


## AGENDA

**Meeting Location:** JW Marriott Tampa, Fort Brooke (2)

**Meeting Date:** Monday 6/26/23 at 10:30 AM - 12:00 PM EDT

### Programs Sponsored or Co-sponsored June 2023:

- **Sunday, June 25th at 8:00 AM to 9:30 AM ET** Your Ethics Tool Box: Building a Framework for Ethical Decision-Making With Case Studies
- **Monday, June 26, 2023 at 8:00 AM to 9:30 AM ET** Engineer to Entrepreneur: Case Studies in Business Ownership
- **Tuesday, June 27, 2023 at 8:00 AM to 9:30 AM ET** College of Fellows Debate: Engineers Have An Obligation To Decarbonize
- **Wednesday, June 28, 2023 at 9:45 AM to 10:45 AM ET** Confidence and Competence: Striking the Perfect Balance

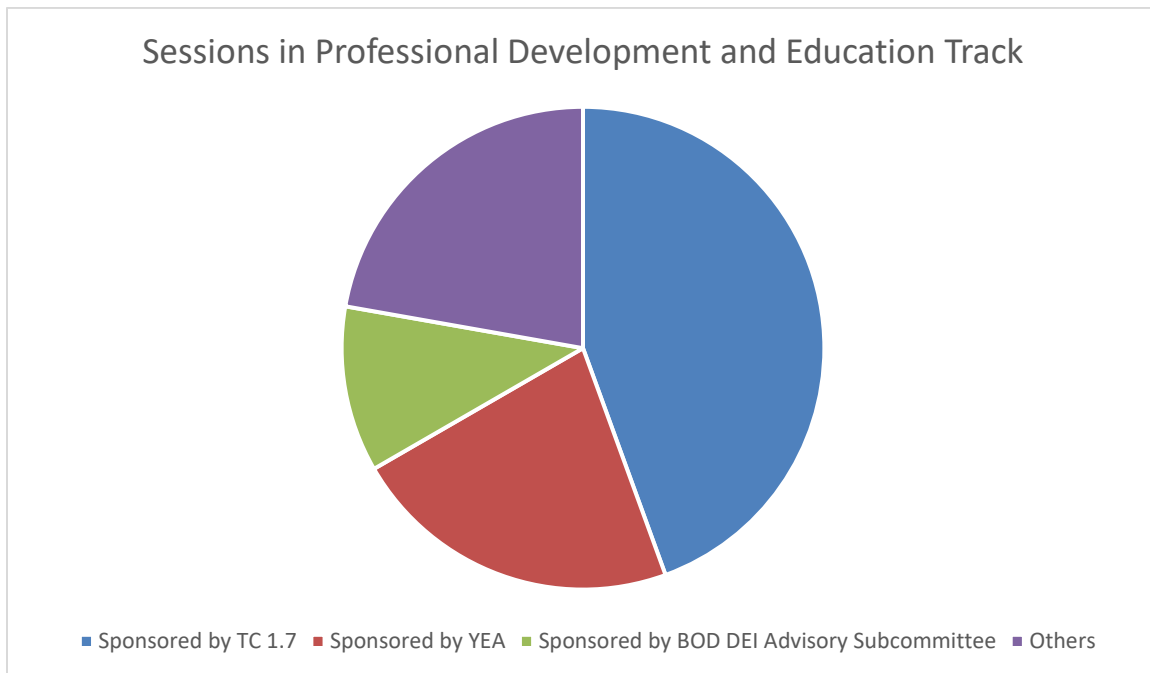
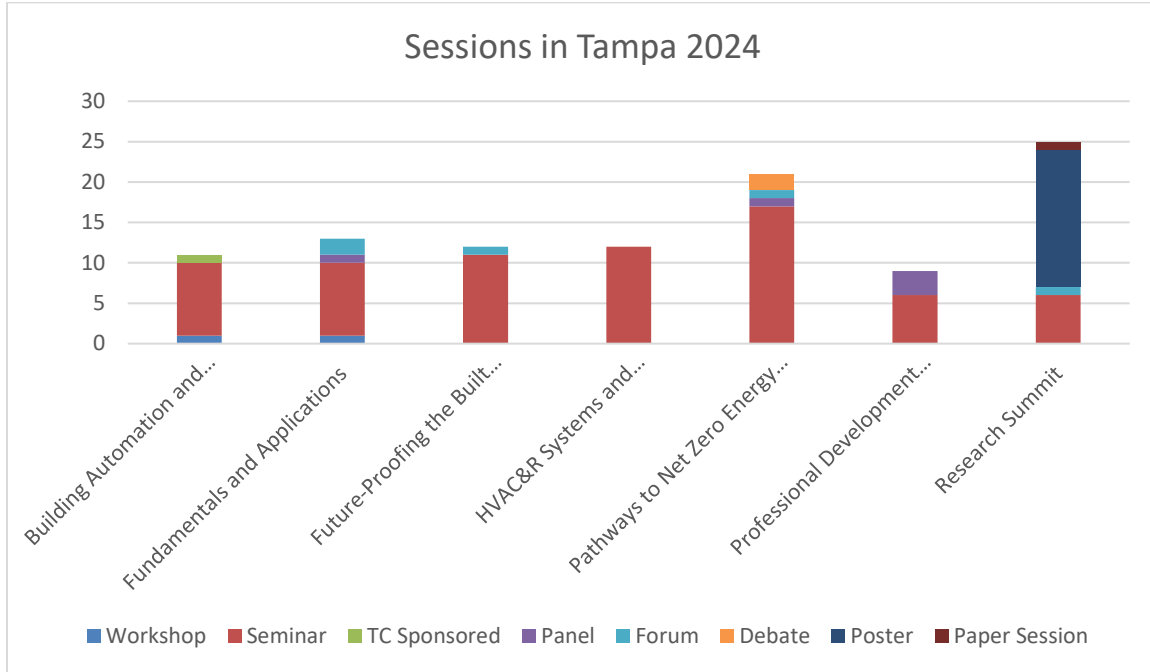
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1. Chair Welcome
    - a. Committee Scope
    - b. Ethics Statement
  2. Member and Guest Introductions
  3.  Roster Updates and Quorum Check
    - a. Review the changes for roster effective 7/1/23.
  4. Approval of Minutes – [TC0107 Minutes Atlanta - 20230206](#)
  5. TC Chair Report
  6. Industry Roundtable – Cooper
    - a. Held Friday, June 23<sup>rd</sup> at Marriott Waterside.
  7. Salary & Benefits Member Survey
    - a. On April 28, ExCom reported to the Board of Directors they approved the development of an annual salary survey for members.
  8. TC Communications
    - a. Website <https://tc0107.ashraetcs.org/>
    - b. Basecamp <https://3.basecamp.com/3106353/projects/1256953>
      - i. As of 2/11/23 – Pam has culled old members and added new members to the basecamp project.
      - ii. Please add your headshot to your Basecamp profile.
  9. Programs – Jennifer Leach
    - a. 2023 Tampa Bay Annual Meeting - Program Submissions – Status Update
      - i. We discussed a total of 6 programs and 4 were slotted. Were the other 2 submitted & rejected, or were they not submitted?
      - ii. Feedback for future meetings (should we resubmit topics? Feedback from sessions in Tampa)

