NASA Langley Research Center Administration Office Building One

Hampton, VA

Project Statistics:

- 79,000 SF
- 3 stories + Penthouses
- Construction Milestones:
  - July 17, 2009: broke grounds
  - March-May 2007: occupancy
  - June 17, 2011: ribbon cutting
- Overall project cost: $26 million
- Design-build project delivery method
- LEED Platinum Rating

Project team:

- Owner: NASA & U.S. General Services Administration
- Contractor: The Whiting-Turner Contracting Company
- Architect, Landscape Architect: Cooper Carry
- Structural Engineer: Structura Inc.
- MEP Engineer: H.F. Lenz Company
- Construction Management: Hill International
- Civil Engineer: PBS&J

South Elevation

Images from AECOM bridging drawings – www.aecom.com

Site Plan

Architecture and Sustainability Features:

- Form evokes flight, with rectilinear form and overhanging upper floors, clad in metal and glass façade
- Horizontal overhangs on south and west facades
- Vertical sun shades on east façade
- Interior layout maximizes daylighting, with open offices no wider than three cubicles and glazed interior partitions on private offices
- Green roof
- 30% water reduction plumbing fixtures
- Voluntary segregation of recyclable materials

Structural:

- Steel framed
- Typical floor: 3" 22 GA deck with 2-1/2" NWC
- Slab on Grade: 5" cast-in-place concrete with 6x6-W2.5xW2.5 WWF
- Gravity framing: wide flange and tube steel columns, composite steel beams and girders
- Lateral Resisting System: series of braced frames; two braced frames oriented in both directions

Mechanical:

- Geothermal well field for full heating and cooling load of the building
- One DOAS unit with heat recovery wheel from building exhaust, four AHU's supplied from DOAS unit with VAV and return air at unit
- Under floor air distribution for office areas
- Separate AHU with OA intake to supply first floor meeting rooms
- BCU's for lobby conditioning

Lighting/Electrical:

- Daylight sensors at perimeter
- Occupancy sensor light switches in private offices
- Occupancy sensors in meetings rooms
- LED and fluorescent lights
- Feeder: 1500 kVA, 6600 volt
- Main service switchboard: 480Y/277
- 250 kW diesel generator
- Two photovoltaic systems connected to the photovoltaic skylight glass.

Valerie Miller | Mechanical | Advisor: Dr. Freihaut
https://www.engr.psu.edu/ae/thesis/portfolios/2015/vkm5018/index.html