A Discussion on the Diversity [& Inclusion] Problem in the AEC Industry

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Learning Objectives

- Identify ways to become an advocate for yourself and others.
- Utilize strategies to become more inclusive in our hiring and collaboration practices.
- Recognize unconscious bias and learn strategies to begin to overcome it.
- Identify and utilize strategies to help the next generation be more inclusive.

Description

The AEC industry has historically had issues with diversity in every sense of the word in the USA. Why is this? What can be done to be more inclusive and welcoming to all people? In this roundtable, we will build upon topics discussed in last year’s Women in BIM panel at Autodesk University to continue to identify some root causes of this disparity and discuss strategies that we can all use to advocate both for ourselves and for others.

Discussion topics may include:

- What groups are historically underrepresented in the AEC industry and why?
- What strategies have worked for you to get you where you are?
- Have others helped you get to where you are and if yes, in what ways?
- What are ways to get out of our comfort zone?
- Where can we find support in our communities?
- What strategies can we start employee NOW to be more inclusive in our hiring practices, to shift the collective paradigm?
- How can we actively encourage and nurture the next generation to pursue careers in the AEC industry?
Purvi is the Practice Manager for Architecture at CADD Microsystems, an Autodesk Platinum partner headquartered in Alexandria, VA, just south of Washington, DC.

Purvi supports professionals across all disciplines with BIM technologies, which includes teaching Revit, creating content, developing workflows and standards, troubleshooting issues, and finding creative solutions to both design and modeling problems.

She has 17+ years of experience, many spent as a preservation project architect, where she specialized in using innovative technologies to facilitate the documentation and rehabilitation of institutional buildings, and 12+ years of Revit experience working with existing buildings (most historic), from conceptual design, through construction administration and project close-out.

Purvi is a registered architect with degrees in both Architecture and Historic Preservation and is a board member on the Alexandria Board of Architectural Review in Alexandria, VA.

Her conference presentations include AU, BILTna, DesignDC, AIA National Conference, ArchEX conference, the APTI Annual Conference, and local AIA chapter events.

When she’s not going down Revit rabbit holes, Purvi likes to let off steam running, watching movies with her family, making origami and other paper crafts, or helping out with her kids’ school and their extracurricular activities.
Why this topic?

As a first generation Indian American who grew up in Salt Lake City, Utah in the 1980-90s, I was always a minority. I have always been acutely aware of being different than most people around me and that this difference could both help and hinder me. I grew up traveling quite often to India and understanding that there was a huge difference between the two cultures but when I was younger, I never really questioned it – to me each was it’s own world that I separated in my mind.

When I chose architecture as my focus for higher education (it was a perfect melding in my mind of my two interests – art and science), I chose a school in one of the most diverse cities in the country – New York City – and one of the most diverse colleges – The Cooper Union for the Advancement of Science and Art. My first year architecture class of 35 people had students from all across the globe from every social and economic background. It was honestly very refreshing to be in a place where diversity was encouraged and celebrated in this way. When I proceeded to earn my Masters of Science in Historic Preservation, my fellow classmates were also diverse, which was great considering that within the building professions, Historic Preservation has been traditionally just as homogenous in makeup and the general AEC industry. 

When I started out in the workplace, I quickly realized that the actual world of architecture was much less diverse than my college experience. It really was an “good old boys club” where things were done as they had always been done. After 10 years, I moved to a consultant role and discovered that this was not unique to one particular firm, but that there was some glimmer of hope that things were changing.

As I began getting more involved in the larger technology community, I heard from many that while things were improving, that there was still a long way to go. The beginnings of my real involvement into this issue began with the 2018 BILT conference, where I was invited to be a panelist on a Women in BIM panel. This was my first time speaking publicly on the topic. I was then part of a another Women in BIM panel at the 2019 Autodesk University conference which continued the conversation in a larger venue that received record participation in a packed room, highlighting the interest and need for change.

With this roundtable, I want to expand on the topics we had discussed during the previous panels and turn them into a much larger discussion. I am by no means an expert on the subject. While I have some life experiences that can speak to issues of diversity and inclusion, I am just one person with my own reality. Instead of doing the talking, I wanted to instead listen and learn more myself about other’s unique and shared experiences.

Only after I sent out the survey did I discover that an Industry Talk on this subject was given by Danielle Civitillo at AU 2019 titled “Why Diversity and Inclusion in the AEC Industry are Necessary and How to Achieve them.” I recommend that you review her presentation and handout before this session as the topics raised there have informed the discussion topics below.
Roundtable Discussion Questions

The questions listed below are to facilitate the roundtable discussion. These questions were formed from a review and analysis of the comments received via the survey I created and shared and other materials that I have discovered along this journey. More information on the survey itself and the results can be found in the next section. The order below is a suggestion only to keep the conversation going if needed.

