook Content and Philosophy.
- 2.5.3 The Publisher grants permission to quote, reprint, or otherwise reproduce material from *Handbook* volumes, based on policy established by the BOD. If any request is not clearly covered by such policy, the Publisher submits it to the BOD for a decision.

2.6 Interaction with Other Committees

- 2.6.1 The HBC shall seek coordination with the Technical Activities Committee (TAC), appropriate TCs, and other society committees as needed.
- 2.6.2 In the event TCs are not able to or do not provide the necessary reviews or revisions, the HBC shall seek other appropriate means to complete the reviews and revisions in a timely manner.
- 2.6.3 The HBC works with the editors of *ASHRAE Journal* and *ASHRAE Insights* to publish articles containing *Handbook* material of current value.
- 2.6.4 The HBC gives the ASHRAE [Program Committee \(APC\)-Conference and Exposition Committee \(CEC\)](#) suggestions for program material that develops during review and revision of chapters. The APC provides the

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Assigned to Scott Fisher

committee with author's comments on reviewed papers' impact on *Handbook* information and with abstracts for potential inclusion with relevant chapters.

- 2.6.5 The [Review/Training Subcommittee](#) chair leads an authors and revisers workshop each year at the ASHRAE winter conference. The purpose of the workshop is to help the TCs in their duties of revising and/or authoring *Handbook* chapters. The leader is responsible for planning, scheduling, and announcing the workshop.
- 2.6.6 The HBC chair appoints, from the committee's membership, liaisons to the TAC sections. These liaisons attend the assigned TC Chairs'/Section meetings at the annual and winter conferences.

2.7 Mentoring Program (ROB 100-128-003)

- 2.7.1 The [Review/Training Subcommittee](#) is responsible for training new committee members. The [Review/Training Subcommittee](#) conducts a training session for new and continuing HBC members at the ASHRAE annual (summer) conference.
- 2.7.2 The volume subcommittee chairs shall maintain contact with their committee members and transmit to the [Review/Training Subcommittee](#) any observations of areas for improvement.
- 2.7.3 The volume subcommittee chairs shall maintain contact with their subcommittee members and transmit to the [Review/Training Subcommittee](#) any observations of areas for improvement.
- 2.7.4 The Handbook Editor will send new HBC members a copy of the applicable Rules of the Board (ROBs), Manual of Procedures (MOP), Authors and Revisers Guide (ARG), the current HBC roster, and minutes for the most recent meeting.
- 2.7.5 Each new HBC member should develop a rapport with other members to gain experience and maximize productivity.
- 2.7.6 The chair shall
 - (a) assure that the time allotted at the beginning of the first meeting is sufficient for proper introduction of the new members,
 - (b) assess at a later meeting the effectiveness of the training program,
 - (c) provide any assistance to enhance the training program, and
 - (d) include an objective for mentoring in the committee's Management by Objectives (MBO).

2.8 Changes to Rules of the Board (ROBs)

- 2.8.1 Changes to Rules of the Board (ROBs) are submitted by the committee to the [Publishing and Education Council Products Subcommittee of the Publishing and Education Council](#) in the following manner:
 - (a) *Proposing a change to an existing rule.* Present a track-changes comparison showing the *current* ROB number and wording and the *proposed* wording. A proposed change, as a minimum, includes the rule number, the proposed change, and the reason for the change.
 - (b) *Proposing a new rule.* Present the wording for the new rule and suggest where it should be placed within the ROB organization.

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Assigned to Kevin Gallen and Brian Fricke

- (c) *Proposing the rescinding of a rule.* Identify the ROB book in which the rule is located, the rule number or other identification code, the wording of the rule, and the reason for rescinding it.
- (d) To propose changes to Society-wide policies and procedures, follow the same procedures as for proposing changes to ROB's.

2.9 Changes to the Manual of Procedures (MOP)

- 2.9.1 Changes to the HBC MOP shall be submitted to the ~~Publishing and Education Council Products Subcommittee of the Publishing and Education Council~~ after an affirmative vote of the HBC.
- 2.9.2 Appendices are part of the MOP and, therefore, ~~require~~ are submitted to the Publishing and Education Council Products Subcommittee of the Publishing and Education Council approval after an affirmative vote of the HBC.

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2.10 Reports

- 2.10.1 Before the ASHRAE annual conference, the vice chair will prepare objectives for the committee for the next year and present these objectives to the committee for review at its meeting held during the annual conference. The objectives will be included in the committee's report to the ~~Publishing and Education Council Products Subcommittee of the Publishing and Education Council~~ at the annual conference as an information item, and a copy of the objectives will be sent to the staff assistant to the Board of Directors.
- 2.10.2 If any committee does not submit its objectives to the ~~Publishing and Education Council Products Subcommittee of the Publishing and Education Council~~ at the annual conference, the assigned Director (BOD Ex Officio) will work with the committee's incoming chair to complete objectives.
- 2.10.3 Each objective should be measurable and should include a projected completion date, fiscal impact (if any), and other information that would clarify the intent of the objective. If an objective is to be assigned to a specific member or subcommittee of the committee, this should also be included.
- 2.10.3 A status report of the objectives will be included in the committee report submitted to the council at the ASHRAE winter conference, and a copy of the objectives will be sent to the staff assistant to the Board of Directors.
- 2.10.4 A final report of the objectives will be included in the committee report submitted to the Publishing Council at the annual conference, and a copy of the objectives will be sent to the staff assistant to the Board of Directors. The objectives prepared by the committee vice chair for the next year, or by the individual who will be the next year's chair, will also be included in this report.

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3.0 HANDBOOK PROCEDURES

All *Handbook* chapters are under continuous maintenance, and may be revised annually, but must also receive a review and likely a revision in each regular four-year cycle.

3.1 Continuous Maintenance

- 3.1.1 On its own initiative, a TC may revise an assigned chapter in any publishing year. Upon approval by the TC and acceptance by their HBC liaison, the revised chapter will

appear, subject to submission deadlines, in the next scheduled electronic and print *Handbook* volumes.

- 3.1.2 When the author of peer-reviewed program material indicates the material applies to a *Handbook* chapter, the TC's Handbook subcommittee will be asked to review the paper and the TC may incorporate the published material in a revision of their chapter(s).
- 3.1.3 The TCs note any identified conflict of the *Handbook's* information with proposed Society standards or guidelines during the public review period. The TC takes one of the following steps:
 - (a) Comment on the standard or guideline draft to eliminate the conflict.
 - (b) Revise the chapter to eliminate the conflict.
 - (c) On publication of the standard or guideline, revise the chapter to reference it and to explain any remaining conflicts.

3.2 Chapter Review

- 3.2.1 TCs review their assigned chapters within six months of publication of the print versions and plan the next revision during this period.
- 3.2.2 Steps in the review process are as follows:
 - (a) Shortly after publication of a volume, the Handbook Editor sends to the appropriate volume subcommittee members (1) the ARG and (2) a revision schedule.
 - (b) HBC volume subcommittee members (liaisons) then meet with their assigned TCs to ensure that the reviews begin. If a TC cannot find reviewers for a chapter, the volume subcommittee member or the Editor will assist in this area. Additional reviews may be obtained from HBC members, the College of Fellows, or others within or outside ASHRAE.
 - (c) The TC Handbook subcommittee chair collects the reviewers' written reports and sends copies to the chapter's lead reviser and their HBC liaison.

3.3 Chapter Revision

- 3.3.1 Revision follows the review and lasts up to two years. The revised chapter then receives TC approval via a recorded vote. It is then sent to the volume subcommittee liaison between March and July of the year before publication of the printed volume following the schedule set by the Handbook Editor in consultation with the volume subcommittee chair.
- 3.3.2 Steps in the revision process are as follows:
 - (a) The volume subcommittee liaison gathers lead revisers' names from the TC and forwards them to the Handbook Editor.
 - (b) The liaison checks with each lead reviser at least every six months, preferably in person at the annual and winter conferences, to be sure the revision is on schedule and to answer questions. The liaison notifies the Editor if the submission schedule needs to be adjusted.

- (c) The lead reviser sends draft revisions to reviewers and the volume subcommittee liaison. The liaison should try to reconcile any controversy that develops as a result of reviewers' comments.
- (d) On receiving the final version of the revised chapter, the volume subcommittee liaison checks that it has been reviewed and approved by the TC. If nonmembers of the TCs revised the chapter, the liaison arranges for review by the responsible TC.
- (e) The liaison checks the final draft to ensure that it complies with the Authors and Revisers Guide.
- (f) The volume subcommittee liaison acknowledges receipt of the final draft and thanks the revisers for their work.
- (g) The liaison sends the final TC-approved draft, completed checklist, and supporting materials to the Editor.
- (h) The liaison completes a commentary form for each chapter and sends a copy to the outgoing volume subcommittee chair who passes them to the incoming volume subcommittee chair and the Handbook Editor for the information of the incoming liaisons.

3.4 Addition of a Chapter

- 3.4.1 Anyone may request that a chapter be added to the *Handbook* by writing to the HBC chair or the Handbook Editor. A proposed chapter outline, as described in the ARG, should be submitted to assist with evaluation of the idea. If the HBC approves the request, it will assign the chapter's preparation to the appropriate TC. TCs may also propose a new chapter through the process described in the Authors and Revisers Guide.

3.5 Deletion or Reassignment of a Chapter

- 3.5.1 Chapters are deleted or reassigned in the following manner:
- (a) Any TC may request that a chapter assigned to it be deleted or reassigned after a recorded TC vote by writing to its volume subcommittee liaison.
 - (b) Any Society member may request that a chapter be deleted or reassigned by writing to the chair of the TC assigned to prepare the chapter. The request should include reasons and technical data, if any, for deleting or reassigning the chapter.
 - (c) The TC shall review the request and forward recommendations to the volume subcommittee liaison who shall recommend action by the HBC.
 - (d) The HBC may delete or reassign any chapter on its own initiative.
 - (e) A reference to a deleted chapter may be included in the current *Handbook* to alert readers of the location of the material in a prior *Handbook*.

3.6 Resolution of Disputes

- 3.6.1 A dispute is defined as a major difference of opinion or fact with part or all of a chapter that is brought to the attention of the HBC and which could affect the credibility or reputation of ASHRAE.

- 3.6.2 The HBC shall ensure that the dispute is handled professionally, fairly, and without bias.
- 3.6.3 The following procedure shall be followed to resolve a dispute:
- 3.6.3.1 The HBC liaison determines that a conflict is occurring within a Technical Committee.
- 3.6.3.2 The liaison brings the concern to the volume subcommittee chair, who notifies the HBC chair.
- 3.6.3.3 The volume subcommittee chair and liaison meet with the conflicting parties to attempt to resolve the situation.
- 3.6.3.4 If, at this stage, the conflict is unresolved, a Handbook Committee Resolution Team consisting of the HBC chair, volume chairs, and Director is formed by the HBC chair.
- 3.6.3.5 The Handbook Committee Resolution Team meets with the conflicting parties.
- 3.6.3.6 It is hoped the conflict will be resolved within one of the preceding steps; however, if the conflict continues, the Handbook Committee Resolution Team will vote on one of the following:
1. To accept one side, with overwhelming technical evidence.
 2. To recommend to the HBC to remove the chapter entirely.
 3. To republish the previous version of the chapter.
- 3.6.3.7 The results of the dispute are reported to the [Publishing and Education Council Products Subcommittee of the Publishing and Education Council](#).

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3.7 Procedure for Gathering and Distributing External (non-TC) Comments

Comments on the *Handbook* are encouraged. All forms of comments are accepted; written comments are preferred (e.g., by letter, fax, e-mail, Handbook Web page form). Comments received by HBC members should be transmitted to the Handbook Editor, who will distribute them to the appropriate TC(s). The Handbook Editor will acknowledge receipt to the commenter. TCs should be encouraged to communicate the results of consideration of a comment to any commenter who provides contact information and indicates a desire for such a response. Commenters should also be encouraged to attend TC or HBC meetings to participate directly in the review and revision process.

APPENDIX

(from ROB Volume 2) 2.411.003.2 Guidelines for Awards

The following guidelines for ASHRAE awards are approved: (99-01-27-51/06-01-25-08/07-03-25-01)

- All requests or suggestions for new awards, revisions to current awards, or award deletions shall be forwarded to the Honors and Awards Committee for review and

recommendation before being forwarded to Members Council and the BOD -for review and approval.

- ASHRAE awards are grouped into the following categories, each of which has its defined form of award:
 1. Personal Honors (plaque and medallion)
 2. Personal Awards for General Society Activities (plaque and lapel pin)
 3. Personal Awards for Specific Society Activities (plaque and lapel pin)
 4. Paper Awards (plaque and honorarium)
 5. Society Awards to Groups or Chapters (plaque)

- Awards will normally carry the name of an ASHRAE activity (e.g., Distinguished Service Award, Fellow, Journal Paper Award). No business, product or other commercial name shall be used for an award. Only in very exceptional instances may consideration be given to naming the award after an individual.
- Each proposed award shall be submitted to the Honors and Awards Committee with a detailed description including the name of the award, the suggested category for the award, the reason for establishing the award, and the proposed selection and awarding process.
- Initial total funding for the award shall be described in the proposal, along with provisions for future funding and inflation considerations. Funding shall be self-perpetuating and supporting for the expected life of the award.
- Proliferation of awards that would tend to detract from the worth of existing awards must be avoided. The award must first be considered as applying to an important field of ASHRAE related activity; the name of the award would then add prestige.
- Awards may be proposed by any committee, chapter, or individual to the immediate authority but eventually must pass through the Honors and Award Committee for approval prior to submission to Members Council and then to the Board of Directors. The Honors and Awards Committee will assist anyone wishing to submit a proposal for a new award. The proposal should be reviewed early in the process to allow determination for the appropriate nature of the anticipated award and meeting all necessary criteria for acceptance.

This committee shall include in their supporting material for candidates only information pertinent to the requirements for the particular award for which the candidate is being recommended. (70-07-01-11)

All voting for honors and awards of the Society shall be strictly secret and held at meetings of the Board of Directors and Members Council (not by mail ballot), and that the H&A Committee be instructed to place the necessary information for such voting before the BOD at least two months prior to the applicable meeting. (65-01-28-19/06-01-25/26-8.16)

It is the policy of the Society not to consider for approval any Society honors or awards posthumously, other than the Hall of Fame.

ASHRAE ~~PROFESSIONAL DEVELOPMENT TRAINING AND EDUCATION~~
COMMITTEE
MANUAL OF PROCEDURES

Fred Betz modification 10-1-18
Charlie Henck modification 3-31-19

~~October 1, 2018~~

Revised and Approved by the Publishing and Education Council January 27, 2015

ASHRAE ~~PROFESSIONAL DEVELOPMENT TRAINING AND EDUCATION~~ COMMITTEE
MANUAL OF PROCEDURES (MOP)

1. INTRODUCTION

- 1.1 The Rules of the Board for the ~~Professional Development Training and Education~~ Committee define its authority, organization, and general responsibilities. The Manual of Procedures (MOP) details the operating procedures followed in carrying out the general responsibilities of the committee as prescribed in its Rules of the Board.
- 1.2 The MOP provides a description of some, but not all, of the duties and responsibilities of the ~~PDTEC~~ Chair, Vice Chairs, members, and staff liaison.

2. GENERAL RESPONSIBILITIES OF THE ~~PDTEC~~

- 2.1 Develop and implement an overall career program of learning and development for those persons pursuing and enhancing careers related to the HVAC&R industry.
~~Programs to specifically relate to occupant health and building sustainability and energy usage.~~
- 2.2 Develop and provide the educational products that position ASHRAE as a recognized source of quality training for the HVAC&R Industry.
- ~~2.2.3~~ Review effectiveness of training centers and recommend new centers if needed.
- ~~2.3.4~~ Maintain an operations plan for the ~~PDTEC~~.
- ~~2.4.5~~ ——— Prepare and monitor fiscal plans related to ASHRAE educational products in accordance with Society policy and with approval of the BOD and the ~~PDTEC~~ Council.

This committee shall develop procedures for recommending updates to the strategic plan on a continuous basis. As a minimum the committee shall submit a report to the council at a time determined by the Planning Committee. The report includes the current status of each activity which supports the fulfillment of the committee's assignments under the strategic plan. The committee shall report to the council all recommendations for changes to the strategic plan as provided by the committee's constituents prior to the Annual Meeting.

- ~~2.5.6~~ Develop courses and other resources in support of ASHRAE certification programs in collaboration with the Certification Committee.

3. APPOINTMENT OF SUBCOMMITTEES

- 3.1 The Chair shall establish subcommittees, to accomplish the mission of the **PDTEC**, and make appointments from **PDTEC** members.
- 3.2 Ad hoc subcommittees can be formed at the discretion of the Chair.
- 3.3 Responsibilities of subcommittees shall be delineated by the Chair of the **PDTEC**.
- 3.4 If a subcommittee is established as a standing subcommittee, that subcommittee chair shall recommend appropriate responsibilities for subcommittee members for inclusion in Item 4 of the **PDTEC** MOP.

4. RESPONSIBILITIES OF STANDING **PDTEC SUBCOMMITTEES**

4.1 Planning Subcommittee

- 4.1.1 Develop and implement strategic objectives to support Society goals for **Education and Training**.
- 4.1.2 Develop curricula for the **PDTEC**.
- 4.1.3 Maintain a prioritized list of potential **programs** and objectives.
- 4.1.4 Work with Society’s marketing group to develop, implement and monitor the effectiveness of a marketing plan for **PDTEC** courses including course content and delivery mechanisms.

4.1.5 Review new course proposals.

4.1.6 ~~4.1.6~~ **Monitor Training Centers.**

4.1.7 Review the budget of the **PDTEC** and make fiscal recommendations to the Council.

~~4.1.5~~ 4.1.8 Explore strategic partnerships with other organizations that are in alignment with the mission of the **PDTEC**.

4.1.9 Conduct annual review and update of the **PDTEC** Reference Manual.

4.1.10 Maintain committee responsibility (job description) documents.

4.2 Operations Subcommittee

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- 4.2.1 Manage courses for presentation.
- 4.2.2 Manage the development of new courses.
- 4.2.3 Periodically review and update existing courses; maintain curricula for the PDTEC.
- 4.2.4 Formulate and maintain an operations plan for the PDTEC.
- 4.2.5 Develop and maintain procedures for selection of course authors, reviewers and presenters.
- 4.2.6 Assess the success of existing courses, modify them as needed to increase their success or recommend eliminating them.
- 4.2.7 Review pricing of PDTEC courses and programs to meet the fiscal objectives of PDTEC.
- 4.2.8 Conduct annual review and update of the MOP.
- 4.2.9 Conduct annual review of the Rules of the Board for PDTEC. After PDTEC approval, forward to Society Rules Committee through PEC for vetting, then to PEC for its approval before final BOD approval.

5. RESPONSIBILITIES OF THE CHAIR

- 5.1 Preside over meetings of the PDTEC.
- 5.2 Prepare reports for PDTEC's Council as required.
- 5.3 In conjunction with the staff liaison, prepare reports on program success and fiscal matters for distribution to the PDTEC and its Council at each meeting.
- 5.4 Appoint a liaison to the Chapter Technical Transfer Committee and other Society committees as appropriate.
- 5.5 Ensure all new committee members receive PDTEC orientation training.
- 5.6 Serve as the PDTEC liaison to Society's marketing group in cooperation with the staff liaison.

6. RESPONSIBILITIES OF THE PLANNING SUBCOMMITTEE CHAIR

- 6.1 Preside over PDTEC meetings in the absence of the Chair, and assist the Chair as needed.
- 6.2 Serve as PDTEC Vice Chair.

7. RESPONSIBILITIES OF THE OPERATIONS SUBCOMMITTEE CHAIR

- 7.1 Serve as PDTEC Vice Chair.
- 7.2 Work with the staff liaison to manage development and delivery of courses.
- 7.3 Assign all active PDTEC programs to PDTEC members to act as liaisons with the instructors.

8. RESPONSIBILITIES OF THE STAFF LIAISON

- 8.1 Maintain all official PDTEC reports, correspondence, and documentation of PDTEC actions taken committee members individually and collectively.
- 8.2 Assist the Chair and the Vice Chairs with preparation of the agendas and supporting documentation for PDTEC meetings, and provide this information to the PDTEC members prior to the meeting.

8.3 Generate and submit meeting minutes to the Chair for approval prior to distribution to the Committee within 60 days after Committee meetings.

8.4 Track fiscal matters and program details (attendance figures, feedback from participants, etc.) for reports to the PDTEC through the Operations Subcommittee; make recommendations for improvement or elimination of programs to the PDTEC based on this information.

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8.4.5 Track fiscal matters and program details (attendance figures, feedback from participants, etc.) for ASHRAE Training Centers for reports to the TEC through the Operations Subcommittee; make recommendations for improvement or elimination of programs to the TEC based on this information.

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8.5.6 Coordinate with the ASHRAE Meetings Manager to secure the necessary space at the Winter and Annual Conferences to conduct PDTEC meetings and scheduled PDTEC programs at those meetings.

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8.6.7 Implement actions approved by the PDTEC such as market research, membership surveys, etc.

8.7.8 Assist the committee as necessary for management of the committee's website.

9. RESPONSIBILITIES OF ALL PDTEC MEMBERS

- 9.1 Fully participate in all assigned subcommittees and complete assignments by the designated time. Each PDTEC member will be assigned to one or more subcommittees.
- 9.2 Attend all assigned committee and subcommittee meetings and conference calls.

9.3 Observe two or more ALI programs each year and review one or more self-directed learning course (SDL) each year to gain first-hand experience. Provide any feedback on these programs to the **PDTEC** and the staff liaison.

9.4 Manage courses assigned by the Operations Subcommittee Chair including:

9.4.1 Obtaining authors and reviewers for update of courses.

9.4.2 Coordinating the course updates with the cognizant Technical Committee.

9.4.3 Managing the course updates with the staff liaison

10. MEETINGS

10.1 Meetings shall be called by the Chair in accordance with Section 7 of the Board Approved Rules for the **PDTEC**.

10.2 Conduct of meetings shall be governed by the current edition of *Roberts Rules of Order*.

10.3 Meetings shall be held in strict compliance with the ASHRAE Code of Ethics. (See full Code of Ethics at <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>.)

Attachment C
Functional Planning Subcommittee Report to PEC

MBO#2: Develop Strategy for expanding ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration.

Instruction Qualifications

1. Solid grasp of engineering fundamentals.
2. Practical experience to answer questions for students and to be able to distinguish between theory and practice in day to day engineering.
3. Skill and ability to teach and present well in a compelling and engaging manner. This means preparing ahead of time and not just reading the slides.
4. Motivation and interest in teaching. We're not looking for reluctant instructors who will turn over regularly.

Search Criteria

1. ASHRAE DL Series: Sort by high ratings and participation. DL's with these criteria have already expressed and interested in teaching and presenting and have the skills do so.
2. Regular Chapter Speakers: Most local chapters have their go to speakers. Many of those speakers are motivated to give back and/or to develop their careers and speaking abilities. Chapters are not going to recommend unskilled speakers who aren't capable of presenting.
3. Sole (Sr.) Practicing Engineers: There are a quite a few consultants working on sunset or second careers that have a tremendous depth of practical experience that would be applicable to teaching. Need to carefully screen for the speaking / teaching ability.
4. Academia: There are many great teachers produced by academia. The challenge is screening out those who do not have the practical experience needed or who are mostly focused on research and less interested in teaching but may agree to build a resume.

Keith Reihl:

Actually CTTC has been requesting it thru their RVC's internationally for a few years. I'm sure Farooq is in favor of it. We have been identifying candidates but are careful to maintain the quality of instruction. Once a candidate is identified they co present with an existing instructor. Charlie and Jeremy can add more.

Publications Committee Item for
Publishing and Education Council Functional Subcommittee
Thursday, June 25, 2020, 7:00-11:00 a.m.

Item:

See **Attachment A** for Publication Committee's suggested edits (shown in Track Changes) for PEC Functional Subcommittee's ASHRAE New Special Publications Evaluation Criteria.

Respectfully submitted,
Chee S. Ow, Chair
Publications Committee
10 June 2020

Publications Committee Report to
Publishing and Education Council Functional Subcommittee
Attachment A

ASHRAE New Special Publications Evaluation Criteria

To be filled out by Publications staff and supplied to Publications Committee for their use when evaluating a proposed publication.

Publication Name:

Publication Sponsor:

Point Threshold for Publication: ~~(need to determine what this minimum is --70 points?)~~

Evaluation:

Criteria	<u>The Historical Performance of Similar ASHRAE Publications is Good</u>	<u>There is a Market and an Industry Need for a Publication on this Topic</u>	<u>The Projected Product Cost is Acceptable</u>	<u>The Projected Revenue Profit Margin is Positive</u>	<u>There is a Primary Buyer in the Market who Wants this Publication</u>	<u>This Publication Would be or Provide a Good Member Benefits</u>	<u>This Publication Addresses a Current Hot Topic?</u>	Total Points	Projected Margin
Max Points	150	20	15	15	150	15	10	100	
Points Assigned									

Notes:

Historical Performance of Similar Publications:

We should look at similar types of publications (Design Guides, User's Manuals, hands on guides, etc.) to help in estimating sales

Harr, Julie

From: Owen, Mark
Sent: Tuesday, June 2, 2020 2:56 PM
To: Harr, Julie
Subject: FW: PEC MOP Edits
Attachments: SRC MOP - June 2019.pdf; PEC_MOP proposed-KMF-LM 4-14.doc

Julie,
This is for Functional's agenda.
Thanks,
Mark

Mark Owen | Director of Publications and Education
Extension: 1187

From: Jacobs, Chandrias <CJacobs@ashrae.org>
Sent: Monday, June 1, 2020 8:01 AM
To: Owen, Mark <mowen@ashrae.org>
Subject: PEC MOP Edits

Good Morning Mark,

I hope that you and your family are doing well!

