



Architects • Engineers



MEP/FP EXPERIENCE



February 22, 2016

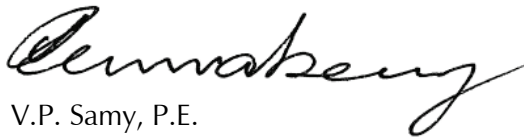
**RE:** O&S Associates, Inc.  
Past performance

O&S Associates, Inc. is pleased to have the opportunity to present our firm for your consideration.

O&S Associates is a full service multi-disciplinary architectural, engineering firm that specializes in the assessment and repair design of exterior walls, roofs, mechanical systems, parking, and other building consulting needs, such as capital reserve planning.

Please find attached numerous projects to help demonstrate the range of services that we provide for a range of clients. We look forward to responding to your needs in more detail, with a project specific approach, as they become known to us.

Respectfully,  
**O&S ASSOCIATES, INC. - Consulting Engineers**



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## RELEVANT PROJECTS

O&S Associates provides the following projects as evidence of our firm’s relevant experience.

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Columbia Gas – Columbus Ohio

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O&S Associates, Inc. provided a total property condition assessment pursuant to their triple-net lease obligations and studied all of their mechanical systems. O&S designed the replacement of their chillers and air handlers for the main office building and the office space located in an attached parking facility. The construction value was \$3M.





**Tremco Headquarters Energy Upgrade: Exterior Wall, Window, and Green Roof – Cleveland OH**

Tremco Inc., headquartered in Beachwood Ohio, undertook an extensive modernization of their facility to provide a “Green” makeover for their 40+ year old buildings. The energy consumption to be brought in line with current green and LEED standards using a combination of building upgrades and energy conservation measures. The \$5 million renovations and upgrades project finished within budget and on schedule.



**HVAC Upgrades & Re-Design:** Existing heavy MEP equipment was replaced with new. HVAC delivery and control systems were a major source of energy wastage in the buildings. The controls system has been re-designed to optimize energy performance and provide better controllability of systems for increased thermal comfort. The provision of Solar and Wind electric generation provided 40% of the buildings energy. The MEP upgrades had a construction costs in excess of \$3M.

**Exterior Façade Re-Design:** The old façade of the building consisted of hung slate panels and curtain walls. A more energy efficient façade was achieved by provision of new EIFS panels directly on the existing slate panels. This resulted in considerable cost savings for Tremco by allowing the existing façade to stay in place while achieving their goal of energy savings and aesthetic upgrades.

**Window & Glazing Replacement:** The existing windows were replaced with energy efficient windows and glazing which helps in achieving the goal of energy savings and sustainability.

**Vegetated Green Roof:** The existing roof which was approaching the end of its useful life was replaced with a new vegetated Green Roof system. This provides better energy performance for the building and helped in securing LEED credits for the building.



**LEED Criteria:** As a result of the modernization program, the building received LEED Gold Certification from the U.S. Green Building Council which is a difficult accomplishment to achieve for an existing structure.



Mediterranean Towers – Fort Lee, NJ

Med South is a 22-story high rise apartment building that was constructed in 1967 and consists of 483 Units. The common elements include the building’s mechanical, electrical, and plumbing systems, building envelope and structure, recreation deck (pool, site fixtures, and amenities), parking garage, lobby, mail room, laundry, and hallways, and other site/civil improvements and shared amenities.

O&S provided Architectural Engineering Services for Mechanical Systems, Lobby, Parking

Garage Repairs, Balcony Repairs and Waterproofing, Window Replacement, Exterior Masonry Repairs, and renewals for the 2-acre recreation deck and plaza which featured pools, tennis courts, playgrounds, and other amenities.

O&S designed and managed the construction for the 4 acre plaza renovation and garage repairs. The project started with Med South and several years later their neighbor with “sister” construction, Med North, elected to have O&S provide the same program. Structural repairs included full depth and partial depth waffle slab repairs.

O&S also provided Architectural Engineering Services for the replacement of the roof of Mediterranean Towers South. The new roof was comprised of 3-ply modified built-up roofing. The total size of the roof was about 32,000 square feet. The construction value was approximately \$700,000. O&S provided the client with construction documents, bidding services, and construction management services.