- b. 2024 Chicago Winter Meeting ([Conference Tracks](#))
    - i. Only track of interest to our committee is Project Delivery Methods.
    - ii. Pull Planning / CPM (Swann per 2/15 email) – per 6/9 Programs meeting, potentially join forces with TC 7.2 (Elise & Heather)
    - iii. Deadline for Seminars – August 2<sup>nd</sup>, 2023
  - c. 2024 Indianapolis – Update
    - i. Conference Papers for Summer 2024 Indianapolis
      - 1. **Need Volunteers to Edit Abstracts and author (or co-author) papers. Must be completed by end of this meeting.**
        - a. The first step is an abstract (up to 400 words).
        - b. Final paper is no more than 8 single-spaced pages in length total (includes text, tables, figures, etc.).
      - 2. Topics
        - a. How to Structure a Project Team to ensure 1 person is responsible
        - b. How to Get Your Act Together & Get Organized
        - c. Writing Effective Meeting Notes
        - d. What Does an Effective Project Schedule Look Like
        - e. Writing Effective Memos and Letters
        - f. How to Prioritize when Everything is Important
        - g. Team Communication & Collaboration
    - ii. Seminars, Debates, Forums
      - 1. Do we know of anyone that may be able to lead a session on **Common Professional Liability Issues?**
      - 2. [Master Idea List](#)
10. New Business
- a. Guest Speakers at ASHRAE Conferences (Swann)
    - i. Mitchell noted in a 2/15/23 email that it is challenging to get non-ASHRAE members as speakers (ex: lawyers) because speakers are still required to pay a registration fee. Speakers from outside the industry can provide significant value to ASHRAE members. Potentially provide this feedback to CEC/TAC.
  - b. Open Discussion as Time Allows
11. Next Meetings
12. Adjourn

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**Addendum 1: Analysis of Programs Slated in Tampa**



**Addendum 2: All Sessions in Professional Development and Education Track****Seminar 5: Your Ethics Tool Box: Building a Framework for Ethical Decision-Making With Case Studies****Sunday, June 25 8:00 AM – 9:00 AM EDT**

**Summary:** ASHRAE members are often confronted with ethical issues (whether they realize it or not). This session is part of a continuing program under which ASHRAE members engage in an interactive session where participants are presented with multiple ethics cases, discuss the cases in small groups, and then reveal their decisions. Test your "Ethics IQ" against real cases and receive CE credit in the process.

**Chair:**

Julia Timberman, PE

**Technical Committee:**

1.7 Business, Management &amp; General Legal Education

Your Ethics Tool Box: Building a Framework for Ethical Decision-Making with Case Studies 1 and 2

Presenting Author: Michael Cooper, PE, Bernhard, Kenner, LA, USA

Ethics cases 1 & 2 will be presented to the session participants, participants will then discuss the cases in small groups, and then reveal their decisions to the room. The presenter will then provide feedback about the group's decisions. This is your chance to test your "Ethics IQ" against real cases.