Please see attached recommended edits and comments from SRC relating to the PEC MOP.

When reviewing the requested revisions from PEC, SRC noticed there were additional edits that needed to be made to the PEC MOP.

SRC has asked that edits/ comments made be taken into consideration and then a finalized version of the PEC MOP be forwarded back to SRC for review/approval. Also, SRC has recommended that PEC follow the attached MOP formatting example relating to formatting changes (SRC MOP).

Lastly, edits were made using the 2015 version of the PEC MOP. SRC has asked that edits made in the 2015 version of the MOP be compared with the 2019 version posted online.

Let me know if you have any questions regarding the attached.

Thanks,
Chandrias

Chandrias Jacobs | Coordinator of Board Services
Extension: 1215

MANUAL OF PROCEDURES
SOCIETY RULES COMMITTEE

December 12, 2008
Amended May 2013
Approved, June 2014
Approved June 23, 2019

MANUAL OF PROCEDURES (MOP)
SOCIETY RULES COMMITTEE

1 INTRODUCTION

- 1.1 This Manual of Procedures (MOP) details the operating procedures followed in carrying out the general responsibilities of the Society Rules Committee (SRC) as prescribed in the ROB.
- 1.2 The MOP provides a description of some, but not all, of the duties and responsibilities of the SRC chair, members, and staff liaison.

2 GENERAL RESPONSIBILITIES OF THE SRC

- 2.1 Provide information to the Society on the proper conduct of meetings, the rules of order, and the process for changing those rules. The SRC shall prepare training materials as appropriate.
- 2.2 Review all changes to Society rules. Preferably this should be done and reported on before Board consideration. Report findings to the Board of Directors in a timely manner.
- 2.3 Review all actions of the Board for consistency with Society rules. (Clarify or return to the Board any actions that are ambiguous or inconsistent with the Rules of the Board).
- 2.4 Initiate, review and/or approve Society ROB and MOP changes as authorized by the Board, including maintenance of the MOPs from those committees listed in Section 8.
- 2.5 Advise all standing bodies when changes to their rule-related documents are needed. Provide oversight and review of the Rules of the Board for all councils and committees.
- 2.6 Implement editorial or minor changes as needed to the Rules of the Board and maintain a Log of those changes. The Log shall be reported to the Board of Directors as an information item.

“ROB 2.424.003.6 When editorial or minor changes are needed to the Rules of the Board, this committee is empowered to make such changes provided they are reported to the Board of Directors at or before its next scheduled meeting. Minor changes generally include matters that do not directly change overall organizational structure, policies or fiscal matters. This committee may designate changes as minor only by unanimous consent.”

- 2.7 Maintain a reference manual for the SRC, containing an operational plan for SRC and the regular review of the rules.
- 2.8 Maintain Committee Responsibility (Job Description) documents.

3 MEMBERSHIP

In addition to the six (6) voting members, a nonvoting liaison should be recruited from each council. This member should represent the council's operations committee.

4 RESPONSIBILITIES OF THE CHAIR

- 4.1 Preside over meetings of the SRC.
- 4.2 Prepare reports for the Board of Directors and SRC as required.
- 4.3 Assign a mentor for each new committee member.
- 4.6 Assign specialties to members to strengthen the committee's skills in each area. These specialists should become very familiar with existing documents and rules that influence and govern their specialty. Suggested specialists are ROB, MOP, Membership, Policy, Procedure, etc.
- 4.4 Designate tasks groups as needed to discharge SRC duties.
- 4.5 Call additional meetings of the SRC as needed to respond to workload,

5 RESPONSIBILITIES OF THE STAFF LIAISON

- 5.1 Maintain all official SRC reports, correspondence, and documentation of SRC actions taken by committee members individually and collectively.
- 5.2 Assist the Chair with preparation of the agendas and supporting documentation for SRC meetings, and provide this information to the SRC members prior to the meeting.
- 5.3 Generate and submit meeting minutes to the Chair for approval prior to distribution to the Committee within 30 days after committee meetings.
- 5.4 Implement actions approved by the SRC including but not limited to, ROB revisions and Log entries.
- 5.5 Assist the committee as necessary in the management of rule-related documents including any websites.
- 5.6 Submit to SRC prior to each SRC meeting (in-person or conference call) a summary of ROB changes made since the last SRC meeting (in-person or conference).

6 RESPONSIBILITIES OF ALL SRC MEMBERS

- 6.1 Attend all committee meetings.
- 6.2 Act as a liaison to one or more councils or committees. Interface with appropriate subcommittees as needed.
- 6.3 Keep current on all standing documents and rules approved by the Board of Directors or the membership.

6.4 Fully participate in all assigned activities and complete assignments by the designated time.

7 RESPONSIBILITIES OF COUNCIL LIAISONS

7.1 Represent the interests of the Council

7.2 Assist council with SRC Guidelines for ROB and MOP revisions

7.3 Expedite business between the Council and SRC

8 MOPS MAINTAINED BY SRC

8.1 Executive

8.2 Finance

8.3 Nominating

8.4 Planning

8.5 President-Elect Advisory

8.6 Government Affairs

8.7 Society Rules

8.8 Building Energy Quotient

9. Mentoring Program

The Chair shall assign experienced committee members to serve as a mentor to incoming members for their first year of service and take other actions needed to train and assist new members to be effective in their position.

10. Additional Documents

The following Documents should be read and understood by members of SRC

10.2 Procedure for Revising Rules (ROB 1.100.002.4)



PUBLISHING and EDUCATION COUNCIL

MANUAL OF PROCEDURES

Approved by Publishing and Education Council **June 30, 2015**

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TABLE OF ACRONYMS

BOD	Board of Directors
ExCom	Executive Committee
ExO	Ex Officio
HVAC&R	Heating, Ventilating, Air-conditioning and Refrigerating
MOP	Manual of Procedures
PEC	Publishing & Education Council
ROB	Rule of Board
MBO	Management By <u>O</u> bjectives

MANUAL OF PROCEDURES PUBLISHING AND EDUCATION COUNCIL

1. INTRODUCTION

- 1.1. The MOP is an internal document of PEC. It is subject to change from time to time as needed due to changes in the Society.
- 1.2. The MOP provides a description of some, but not all, of the duties and responsibilities of the Council Members, Chair, Vice Chair, and Directors.

2. GENERAL RESPONSIBILITIES OF THE COUNCIL

- 2.1. Refer the following types of action to the BOD for action:
 - Approval of policy statements
 - Change fiscal limits
 - Change existing ASHRAE policy
 - Approval of projects exceeding the authority of the Council
- 2.2. Act as a communications link between BOD and committees.
 - 2.2.1. BOD to PEC
 - PEC Chair designates one or more ~~PEC members- who are Directors~~ Directors to work with staff to distribute key BOD actions to PEC members immediately following preparation of the BOD minutes.
 - Communicating BOD actions to standing committees remains the responsibility of the BOD ExO.
 - 2.2.2. PEC to BOD
 - PEC will report in writing to the BOD all principal motions immediately after each PEC meeting. At the Winter and Annual ~~Meetings~~ Conferences the written reports shall be distributed to the BOD ~~the~~ in time for its Wednesday meeting.
 - PEC reports and actions shall include summary support information provided to it by its standing committees.
 - 2.2.3. Committees to Council
 - ~~Committee reports at regular PEC meetings shall be in writing, and include all principle motions requiring PEC action, and supporting information.~~
 - ~~Minutes of each standing committee shall be distributed to all members of PEC.~~
 - The Products Subcommittee, Professional Development Subcommittee, Planning Subcommittee and Fiscal Subcommittees shall hold meetings outside of the regular PEC meetings. Subcommittee reports shall be provided to PEC in writing prior to its meeting. Each ~~The~~ report must include all principale motions as well as summary information regarding the actions of the subcommittee and supporting information.

- Minutes of standing committees under the Products Subcommittee shall be distributed to all members of the Fiscal Subcommittee.
- Minutes of standing committees under the Professional Development Subcommittee shall be distributed to all members of the Fiscal Subcommittee.
- Minutes of the Fiscal and Planning Subcommittees shall be distributed to all members of PEC.
- The Products Subcommittee shall prepare a combined committee report of its reporting committees (Publications, Handbook and Historical). This report shall be provided in writing prior to regular PEC meetings, and include all principal motions requiring PEC action, and supporting information.
- The Professional Development Subcommittee shall prepare a combined committee report of its reporting committees (Certification, Training and Education). This report shall be provided in writing prior to regular PEC meetings, and include all principal motions requiring PEC action, and supporting information.

2.2.4. Council to Council

- Actions of PEC for which parallel or supporting action is required by another council shall be communicated in writing to that council chair for inclusion in the meeting agenda of the other Council. Where an oral presentation to another Council would be is necessary, the PEC chair will arrange for their appearance of a PEC member wishing to make a report to that Council.
- Minutes of all PEC meetings shall be sent to all Council chairs and vice chairs.

3. ESTABLISHMENT OF SUBCOMMITTEES

- 3.1. The PEC chair may shall establish subcommittees, where deemed appropriate, and make appointments from the PEC members hip. Such subcommittees can be standing or ad hoc at the discretion of the chair.
- 3.2. Responsibilities of subcommittees shall be delineated by PEC chair at the time of establishment.
- 3.3. If a subcommittee is established as a standing subcommittee, the PEC chair or that subcommittee chair shall recommend appropriate responsibilities to PEC for inclusion in ~~in~~ item four section 4 of the PEC MOP.

4. RESPONSIBILITIES OF COUNCIL STANDING SUBCOMMITTEES

QUESTIONS ABOUT / INCONSISTENCIES WITH THE ROB:

Current ROB: 2.302.002 MEMBERSHIP

2.302.002.1 The members of this Council are as follows:(08-12-08-01/12-01-25-15/15/07/01/03)

A. Chair: A Vice President of the Society

B. Vice-Chair: A Vice President of the Society

C. Voting Members: Chair, Vice Chair, up to four (4) Directors, plus the following: positions elected by the Board of Directors:

4a. One past voting member from each of the following committees: Certification, Training and Education, Handbook, and Publications.

2b. Current Chair of the following committees: Certification, Training and Education, Handbook and Publications.

Commented [ML1]: Note this is a problem in ROB, as these committee chairs are not elected by the Board.

Also, Historical is not mentioned in the ROB – we need to clean that up

D. Non-Voting Members: Vice Chairs of each committee reporting to this council.

The ROB should read: **2.302.002 MEMBERSHIP**

2.302.002.1 The members of this Council are as follows:(08-12-08-01/12-01-25-15/15/07/01/03)

A. Chair: A Vice President of the Society

B. Vice-Chair: A Vice President of the Society

C. Voting Members: Chair, Vice Chair, up to four (4) Directors, plus the following: positions elected by the Board of Directors:

• Positions elected by the Board of Directors: One past voting member from each of the following committees: Certification, Training and Education, Handbook, and Publications and Historical.

• Current Chair of the following committees: Certification, Training and Education, Handbook and Publications and Historical.

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D. Non-Voting Members: Vice Chairs of each committee reporting to this council.

Commented [ML2]: It looks like the Vice chairs are non-voting members of PEC. The Chairs are subcommittee members, but not (non-voting) members of PEC. Is this correct?

3.4.4.1. Fiscal Planning Subcommittee

3.4.4.1.1. The subcommittee consists of:

- One PEC voting ~~One (1)~~ VP member designated as subcommittee chair by PEC chair
- Chairs of all committees and subcommittees reporting to PEC
- Two voting members designated by PEC chair in addition to the chair of the subcommittee
- Five (5) Chairs of the standing committees reporting to PEC Chairs, five (5) past committee members from these standing committees, ~~one Vice President, two (2)~~ PEC members elected to PEC as past members of ~~past committees reporting to PEC~~ members, and three (3) ExOs.

Commented [ML3]: This clarification: "...of the standing committees reporting to PEC..." and PEC members who were elected to PEC as past committee members should be inserted throughout the MOP

Also, it seems

3.4.2.4.1.2. The subcommittee shall assist the ~~Publishing & Education Publishing and Education~~ staff ~~PEC~~ Director in strategic planning, review and coordination of marketing activities managing the budget, providing data to help drive decisions and manage advertising activities.

Commented [ML4]: You have designated 11 ExOs as PEC subcommittee members – this is a lot of ExOs. ExOs can be DALs and DRCs, but they are very busy. Is 11 ExOs too many to involve in PEC subcommittees?

3.4.3.4.1.3. The subcommittee shall assist the ~~Publishing and Education Staff Publishing & Education~~ ~~PEC~~ Director in preparation of the budget and four-year plan. The

In general, these subcommittees seem very large and involve too many BOD members.

subcommittee shall evaluate budgets to determine compatibility with the aims and policies of PEC and Society.

3.5.4.2. Functional-Planning Subcommittee

3.5.1.4.2.1. The subcommittee shall consist of ~~PEC members designated by PEC chair,~~

- One (1) VP member designated as subcommittee chair by the PEC chair
- Five (5) ~~standing committee~~ Vice Chairs, five (5) ~~committee members from the standing committees, one Vice President, three (3) past committee members, and two (2) ExOs.~~

Commented [ML5]: Standing committees that report to PEC

Commented [ML6]: Standing committees that report to PEC
More precision about what you mean, please. E.g., "X PEC members who had been selected as former members of committees reporting to PEC." Are the 5 standing committee members the vice chairs? Are the 3 past committee members PEC voting members who were selected because of past committee membership?

4.2.2. The subcommittee shall ~~continually review the operation of PEC and prepare for submission to PEC any suggested revisions or additions to the ROB, PEC's MOP and MOPs of standing committees that report to PEC, set strategic direction, assist the PEC Chair in developing MBOs, prioritize resource allocations, ensure alignment of assigned tasks~~ with Society Strategic Plan, identify future PEC leadership, maintain MOP and ROB of PEC, assist with committees' MOP and ROB, act as a resource for rule interpretation, assist with motions, review MBO progress, recommend action when goals are not met, and evaluate and document progress toward Society Strategic Planning goals.

4.2.3. The subcommittee shall ~~r~~Review the status of all strategic plan objectives assigned to PEC and recommend action.

3.6.4.3. Journal Advertising Sales Subcommittee Products Subcommittee

3.6.1.4.3.1. The subcommittee consists of:

- Three past ~~standing committee members~~ PEC chair
- ~~Chairs and Vice Chairs of Handbook, Publications, and Historical standing committees~~ ~~-(Where Committees have with more than one (1) Vice Chair, only one (1) is to be designated. -No more than two (2) members from each committee are to serve on the subcommittee.)~~ Fiscal Planning and Functional Planning Subcommittee chairs
- Three (3) ExOs ~~from~~ Handbook, Publications, and Historical standing committees
- Publications Committee chair
- Publisher/Director of Publications & Education

Commented [ML7]: Need to correct the ROB, which has VCs but not Chairs as PEC non-voting members

3.6.2.4.3.2. The subcommittee shall ~~review the advertising sales program and make recommendations for advertising policy development~~ monitor the progress and activities of the Handbook, Publications, and Historical standing committees and report to PEC.

3.6.3.4.3.3. The subcommittee shall annually recommend a ratio of advertising pages to total pages in ASHRAE Journal. ~~'s chair and vice-chair shall be determined by vote of the subcommittee.~~

Commented [KF8]: This seems odd; should it change?

3.6.4.4.3.4. The subcommittee shall annually recommend the rates for advertising in ASHRAE Journal.

4.4 eLearning Subcommittee Professional Development Subcommittee

4.4.1 The subcommittee consists of:

- ~~PEC chair~~ Two (2) past committee members
- ~~PEC vice chair~~ Chair and Vice Chair of Certification and Training and Education standing committees ~~—(Committees with more than one (1) Vice chair, only one (1) is to be designated. No more than two (2) members from each committee are to serve on the subcommittee.)~~
- ~~Professional Development Committee chair~~ Two (2) ExOs of Certification and Training and Education standing committees
- Publications chair
- Director appointed by PEC chair
- ~~Consultants appointed by chair as needed.~~

4.4.2 The subcommittee ~~subcommittee provides Society oversight of the vendors for eLearning products and services shall monitor the progress and activities of the~~ Training and Education and Certification standing committees and report to PEC.

4.4.3 ~~The subcommittee's chair and vice chair shall be determined by vote of the subcommittee.~~

Commented [KF9]: Is this right?
LM - Isn't it easier to have PEC chair appoint the SubC chairs?

4.5 Research Journal Subcommittee

4.5.1 ~~The Research Journal Subcommittee reports to the Product Subcommittee.~~

4.5.2 The subcommittee consists of:

- ~~PEC chair~~
- ~~PEC vice chair~~
- ~~EXO of Publications Committee~~
- Two (2) ASHRAE Fellows selected according to 4.5.2.1.2
- *Science and Technology for the Built Environment* editor (ex-officio member)
- Director of ~~Publications staff Publications & Education~~ PEC (staff liaison)

Commented [KF10]: Should this not be simply Publication and Education Director?

4.5.2.1 ~~PEC chair~~ ExO shall serve as chair of the subcommittee.

4.5.2.2 The two (2) ASHRAE Fellows serving on the subcommittee shall be appointed by the PEC chair, serving staggered two-year terms. They shall be selected based upon having achieved prominence in the field or as researchers in the sciences of HVAC&R and shall have extensive lists of published research works to their credit. The Director of ~~Publications staff Publications & Education~~ PEC shall prepare annually a list of candidates meeting the qualifications for appointment.

Commented [KF11]: Same question.

4.5.3 The subcommittee has the following responsibilities:

- Appoint the editor of the Research Journal acting upon recommendations and suggestions made by the Director of ~~Publications staff Publications & Education~~ PEC.
- Confirm the recommendations of the editor for persons to serve as associate editors.
- Recommend approval of the annual budget and four-year plan.

Commented [KF12]: Same question

- Submit a report to the Products Committee before their meeting at the Winter Annual Conference.

4.5.23.1 ASHRAE *Science and Technology for the Built Environment* Research Best Paper Award

- To solicit nominations
- To determine the most outstanding paper published in the volume year of *Science and Technology for the Built Environment* preceding the ASHRAE Winter Meeting
- To forward the name of the recommended award recipient to the Honors & Awards Committee at the Winter Meeting Conference for awarding at the Annual Meeting Conference.

4.5. RESPONSIBILITIES OF THE CHAIR

~~4.1-5.1.~~ Preside over meetings of the PEC.

~~4.2-5.2.~~ Prepare meeting agendas, check meeting minutes, and prepare or approve designated reports to the BOD.

~~4.3-5.3.~~ Establish standing and special ad hoc subcommittees as may be required and assign chair and members to these subcommittees.

~~4.4-5.4.~~ Delineate responsibilities and duties of the established subcommittees.

~~4.5-5.5.~~ Serve as the conduit between PEC and the BOD, bringing issues of the BOD to PEC for action and PEC issues requiring BOD action forward.

~~4.6-5.6. The Chair shall appoint a liaison to the Society Rules Committee. The chair of the PEC Functional Planning Subcommittee is normally appointed as the Council liaison to the Society Rules Committee.~~

5.6. RESPONSIBILITIES OF THE VICE CHAIR

~~5.1-6.1.~~ Preside over PEC meetings in the absence of PEC chair, and assist PEC chair with preparation of the agenda and supporting documentation.

~~5.2-6.2.~~ Perform such other duties as may be assigned by PEC chair.

7. RESPONSIBILITIES OF THE DIRECTORS WHO ARE EXOS TO STANDING COMMITTEES

~~6.8.~~

~~6.1-8.1.~~ Each Director will serve on at least one of the PEC standing subcommittees.

~~6.2-8.2.~~ In the case of absence by PEC chair and vice chair, preside over PEC meeting.

~~6.3-8.3.~~ The Director is an advisor to, and an advocate for, the committees to which they are assigned by the president-elect.

Commented [KF13]: Any issue with this?

Commented [ML14R13]: No issue. SRC should have a liaison to PEC – right now we have 2 PEC members – so this is not needed to have a liaison back the other way

Commented [ML15]: Other than .1 and .2 (i.e., #3-13), I think this is redundant to the Director's MOP. It defines role of ExO.

Commented [ML16]: If there is more than one Director (BOD member) on PEC, do you mean that "one of the Directors shall preside..."

Commented [ML17]: I think 8.3 is redundant to the Director's MOP. It defines role of ExO. Does it need to be repeated in the PEC MOP? (maybe yes, for convenience)

6.3.1.8.3.1. Serves as ExO non-voting member of the committee, its subcommittees and its Excom.

6.3.2.8.3.2. Is invited to attend and participate in all committee, subcommittee and ExCom meetings. Attendance at subcommittee meetings may be counted towards quorum requirements.

6.3.3.8.3.3. Moves committee motions to council, and acts as an advocate for the committee in all relevant discussions.

6.3.4.8.3.4. Assists committee in preparation of written motions. (To include answers to: who, what, when, why and how much. If fiscal impact been budgeted by ASHRAE, and if so, in which fiscal year?)

6.3.5.8.3.5. Communicates committee plans to other Director's to allow for inter-committee contribution and cooperation.

6.3.6.8.3.6. Conveys presidential goals to the committees.

6.3.7.8.3.7. Assists committee in preparation of "objectives" to satisfy committee scope, presidential goals and strategic plans.

6.3.8.8.3.8. Assists committee and staff liaison in the process of monitoring progress toward timely completion of objectives.

6.3.9.8.3.9. Assists committee in the ongoing review of operational guide, MOP, relevant ROB and Strategic Plan objectives.

6.3.10.8.3.10. Suggests changes in assigned scope, function and personnel.

6.3.11.8.3.11. Receives copies of all committee correspondence, including invitations to all committee meetings.

6.3.12.8.3.12. Interprets BOD and PEC actions to the committee.

6.4.8.4. At BOD meetings; acts as an advocate for committees to which they are ExO, in all relevant discussions.

7.9. RESPONSIBILITIES OF VOTING MEMBERS

7.1.9.1. Fully participate in all assigned subcommittees and complete assignments by the designated time.

7.2.9.2. PEC is supplied by the Director of Publication ~~staff & Education~~ with fiscal reports covering all publications. It is the duty of PEC members to review these reports and act on recommended changes, if needed, to keep publications within budget.

8-10. RESPONSIBILITIES OF NON-VOTING MEMBERS

~~9.1 Each committee chair shall be non-voting members of the council. Chairs report actions and recommendations of the committee and seeks approval. Each committee chair is responsible for conveying to the committee those actions of PEC which may have an impact on the committee's activities.~~

9.12 Each committee vice chair shall be non-voting members of the council and will act in the absence of the committee chair. ~~(Committees with more than one vice chair, only one is to be designated to serve in this capacity).~~

Commented [ML18]: This is consistent with ROB, but the PEC structure has BOTH Chairs and Vice Chairs of standing committees as non-voting PEC members

9-11. RESPONSIBILITIES OF STAFF DIRECTOR OF PUBLICATION & EDUCATION

9-1-11.1. The Director of Publications ~~&and~~ Education serves as secretary to PEC. The Director also advises PEC on publishing matters and coordinates the activities of others assigned by the Executive Vice President to support the operations of PEC.

9-2-11.2. Along with the Fiscal Planning subcommittee, prepare and submit to PEC for approval an annual budget covering all publishing activities of PEC.

9-3-11.3. Implement and administer on behalf of PEC practices which fulfill the Society's publishing responsibilities, such as copyright protection, reprint permission, translation rights, etc.

Commented [ML19]: I'm a little concerned that this ideally duplicates and, non-ideally may contradict to some extent, the duties in the Director's employment agreement/job description. I think this is better rewritten the Director administers PEC's instructions, to the extent they are consistent with Society's publishing policies, such as....

9-4-11.4. Ensure ~~that compliance with~~ ASHRAE policy is adhered to.

Commented [ML20]: Tough to say "ensure" maybe better is to inform PEC and help insure PEC actions and policies and ASHRAE publishing practices and policies are consistent

RESPONSIBILITIES OF ALL COUNCIL MEMBERS

~~Review each issue of ASHRAE Journal. The Journal editor will provide a form each month that outlines the review material needed.~~

10-12. FISCAL PLANNING

10-1-12.1. Reports from Non-PEC Committees

10-1-12.1.1. Committees not represented on the council who require publication of material shall submit each year, prior to the Fall meeting of PEC, a report covering their plans for the following fiscal year. The Director of Publishing and Education ~~Publication & Education~~ PEC shall notify all Society standing general committees of their need to submit such a report with sufficient time that the information is available to be incorporated in the PEC budget under preparation.