Disclaimer: I know that we are all tired of tiptoe-ing around this issue, so I’m going to be blunt below in my questions and my assessment of root causes. I want this to be an honest and real conversation while also being respectful of all parties involved.

Defining the Problem

Question 1:
From the survey, official labor and statics information and from our own experiences, we have a pretty good sense of the major groups that are typically underrepresented in the AEC Industry – women, ethnic minorities, LGBTQ folks, and those who are differently abled. Are there other groups that we need to specifically target for better inclusion in the industry?

Each person has their own challenges and by identifying groups and their general characteristics, we can begin to then create a more individualized approach to including these groups.

Question 2:
What are some of the root causes of the lack of diversity and inclusion in the AEC Industry?

The survey provided a great variety of examples of root causes, many of them centered on implicit bias, racism, and opposition to change.

Question 3:
Have you faced discrimination in the workplace? If so, is there anything that you would like to share with the group? What strategies did you use to cope with these experiences and what impact did they have on you?

We want everyone to feel comfortable so no one is required to share any information unless they choose to do so.

Question 4:
There is a lot of ego in the AEC industry, which many have commented might be one of the main factors contributing to the lack of diversity – that people don’t like to be called out for being wrong or discriminatory because it tarnishes their reputation. Why do you think that egotism is so rife in the AEC industry?

Disciplines like architecture are surrounded in ego in part because you have to have a certain amount of self confidence to put your work out there and prove that what you’ve created has value in the world. How can this confidence not be turned into ego run rampant?
Question 5:

Continuing the discussion on ego, have you seen places where change has been able to occur? What are strategies to break through this ego layer?

We definitely don’t want to be sycophantic and sugar coat what we tell others but at the same time we want to be respectful as a general rule of thumb. Are there times when the only way to break through is to really be blunt and, to an extent, offend to get through?

Workplace Solutions, Support, & Advocacy

Question 6:

How do we convince those at the top that D&I (Diversity and Inclusion) is important and can make a huge difference in their business, not just economically but socially and culturally?

Think about what would incentivize a business owner/leader to open their mind and be open to change.

Question 7:

What solutions have you seen that have made a difference in D&I and why do you think these initiatives work? Alternatively what have seen that doesn’t work and why?

A lot of companies have D&I committees that have had varying levels of success. The hope here is to start creating a list of strategies that can be implemented NOW and that can lead to a robust program that eventually becomes obsolete as culture shifts.

Question 8:

What are ways that we can support the diversity that is already in the industry? How do we support groups in different ways to continue their valuable contributions?

Often women leave the industry because it’s not compatible with pregnancy and having a family. Others might leave because they don’t feel like they are valued because they are, too young, too different, too old, too [fill in the blank].

Question 9:

What are ways that we can support each other without putting an undue burden on already over-burdened groups? To be blunt, how can cis, white males support colleagues that don’t have the same opportunities and priviledge as them?

This question is in direct response to an issue raised by Danielle in her presentation. She states that all POC who worked at a company with a D&I program and who answered her survey were all part of that committee. While it’s great that they are involved, we have seen that this can put a great burden on people who already have a great burden on them because of societal bias.
Question 10:
What are some ways that we can be more aware of bias around us and counteract it when we see it? How can we be advocates for others in a way that is respectful and cognizant of their backgrounds and personal experiences?

Please share examples of how you have been helped by those around you, or you have helped others.

Economic and Education
Question 11:
What are some economic and educational barriers that hinder a diverse applicant pool? What are some suggestions for ways that this can be changed? What have you seen that has made an impact?

Survey respondents indicated the price of education and relatively poor pay as two main barriers.

Question 12:
What are ways that kids can get exposed early to all the fields that are encompassed in the AEC industry? How can we support those who want to pursue these fields but don’t know where to begin or don’t have the means to do so? Should we begin this early or later?

Programs exist to expose K-12 students to AEC fields but often they are limited in scope and reach. Describe programs that you have seen/experienced and how they might be expanded to further their reach.

Final Thoughts
Question 13:
I want to use the end of this session to come up with examples of ways that diversity is beneficial to everyone – social, economic, cultural, maybe even spiritual?

The hope is to create a list of benefits that we can use to influence others and help to change their minds about being more open to all kinds of people.

Question 14:
Are there any additional topics that you would to discuss or any last thoughts that you would like to share?

Thank you for being part of this discussion! If you would like to continue to be involved, please got to the website in the next section.
Diversity Survey Results – Demographics & Data

To help me gain a better understanding of the issues and makeup of the industry as it currently stands, I created an online survey. I want to make clear that this survey was distributed via social media only – Twitter, Linkedin, and Facebook – and was not scientific but rather a way for me to get an general idea of the issues and solutions people around the world had to share. Below is a summary of that information. To have time to more thoroughly analyze the data, cross-data analysis will be posted at the website listed below and be updated periodically as more survey data comes in.

https://sites.google.com/view/aediversityproblem

If you would like to share your thoughts, the survey is open and will remain so, as a way to continue to inform the discussion with more individual experiences.

https://forms.gle/3GT87PsmUfRFQbben7

Demographics of Respondents:
128 unique responses were submitted.