Your Ethics Tool Box: Building a Framework for Ethical Decision-Making with Case Studies 3 and 4

Presenting Author: Julia Timberman, PE, Air Control Products, Columbus, OH, USA

Ethics cases 3 & 4 will be presented to the session participants, participants will then discuss the cases in small groups, and then reveal their decisions to the room. The presenter will then provide feedback about the group's decisions. This is your chance to test your "Ethics IQ" against real cases.

Your Ethics Tool Box: Building a Framework for Ethical Decision-Making with Case Studies 5 and 6

Presenting Author: Mike Bilderbeck, PE, Pickering Firm, Memphis, TN, USA

Ethics cases 5 & 6 will be presented to the session participants, participants will then discuss the cases in small groups, and then reveal their decisions to the room. The presenter will then provide feedback about the group's decisions. This is your chance to test your "Ethics IQ" against real cases.

**Seminar 6: ASHRAE Conference Crash Course****Sunday, June 25 9:45 AM – 10:45 AM EDT**

**Summary:** First time at an ASHRAE Conference? Been coming for years, but still confused? What is a TC? What is a Standing Committee? Who can attend what? What is the AHR Expo? And why is all this happening at once? This crash course provides all attendees with an introduction to all the ASHRAE

Conference activities, explains how you can get involved, and allows you to ask questions to experienced attendees.

**Chair:**

Branislav Cvijetinovic

**Other Sponsoring Committee:**

Young Engineers in ASHRAE Committee

**The Ins and Outs of ASHRAE**

Presenting Author: Elizabeth Jedrlinic, Sales Leader, Trane, San Juan, PR, USA

This presentation will give a high level overview of the structure of ASHRAE Society to first time conference attendees. It will also showcase the programs available to YEA members both within and outside of the conference.

**Let's Get Technical! An Overview of ASHRAE's Technical Offerings**

Presenting Author: Paul Fernandez, Sales Engineer, Mechanical Solutions Indiana, Indianapolis, IN, USA

With more than 50,000 members from over 130+ nations, ASHRAE is a diverse organization dedicated to advancing the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. This presentation will cover the technical side of ASHRAE that gets this work done - how to join a Technical Committee, which other groups meet at the conference, and what other technical resources are available to members.

**Make the Most of Your Conference Experience**

Presenting Author: Drew Samuels, Engineering Principal, Resource Innovations, Missoula, MT, USA

There is much more fun that happens at an ASHRAE Conference besides the technical sessions and committee meetings. This presentation will cover the tours and social events happening in Tampa and give an overview of what first time attendees can expect at future conferences.

**Panel 2: LIVESTREAM: DEI Within Your Organization: Implementing a DEI Plan (Even When You Don't Have Buy-In from Key Stakeholders)**

**Monday, June 26 8:00 AM – 9:30 AM EDT**

**Summary:** Over the past several years, organizations (including ASHRAE) have implemented DEI initiatives in an effort to increase awareness and promote policy change around diversity, equity and inclusion. What are the biggest challenges of implementing these policies? How do you gain consensus if some of your key leaders feel that such initiatives are unwarranted, discriminatory or politically-motivated? How do you effect meaningful change to improve employee/member engagement? This session features panelists who have faced and overcome these and other challenges to implement DEI initiatives at the corporate, institutional and grassroots levels.

**Chair:**

Devin Abellon, PE

**Other Sponsoring Committee:**

BOD DEI Advisory Subcommittee

**Panelists:**

- Jennifer Leach, PE BR+A
- Adeeba Mehboob, S. Mehboob & Company
- Reginald Truxon, AIA, NOMA, Gensler
- Craig Wanklyn, PE, Kansas State University

**Seminar 22: Engineer to Entrepreneur: Case Studies in Business Ownership****Monday, June 26 8:00 AM – 9:30 AM EDT****Summary:**

Have you ever thought about becoming a consultant or starting your own business? Being your own boss comes with a lot of benefits: you decide what work you do, where you work, and who you work with. But it's not all upside; business owners are responsible for tasks they don't necessarily enjoy or excel at, and ensuring a profitable business can be stressful. In this seminar, you'll hear from ASHRAE members who are engineers turned business owners. You'll hear why they started their business, lessons learned and answer your questions about entrepreneurship and business ownership.

**Chair:**

Pamela Duffy, PE

**Technical Committee:**

1.7 Business, Management & General Legal Education

**Taking the Big, Scary Leap into Business Ownership**

Presenting Author: Tricia Drake, PE, HVAC Double Check

Listen to advice, successes, and cautionary tales from a business owner who has only recently launched their company. Founded in 2021, hear from the owner of a engineering firm focused on design collaboration throughout pre-construction for commercial buildings. Attendees will hear their perspectives on entrepreneurship and how to finally make the call and take the leap into ownership.