10-2-12.2. Preparation of Budget and ~~Four-Year Plan~~ Budget Projections

~~10.2.1.12.2.1.~~ Director of ~~Publishing and Education staff~~ ~~Publication & Education~~ ~~PEC~~ prepares, ~~w~~with the assistance of the Fiscal ~~Planning~~ Subcommittee, a proposed budget for the following year and a four-year plan. This tentative budget is forwarded by the Comptroller to the Finance Committee. The Finance Committee includes the PEC budget, as approved or modified, in the overall budget submitted to ExCom of BOD.

~~10.2.2.12.2.2.~~ The new budget and four-year plan, as approved by ExCom, is transmitted by the Comptroller to PEC and the ~~Publishing & Education~~ ~~Publishing and Education~~ ~~PEC~~ ~~Staff~~ Director for review and discussion at the Winter ~~Meeting~~ ~~Conference~~.

~~10.2.3.12.2.3.~~ PEC budget as approved or modified is incorporated by the Comptroller in the overall budget for action by the Finance Committee prior to its submission by the Finance Committee to the BOD at the Annual ~~Meeting~~ ~~Conference~~ for approval.

~~11.13.~~ MOTIONS

~~11.1.13.1.~~ Motions not involving Society policy or fiscal matters outside PEC's fiscal plan can be approved by a majority of the voting members in accordance with the voting requirements outlined in the ROB.

~~11.2.13.2.~~ Motions involving Society policy or fiscal matters outside PEC's fiscal plan can be approved by a 2/3 ~~majority~~ of the voting members in accordance with the quorum requirements outlined in the ROB but must be submitted to the BOD for final approval.

~~12.14.~~ MEETINGS

~~12.1.14.1.~~ Meetings shall be called by the Chair in accordance with schedule outlined in the ROB.

~~12.2.14.2.~~ Incoming members of the council shall be invited and strongly encouraged to attend the meeting of the council immediately preceding their term of office. When requested, they will be reimbursed for transportation costs in accordance with the approved travel reimbursement policy.

~~12.3.14.3.~~ Conduct of meetings shall be governed by the current edition of Roberts Rules of Order.

~~12.4.14.4.~~ ~~Standing committees~~ and subcommittees of the council shall meet separately at least twice a year at the call of their chairs

~~12.5.14.5.~~ Council Agenda

~~12.5.1.14.5.1.~~ The ~~Staff Publications Director, serving as~~ secretary of the council, (~~PEC Director of Publishing and Education~~ ~~Publication & Education~~) shall prepare under the direction of the chair an agenda including, but not limited to, the following items: call to order; approval of minutes; list of action items assigned by chair at previous meeting; committee reports and recommendations; subcommittee reports; old and new ~~business~~.

Commented [ML21]: How about review of MBO status

~~12.5.2-14.5.2.~~ Any member of the council desiring that a subject be placed on the agenda for discussion should notify chair not ~~less than thirty days~~ before such a meeting.

~~12.5.3-14.5.3.~~ A preliminary agenda shall be circulated to council members by the secretary so as to be in their possession no less that five working days prior to the meeting. The chair may modify the items at any time prior to or during the meeting.

Commented [ML22]: This is ideal, but in practice things often come up much closer to the meeting. I suggest that instead of "should notify" it says "will endeavor to notify"

Appendix A

Guidelines for Publication & Distribution of ASHRAE Position Documents

- ~~1. Labor for the editing and publication preparation for Position Documents shall be assigned to Publications & Education Department with that cost assigned to PEC. Costs associated with the printing of Position Documents shall be charged to Public Relations.~~
- ~~2. Single printed copies of Position Documents shall be made available to members on request at no cost. The main inventory will be maintained by the Public Relations Section, but other sections may maintain small inventories to meet their needs. Any staff member may respond to requests. (Note: Initial distribution to cognizant TCs and other Society committees and interested parties will be made by the assistant to the BOD upon Position Document publication.) Staff directors should advise the assistant to the BOD regarding distribution internal to Society.~~
- ~~3. Requests for bulk quantities of Position Documents will be judged on a case by case basis by the Publications & Education Director. Typically, there will be no charge for a reasonable number of multiple copies when they are for distribution at an ASHRAE function or at a function or for a purpose which supports ASHRAE activities.~~
- ~~4. When fees are assessed for either bulk distribution or non member distribution pricing will be on a cost recovery basis.~~
- ~~5. Income from Position Document sales shall be credited to PEC and sales will be administered through normal publication sales channels.~~
- ~~6. At ASHRAE meetings, Position Documents will be displayed in the ASHRAE publications sales area. Attendees will be mailed single copies at no charge upon request.~~



**eLearning Subcommittee of PEC
Report to Publishing and Education Council (PEC)
Meeting of Thursday, June 25, 2020**

Attendees

Farooq Mehboob — Chair (Present)
William Dean — Member (Present)
Charles Henck — Member (Present)
C S Ow — Member (Absent)
Chandra Sekhar — Member (Present)
Doug Fick — Member (Present)
Jeremy Smith — Member (Present)
Keith Reihl — Member (Present)
Jim Vallort — Member (Present)
Mark Owen — Staff Liaison
Eunice Njeru — Staff
David Soltis — Staff
Susan Polite — Staff
Karen Murray — Staff

Action Items

None

Information Items

1. Financial Review

Subscription revenue for ASHRAE eLearning is on track to make the forecast for the 2019-2020 fiscal year. The cumulative subscription revenue for the fiscal year to date is 204.5K on a forecast of 225K (May Financials). Most of this revenue is from individual member and non-member subscriptions, with a few corporate subscriptions. eLearning is expecting a 60K transfer from Foundation to continue to fund both new courses and updating existing course to achieve an interactive learning experience for the learner. UNEP activities are forecasted bring in 166K.

A review of credit card charges, salaries, and overhead allocations budget lines will be conducted to determine their impact on the overall performance of eLearning.

2. Course Updates Status

ASHRAE eLearning is updating its courses to meet the demand of interactive learning experience in the marketplace. For the Society Year 2019-2020, seven courses were updated. The goal is to update 10 course each year. This will depend on the availability of financial resources.

A metric for course updates is needed to determine the frequency of updates. An eLearning Dashboard highlighting course age, demand, and industry trends will act as a basis for determining when and which courses should be updated. Attachment A shows a draft Dashboard.

3. LMS Upgrade

eLearning's current Learning Management System (LMS) and eCommerce are being upgraded due to technology change. The upgrade effort entails both course and participant data migration. The upgrade is on track to launch at the end of July 2020.

4. Translation

During the Members Council 2019 winter meeting in Atlanta, a motion to translate eLearning courses into several languages was put forward (see Attachment B). The eLearning Subcommittee reviewed the cost associated with translation per course. The fiscal impact per course is estimated at 30K-35K. As an alternative, the PEC Committee recommended considering course subtitling. The estimated subtitling cost is 2.5K per course, per language. In total, each course would cost between 20K-25K to subtitle in all eight languages proposed.

Before moving forward with subtitling, there is need to consider the potential return on investment (ROI). ASHRAE will conduct a survey to determine the demand of these courses in the 8 countries outlined in the motion. eLearning Subcommittee's recommendation is for PEC to respond to Members Council that further studying of this matter is needed before any decisions can be made.

Respectfully submitted,

Farooq Mehboob, Chair
25 June 2020
FM: en/mso

Attachment A

Course Updates Progress Report – SY 2019-2020	
Fully updated	7
Awaiting Instructional Designer Assignment	6
Under Subject Matter Expert (SMEs) Contract	3
Seeking SMEs	3
Content Proofing	2
Content Organizers	0
Total	21

Attachment B

TO: Julia A. Keen, Publishing and Education Council Chair
Mark Owen, Publishing and Education Council Staff Liaison

FROM: Joyce Abrams

DATE: February 27, 2019

SUBJECT: Members Council Referral – E-Learning Courses

During the Members Council 2019 winter meeting in Atlanta, the motion below was referred to Publishing and Education Council for consideration. I appreciate your keeping me advised of your actions. Let me know if you have any questions. Thank you.

Membership Promotion Committee – Motion 11 (01/15/2019):

That e-learning courses be translated to major non-English languages based on membership demographics.

Background: ASHRAE's vision is to be a global leader and foremost source of technical and educational information. Based on membership demographics, the top eight non-English speaking countries include: Canada (French), India (Urdu), Hong Kong (Chinese), Philippines (Tagalog), UAE (Arabic), Malaysia (Malay), Brazil (Portuguese), and Mexico (Spanish). Voice-over audio recording of the e-learning materials will provide greater global membership value. Translations can be completed by volunteer members with peer review.

Fiscal Impact: Recommend \$0 fiscal impact. Generate income with new e-learning benefit and increase use of e-learning.

cc: Michelle L. Swanson, Membership Promotion Committee Chair
Daniel B. Gurley, III, Membership Promotion Committee Staff Liaison



**Journal Advertising Subcommittee
Report to Publishing and Education Council (PEC)
GoToMeeting of June 25, 2020**

Attending:

Farooq Mehboob, Chair
Bill Dean, Vice Chair
Katherine Hammack
C.S. Ow
Jon Symko
Mark Owen, staff liaison
Greg Martin, staff

Action Items for PEC

None.

Information Items

1. **Chair's Analysis.** An analysis of current sales revenue compared to previous fiscal years was discussed by the subcommittee.
2. **Staff Report.** The subcommittee reviewed a status report on sales, including financial statements for the FY19-20 forecast and the budget outlook for FY20-21, the current rate structure, and new incentives to encourage expanded programs. Financial forecasts for the 2019-20 Society Year show \$3.31 million projected in ASHRAE advertising revenue. The Journal remains advertisers' No. 1 choice for the past ten years. Paid advertising share of market (SOM) ratio for the past 12 months is slightly greater than the previous 12 months at 63% of all advertising pages sold— capturing 84% of all HVACR engineering advertisers—from May 2019-April 2020. At the same time, a net loss of 69 paid pages impacted ASHRAE Journal while competitors lost an additional 45 net pages of advertising. This result is attributable to increased market competition and internal channels for advertising dollars. The Journal's SOM has risen from 47% in 2009 to 62% for 2019 calendar year in a three-publication marketplace.
3. **Online Advertising.** ASHRAE.org advertising revenue has declined, with the exception of the supplier webinars program, which has grown from \$18k revenue in 2014 to more than \$220k sales forecast for this year. However, this growth has not offset the overall decline in run-of-site and newsletter advertising. While traditional publishers continue competing for advertising revenue, nontraditional publishers also are competing. These include Google, Facebook, and others. Additionally, some suppliers have allocated marketing budgets to improve their own company website, renting emails and trade show marketing as alternatives to ASHRAE advertising.
4. **HPB.** The subcommittee voted to recommend to the Publications Committee that print and digital publication of *High Performing Buildings* (HPB) magazine be discontinued and its content be folded into *ASHRAE Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars. Publications Committee approved and sent the recommendation to the Fiscal Subcommittee for further consideration.

5. **Pandemic.** ASHRAE advertising revenue appeared to be trending upward prior to the global pandemic's arrival in the U.S. In February, Journal sales exceeded its FY20 goal and the prior year's revenue. However, advertising cancellations attributed to the pandemic to date totaled \$50,000 in FY20 and an additional \$50,000 in FY21. Advertising programs being negotiated or considered during the time of the crisis were not counted in the cancellations. Some advertisers furloughed marketing staff during the crisis, and office closures created logistical problems in gathering information on advertising programs.
6. **Representatives.** The subcommittee discussed ASHRAE Journal's use of independent publisher representatives. Staff was assigned to review and report on options for revisions to the commission structure and territory assignments as well as consider expanding sales offices around the world as sources of additional revenue.

Respectfully submitted,

Farooq Mehboob, Chair
25 June 2020
FM: gm/mso



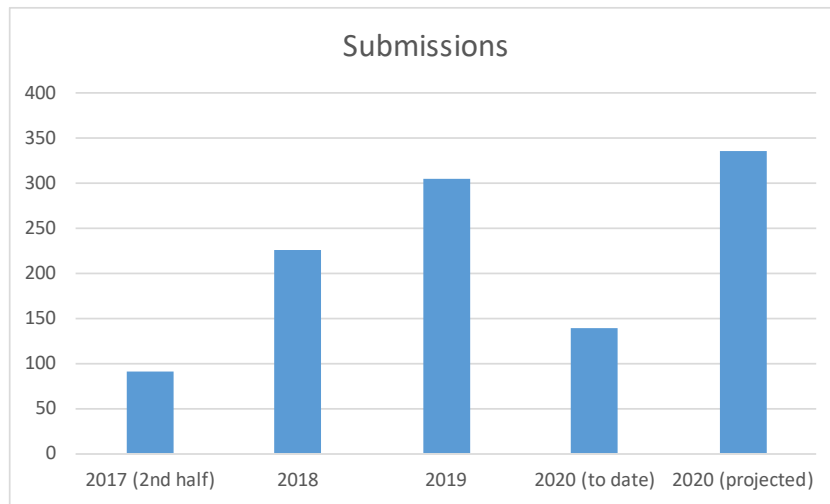
**Report to PEC from
Research Journal Subcommittee
GoToMeeting of Thursday, June 25, 2020**

Motions for PEC

None.

Information Items

1. Editor-in-Chief Dr. Jeff Spitler reports paper submissions projected for a new high as shown in the following chart:



2. STBE received 69,751 article downloads in 2019, an increase of 43% over 2018. 129 papers were published in 2019, with 10 of them open access (OA). The journal's 2018 impact factor is 1.199, ranking 42/63 in the construction and building technology category of Journal Citation Reports (JCR). The impact factor for 2019 is pending announcement typically in late June.
3. Four Associate Editors with terms expiring this year +1 resignation. Dr. Spitler will submit recommendations for renewed terms and additions for subcommittee approval in late June.

4. The COVID-19 pandemic is going to delay or eliminate some opportunities for special issues based on conferences. Dr. Spitler will ask the Editorial Board to help identify non-conference-based topical issues.
5. Progress on recruitment of an expanded review board has also been delayed due to the pandemic. This initiative was to recruit members from junior and mid-level faculty and recent PhD graduates, with a commitment to review ~4 papers per year in a timely fashion (2 weeks or less). Recognition would be given on a research journal web page.

Respectfully submitted,

Farooq Mehboob, Chair
4 February 2020
FM:jh/mso



Certified
Certification Committee
Report to Publishing and Education Council (PEC)
ASHRAE 2020 Summer Conference / Virtual

Item Requiring Council Attention

None.

Information Items

1. Certification Application Rate YTD vs. LYTD

Through March 31, 2020, ASHRAE received 10% more certification applications (340) over the previous SYTD (305).

Through May 31, 2020, ASHRAE received 378 certification applications, equal to the number received over the previous SYTD.

2. Actual Revenue YTD vs. LYTD

Through the period ending May 31, 2020, actual Certification revenue is better by \$4,000 versus last year's actual revenue through May, not including an ASHRAE Foundation contribution.

3. PEC MBO #3 (Attachment A)

“Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 (*promote best practices that enable adaptability, resilience and recovery of buildings and communities*) & 2 (*promote understanding of indoor environmental quality (IEQ) among practitioners*) after surveying members to establish interest and demand.”

Execution of this MBO by the Certification Committee is ongoing. Please see Attachment A for details.

4. ANSI Accreditation

ASHRAE's ANSI Reaccreditation Application with scope extension (CHD, HFDP and OPMP) is in progress. The Certification Committee anticipates continued accreditation of all seven ASHRAE certification programs under the ISO/IEC 17024 International Standard for personnel certification programs in September, 2020.

The Certification Committee believes that accrediting the CHD, HFDP and OPMP programs will avoid confusion in the marketplace. The onetime scope extension application fee falls within currently budgeted expense.

5. Marketing

A. Remote Online Proctored Examination

Due to launch in July, Remote Online Proctored examination will be a safe, secure and convenient way for ASHRAE certification candidates to schedule and sit for their certification exam from their office or home.

This new exam delivery mode will expand the market for ASHRAE certification from candidates located near a brick-and-mortar testing location to any built-environment professional in the world with a desktop or laptop, a stable internet connection, a Google Chrome browser, a working webcam, and a microphone.

B. CHD Study Guide

With financial support from the ASHRAE Foundation and the assistance of Certified HVAC Designer (CHD) volunteers, the PEC is creating a study guide for the CHD program entitled *Certification Study Guide: Certified HVAC Designer (CHD)*. The new publication is due to launch in July.

With a focus on key HVAC Designer job tasks and a customizable exam preparation plan, the study guide will leverage instructional design best practices to ensure effective adult learning that drives desired outcomes and helps CHD certification prospects achieve goals.

C. Digital Badging

New in 2019-20, Certification [Digital Badging](#) continues to be a success. A total of 680 (73%) of 932 badges issued have been accepted by certificants. There have been over 8,800 badge views in various electronic media. As examinees continue to pass their exam and certificants continue to renew their certification, more badges will be issued.

- ✓ Helps Certificants get the recognition they've earned
- ✓ Shareable in electronic media e.g. LinkedIn profile, website and email signature
- ✓ Rich meta-data includes certification scope and key job knowledge, skills and abilities
- ✓ Real-time, third-party verification

Example:



6. Exam Development

Ongoing exam development activities in 2019-20 will help ensure the continued relevancy and validity of ASHRAE's certification programs:

- BCxP: New exam form launched in March, 2020.
- BEMP: New exam form launched in March, 2020.
- HBDP: New exam form to launch by August 15, 2020.
- HFDP: New exam form launched in February, 2020.

7. 2019-20 MBOs (Attachment B)

Respectfully submitted,
Mark Bettin, PE, OPMP
Certification Committee, Chair
06/23/2020

Attachment A
Certification Committee Report to PEC

To execute PEC MBO #3, the Certification Committee has identified the following steps:

A. *Generate proposals for possible certification program(s) that support Strategic Plan Initiatives 1 and 2. In Progress*

- Nineteen (19) TCs and SSPCs were invited to consider submitting a proposal for such a new Certification program. These TCs and SSPCs likewise were invited to attend the Certification Committee meeting on Feb. 1, 2020 and given the opportunity to have a Certification Committee member attend their meeting in Orlando, as a resource to answer questions and provide guidance. In the end, five TC and SSPC Chairs requested Certification Committee Member attendance at their meeting in Orlando.
- The initial due date to submit a proposal was 3/15/2020.
- As no proposals were submitted by the due date, Committee Members Mr. Armstrong, Ms. Cowman and Mr. Millies are following up with select TCs (1.4, 2.1, 2.5, 2.10, 7.1) and SSPCs (135) by June 30, 2020, to monitor progress and encourage them to continue working to identify and submit a proposal for a new certification program.

B. Develop metric for evaluating the likelihood of success for the proposed program(s).

COMPLETED. The “ASHRAE Certification Program Proposal Evaluation Algorithm” was created in 2015.

C. Survey members regarding interest and demand in the possible certification program(s).

A step in the Certification program evaluation process (bullet B) is to conduct market research into the need and demand for a proposed certification program.

D. Evaluate the likelihood of proposed program success.

“ASHRAE Certification Program Proposal Evaluation Algorithm” (bullet B) clearly defines the criteria for recommending new certification programs. The initial expense to develop a new certification program is approximately \$100,000.

Attachment B
 Certification Committee Report to PEC

Certification Committee MBOs Society Year: 2019-2020

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

Vision: A healthy and sustainable built environment for all.

Goal #1: Position ASHRAE as an Essential Knowledge Resource for a Sustainable, High-Performance Built Environment.

Goal #2: Maximize Member Value and Engagement.

Goal #3: Optimize ASHRAE's Organizational Structure to Maximize Performance.

Certification Committee Scope: The Certification Committee is responsible for developing, implementing, and monitoring ASHRAE certification programs.

Chair: Mark Bettin, OPMP

Date: June 9, 2020

Objective	S P 20 19 - 24 1	Comp Date	Fiscal Impact	Responsible Party	May Status	Comment
1. Attain 80% recertification rate for the 2019 renewal class, exceeding the industry average of 76%.	2 C	3/31 2020	Currently budgeted	Chair, Certification Committee, Staff	Completed.	388 total applications received. BEAP renewal rate 45%; CPMP renewal rate (both recert as BCxP and BCxP cert) 47%; all other certifications 78% combined.
2. Grow the number of certification applications by 10% over 2015-16 total of 500, a record high.	3 A	6/30 2020	None, Staff Time	Chair, Certification Committee, HVAC Designer Exam Subcommittee , Staff	<i>In progress</i>	Through 5/31/2020, 0% increase in applications (378 total) over LYTD.
3. Enhance relevancy of ASHRAE certification to ASHRAE members & the industry in general.	2 C	6/30 2020	Volunteer & Staff Time	Chair, Certification Committee, HVAC Designer Exam Subcommittee , Staff	<i>In progress</i>	- Launched examination for new HVAC Designer (CHD) certification on June 3, 2019. - Digital badging launched September 2019. As of May 13, 926 digital badges issued with 669 badges claimed for a 72% acceptance rate, against an industry average of 45%. 7,149 badge views for an 9.5 average views per share rate, against an industry average of 2.0 views. - Remote proctoring adopted as an additional exam delivery mode.
4.1 Manage certification programs against the ANSI/ISO/IEC	2 B	6/30 2020	Currently budgeted.	Chair, Certification Committee, Staff	<i>In progress</i>	- BCxP, BEAP, BEMP & HBDP are accredited. - Reaccreditation application with scope extension for the CHD,

17024 accreditation standard.						HFDP and OPMP submitted at the beginning of April.
4.2. Launch new HBDP and HFDP exam forms updated per revised exam Detailed Content Outlines.	3 A	11/1 2019	Currently budgeted.	Chair, Certification Committee, HVAC Designer Exam Subcommittee, Staff	<i>In progress</i>	New HFDP form released in February. New HBDP form to launch by 8/15/2020.
4.3. Recruit 2020-23 class of Exam Subcommittee members.	2 A	6/30 2020		Chair, Certification Committee, Nominations Task Force, Staff	Completed	"Call for Nominations" sent May 6 with a due date of May 20. - Committee to approve slate in June 9, 2020 meeting.
5. Monitor the effectiveness of current certification programs and recommend and implement any steps to improve program effectiveness.	3 A	6/30 2019	None	Chair, Committee Task Force, Staff	Completed.	Task Force recommendations accepted by Certification Committee in Oct. 4, 2019 meeting.
6. Finalize 2019-20 MBOs.	2 A, B, C; 3 A, B	9/30 2019	TBD	Chair, Certification Committee, Staff	Completed.	Task Force to incorporate new Strategic Plan and Committee self-assessment.
7. Evaluate Live Remote Proctoring as an alternative exam delivery mode.	3 B	6/30 2020	TBD	Chair, Certification Committee, Staff	Completed.	Live remote proctoring adopted as an exam delivery mode in May 15, 2020 meeting.
8. Evaluate the certification and recertification application fee schedule for any possible updates in the February 1, 2020 meeting.	3 A	1/12 2019	None. Possible 2020-21 revenue increase.	Chair, Certification Committee, Staff	Completed.	In Feb. 1, 2020 meeting, the Certification Committee agreed to increase the non-member initial certification application fee to \$595 beginning July 1, 2020 and maintain other application fees one additional year through June 30, 2021.
9. Analyze Certification Program and develop metrics for evaluating potential for new certifications	2 B, 3 A	6/30 2020	Staff time.	Chair, Certification Committee	Completed.	Assigned by PEC and evaluated by Certification Committee in Oct. 4 meeting. Next steps to complete objective: 1. Generate proposals for possible certification program(s) that support SP Initiatives 1 and 2. 19 TCs and

<p>aligned with Strategic Plan initiatives 1 (promote best practices that enable adaptability, resilience and recovery of buildings and communities) & 2 (promote understanding of indoor environmental quality (IEQ) among practitioners) after surveying members to establish interest and demand</p>					<p>SSPCs invited to submit proposals by 3/15/2020, No proposals received. By June 30, 2020, Committee liaisons Mr. Armstrong, Ms. Cowman and Mr. Millies to follow up with select TCs and SSPCs to monitor progress and encourage them to continue working to identify and submit a proposal for a new certification program.</p> <p>2. Survey members regarding interest and demand in the possible certification program(s) N/A</p> <p>3. Develop metric for evaluating the likelihood of success for the proposed program(s) Completed.</p> <p>4. Evaluate the likelihood of proposed program success. N/A</p>
<p>Recommendations for Strategic Planning:</p>					

2019-24 Strategic Plan: Goals & Objectives

1. **Position ASHRAE as an Essential Knowledge Resource for a Sustainable, High-Performance Built Environment**
 - A. Utilize a holistic approach to ASHRAE's offerings and activities to drive positive economic, environmental and social impact through innovation in building design and operations.
 - B. Expand capabilities globally to create, aggregate and disseminate essential information and knowledge focusing on emerging market trends and transformative approaches
2. **Maximize Member Value and Engagement**
 - A. Infuse enthusiasm, vitality and diversity throughout ASHRAE events and services
 - B. Expand the impact of collaboration and partnerships with industry organizations, universities and government agencies
 - C. Leverage technology to increase member engagement, awareness and value
3. **Optimize ASHRAE's Organizational Structure to Maximize Performance**
 - A. Prototype and launch new approaches that will increase ASHRAE's relevance and speed to market for key offerings
 - B. Optimize ASHRAE's organizational systems and structures to increase capacity, efficiency and effectiveness
 - C. Cultivate industry and member philanthropy to extend ASHRAE's impact and reach



**Handbook Committee Report to
Publishing and Education Council (PEC)
Meeting of June 9, 2020**

Action Items

None.