Galaxy Towers Boiler Replacement & Women’s Locker Room Renovation – Guttenberg, NJ



Galaxy Towers consists of three, 50 story, high-rise towers, an 11 story private parking garage and an affiliated two level ‘Mall at the Galaxy’. The Mall includes restaurants, mini-supermarket, pharmacy, dry-cleaners, salons and day care center.

O&S is currently working to replace the boiler that provides steam for space heating in the common areas (lobbies, corridors, support areas) of each tower as well as steam to air handling units serving the Mall spaces. The boiler plant also serves steam to hot water exchangers located throughout the facility. O&S found that the existing boiler plant, (including boilers, condensate pumps, valves, trim, controls and piping) and the existing domestic hot water generator systems (including heat exchangers, pumps, valves, trim, controls and piping) are well beyond their life expectancy. O&S is currently working to replace the plant with a cogenerator boiler.



O&S is also currently providing consulting engineering and architectural services to renovate the Galaxy’s Women’s locker room. The work includes, redesigning the locker room to increase the number of vanities and sinks, mirrors, convenience outlets and hooks for towels and garments. The changing rooms and shower stalls will be renovated to be ADA accessible. MEP improvements will be made to improve ventilation and airflow. The lockers and steam room tiles will be replaced and refinished.



New Jersey Performing Arts Center & Military Park – Newark, NJ

The renovation consisted of structural concrete repairs, new lighting system, structural modifications to accommodate a new elevator/escalator pavilion, new mechanical ventilation system, new plumbing systems, refurbishing the existing sprinkler system, new carbon monoxide monitoring system, new stair and exhaust/air intake kiosks in the park and renovation of sidewalks, new stone retaining walls and landscaping of the Park and new sidewalks in the Military Park.



Several design innovations were implemented on the project. First, since the garage was underground lateral bracing was an important consideration. A comprehensive structural analysis was conducted to arrive at a demolition sequence which minimized the bracing required but maintained the lateral stability of the perimeter retaining walls. **Hydrodemolition** was used for the controlled partial depth demolition. Second, a fully bonded, fiber reinforced concrete overlay was designed to restore the supported structural slabs. Special considerations were used to increase bond and minimize cracking. The construction of the new elevator/escalator pavilion required cutting a large openings through the 24" thick plaza slab and 12" thick parking floors. Large reinforced concrete bracing beams were designed for the walls and hidden beams in the floor were used to reinforced perimeter of openings.

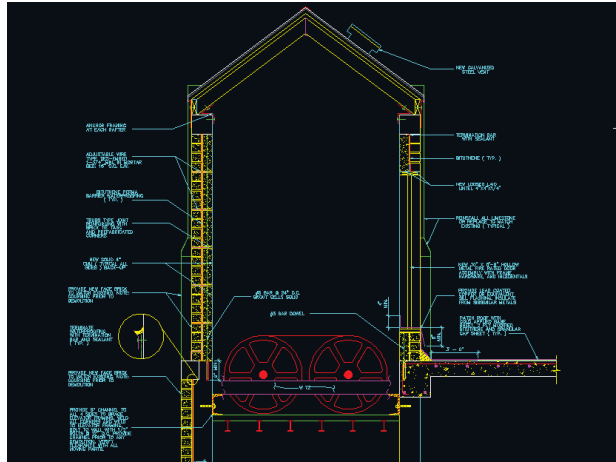
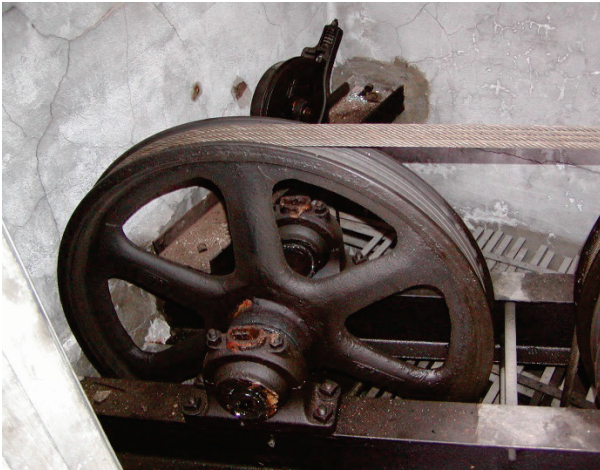


