ACE MENTOR PROGRAM
ARCHITECTURE • CONSTRUCTION • ENGINEERING

MENTORING TIPS
TEAM LEADER BEST PRACTICES

DEVELOPED BY:
THE ACE MENTOR PROGRAM OF GREATER NY

Table of Contents

BEST PRACTICE HANDBOOK 2

PURPOSE 2

STARTING THE YEAR 3

STUDENT REGISTRATION FAIR 3
SCHEDULE 4
PROJECT SELECTION 6
PROJECT SELECTION: RFP BASED 7
PROJECTS 7
TEACHING STYLES & TECHNIQUES 10
STUDENT RETENTION AND ENGAGEMENT IN SESSIONS 11
STUDENT ENGAGEMENT OUTSIDE OF SESSIONS 12
USING SOCIAL MEDIA: INSTAGRAM BEST PRACTICES 13

MID-YEAR 15

FIELD TRIP PLANNING & PROTOCOL 15
BIM/CAD TECHNOLOGY & MODELING 17
COLLEGE SCHOLARSHIP PROCESS 20
SCHOLARSHIPS TO SUMMER ACTIVITIES 22
SUMMER INTERNSHIP & CAREER EXPLORATION OPPORTUNITIES 23
ONLINE NETWORKING 24

END OF YEAR 25

PREPARING FOR FINAL PRESENTATION 25
POST-GRADUATION COMMUNICATION: FROM STUDENTS TO MENTORS 28
MENTOR RECRUITMENT & RETENTION 29

MENTOR RESOURCES 31

GETTING INVOLVED IN ACE MENTOR COMMITTEE: 31
CONTRIBUTING TO THE BEST PRACTICE MANUAL: 31

Best Practice Handbook

Purpose

The Best Practice Handbook has been created by the ACE Mentor Committee to help new and existing teams learn about different techniques with which other teams have had success. The ACE Mentor Committee is comprised of volunteers who have experience mentoring for the ACE Mentor Program of Greater NY.
The goal of this handbook is to have a variety of mentor teams contribute their methods for different subjects. Teams are also encouraged to provide topics to be incorporated into the Handbook. There is no one way to mentor an ACE team, and the diverse mentors, methods and students are what make the ACE program so great. With the handbook as a guide, teams can follow the suggested methods, combine different methods, or use the methods as inspiration to create their own.

Remember the goal for every ACE team is for the students to learn and to experience a holistic view of the building process.

If you would like to contribute to the handbook or have suggestions for topics you'd like to see included, please contact the Mentor Committee Program and Education Coordinator Alison Kran at GreaterNY@acementor.org.

Starting the Year

Student Registration Fair

Student recruitment kicks-off the season and helps give a team the momentum for a great year. Each year, the staff at ACE Mentor Program of Greater NY organizes a three-hour Student Registration Fair. Hundreds of students who are interested in ACE attend this fair. Mentor teams set-up tables at the fair, speak with students and help them find the team that fits best with their interests and schedule.

In order to attract students to your team, we suggest the following:

It Starts with the Poster: A standing poster will display the meeting day and time, location, and firms involved. Make it enticing with a picture of the proposed project, photos of the past team, or past model and/or cool activities. Most students have certain requirements regarding location or time. It can be helpful to add nearby subway stops and lines.

Back It up with Supplies: Some teams elect to have candy or giveaways at the table to attract attention to the table. However, the team's time/location information may be the leading reason for students to commit to the team. Bring plenty of handouts to distribute the team's information and keep the team on students' minds as they scan through other tables.

Get Coverage: Recruitment can involve a few steps: Reaching out to students, explaining the team to interested students, and taking down information and completing paperwork for the students who are ready to commit. Make sure there are at least three mentors representing the table--one mentor to record and two to explain the team.

Schedule Shifts: Recruitment is an energetic three hours that can drain a mentor. Most mentors may not be able to get there early but some may not be able to stay late. Spread the work out by having mentors volunteer for shifts during the whole recruitment fair.

Reach Out: Students can be shy or unsure how a fair works. Take on the responsibility to initiate conversation. A simple "hey" or "are you for looking for a ---- day team?" could get a student asking questions about the team. Some students are new to ACE and will need an overall explanation of the ACE program.

Look for a Good Fit: Recruitment commits students for the rest of the year. If a student is looking for a team that will work on modeling but the team isn't capable, be honest. The same applies if the team does not include a mentor from the specific field a student is interested in. Both the team and students will suffer if expectations are not aligned. Think about the team's age dynamic. An unsure freshman may not be comfortable on a team of seniors. Bottom line: don't sell the team or student short for the sake of getting a name on the list.

Celebrate: Take advantage of the milestone and one of the first team gatherings as a chance to hang out and recap on the new team by organizing a little post recruitment meet up. Keep the momentum going!

Schedule

Planning your ACE Team's schedule is an important task in making sure the season goes smoothly and the team gets the most out of their year. Often mentors struggle on where to start and how to plan.
The following are some important items to consider when creating your team's curriculum and schedule.

Organization: At the beginning of ACE season, teams should decide how they will organize the team's schedule. Organization should be based on the team's frequency of meetings and the degree of detail focused on the design disciplines.

Frequency of Meetings: The ACE season is the last week of October through the end of May, with teams meeting once every other week. If your team is not following the schedule because of your desire to participate in the National CIRT competition or for any reasons, you must first contact the ACE Mentor of Greater NY office in order to gain approval (GreaterNY@acementor.org). If a team is interested in competing in the National CIRT competition, please notify the ACE Greater NY office as well.

Organization of Design Groups: The ACE model requires all teams to introduce each of the four major disciplines in the design and build field to their students - - (1) architecture; (2) civil/structural engineering; (3) mechanical engineering, electrical engineering, and plumbing; and (4) construction management. After an introduction to each discipline is presented, teams may choose to split into discipline groups to allow for more time to focus on each aspect of their project's design. Teams should decide if their team is to work:

1. One group throughout the season and rotate working on each discipline
2. Split into different disciplines after an introduction period so that each sub-group focuses exclusively on one design discipline.

"Curriculum"/Season Goals: The organization of a team's schedule will determine your team's production, and should set the expected level of goals or deliverables for the team's project. After planning your team's organization, decide on the level of deliverables your team is looking to accomplish in its season. Schedules should be planned to achieve the desired deliverables. Deliverables can vary based on the disciplines of your team firms, and also the level of the students. Below are example deliverables/schedules ranging from basic to advance.