Information Items

1. Revisions to the Handbook Committee MOP have been completed and approved by the HBC and by the PEC Functional Subcommittee (*Attachment A*). There are no revisions to HBC ROB.
2. ASHRAE staff is currently testing a solution to allow Internet browsers beyond just Internet Explorer to be used with the ASHRAE Authoring Portal. We anticipate releasing a beta version to member revisers within the month or two.
3. The status of the 2019-2020 MBOs shown in *Attachment B*.

Respectfully submitted,

Suzanne LeViseur, Chair
Handbook Committee
9 June 2020
SL: hek

Approved by Publishing and Education Council 2020-XX-XX
[Approved by Products Date 2020-XX-XX](#)

ASHRAE HANDBOOK COMMITTEE

MANUAL OF PROCEDURES

1.0 HANDBOOK CONTENT AND PHILOSOPHY

1.1 ASHRAE is the recognized authority on current engineering procedures and practices in the fields of heating, ventilation, air conditioning, and refrigeration (HVAC&R). The Society publishes the *ASHRAE Handbook* primarily to provide technical information and data for the design engineer. The information is directed at those who understand engineering principles and need its procedures, design data, and review of recent industry practices. Typical users include consulting engineers, plant engineers, equipment vendors, contractors, government officials, and engineering students.

1.2 The Handbook is published each year in print and electronic formats, in a four-year, repeating sequence of volumes as follows:

Fundamentals

Refrigeration

HVAC Applications

HVAC Systems and Equipment

All four volumes of the Handbook are also published each year in a combined electronic form. The Handbook, both electronic and print, is published in two editions. One edition contains Inch-Pound (I-P) units of measurement and the other contains the International System (SI) of units.

1.3 The general content and philosophy of the volumes are as follows:

1.3.1 **Fundamentals** covers the basic principles and data for the entire technology of the industry, including the following:

- Theories and engineering concepts
- Data on general subjects applicable to many specific fields
- Data on basic working materials
- Methods of calculating heating, cooling, and ventilation loads
- Data and procedures for relatively unchanging subjects such as pressure losses in fittings and duct and pipe sizing

1.3.2 **Refrigeration** covers refrigeration equipment and systems in a particular application, process, or cold storage facility and addresses current design for specific applications.

1.3.3 **HVAC Applications** describes the use of heating, ventilation, and air-conditioning to provide desired conditions in a particular building occupancy or to accomplish a specific purpose in particular applications.

1.3.4 **HVAC Systems and Equipment** describes both the combinations of equipment and the components or assemblies that perform a particular function either individually or in combination.

2.0 COMMITTEE RESPONSIBILITIES

2.1 The Handbook Committee (HBC) is responsible for preparing and publishing the *ASHRAE Handbook*. This committee formulates editorial policies and establishes the overall philosophy and guidelines for the *Handbook* to ensure a well-rounded, authoritative publication consistent with the mission of ASHRAE. The HBC or its representative shall reply in writing to all comments received that pertain to *Handbook* content or procedures. The HBC assigns the preparation of chapters to appropriate Technical Committees (TCs).

2.1.1 The TCs establish the scope of the chapter(s) assigned to them and select reviewers and revisers. The reviewers suggest deletions and additions. The revisers organize the material and rewrite it within the guidelines established by the HBC and as described in the Authors and Revisers Guide. The volume subcommittees shall determine if the guidelines have been followed and shall have authority to change or delete material if the TC is unwilling to do so. The final arbiter in a dispute is the HBC; the procedure is described in Section 3.6.

2.1.2 The Manual of Procedures (MOP) for Technical Committees, Task Groups, and Technical Resource Groups states:

“5.5. Handbook

5.5.1. Each TC/TG/TRG is charged with the responsibility of reviewing Handbook chapters within its field of interest and with making appropriate recommendations to the Handbook Committee and the responsible TC, TG, or TRG for a specific chapter(s).

5.5.2. The TC/TG/TRGs are responsible for the technical content of these chapters, but review and revision must be coordinated with the publication schedule established by the Handbook Committee. The most authoritative reference for TC/TG/TRG handbook responsibilities and procedures is the Handbook Authors and Reviser’s Guide.

5.5.3. MTGs review Handbook chapters within its field of interest and make appropriate recommendations if this responsibility is part of its scope.”

2.1.3 The HBC, in cooperation with the Handbook Editor, shall prepare and maintain an Authors and Revisers Guide (ARG).

2.1.3.1 The Functional subcommittee and Handbook Editor will review the ARG annually for minor edits and updates, and each four years do a major revision of the ARG if needed.

2.1.4 This committee shall develop procedures for recommending updates to the strategic plan on a continuous basis. As a minimum, the committee shall submit a report to the council at a time determined by the Board Planning Committee. The report includes the current status of each activity that supports the fulfillment of the committee’s assignments under the strategic plan. The committee shall report to the council all recommendations for changes to the strategic plan as provided by the committee’s constituents before the annual conference.

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2.2 Subcommittees for Handbook Volumes

- 2.2.1 Each volume subcommittee has responsibility for preparing a specific *Handbook* volume.
- 2.2.2 Subcommittee members help find individuals or groups to review chapters. TCs are the primary sources for chapter authors, reviewers, and revisers.
- 2.2.3 The HBC volume subcommittee member works with each reviewer to transmit comments, criticism, and suggestions to the responsible author or reviser so the chapter will reflect current practice.
- 2.2.4 At their first ASHRAE annual conference, the incoming volume subcommittee chair meets with the incoming volume subcommittee
 - (a) to review duties and responsibilities of the subcommittee,
 - (b) to review and finalize chapter assignments, and
 - (c) to review and discuss commentary forms for each chapter as prepared by the prior volume subcommittee liaisons.
- 2.2.5 At the following ASHRAE winter conference, the incoming volume subcommittee uses the chapter revision history maintained by Handbook staff to determine the status of each chapter regarding its timeliness and currency. The volume subcommittee uses its collective judgment, taking into account the stability of each chapter's content. The volume subcommittee members (liaisons) inform each TC of the status of their chapter(s) as determined. Adjustments to status may be suggested by the respective TCs, in conjunction with the liaison, for possible change.

2.3 Other Subcommittees

- 2.3.1 The Executive Subcommittee of the HBC consists of the chair of the HBC, the chairs of the volume subcommittees, and the Director for the HBC. The chair of the HBC is the chair of the Executive Subcommittee. This subcommittee is concerned with activities of the HBC in the current Society year.
- 2.3.2 The **Review/Training** Subcommittee has the newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee is responsible for training incoming HBC members and the authors and revisers of Handbook chapters **and reviewing the training materials for TC subcommittee chairs chapter lead authors, Handbook and committee members, and reviewing the relevant relevant handbook chapters.**
- 2.3.3 The Functional Subcommittee has the second newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee is responsible for annually reviewing and recommending updates as needed for the Rules of the Board (ROBs), Manual of Procedures (MOP), and the Authors and Revisers Guide (ARG).
- 2.3.4 The Electronic Media Subcommittee has the third newest volume chair as its chair, and other members as appointed by the HBC chair. This subcommittee investigates - **software and electronic tools to make members and associates perform the work quicker, better, and more efficiently and improve ASHRAE's services and makes recommendations regarding electronic content development and delivery.** ~~makes recommendations regarding electronic content development and delivery.~~
- 2.3.5 The Strategic Planning Subcommittee has the HBC's vice chair as its chair, and other members as appointed by the HBC chair. This subcommittee recommends objectives to further the Society's goals for the Handbook and makes plans for the committee's future operation.

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2.3.6 Other standing or temporary committees may be appointed or dissolved by the current HBC chair.

2.4 Committee Personnel

- 2.4.1 The HBC chair is usually the retiring subcommittee chair for the volume most recently published. The chair
- (a) presides at all HBC meetings and
 - (b) prepares the agenda for these meetings in consultation with the Handbook Editor.
- 2.4.2 The HBC vice chair usually is the chair of the subcommittee responsible for the volume published in that fiscal year. The vice chair presides at HBC meetings in the absence of the chair.
- 2.4.3 The chair for each volume subcommittee
- (a) assigns volume subcommittee members as liaisons to TCs for specific chapters,
 - (b) monitors and keeps the Handbook Editor informed of the progress on chapters being prepared, and
 - (c) regularly reports to the HBC on all matters pertaining to the assigned volume.
- 2.4.4 The HBC members
- (a) act as liaisons between the Editor and revisers,
 - (b) arrange for adequate review of their assigned chapters,
 - (c) monitor progress of the review and revision process, and
 - (d) submit final, TC-approved manuscripts to the Editor.

2.5 Staff Support

- 2.5.1 The Handbook Editor and staff support the HBC. The Editor prepares and distributes meeting notices, agendas, minutes, and any other material required for committee use.
- 2.5.2 The Handbook Editor and supporting staff
- (a) edit TC- and HBC liaison-approved chapter manuscripts, sometimes substantially, and
 - (b) suggest new chapters that conform to Section 1.0, Handbook Content and Philosophy.
- 2.5.3 The Publisher grants permission to quote, reprint, or otherwise reproduce material from *Handbook* volumes, based on policy established by the BOD. If any request is not clearly covered by such policy, the Publisher submits it to the BOD for a decision.

2.6 Interaction with Other Committees

- 2.6.1 The HBC shall seek coordination with the Technical Activities Committee (TAC), appropriate TCs, and other society committees as needed.
- 2.6.2 In the event TCs are not able to or do not provide the necessary reviews or revisions, the HBC shall seek other appropriate means to complete the reviews and revisions in a timely manner.
- 2.6.3 The HBC works with the editors of *ASHRAE Journal* and *ASHRAE Insights* to publish articles containing *Handbook* material of current value.
- 2.6.4 The HBC gives the ASHRAE [Program Committee \(APC\)-Conference and Exposition Committee \(CEC\)](#) suggestions for program material that develops during review and revision of chapters. The APC provides the

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committee with author's comments on reviewed papers' impact on *Handbook* information and with abstracts for potential inclusion with relevant chapters.

- 2.6.5 The [Review/Training Subcommittee](#) chair leads an authors and revisers workshop each year at the ASHRAE winter conference. The purpose of the workshop is to help the TCs in their duties of revising and/or authoring *Handbook* chapters. The leader is responsible for planning, scheduling, and announcing the workshop.
- 2.6.6 The HBC chair appoints, from the committee's membership, liaisons to the TAC sections. These liaisons attend the assigned TC Chairs'/Section meetings at the annual and winter conferences.

2.7 Mentoring Program (ROB 100-128-003)

- 2.7.1 The [Review/Training Subcommittee](#) is responsible for training new committee members. The [Review/Training Subcommittee](#) conducts a training session for new and continuing HBC members at the ASHRAE annual (summer) conference.
- 2.7.2 The volume subcommittee chairs shall maintain contact with their committee members and transmit to the [Review/Training Subcommittee](#) any observations of areas for improvement.
- 2.7.3 The volume subcommittee chairs shall maintain contact with their subcommittee members and transmit to the [Review/Training Subcommittee](#) any observations of areas for improvement.
- 2.7.4 The Handbook Editor will send new HBC members a copy of the applicable Rules of the Board (ROBs), Manual of Procedures (MOP), Authors and Revisers Guide (ARG), the current HBC roster, and minutes for the most recent meeting.
- 2.7.5 Each new HBC member should develop a rapport with other members to gain experience and maximize productivity.
- 2.7.6 The chair shall
 - (a) assure that the time allotted at the beginning of the first meeting is sufficient for proper introduction of the new members,
 - (b) assess at a later meeting the effectiveness of the training program,
 - (c) provide any assistance to enhance the training program, and
 - (d) include an objective for mentoring in the committee's Management by Objectives (MBO).

2.8 Changes to Rules of the Board (ROBs)

- 2.8.1 Changes to Rules of the Board (ROBs) are submitted by the committee to the [Publishing and Education Council Products Subcommittee of the Publishing and Education Council](#) in the following manner:
 - (a) *Proposing a change to an existing rule.* Present a track-changes comparison showing the *current* ROB number and wording and the *proposed* wording. A proposed change, as a minimum, includes the rule number, the proposed change, and the reason for the change.
 - (b) *Proposing a new rule.* Present the wording for the new rule and suggest where it should be placed within the ROB organization.

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- (c) *Proposing the rescinding of a rule.* Identify the ROB book in which the rule is located, the rule number or other identification code, the wording of the rule, and the reason for rescinding it.
- (d) To propose changes to Society-wide policies and procedures, follow the same procedures as for proposing changes to ROB's.

2.9 Changes to the Manual of Procedures (MOP)

- 2.9.1 Changes to the HBC MOP shall be submitted to the Publishing and Education Council Products Subcommittee of the Publishing and Education Council after an affirmative vote of the HBC.
- 2.9.2 Appendices are part of the MOP and, therefore, ~~require~~ are submitted to the Publishing and Education Council Products Subcommittee of the Publishing and Education Council approval after an affirmative vote of the HBC.

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2.10 Reports

- 2.10.1 Before the ASHRAE annual conference, the vice chair will prepare objectives for the committee for the next year and present these objectives to the committee for review at its meeting held during the annual conference. The objectives will be included in the committee's report to the Publishing and Education Council Products Subcommittee of the Publishing and Education Council at the annual conference as an information item, and a copy of the objectives will be sent to the staff assistant to the Board of Directors.
- 2.10.2 If any committee does not submit its objectives to the Publishing and Education Council Products Subcommittee of the Publishing and Education Council at the annual conference, the assigned Director (BOD Ex Officio) will work with the committee's incoming chair to complete objectives.
- 2.10.3 Each objective should be measurable and should include a projected completion date, fiscal impact (if any), and other information that would clarify the intent of the objective. If an objective is to be assigned to a specific member or subcommittee of the committee, this should also be included.
- 2.10.3 A status report of the objectives will be included in the committee report submitted to the council at the ASHRAE winter conference, and a copy of the objectives will be sent to the staff assistant to the Board of Directors.
- 2.10.4 A final report of the objectives will be included in the committee report submitted to the Publishing Council at the annual conference, and a copy of the objectives will be sent to the staff assistant to the Board of Directors. The objectives prepared by the committee vice chair for the next year, or by the individual who will be the next year's chair, will also be included in this report.

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3.0 HANDBOOK PROCEDURES

All *Handbook* chapters are under continuous maintenance, and may be revised annually, but must also receive a review and likely a revision in each regular four-year cycle.

3.1 Continuous Maintenance

- 3.1.1 On its own initiative, a TC may revise an assigned chapter in any publishing year. Upon approval by the TC and acceptance by their HBC liaison, the revised chapter will

appear, subject to submission deadlines, in the next scheduled electronic and print *Handbook* volumes.

- 3.1.2 When the author of peer-reviewed program material indicates the material applies to a *Handbook* chapter, the TC's Handbook subcommittee will be asked to review the paper and the TC may incorporate the published material in a revision of their chapter(s).
- 3.1.3 The TCs note any identified conflict of the *Handbook's* information with proposed Society standards or guidelines during the public review period. The TC takes one of the following steps:
 - (a) Comment on the standard or guideline draft to eliminate the conflict.
 - (b) Revise the chapter to eliminate the conflict.
 - (c) On publication of the standard or guideline, revise the chapter to reference it and to explain any remaining conflicts.

3.2 Chapter Review

- 3.2.1 TCs review their assigned chapters within six months of publication of the print versions and plan the next revision during this period.
- 3.2.2 Steps in the review process are as follows:
 - (a) Shortly after publication of a volume, the Handbook Editor sends to the appropriate volume subcommittee members (1) the ARG and (2) a revision schedule.
 - (b) HBC volume subcommittee members (liaisons) then meet with their assigned TCs to ensure that the reviews begin. If a TC cannot find reviewers for a chapter, the volume subcommittee member or the Editor will assist in this area. Additional reviews may be obtained from HBC members, the College of Fellows, or others within or outside ASHRAE.
 - (c) The TC Handbook subcommittee chair collects the reviewers' written reports and sends copies to the chapter's lead reviser and their HBC liaison.

3.3 Chapter Revision

- 3.3.1 Revision follows the review and lasts up to two years. The revised chapter then receives TC approval via a recorded vote. It is then sent to the volume subcommittee liaison between March and July of the year before publication of the printed volume following the schedule set by the Handbook Editor in consultation with the volume subcommittee chair.
- 3.3.2 Steps in the revision process are as follows:
 - (a) The volume subcommittee liaison gathers lead revisers' names from the TC and forwards them to the Handbook Editor.
 - (b) The liaison checks with each lead reviser at least every six months, preferably in person at the annual and winter conferences, to be sure the revision is on schedule and to answer questions. The liaison notifies the Editor if the submission schedule needs to be adjusted.

- (c) The lead reviser sends draft revisions to reviewers and the volume subcommittee liaison. The liaison should try to reconcile any controversy that develops as a result of reviewers' comments.
- (d) On receiving the final version of the revised chapter, the volume subcommittee liaison checks that it has been reviewed and approved by the TC. If nonmembers of the TCs revised the chapter, the liaison arranges for review by the responsible TC.
- (e) The liaison checks the final draft to ensure that it complies with the Authors and Revisers Guide.
- (f) The volume subcommittee liaison acknowledges receipt of the final draft and thanks the revisers for their work.
- (g) The liaison sends the final TC-approved draft, completed checklist, and supporting materials to the Editor.
- (h) The liaison completes a commentary form for each chapter and sends a copy to the outgoing volume subcommittee chair who passes them to the incoming volume subcommittee chair and the Handbook Editor for the information of the incoming liaisons.

3.4 Addition of a Chapter

- 3.4.1 Anyone may request that a chapter be added to the *Handbook* by writing to the HBC chair or the Handbook Editor. A proposed chapter outline, as described in the ARG, should be submitted to assist with evaluation of the idea. If the HBC approves the request, it will assign the chapter's preparation to the appropriate TC. TCs may also propose a new chapter through the process described in the Authors and Revisers Guide.

3.5 Deletion or Reassignment of a Chapter

- 3.5.1 Chapters are deleted or reassigned in the following manner:
- (a) Any TC may request that a chapter assigned to it be deleted or reassigned after a recorded TC vote by writing to its volume subcommittee liaison.
 - (b) Any Society member may request that a chapter be deleted or reassigned by writing to the chair of the TC assigned to prepare the chapter. The request should include reasons and technical data, if any, for deleting or reassigning the chapter.
 - (c) The TC shall review the request and forward recommendations to the volume subcommittee liaison who shall recommend action by the HBC.
 - (d) The HBC may delete or reassign any chapter on its own initiative.
 - (e) A reference to a deleted chapter may be included in the current *Handbook* to alert readers of the location of the material in a prior *Handbook*.

3.6 Resolution of Disputes

- 3.6.1 A dispute is defined as a major difference of opinion or fact with part or all of a chapter that is brought to the attention of the HBC and which could affect the credibility or reputation of ASHRAE.

- 3.6.2 The HBC shall ensure that the dispute is handled professionally, fairly, and without bias.
- 3.6.3 The following procedure shall be followed to resolve a dispute:
- 3.6.3.1 The HBC liaison determines that a conflict is occurring within a Technical Committee.
- 3.6.3.2 The liaison brings the concern to the volume subcommittee chair, who notifies the HBC chair.
- 3.6.3.3 The volume subcommittee chair and liaison meet with the conflicting parties to attempt to resolve the situation.
- 3.6.3.4 If, at this stage, the conflict is unresolved, a Handbook Committee Resolution Team consisting of the HBC chair, volume chairs, and Director is formed by the HBC chair.
- 3.6.3.5 The Handbook Committee Resolution Team meets with the conflicting parties.
- 3.6.3.6 It is hoped the conflict will be resolved within one of the preceding steps; however, if the conflict continues, the Handbook Committee Resolution Team will vote on one of the following:
1. To accept one side, with overwhelming technical evidence.
 2. To recommend to the HBC to remove the chapter entirely.
 3. To republish the previous version of the chapter.
- 3.6.3.7 The results of the dispute are reported to the [Publishing and Education Council Products Subcommittee of the Publishing and Education Council](#).

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3.7 Procedure for Gathering and Distributing External (non-TC) Comments

Comments on the *Handbook* are encouraged. All forms of comments are accepted; written comments are preferred (e.g., by letter, fax, e-mail, Handbook Web page form). Comments received by HBC members should be transmitted to the Handbook Editor, who will distribute them to the appropriate TC(s). The Handbook Editor will acknowledge receipt to the commenter. TCs should be encouraged to communicate the results of consideration of a comment to any commenter who provides contact information and indicates a desire for such a response. Commenters should also be encouraged to attend TC or HBC meetings to participate directly in the review and revision process.

APPENDIX

(from ROB Volume 2) 2.411.003.2 Guidelines for Awards

The following guidelines for ASHRAE awards are approved: (99-01-27-51/06-01-25-08/07-03-25-01)

- All requests or suggestions for new awards, revisions to current awards, or award deletions shall be forwarded to the Honors and Awards Committee for review and

recommendation before being forwarded to Members Council and the BOD -for review and approval.

- ASHRAE awards are grouped into the following categories, each of which has its defined form of award:
 1. Personal Honors (plaque and medallion)
 2. Personal Awards for General Society Activities (plaque and lapel pin)
 3. Personal Awards for Specific Society Activities (plaque and lapel pin)
 4. Paper Awards (plaque and honorarium)
 5. Society Awards to Groups or Chapters (plaque)
- Awards will normally carry the name of an ASHRAE activity (e.g., Distinguished Service Award, Fellow, Journal Paper Award). No business, product or other commercial name shall be used for an award. Only in very exceptional instances may consideration be given to naming the award after an individual.
- Each proposed award shall be submitted to the Honors and Awards Committee with a detailed description including the name of the award, the suggested category for the award, the reason for establishing the award, and the proposed selection and awarding process.
- Initial total funding for the award shall be described in the proposal, along with provisions for future funding and inflation considerations. Funding shall be self-perpetuating and supporting for the expected life of the award.
- Proliferation of awards that would tend to detract from the worth of existing awards must be avoided. The award must first be considered as applying to an important field of ASHRAE related activity; the name of the award would then add prestige.
- Awards may be proposed by any committee, chapter, or individual to the immediate authority but eventually must pass through the Honors and Award Committee for approval prior to submission to Members Council and then to the Board of Directors. The Honors and Awards Committee will assist anyone wishing to submit a proposal for a new award. The proposal should be reviewed early in the process to allow determination for the appropriate nature of the anticipated award and meeting all necessary criteria for acceptance.

This committee shall include in their supporting material for candidates only information pertinent to the requirements for the particular award for which the candidate is being recommended. (70-07-01-11)

All voting for honors and awards of the Society shall be strictly secret and held at meetings of the Board of Directors and Members Council (not by mail ballot), and that the H&A Committee be instructed to place the necessary information for such voting before the BOD at least two months prior to the applicable meeting. (65-01-28-19/06-01-25/26-8.16)

It is the policy of the Society not to consider for approval any Society honors or awards posthumously, other than the Hall of Fame.

Handbook Committee
MBOs for Society Year 2019-2020
Chair: Suzanne LeVisuer Date: 23 June 2019

Attachment B
Handbook Committee Report to PEC

	Objective	Completion Date	Fiscal Impact	Responsible Party	Status	Comment
1	Solicit ideas from volume subcommittee chairs for process improvements.	6/20	None	HBC	Continuous	
2	Improve peer-to-peer training of incoming volume subcommittee chairs.	6/20	None	Vice Chair	Continuous	Mentoring of new members
3	Review the relevance, scope, and objectives of subcommittees.	6/20	None	HBC ExCom	Continuous	Reshape HBC to best function under the new TC structure (when implemented) in a way that serves both HBC's and TCs' needs
4	Encourage TCs to develop extra features (spreadsheets, sidebar discussions, video, etc.) for Handbook Online. Suggest using YEA members	6/20	None	HBC	Continuous	
5	Address volume imbalances	6/20	Could reduce mailing costs	HBC ExCom	In progress	Applications and Fundamental volumes are nearly twice the size of Refrigeration volume. Look at the possibility of shifting some material to a different volume. Investigating shifting some chapters between Fundamentals, Applications, and Systems (HS suggested possibly vibration and air cleaning chapters could move from Applications).
6	Improve international representation /input in the handbook process	6/20	None	HBC ExCom	Ongoing	Continue with the effort started by Don Fenton. New Zealand member added for 2024 volume subcommittee.



Historical Committee (HC)
Report to Publishing and Education Council (PEC)
ASHRAE 2020 Annual Conference / Virtual

Information Items

1 Historical Committee heard an update on the progress of all projects for 125th anniversary. All projects have been completed except one book to be promoted during the Virtual Conference and to be published in hard cover afterwards. A timeline may be published online to take the place of the print calendar.

2 Historical Committee discussed the pilot plaque project which will be installed in Orange, Texas later this year, date as yet to be determined.

3 Historical Committee listed the two names for the next Leadership Voices interviews to be filmed in either Chicago or Phoenix.

4 Historical Committee discussed the importance of including not just Presidential members but also industry innovators and leaders.

5 Historical Committee acknowledged that although they do not endorse candidates for either Hall of Fame or Pioneers of the Industry, both individuals and/or the Committee can nominate someone.