City of Trenton – HVAC System & Control Replacement at Fire Headquarters & Fire House #9

O&S was hired by Trenton, NJ to replace the obsolete Staeffa HVAC control system for the city's Fire Headquarters and Fire House #9. The City also needed the new system be integrated with the monitoring/control system located within the City Hall building. O&S performed an assessment of the existing system and controls and prepared engineering plans and specifications for the modification, removal and replacement of systems and controls.



Northeast Middle School – Emergency Elevator Tower Repairs



The Northeast Middle School, built in 1922, was retrofitted with an elevator at some point in its history. The elevator tower however suffered from moisture infiltration such that the steel bearings and anchorages for the elevator sheaves began to fail with the wall, which was also displaced and unstable. O&S designed emergency repairs for this tower which required careful considerations to temporarily support the elevator and exterior walls while maintaining occupancy. The low bidder was awarded the project for \$207K but with careful planning and execution O&S closed out the project with a credit to the project of \$18K such that the final project cost was \$189K.



### New York City Housing Authority – Water Tank Design

In 2011, the New York City Housing Authority (NYCHA) engaged O&S Associates to provide Architectural & Engineering and Construction services in a 5-year IDIQ contract. O&S Associates has already provided design and construction services for more than 300 NYCHA buildings. Our first Task Order was to provide comprehensive structural evaluations of the facades, windows, and roofing of 80 buildings and then recommend required repairs, estimate construction costs, produce specifications and construction drawings, and provide construction administration. O&S also filed all required documents with the NYC Department of Buildings. Project funding was provided by the Department of Housing and Urban Development (HUD) and thus was subject to very strict A/E and construction requirements. It was also highly time-sensitive and O&S Associates was immediately responsive to any changes or revisions that were required to complete the project.



**Hazardous Materials:** The presence of hazardous materials was also a significant consideration in this project. Due to the age of the buildings, the existing building materials included asbestos and lead-containing roofing and flashing materials. As per NYC rules, O&S Associates tested for hazardous materials at each building under contract. We then utilized certified hazardous material specialists to develop a remediation plan for safely removing and disposing of hazardous materials during construction.

Wylie Natatorium – Maple Heights, OH

O&S Associates provided mechanical consulting for the City of Maple Heights for their public pool. O&S designed the replacement of their packaged heat units and consulted with the natatorium dehumidification system.



(\$3M MEP lighting, HVAC, Solar, 40% onsite electric generation, LEED

SP+ New York City Capital Improvements and Elevator Upgrades

In 2014, SP+ engaged O&S Associates, Inc. to provide Architectural and Engineering services in order to upgrade and modernize building systems at 7 facilities in New York City. The purpose of the program is to determine the required repairs and upgrades that will bring all of the elevators into compliance with the current New York City Building Code. The 7 garages contain a total of 14 elevators; 13 vehicle elevators and 1 passenger elevator. The Scope of Work includes field inspections to determine the current condition of the elevators, code analysis to determine deficiencies, design of repairs and upgrades, preparation of construction documents, bidding services, and construction administration. The scope of work also includes assessing the existing conditions of the elevator shaft, structural framing, building envelope, plumbing, electrical, and HVAC systems and performing the necessary repairs that are incidental to the elevator work.



**Location of the Project**

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| 154 East 53 <sup>rd</sup> Street   | 252-262 West 40 <sup>th</sup> Street |
| 38-42 West 46 <sup>th</sup> Street | 150-156 West 83 <sup>rd</sup> Street |
| 56 North Moore Street              | 23-25 West 55 <sup>th</sup> Street   |
| (Historic / Landmark Building)     | 150 West 38 <sup>th</sup> Street     |



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Landmark Towers – Atlantic City New Jersey

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O&S Associates was originally retained by Landmark Towers Condo Association to help with issues pertaining to capital projects related to deferred maintenance by the building's sponsor. O&S provided new domestic hot water heaters after determining that pool heater was provided at the exterior, on the roof of coastal high-rise



building to provide hot water. O&S also provided balancing, restored the abandoned fresh-air supply and air handlers, replaced the roof exhaust fans, and replaced lighting in the parking structure, and other MEP/FP projects.

