

THE SOCIETY OF AMERICAN MILITARY ENGINEERS

# ARCHITECTURAL PRACTICE COMMITTEE

QUARTERLY JOURNAL

## MILITARY ARCHITECTURE - A GREAT ARCHITECTURAL PLAN FOR ARMY OF THE 1900S

**Article by Paula Loomis**

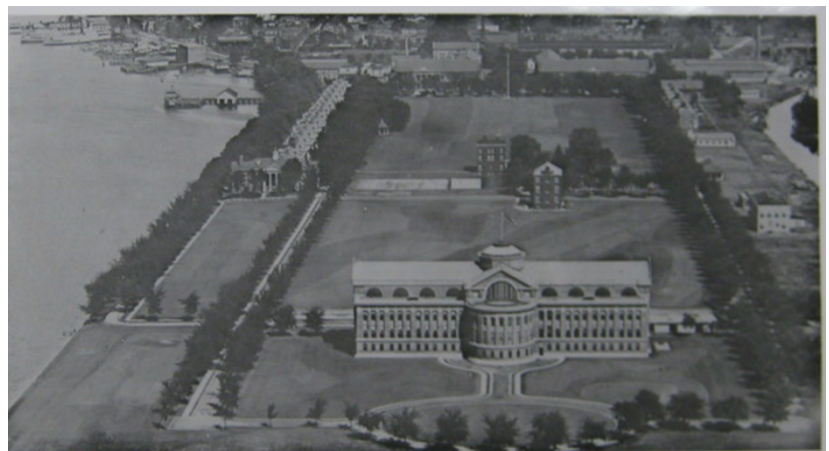
*As we approach the SAME centennial it is a good time to look at military architecture that occurred and shaped our profession at the beginning of the 20th century. One of the prominent base building initiatives during that period was the creation of the Army War College at Ft McNair in Washington, DC. McKim, Mead and White Architects laid out the plan for the College, designed its prominent building, Roosevelt Hall, and designed many of the buildings at Ft McNair. During that same time period, Ft McNair was also home of the Army's Engineer School. So McKim, Mead and White's Beaux-Arts design surely helped to shape future Army Engineers and SAME members*

### Location and History

Ft Lesley J. McNair is located on the point of land where the Potomac and Anacostia Rivers join in Washington, D.C. It has been an Army post for more than 200 years, third only to West Point and Carlisle Barracks, Pennsylvania, in length of service. The military reservation was established in 1791 on about 28 acres of what then was called Greenleaf Point. Maj. Pierre C. L'Enfant included it in his plans for "Washington, the Federal City," as a major site for the defense of the capital. An arsenal first occupied the site in 1801. By 1794, a one-gun battery and defenses were in place at Greenleaf Point, and in 1803, an arsenal building designed by George Hadfield was built on the site.

### Architect George Hadfield

George Hadfield (1763 – 6 February 1826) was born in Livorno, Italy of English hotel-keeper parents. He studied at the Royal Academy, and worked with James Wyatt before emigrating to the United States. He



McNair as Constructed in 1906

was appointed superintendent of the United States Capitol's construction on 15 October 1795, and continued in that position until June 1798, resigning after an argument with William Thornton. He is credited with part of the design of the original Capitol building such as the north wing. Hadfield also designed the original Treasury Building, the Navy Building (1800), the Washington Jail (1801), the Marne Corps Commandant's House (1801-1805), the Curtis-Lee Mansion (1818) and the District Columbia City Hall (1820).

### Penitentiary

The fortifications did not halt the invading British in 1814. The remaining British destroyed the arsenal buildings, but the facilities were rebuilt after the war. Land was purchased north of the arsenal in 1826 for the first Federal Penitentiary, which was designed by Charles Bulfinch. The penitentiary is best known for imprisoning the four conspirators who assassinated President Abraham Lincoln, among them Mary Surratt, the first woman to be executed under federal orders

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# WELCOME LETTER



Laura Lavelle, AIA

A very warm welcome to 2020 and to our latest issue of the quarterly journal. I've enjoyed compiling these issues and the opportunities to connect with our Architecture Community of Practice leadership, industry partners, and my own colleagues. We have so many talented individuals in our community of practice!








I always look forward to the variety of articles and spotlights each issue brings. I'm also grateful to the continued contributions for our ongoing series "Military Architecture" and the "SAME Urbahn Medal Recipient Interviews". We're all so busy, and I've found that working on these publications allows me to take a step away from the day-to-day activities and foster not just creativity and appreciation for the industry, but also friendships and mentorship.

I'm looking forward to our inaugural SAME Design Awards as another avenue to highlight the amazing talent within our organization. Please review the submission details included in this issue.

I enjoyed connecting with those of you who joined our committee meeting at Small Business Conference in Dallas last fall, and hope to see you all again at JETC this spring.