6 Historical Committee discussed the necessity of continuity of communication, to keep Regional and Chapter Historians involved in history at the Society level.

7 Historical Committee reviewed a report on the status of PAOE points on the part of chapters by regions and approved suggested changes to PAOE for fiscal year 2020-21 with the goal of continuing to encourage non-participating chapters to reach minimum or par.

8 Historical Committee discussed reinstating the Historians Newsletter and who could take over

9 Historical Committee discussed ways to disseminate information about the best way for chapters and regions and others to maintain, preserve, and store important documents and materials

10 Historical Committee suggested that Basecamp be investigated as a potential storage solution for electronic documents and files with the possibility of a template or structure being created for that specific use.

11 MBOs *Attachment A*

Respectfully submitted,

Stan Westhoff, Chair Historical Committee
06/23/2020
SW: ess

Attachment A

Historical Committee 2019-2020 MBOs – Stan Westhoff, Historical Chair 06/23/2020

Objective	PR	Completion Date	Fiscal Impact	Delegate d to:	Status	Comm ent
HC MBO 1 Develop proposals to improve the opportunities for Regional Historians to participate in Historical Committee activities.	1	Winter 2020 Orlando	None	RVC Guideline sub committee	Ongoing	Continue on-line participation of (RVCs) at Committee meetings.
HC MBO 2 Develop PAOE Recommended Changes to 2020-2021 PAOE	1	2020 Austin	none		Complete February	To get ahead of the PAOE Committee Cycle with proposal for the following year's PAOE Letter in Summer 2020.
HC MBO 3 History VC PAOE Update Summary Report at Annual & Winter Meetings to include copy similar to 2018-2019 Annual meeting	1	Winter & Annual	None	VC Report	Complete February	To encourage RVCs to target the below PAR performing Chapters in their Region based on the previous year's History PAOE Summary.
HC MBO 4 Encourage Chapter Historians who don't Attend their Regional CRC to complete the Chapter Historians Training Power Point and promote on-line workshop participation at CRCs	1	Winter 2020	minor	RVC Guideline sub committee	Complete February	Update the Chapter Historians Training PowerPoint. Add points for submittal of a completed MBO with phone discussion with RVC History prior August 30 of fiscal year. Promote on-line workshop participation at CRCs
HC MBO 5 Assist in publicizing 125 th Anniversary. Develop information of historical interest that can be presented at Society & Regional Meetings	1	Summer 2020	Major	125th Anniversary Celebrati on sub	Complete June 2020	Continue 125th Seminar and Historical Articles Promotions with PEC to support the 125th anniversary and demonstrate to members the strength in depth of our Society.
HC MBO 6 Develop proposal for publication/s to celebrate 125th Anniversary	1	Summer 2020	To Be Advised	Historical Committee	Complete February	Continue working on and supporting 125th Publications to PEC.
HC MBO 7 Foster collaboration with other international societies to improve our historical research and	4	Summer	None	Historical Committee	Ongoing	Continue work on collaboration. HC has links with similar groups in CIBSE and AiCARR - opportunity to pursue to work w/similar committees in CEN. International Institute of
HC MBO 8 Encourage younger members of ASHRAE to have interest in history-related activities of the Society	2	Summer 2020	None	Historical Committee	Complete February	Proposing to keep the PAOE line item "For a local Chapter Historical activity performed by an actively engaged YEA member"
HC MBO 9 Leadership Recall Arrange for videos at Annual meeting 2020	2	Summer 2020	Verify \$1,000 Budget ed	Historical Committee	Ongoing	Arrange two Presidential interviews. Review other potential interviewees
HC MBO 10 Digitize Archived Journals + Transactions	3	Summer 2020	Major	Historical Committee/PEC	Ongoing	Encourage digitalization of all Society Journals and Transactions
HC MBO 11 Incorporate a Women In Engineering component to the 125 Year ASHRAE Anniversary celebration	1	Summer 2020	None	Historical Committee	Complete (WIA now called Diverse)	Continue WIA PAOE Support in History
Feb 1-5, 2020 – Orlando, FL						June 9, 2020 – Virtual



**Professional Development Committee
Report to Publishing and Education Council (PEC)**

ASHRAE 2020 Annual Conference – Virtual

Information Items

1. Comparison of 2019-20 vs 2018-19 ALL course registrations:

Year	Winter	Annual	Online	In-Company	Chapter	Industry	HVAC I	HVAC II	Global Training Ctr	TOTAL
2019-20 (Orlando/)	1,137		747*	665	200	42	312	250	694	4,047
2018-19 (Atlanta/Kansas City)	747	212	260	955	600	290	548	331	730	4,673

*Does not include Free 1-hour webinar registrants (more than 7,400 to date).

2. Online course registrations increased over 187% in response to the COVID-19 Pandemic. Staff efforts quickly pivoted to handle the tremendous increase in online course registrations.
3. The committee will oversee development of HVAC Design Training: Level I – Essentials training offered as comprehensive online modules. Completion expected in late summer.
4. In response to PEC MBO#2, the PDC provided Instructor Qualifications and Search Criteria. (Submitted to Functional.)
5. Work continues with the cognizant TC members to review and revise six (6) Self Directed Learning (SDL) courses.
6. Two (2) new courses, initially scheduled for presentation in Austin, are now available in the ALL course catalog:
Complying with Standard 90.1-2019 (6-hours)
Smart Grid Systems, Applications and Integration with the Built Environment (3-hours)
7. Professional Development Committee 2019-2020 MBOs are included as *Attachment A*.

Respectfully submitted,
 Charles E. Henck, Professional Development Committee Chair
 June 25, 2020

ATTACHMENT A

Professional Development Committee

MBOs for Society Year 2019-2020

Chair: Charlie Henck **Date:** June 24, 2019

Objective	SP	Complete by	Fiscal Impact	Responsible Party	Comment/ Status
1. Review new strategic plan for items that apply to PDC and develop a plan to implement.		Jun-20	None	Planning Subcommittee	In progress with assigned ad hoc
2. Develop topics and RFPs for an additional (3) practical applications courses to 'fill the gaps' in our current offerings for developing young engineers.		Jan-20	None	Planning Subcommittee	In progress New topics in discussion.
3. Review all SDLs and issue RFPs for the ones that need updating.		Jun-20	None	Operations Subcommittee	SDLs sent to TCs for review. Progress in place to revise three.
4. Review all existing courses and sunset those that have not been used in 5 years or recommend updates		Jun-20	None	Operations Subcommittee	Complete.
5. Update of the Reference Manual		Jun-20	None	Operations Subcommittee	Draft in progress to reflect changes related to restructure.
6. Every course reviewed by PDC Liaison prior to presentation– Quality check		Jun-20	None	Operations Subcommittee	Complete. Continuous.
7. Improve marketing of courses/branding. Work with ASHRAE marketing for improvement		Jun-20	TBD	Planning Subcommittee	Work in progress to provide course information to chapters.
Additional Recommendations for Strategic Planning: Not at this time					

Attachment B
 INSTRUCTOR PAY SCALE PROFESSIONAL DEVELOPMENT
 SEMINAR (6-HOURS)

	<u>Honorarium</u>		<u>Transportation</u>
	1 Instructor	2+ Instructors	
ASHRAE Conference	\$1,000	\$800	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
In-Company Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Chapter Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Online	\$1,200	\$900	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Industry Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
ASHRAE Conference	\$700	\$500	
In-Company Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Chapter Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Online	\$700	\$500	
Industry Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
HVAC DESIGN TRAINING			

	<u>Honorarium</u>	<u>Transportation</u>
ASHRAE to Public	\$1,500	Airfare, Lodging
In Company	\$1,500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location

GLOBAL TRAINING CENTER – DUBAI

	<u>Honorarium</u>	<u>Transportation</u>
1-Day	\$850	Airfare, Lodging
2-Day	\$1,700	Airfare, Lodging
3-Day	\$2,550	Airfare, Lodging

NOTE: Rates for training in the Middle East and in Europe are set to reflect the market in which the training is offered and are aligned with registration fees, competitive pricing, and availability of budgets for training by the respective customer base.

Publications Committee Report to
Publishing and Education Council
Thursday, June 25, 2020, 7:00-11:00 a.m.

Attachment M June 25, 2020

Action Items for PEC

(None)

Information Items

Major Motions Passed:

1. On a conference call on April 28, 2020, the Publications Committee voted to approve that the proposed children's book *Lucy's Work Day Adventure* move forward to the Director of Publications and Education for publication.
2. During the Publications Committee 2020 Virtual Conference meeting on June 9, 2020, the committee voted to conditionally accept PTAR 1 (re: revising the 1998 publication *Application of Manufacturers' Sound Data*) and is forwarding that vote outcome to RAC.

Other:

1. An action item has been assigned to Sarah Foster, *ASHRAE Journal* Editor, and Tani Palefski, *ASHRAE Journal* Associate Editor, to update the Publications Committee Reference Manual to reflect the current practices for peer review of articles submitted to *ASHRAE Journal*.
2. An action item has been assigned for a subcommittee to generate a market survey that will be sent to members/customers to determine the market need/demand for a series of simple, straightforward application guides on various HVAC topics as suggested by Presidential Member Tim Wentz in June 2018.
3. The committee had been assigned PEC MBO #4, but it was put on hold when the committee was informed after the Orlando conference that Functional Subcommittee was also working on this MBO. At this Virtual Conference, the committee has responded to Functional Committee, who had completed the three-year performance evaluations of existing publications with Mark Owen and who had drafted evaluation criteria for Publications Committee's feedback.
4. Updates on the Publications Committee MBOs for the 2019-2020 Society year are included in **Attachment A**.
5. The Publications Committee MBOs for the 2020-2021 Society year are included in **Attachment B**.

Respectfully submitted,
Chee S. Ow, Chair
Publications Committee
10 June 2020

Publications Committee Report to Publishing and Education Council
Attachment A

Publications Committee
MBOs for Society Year 2019-2020
Chair: Chee S. Ow Date: 10 June 2020

Objective	SP 2019	Compl. by	Fiscal Impact	Resp. Party	Comment/Status
Establish evaluation criteria for Publications Topic Acceptance Request (PTAR) submissions in line with RAC liaison processes	1b	June 2020	Nil	Roberto Aguilo and Hugh McMillan (Chair)	Completed and sent to RAC staff liaison, 5/5/20
Review Pub. Committee Orientation materials	3b	June 2020	Nil	Rennie Tisdale (Chair) and Hugh McMillan	Completed 8/20/19
Determine international readership needs for ASHRAE Journal	1b, 2c	June 2020	Nil	Vikram Murthy (Chair) and Adeeba Mehboob	Ongoing (related to below recommendation for strategic planning)
<p>Additional Recommendations for Strategic Planning: In line with Goal 3 of the 2019-2024 ASHRAE Strategic Plan, Publications Committee recommends that ASHRAE develop a survey tool that collects feedback from our grassroots levels, including our international membership, with respect to their product needs (books, <i>ASHRAE Journal</i> articles, apps, and other tools) and to link this information back to TAC council and other relevant sections for their further actions.</p>					

SP 2019 = Strategic Plan 2019 Initiative addressed by objective

Publications Committee Report to Publishing and Education Council Attachment B

Publications Committee

MBOs for Society Year 2020-2021
Chair: Hugh D. McMillan III Date: 10 June 2020

Objective	SP 2019-2024*	Compl. by	Fiscal Impact	Resp. Party	Comment/Status
Reduce conference calls to bimonthly	3-3	July 2020	None	McMillan	Streamline committee operation by optimizing quantity of meetings. Discuss ASHRAE Journal Articles by exception only, meaning only if there is something exceptional to discuss about a particular article.
Reorganize Planning Subcommittee	3-2, 3-3	January 2021	None	Mehboob	Planning Subcommittee to meet for 1 hour on Saturday of Winter and Annual meetings. May need to conduct some business between face-to-face meetings. Remainder of time Saturday will be dedicated to PTAR Subcommittee.
Apply Evaluation Rating Sheet rubric to all existing special publications	3-1	June 2021	None	TAC Section Liaisons/Staff	Each TAC Section Liaison should apply the recently approved Special Publications Evaluation Rating Sheet for the TCs to which they are the liaison. This will require input from staff on some items of the rubric.
Institutionalize PTAR Subcommittee operations	3-2, 3-3	June 2021	None	Thrasher	Review and edit as necessary the PTAR Process and Forms and insert any required description in the MOP.
Mentors reach out to new members	3-2, 3-3	September 1, 2020	None	Tisdale, Murthy	Ask if any questions; review new member orientation PowerPoint if desired by new member.
Additional Recommendations for Strategic Planning:					

*SP 2019-2024 = 2019-2024 Strategic Plan Initiative

Strategic Plan Notes:

Initiative 3: Organizational Streamlining

- Desired Outcome 1 (3-1 above): Evaluate the staff/volunteer support structure to optimize volunteer engagement, efficiency and effectiveness of the Society (e.g. volunteer efficiency). Present and implement findings to support the delivery of key products and services (e.g. Guidelines, Standards, Research, Publications, and Programs) with less cost, reduced time to market and an advancement in market responsiveness.
- Desired Outcome 2 (3-2 above): Redesign leadership/governance structure to support increased operational efficiency and effectiveness of the organization.
- Desired Outcome 3 (3-3 above): Targeted streamlining for committee operational effectiveness through the reduction of overlap and optimization of quantity, scopes.

PEC Restructuring

June 2019

Ad Hoc Members:

Julia Keen (Chair)

Dan Dettmers

Charlie Henck

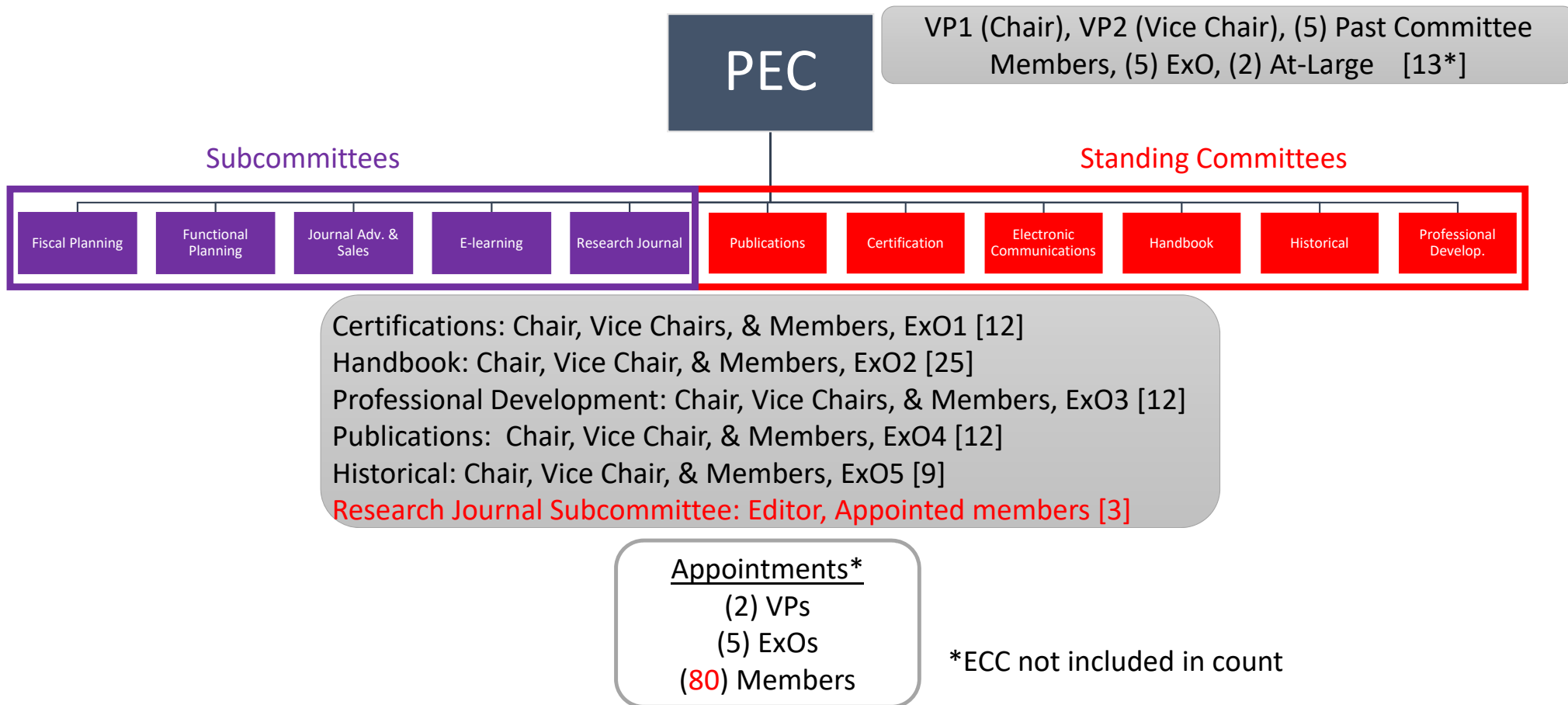
Jin Jin Huang

Restructuring Goals

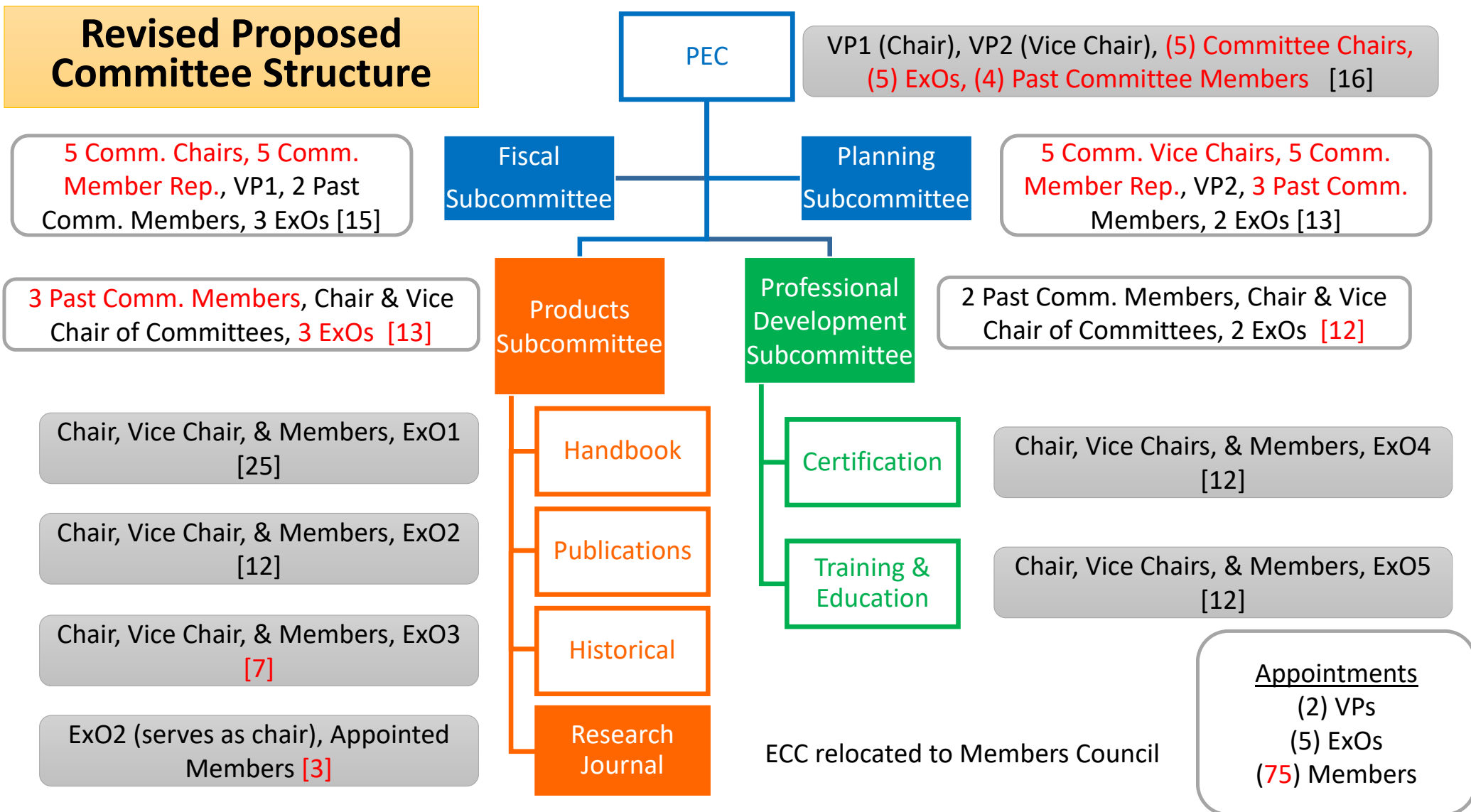
- Reshape the role of PEC and its subcommittees' functions
- Efficient use of volunteer and staff time
- More effectively use volunteer talent and knowledge to provide direction on all publication and education member products
- Improve communication and planning between all things publication and education related
- Build in an evaluation process of committee progress on Council and Society Strategic Plan
- Organize in a logical manner all ASHRAE PEC responsibilities
 - Staff transition
 - New responsibilities as ASHRAE evolves and adds services

Existing Committee Structure

Not addressed: training centers, external education, university courses, etc.



Revised Proposed Committee Structure



PEC

(Monitor and Planning)

Planning

- Set strategic direction
- Develop MBOs
- Prioritize resource allocations
- Ensure alignment with Society Strategic Plan
- Identify future PEC leadership
- Maintain MOP & ROB of PEC
- Assist with committees' MOP & ROB
- Act as a resource for rule interpretation
- Assist w/ motions
- Review MBO progress
- Recommend action when goals are not met
- Evaluate & document progress toward Society Strategic Planning goals

Fiscal

- Manage budget
 - Monitor Revenue and Expenses
 - Review for potential efficiencies
- Provide data to help drive decisions
- Advertising
 - Recognize advertising opportunities
 - Evaluate advertising and sales yield and potential
 - Job board
 - Supplier Directory
 - Supplier Webinars

Products

(Monitor, Planning, Review of Bookstore and Portals & Point of contact for other society pubs)

Handbook	Publications	Historical	Research Journal Subcommittee
<ul style="list-style-type: none">• Manage the development and revision of Handbook content• Provide effective means for content delivery• Assist TC's to identify new content developers (authors)	<ul style="list-style-type: none">• Books• AEDGs• Charts/Tools• ASHRAE Transactions• Proceedings• ASHRAE Journal• HPB Magazine• ASHRAE Insights and eSociety• Electronic Pubs - Apps/Data Bases/Software	<ul style="list-style-type: none">• Archives (including Library)• Content Support/Development (research, sessions, papers, books, etc.)• Landmarks• Anniversary/Special Event Projects	<ul style="list-style-type: none">• S&T for the Built Environment

Professional Development (Monitor and Planning)

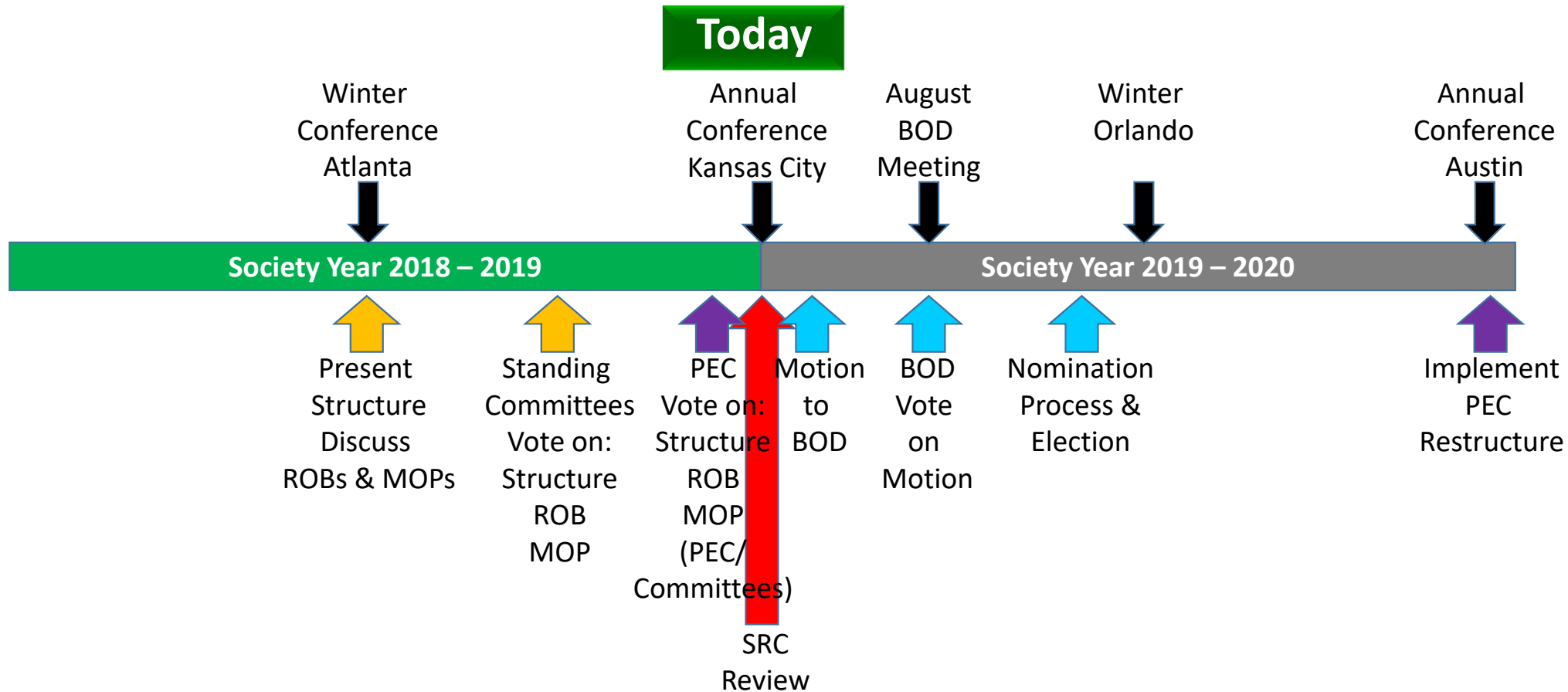
Training and Education

- E-learning
- Certificates
- Instructor Led Courses
- Self-Directed Learning
- In-Company Courses
- Chapter Resources
- Develop strategy for the evaluation of existing and need for additional training centers
- Assist in the review of training centers – effectiveness and financial impact
- Assist in identification of courses for each training center
- University Course(s)
- ASHRAE Career Enhancement Curriculum Program

Certification

- Maintain existing certifications and development of new
- Evaluate market demand
- Develop strategy for evaluation

Implementation Time Line



Deadlines and Deliverables

- Monday, June 24 - PEC Functional Subcommittee vote on:
 - Changes to PEC MOP and ROB and, if approved, forwarded to PEC
 - Changes to Committee ROBs and, if approved, forwarded to PEC
- Tuesday, June 25 - PEC vote on:
 - Changes to PEC MOP and ROB and, if approved, forward to SRC and BOD
 - Changes to Committee ROBs and, if approved, forwarded to SRC and BOD
- Tuesday, June 25 - SRC vote on MOP changes
- Tuesday, June 25 - SRC vote to recommend changes to the ROBs to the BOD
- Wednesday, June 26 - BOD vote on ROB changes
- January 2020 –
 - Changes to committee MOPs & Reference Manuals approved by committee
 - Committees submit to PEC Functional Subcommittee for approval
 - If, approved, Functional Subcommittee forwards to PEC for approval

**REPORT TO THE BOARD OF DIRECTORS
From the Publishing & Education Council
As of June 25, 2020**

Recommendations for Board Approval:

1. That the BOD approve the ASHRAE Units Policy (ROB 1.201.002):

1.201.002 Units Policy (82-07-01-30/84-06-21-39/85-06-27-41/87-01-19-28/88-05-21-37/90-02-14-10/90-06-14-31/91-01-24-51B/92-07-02-39/93-07-01-54/94-01-26-57/94-06-30-32B/95-02-02-38/95-06-29-29/01-06-28-38C/04-06-30-13/07-06-27-22/08-06-25-14/09-06-24-14/11-06-29-07/12-06-27-20)

1.201.002.1 The units use or application policy shall include, as a minimum, time-dated directions on the use of SI and I-P in all ASHRAE publications.