O&S also provided reserve & transition study to identify defects and deferred maintenance. O&S subsequently designed repairs for the parking garage, ventilation system, smoke control, domestic hot water heaters, roofing, roof fans, exterior walls and balcony railings, and elevators.

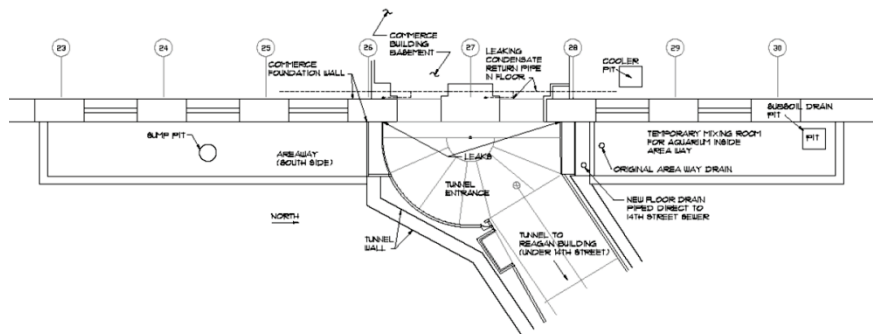
O&S Associates also provided Architectural Engineering services for the roof replacement at the Landmark Towers Condominium in Atlantic City, NJ. O&S also provided a number of other services including restoration of the parking garage, exterior walls, reserve & transition study and mechanical upgrades. The roof covered about 70,000 square feet. O&S developed a repair program, and provided bidding services and construction management. The total cost of construction for all restoration (roof, walls, garage, etc.) was about \$2 million.



Reagan Building: Commerce Tunnel Leak Investigation & Tile Drain Moisture Infiltration



The scope of work was to determine the causes of the leaks and to propose remedies for repairing the leaks into the subject areas. The scope of work included an investigation of the leaking into the commerce tunnel that connected the Brand New Reagan Building with the 1900's Commerce Building. The work also



PLAN VIEW OF TUNNEL ENTRANCE INTO COMMERCE BUILDING

included assessing the moisture that was infiltrating the basement slab from beneath as a result of an overwhelmed sub-soil tile drain system. This work included incidental repairs to many building systems including:

<ol style="list-style-type: none"> <li>1. Civil / Site Systems             <ol style="list-style-type: none"> <li>a. Ground Water Infiltration</li> <li>b. Storm Water Runoff</li> <li>c. Sewer Leaks (Storm &amp; Sanitary)</li> </ol> </li> <li>2. Plumbing Systems             <ol style="list-style-type: none"> <li>a. Steam Condensate Lines</li> <li>b. Floor Drains (Are Way and Aquarium Mixing Room)</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>c. Floor Drains or Rain Leaders from 3<sup>rd</sup> Floor Portico</li> <li>d. Aquarium Pits</li> <li>3. Waterproofing             <ol style="list-style-type: none"> <li>a. Counter Flashing</li> <li>b. Caulking (Area Way)</li> </ol> </li> </ol>
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415 W 46<sup>th</sup> Corp – New York City

O&S Associates, Inc. designed the oil to gas conversion of a midrise apartment building that had secured NYCERDA funding for energy rebates. The conversion was provided while maintaining occupancy which required careful planning and auxiliary plants. The project also included decommissioning of the oil storage tank per DEP standards, provision of a new hot water heater, and miscellaneous repairs to system traps, vents, and other accessories to improve the balance and performance of the steam system.



VWR International – Radnor, PA

O&S Associates designed the HVAC Upgrades for a distribution center Lab and healthcare chemical plant.



Coca Cola Stadium – Allentown, PA

O&S Associates was retained by Kistler O'Brien to be the Engineer of record for fire suppression and fire alarm systems, including ancillary computer and data centers at Met Life Stadium and the kitchen/food service center at Coca Cola Stadium in Allentown.