# UPCOMING EVENTS

2020 Engineering & Construction Camp applications are OPEN!!  
Deadline to apply is March 16, 2020.

 <p><b>US Army</b> Engineering and Construction Camp US Army Corps of Engineers Vicksburg, MS June 14-20, 2020 Cost: \$100 (Sponsorships may be available to offset the cost.) Grades: Rising Junior or Senior as of Fall 2020</p>	 <p><b>US Navy</b> Engineering and Construction Camp Naval Construction Battalion Center Port Hueneme, CA June 21-27, 2020 Cost: \$800 (Sponsorships may be available to offset the cost.) Grades: Rising Sophomore, Junior, or Senior as of Fall 2020</p>
 <p><b>US Air Force</b> Engineering and Construction Camp Scott Air Force Base Scott AFB, IL July 20-25, 2020 Cost: \$600 (Sponsorships may be available to offset the cost.) Grades: Rising Sophomore, Junior, or Senior as of Fall 2020</p>	 <p><b>US Air Force Academy</b> Engineering and Construction Camp U.S. Air Force Academy Colorado Springs, CO June 24-30, 2020 Cost: \$900 (Sponsorships may be available to offset the cost.) Grades: Rising Sophomore, Junior, or Senior as of Fall 2020</p>
 <p><b>US Marine Corps</b> Engineering and Construction Camp Camp Lejeune Jacksonville, NC Dates: June 21-27, 2020 Cost: \$600 (Sponsorships may be available to offset the cost.) Grades: Rising Sophomore, Junior, or Senior as of Fall 2020</p>	 <p><b>US Coast Guard Academy</b> Academy Introduction Mission US Coast Guard Academy New London, CT Dates: Session I: July 5-10; Session II: July 12-17; Session III: July 19-24 Cost: \$525 (Sponsorships may be available to offset the cost.) Grade: Rising Senior as of Fall 2020</p>
 <p><b>BSA Atlanta Area Council</b> Exploring Engineering STEM Academy Georgia Tech University Atlanta, Georgia Dates May 31-June 5, 2020 Cost: \$1100 (Sponsorships may be available to offset the cost.) Grades: Rising Freshman, Sophomore, Junior, or Senior as of Fall 2020</p>	



## QUARTERLY CALL

The Architectural Practice Committee will host a quarterly conference call on Wednesday, Feb 12, 2020 from 12:00 – 1:15 pm Eastern. Please join the meeting from your computer, tablet, or smartphone at <https://global.gotomeeting.com/join/921502013> You can also dial in using your telephone at:

United States: +1 (571) 317-3129  
United States (Toll Free): 1 877 309 2073  
Access Code: 921-502-013

The agenda for the quarterly conference call includes an update on committee focus area initiatives, open discussion, and 1 AIA/LU/HSW presentation. The presentation will be given by Stephen Wakeman and Derrick Steltzer, on a topic titled “Container Architecture”.

Stephen Wakeman, AIA & Derrick Steltzer, AIA of JACOBS will present one of their most recent award-winning modular buildings the Deployable Air Traffic Control Facility constructed out of shipping containers to illustrate “Shipping Container Architecture”. The Deployable Air Traffic Control Facility is used by the United States Federal Aviation Administration to temporarily replace existing Airport Traffic Control Towers closed due to renovations or because of an unexpected closure due to natural or unforeseen causes. The tower can be shipped anywhere in the world and was initially designed to respond to the 2010 earthquake that ravaged Port au Prince, Haiti.

Steve and Derrick will share their experiences in modular assembly using shipping containers and will focus on topics such as IBC, NFPA code compliance, means of construction using shipping containers, Anatomy of shipping containers, Drawing requirements for modular shipping container assembly, Wind and seismic provisions, Fire rating and Transportation. The design team is currently working on Tower Design Version 2.

Learning Objectives include:

- » Explore the means of construction used with the shipping containers that allow for construction, removal and reconstruction
- » Understand the anatomy of shipping containers and how this impacts the method of construction.
- » Learn how fire rating is achieved and how wind and seismic conditions were addressed in design.
- » Understand the challenges with transporting shipping containers for use in construction.



**Stephen Wakeman, AIA & Derrick Steltzer, AIA**

*Photo from 'Lenses for All', London Festival of Architecture*

*Stephen Wakeman, AIA & Derrick Steltzer, AIA have worked together for 14 year at Jacobs. Steve is Division Vice President and National Design Principal and is responsible for the design vision for Federal Architecture. His design vision has helped win numerous design awards including a 2016 American Institute of Architects Honorable Mention for Excellence in Architecture from AIA Virginia for the Federal Aviation Administration's new mobile Airport Control Tower. Steve is currently on the Board of Directors Virginia Chapter of the American Institute of Architects and was the Chair for the 2015 NOVA AIA Design Awards.*

*Derrick Steltzer was born in Frankfurt am Main, Germany. After graduating from the University of Fine Arts, School of Architecture in Hamburg, Germany he won a Fulbright Scholarship and an AIA First Professional Degree Scholarship with the American Institute of Architects to attend Virginia Polytechnic Institute in Blacksburg Virginia, where he gained with honors a professional Master's degree in Architecture. In 2006 he joined JACOBS Engineering as a Senior Project Designer. His work has won numerous prestigious design awards. Derrick Steltzer is a member of the DC/AIA - Chapter and a member of the DC/AIA - Design Excellence Committee.*

## COMMITTEE NEWS

The SAME Architectural Practice Community of Interest is pleased to announce the inaugural 2020 Design Awards Program. The program was recently approved by the SAME National Board of Direction Executive Committee. It is the result of an initiative proposed by Urbahn Medal recipients during their first annual Urbahn Medal Summit held in April 2017 and is the APCOI's contribution to the SAME Run to 2020 Centennial Celebration. Please reference the following pages for the full submission details.

Big thanks to those that have led this effort, JJ Tang, Paula Loomis, and Ed Gauvreau along with those that have provided additional support in this process including Joe Brink, Les Shepherd, and Karl Stumpf.

Thanks to all who attended our meeting during the SAME Small Business Conference in November, 2019. The committee members enjoyed an outing to the Dallas Museum of Art and dinner at Savor in Klyde Warren Park.

Please join us at SAME JETC in May!





## SAME Design Awards Program

Thank you for your interest in submitting a project for the SAME Design Awards Program.

### Purpose:

- To align with the SAME mission statement:
  - To get more firms, agencies and people involved in SAME,
  - To increase awareness of SAME firms and agencies in the AEC industry,
  - To improve the image of the military built environment.
- To improve the quality of the military built environment through recognition of designs that:
  - Improve operational efficiency, enhance mission accomplishment, and positively impact the federal agency,
  - Effectively and efficiently meet mission and user requirements,
  - Produce life cycle cost effective facilities,
  - Encourage sustainable and energy efficient designs and
  - Enhance the built environment within and around the facilities.