1.201.002.2 TC 1.6 shall serve as the authority on SI and I-P usage and application.

1.201.002.3 Research projects; codes, standards, guidelines and addenda hereto; special publications; Insights articles; Journal articles; and Handbooks shall be prepared using the International System of Units (SI) and/or inch-pound units (I-P) in formats approved by the Publishing and Education Council.

1.201.002.4 The Publishing and Education Council shall review annually the approved formats to be used in ASHRAE publications, considering suggestions from members and committees, and shall establish any changes in the approved formats.

1.201.002.5 The Publishing and Education Council shall consider this Units Policy annually and shall recommend to the Board of Directors the formats to be used in ASHRAE publications.

A. The format for ASHRAE publications shall be dual units, except in cases determined by the Publishing and Education Council, where two separate versions are to be published, where one is rational SI and the other is rational I-P. For selected ASHRAE standards and guidelines, the Standards Committee may approve use of SI units only.

B. In dual unit publications, the units used in calculating the work being reported shall be listed first. The alternate system of units should follow in parentheses. Authors shall round off equivalents in the alternate system of units so that they imply the same accuracy as is implied with primary units.

C. Exceptions require the approval of the Director of Publishing and Education.

1.201.002.6 Handbook volumes shall be published in separate SI and I-P editions.

1.201.002.7 *Science and Technology for the Built Environment*, as ASHRAE’s international research journal may publish papers in dual units or, in cases where the original research being reported was conducted in SI units, in SI units only.

Background: The ASHRAE Units Policy is required by the PEC Rule of Board to be reviewed and reconfirmed at the annually. *(PEC Approved 12-0-0 CNV)*

Fiscal Impact: None.

Information Items:

1. PEC approved the Strategic Business Development Ad Hoc’s initiatives and action plan as shown in Attachment A.
2. PEC voted unanimously to discontinue the print and digital publication of High Performing Buildings (HPB) magazine and fold its content into ASHRAE *Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars.
3. In response to a motion from Technology Council, PEC will make the ASHRAE Residential IAQ Guide available for free download to the public. In response to another motion from Technology Council that all ASHRAE standards be made available for free online read-only access, PEC assigned staff to study in detail and report on the fiscal impact of such availability.
4. The council received a new dashboard for PEC performance to fulfill its MBO #5 (Attachment B). This dashboard will be updated on a monthly basis for the council and the Board.
5. The status of the council’s MBOs is shown in Attachment C.



1 July 2020
Date

Chair



PEC Ad Hoc on Strategic Business Development

FINAL REPORT – JUNE 15, 2020

AD HOC COMMITTEE MEMBERS

STEVE COMSTOCK

HUGH CROWTHER

BILL DEAN

MARK OWEN

JON SYMKO

MEGAN TOSH

TIM WENTZ

ALICE YATES

Ad Hoc Scope and Background

ASHRAE revenue streams from publications and educational products are being challenged by a rapidly changing market and culture. Our Society needs to review the business models of each of its product and service offerings and identify ways to increase profitability and diversify its portfolio. From this background the PEC Ad Hoc on Strategic Business Development has been created to research, evaluate and recommend opportunities for enhancing PEC revenue.

The ad hoc committee's investigation process includes three steps with respect to the products and services provided by PEC;

1. Determine where we are today
2. Ascertain where we want to be
3. Develop a plan to attain our goal

The preliminary report¹ proposed looking at ASHRAE's products and services through a financial lens, as does most of our industry, using gross margin as one of the guiding metrics. As found in the preliminary report, we are defining gross margin as Revenue minus the direct costs to provide product/service that varies with volume and minus the staff labor directly associated with product/service. As an example, if Handbook revenues are \$100 and it costs \$50 to print the book, \$5 to ship the book and \$25 of staff labor, the gross margin would be $\$100 - (\$50 + \$5) - \$25 = \$20$ with a gross margin percentage of 20%.

Moving to a financial perspective is a fundamental, cultural change for ASHRAE, as we have historically used an accounting process to evaluate products. The first two steps above were addressed in the preliminary report and provide a new perspective of where we are today and where we want to be in the next 3 to 5 years, as illustrated Table 1 below, relative to PEC's products and services.

	Publications	Advertising	Education	Certification	TOTAL
Actual Revenue	\$ 3,042	\$ 4,074	\$ 1,870	\$ 226	\$ 9,212
Actual Gross Margin (\$)	\$ 969	\$ 145	\$ 149	\$ (141)	\$ 1,122
Actual Gross Margin (%)	32%	4%	8%	-62%	12%
Target Revenue Goal	\$ 4,000	\$ 4,100	\$ 2,500	\$ 500	\$ 11,100
Target Gross Margin (\$)	\$ 1,280	\$ 205	\$ 800	\$ 50	\$ 2,335
Target Gross Margin (%)	32%	5%	32%	10%	21%

Note: Revenues shown are x1000.

Table 1

In analyzing the four revenue streams of PEC from a financial basis revealed a completely new perspective of how each revenue stream is performing. Publications is viewed as performing at a high level with a 32% gross margin. As a result, its target gross margin remains at the same level. Advertising is undergoing a dramatic change in virtually every industry as we move from a print to a digital environment. Comparing advertising across industries, it is felt that Advertising is performing at an acceptable level and thus its target also remains virtually unchanged. Inasmuch as both Publications and

¹ A preliminary report, dated Feb. 17, 2020, addressed the first two steps and can be found at <https://unl.box.com/s/lgv8kgw5rfd8vsbrtppmy4f7uu7udtn>

Advertising are performing at an acceptable gross margin, our future strategy will be to grow revenue. Education and Certification are both areas of great opportunity as they appear to be operating below their potential with a gross margin of 8% for Education and -63% for Certification. Education particularly seems to have lots of upside, especially with governments supporting training and education with significant funding. We have accordingly set its target gross margin to be equal to that of Publishing at 32%. Certification is obviously underperforming, notwithstanding the fact that the program was originally presented to the Board as a member benefit and not intended to be a profit center. Even though Certification may well have a low margin under the best of circumstances, the Certification margin can easily be augmented by our education mission. Certification is an important member benefit and we believe that it is possible to significantly improve its performance by reconsidering its business model together with a closer and more dynamic relationship with our education programs. Our review of industry certification programs revealed that most organizations don't make their money on certification, they make money on training and education. Accordingly, we are recommending a target gross margin of 10% for Certification.

To truly understand the choices being made, it is important to go beyond the margin a product or service can create and also consider the development cost and the time to recoup the investment. To assist in the implementation of the financial perspective, we are recommending that Finance Committee use a single analysis form to evaluate all services and products.

Action Item #1 – Recommend that Finance Committee adopt the use of a single analysis form across all ASHRAE products and services to include gross margin dollars, gross margin %, payback and other suitable metrics. An example of such a form can be found in Appendix A.

Action Item #2 – Recommend that Finance Committee reconfigure their accounting system to automatically produce financial data, including gross margin in dollars and percentage, for all products and services.

The Importance of the Transformation

The world has changed fundamentally due to the crisis created by the COVID pandemic. There is no going back to “business as usual”, for either the world or for ASHRAE. We have long held that ASHRAE's future is a digital future. Incoming President Chuck Gulledge will provide his vision for our Society at this annual meeting and his theme makes it abundantly clear that the pace of change is accelerating inexorably towards a virtual future including both design and construction.

In many respects, the COVID pandemic has further magnified the need to transform to a digital future, as evidenced by the fact that this report is being presented in a digital platform at our first virtual annual conference. These abrupt changes have also revealed a significant weakness in ASHRAE's financial platform, as shown in Table 2 below. Approximately 21% of ASHRAE's revenue is found in one revenue item; the yearly Exposition. Any change in the revenue generated by the Expo will have a very significant impact on ASHRAE inasmuch as it has a 100% margin (no expenses). Said another way, a \$1 million dollar miss in Expo revenue automatically translates into a \$1 million dollar miss in gross margin revenue. This is critical as the gross margin dollars are used to offset ASHRAE's general and administrative overhead. A revenue stream that constitutes 21% of total revenue exposes ASHRAE to significant amount of risk, as we are now realizing. The point of this illustration is clear; it is the margin

dollars that are important. Revenue is simply a necessary evil one has to deal with in order to get to margin dollars, which tell the real story of product/service performance.

The global economic crisis is still evolving and its true impact is uncertain. What is certain is that PEC must play an important role in replacing any lost revenue if ASHRAE is to enjoy a strong financial future.

Revenues (x1000) & Margins (SY 18-19)				
Category	Total Revenue	% of Total	Gross Margin \$	Gross Margin %
Membership Dues	\$ 8,151	28%	\$ 1,470	18%
Exposition Income	\$ 5,976	21%	\$ 5,976	100%
Advertising Income	\$ 4,074	14%	\$ 145	4%
Publication Sales	\$ 3,042	10%	\$ 969	32%
Education	\$ 1,870	6%	\$ 149	8%
Certification	\$ 226	1%	\$ (141)	-62%
Meetings & Seminars	\$ 1,589	5%	\$ (846)	-53%
Contributions	\$ 2,405	8%	NA	NA
Other	\$ 1,711	6%	NA	NA
REVENUES	\$ 29,044	100%		

Table 2

The Transformation Process

These unprecedented times have thrust ASHRAE into an entirely new environment highlighted by a global economic crisis. It is well to recall that the Chinese word for ‘crisis’ is comprised of the symbol for ‘danger’ coupled with the symbol for ‘opportunity’. Dynamic leaders always focus on the opportunity, as must ASHRAE, if it is to create a new financial platform that is secure, robust and viable. Many opportunities will manifest themselves during these uncertain times. For example, the need to save on energy costs, an ASHRAE strength, will be greatly amplified as firms, universities and governments struggle with lower revenues and higher expenses caused by the pandemic. The crisis will call for ASHRAE to transform how we view our products and services if we are to unlock their vast economic potential.

Moreover, our members are best served if ASHRAE enjoys a strong, stable financial foundation. Our Ad Hoc has recommended the above gross margin targets to create that foundation. Further, the Ad Hoc has identified three additional transformational changes that, taken together, have the potential to produce the type of financial platform ASHRAE will need in order to accomplish our mission in the future. The transformational changes recommended for PEC’s products and services are:

- Create a market-driven business model of product/service development that focuses on the needs and expectations of clients
- Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value

- Develop a sales strategy to sell ASHRAE technology B2B in a digital world

In order to effectively demonstrate how these proposed changes might be implemented by PEC, we divided the Ad Hoc into four work groups, each of which was tasked to develop a “mini-business plan” on four different PEC revenue streams, as listed below:

- Training and certification
- The digital universe/Advertising
- Building EQ
- Royalties and custom codes

The sole purpose of the four mini-business plans is to demonstrate implementation paths from a financial perspective; that is, how the PEC products and services can improve their gross margin. The four mini-business plans can be viewed separately in Appendix B, C, D and E.

Transformation Implementation Paths

Create a market-driven business model of product/service development that focuses on the needs and expectations of clients

Committing to a business perspective in making decisions requires that the voice of the customer needs to be our prime consideration in the development of PEC products and services. Otherwise, we run the risk of developing a quality product that no one wants to buy. ASHRAE has a long history of making exactly that mistake. Producing what the market wants, not what we like, essentially reverses the flow of decision making in ASHRAE. We must commit to pulling information from industry regarding their needs and expectations and then delivering a product that meets those expectations. An ASHRAE competitive advantage is our ability to generate content, thus this strategy plays exactly into our strengths.

ASHRAE has historically waited for the phone to ring before a sale is made. A cultural shift is required wherein our business perspective will pull information from industry, developing products that meet a specified need or expectation. This new perspective, used by most organizations that compete in a free market system, treats clients as business partners, as opposed to the passive approach we have employed in the past. Using a business perspective and developing products and services based on industry needs does not void the charitable function of our Society. Rather, it recognizes the need to generate revenue in a free market system to allow the charitable work of our Society to proceed forward.

Examples on how to implement a transformational change in a market-driven business model follow:

- Royalties and Custom Code Work Group

This work group notes that ASHRAE is often asked for “*assistance in development and review of state and local building codes including those from smaller communities that may only have one person who is responsible for all building codes*”. Examples are also available in larger communities, such as Vancouver, British Columbia that eventually found it necessary to develop their own software to assist its plan reviewers check for compliance with ASHRAE Standard 90.1. Most communities that adopt ASHRAE standards modify or adapt them to local conditions, climate or culture, necessitating the need for assistance in reviewing and developing these modified codes. This is clear evidence of global, market-driven needs that should be the driver

of ASHRAE product and service development. ASHRAE's current focus is very internal; working only on the promotion and adoption of ASHRAE Standards. While ASHRAE has created some custom codes, including for Kuwait, a more fully develop program would enable ASHRAE to take greater advantage of this market demand. A more detailed explanation can be found in the Royalties and Custom Code mini-business plan, Appendix B

A rare opportunity exists that makes this market-driven approach even more attractive. The current pandemic will undoubtedly cause many communities across the world to re-evaluate and adapt existing codes and standards to provide greater protection for building occupants from pathogens, such as SARS-CoV-2. ASHRAE needs to be on the leading edge of this sea change, which could provide significant revenues across our product lines. Further, this market-driven approach leverages some of ASHRAE's competitive advantages, including our "go to" reputation in the standards writing arena, our 57,000 member 'sales force' spanning 132 different countries, and the fact that we are often the first organization contacted inasmuch as we wrote the standards. One hindrance for short-term opportunities and revenues is the severe fiscal situation facing most state and local governments. This needs to be carefully considered as ASHRAE balances its important mission with revenue needs.

A separate Presidential Ad Hoc committee was formed by President Boyce to *"provide assistance, through fee-based consulting services, for code and standards support services and identify a mechanism to provide services"*. The Board approved the plan put forward by the Code/Standard Jurisdiction Support Services Ad Hoc. The report approved by the Board is attached in Appendix F. The Presidential Ad Hoc recommended a separate staff person to coordinate these services. This could easily grow into a separate, revenue-seeking department with ASHRAE volunteers as paid consultants, authorized dealers, partner organizations or any number of similar organizational structures.

This Work Group fully supports the work of the Jurisdictional Support Ad Hoc and recommends that their recommendations be implemented in accordance with the transformational changes identified in this report, as identified below:

- A financial review be conducted, including anticipated gross margins, using the form found in Appendix A. The gross margin goal set by the Work Group for this revenue stream is 30 – 35%.
- Create a portfolio or "bundle" of services to sell that enhances the value of products across ASHRAE silos. In this particular case, it would be logical to create a portfolio of services that includes standard/code development, standard/code review, education, training, and certification and/or badging. This would require this market-driven service to be in close communication and collaboration with Tech Council, Pub/Ed Council, Government Affairs Committee, and the Certification Committee to name just a few of the major players within ASHRAE.
- Much of the product and services can be provided online, opening up opportunities for selling B2B in a digital world. There are organizations in this area that may serve as partners, such as ICC and IAPMO, both of which already have a relationship with ASHRAE. Both ICC and IAPMO develop model codes and ASHRAE does receive approximately \$50,000 to \$65,000 in royalties from ICC. In exploring the B2B digital opportunity it would probably be well to continue the relationship with ICC to enhance that revenue stream, while also attempting to create a similar business opportunity with

IAPMO. The B2B digital approach has its greatest opportunities outside of North America, where less competition exists. Notable successes have already occurred in Kuwait and negotiations are underway with other countries outside North America.

Action Item #3 – Adopt a product/service planning process that is market-driven. The process should be developed by a cross-Council team and include marketing. To leverage ASHRAE strengths, the process should include the appropriate path(s) within ASHRAE to optimize the development and marketing of the product/service identified by the process.

Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value

Another one of ASHRAE’s competitive advantages is that it produces a very wide diversity of technical products, much more so than many other non-profit organizations. Additionally, these products are of very high quality and enjoy a significant branding advantage due to the high regard with which ASHRAE products are held. These competitive advantages are not leveraged well, however, in that most of ASHRAE’s products and services are “stand alone”. Our competitive advantage could be magnified many times over by creating portfolios or “suites” of complementary products. For example, packaging training, education, standard sales along with a certification program adds value to the portfolio that is greater than the sum of its parts.

PEC is uniquely situated to cut across all parts of ASHRAE and eliminate the “silo effect” that has prevented ASHRAE from realizing the full market value of its products and services. Coupled with our recommendation to transition to a financial perspective will allow us to analyze sales and margin figures for portfolios instead of a single product or service. Producing portfolios will also open new opportunities and markets to ASHRAE, which is critical to our need to greatly expand our revenue streams. Additionally, coupling the concept of product portfolios with the transition to a business-oriented perspective will make PEC the driver of product development, based upon client needs.

- Building EQ Work Group

This Work Group noted that the Building EQ product was generated internally, without the benefit of market-driven input, and would then also serve as a good example of what happens when a non-market driven product is brought to market. However, there is sufficient evidence that Building EQ does have strong market potential, particularly among large, campus-style owners such as universities, municipalities, military, healthcare and other similar entities. A preliminary survey of potential organizations in the large, campus-style market reveals over 32,000 potential clients just in the United States. Many, many more would exist internationally, of course. We know this market segment has a very real need for energy savings, consistent energy audits that allow comparisons amongst existing building stock on their campus, an ability to measure and eliminate the “energy gap” between design and actual performance, and a method of quickly and accurately identifying energy saving measures. Building EQ is not currently configured to create a custom portal to meet these needs, assuming a custom portal is the product the market wants.

The path towards a financial revival for Building EQ is fairly straightforward under the new transformational changes recommended in this report. That path includes the following steps:

- Conduct an extensive market survey focusing on the needs and expectations of the organizations within the large, campus-style market with respect to energy audits, comparing existing buildings within their existing stock, and identification of energy saving measures within a customized online portal. Finding the needs of the customer is a critical first step.
- Analyze how Building EQ would have to be modified to address the needs discovered in the survey.
- Develop a portfolio of ASHRAE products and services to license, for an annual fee, to create a custom, online market to meet the needs of the client. Those products and services are likely to include:
 - Educational offerings in energy audits, Standards application and other similar topics.
 - Training for the users of Building EQ, individuals conducting the energy audits, and other similar topics.
 - Books, guidelines and standards relating to the Building EQ program
 - Certification or badging for those client employees using Building EQ
 - Outreach services for those clients that live in states or communities that require building benchmarking and/or disclosure. This outreach effort would ensure that their custom portfolio meets the statutory provisions of the regulations.
- Market the customized portal to the appropriate clients, instead of “waiting for the phone to ring”.

By building a portfolio or “bundle” of products it is possible to amplify the value such that the whole is much more valuable than the sum of the parts. Using a portfolio approach, as outlined above, and assuming we gain only a 1% market share in the United States, coupled with a \$2,000 annual license fee, we could generate an estimated \$261,000 a year in gross margin at a rate of 41%. These estimates are for illustration purposes only and would need to be fully vetted by the Building EQ committee. A more detailed explanation can be found in the mini-business plan for Building EQ, found in Appendix C.

- Training and Certification Work Group

Training & Certification are two key components of Pub/Ed Council (PEC) that, while evaluated independently, are intertwined for ASHRAE members and customers. Certification, if properly leveraged, should create a demand for training as well as other ASHRAE products, such as Standards, guidelines and other similar products. As individuals pursue certification to distinguish themselves from their peers and companies support certification of their employees, training grows beyond the opportunity to learn technical content or skills and is supported by our educational and publishing products.

Through the lens of this relationship between Training & Certification ASHRAE could offer a wide variety of products and services as a bundle or portfolio to increase margins along the whole product line.

Opportunities to increase the training and certification revenue streams include:

- Micro-credentialing - The potential of certification in the engineering community globally is unrealized. More sales could be achieved by reaching out to those who desire a credential but cannot invest the time or money required to earn a certification under the current program. Micro-credentials, or badges as they are referred to in some industries, offer the benefits of recognition but with a lower effort on the part of ASHRAE and consumers when compared to Certification. The global market has a high demand for third-party recognition of expertise, mastery, qualifications, and competencies. ASHRAE can offer this third-party recognition in related topic areas. To achieve success, micro-credentials should be less costly to develop than ASHRAE's current Certifications, quicker to bring to market, and easier to administer (especially outside of North America). Micro-credentials do not need to be ANSI accredited certifications.
- Training Portfolios - Developing the relationship between credentialing and training, a suite of training courses can be offered as a package to those seeking a specific credential. These training portfolios could be focused on a particular topic, such as commissioning, or around a goal, such as training a recent graduate for an entry-level consulting engineering job. Portfolios would be supported by employers who wish to upskill their organization though also available to individuals. Training portfolios with a certification opportunity at the end also provide an opportunity for networking for members. Courses can be taught live as well as on-demand, offering interaction between participants and adding value to the attendee.
- Subscription Services – A subscription model for training courses offers a lower price point per time period to customers while providing a constant stream of revenue for ASHRAE. A subscription training option could offer web-based on-demand instruction that is interactive and more sophisticated than current online offerings. Online instruction is increasingly critical in society and offers training opportunities to global communities less able to travel to central locations. Additionally, the ability to provide training courses in multiple languages grows as ASHRAE relies less on travel to deliver instruction. As mentioned in discussion of training portfolios, subscription-based training can offer the opportunity for participants to interact and learn together, either through social media or live sessions. Many ASHRAE members and volunteers attribute their attachment to ASHRAE to networking and fostering the human connection – especially in online instruction – is essential to providing value consistent with ASHRAE's brand and offering a robust product.

A more detailed description of the Work Group's recommendations are contained in the mini-business plan found in Appendix D.

Action Item #4 - Align products and services across ASHRAE boundaries while simultaneously developing suites or portfolios of products to meet market needs. Alignment shall include addressing pricing and costs, along with coordinating regional and Society delivery of products and services.

Action Item #5 – Extend and further develop a PEC business model that includes governmental and non-governmental entities to deliver ASHRAE products. The business model should include the ability to scale our educational offerings, create revenue streams by licensing or selling ownership of products, hiring an ASHRAE contract officer, the investigation of potential partners.