Example Schedule: Bi-Weekly

Session No.	Description	Notes
-	Student Registration	i.e. - Collect consent forms, update contact list
1	Introductions and Icebreaker	
	No Class - Election Day	
2	Architecture Introduction	
3	Structural Introduction	
-	No Class – Thanksgiving	
4	Mechanical Engineering Intro	
5	Landscape Architecture Introduction	i.e. Holiday Party
6	Construction Management Intro	i.e. collect permission slips
7	Site Visit	
8	Reveal Project Assignment – Overview of Milestones	
9	Project Development	
10	Project Development	

11	Project Development	
12	Review Presentation Deliverable – model, PowerPoint, boards	
-	SCHOLARSHIP APPLICATIONS DUE	
13	Project Development	
14	Project Development – Final Development Session	
15	Power Point and Model Building	
16	Power Point and Model Building, Rehearsal	
17	Finalize PPT and Rehearsal	
-	Presentation	

Example Schedule – Weekly & CIRT

Session No.	Description	Notes
-	Student Registration	
1	Icebreakers & Introductions **Introduction of CIRT RFP**	
2	Design Activity Presentation of Three RFPs // RFP Selection	
3	Construction Activity // Brainstorming Session // **RFP Selection / Project Selection**	
4	Construction Management Activity // **Final Project Selection**	
5	Design Project	
6	Design Project	
7	Design Project	
8	Design Project	
Winter Recess – Optional Meeting	Design Project	
9	Scholarship Application Opens	
10	Design	
11	Design Project	
12	Design Project	
13	Design Project	
14	Design Project	
15	Project Working Session	
16	Project Working Session	
February Recess – Optional Meeting	Project Working Session	
17	Project Working Session	
-	ACE Scholarship Application Deadline	
18	Finalize CIRT Competition Deliverable	
-	CIRT Entry Due to CIRT National Office	
19	Presentation Working Session	
-	Notification of Finalists	
20	Presentation Working Session	
21	Practice Presentation	
-	CIRT Presentations (tentative)	
22	Site Visit	
Spring Recess- Optional Team Meeting	Presentation	
23	Practice Presentation	
24	Practice Presentation	
25	ACE Team Presentations	

Project Selection

Deciding on a project that will dictate the course of action throughout the academic school year can be stressful. It can also be the most celebrated part of the entire school year.
Note: These methods are just suggestions. Any means that allow a project to be established are viable alternatives.

Objective 1: Selecting a Site: A design project is never rendered in free space. Understanding where the building will be helps decide what type of building is most suitable for a selected site.

Method 1: Mentors select site behind the scenes

1. Establish a pool of sites from which to pick from
    a. Site can be selected from old/current RFP's or competition websites.
    b. Site can be derived from mentor input (if the mentor has external knowledge).
    c. Site can be selected if working relationships allow access to a certain locations.
2. Vote among the mentors to decide most appropriate site location for the year's goals.

Pros: Speeding up this process allows for more time for project development. Decisions could be made without the need to visit each potential site.

Cons: Minimal student engagement.

Method 2: Students select site during a class session

1. Establish a pool of sites from which to pick from
    a. Site can be selected from competition websites.
    b. Students can research areas that interest them that may have project potential.
    c. Site can be selected if working relationships allow access to certain locations.
2. Vote among students to decide the most suitable site location to achieve the year's goals.

Pros: Heavy student engagement. Reliance on mentor guidance.

Cons: Reliance on a reasonably sized student contribution. Sites may not be feasible. Students may not have the initial understanding of the magnitude of the space available to them.

Objective 2: Selecting a Project Type: After a site is selected, the next step is to choose the type of project to work on. Examples include a commercial, residential, or community space.

Method 1: Mentors select building type behind the scenes

1. Establish a pool of projects from which to pick from
    a. Projects can be selected from old/current RFP's or competition websites.
    b. Projects can be derived from mentor input (if site is known).
2. Tally vote among the mentors to decide most appropriate project for the year's curriculum.
3. Alternatively, mentors can choose a group of project choices for the students to vote on.

Pros: Speeding up this process allows for more project development time. Allows for additional research time for students and mentors to learn about similar projects.

Cons: Lack of student engagement may reduce personal investment and interest in project selected.

Method 2: Students select project during a class session

1. Request the students to bring in ideas for a design project for the selected site.
    a. Will likely require an entire session for students to research and contribute ideas.
2. Establish a small pool from which the students could vote upon.

Pros: Heavy student engagement.

Cons: Reliance on a reasonably sized student contribution. Massive outpouring of ideas may saturate the pool of prospective projects. Projects may not be feasible/suitable for the site selected. Be prepared for far out ideas.

Project Selection: RFP Based Projects

All projects begin with a set of requirements created by an owner to address programmatic needs. These needs might be simply 'we need more space' to a more complex multipurpose space that demands flexibility. The ACE model-project can be explained as 'design/build a mock-project as real as possible without actually building it.' At the start of each year the team could start out with an RFP issued by a mentor-client (addressed to the ACE team) with a due date that matches the day of the final presentation. This is not an easy thing to create, especially if there is no 'client' in mind.

On Finding a Mentor-Client: When deciding on a potential mentor-client think about active projects, think about colleagues and friends in the industry, but always be mindful of their privacy and business issues. Make sure to discuss among the team before approaching the client to ensure there is no potential for conflict. In addition, make sure you follow up, clearly in writing, all of your discussions regarding the team.

Once a potential client is on board make sure to notify the ACE Mentor Program of Greater NY staff and make introductions via email at a minimum (GreaterNY@aceementor.org). The client may be recruited as a future team sponsor! Here are some examples of potential conflicts so that you can appreciate your responsibility in this process:

- A client may wish to keep an anonymous profile with all non-for profit volunteer work.
- A mentor's boss is approached at an industry function and is embarrassed by not knowing that their firm has been speaking with this client.
- The Mock-client may not let their team know about the mock-project. This could result in confusion.

To this point, it is important that the RFP is issued to the ACE team on the mock-client's letter head. Doing this adds realism and signifies that the client formally is aware of their involvement.

Just a warning, this is not an easy task. It is typical to approach 5-6 potential clients before getting someone interested in coming aboard. This may be due in part because of the unique nature of the ACE program, but also the reality that everyone in this industry is very busy.

Potential Mock-Client Contributions: Once an interested client is found, they should be brought on board as early in the year as possible. Ideally, before the registration fair so that the project idea can help recruit students who want to work with the mock-client. Here is a list of questions and requests for the mock-client:

- We need an RFP issued to our team on your company letterhead. I can write it for you and send you a word file to edit and you can transfer it onto your letterhead.