### Eligibility and Criteria:

- Any facility, infrastructure, landscape, planning or facility-related project designed, completed, or constructed for an SAME partner agency (DoD, VA, DHS, Public Health Service).
- Who can submit? Any entity involved in the project to include, but not limited to, A/E firms, general contractors, partner agencies.
- Built Projects must be complete, and the construction competition must be within the last 5 years, (completion date no earlier than 1 February 2015).
- Planning, design studies must have been completed within the last 5 years, (final planning, design study date no earlier than 1 February 2015).

### Awards Categories:

- Two categories:
  - Built Projects.
  - Planning, design studies.
- Awards will be given for projects that exhibit the highest level of quality achievement as described by the purpose statement and determined by the jury.

### Submittal Requirements:

The submittal package has two parts:

- Part 1 - Identification of the Project and Team participants.
  - Please fill out the attached Project Identification Form.
- Part 2 - Technical submission highlighting the merits of the project.
  - Please submit up to ten pages of information. The content and style of the ten pages is up to you. In those ten pages please mention the title of the project, its location and its customers. There should be no mention on those ten pages of the architect, engineers, contractor or others that are part of the project team. If you include text make sure that the text is readable on a typical computer or printed on 8-1/2 x 11 inch paper.
  - Please place Project Name on the Part 2 document as identification. Do not name any of the participating parties on Part 2.
  - File size limit for Part 2: 8mg.

For the jury review the Part 1 – Project Identification Form (identifying the team members) will be separated from Part 2, the ten page submittal so that the jury is judging the projects on the merits of each project.

### Schedule:

- February 21 - Electronic submittals due.
- May 27-29 2020 JETC - Awards given

### Submittal To:

Send submittals electronically to David Packard, [davidpackard1224@gmail.com](mailto:davidpackard1224@gmail.com)

### Questions:

Please ask any questions or provide any feedback to the Architectural Practice Community of Interest, attention Ed Gauvreau, FAIA; [edmond.g.gauvreau@usace.army.mil](mailto:edmond.g.gauvreau@usace.army.mil) and David Packard, [davidpackard1224@gmail.com](mailto:davidpackard1224@gmail.com).

**Thank you for submitting your project to the inaugural SAME Design Awards Program.**



## SAME Design Awards Program

### Part 1: Project Identification Form

Thank you for submitting your project to the SAME Design Awards Program.

#### Entry Category:

- Built Projects       Planning, Design Studies

#### Project Information:

Project Name: \_\_\_\_\_

Installation: \_\_\_\_\_

State: \_\_\_\_\_

Cost (if applicable): \_\_\_\_\_

Programmed Amount: \$ \_\_\_\_\_

Actual Construction Cost: \$ \_\_\_\_\_

#### Submitted By:

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

#### Project Credits

##### Design Organization:

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

**Contracting Agent:** (if applicable. This is the agency that contracted for design and/or construction services, such as USACE, NAVFAC, AFCEC, or local Base Civil Engineer or MICC.)

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

**Installation Organization:** (if applicable. This is the agency that contracted for design and/or construction services at the local installation, such as Base Civil Engineer, Department of Public Works, etc.)

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

**User Organization:** (if applicable. This is the occupants of the facility if differs from the Installation organization. An example would be a tenant organization on an installation.)

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

**Construction Contractor:** (If applicable)

Agency/Firm name: \_\_\_\_\_

Address: \_\_\_\_\_

Point of Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

email: \_\_\_\_\_

#### Part 2 - Technical submission highlighting the merits of the project.

- o Please submit up to ten pages of information. The content and style of the ten pages is up to you. In those ten pages please mention the title of the project, its location and its customers. There should be no mention on those ten pages of the architect, engineers, contractor or others that are part of the project team. If you include text make sure that the text is readable on a typical computer or printed on 8-1/2 x 11 inch paper. Please place Project Name on the Part 2 document as identification. Do not name any of the participating parties on Part 2. File size limit for Part 2: 8mg

# AN INTERVIEW WITH CHARLES ENOS, SAME 2013 URBahn MEDAL RECIPIENT

## PART OF ONGOING SERIES IN THE APC QUARTERLY JOURNAL

*In the inaugural summit of the SAME Urbahn Medal Group, after half-day's discussion, exploring ideas, with SAME Executive Director Joe Schroedel, PE, F.SAME and AIA CEO Bob Ivy, FAIA the Urbahn Medal recipients decided that Architects needed better visibility within the SAME organization. After listening to brief background by each Urbahn recipient who has contributed so much to the profession in his or her own unique way, Bob Ivy stated that these are great stories which are valuable for young people to hear, and could be inspirational to their professional growth. That is how The Urbahn Medal Recipient Interview Series was born.*

Charles E. Enos has distinguished himself through his outstanding contributions to the field of architecture. He has dedicated his career to bring revitalized life to older federal government buildings. Charles' early vision in recognizing the sustainability inherent in renewing existing buildings led to a career devoted to bringing revitalized life to older federal buildings. A leading expert in sustainable renovations, his work over the past 25 years has helped countless federal government agencies in numerous renovation projects improve federal building performance and create new and inviting class A workspace yielding higher federal worker satisfaction and productivity - all while reducing energy consumption and government expenditures. Charles' projects are noted for use of innovative solutions with measurable results. An active leader within the architectural community, Charles is devoted to sharing his knowledge with his colleagues to enhance their abilities to better serve the public trust. He writes articles, speaks professionally, teaches seminars, and mentors intern architects in his firm as well as others through the Intern Development Program of NCARB. His long-term leadership as the chair of the Continuing Education program for the Northern Virginia Chapter of the AIA significantly grew education opportunities for the region and ultimately led to being honored as the best Continuing Education program nationwide within AIA. Charles achieved these successes while also serving as a Naval Flight Officer in the United States Navy Reserve for 30 years. The outstanding and valuable contributions of Charles E. Enos to the field of architecture, reflects great credit upon himself and the Society of American Military Engineers.