**The Journey to Successful Business Ownership**

Presenting Author: Keith Reihl, PE, MBA, CEM, HBDP, Reihl Engineering, LLC

Learn challenges, advice, and lessons learned from a president and owner of an engineering firm that provides LEED consulting, commissioning, and energy auditing, along, with MEP engineering. Through the presenters six years of experience in the business, attendees will see how these relatable fields connect to their work and show what it takes to start a business.

**Balancing Act: The Art of Owning a Business and Maintaining Your Life**

Presenting Author: Sarah Maston, PE, LEED AP, Colliers, Hudson, MA, USA

This session will explore the concept of work-life balance for business owners. As an entrepreneur, it is easy to become consumed by the demands of running a business and neglect the important areas of life such as family, friends, and personal growth. Through this seminar, we will discuss the importance of work-life balance and how it can be achieved without compromising the success of the business. Attendees will leave with a deeper understanding of the impact of work-life balance on their business and personal life, as well as practical tips to create a sustainable and fulfilling lifestyle.

**Seminar 30: Workplace Retention in a Post Pandemic Global Economy****Monday, June 26 9:45 AM – 10:45 AM EDT**

**Summary:** This seminar focuses on explaining how retention in the workforce has changed in a post pandemic world. It examines recent trends in retention rates within the industry, discuss characteristics that employees are looking for in their employers that increase retention and new hire interest. It will also review possible causations for the increase of exodus from a workplace and strategies to reduce employee burnout. The second half focuses on similar topics with an emphasis on employees and employers internationally and the potential differences.

**Chair:**Elise Kiland, PE

**Attracting Talent Post Pandemic**

**Presenting Author:** Danielle Passaglia, Mechanical Engineer, Arup, Chicago, IL, USA

This session will focus on discussing retention in the workforce in a post pandemic economy. It will examine recent trends in retention rates within the industry, discuss characteristics that employees are looking for in their employers that increase retention and new hire interest. It will also review possible causations for the increase of exodus from a workplace and strategies to reduce employee burnout.

**An International Perspective on Workplace Retention**

**Presenting Author:** Eleazar Rivera, Director of Energy, Innovatorio, Monterrey, Mexico

The second half of this seminar will focus on the challenges facing the global community for talent retention, both from the post-pandemic perspective, as well as teleworking as a result of globalization and the needs of the generations that have just entered into the professional world.

**Seminar 44: LIVESTREAM: Quantifying the Impact of IAQ on Occupant Health****Tuesday, June 27 9:45 AM – 10:45 AM EDT**

**Summary:** Managing IAQ to both decrease acute and chronic diseases and optimize wellbeing and productivity in occupants is an underutilized yet powerful tool in supporting health. One of the biggest challenges is quantifying the relationships between IAQ constituents and human physiology. If we are to manage HVAC systems to support health, we need a data-based foundation that draws from studies in medicine, epidemiology, microbiology, chemistry and materials science. This seminar presents such a framework and outline the cost/benefits of IAQ managed for health.

**Chair:**

Stephanie Taylor

Technical Committee:

2.1 Physiology and Human Environment

Quantifying the Impact of IAQ on Occupant Health

**Presenting Author:** Stephanie Taylor, Building 4 Health, Inc., Austin, TX, USA

Managing IAQ to both decrease acute and chronic diseases and optimize wellbeing and productivity in occupants is an underutilized yet powerful tool in supporting health. One of the biggest challenges is



quantifying the relationships between IAQ constituents and human physiology. If we are to manage HVAC systems to support health, we need a data-based foundation that draws from studies in medicine, epidemiology, microbiology, chemistry and materials science. This seminar will present such a framework and outline the cost/benefits of IAQ managed for health.

#### Health and IAQ

Presenting Author: Marwa Zaatari, PhD, D ZINE Partners, Austin, TX, USA

*How to Achieve Sustainable IAQ: A Roadmap to Simultaneously Improving IAQ & Meeting Building Decarbonization and Climate Resiliency Goals.* Dr. Zaatari will discuss the steps to achieve sustainable indoor air quality, the evolution of ASHRAE guidance, innovations and new technologies to achieve IAQ goals, and the bottom line of cost effectiveness of good and sustainable IAQ.

#### DALY and IAQ

Presenting Author: Max Sherman, Ph.D., Moraga, CA, USA

IAQ is typically not represented by a health-based performance metric. Consequently, ventilation rates are used as a surrogate for IAQ. Recent research has developed “Smart Ventilation” technologies that economically optimize ventilation by considering utility rate structures, exposure to outdoor contaminants, as well as peak loads and total energy demand. Enabling this optimization of Smart Ventilation requires IAQ performance metrics that can be monetized. This presentation will review the most recent work on economic metrics for IAQ using Disability Adjusted Life Years (DALYs) to quantify health impacts of contaminant exposure.