The following section give a general overview of the responses received for the survey.

Gender Identity:
- Male: 57% (73 respondents)
- Female: 43% (54 respondents)
- Non-Binary: 0%

Sexual Orientation:
- Heterosexual: 90%
- Homosexual: 5%
- Bisexual: 3%
- Pansexual: 2%
Respondents' Age

- 19-29: 8%
- 30-39: 4%
- 40-49: 7%
- 50-59: 31%
- 60-69: 8%
- 70+: 5%
- 80+: 4%

Race

- White: 81%
- Black/African American: 33%
- Asian: 33%
- Hispanic or Latinx: 21%
- American Indian or Alaska Native: 4%

Income bracket growing up

- Lower Class (below or at the poverty level, free and reduced price lunch, on gov't or private assistance, typically household income below $20,000 per year)
- Working class (generally able to make ends meet, paycheck to paycheck, typically household income of $20,000-$50,000 although varies based on location)
- Middle Class (able to live comfortably with some savings and investments, typically household income of $50,000-80,000)
- Upper Middle Class (own a house, have investments, no financial insecurity, typically household income between $80,000-$120,000)
- Upper Class (lots of personal wealth and property, typically household income above $120,000 per year)
Highest Level of Formal Education Completed

Money a Factor in Formal Education?

Discipline of Respondents

Years in the Industry
Discriminated Against at Work

- Yes: 57%
- No: 43%

Discriminated Against at Work

- Female: Yes: 90%, No: 10%
- Male: Yes: 70%, No: 30%

Discrimination Categories

- Age ("too young")
- Gender identity
- Education
- Race/ethnicity
- Age ("too old")
- Religion
- Pregnancy
- Physical ability/disability
- Sexual orientation
- Skin color
- National Origin
- Physical size
- Medical history
- Social class
- Supporting LGBT teammates
- Being an interior designer

The data indicates that individuals are more likely to be discriminated against at work based on specific categories. The chart shows a higher percentage of affirmative responses for certain categories compared to others.
Feel Supported by Direct Manager (5 the most supported)

Feel Supported by Company (5 the most supported)

Likely to be at Current Employer in 5 Years (5 most likely)
Cultural Heritage

So many diverse answers were provided that a word cloud seemed the best way to share this data.

Respondents Location – Country
12 Countries

Respondents Location – USA State
22 States + DC
Diversity Survey Results – Experiences, Root Causes, & Solutions

In the survey, I asked 3 questions that were intended to inform the discussion questions for this roundtable. Below is a summary of the responses that I received. I have taken the answers and tried to group them together into themes.

What is the biggest issue you have faced or you have seen with diversity and inclusion in the AEC industry?

General
- “Good Old Boys Club” (this was written a lot)
- Diversity in the general population not reflected in the leadership of AEC firms
- Wealthy white male leadership
- Culture of those at the top creates obstacles and a harsh environment for diversity
- If you aren’t like them, you have to work harder and aren’t valued as highly
- Deep rooted history of stereotypes
- Women and BIPOC don’t feel comfortable in the profession
- Lack of diversity in clientele – mostly upper middle class and higher
- Industry is rife with ego and opinions where companies are born and die on reputation, which puts architects in a constant ego trip
- Being judged based on your appearance and/or personality
- General barriers to entry and then complaining that there’s not a pool to draw from when it’s been made small intentionally
- Disconnect between what firms say they do and what they actually do
- Credential bias – architects seen as more qualified than interior designers
- Retaliation and bullying for standing up for yourself or others

Preconceived Notions
- Finding diverse applicants is “more work” and not something that we are trained to do
- Hiring only for diversity in culture/race/gender above expertise and experience
- Hiring for “culture fit” which often means “like us”
- Women are “lawsuits waiting to happen” or only got in because of “favors”

Awareness
- Unconscious bias
- Bias against minorities isn’t just leveraged by the majority but also by minorities towards each other
- Very behind in Diversity & Inclusion (D&I) nitatives
- White, male, hetero at the top that layers on privilege and lack of awareness – they think that because they did it, anyone can
- Not being aware of these issues in general (or refusing to acknowledge them)
- They don't care
- Don’t discuss it, or don’t want to
- Not looking outside of your “echo chamber”
• Lack of inclusive policies – WFH, flexible hours, leave policies, work/life balance

Gender Identity
• Being pigeonholed into roles based on gender – i.e. men work construction, women are interior designers
• Sexual harassment and retaliation
• Men taking credit for women’s ideas, not letting them speak, not giving them a seat at the table.
• Women seen as not serious and lacking ambition for:
  o Working fewer hours
  o Wanting maternity leave
  o Wanting flexible work hours and environments

Racism
• Not hiring someone with a foreign name
• Assuming that international applicants know everything even though they may not have much experience
• Hiring internationally as contract work only and not full-time employees
• POC aren’t a “cultural fit”
• Lack of diversity in practice, but not in college – where do all the diverse people go?