### APC: Have you always done Federal work?

Enos: Nope. When you are starting out in architecture, you never know where you will end up. I kind of fell in to doing federal work and renovations. A little background...The Navy recruiters enticed me to "Fly Navy" while I was walking through the Student Union at the University of Oklahoma where I graduated in 1977 in architecture. Then while serving 8-years active duty in the Navy as a Naval Flight Officer in California, I met and married my wife whom was also a Naval Officer. She accepted orders to Charleston SC, while I got out of active service but joined the Navy Reserves and went looking for work as an intern architect in 1985. So, in Charleston I landed my first job in architecture working for a sole practitioner who specialized in custom resort residences for Kiawah Island and Wild Dunes.



Charles Enos, AIA, LEED AP



SAME URBahn MEDAL  
THIS PRESTIGIOUS NATIONAL  
HONOR IS PRESENTED EACH  
YEAR TO A SAME MEMBER  
FOR THEIR EMINENT AND  
NOTABLE CONTRIBUTIONS IN  
THE FIELD OF ARCHITECTURE.

That was great fun and I loved it. I remember using a structural software program to calculate and size the connections to the piles in the flood zone and I am happy to say that all 30 of the houses I worked on came through Hurricane Hugo without a scratch.

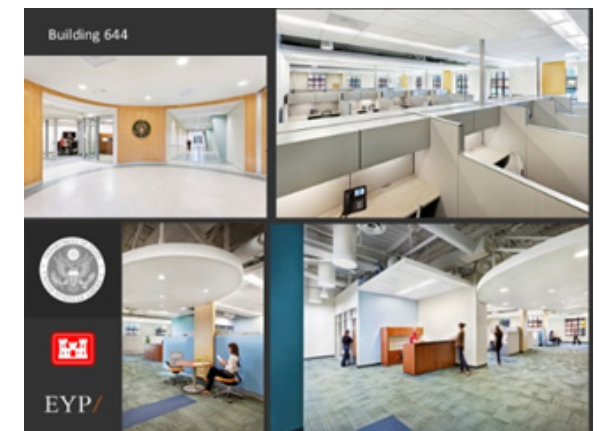
In October 1989 my wife got Navy orders to Washington DC and we moved to Springfield Virginia. Back then the jobs were advertised in the newspaper, and there were three columns worth of ads for architect interns. I interviewed with only one firm, which was south of where I lived so that I did not have to deal with the horrible DC commute. Peck Peck & Associates (PPA) was a husband and wife small business specializing in Federal Government work, and interns were scarce so they hired me immediately. They had multiple term contracts with GSA and DoD. I had never done federal government work, so while I was drafting on the pin register mylar adding my normal notes that I had learned while doing custom residential work such as "use 95% standard proctor compaction for soils preparation," and a senior architect/spec writer looked over my shoulder and said, "no, wait, what are you doing? We have specifications that cover that kind of stuff." Specifications? Wow did I have a lot to learn. Obviously, I learned. Three years later with multiple federal government renovation projects under my belt, I was leading the firm's GSA IDIQ Prospectus Development Study contract and writing PDS's, which are detailed programming documents that GSA and OMB use to seek approval for large Federal Projects (both new work and major modernization projects) through Congress. This is why major projects are called "Prospectus Level" projects in GSA. Then I was "head hunted" from word of mouth by a colleague that I worked with at PPA who was at EYP Architecture & Engineering. EYP had GSA's sister IDIQ contract for PDS's and EYP was short-handed. So EYP hired me to run the GSA PDS IDIQ contract and lead PDS project teams. From then on, I did nothing but federal government work.

**APC: Your Urbahn Medal Award Citation notes a career "dedicated to bring revitalized life to older federal government buildings," tell me about that.**

Enos: In a large firm, first as an new intern, you work on the projects that come in the door, then when you become more senior, you get to pick and choose, then when you become a Principal, you decide what type of project you want to work on and you also bring in the work. I was very fortunate while at EYP for 25 years to develop an expertise in federal government work and as a Principal to compete for, win, and lead multiple GSA Design Excellence projects as well as multiple IDIQ contracts for AOC, NARA, GSA, DoD, and other "lettered" federal agencies. So, in doing this Federal Government work, I realized that I really enjoy giving renewed life to buildings whether it is repurposing buildings for new uses, modernization of 1960's buildings or

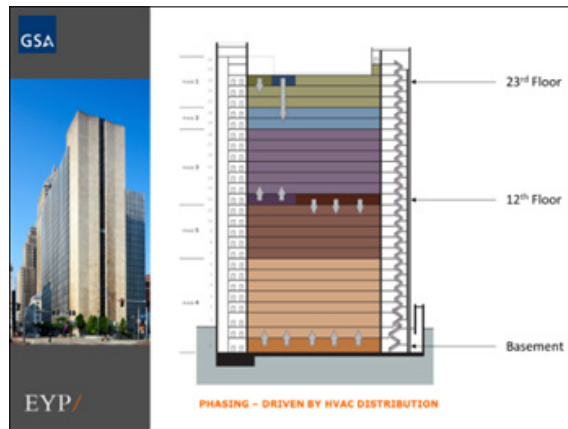
revitalizing historic buildings. Actually for SAME JETC 2014, I gave a seminar about three case studies of these types of buildings that focused on incorporating sustainable design in these renovations.

1. Repurposing: When my wife was stationed in Charleston at the Navy base before BRAC, I did my architectural internship in the 1980's with a sole practitioner who specialized in custom resort residences for on the barrier islands, and while there, I remember going bowling on base. Little did I know that thirty years later I would convert that bowling alley to a Class A LEED Silver office building. After BRAC, the US Department of State built a campus for providing worldwide services on the base. Building 644 (the bowling alley) was situated right in the middle of their campus, but instead of tearing it down the decision was made to be sustainable and renovate it. A bowling alley does not have windows, so to bring light into the building, we saw-cut the CMU, and added steel reinforcement for new window openings. The brick used when the building was first constructed in the 60's was still available from the same original vendor, so we had a perfect match of the brick veneer finish. We used solar light tubes to bring in natural light to the interior portions that were further away from the new perimeter exterior windows. The USACE provided the construction management. As noted by the Bureau Chief, her folks love coming to work there and the inviting design attract new employees.