- We would love to be able to have some conference calls/emails throughout the year to give updates and discuss issues as they come up.
- We meet typically every other week. Would you be able to attend a class to meet our team in person or perhaps we could schedule a site visit with you?
- The Final Presentation is in May, we would be honored if you could attend.
- We will typically include site photos and drawings from our meetings in inter-team emails and in the final presentation. Please let us know if this is ever an issue.
- Your involvement is totally up to you as we can appreciate how busy you are. Just by you taking the time to create an RFP with us means a lot to our team.

Creating the RFP: The project should be something that can realistically be designed and built within 2-3 years. The project should be designed with realistic budget constraints. DO NOT let the phrases like 'money is no object', 'sky's the limit' or 'design the tallest building in the world' pervade the dialogue. Having a real mentor-client will help this, but please keep it in mind. Remember the goal is for the students to learn something and to experience a holistic view of the building process. If the design is unrealistic or too ambitious, the team will certainly not have enough time to discuss finishes in the lobby or create a construction logistics plan.

The mentors can start the discussion with the client by asking if is there a project that their firm is currently working on or is about to start. There may not be anything coming up that the ACE team would be interested in or the project may be too far along to be viable for this exercise.

Another option is to ask the mock-client if there is a wish-project that they might be interested in starting. This may actually engage the client more and could allow for more creativity.

- RFP should be from the mentor-client addressed to the ACE team. Language should include 'I am aware that this is a mock-project being designed by High School Students in the ACE Mentor Program working with an interdisciplinary group of mentors.'
- Include description list of program requirements, including occupancy, use type, level of finishes.
- Proposal should include deliverable like drawings, schedule, logistics plan, finish board, and sometimes a model or renderings.
- Client should issue constraints on project location. i.e. 'propose a suitable location in the NYC area' or 'location should be adjacent to our current facility.'
- Questions or design changes should be issued to client in the form of RFIs.
- Proposal should be due roughly in early May.

Post ACE Presentation: After working for a year with ACE students the client may want to continue the exercise beyond the final presentation. ACE teams have travelled as far as Miami to re-present their final project to a client and their team. To present directly to the client is an additional experience that the team will never forget. If these opportunities arise please speak with the ACE Mentor Program of Greater NY staff. At a minimum ACE staff will probably want to participate in the presentation. Again, this is getting the word out on ACE and possibly recruiting future team sponsors.

Example RFP:

AIA Westchester + Hudson Valley
A Chapter of The American Institute of Architects

President
John D. Fry, AIA Leed AP bd+c

Vice-President/President Elect
Peter Gaito Jr., AIA

Treasurer
Manuel Andrade, AIA

Secretary
Michael Berta, AIA

Executive Director
Valerie Brown, Hon. AIA/NYS, Leed AP

Directors
James Copeland, AIA
May G. Kirk, AIA
Seunghee Park, AIA
Elizabeth Parks, AIA
Joseph Sencen, AIA, Leed AP
Jason Taylor, AIA
Richard Torres, AIA

Associate Directors
Erika Conradt, Assoc. AIA
Jaclyn Tyler, AIA

NYSAIA Director
George Gaspar, AIA

Immediate Past President
Gregg DeAngelis, AIA Leed AP

General Counsel
David B. Kosakoff, Esq.

November 17, 2014

RE: ACE Mentor: Team 42 NYC – RFP for AIA Westchester Hudson +Valley Center for Architecture

Dear Jim,

On behalf of the officers and directors of AIA WHV, please accept this letter as a request for proposal for ACE NYC Team 42 to do a MOCK Proposal for a AIA Westchester Hudson + Valley Center for Architecture. We understand that this is a project that will be created by High School age students assisted by a team of adult mentors. This scope of work includes: site selection, program development, design development. Information gathered should culminate in a formal power point presentation that will cover all aspects of the proposal including: Architectural Design and Development, Engineering Design & Major Systems, Site Development and Landscape, Constructability, Project Budget, Schedule, 3D model (SketchUp) and a scale model.

1) Site should be located in Newburgh, NY (newburghcommunitylandbank.com)
   a. Team should propose a group of (at least) five sites that fit the RFP project needs.
   b. Team should prepare a written comparison of pros-cons for each site.
   c. AIA WHV shall have final site selection
2) "The Center for Architecture is a destination for all interested in the built environment."
   a. A site that re-uses/re-purposes an existing structure is preferred
   b. Site should have office space, Toilet facilities, and break room for a staff of Five (5)
   c. One Large conference room (25pp)
   d. There should be three (3) Multipurpose Galleries 1) Major/Permanent Exhibition, 2) Temp exhibition, and 3) Design Contest Exhibition
   e. There should be Two (30 set) classrooms
   f. Project should include a 100 person Screening Room/Lecture Hall
   g. Site should employ LEED and alternative solutions whenever possible (ex: geothermal wells, photovoltaics, natural lighting/ventilation, green roof/outdoor space, etc.
   h. Project should include a locker room and bicycle lock up area
   i. 3d Printing Studio

RFP should be submitted in a phased format to cover ACE 42 Season:
1) Site Selection – December 2014
2) Program Development – January 2015
3) Massing & Adjacency Study - January 2015
4) Preliminary Floor Plans – January 2015
5) Preliminary design sketches (exterior) – January 2015
6) Material Selection
7) Sketch Up Model
8) Presentation Draft
9) Final Presentation – RFP DUE DATE, May 5th 2015

Questions/RFIs should be sent via email to [redacted] Thank you very much for your interest in our program. We are excited - Good Luck!

Sincerely,

Peter F. Gaito Jr.