### **Panel 5: LIVESTREAM: YEA Mentorship Panel Discussion with College of Fellows**

**Tuesday, June 27 1:30 PM – 3:00 PM EDT**

**Summary:** ASHRAE members at any stage of their career will benefit from this interactive panel discussion between a diverse group of YEA and the College of Fellows members. Mentorship does not just happen; it's important to be intentional about finding and nurturing relationships, both with those that fill experience gaps, but also with peers to achieve your highest potential. It's the goal of this panel for new and seasoned members of ASHRAE to develop their skills, knowledge and confidence around navigating through the organization and avail of all it has to offer such as technical, standing and grassroots committees.

Chair:

Madison Schultz

Other Sponsoring Committee:

YEA and College of Fellows

- Katherine Hammack, CEM, LEED-AP, MK Advisors
- Sheila Hayter, National Renewable Energy Laboratory
- Srinivas Katipamula, Dr. , Pacific Northwest National Laboratory
- Samir Traboulsi, PhD., P. Eng. , Thermotrade/Ranec
- David Underwood, Isotherm Engineering Ltd.

**Panel 6: Professional Liability – Sliding Doors\Changing Landscapes****Wednesday, June 28 8:00 AM – 9:30 AM EDT**

**Summary:** The landscape of project execution strategies has been rapidly changing. Collaborative strategies such as Integrated Project Delivery and Design-Build along with ‘hybrids’ like (progressive D-B and design-assist change the relationship and sometimes role of engineers and contractors. Increased use of contracts with ‘performance’ expectations (net zero, GHG emissions, GESC, C-PACE, etc) and “predictive” modeling (i.e. BIM and BEM) have changed owner expectations. Come hear our diverse panel cover the ins, outs and roundabouts that are impacting Professional Liability and what the savvy practitioner should know.

**Chair:**

Mitchell Swann, PE

**Technical Committee:**

1.7 Business, Management &amp; General Legal Education

**Co-Sponsoring Committee:**

7.1 Integrated Building Design

**Other Sponsoring Committee:**

TC 7.2 HVAC&amp;R Construction &amp; Design Build Technologies

**Legal Perspectives from the Practice**

Presenting Author: Jay Jayaram, JD, Atkins North America, Tampa, FL, USA

The changing nature of project execution strategies has made the delivery of engineering services much more complex. Roles and responsibilities have shifted and there is a greater focus on our work as it relates to the long term care of the community and environment as well as our traditional duty to our clients and the public health, safety and welfare.

**Insurance Perspective - Covering Bases, Seen and Unseen**

Presenting Author: Robert Hughes, JD, Ames &amp; Gough, West Chester, PA, USA

The challenge facing the insurance industry is that the changing pace of how projects are done and by whom often outruns the industry's historical, predictive models which are used to analyze risk. That can leave our clients and their clients underprotected as project demands grow.

**Owner Perspective - Demands for Performance Rule**

Presenting Author: Jennifer Isenbeck, PE, Moffitt Cancer Center, Tampa, FL, USA

As Owners, we have often dueling pressures being applied to us as we deliver projects. There is always the pressure of time and money, but now the number of stakeholders has grown. The impact of our projects on the environment and community has risen to become a major image on our radar. Performance is key.

**Design Perspective - Greater Demands with Broader Objectives**

Presenting Author: Mitchell Swann, PE, Resolution Management Consultants, Philadelphia, PA, USA

Designers are now faced with an ever expanding set of goals with more long term and complex targets. Time has become an even greater pressure along with a desire for greater certainty on outcomes. Designers have to balance both near term pressures and long term performance expectations.

**Seminar 61: Confidence and Competence: Striking the Perfect Balance**

Wednesday, June 28 9:45 AM – 10:45 AM EDT

**Summary:**

As engineers, we frequently think that high competence is the key to a successful career. In this seminar attendees learn how confidence can be just as important as competence. Speakers discuss what it means to be confident, what is an appropriate level of confidence, how confidence impacts competence and why confidence can be a struggle for under-represented groups like women and minorities.

**Chair:**

Lynndy Ruddell

Technical Committee:

1.7 Business, Management & General Legal Education

**The Confidence and Competence Balance**

Presenting Author: Julia Keen, PE, Kansas State University, Manhattan, KS, USA

In this seminar we'll address all your questions about confidence! What is confidence? What actions portray confidence or lack thereof? Can one be too confident? We'll review the spectrum of confidence and how it impacts your perceived competence. Why do women, in particular, struggle with appearing confident? Can we increase our confidence level?

**Confident Mentoring**

Presenting Author: Jennifer Leach, PE, BR+A, Vienna, VA, USA

Now that we understand confidence and its impact on competence, let's review why confidence is an essential component of mentoring. How can you help a mentee feel more confident? How does confidence empower you as a mentor?

**Addendum 3: Draft Abstracts for Conference Papers for Indianapolis 2024**

**Optimizing Project Team Structure for Enhanced Accountability in Mechanical Engineering Projects**

Efficient project management is crucial for successful execution of complex mechanical engineering projects. Central to this endeavor is the establishment of a well-structured project team that ensures clear lines of responsibility and accountability. This paper aims to investigate the optimal methods to structure a project team to guarantee a single person is assigned and held responsible for each aspect of the project.