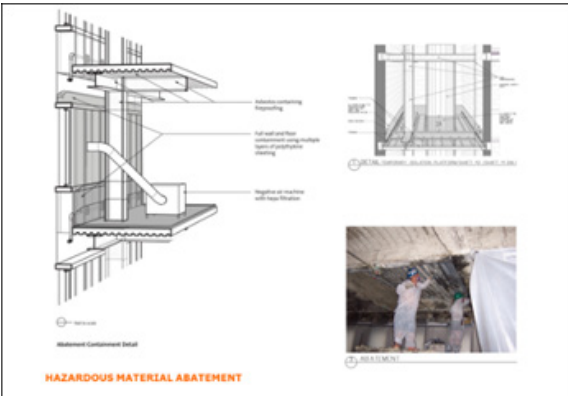




2. Modernization: This was a GSA Design Excellence phased modernization of the 770,000 SF William S. Moorhead Federal Office Building in Pittsburgh, PA. The 23-story building was built in the 1960's and the energy literally poured out of the building's curtain-wall skin. All building systems including the HVAC, electrical, plumbing and life safety needed replacing. In addition, GSA had been losing rent since many of the federal agencies had moved out seeking better working spaces for their staff. In order to not lose any more rent, we developed a construction phasing plan that kept existing tenants in the building. By necessity HVAC drives the zones to be renovated.



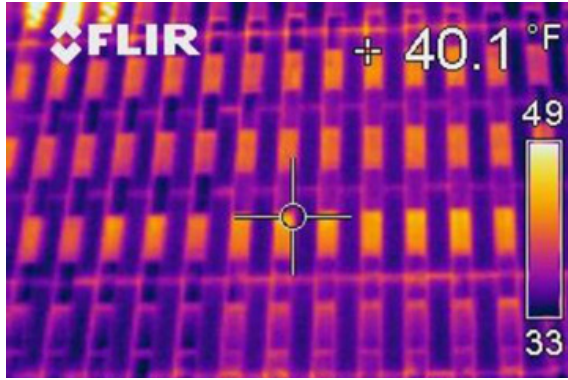
Also typical of buildings built in this era, there was asbestos in all of the pipe insulation as well as all of the fireproofing of the steel including the steel decks. We were concerned about contaminated water finding its way to lower floors during abatement. It would have been ideal to renovate the phases from the ground floor up, but due to the optimal tenant moving plan for the phasing plan we had to renovate upper stories of the building first, and water infiltration was of great concern. We developed a process for sealing one floor at a time and abating the hazardous materials while the building remained in operation. Full containment included complete coverage using multiple layers of 6 mil polyethylene sheeting and full flashing up the walls.



The existing curtainwall was single pane glazing with no thermal breaks. It was too expensive to replace it. So we developed a design that added insulation and new storm windows on the interior face creating an insulation layer that vastly improved thermal performance and was easy to install. These skin modifications made a dramatic difference by decreasing infiltration and increasing performance.

The modernization project converted uninviting, non-code compliant age-wear space into desirable rentable Class A office space that provides a comfortable, functional, efficient and aesthetically appealing work environment for its tenants as well as providing a safe and technologically advanced energy efficient building. The Building achieved LEED Silver and GSA is having no problem maintaining full occupancy and is enjoying significant

Infra-red photography showing both renovated floors and un-renovated floors. Notice the reduction of heat transfer through the curtainwall due to the building modifications along the bottom row of windows.



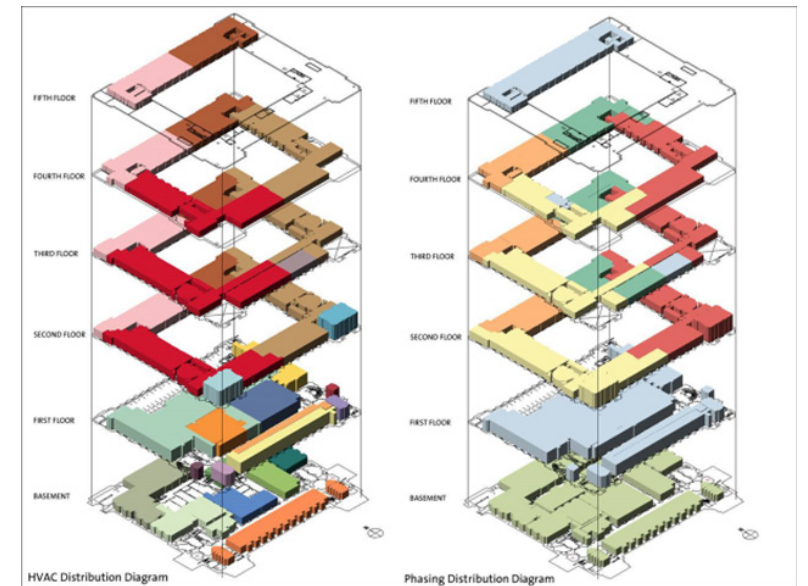
3. Revitalizing historic buildings: Yet another GSA Design Excellence phased renovation project - Built at the turn of the century, the historic 550,000 SF Birch Bayh Federal Office Building and US Courthouse in Indianapolis, IN needed all of its historic charm to remain but also to become a modern energy efficient building. We had to modernize the building while keeping the building open to the public which the courts serve.