Peter Gaito, Jr., AIA – President Elect
AIA Westchester + Hudson Valley
CC: ACE TEAM 42 NYC

P.O. Box 611, Katonah, NY 10536
914-232-7240 www.aiawhv.org
chapteroffice@aiawhv.org

Teaching Styles & Techniques

There are many ways to present information, encourage information retention, and successfully apply it to an activity; the following presents a few concepts:

Presenting the Information:

1. Keep content simple – each topic discussed should have a maximum of 3 major points
    a. PowerPoint/Presentations: not too many words on the page, as this is difficult to digest
2. Have the topic connect to students
    a. When presenting a topic, make it relevant to the student's life; if they can make the connection to the topic presented they will have an easier time understanding it and why it's important – it's also good to ask questions during the presentation to keep them engaged
3. Tell a professional personal story – this makes the concept more tangible

Retaining Information:

1. Come up with a rhyme or song to help them remember certain topics
2. Present/ask students why this information is important and how they can use it in a high school setting – they will remember most if they can relate it back to their own lives
3. Repeat, repeat, repeat! After the presentation is completed, engage the students by asking them to summarize what they have learned and what other ACE topics relate to the new learned topic
4. Apply information to an activity to reintroduce the information learned during the lecture

Encouraging Students to Participate:

1. Allow students to work with their friends, as long as they maintain pace and are productive, this is acceptable; ACE is about providing a positive environment for kids to voluntarily learn about architecture, construction, and engineering
2. Make it a challenge/game – set a timer for the activity; give a prize to the group who finishes first
3. Play to the student's strengths – if one student is a visual learner, have them draw/sketch the activity; do this with other strengths seen in your students

Talking Among Sub-Groups: Get attention by clapping, lights 'on, off', or simply rearrange seats until the presentation is over; while we want to provide a positive atmosphere, the idea is to learn and retain during ACE meetings

Rowdy Students/Students Unwilling to Do the Work: Get them involved – ask them questions and allow them to think through things with no time limit – students feel more confident when they can answer a question, and will want to be more involved when they understand

Student Retention and Engagement in Sessions

As the academic year progresses and the tone of the project is set in motion within the team, the students will begin to fit into their roles within the dynamic of the team. This may lead to some students not feeling invested in the team or feeling as though they are not being given enough responsibility to warrant their presence. It is also perfectly normal for students to not return because they simply realize they are not interested in the ACE career path.

If Attendance Declines or the Project Stalls:

1. Viable solutions to maintain the project flow:
    a. Allow/encourage students to step into meaningful design roles. Encouraging a sense of ownership in the project (without overburdening them with responsibilities) will motivate students to put their voice into the final product.
2. Viable solutions to reduce further decline in attendance:
    a. Observe
        i. Are the students learning?
        ii. Are the students engaged?
    b. Assess
        i. Are the mentors engaged?
        ii. Are the students having fun?
    c. Intervene
        i. Do all students have an opportunity to engage in the task at hand?

Understanding how the students feel about each ACE session is a good gauge on where to make changes.

How to Re-Engage Students After Winter Break:

Typically, per the public school system, students are given two weeks off from school. As such, ACE sessions will typically not meet for those respective holidays. While it may be refreshing to have a little time to recharge, students tend to return the following session having forgotten *where the team left off*. It is imperative that effort be made to make sure that upon the students' return, everyone can quickly be brought up to speed on the state of progress so that work may resume at normal pace.

Student Engagement Outside of Sessions

While not mandatory, the team may assign a task for the students to accomplish that would supplement the understanding of the project goals. The purpose for these home assignments may range from: developing the active ACE project, to inducing creative energy so that new ideas are brought to the next session, to encouraging the students to establish a line of communication among themselves so that there may be dialogue between sessions.

Keep Assignments to No More Than 15-30 Minutes:

1. Keep content simple – remember the students are volunteering their time just as much as the mentors are! To request a few hours of homework may be too much depending on what the students already have on their plates.

Allow Students to Work in Groups/Divide the Work:

1. Allow students to work with their friends, as long as they maintain pace and are productive, this is acceptable; again, remember that ACE is about providing a positive environment for kids to voluntarily learn about architecture, construction, and engineering.
2. Apply information to an activity to reintroduce the information learned during the lecture.

Allow Students to Use Social Media:

1. Allow them to Instagram photos of construction progress or a cool architectural feature that relates to their project/lessons learned in the previous week - this allows the students to share their work with their friends and makes them proud of what they are doing. Reminder – only students who have submitted a parent consent form may appear in photos taken by anyone on the team – that includes mentors as well as other student team members.
2. Make it a challenge/game – set a deadline for the assignment; give prizes to the students who finish the homework on time.

Relate Homework to Lesson Learned That Week:

1. Learning is about practice! This allows the students to summarize what they have learned and gets them to apply it to a real situation.

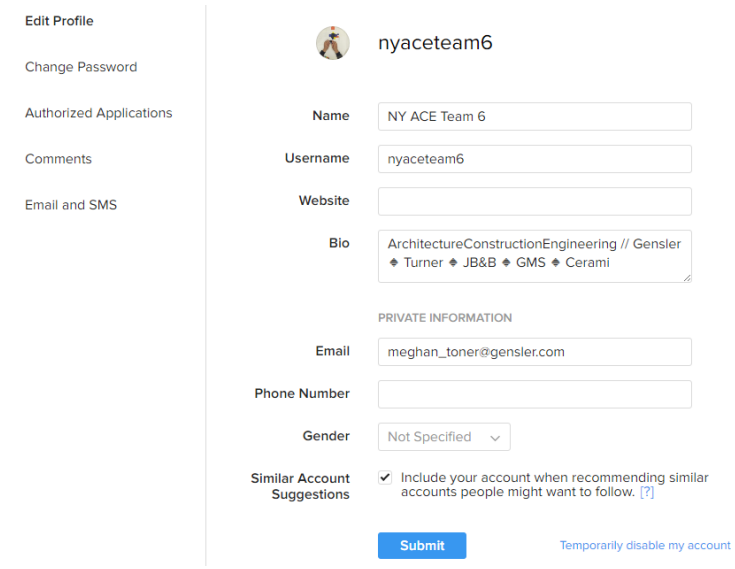
Examples (Not Necessarily Suggestions):

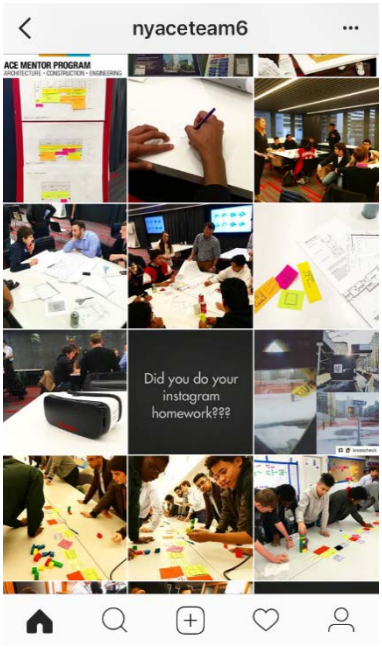
1. Developing/completing a portion of a model (physical or digital)
2. Solving a “structural moment diagram” exercise
3. Calculating the total Kilowatt per hour used in a given space
4. Hand drawings of the ACE project

Using Social Media: Instagram Best Practices

NOTE: Prior to posting any images with minors ensure every student submits a signed parent consent form. This form can be obtained from ACE Mentor Program of Greater NY staff.