To achieve this objective, a comprehensive literature review was conducted to identify existing models and best practices in project team structuring. The study also involved interviews and surveys with experienced mechanical engineers and project managers, allowing for the collection of valuable insights from industry practitioners. The findings were analyzed and synthesized to propose a framework for effective project team structuring in the context of mechanical engineering projects.

The proposed framework highlights the significance of three key elements: roles and responsibilities, communication channels, and project management tools. Firstly, clearly defined roles and responsibilities should be allocated to team members to ensure that each individual has a designated area of expertise and ownership. This includes designating a project manager or team leader who possesses the necessary authority and accountability to oversee the project as a whole.

Secondly, effective communication channels are essential for maintaining a seamless flow of information among team members. Regular meetings, progress reports, and documentation tools should be established to facilitate effective communication and foster a collaborative environment. Furthermore, the integration of project management software and technology can enhance transparency and coordination within the team.

Lastly, the implementation of robust project management tools and techniques is critical to ensure that project goals are met within the allocated time frame. This includes employing project scheduling, task tracking, and progress monitoring tools to track individual and team performance, identify potential bottlenecks, and take corrective actions promptly.

By adhering to the proposed framework, mechanical engineering project teams can streamline their operations, enhance accountability, and ultimately improve project outcomes. The structured approach helps prevent confusion, overlapping responsibilities, and delays, enabling team members to focus on their respective areas of expertise and fulfill their assigned tasks efficiently.

In conclusion, effective project team structuring plays a pivotal role in fostering accountability in mechanical engineering projects. This paper provides valuable insights into optimizing team structures through clearly defined roles and responsibilities, efficient communication channels, and the adoption of project management tools. Implementing such a framework can empower mechanical engineers and project managers to successfully deliver projects on time, within budget, and to the required quality standards.

### How to Get Your Act Together & Get Organized

In today's fast-paced and dynamic world, the ability to effectively manage time, resources, and information is crucial for success in any profession, especially for mechanical engineers. However, many engineers struggle with disorganization, leading to decreased productivity, missed deadlines, and increased stress. This paper aims to address this issue by providing practical strategies and techniques to help mechanical engineers get their act together and get organized.

The paper begins by highlighting the importance of organization in the field of mechanical engineering, emphasizing its positive impact on productivity, efficiency, and overall project success. It also explores the root causes of disorganization, such as poor time management, cluttered workspaces, and ineffective communication.

To address these challenges, the paper presents a step-by-step approach to getting organized. It starts by encouraging engineers to define their goals and priorities, both at the project level and in their personal lives. This clarity enables them to focus their efforts and allocate resources effectively. The paper then introduces various techniques for managing time, including creating schedules, setting deadlines, and utilizing productivity tools.

Moreover, the paper emphasizes the importance of decluttering physical and digital workspaces. It provides practical tips for organizing files, maintaining an efficient filing system, and leveraging digital tools for information management. Additionally, it discusses strategies for optimizing communication and collaboration, such as utilizing project management software, implementing effective meeting practices, and fostering a culture of accountability.

Recognizing the challenges that may arise during the implementation of organizational strategies, the paper offers guidance on overcoming common obstacles. It addresses issues such as procrastination, multitasking, and dealing with overwhelming workloads, providing practical solutions and mindset shifts to promote sustained organization.

The effectiveness of the presented strategies is supported by real-life examples and case studies from the mechanical engineering field. The paper also explores the potential benefits of leveraging emerging technologies, such as artificial intelligence and automation, to streamline organizational processes and enhance efficiency.

In conclusion, this paper serves as a comprehensive guide for mechanical engineers seeking to improve their organizational skills. By following the strategies and techniques outlined, engineers can enhance their productivity, reduce stress, and achieve greater success in their professional and personal lives.

Ultimately, getting one's act together and getting organized is not only a matter of personal discipline but also a key factor in driving innovation and advancing the field of mechanical engineering as a whole.

### Writing Effective Meeting Notes for Building Design and Construction Projects

Meetings play a vital role in the successful execution of building design and construction projects. They serve as a platform for effective communication, collaboration, and decision-making among various stakeholders. The ability to capture and document essential information during these meetings is crucial for maintaining project continuity, resolving issues, and ensuring project goals are met. This paper aims to provide mechanical engineers with guidance on writing effective meeting notes specifically tailored to building design and construction projects.

The first section of this paper explores the importance of meeting notes in the context of building design and construction projects. It highlights the significance of accurate and comprehensive documentation for project management, risk mitigation, and legal purposes. The section emphasizes the role of mechanical engineers as key contributors in meetings and the need for their proactive participation in note-taking.

The second section delves into the essential components of well-written meeting notes. It discusses the importance of capturing key discussions, decisions, action items, and responsibilities. It also emphasizes the need to document technical details, design considerations, and any other pertinent information related to mechanical engineering aspects. Additionally, the section addresses the significance of organizing meeting notes in a structured and easily accessible manner.