Gerard Tower Lobby Renovation – Forest Hills, NY



O&S Associates was contracted by Girard Owners Corporation to perform architectural/engineering services for the reconfiguration of the building's lobby, front entrance, mailroom, and rear garden exit to provide universal access throughout these areas. Wheelchair-specific access with compact lifts was also considered.

Part of the design criteria was to create access within and through the lobby to both sides of the building to achieve the greatest possible freedom, safety and ease of movement to and from the elevators, mailroom, front of building and rear garden sitting area incorporating ADA standards for all residents and visitors.



Ramps were designed to enhance the present visual and physical space. The décor designed projected a warm and distinctive environment with improved acoustics. To soften the visual impact of the entry area, planter beds with adequate lighting and drip-irrigation and sitting areas were provided. HVAC and lighting improvements were incorporated to minimize the impact of seasonal fluctuations in the ambient conditions. .



The mailroom was designed to conform to Postal Service and ADA requirements. To meet these standards the mailroom was extended outwards into the rear garden area and other changes such as mailbox islands incorporated.

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Portofino Condo Association – Jersey City, New Jersey

O&S Associates, Inc. provided a property condition assessment of the building for reserve funding and for use in litigation against the sponsor. O&S provided an assessment of the building mechanical systems, and made post-sandy disaster response recommendations. O&S provided design for generator upgrades, lighting & surge Protection, Water Softening, Garage Fire Protection, and other Misc MEP/FP projects.

O&S also provided emergency response during super-storm sandy to restore the roof and provided other leak assessment, waterproofing, and structural repair design for their parking structure, recreation deck, bulkheads, and other amenities.




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Hudson Harbor Condo – Edgewater New Jersey

O&S Associates provided a limited property condition assessment of the building for capital reserve funding, which included all mechanical systems. O&S also provided an emergency generator feasibility study after Superstorm Sandy, provided Fire Protection design and consulting to cure fire department violations, and consulted regarding replacement and upgrades for the building's switch gear. O&S also designed the replacement of the water and fire mains, and provided exterior wall repair design, parking structure repair design, and expert witness services.




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Siemens Office Parking Garage – Woodbridge, NJ

This project is a 1800 car garage to be constructed in 3 phases. Phase 1, a 600 car garage is recently completed with Phase 2 and Phase 3 to follow. The garage is a four level, precast concrete structure, with two internal ramp systems, three elevator and stair cores and two additional stairs.

**This project was designed using two structural systems;** one as a precast structure and the alternate as a steel structure. Contrary to popular belief, the precast option was equal in cost as the steel option and hence, the precast option was selected.

O&S completed the garage in July of 2002. The parking structure cost was about **\$7,750.00 per space** including site work, foundation, precast concrete structure, lighting, fire protection, shear walls and glass curtain wall for stairs.





**Dwight Morrow High School – Englewood School District, New Jersey**

The flagship school building for the Englewood School District is the historic Dwight Morrow High School, a tribute to 1933 Tudor Revival style, inside and out. Despite its heritage, the district was burdened financially.



During routine inspections, legitimate life safety issues (violations) were found throughout the school that would be typical to any aging infrastructure, including means of egress and stair tower concerns. Additionally, the school district also received a violation for the 150+ classroom doors in the building, since they were not a UL fire rated assembly. O&S Associates was retained to help the district correct all the deficiencies, including the replacement of all the doors.



During the design process, O&S Associates worked with local code enforcement officials to understand their concerns. O&S Associates also understood the limited resources that the school district had to correct the violations. The school district would not have the funds to replace the doors with an architectural equivalent of what existed. The existing doors were 3 inch thick solid wood doors, with transoms, or gothic arches, and custom millwork casings and jambs. O&S Associates took exception to removing these architectural doors and replacing them with a 45 minute fire-rated metal door assembly, unnecessarily.

O&S Associates worked with state officials and the municipality, and through technically sophisticated testing and analysis proved that the existing doors were much safer than the minimum rated door required by code!! In the end, O&S Associates helped the school district save over \$500,000, while making sure the students enjoyed a safe school.