Create a Team Account: Use your ACE team name in the handle and create a password that is easy for all the mentors to remember. Ideally all mentors can post to the account or can tag / # the team account from their personal Instagram accounts.





Document Weekly Sessions – Day of / During Session: Take photos and/or videos during weekly sessions. Be sure to post right after or during the session. Review the team account at the end of each session to recap the day's lesson/activity and assign homework.

Weekly Challenge / Homework: Assign weekly challenge / homework to students based on activity or lesson. Goal of weekly challenge is to engage students with built environment around them, and to relate activities/lessons outside of the classroom. See below for a sample assignment:

Get out there and start snapping! Special treat to anyone who heads downtown to see Calatrav's Transit Hub.

ACE Team 6 Instagram Challenge

1. Follow NYACETeam6 on Instagram
2. Take a photo of a theater – or a space that reminds you of this week's exercise: structure
3. Tag our team: @NYACETeam6
4. Hashtag the image: #NYACETeam6 #ACEweeklychallenge

Mentor Spotlights: Post mentor spotlights on the ACE Team Instagram page so the students can get a better idea of who the mentors are. This can be as simple as a single photo or a collage. It is best to have a photo of the mentors outside of the natural workplace setting (to prove we are human). Additions can include: hometown, education, favorite NYC building, and a piece of advice to the students.

Mid-Year

Field Trip Planning & Protocol

Site Selection:

1. Make it interesting: (Turner made this easy for ACE Team 6, as we visited their Rockefeller University project that spans over the FDR)
2. Obtain approvals from job site, inform trades as needed.
3. Best if site is active construction site with partial enclosure. This allows students to see behind walls, into ceilings, observe MEP and structural systems.

Prep:

1. Discuss attire, safety protocol, and site access procedure
2. Publicize field trip/site visit to students. Parents must complete and return field trip permission slip before a student can participate; these slips must be sent to ACE Mentor Program of Greater NY staff

Day of:

1. Email: time, location, and attire reminder to students and mentors
2. Social Media: (If applicable)
    a. Post field trip teaser with reminder of time and place
    b. Create hashtag for student and mentor's personal accounts
    c. Remember to take a team photo at start or end of the field trip
    d. Share pictures with ACE staff so that they can post them on the ACE Mentor of Greater NY social media platforms!

Field Trip:

1. Arrival:
    a. Have students and mentors meet at a designated location outside of the site
    b. Designate two mentors with site access: one to lead students, the other to wait for additional students or mentors who may be running late.
2. Video Intro to project in site GC trailer
    a. Serve food during project intro
3. Review of safety protocol
    a. Dispense hard hats and vests
    b. Remind everyone this is an active construction site. Clearly state out of bounds/off limit areas.
4. Site walk through
    a. Pick 3-5 features to showcase:
        i. Encourage highlighting each field: CM, architectural, structural, MEP, and acoustics if applicable.
        ii. Ensure a mentor from each professional organization is present to comment, clarify, and answer student questions.
    b. Plan path through site to highlight each element
    c. Encourage photographs and questions throughout the process

Follow Up:

1. Recap field trip at following session
    a. Ask students what they remember – discuss impact and connection to course curriculum
    b. If applicable, bring up Instagram account and review photos
2. Send Thank You:
    a. Tailored from students to Site, GC, and or others who facilitated

Supporting Images:

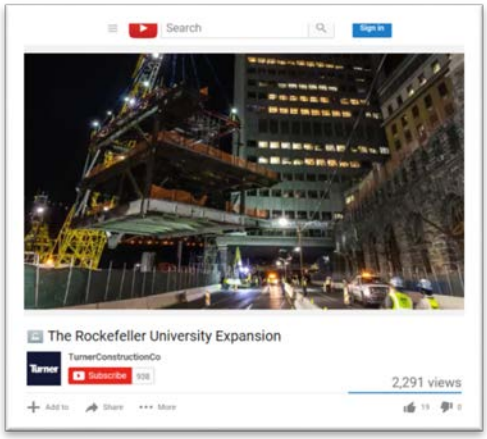
Students:

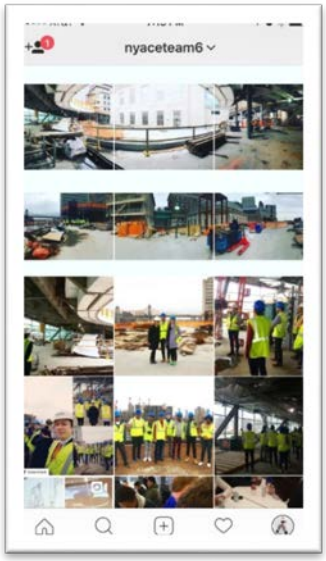
Monday's ACE session will be a site visit to a Turner Construction Project, Rockefeller University (1230 York Avenue >> cross streets 68th and York Ave). We will be meeting there at 4 PM, **NOT AT GENSLER's OFFICE.**

Please wear CLOSED TOED SHOES- preferably work boots. Must have full length pants and preferably long sleeves.

Check out this cool video about the project! https://www.youtube.com/watch?v=rr2oYCSHZCQ

Thank you.





BIM/CAD Technology & Modeling

Why It's Important to See Project in 3D Space: There is a common expression in Architecture school that says if *you can't see it, then it doesn't exist*. When it comes to the ACE project, it shouldn't be a question that it should follow that similar attitude. A 3D representation of the work done by the students is a testament of their effort done over the course of the school year and a manifestation of the contribution done by the mentors to help mold their young minds.

While we may interpret drawings for our buildings in two dimensions in the form of plans, sections and diagrams, we live in a three-dimensional world and as such our work should convey an understanding that we designed our building for the real world.

A 3D Model enables us to achieve:

1. Tactile understanding
2. Contextual reference
3. Development of new skills (technical/crafting)
4. A nice centerpiece during our final presentation

Mentors also make note that the students' work may be perfect for promotional material for both the team and for future ACE students.

Purpose: Model making has proven to be a valuable design tool and aid throughout the design process. While it is often mistaken that a model is a representation of the final product, modeling serves the architect as much as any pencil would.