The third section focuses on practical strategies for effective note-taking during meetings. It provides tips for active listening, identifying critical information, and using efficient note-taking techniques. Furthermore, the section discusses the benefits of utilizing technology tools, such as digital note-taking apps or collaboration platforms, to streamline the note-taking process and enhance productivity.

The fourth section highlights the importance of post-meeting activities in relation to meeting notes. It explores the role of mechanical engineers in reviewing, sharing, and distributing meeting notes promptly. It also emphasizes the significance of following up on action items and tracking their progress to ensure accountability and project success.

The final section offers recommendations for continuous improvement in writing effective meeting notes. It encourages mechanical engineers to seek feedback, refine their note-taking skills, and adopt best practices from previous projects. It also emphasizes the value of regular communication and collaboration with other project stakeholders to enhance the quality and effectiveness of meeting notes.



By following the guidelines and recommendations presented in this paper, mechanical engineers can enhance their ability to write effective meeting notes for building design and construction projects. The adoption of these practices will contribute to better project outcomes, improved communication, and efficient decision-making, ultimately leading to successful project delivery.

### **Building an Effective and Realistic Project Schedule for building design and construction projects**

Building design and construction projects are complex endeavors that require careful planning and scheduling to ensure successful outcomes. A project schedule serves as a roadmap, outlining the sequence of activities, milestones, and deadlines necessary for project completion. However, creating an effective and realistic project schedule poses significant challenges for mechanical engineers. This paper aims to address these challenges and provide practical strategies for building an effective and realistic project schedule for building design and construction projects.

The paper begins by discussing the importance of project scheduling in the context of building design and construction. It highlights the potential consequences of inadequate scheduling, such as cost overruns, delays, and compromised quality. The significance of a realistic schedule that considers various project constraints, including resource availability, budget limitations, and regulatory requirements, is emphasized.

Next, the paper explores the key factors that mechanical engineers should consider when developing a project schedule. It emphasizes the need for a thorough understanding of the project scope, including design requirements, procurement processes, and construction methods. The incorporation of all relevant stakeholders' input and collaboration is also emphasized, as their expertise and insights can enhance the accuracy and feasibility of the schedule.

The paper then presents a comprehensive framework for building an effective and realistic project schedule. This framework includes various steps, such as defining project objectives, breaking down activities into manageable tasks, estimating durations, establishing dependencies, and allocating resources. The importance of utilizing scheduling software and tools to facilitate the process and enhance schedule visualization and communication is also highlighted.

Furthermore, the paper discusses strategies for managing schedule risks and uncertainties. It addresses the identification and mitigation of potential schedule disruptions, such as design changes, unforeseen site conditions, and material availability issues. The incorporation of contingency buffers and the implementation of proactive monitoring and control mechanisms are recommended to ensure schedule adherence and timely decision-making.

Finally, the paper presents case studies and real-world examples to illustrate the application of the proposed strategies and framework. It showcases successful projects that have implemented effective

project scheduling techniques, highlighting the resulting benefits, including improved project performance, enhanced stakeholder satisfaction, and reduced risks.

In conclusion, building an effective and realistic project schedule for building design and construction projects is a critical task for mechanical engineers. This paper provides valuable insights, strategies, and a comprehensive framework to guide engineers in developing schedules that consider project constraints, promote collaboration, and mitigate risks. By applying these recommendations, mechanical engineers can enhance project planning, execution, and ultimately deliver successful building design and construction projects.

**Writing Effective Memos and Letters building design and construction projects**

Effective communication is essential in the field of mechanical engineering, particularly when it comes to conveying information related to building design and construction projects. Memos and letters serve as vital tools for engineers to exchange critical project details, provide updates, and coordinate activities. However, writing these documents requires a specific set of skills to ensure clarity, conciseness, and professionalism. This paper aims to provide mechanical engineers with guidelines and best practices for writing effective memos and letters in the context of building design and construction projects.

The paper begins by emphasizing the importance of effective written communication in the mechanical engineering profession. It highlights the significance of clear and concise memos and letters in conveying technical information accurately and facilitating efficient project management. Furthermore, it discusses the potential consequences of poorly written communication, such as misunderstandings, delays, and increased costs.

Next, the paper delves into the key components of an effective memo or letter. It explores the importance of a well-defined purpose, establishing a clear structure, and using appropriate language and tone. The authors emphasize the significance of identifying the target audience and tailoring the communication accordingly to ensure maximum comprehension and engagement.

Furthermore, the paper provides practical advice on organizing and presenting information in a logical and coherent manner. It discusses the use of headings, bullet points, and paragraphs to enhance readability and facilitate the quick retrieval of essential details. Additionally, the paper addresses the importance of using visuals, such as diagrams or charts, to supplement written information and improve understanding.

The paper also addresses potential challenges and pitfalls in memo and letter writing, along with strategies for overcoming them. It discusses common issues like wordiness, ambiguity, and excessive technical jargon, offering tips on how to simplify language and enhance clarity without sacrificing accuracy.

To illustrate the application of these guidelines, the paper includes real-world examples of memos and letters commonly encountered in building design and construction projects. These examples highlight best practices and showcase the effective implementation of the principles discussed.