**Sansone Auto Mall Car Garage – Avenel, NJ**

**O&S Associates** was retained to design a 600 car parking garage for Sansone’s Route 1 Auto Mall on an 18 acre site in Avenel, NJ. **O&S Associates** was responsible for the architectural, structural, mechanical, electrical and plumbing design of the structure



**O&S Associates** was selected by the owner to provide the design and manage the construction of the garage. The scope of work included the following: code and zoning analysis, foundations, superstructure, and seismic design, architecture, materials and finishes, vehicle restraint barriers, waterproofing, drainage, lighting layouts, fireproofing and fire suppression systems, signage/wayfinding, security, operations, construction documents and construction administration. The garage project was completed on time and within budget.

**Englewood Hospital and Medical Center Garage – New Brunswick, NJ**

The Englewood Hospital and Medical Center Parking Garage is a 600 car precast concrete garage located on the north end of the main campus. The garage provides parking for employees of the Medical Center and visitors to the Emergency Department.



As part of the master plan for the Medical Center, the garage site is restricted on two sides with existing structures and the property line to the north. Access to the garage can be achieved from Engle Street as well as North Dean Street. With ambulance access required through the ground level of the garage to the Emergency Department, **O&S Associates, Inc.** was able to provide proper clearance with internal ramping and sloped grading.

**O&S Associates** provided architectural, structural and MEP design for this parking garage. The six level garage is a precast concrete structure with architectural precast facades. Utilizing architectural precast panels, **O&S Associates** was able to match the existing adjacent garage as well as complementing the design of the adjacent Hospital buildings. Although the garage needed firewalls at two locations the garage was able to be classified as an Open Parking Structure in keeping the project within budget.

**Rock Island Arsenal Roof Consulting – Rock Island, IL**



The project consists of the conversion of existing warehouse building into MPPM manufacturing area (100,000 sf) and the replacement of the existing asbestos roofing assembly including ventilation improvements of existing 850,000 square feet Building No. 299 in Rock Island, Illinois.

Our engineering design work consisted of a comprehensive structural/MEP investigation of the existing building, design of new structural system, roof system, interior space planning, offices, bath rooms, lockers, new ventilation system and lighting system, new mezzanine area, new overhead crane structures, new process piping, new electrical sub-station, roadways, and site improvements.

Our services consisted of all design, engineering, drawing and specifications, construction administration and part time construction supervision. The Total Project Costs was \$ 22,030,357.00 which included Architectural, Engineering services (structural, electrical, mechanical, plumbing, civil, and environmental) and Construction Management.



Whitehall Apartments Capital Reserve Study – Hackensack, NJ

O&S was retained by the Board of Trustees of the Whitehall Cooperative Apartments to provide a Capital Reserve Study in 2011. The study covered components such as MEP systems, finishes and furnishings, exterior landscaping, building enclosures, and building structures. O&S provided a detailed report upon the completion of the study that included a cost estimate detailing each item studied with recommended funds set-aside each year for maintenance.



Jehovah’s Witness Headquarters Visitor Parking – Tuxedo, NY

Watchtower Bible and Tract Society of New York relocated their world headquarters building from Brooklyn, NY to a larger and more serene setting in Tuxedo, NY. Included as part of the master plan for development is a 300-space parking garage that is benched into the sloping topography of the rocky site. Placed at the entryway to the main complex, a garage was designed to limit the exposure of the facility at the gateway by incorporating a green roof design at rooftop level of the garage, which equated to grade level of the gateway area.



**O&S Associates, Inc.** provided architectural, structural, and MEP design for this parking garage. The three level garage is a precast concrete structure with architectural precast facades. Utilizing architectural precast panels, **O&S Associates** was able to match the proposed complex façade color schemes while complementing the green space in which the facility was placed. With three sides if the facility either fully or partially blocked by topography, **O&S Associates** was able to design the garage as an Open Parking Structure keeping the project within budget.





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## Services

STRUCTURAL • MEP • ARCHITECTURE

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Energy • Exterior Envelope • Studies  
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