Digital Models: The ability to articulate and illustrate the design of a project in a tangible and concise manner is a valuable skill in any profession. Digital modeling allows you to create a visual representation of a project with similar advantages to creating a physical model. Working electronically provides advantages such as file sharing and tracking changes. Consider using a file sharing website to allow the students to update it in real time and avoid having to keep track of the latest iteration. One main advantage of digital vs. physical is allowing students to work on the model outside of the sessions.

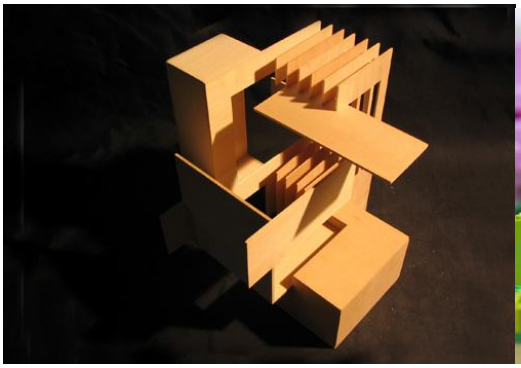
There are a variety of tools we use to develop a 3D representation such as AutoCAD, Rhinoceros, Sketch-Up, Revit and 3DS Max. Students have access to a variety of free resources, simply for being students. Refer and encourage your students to learn software on their own time at:

http://www.autodesk.com/education/free-software/all
http://www.sketchup.com/

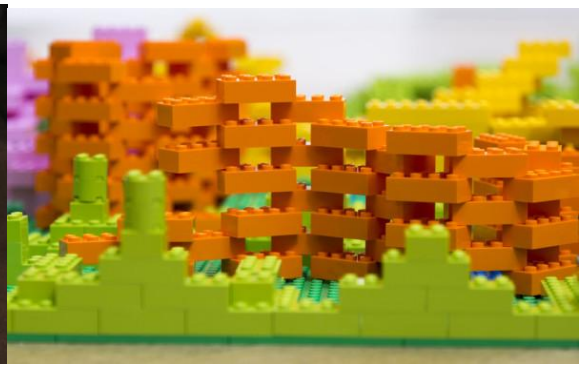
By signing up with their school assigned email address, they will be able to obtain *free* academic licenses on select Autodesk products. Including AutoCAD and Revit. Having this experience prior to entering the job market is highly valuable.

Physical Models: While creating the project in digital space is impressive and important, "If *I can't see it, and I can't touch it, then it doesn't exist*." Creating a physical model is a longtime pillar of spatial testing and problem solving when it comes to architectural design. For the student, it enables them to invest their effort into a tangible version everything they have experienced over the course of the academic year.

Sources of Inspiration: Sometimes knowing where or what a team wants to design is not enough to spark a channel of creativity. Using model resources to have a design charrette or brainstorm session unrestricted by prerequisites may induce unplanned imagination flow.

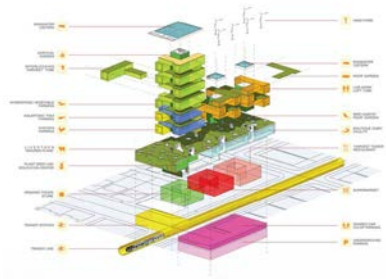


(Basswood)



(Lego)

Means to Develop Programming: Knowing what to do with established programs may be daunting. Having a modeling charrette to organize programs in a three-dimensional space helps students contextualize relationships between different spaces.



(Foam Insulation)

Means of Consolidating Ideas Between Teammates: Students may come to see that the initial development of their design resembles the assembling of a puzzle. With all the pieces in front of them (labeled with programming) they can engage with each other as they decide and compromise what goes where. It enhances their rationale in defending their ideas to the mentors.

Means to establish site context: It may help to build the surrounding architecture and landscape for the building. This will enable the students to grasp the elements and features that may influence the building's design.

(Site Model)

(Final Model)

Means to create a representation of the final design: Nothing is more fulfilling than showcasing to other ACE teams and to fellow students that their year-long effort in learning the ropes about the industry brought about a fully realized project in the form of a model.

Any work produced from these efforts can easily be included in the final presentation. It allows the student to talk through the work produced during these phases. It also shows the observer that the students used methodical design steps to conceive the final project.

Useful Tools:

1. Foam Core
2. Basswood
3. Lego
4. Newspaper
5. Wafer Cookies
6. Mat Board
7. Cardboard
8. Foam Insulation
9. Wire Cutter
10. Olfa Knife
11. X-Acto Blades
12. Safety Ruler/Straight Edge

College Scholarship Process

The following tips can be used to organize your seniors' focus on achieving a scholarship from the ACE Mentor Program of Greater New York.

Note: It's important for students to put in the requests for recommendations early.

The Guide(s): Each team should appoint a mentor(s) whose responsibility it is to focus on scholarships.

Timeline: Mentors should start as early as possible to get seniors focused on their scholarship application and requesting the necessary application materials (recommendations, transcripts, etc.) The final deadline is mid-March, but each team should set earlier deadlines for mentor review and uploading materials into the online application.

Encouragement: It's important to encourage students to go to their teachers and mentors and put in the requests for recommendations early. Let them know that their teachers want to help them as much as possible. Let the seniors know that there is a good chance they will succeed in winning a scholarship.

Organization: The following is a sample of a matrix that can be used to track seniors' progress:

Mentee	Email	Online Registration	Transcript	Teacher Rec.	Mentor Rec.	Essay Review 1	Essay Review 2	Notes
Student 1								
Student 2								

Meeting with Seniors: The first meeting with the seniors can include the entire team – so underclassmen know what to expect in years to come and become inspired to return to ACE for subsequent years. This meeting can be used to introduce the process and set a deadline for seniors to register online and request recommendations and transcripts from their mentors and school.

The second and subsequent meetings are typically best if you pull the student aside during a team meeting to discuss their progress and interest. In these meetings you can follow up with the seniors on a more direct level and begin to focus on their essays. In early sessions it can be helpful to start an open dialogue with seniors on the essay topics to get thoughts flowing.

Essays: If time permits, essays can go through two rounds of review as shown in the chart. It is important to let the students know that any information they share will be kept confidential between the student and the two reviewing mentors. Other mentors are asked to volunteer as reviewers. While editing, make sure to let the student's voice show, but don't be afraid to substantially shuffle content around.