Age
• Ageism both younger and older
• Younger companies not respected, especially those run by younger people
• Younger employees being taken advantage of – lower pay, longer hours (often due to poor management skills by those above)
• Responsibility not given (or taken away) because a person is deemed “too young”
• Generation gaps between management and production staff

Education
• Lack of diversity in graduate engineering school
• Lack of educational opportunities available to minorities
• Minorities don’t pursue careers because of low incomes in the AEC industry
• Cost and time to get a degree and then a license
• Being judged right away for not coming from a “good school”

Economics
• Salary inequality for foreigners, women, those who are “different”
• Lack of salary transparency
• Difficulty negotiating an appropriate salary
• Lack of willingness to invest in new tools (and ideas)

What do you think are the root causes of diversity & inclusion issues?

General
• Old stereotypes toward people and toward certain sectors of the profession
  • Appearance, perceived morality
  • Gender
  • Age
  • Responsibilities of a role
  • Role
  • People are stuck in their ways
  • Don’t see the benefit of change or feel like there are incentives to change
  • Not a priority
  • Like thing to be and stay the same
  • “We had to suffer so you should have to, too”
  • Discrimination against those new to the field
  • Ignorance
  • Close-mindedness
  • Lack of respect for work-life balance – profession is not sustainable (architecture especially)
  • General lack of support of those who are entering or want to enter the industry
  • Lack of communication
  • Limited talent pool

Ego
• People get defensive when you ask them to change/evolve
• Possessive of power/spotlight
• Historic elitism and privilege
• Superiority complexes
• Pandering & letting people get away with bad behavior

Bias
• Unconscious Bias
• Systemic Racism & Cultural bias
• Sexism, gender bias, & perceived gender roles
• Feeling the need to conform
• Not valuing diversity in leadership
• Not much thought on reincorporating those who left the field and want to reenter later in life

Economics & Education
• Capitalism
• It’s not cheap to get educated in architecture and engineering
• Cost is a big barrier to licensure
• Lack of support and outreach at a young age
• Lack of programs to expose kids to AEC careers
• Architecture schools aren’t formatted to accommodate working part-time
• Architecture as a career does not have a good ROI
• Architecture as a profession is not valued from outside of the industry so pay is low
Please describe solutions, if any, have you've seen to counteract these anti-diversity and exclusive practices? If you haven't seen any, please describe any ideas for solutions that you would like to share.

Education
- Mentorships at young ages
- Education about alternative education avenues
- Scholarship programs for disadvantaged youth
- More internships, job shadowing, and accessibility/insight into the AEC industry
- Encourage the trades
- Outreach to disadvantaged K-12 schools to elevate interest
- Flexible schedules during university that support part-time jobs

Workplace
- Build it and they will come
- Government requirements
- D&I CEU requirements
- Blind Interviews & updated job descriptions to be more inclusive
- Open conversations about ways to increase diversity
- Company initiatives to promote education and awareness
- Community conversations
- More exposure will hopefully make people more open to change
- Retire old thinkers (wait it out)
- Coaching, counseling, training
- Time and effort
- Social pressure
- Intentional hiring
- Clients – demanding diversity in RFPs
- Education of people in power – “emotional intelligence” and Bias/awareness training
- Create spaces where leaders feel comfortable with their own blind spots and the blind spots of their companies
- Regular training to reinforce practices
- Recognize discrepancy between industry and community
- Put strategies and timelines in place for all levels of organizations to mirror the communities they are in/they serve
- Flexible work schedules
- Defined paths and salaries based on experience and education
- Training people to speak up and making them feel comfortable in doing so – this is a fine line since there’s a certain amount of “ring kissing” necessary to win jobs
- More women and BIPOC presenting and hosting events to showcase their capabilities and knowledge, to break down gender/cultural barriers
- Real commitment from companies to “put their money where their mouth is”
Conclusion
The roundtable is by no means the end of the discussion, it is only the beginning of what I hope becomes a larger conversation and action plan to create real change in the world.

For this reason I have created the website as a way to continue to share information. Eventually I hope for it to become a shared space with the following information:

- Updated survey information
- Links for additional resources on articles about the topic
- Links to programs to support diversity and inclusion
- A space to share ideas and thoughts on the topic and connect with others