- Project Goals
- » Preserve the historic building fabric – limit the impact of the work on the building
  - » Seamless integration of new infrastructure
    - o Mechanical Systems and Controls
    - o Interior Lighting and Controls
    - o Fire Suppression and Fire Alarm Systems
    - o Plumbing Systems
    - o Building Envelope
    - o Hazardous Materials
  - » Limit disturbance to the tenants and the public
  - » and most importantly - maintain public access to the US Courts



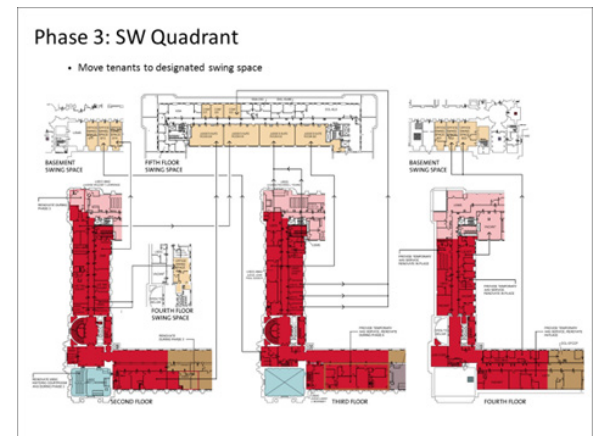
Federal Judges are appointed for life, so if you think generals and admirals are tough, think again: Generals and Admirals move their flags from job-to-job, location-to-location, Federal judges stay in one location and consider their building, their building, and it is very, very dear to them. So, we developed scoping boards to be able to clearly show the judges what we were going to be doing to their building.

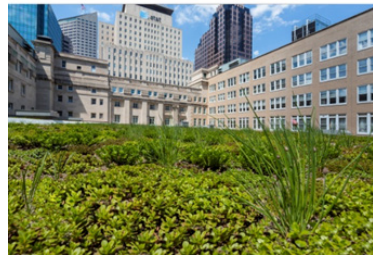
You can clearly see in this diagram how the HVAC distribution drove the phasing solution for this project.



We built swing space on the top floor that was populated then vacated by the judges at every phase. We developed detailed swing space diagrams for every planned move to swing space that we used to show the judges during concept design. With 14 courtrooms in the building, we were able to only take 3 or 4 courtrooms offline during each phase. The judges were happy with the plan and it went very smoothly during construction.

The building was unsprinklered and did not have a code compliant fire alarm system. The routing of sprinkler piping and installation of sprinkler heads in the historic fabric and especially the ornate areas of the building became one of the biggest challenges. We investigated pathways for sprinkler piping using careful localized investigation, eliminating the risks of unknown during construction that could lengthen the schedule.





A new vegetative roof and new storm windows save 1000s of kilowatt hours of power and reduce the heat island effect of the entire city by 1.2%. A rainwater harvesting system redirects 18,000 gallons of water for plant irrigation and non-potable water needs. Overall the upgrades to this LEED Gold certified building achieve 18% energy savings over the industry baseline.

The renovation of the historic building was awarded two GSA National Design Awards.

**Your citation also says you are retired from the US Navy Reserve after serving 30 years, how did your service contribute to your profession as an architect and vice versa?**



Well that's easy, for me the intersections are leadership and project management. Even though my service as a Naval Flight Officer and practicing as an architect are diverse and totally different, the navy taught me how to effectively lead people, and being an architect in charge of major multi-million dollar federal government projects with multiple stakeholders, I learned to be an effective project manager. I have used both sets of skills effectively in both venues.

I supported the Office of Naval Research for my last seven years with three Commanding Officer tours until I retired with 30 years of service as a Navy Reserve Captain, all while also doing my "real" civilian job as an architect and trying to spend time with my family. At ONR I discovered that they employed the best and brightest technical and scientific SME's but lagged in project management expertise. So as a Project Management expert (and a Navy Captain who definitely exudes authority in the navy), I jumped right in and helped them. I restructured the NR Program (over 250 Navy Reserve Officers) to align with ONR Functional



*Birch Bayh Images courtesy of EYP Architecture & Engineering*



Naval Capabilities with team leaders and Navy Reserve SME Officers aligned with each of the ONR Functional Naval Capabilities resulting in significant efficiency and huge productivity gains in bringing new technologies to the fleet. Also I used focused brainstorming sessions to lead SME's in developing innovative solutions for the warfighter and developed a scalable Test & Evaluation process to allow these innovative life-saving measures such as the Predator UAV to be deployed quickly to the warfighters during Operation Enduring Freedom and Iraqi Freedom.

Regarding bringing leadership to the architectural community, in addition to successfully leading large multiple stakeholder Federal Government projects and mentoring intern architects in the fine art of leading project teams, I developed three seminars over the years: Teambuilding 101, Communications 101, and Leadership 101, that I still present at professional events serving our profession such as AIA, CSI, & SAME. I have volunteered to be one of the instructors in the DC area for the upcoming SAME Leadership series.

**What have you been up to since you won the 2013 Urbahn Medal?**

A little over two years ago, I founded Charles Enos Architecture, PLLC with the goal of helping small businesses wanting to grow their federal government work. It was time to share my leadership and project management expertise with more folks than just the clients, architects and engineers on my project teams. My consulting business has taken off by word of mouth, through personal relationships built over the years with colleagues, clients, peers, and even contractors. I have been mentoring whole new sets of architects in the intricacies of fulfilling federal government project requirements and helping their people to become wiser Project Managers able to serve multi-stakeholder government clients better. They see and appreciate the value that I bring, and I love mentoring them. ...and best of all, they all say: "Thanks Charles!"

**You have talked about the project work, but is there one aspect of the work that stands out? What are you passionate about besides bringing new life to older building? What is your passion?**

I have been speaking about it in Toastmasters for years. Problem Solving using Teambuilding, Collaboration, and Leadership, I did it in the Navy at ONR by creating a culture of bringing together subject matter experts, focusing them and leading brainstorming sessions yielding out-of-the-box innovative solutions to get life-saving solutions to the warfighter faster and more effectively, and I do the same thing on my architectural projects. At EYP, I had the honor of being the Principal-in-Charge of many projects including 10 years in leading DOS IDIQ task orders, but leading the Department of State Foreign Affairs client through multiple design charrettes in designing the Foreign Missions Center Master Plan at the former site of Walter Reed National Medical Center in Washington DC and obtaining approval from National Capitol Planning Commission, Commission of Fine Arts, and the DC SHPO stands out as one of my favorite accomplishments. Its not work, its totally fun!