Round 1: 1st mentor reviews the content of the essays and discusses with the senior
Round 2: 2nd mentor reviews essays for grammar, etc. and discusses finalization with senior

Mentor Evaluations: These are very important. Since the deadline is so early in the season, it is not always possible to tell how much effort each senior will put in through the end of the project. It is important that the mentor evaluations be accurate. So, it is recommended that the reviewers meet with each senior and understand their interests in ACE and the potential to pursue a career in design, construction, and engineering prior to scoring them. Mentor recommendations should be personal, form letters are easy to recognize and are often graded lower.

These tips can help maximize your seniors' potential to receive a scholarship from ACE of Greater NY.

Scholarships to Summer Activities

While your students are participating in ACE in high school, remind them that they can take advantage of the opportunities that are available outside of your ACE team.

FallingWater Architecture Program: Scholarships have been given to ACE students to fund their attendance at a summer studio at Frank Lloyd Wright's amazing 1935 project, Fallingwater, a house he designed for the Edgar Kaufmann family of Pittsburgh. In 1986, AIA named this “Best All-time Work of Architecture” -- and it is a National Historic Landmark. Attending a studio during the summer while in high school can help your students begin to understand the world of opportunities that they can take advantage of as they complete the ACE program and high school and begin to plan to enter college.

One ACE Alumni who was given a scholarship for the 2016 Summer Studio wrote:
"To anyone considering applying for this program - It is the most fun you’ll have all summer and it is worth every second of it. From the projects to the sketching to the overall experience itself, this was an amazing opportunity and I am so happy that I decided to apply and you will too."

For more information and to view the applications for scholarships to both studios, follow the link below:
www.fallingwater.org/142/residencies

Other Opportunities: There are more available summer opportunities too! Look for updates on the ACE website: http://www.acementor.org/students/summer-activities/

Summer Internship & Career Exploration Opportunities

While participating in ACE after-school, students will learn about the world of design and build - and about the exciting number of construction-related careers open to them. But one of the most amazing aspects of the program, perhaps even more valuable than the specific building-related skills that one learns in the program, might be the relationships that the students build with the mentors who volunteer their time and energy at each team meeting.

Career Exploration: Encourage the students to ask questions about where and how the mentors work, and what skills are essential to their professional development. When introducing a new discipline, include the personal journey of the mentor. Discuss what helped the mentor decide on their career path, where the mentor went to school, which major the mentor studied, internships, etc. Be sure to include any certification/licenses required for that career path. Some teams have even included the expected salary for the NYC area throughout the years for a given career. All of this can help students decide where their interests lay and how to create a plan to achieve their career goals.

Summer Internships: ACE teams expose the students to so many different disciplines and specialties associated with the design and build field. While your students are on your team, help them gain a behind-the-scenes understanding of your workplace. As a mentor, you can be a great resource as your students think about summer internships and job opportunities. Remember that meeting at these businesses can link your students to summer jobs, internships, and even greater career opportunities. As you see your students begin to apply and work in the STEM fields, think about the experiences you saw them learn at ACE - encourage them to see the growth they've made throughout the program. Sometimes, highlighting the experience the student had in their mentor's workplace can help prospective employers realize that your student is ready to work in a professional work environment.

Online Networking

STEM Premier: STEM Premier is an amazing resource for all lovers of these disciplines, from middle school through professional growth. This online community is a great way to encourage your students to grow their skills. STEM Premier can help your students find exciting opportunities to enhance their talents, leading them towards new experiences. By helping your students create their own profiles when they join your ACE team, they can immediately access a greater world of STEM opportunities, including schools and companies within a larger professional network, helping form essential relationships that can help your students enter the pipeline to scholarships, internships, and the career they are dreaming about.

> STEM Premier + ACE: Since 2016. The ACE Mentor Program has collaborated with STEM Premier to give our students additional resources to support their pursuit of education and job opportunities in the rapidly growing STEM fields. STEM Premier is an on-line platform that your students can use to promote their own professional brand and help institutions of higher education and corporations connect with your students when in search of top talent.
>
> Signing -up is Easy: For more information, go to: http://acementor.org/students/stem-premier/
>
> Questions: If you need help with STEM Premier, contact ACE Mentor Program of Greater NY at GreaterNY@acmentor.org

LinkedIn for Seniors: In the transition to college and beginning a career, LinkedIn is a resource that can help ACE students and alumni build bridges. LinkedIn can enable alumni/ACE graduates to make the most of the professional opportunities available through the larger ACE network. LinkedIn is a social network, similar to Facebook, but focuses on career growth. Users can connect with other professionals; including peers with similar STEM related interests, as well as potential employers and new employees.

LinkedIn is like an online resume -- so remember that the photo should show the student "dressed for the job you want!" - maybe from one of your ACE field trips or final presentations! The student can highlight their best work in the Summary, Education, and Experience sections. LinkedIn also makes it very easy to send a resume based on the information in your profile using the Resume Builder tool. LinkedIn Jobs helps to easily search opportunities - the students can search by industry, experience level, location, and more.

Remember to encourage the students to make their profile while they are in contact with the ACE team and all of the ACE mentors -- and remind the students to connect with everyone they can - especially by joining the ACE Alumni Association so that the students can expand their network beyond their specific team!

Creating a LinkedIn profile is easy and ACE Alumni Association offers workshops to help the students craft a profile, and connect with mentors and other ACE affiliates. Contact ACE at: GreaterNY@acementor.org

End of Year

Preparing for Final Presentation

Sample Preparation Schedule:

Date	Activity
4 weeks before	Work on PPT slides in small groups
3 weeks before	• Finalize PPT slides • Confirm student availability to participate in remaining sessions and final presentation. Assign slides for students to present based on availability. • Help students prepare talking points for each slide
2 weeks before	• Give a 15-minute tutorial on presentation skills (choose a good speaker for this) • Practice presentation in small groups • Presentation dry-run with all students with a timer and practice jury questions • Invite your colleagues to next week's ACE session for presentation practice
1 week before	• Dry-Run through the presentation & record video • Playback video for students and discuss ways to improve • Give the presentation to your colleagues (second hour of the session)
Presentation	Final presentation

Throughout the Year: Plan design sessions with deliverables in mind. Scan in the worksheets/completed work at the end of each session and upload any pictures taken by mentors. A shared database such as Dropbox helps to give all mentors access.

Practice: Find ways to incorporate practice presentations throughout the year. If you break into different groups during the session have the students present their progress to the other group at the end of each session. This reinforces what was covered in the session, while allowing students to get used to presenting with technical jargon.

Prepare Visual Aids: Depending on the skill level of the group, this may include anything from hand drawn sketches to computer renderings. This will help trigger the student's memory on the topic and give them something to reference during the presentation. You can start doing this in the weeks leading up to the presentation preparation sessions.