In conclusion, effective written communication is crucial for mechanical engineers involved in building design and construction projects. This paper serves as a valuable resource by providing guidelines, best practices, and practical examples for writing effective memos and letters. By following these recommendations, engineers can enhance their communication skills, improve project coordination, and contribute to the successful execution of building design and construction projects.

## How to Prioritize when Everything is Important: A Guide for Mechanical Engineers

### Abstract:

In the fast-paced world of mechanical engineering, professionals often find themselves juggling multiple projects, deadlines, and responsibilities simultaneously. With limited time and resources, the ability to effectively prioritize tasks becomes crucial for achieving success. However, the challenge arises when faced with a situation where everything seems important. This paper aims to provide mechanical engineers with practical strategies to navigate such scenarios and make informed decisions on task prioritization.

The paper begins by emphasizing the significance of prioritization in engineering projects and the potential consequences of neglecting this aspect. It then explores the common dilemmas faced by mechanical engineers when everything appears to be of equal importance, creating a sense of urgency and potential overwhelm. By acknowledging these challenges, engineers can better understand the need for systematic approaches to prioritize their work.

Next, the paper outlines a framework consisting of five key steps to effectively prioritize tasks. These steps include:

1. **Task Evaluation:** Engineers are encouraged to thoroughly evaluate and categorize each task based on its importance, urgency, and alignment with project objectives. This step helps create a clear overview and facilitates decision-making.
2. **Impact Analysis:** This step involves assessing the potential impact of each task on project outcomes and overall organizational goals. By considering factors such as cost, time, and resources required, engineers can gain insights into the relative significance of each task.
3. **Risk Assessment:** Identifying potential risks associated with each task is crucial to prioritization. Engineers should evaluate the consequences of delaying or neglecting specific tasks, considering both short-term and long-term implications.
4. **Resource Allocation:** Given the limited resources available, this step involves assessing the availability and allocation of resources required for each task. Engineers must consider factors such as expertise, equipment, and budget constraints to optimize resource utilization.
5. **Stakeholder Alignment:** Recognizing the expectations and needs of stakeholders is essential when prioritizing tasks. Engineers should engage in effective communication and collaboration with stakeholders to ensure their priorities are considered.

Throughout the paper, relevant case studies and real-life examples from the field of mechanical engineering will be presented to illustrate the application of the proposed strategies. By leveraging these practical approaches, mechanical engineers will be better equipped to make informed decisions when confronted with situations where everything appears to be important.

In conclusion, prioritization is a critical skill for mechanical engineers to thrive in their professional endeavors. By following a systematic framework and considering task evaluation, impact analysis, risk assessment, resource allocation, and stakeholder alignment, engineers can effectively manage their workload and ensure successful project outcomes even in situations where everything seems important.

### Team Communication & Collaboration in Building Design and Construction Projects

Efficient communication and collaboration among team members are crucial for successful outcomes in building design and construction projects. This paper explores the significance of effective team communication and collaboration in the context of mechanical engineering. It highlights the challenges faced by mechanical engineers in coordinating with multidisciplinary teams, emphasizes the benefits of clear and transparent communication, and presents strategies to enhance collaboration within teams.

Building design and construction projects often involve diverse teams comprising architects, structural engineers, electrical engineers, and mechanical engineers, among others. Each team member brings unique expertise, and their collective efforts are essential to deliver a high-quality end product. However, coordinating activities and integrating various design elements can be a complex task. Mechanical engineers, in particular, face challenges related to integrating mechanical systems with other building components and ensuring their seamless operation. Effective communication and collaboration play a pivotal role in addressing these challenges.

Clear communication is critical to ensure that team members share a common understanding of project goals, requirements, and timelines. Miscommunication can lead to errors, rework, and delays, impacting project schedules and budgets. Additionally, inadequate communication can hinder the exchange of ideas and hinder the innovation potential of the team. Therefore, establishing clear communication channels, leveraging appropriate tools and technologies, and fostering an open and transparent environment are vital to overcoming these hurdles.

Collaboration among team members enables them to leverage their collective knowledge and skills, leading to enhanced problem-solving and decision-making. Mechanical engineers need to collaborate closely with architects, electrical engineers, and structural engineers to ensure optimal integration of mechanical systems within the building design. This requires effective coordination, sharing of information, and mutual understanding of design intent. Employing collaborative platforms, conducting regular team meetings, and encouraging interdisciplinary discussions can facilitate efficient collaboration.

The paper also discusses various strategies to enhance team communication and collaboration in building design and construction projects. It explores the role of leadership in fostering a collaborative culture and establishing effective communication protocols. Additionally, the integration of Building Information Modeling (BIM) and other digital tools is examined as a means to facilitate information sharing and collaboration among team members.

In conclusion, effective team communication and collaboration are vital for mechanical engineers in building design and construction projects. Clear communication ensures shared understanding and prevents errors, while collaboration harnesses the collective expertise of team members. By employing



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appropriate strategies and tools, mechanical engineers can overcome challenges, enhance teamwork, and deliver successful projects.