OK, Start the Charrette!

Design Charrettes are an extremely effective venue for brainstorming innovative solutions, achieve buy-in, and every team member contributed and has pride of ownership at the end of the process. I have to give fair warning to those who have never led a design charrette. To be effective, the Charrette Leader has to set the pace, facilitate the team in goal setting, and keep the team focused on the goal. It is not easy, the leader has to have all sessions well planned in advance, then at the outset of the charrette make it clear to the team what the goals are, and then keep the groups moving at a fast







Design Charrettes led by Charles Enos for DOS Foreign Missions Center Master Plan, Washington, DC

Images courtesy of DOS and EYP Architecture & Engineering

pace while brainstorming. I bounce from small group to small group to prompt them and guide them while ensuring they document their discussion in real time to report out to the group. It is an exhilarating process and I am always astonished with the innovative solutions we discover.

In 2016 also at EYP, under the GSA National Workplace IDIQ contract, my first undertaking was a daunting and monumental task: we had to obtain buy-in from 14 Federal Government Law Enforcement Agencies in performing a Federal Law Enforcement Workplace Engagement with the goal of implementing Workplace Initiatives with them IAW federal directives. YIKES!

I strategized with GSA and we developed a Visioning Session (charrette) where representatives from the agencies brainstormed the work environment areas needing further development, which resulted in four primary focus areas. Then after documentation and agency reviews for concurrence, we held a Focus Group Charrette where we broke down into small groups to brainstorm solutions for each focus area. The process used were the good ole design charrettes!

**GOAL:**

The GSA is working with 14 Federal Law Enforcement Agencies to create a common “starter” set of workplace strategies and guidelines informed by **similar** work patterns and job functions happening within these agencies. While acknowledging each agency’s unique mission, the strategies and guidelines developed together will highlight and integrate those areas (including space, technology and business operations) common across agencies such as space standards, business processes, mobility, hoteling, right sizing, secure work, special space, special technology and equipment needs, etc.

And very recently for the Onyx Group with their USAF IDIQ, I led another fun project where I got to use charrettes to build multi-stakeholder team consensus. We developed a Design Build RFP for a new Addition for the Hanscom Collaboration and Innovation Center. The first thing we did was convince the base commander that we had a better location to showcase this new addition to be more inviting to academia and coalition partners. We put it in front of the existing facility instead of where they had originally planned it, hidden away behind the existing building. The tenant client loved the design so much, they expanded the scope to house not only the collaboration spaces, but also their team spaces.

One last nugget to share: Joe Reid, one of my most influential mentors told me years ago, Charles all you have to do to be successful is to build a trusting relationship with your client, because when you do that, together you can work out any

problem. ...and he was right, I have applied that wisdom throughout my career and it applies to teams whether led by government employees or private sector folks. All team member stakeholders can build trusting relationships by being honest and forthright, listening to each other, being dependable, and communicating in a courteous responsive manner. One major ingredient that really helps: Pick up the phone and talk to each other!

Design Charrettes led by Charles Enos for HCIC Addition, Hanscom AFB, MA



## MILITARY ARCHITECTURE, CONTINUED



*US Arsenal, Washington DC (now Ft McNair location)*

### Charles Bulfinch

Bulfinch was an architect from Boston who worked in Boston and Washington. He designed the Old State House in Hartford, Connecticut (1796), the Massachusetts State House (1798), the Boston Common, the Massachusetts State Prison (1803); Boylston Market (1810), and University Hall for Harvard University (1813–1814). He was educated at the Boston Latin School and Harvard University. After his education he made a grand tour of Europe. He was greatly influenced by Andrea Palladio, Sir Christopher Wren, Robert Adam, William Chambers. Thomas Jefferson became something of a mentor to him in Europe, as he would later mentor Robert Mills. Bulfinch is often considered the first native U.S. architect.

In Washington, Bulfinch served as the Commissioner of Public Buildings and the Third Architect of the Capitol. Bulfinch completed the Capitol's wings and central portion, designed the western approach and portico, and constructed the Capitol's original low wooden dome to his own design (replaced by the present cast-iron dome completed in the mid-1860s). His works are notable for their simplicity, balance, and good taste, and as the origin of a distinctive Federal style of classical domes, columns, and ornament that dominated early 19th-century American architecture.

### General Hospital

The arsenal was enlarged to 69 acres in 1857 for construction of a hospital, and during the Civil War it housed 1,000 beds for care of the wounded. After the

Civil War the arsenal was closed in 1881 and the post transferred to the Quartermaster Corps. A general hospital was located at the post from 1898 until 1909. Maj. Walter Reed worked there and found the area's marshlands an excellent site for his research on malaria. The major died of peritonitis after an emergency appendectomy operation at the post in 1902. Later the hospital was renamed in Reed's honor and remained at Fort McNair until 1909.

### The Army War College

McNair's 1900's architectural history began with the establishment of the Army War College. The War College was established by President Theodore Roosevelt and Secretary of War Elihu Root to teach principles learned in the Spanish–American War. The College was designed by McKim, Mead and White, architects who practiced Beaux-Arts architecture, adopting the classical Greek and Roman stylistic vocabulary and filtering it through the Parisian Ecole des Beaux-Arts and the related City Beautiful movement.

Their design for the Army War College included a large parade field flanked by faculty housing on either side of the parade field with an Engineering School, Barracks and the Hospital at one end and the War College classroom building, Roosevelt Hall, at the other end of the parade field facing the river. Roosevelt Hall is the centerpiece of the AWC campus. As many as fifty additional buildings were envisioned, but only Roosevelt Hall was completed.