Assign Slides: Assign a topic based on what the student worked on throughout the year or what his/her main interests are when possible.

Give a Good Example: Ask a great speaker to give a 15 to 20 minute tutorial about great presentation skills. Remember to encourage the students:

1. Not to read from slides
2. Speak loud and clear
3. Be confident even if unsure
4. Practice, at home and in sessions
5. Limit facts that are out of context

Give Feedback: Film the students' practice presentation and comment during the viewing so that they can see areas for improvement. This especially helps students notice their body language.

Present to Strangers: It's different to present in front of large unknown crowds than to the mentors they've gotten to know throughout the year. Have the students give a practice presentation to others in your office. This can also be a good tool for gaining new mentors next year!

Stick to Allotted Time: ACE suggests all presentations last 15 minutes followed by a 5 minute Q&A session. Work with your students to refine their talking points to fit in the given time limit. It's better to be concise and to the point!

Public Speaking Techniques

An added benefit of the ACE program for the mentees is early exposure to public speaking; however, mentees and mentors alike may not have much experience presenting in front of others. To help guide your students to a successful presentation, we gathered the most popular tips for public speaking.

10-Word Note cards: To avoid reading and lack of eye contact with the audience, encourage students to use a note card with no more than ten words. The words should be reminders of the critical bullet points of the student's slide.

Eye Contact: Remind students to try to make eye contact with different parts of the room and different members of the panel to which they are addressing.

Practice: Give students enough time to understand and rehearse their slides. Plan on using an entire session to allow multiple run-throughs for the students to remember their lines and speaking points.

Feedback: Give students positive and constructive feedback after their rehearsals. Typically, students need encouragement to speak loudly and to clearly pronounce their words. Other tendencies students should avoid are swaying while speaking, using sounds and not words, i.e. "um", "er" and excessive use of words such as "like" and "actually".

Post-Graduation Communication: From Students to Mentors

ACE gives something special to everyone who participates in the program -- something that may be a little different for each student -- because the program is shaped so much by each individual participant.
Your students may not want to leave ACE as they graduate high school - and we hope you encourage them to continue to be an essential part of ACE by joining the Alumni Association!

ACE Mentor Program Greater NY Alumni Association has a vision to create seamless continuity in an ACE student's transition from high school to college, and ultimately into the industry. They implement strategies and mechanisms to track students post-graduation, keep them engaged and connected to ACE, help them identify opportunities in the industry and create meaningful professional relationships. Please encourage your students to update their email addresses with GreaterNY@acementor.org as many students have high school email addresses – this way ACE can invite them to annual alumni events and networking opportunities with industry leaders.

Mentor Recruitment & Retention

An important part of a successful ACE season is having enough active and involved mentors, but making sure the team has or keeps a strong mentor count may be difficult. The following are helpful tactics to ensure mentor retention and help with mentor recruitment.

Mentor Registration: Before team meetings begin, each team must submit its mentor roster to ACE Greater NY staff. In order to participate, each mentor must register for the current season and have submitted and passed his/her background check.

Beat Surprises: Check in with your team prior to the start of the season; confirm with the lead from each discipline that their team will return. If the lead mentor is not returning, have them first assign a replacement. Ask leads to replace any non-returning mentor so a minimum mentor count remains.

Avoid Over Working Mentors: Typically teams have at least two mentors per company involved as a minimum, with four mentors as an average. The more mentors, the more help each discipline has and the less likely sessions will be without a mentor from a discipline.

Mentor Bonding: One of the benefits of participating in ACE is working and networking with other professionals in the industry. Encourage these relationships and help keep the team's spirits up by organizing a few mentor bonding outings. Outings can be scheduled around the season – pre-recruitment season kick-offs, post recruitment, holiday outing, and final presentation celebration. Outings can be as often as your schedule or budget allows.

Include the Mentors: Giving mentors responsibility, purpose and power to affect the team will encourage their participation. Including mentors input will gain their interest and stake in the success of your team. Request mentors input and coordinate on team decisions – including project assignment, schedule structure, curriculum, and goals of the season. Encourage each mentor to have some sort of responsibility for at least a session or activity.

Listen: Get feedback from the mentors; see if there are any important lessons learned at the end of the season. Bring to light any issues that may keep them from returning next year.

Discipline Diversity: ACE Mentor stands for 'Architecture, Construction, and Engineering' and it is essential that every team, and every project could include elements of all three. If the mentors are mainly from one trade, it can show when presenting at the end of the year. This typically happens when one or more disciplines are missing from the mentor group. The delivery method that fits best with ACE is usually referred to as design-build. Meaning each ACE team is tasked with presenting a plan to Design and Build-out the proposed project. It is hard enough to organize an ACE class and keep students engaged all year but for many mentors it is hard to teach beyond their expertise. If the project requires a discipline beyond the team's expertise, use that opportunity to reach out to peers that can help or reach out to the ACE staff who can assist in filing out your team. This has the double positive effect of spreading the word about ACE and teaching students about the building process. So always shoot to have a well-rounded mentor group and if help is needed in related disciplines reach out!

Recruiting a New Mentor Firm: If you lose a mentor firm, they will have to be replaced. Use ACE, your colleagues, and other firms working on a project with you to find a new firm – again, you can reach out to the ACE staff who can help you as well.

Mentor/Firm Not Carrying Their Weight: Sometimes a mentor/firm will become too busy throughout the year. Typically this is not known in time to find a replacement. Reach out to ACE staff and let the mentors/firm know how important they are and ask for a commitment to a minimum number of meetings. Sometimes the firm can find other employees who can take over for the original mentors. Fill in the void with the other mentors, even if it is not their trade, they will know more than the average ACE student about the subject.

Mentor Graduation: Often as mentors get to a certain level in their career they lose time to leave early for ACE sessions. There are other ways they can contribute including joining the ACE Mentor Committee.

Mentor Resources

Getting Involved In ACE Mentor Committee: To find out when the next general meeting will be held, please contact ACE Mentor Greater NY at GreaterNY@acementor.org to be added to the Mentor Committee Mailing List. The Mentor Committee is open to all mentors.

Contributing to the Best Practice Manual: If you or your team would like to contribute to an existing topic or create a new topic please let us know! We are always looking for new methods that have succeeded with the ACE Students. Or if you have an idea for a topic you'd like to see addressed, reach out and we can see if any other teams have methods to suggest. Please send all inquiries to Alison Kran at GreaterNY@acementor.org.