Develop a sales strategy to sell ASHRAE technology B2B in a digital world

Our incoming president, Chuck Gulledge, has a clear vision of the digital future of ASHRAE and our Society's role in that digital future. The worldwide reaction to the current pandemic has only accelerated the move to digital platforms across our industry, which hold tremendous opportunities for those willing to take a risk and seize the opportunities that manifest themselves.

- Digital World/Advertising Work Group

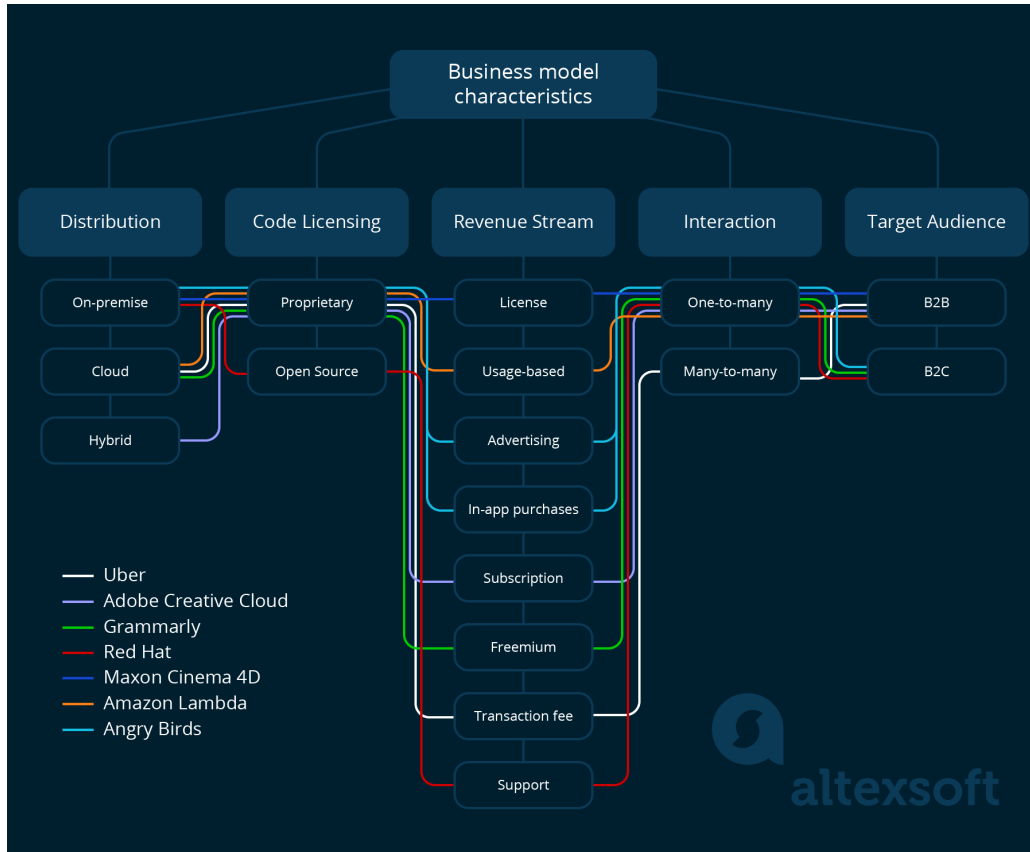
More and more ASHRAE technology will be delivered to the marketplace digitally. Today, most of ASHRAE's technology and effort is delivered in written form (a book or PDF) online. This misses out on the great opportunity of a full online experience. For example, an interactive tool that reviews a design or specification for a project to check compliance with Standard 90.1 would be a very powerful tool that promises to have great value in the marketplace. The challenge is how does ASHRAE get compensated for delivering its valuable technology "via the web"?

- Advertising - Table 3, which follows, further demonstrates that advertising is one of PEC's success stories and the goal is to have it maintain its revenue and margin going forward. Although advertising at ASHRAE is a well-established piece of machinery and has delivered great results for the organization for a long time, trends are undergoing a great deal of change as the team adjusts from a print to a digital environment. Right now, the Journal being in print is an advantage as most of our competitors have exited the market and a magazine that is delivered to the membership is considered a very high quality pathway to the marketplace. Advertising is looking at other channels which can be digital. Examples include expanding geographic markets, Podcasts and Vodcasts, native advertising, sponsored editorial content and expanding digital advertising. It should be noted that COVID has had a direct, negative impact on advertising, which is a marketplace issue and beyond our control. PEC should recognize that changes are required for advertising to maintain its level of success; changes PEC should lead and support.
- Digital Business Models – Table 3, which follows, also shows that ASHRAE already uses a number of different business models in generating revenue in a digital platform.

DIGITAL REVENUE STREAM	DESCRIPTION	PRODUCT OR SERVICE	SUCCESS
Paid Apps and Software	Charge once to install software. Revenue is generated by selling updates or technical support. Challenge is competing with open source or free products.	ASHRAE phone apps Psychrometric Analysis CD, Duct Fitting Database	Low Med
In App Advertising	Free software use but sell advertising space in the application	Advertising in digital newsletter, Digital Journal Handbook Online Web advertising	High High Medium High
Freemium	Basic features are free. Paying a fee allows access to premium features.	Building EQ	Low
Usage Based License	Based upon a 'pay as you go' model. Common with B2B.	Building EQ	Low
Subscription	Pay user fee either monthly or annually. A "free service period" used to let customer try product before committing. Once free period is up the fee starts.	Std 90.1 Portal Technology Portal	Low Low
Licensing	License ASHRAE digital products to someone else for use in their products. Partner with a company who will compensate ASHRAE when the software is used.	Enterprise content licensing for Handbook, Stds, Journal etc	High
Sponsorship	Allow other companies to access your sphere of influence by placing their digital technology into our digital technology.	Not used by ASHRAE	
Free with in-App Purchases	Provide physical and virtual goods for sale. Works well with e-commerce models	Not used by ASHRAE	
Transaction fee	Charge a commission based on transactions	Not used by ASHRAE	
Support	Charge for special services required by customers (e.g., custom codes)	Not used by ASHRAE	

Table 3
203

The graphic below shows multiple business cases companies often use to generate revenue from digital based technology. As can be seen, there are a lot of variables. ASHRAE will likely be more successful if it focuses its efforts on a few methodologies rather than a shotgun approach. If a methodology does not prove out, it can be retired and a new approach taken.



Business Model Graphic

Learning how to be compensated for deploying ASHRAE technology is critical to our success. Failure to do this will mean other organizations will gather our technology deployed in books and other old school means, repackage it in digital format and deliver it to the market cutting ASHRAE out of the process.

The methodology ASHRAE selects will be heavily influenced by the technology ASHRAE is trying to deploy and the target audience. The following recommendations streamlines ASHRAE’s current digital revenue model using the business model characteristics shown in the graphic above as a starting point.

- Distribution – Focus on cloud solutions as this is where the market is going.
- Code Licensing – Proprietary offers the most control for ASHRAE but open-source will help disseminate our technology.
- Revenue streams – Will depend on product offering and sales channel. See Table 2 above.

- Interaction – ASHRAE will probably focus on the ‘One to Many’ approach (e.g., Microsoft), as opposed to ‘Many to Many’ (e.g., eBay).
- Target Audience – ASHRAE will probably utilize a ‘B2B’ business approach as it fits best with our client base, as opposed to a ‘B2C’ business to customer approach often used by retail.

Action Item #6 – Create a digital business plan for PEC by identifying 3 to 5 digital product strategies that are in response to market needs and try them, thus allowing PEC to learn which strategies work and which do not.

Action Item #7 – Implement a professional development program to allow staff to develop the skills and knowledge necessary to guide PEC volunteers on how to leverage and apply a digital format.

Summary

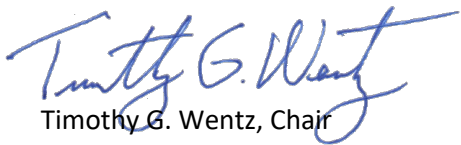
The Ad Hoc has identified four transformational changes ASHRAE must make if it is to be competitive in the market-place and take advantage of its competitive advantages. Those transformational changes are:

1. Change from an accounting basis to a financial basis in evaluating all ASHRAE products and services.
 - a. Action Item #1 – Recommend that Finance Committee adopt the use of a single analysis form across all ASHRAE products and services to include gross margin dollars, gross margin %, payback and other suitable metrics. An example form can be found in Appendix A.
 - b. Action Item #2 – Recommend that Finance Committee reconfigure their accounting system to automatically produce financial data, including gross margin in dollars and percentage, for all products and services.
2. Create a market-driven business model of product/service development that focuses on the needs and expectations of clients
 - a. Action Item #3 – Adopt a product/service planning process that is market-driven. The process should be developed by a cross-Council team, including marketing. To leverage ASHRAE strengths, the process should include the appropriate path(s) within ASHRAE to optimize the development and marketing of the product/service identified by the process.
3. Integrate ASHRAE products across Council “boundaries” into a portfolio or “suite” of products that amplifies their value
 - a. Action Item #4 – Align products and services across ASHRAE boundaries while simultaneously developing suites or portfolios of products to meet market needs. Alignment shall include addressing pricing and costs, along with coordinating regional and Society delivery of products and services.
 - b. Action Item #5 – Extend and further develop a PEC business model that includes governmental and non-governmental entities to deliver ASHRAE products. The business model should include the ability to scale our educational offerings, create revenue streams by licensing or selling ownership of products, hiring an ASHRAE contract officer, the investigation of potential partners.

4. Develop a sales strategy to sell ASHRAE technology B2B in a digital world
 - a. Action Item #6 – Create a digital business plan for PEC by identifying 3 to 5 digital product strategies and that are in response to market needs and try them, thus allowing PEC to learn which strategies work and which do not.
 - b. Action Item #7 – Implement a professional development program to allow staff to develop the skills and knowledge necessary to guide PEC volunteers on how to leverage and apply a digital format.

The future is very bright for ASHRAE. To take full advantage of the many opportunities in front of us, and leverage our many competitive advantages, ASHRAE will have to change fundamentally with respect to its products and services. Aligning these fundamental changes with ASHRAE's strengths will amplify our competitive advantages and result in a robust, dynamic financial platform to serve its members and humanity for many years.

Respectfully submitted.



Timothy G. Wentz, Chair

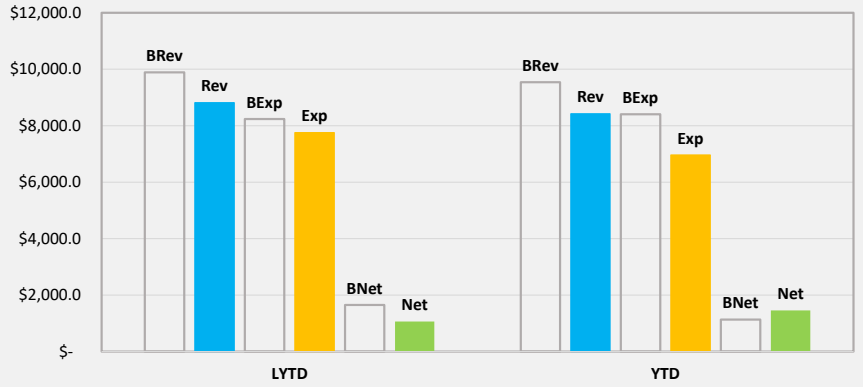


Pub/Ed DASHBOARD

end May 2020

Item	LYTD	YTD	Diff
BRev	\$ 9,886.4	\$ 9,538.2	-4%
Rev	\$ 8,817.6	\$ 8,422.1	-4%
BExp	\$ 8,233.8	\$ 8,406.6	2%
Exp	\$ 7,753.5	\$ 6,962.4	-10%
BNet	\$ 1,652.6	\$ 1,131.6	\$ (521.0)
Net	\$ 1,064.1	\$ 1,459.7	\$ 395.6

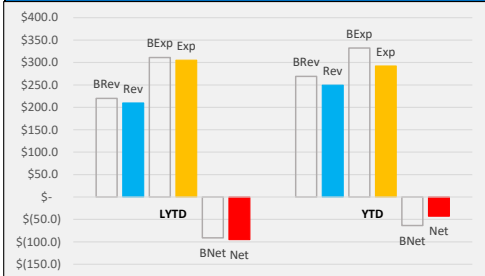
PubEd Council TOTAL



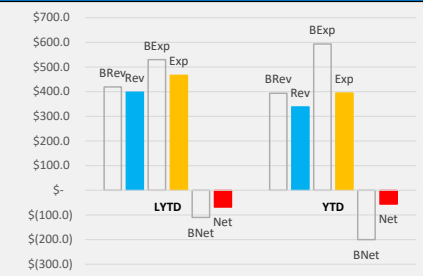
NOTES:

BRev = Budgeted revenue; Rev = Actual revenue; BExp = Budgeted expense before OH&BOD; Exp = Actual expense before OH&BOD; BNet = Budgeted net; Net = Actual net; LYTD = last fiscal year to date; YTD = current fiscal year to date; Diff = Difference between LYTD and YTD, either percentage or dollars. Data source = Financial statements (roll-ups for PEC, Certification, Handbook, Journal, Special Pubs, and Professional Development). Values = US\$ x1000.

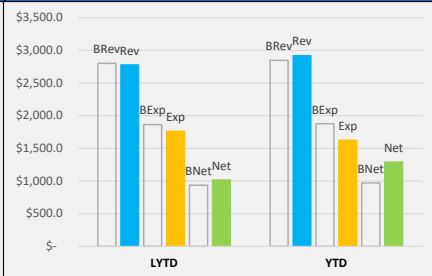
Certification



Handbook



Special Pubs

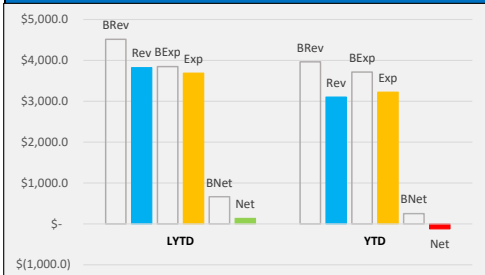


Item	LYTD	YTD	Diff
BRev	\$ 219.9	\$ 268.9	22%
Rev	\$ 209.9	\$ 249.5	19%
BExp	\$ 311.0	\$ 332.5	7%
Exp	\$ 305.1	\$ 292.2	-4%
BNet	\$ (91.1)	\$ (63.6)	\$ 27.5
Net	\$ (95.2)	\$ (42.7)	\$ 52.5

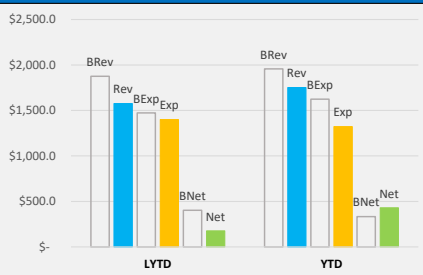
Item	LYTD	YTD	Diff
BRev	\$ 419.3	\$ 393.3	-6%
Rev	\$ 398.7	\$ 338.4	-15%
BExp	\$ 529.5	\$ 593.5	12%
Exp	\$ 467.3	\$ 394.9	-15%
BNet	\$ (110.2)	\$ (200.2)	\$ (90.0)
Net	\$ (68.6)	\$ (56.5)	\$ 12.1

Item	LYTD	YTD	Diff
BRev	\$ 2,800.3	\$ 2,847.6	2%
Rev	\$ 2,779.5	\$ 2,919.1	5%
BExp	\$ 1,863.0	\$ 1,876.2	1%
Exp	\$ 1,763.8	\$ 1,627.2	-8%
BNet	\$ 937.3	\$ 971.4	\$ 34.1
Net	\$ 1,015.7	\$ 1,291.9	\$ 276.2

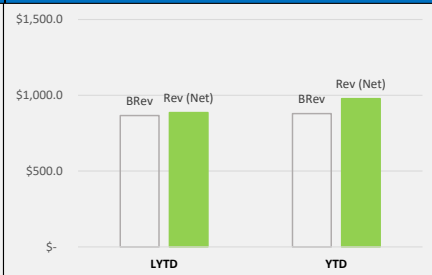
AJ-HPB/Advertising



AL/eLearning



Royalties



Item	LYTD	YTD	Diff
BRev	\$ 4,514.3	\$ 3,963.5	-12%
Rev	\$ 3,820.9	\$ 3,103.4	-19%
BExp	\$ 3,849.8	\$ 3,712.7	-4%
Exp	\$ 3,687.4	\$ 3,224.2	-13%
BNet	\$ 664.5	\$ 250.8	\$ (413.7)
Net	\$ 133.5	\$ (120.8)	\$ (254.3)

Item	LYTD	YTD	Diff
BRev	\$ 1,876.2	\$ 1,957.6	4%
Rev	\$ 1,575.6	\$ 1,751.8	11%
BExp	\$ 1,473.9	\$ 1,624.0	10%
Exp	\$ 1,400.4	\$ 1,321.7	-6%
BNet	\$ 402.3	\$ 333.6	\$ (68.7)
Net	\$ 175.2	\$ 430.1	\$ 254.9

Item	LYTD	YTD	Diff
BRev	\$ 866.9	\$ 878.8	1%
Rev (Net)	\$ 886.7	\$ 977.6	10%

(No direct expenses; Rev = Net.)

PUBLISHING & EDUCATION COUNCIL - MBOs 2019-2020 SY - Farooq Mehboob, Chair

		RESPONSIBILITY															
NO.	DESCRIPTION	Committees				Subcommittees				Other			STATUS	COMMENTS			
		Certification	Handbook	Historical	PDC	Publications	Functional	Fiscal	eLearning	Journal Advert.	Research Journal	Ad-hoc			PEC V Chair	PEC Chair	Staff
1	Appoint PEC Adhoc to address Strategic Business Development for potential new revenue streams.	-	-	-	-	-	-	-	-	-	-	X	-	-	X	Complete.	Final Report submitted to PEC at the Annual Virtual Meeting in June 2020.
2	Develop Strategy for expanding ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration.	-	-	-	X	-	X	-	-	-	-	-	X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. PDC report received in June 2020.
3	Analyze Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand.	X	-	-	-	-	X	-	-	-	-	-	X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. Certification Committee report received in June 2020.
4	Analyze performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3.					X	X						X	X	X	Complete.	Oversight by Functional Planning Subcommittee of PEC. Publications Committee submitted criteria June 2020.
5	Develop PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees. This aligns with strategic plan initiative 3.	X	X	X	X	X		X					X	X	X	Complete.	Oversight by Fiscal Planning Subcommittee of PEC. Dashboard submitted June 2020.

**Publishing and Education Council (PEC)
Report to the Board of Directors**

Thursday, June 25, 2020

1. PEC approved implementation of the Strategic Business Development Ad Hoc Report's seven listed action items as shown in their report.
2. PEC approved changes to the Handbook and Training and Education Committees' MOPs to reflect the reporting and procedural changes that will happen with the new PEC restructure plan to be implemented July 1, 2020. Additional editorial and clean up changes to these documents were also made.
3. PEC approved the ASHRAE *Residential IAQ Guide* be made available for free download to the public at the request of EHC and Technology Council. SSPC 62.2 has moved to withdraw G24 20XX, because the information is available in the *Residential IAQ Guide*. Making the information in the Residential IAQ Guide would make the information vastly more broadly available for use. Staff reported 41 copies sold in the last year. There will be a negative fiscal impact of approximately \$3,800 per year.
4. PEC will respond to a referral from Standards Committee and Technology Council to make all standards accessible for viewing over the internet at no cost. Staff will report in detail on the potential revenue impact of allowing all standards and guidelines to be added for free availability on the website in read-only format, while still offering print and PDFs for purchase, to provide access for potential increased examination and influence while staying true to PEC's responsibility to obtain revenue to support ASHRAE's mission.
5. PEC will consider recommending changing the Units Policy in the ROBs from requiring annual PEC confirmation to allowing an annual review, requiring a vote only when changes are necessary.
6. PEC approved the discontinuation of the print and digital publication of *High Performing Buildings* (HPB) magazine with its content folded into *ASHRAE Journal* while continuing associated revenue-earning offerings such as the HPB newsletter, website, and supplier webinars after review of HPB's fiscal performance.

Volunteer Oversight for Global Training Center (GTC)

7. GTC reported performance for July 2019 through June 2020 showed sixteen courses were presented with total revenue of \$142,881.20 and gross profit of \$73,260.42. Six courses were presented from January 2020 through June 2020 with total revenue of \$56,284.80 gross profit of \$39,741.32. Overhead was \$44,699.95 including Dubai Office yearly fixed costs, but not variable costs charged throughout the year. The final net profit for the year ending June 30, 2020 was \$28,560.47 after overhead.
8. GTC continues to work with UNEP and UNIDO in their efforts with Article 5 countries by offering training in conjunction and providing administrative support for activities aligning with ASHRAE interests to raise awareness and adoption of ASHRAE standards in the region.

9. GTC reported on short-term solutions to meet market demand for training in the absence of face-to-face instruction during the COVID 19 pandemic as well as expanding ASHRAE education in Asia and Africa.

Fiscal Planning Subcommittee

10. A PEC MBO was completed to *develop a PEC 'Dashboard' showing relevant data pertaining to operations of PEC committees in alignment with Strategic Plan Initiative 3*. Staff will update this dashboard monthly.
11. At end May 2020, PEC revenue was down 4% year over year (YOY) and 12% versus budget with expenses down YOY by 9% and 16% versus budget. The net result is \$395k up YOY and \$329k versus budget. The forecast for the end year net is up \$494k YOY and down \$64k versus budget.
12. The pandemic and economic uncertainty have contributed to a reduction in revenue with lower-than-expected advertising, publication sales and cancelled in-person training events and certification exams. However, expenses have been reduced because of lower printing costs, deferred projects, reduction in staff, and lower costs of online versus in-person training events.

Functional Planning subcommittee

13. A PEC MBO was completed to develop a strategy for expanding the ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration. The Professional Development Committee presented the plan shown in *Attachment A*.
14. A PEC MBO was completed to analyze the Certification Program and develop metrics for evaluating potential for new certifications aligned with Strategic Plan initiatives 1 & 2 after surveying members to establish interest and demand. Certification Committee reported that subject matter experts would be best positioned to identify potential new certification prospects. Certification Committee went to TC and SSPC meetings in Orlando to answer questions and be a resource, (SSPC 135, TC 2.1, TC 2.10, TC 2.3, TC 2.5 and TC 7.1). No proposals were received by the March 15 deadline. Several currently existing certification programs already appear to support SP initiatives 1 and 2, including the BCxP, HBDP, CHD, and OPMP.
15. A PEC MBO was completed to analyze the performance of special publications over the past three years and develop criteria for evaluating and approving special publication requests on a business case basis aligned with strategic plan initiative 3. With the assistance of the Publication Committee, a Special Publications Evaluation Criteria Form was developed and approved as shown in *Attachment B*.
16. Society Rules Committee requested a review of the following section of the Members Council section of the ROB and forward any recommendations for changes to represent current practices to them:

2.103.003.8 Single-year CD (03-07-02-20)

A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.

Since a single-year CD is no longer offered, the subcommittee recommended that it be completely struck from the ROB, as such specific listing of the Handbook benefit format is too restrictive. Or that it be changed as follows:

2.103.003.8 ~~Single-year CD~~ Handbook Content (03-07-02-20)

~~A single-year CD that contains the volume's print content in PDF format will be distributed with each year's print Handbook volume.~~ The content of each year's Handbook volume will be offered in electronic format.

18. The subcommittee will consider recommended edits to several documents at the request of SRC in the next Society Year.

eLearning Subcommittee

19. ASHRAE eLearning 2019-2020 subscription revenue at 204.5K (year to date) on a forecast of 225K (May Financials). Most of this revenue is from individual subscriptions, with a few corporate subscriptions.
20. eLearning is expecting a 60K transfer from the ASHRAE Foundation to continue funding for new courses and updating existing courses and UNEP activities are forecasted to bring in 166K. Seven courses were updated in 2019-2020. Depending on the availability of financial resources, eLearning aims to update 10 courses each year.
21. A review of eLearning expenses, salaries, and overhead allocations is under way to determine their impact on the overall performance of eLearning.
22. An eLearning dashboard shown in *Attachment X* was created showing metrics for frequency of updates, course age, demand, and industry trends to help determine when and which courses should be updated.
23. eLearning's current Learning Management System (LMS) and eCommerce are being upgraded for course and participant data migration for launch at the end of July 2020.
24. Members Council referred a motion to translate eLearning courses into several languages to the subcommittee. After review of the cost associated with translation, fiscal impact per course is estimated at 30K-35K. Alternatively, cost of subtitling is 2.5K per course, per language; 20K-25K, per course, to subtitle in all eight languages proposed. The subcommittee determined that a survey is needed in order to evaluate demand in the relevant countries to evaluate return on such an investment.

Journal Advertising Sales Subcommittee

25. Staff reported to the subcommittee a status report on sales, including financial statements for the FY19-20 forecast and the budget outlook for FY20-21, current rate structure, and new incentives to expanded programs. Although the Journal has been advertisers' first choice for the past ten years, financial forecasts for the 2019-20 Society Year show reduced advertising revenue due to increased market competition and internal channels for advertising dollars. The paid advertising share of market (SOM) ratio for the past 12 months is slightly greater than the

previous 12 months at 63% of all advertising with pages sold capturing 84% of all HVACR engineering advertisers for the last fiscal year. This is an increase of SOM of 47% in 2009 to 62% for 2019 in a three-publication marketplace.