The cornerstone for Roosevelt Hall was laid on February

21, 1903, and on June 30, 1907, the building was occupied. Roosevelt Hall housed the Army War College (AWC) from 1907 to 1946. Then the institution moved to Fort Leavenworth, Kansas and a year later to Carlisle Barracks, Pennsylvania. Since 1946, it has housed the National War College (NWC), a training and doctrine institution embracing all branches of the armed forces, as well as the Department of State and the Central Intelligence Agency. The role of the NWC closely parallels that of the AWC, but on a broader, multi-service basis.

The Neo-Classical style building is constructed of red brick with granite trim. The ground plan of Roosevelt Hall is oriented on a cross-axis formed by the intersection of a domed central pavilion and wings extending laterally to the east and west, each consisting of 12 bays. The main pavilion is pedimented and, on the north (main) facade, is distinguished by a tall arched loggia featuring a distyle in antis Ionic screen. (This is a motif also employed in the east and west gable ends of the building.) Surmounting the entablature of this columnar screen, in each instance, is a symbolic sculpted eagle.

Acroteria adorn the long, slate-covered ridge roof. The third floor is a clerestory, with four great arched clerestory openings in the form of thermal windows rising above the entablature of the pilastered, two-story wing elevations on both front and back. At the central pavilion, a two-story windowless, pilastered, vaultless apse projects from the south (back) elevation.

It was originally intended that the stepped terraces on the north side of Roosevelt Hall would include impressive statuary of great warriors. Podia for statues were constructed, but they were never installed, except for one of Frederick the Great, a gift of the German government soon after the completion of the edifice. Anti-German sentiment at the time of World War I forced its removal.

The central feature of the interior is a three-story, marble-floored rotunda, encircled on the upper levels by balustraded galleries. An inner saucer dome of vaulted brick covers the rotunda and terminates in an oculus through which a large metal chandelier is suspended from the outer dome. Contrasting with the severe white walls of the space are exposed brick structural members: pilasters and segmentally-arched brick vaulting supporting the

galleries. Between two of the brick pilasters is a large marble plaque commemorating the efforts of Secretary of War Root in the establishment of the AWC. Flanking the plaque are portraits of Roosevelt and Secretary of War Henry Stimson. Additional portraits and busts of prominent American military figures also adorn the rotunda.

The east wing was extensively modernized in the mid-20th century and contains classrooms ranged along a central corridor at all three main levels. The entire west wing of the structure is devoted to the extensive library of the NWC. Stack space consists of five metal balconies, connected by bridges at the upper levels and bisected by a central corridor. At the far end of this long, vaulted room is a reading area. The ground story houses more office and classroom space. The south side of the rotunda, in the central apse (bowed extension), is a lecture chamber.

McKim, Mead and White shaped the character of Ft McNair for generations. There have been significant buildings added to the installation, but the main structure of McKim, Mead and White's work has been kept. Ft McNair was placed on the National Register of Historic Places in 1972. All of the architects who worked at Ft McNair contributed to its outstanding architectural character.



*Roosevelt Hall from the river, Ft McNair, Washington, DC, McKim, Mead and White Architects*



*Roosevelt Hall from the Parade Field, Ft McNair, Washington, DC, McKim, Mead and White Architects*



*Library of New York University, McKim, Mead and White, Architects*

### McKim, Mead and White

McKim and Mead joined forces in 1872. They were joined in 1879 by White, who, like McKim, had worked for architect Henry Hobson Richardson. Their work applied the principles of Beaux-Arts architecture and the related City Beautiful movement. Its vision was to clean up the visual confusion of American cities and imbue them with a sense of order and formality during America's Gilded Age. They designed many significant structures including the West and East Wings of the White House, the National Museum of American History the former Pennsylvania Station, the Brooklyn Museum, the main campus of Columbia University, the Boston Public Library and the Rhode Island State House.

### Ft McNair Major structures:

Penitentiary Administration Building: 1832 by Bulfinch; 1869 Italianate alterations by Adolph Cluss, architect

Model Arsenal: Built 1838, Greek Revival

Guard House: Built 1838, Eastlake style, now Golf Club House

Stable Guard House: Built about 1860, rebuilt 1904 in Georgian Revival style by McKim, Mead & White, architects

Army General Hospital and Dispensary: Built 1880

Hospital Death House: Built about 1890

Boundary Wall: About 1900, by tradition built from bricks from the demolished penitentiary

Main Entrance Gates (The Six Gun Gate): Fabricated about 1875-1900, moved to present location 1903

### McKim, Mead and White Era:

General Officers' Quarters (Quarters 7-9): Three identical buildings, including Commanding Officer's Quarters; built 1903, Colonial Revival, McKim, Mead & White, architects

Officers' Mess (Officers' Club) and two Mess Halls: Built 1903, Georgian Revival, McKim, Mead & White, architects

Band Building (Quarters 18): Built 1903, Colonial Revival, McKim, Mead & White, architects

Enlisted Men's Barracks and Chapel: Built 1903, Georgian Revival, McKim, Mead & White, architects

General Officers Quarters (Quarters 1-6 and 10-15): Twelve identical buildings, built 1903-05, Colonial Revival, McKim, Mead & White, architects

Parade and Drill Field: 1903-07, McKim, Mead & White

Quarter Master's Commissary Stores and Offices: Built 1904, Georgian Revival, McKim, Mead & White, architects

National War College: Built 1907, Neoclassical, McKim, Mead & White, architects

Engineer Stables and Quarter Master's Stable: Built 1904, 1919

NCO Quarters (Quarters 23-28): Six identical buildings, built 1905-08, Colonial Revival, McKim, Mead & White, architects

Post Office and Gymnasium: Built about 1908, Georgian Revival, McKim, Mead & White, architects

Engineers School: Built 1914, Georgian Revival, McKim, Mead & White, architects

Quarter Master Shop: Built 1914, Georgian Revival, McKim, Mead & White, architects

Post Office: Built 1939, Georgian Revival



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