26. Staff reported ASHRAE.org advertising revenue has declined, except for supplier webinar programs, which has grown from \$18k revenue in 2014 to more than \$220k sales forecast for this year. However, this growth has not offset the overall decline in advertising. Publishers continue to compete for advertising revenue including Google, Facebook, and others. Additionally, some suppliers have allocated marketing budgets to improve their own company website, renting emails and trade show marketing as alternatives advertising.
27. Staff reported ASHRAE advertising revenue appeared to be trending upward before the global pandemic. In February, Journal sales exceeded its FY20 goal and the prior year's revenue. However, advertising cancellations attributed to the pandemic to date totaled \$50,000 in FY20 and an additional \$50,000 in FY21. Advertising programs being negotiated or considered during the time of the crisis were not counted in the cancellations.
28. The subcommittee will review options for revisions if needed to the commission structure, territory assignments and expanding sales offices around the world.

Research Journal Subcommittee

29. The Editor-in-Chief of the *Science and Technology for the Built Environment* (STBE), Dr. Jeff Spittle, reported receiving 69,751 article downloads in 2019, an increase of 43% over 2018. STBE published 129 papers in 2019, with 10 of them open access (OA). The 2018 impact factor is 1.199, ranking 42/63 in the construction and building technology category of Journal Citation Reports (JCR). The impact factor for 2019 was not available at the time of the meeting.
30. The COVID-19 pandemic is going to delay or eliminate some conferences and therefore special issues of STBE. The Editorial Board will be asked to help identify non-conference-based topical issues.
31. COVID-19 has delayed an initiative to expand the editorial review board by recruiting junior and mid-level faculty and recent PhD graduates with recognition given on the ASHRAE website.

Certification Committee

32. ASHRAE received 10% more certification applications (340) over the previous SYTD (305) and received 378 certification applications equaling the number received over the previous SYTD.
33. Certification revenue increased \$4K over last year's, not including an ASHRAE Foundation contribution.
34. ASHRAE's ANSI Reaccreditation Application with scope extension (CHD, HFDP and OPMP) is in progress with application fees included in current budget. Certification Committee anticipates continued accreditation of all ASHRAE certification programs under the ISO/IEC 17024 International Standard for personnel certification programs in September 2020.

35. Remote online proctored examinations will launch in July 2020 to offer a safe, secure, and convenient exam option to ASHRAE certification candidates.
36. With financial support from the ASHRAE Foundation and the assistance of Certified HVAC Designer (CHD) volunteers, a study guide for the CHD program entitled *Certification Study Guide: Certified HVAC Designer (CHD)* is being created and due in July. The focus will be on HVAC Designer job tasks and a customizable exam preparation plan based on instructional design best practices to assist CHD certification prospects achieve their goals.
37. The new Certification digital badging program continues to be a success with 680 (73%) of 932 badges issued accepted by certificants and over 8,800 badge views in various electronic media. This helps certificants get earned recognition. Badges are shareable in electronic media such as LinkedIn profiles, websites, and email signatures and offer imbedded metadata including certification scope, key job knowledge, skills and abilities, and verification.
38. Current Certification activities for 2019-20 include:
 - BCxP: New exam form launched in March 2020.
 - BEMP: New exam form launched in March 2020.
 - HBDP: New exam form to launch by August 2020.
 - HFDP: New exam form launched in February 2020.
39. Certification Committee 2019-2020 MBOs status are shown in *Attachment C*.

Handbook Committee (HBC)

40. With Microsoft discontinuing support of Internet Explorer, ASHRAE staff is testing other internet browsers to be used with the ASHRAE Authoring Portal and anticipates releasing a beta version to member revisers in the next few months.
41. HBC 2019-2020 MBOs status are shown in *Attachment D*.

Historical Committee

42. The 125th anniversary projects have been completed and the pilot plaque project which will be installed in Orange, Texas later this year.
43. Two names were chosen for the next Leadership Voices interviews to be filmed in either Chicago or Phoenix.
44. To encourage Regional and Chapter Historians involvement in ASHRAE history at the Society level, Historical Committee reviewed the status of PAOE points on the part of chapters/regions and approved changes to PAOE for fiscal year 2020-21 with the goal of reaching out to non-participants. Additionally, there was some discussion of reinstating the Historians Newsletter.
45. Historical Committee is discussing options for chapters/regions and others to maintain, preserve, and store important documents and materials. Basecamp is being investigated as a possible storage solution for electronic documents with a template or structure being created for that specific use.

46. Historical Committee 2019-2020 MBOs status are shown in *Attachment E*.

Professional Development Committee (PDC)

47. PDC comparison of 2019-20 vs 2018-19 ALL course registrations:

Year	Locations	Winter	Annual	Online	In-Company	Chapter	Industry	HVAC I	HVAC II	GTC	Total
2019-20	Orlando/ Virtual	1137	n/a	*747	665	200	42	312	250	694	4047
2018-19	Atlanta/ Kansas City	747	212	260	955	600	290	548	331	730	4673

**Does not include free 1-hour webinar registrants (more than 7400 to date).*

48. Online course registrations increased more than 187% in response to the COVID-19 Pandemic. Staff efforts quickly pivoted to handle the tremendous increase in online course registrations.
49. PDC and staff are developing *HVAC Design Training: Level I – Essentials* for online training and continue to work with cognizant TC members to review and revise six (6) Self Directed Learning (SDL) courses.
50. Two new courses, initially scheduled for presentation in Austin, are now available in the ALL course catalog:
- *Complying with Standard 90.1-2019* (6-hours)
 - *Smart Grid Systems, Applications and Integration with the Built Environment* (3-hours)
51. PDC 2019-2020 MBOs status are shown in *Attachment F*.
52. A proposed children’s book, *Lucy’s Workday Adventure*, was approved for further development.
53. Conditional acceptance of PTAR 1 (re: revising the 1998 publication *Application of Manufacturers’ Sound Data*) was approved.
54. Sarah Foster, *ASHRAE Journal* Editor, and Tani Palefski, *ASHRAE Journal* Associate Editor, have been tasked with updating the Publications Committee Reference Manual to reflect current practices for peer review of articles submitted to *ASHRAE Journal*.
55. Publications Committee is developing a market survey that will be sent to members/customers to determine the market need/demand for a series of simple, straightforward application guides on various HVAC topics as suggested by Presidential Member Tim Wentz in June 2018.
56. Publications Committee 2019-2020 MBOs status are shown in *Attachment G*.
57. Publications Committee 2020-2021 MBOs are shown in *Attachment H*.

Attachment A
PEC Report to BOD

INSTRUCTOR PAY SCALE

PROFESSIONAL DEVELOPMENT SEMINAR (6-HOURS)

	<u>Honorarium</u>		<u>Transportation</u>
	1 Instructor	2+ Instructors	
ASHRAE Conference	\$1,000	\$800	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
In-Company Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Chapter Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Online	\$1,200	\$900	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Industry Event	\$1,500	\$1,000	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
ASHRAE Conference	\$700	\$500	
In-Company Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Chapter Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location
Online	\$700	\$500	
Industry Event	\$800	\$500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location

HVAC DESIGN TRAINING

	<u>Honorarium</u>	<u>Transportation</u>
ASHRAE to Public	\$1,500	Airfare, Lodging
In Company	\$1,500	Airfare, Lodging, Meals, Airport/Hotel Shuttle to/from Meeting Location

GLOBAL TRAINING CENTER –
DUBAI

	<u>Honorarium</u>	<u>Transportation</u>
1-Day	\$850	Airfare, Lodging
2-Day	\$1,700	Airfare, Lodging
3-Day	\$2,550	Airfare, Lodging

NOTE: Rates for training in the Middle East and in Europe are set to reflect the market in which the training is offered and are aligned with registration fees, competitive pricing, and availability of budgets for training by the respective customer base.

MBO#2: Develop Strategy for expanding ALI Instructor core and establish procedures and criteria for instructor appointment and remuneration.

Instruction Qualifications

1. Solid grasp of engineering fundamentals.
2. Practical experience to answer questions for students and to be able to distinguish between theory and practice in day to day engineering
3. Skill and ability to teach and present well in a compelling and engaging manner. This means preparing ahead of time and not just reading the slides.
4. Motivation and interest in teaching. We're not looking for reluctant instructors who will turn over regularly.

Search Criteria

1. ASHRAE DL Series: Sort by high ratings and participation. DL's with these criteria have already expressed and interested in teaching and presenting and have the skills do so.
2. Regular Chapter Speakers: Most local chapters have their go to speakers. Many of those speakers are motivated to give back and/or to develop their careers and speaking abilities. Chapters are not going to recommend unskilled speakers who aren't capable of presenting.
3. Sole (Sr.) Practicing Engineers: There are a quite a few consultants working on sunset or second careers that have a tremendous depth of practical experience that would be applicable to teaching. Need to carefully screen for the speaking / teaching ability.
4. Academia: There are many great teachers produced by academia. The challenge is screening out those who do not have the practical experience needed or who are mostly focused on research and less interested in teaching but may agree to build a resume.

*Attachment B
PEC Report to BOD*

ASHRAE New Special Publications Evaluation Criteria

To be filled out by Publications staff and supplied to Publications Committee for their use when evaluating a proposed publication.

Publication Name:

Publication Sponsor:

Point Threshold for Publication: 70 points

Evaluation:

Criteria	The historical performance of similar ASHRAE publications is good	There is a market & industry need for a publication on this topic	The projected production cost is acceptable	The projected profit margin is positive	There is a primary buyer in the market who wants this publication	This publication would be or provide a good member benefit	This publication addresses a current hot topic	Total points
Max Points	10	20	15	15	15	15	10	100
Points Assigned								

Notes:

Historical Performance of Similar Publications:

We should look at similar types of publications (Design Guides, User's Manuals, hands on guides, etc.) to help in estimating sales

Certification Committee MBOs Society Year: 2019-2020

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

Vision: A healthy and sustainable built environment for all.

Goal #1: Position ASHRAE as an Essential Knowledge Resource for a Sustainable, High-Performance Built Environment.

Goal #2: Maximize Member Value and Engagement.

Goal #3: Optimize ASHRAE's Organizational Structure to Maximize Performance.

Certification Committee Scope: The Certification Committee is responsible for developing, implementing, and monitoring ASHRAE certification programs.

Chair: Mark Bettin, OPMP

Date: June 9, 2020

Objective	S P 20 19 - 24 1	Comp Date	Fiscal Impact	Responsible Party	May Status	Comment
1. Attain 80% recertification rate for the 2019 renewal class, exceeding the industry average of 76%.	2 C	3/31 2020	Currently budgeted	Chair, Certification Committee, Staff	Completed.	388 total applications received. BEAP renewal rate 45%; CPMP renewal rate (both recert as BCxP and BCxP cert) 47%; all other certifications 78% combined.
2. Grow the number of certification applications by 10% over 2015-16 total of 500, a record high.	3 A	6/30 2020	None, Staff Time	Chair, Certification Committee, HVAC Designer Exam Subcommittee , Staff	<i>In progress</i>	Through 5/31/2020, 0% increase in applications (378 total) over LYTD.
3. Enhance relevancy of ASHRAE certification to ASHRAE members & the industry in general.	2 C	6/30 2020	Volunteer & Staff Time	Chair, Certification Committee, HVAC Designer Exam Subcommittee , Staff	<i>In progress</i>	- Launched examination for new HVAC Designer (CHD) certification on June 3, 2019. - Digital badging launched September 2019. As of May 13, 926 digital badges issued with 669 badges claimed for a 72% acceptance rate, against an industry average of 45%. 7,149 badge views for an 9.5 average views per share rate, against an industry average of 2.0 views. - Remote proctoring adopted as an additional exam delivery mode.
4.1 Manage certification programs against the	2 B	6/30 2020	Currently budgeted.	Chair, Certification Committee, Staff	<i>In progress</i>	- BCxP, BEAP, BEMP & HBDP are accredited. - Reaccreditation application with scope extension for the CHD,

ANSI/ISO/IEC 17024 accreditation standard.						HFDP and OPMP submitted at the beginning of April.
4.2. Launch new HBDP and HFDP exam forms updated per revised exam Detailed Content Outlines.	3 A	11/1 2019	Currently budgeted.	Chair, Certification Committee, HVAC Designer Exam Subcommittee, Staff	<i>In progress</i>	New HFDP form released in February. New HBDP form to launch by 8/15/2020.
4.3. Recruit 2020-23 class of Exam Subcommittee members.	2 A	6/30 2020		Chair, Certification Committee, Nominations Task Force, Staff	Completed	"Call for Nominations" sent May 6 with a due date of May 20. - Committee to approve slate in June 9, 2020 meeting.
5. Monitor the effectiveness of current certification programs and recommend and implement any steps to improve program effectiveness.	3 A	6/30 2019	None	Chair, Committee Task Force, Staff	Completed.	Task Force recommendations accepted by Certification Committee in Oct. 4, 2019 meeting.
6. Finalize 2019-20 MBOs.	2 A, B, C; 3 A, B	9/30 2019	TBD	Chair, Certification Committee, Staff	Completed.	Task Force to incorporate new Strategic Plan and Committee self-assessment.
7. Evaluate Live Remote Proctoring as an alternative exam delivery mode.	3 B	6/30 2020	TBD	Chair, Certification Committee, Staff	Completed.	Live remote proctoring adopted as an exam delivery mode in May 15, 2020 meeting.
8. Evaluate the certification and recertification application fee schedule for any possible updates in the February 1, 2020 meeting.	3 A	1/12 2019	None. Possible 2020-21 revenue increase.	Chair, Certification Committee, Staff	Completed.	In Feb. 1, 2020 meeting, the Certification Committee agreed to increase the non-member initial certification application fee to \$595 beginning July 1, 2020 and maintain other application fees one additional year through June 30, 2021.
9. Analyze Certification Program and develop metrics for evaluating potential for new certifications	2 B, 3 A	6/30 2020	Staff time.	Chair, Certification Committee	Completed.	Assigned by PEC and evaluated by Certification Committee in Oct. 4 meeting. Next steps to complete objective: 1. Generate proposals for possible certification program(s) that support SP Initiatives 1 and 2. 19 TCs and

<p>aligned with Strategic Plan initiatives 1 (promote best practices that enable adaptability, resilience and recovery of buildings and communities) & 2 (promote understanding of indoor environmental quality (IEQ) among practitioners) after surveying members to establish interest and demand</p>					<p>SSPCs invited to submit proposals by 3/15/2020, No proposals received. By June 30, 2020, Committee liaisons Mr. Armstrong, Ms. Cowman and Mr. Millies to follow up with select TCs and SSPCs to monitor progress and encourage them to continue working to identify and submit a proposal for a new certification program.</p> <p>2. Survey members regarding interest and demand in the possible certification program(s) N/A</p> <p>3. Develop metric for evaluating the likelihood of success for the proposed program(s) Completed.</p> <p>4. Evaluate the likelihood of proposed program success. N/A</p>
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Recommendations for Strategic Planning:

2019-24 Strategic Plan: Goals & Objectives

1. **Position ASHRAE as an Essential Knowledge Resource for a Sustainable, High-Performance Built Environment**
 - A. Utilize a holistic approach to ASHRAE's offerings and activities to drive positive economic, environmental and social impact through innovation in building design and operations.
 - B. Expand capabilities globally to create, aggregate and disseminate essential information and knowledge focusing on emerging market trends and transformative approaches
2. **Maximize Member Value and Engagement**
 - A. Infuse enthusiasm, vitality and diversity throughout ASHRAE events and services
 - B. Expand the impact of collaboration and partnerships with industry organizations, universities and government agencies
 - C. Leverage technology to increase member engagement, awareness and value
3. **Optimize ASHRAE's Organizational Structure to Maximize Performance**
 - A. Prototype and launch new approaches that will increase ASHRAE's relevance and speed to market for key offerings
 - B. Optimize ASHRAE's organizational systems and structures to increase capacity, efficiency and effectiveness
 - C. Cultivate industry and member philanthropy to extend ASHRAE's impact and reach

Handbook Committee (HBC) 2019-2020 MBOs

	Objective	Completion Date	Fiscal Impact	Responsible Party	Status	Comment
1	Solicit ideas from volume subcommittee chairs for process improvements.	6/20	None	HBC	Continuous	
2	Improve peer-to-peer training of incoming volume subcommittee chairs.	6/20	None	Vice Chair	Continuous	Mentoring of new members
3	Review the relevance, scope, and objectives of subcommittees.	6/20	None	HBC ExCom	Continuous	Reshape HBC to best function under the new TC structure (when implemented) in a way that serves both HBC's and TCs' needs
4	Encourage TCs to develop extra features (spreadsheets, sidebar discussions, video, etc.) for Handbook Online. Suggest using YEA members	6/20	None	HBC	Continuous	
5	Address volume imbalances	6/20	Could reduce mailing costs	HBC ExCom	In progress	Applications and Fundamental volumes are nearly twice the size of Refrigeration volume. Look at the possibility of shifting some material to a different volume. Investigating shifting some chapters between Fundamentals, Applications, and Systems (HS suggested possibly vibration and air cleaning chapters could move from Applications).

6	Improve international representation /input in the handbook process	6/20	None	HBC ExCom	Ongoing	Continue with the effort started by Don Fenton. New Zealand member added for 2024 volume subcommittee.
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Attachment E
PEC Report to BOD

Historical Committee 2019-2020 MBOs – Stan Westhoff, Historical Chair 06/23/2020

Objective	PR	Completion Date	Fiscal Impact	Delegated to:	Status	Comment
HC MBO 1 Develop proposals to improve the opportunities for Regional Historians to participate in Historical Committee activities.	1	Winter 2020 Orlando	None	RVC Guideline sub committee	Ongoing	Continue on-line participation of (RVCs) at Committee meetings.
HC MBO 2 Develop PAOE Recommended Changes to 2020-2021 PAOE	1	2020 Austin	none		Complete February	To get ahead of the PAOE Committee Cycle with proposal for the following year's PAOE Letter in Summer 2020.
HC MBO 3 History VC PAOE Update Summary Report at Annual & Winter Meetings to include copy similar to 2018-2019 Annual meeting	1	Winter & Annual	None	VC Report	Complete February	To encourage RVCs to target the below PAR performing Chapters in their Region based on the previous year's History PAOE Summary.
HC MBO 4 Encourage Chapter Historians who don't Attend their Regional CRC to complete the Chapter Historians Training Power Point and promote on-line workshop participation at CRCs	1	Winter 2020	minor	RVC Guideline sub committee	Complete February	Update the Chapter Historians Training PowerPoint. Add points for submittal of a completed MBO with phone discussion with RVC History prior August 30 of fiscal year. Promote on-line workshop participation at CRCs
HC MBO 5 Assist in publicizing 125 th Anniversary. Develop information of historical interest that can be presented at Society & Regional Meetings	1	Summer 2020	Major	125th Annivers ary Celebri on sub	Complete June 2020	Continue 125th Seminar and Historical Articles Promotions with PEC to support the 125th anniversary and demonstrate to members the strength in depth of our Society.
HC MBO 6 Develop proposal for publication/s to celebrate 125th Anniversary	1	Summer 2020	To Be Advised	Historical Committee	Complete February	Continue working on and supporting 125th Publications to PEC.
HC MBO 7 Foster collaboration with other international societies to improve our historical research and	4	Summer	None	Historical Committee	Ongoing	Continue work on collaboration. HC has links with similar groups in CIBSE and AiCARR - opportunity to pursue to work w/similar committees in CEN. International Institute of
HC MBO 8 Encourage younger members of ASHRAE to have interest in history-related activities of the Society	2	Summer 2020	None	Historical Committee	Complete February	Proposing to keep the PAOE line item "For a local Chapter Historical activity performed by an actively engaged YEA member"
HC MBO 9 Leadership Recall Arrange for videos at Annual meeting 2020	2	Summer 2020	Verify \$1,000 Budget ed	Historical Committee	Ongoing	Arrange two Presidential interviews. Review other potential interviewees
HC MBO 10 Digitize Archived Journals + Transactions	3	Summer 2020	Major	Historical Committee/P EC	Ongoing	Encourage digitalization of all Society Journals and Transactions
HC MBO 11 Incorporate a Women In Engineering component to the 125 Year ASHRAE Anniversary celebration	1	Summer 2020	None	Historical Committee	Complete (WIA now called Diverse)	Continue WIA PAOE Support in History
Feb 1-5, 2020 – Orlando, FL						June 9, 2020 – Virtual

Professional Development Committee

MBOs for Society Year 2019-2020

Chair: Charlie Henck Date: June 24, 2019

Objective	SP	Complete by	Fiscal Impact	Responsible Party	Comment/ Status
1. Review new strategic plan for items that apply to PDC and develop a plan to implement.		Jun-20	None	Planning Subcommittee	In progress with assigned ad hoc
2. Develop topics and RFPs for an additional (3) practical applications courses to 'fill the gaps' in our current offerings for developing young engineers.		Jan-20	None	Planning Subcommittee	In progress New topics in discussion.
3. Review all SDLs and issue RFPs for the ones that need updating.		Jun-20	None	Operations Subcommittee	SDLs sent to TCs for review. Progress in place to revise three.
4. Review all existing courses and sunset those that have not been used in 5 years or recommend updates		Jun-20	None	Operations Subcommittee	Complete.
5. Update of the Reference Manual		Jun-20	None	Operations Subcommittee	Draft in progress to reflect changes related to restructure.
6. Every course reviewed by PDC Liaison prior to presentation- Quality check		Jun-20	None	Operations Subcommittee	Complete. Continuous.
7. Improve marketing of courses/branding. Work with ASHRAE marketing for improvement		Jun-20	TBD	Planning Subcommittee	Work in progress to provide course information to chapters.
Additional Recommendations for Strategic Planning: Not at this time					

Publications Committee

MBOs for Society Year 2019-2020

Chair: Chee S. Ow Date: 10 June 2020

Objective	SP 2019	Compl. by	Fiscal Impact	Resp. Party	Comment/Status
Establish evaluation criteria for Publications Topic Acceptance Request (PTAR) submissions in line with RAC liaison processes	1b	June 2020	Nil	Roberto Aguilo and Hugh McMillan (Chair)	Completed and sent to RAC staff liaison, 5/5/20
Review Pub. Committee Orientation materials	3b	June 2020	Nil	Rennie Tisdale (Chair) and Hugh McMillan	Completed 8/20/19
Determine international readership needs for ASHRAE Journal	1b, 2c	June 2020	Nil	Vikram Murthy (Chair) and Adeeba Mehboob	Ongoing (related to below recommendation for strategic planning)
<p>Additional Recommendations for Strategic Planning: In line with Goal 3 of the 2019-2024 ASHRAE Strategic Plan, Publications Committee recommends that ASHRAE develop a survey tool that collects feedback from our grassroots levels, including our international membership, with respect to their product needs (books, <i>ASHRAE Journal</i> articles, apps, and other tools) and to link this information back to TAC council and other relevant sections for their further actions.</p>					

SP 2019 = Strategic Plan 2019 Initiative addressed by objective

Publications Committee
MBOs for Society Year 2020-2021
Chair: Hugh D. McMillan III Date: 10 June 2020

*SP 2019-2024 = 2019-2024 Strategic Plan Initiative

Strategic Plan Notes:

Initiative 3: Organizational Streamlining

Objective	SP 2019-2024*	Compl. by	Fiscal Impact	Resp. Party	Comment/Status
Reduce conference calls to bimonthly	3-3	July 2020	None	McMillan	Streamline committee operation by optimizing quantity of meetings. Discuss ASHRAE Journal Articles by exception only, meaning only if there is something exceptional to discuss about a particular article.
Reorganize Planning Subcommittee	3-2, 3-3	January 2021	None	Mehboob	Planning Subcommittee to meet for 1 hour on Saturday of Winter and Annual meetings. May need to conduct some business between face-to-face meetings. Remainder of time Saturday will be dedicated to PTAR Subcommittee.
Apply Evaluation Rating Sheet rubric to all existing special publications	3-1	June 2021	None	TAC Section Liaisons/Staff	Each TAC Section Liaison should apply the recently approved Special Publications Evaluation Rating Sheet for the TCs to which they are the liaison. This will require input from staff on some items of the rubric.
Institutionalize PTAR Subcommittee operations	3-2, 3-3	June 2021	None	Thrasher	Review and edit as necessary the PTAR Process and Forms and insert any required description in the MOP.
Mentors reach out to new members	3-2, 3-3	September 1, 2020	None	Tisdale, Murthy	Ask if any questions; review new member orientation PowerPoint if desired by new member.

Additional Recommendations for Strategic Planning:

- Desired Outcome 1 (3-1 above): Evaluate the staff/volunteer support structure to optimize volunteer engagement, efficiency and effectiveness of the Society (e.g. volunteer efficiency). Present and implement findings to support the delivery of key products and services (e.g. Guidelines, Standards, Research, Publications, and Programs) with less cost, reduced time to market and an advancement in market responsiveness.
- Desired Outcome 2 (3-2 above): Redesign leadership/governance structure to support increased operational efficiency and effectiveness of the organization.
- Desired Outcome 3 (3-3 above): Targeted streamlining for committee operational effectiveness through the reduction of overlap and optimization of quantity, scopes.