INOVA Office Building I

Adolfson & Peterson Construction

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Category #9 Best Building Project – General Contractor ($10 - $40 Million)

Why this project should win an ACE Award

The success of the INOVA Office Building I opened a new type of tilt-up to the market, being the tallest tilt-up project completed in Colorado. Embracing the innovative construction technique, the project is a showcase facility for efficiency and investment return.

Why this project is unique

INOVA, a shortened name for innovative, introduces an enhanced, tilt-up office architecture to the Denver area. Economics of this building technology provided the investors reasonable cost with low maintenance, durability, speed of construction and minimal capital investment. Tilt-up construction is a fast-growing technology, and INOVA I was the first to attempt, and successfully complete, a 5-story tilt-up in the area.

Committing to the innovation in tilt-up construction was not easy, as the project wall area totaled 55,409 sf, using 66 panels, some of which were up to 80 feet in height. The team avoided cost escalations, such as bringing in a specialized crane, and implemented numerous safety measures to installing the panels.

The result was a 212,000-sf, Class-A suburban office building with 14 ½-foot ceiling heights, 9-foot windows, flexible floor plates and a LEED Silver certification. The office building is the first project on a 58-acre campus that will eventually include mixed-use office, industrial, hotel and residential facilities in a highly-desirable location in the busy Denver Technological Center.

The core/shell started without having a tenant, and the team had to change design and construction needs once the tenant was confirmed. Now, the building is a home office to over 1,000 Comcast employees.

The original business plan, as conceived by the ownership partners in 2015, assumed a financial model that demonstrated an excess of a 20% unleveraged internal rate of return. The project sold in half the time expected by the original business plan at a value well exceeding the estimated sales price, meaning the final returns to the partnership far surpassed the most optimistic projections.

Solutions of Special Projects:

Safely building this one-of-a-kind tilt-up design required unique solutions. Screw piles and bracing required immense planning with the engineer to be perfectly laid out to brace the tilt-panels. The soils had to be tested, prepped and compacted with 6 inches of gravel laid out to safely prepare the crane pad. The tilt-wall installation required a separate crane for the bracing, each pole weighing over 1,000 lbs. Slab-on-deck concrete had to be poured on two of the five floors before the bracing could be removed.

The weather, with 60% more snow accumulation compared to the last decade, provided challenges for keeping the panels dry. To avoid delays, the team tented the panels to keep them dry instead of waiting for them to melt out.

The construction team started the project without a tenant selected, which became a challenge in design planning and turning the building over once ready for TI. Once the tenant was selected, the team turned work over floor-by-floor and had to pull together to finish tenant requests and restructuring quickly while coordinating with the TI contractor. The parking lot was expanded by three acres to meet the parking needs of the client. Bathrooms were reconfigured which required cutting slabs to upsize the existing underground plumbing to capture the new flow loads. All firms and personnel came together to complete the change orders and requests to open the building on time.

Excellence in Project Execution and Management/Team Approach:

To ensure a cost-effective and fast-track schedule, the team had immense coordination in preconstruction to plan a 5-story (4+1) concrete tilt-up for the exterior walls, making it the tallest tilt-up in the Denver area. Being the first to try this was not simple, as the original plans required a special 400-ton crane, which didn't exist in Colorado. Through team brainstorming, the panels were modified with wider openings, lightweight concrete and thinner panels to allow them to be picked up by a 300-ton crane. This saved $200k on shipping costs alone by avoiding bringing in an out-of-state crane.

A computer was setup at the construction site, creating a mobile workspace, making RFIs and plans immediately available to the working crew and avoiding wasted time for crews to travel to and from the construction trailer. This enhanced communication, improved quality and lessened punch-list items at the end of the project.

AP also had a full-time employee dedicated to quality control, stationed at the jobsite. This allowed for one person to be solely focused on quality work and eliminate punch list items while the Superintendent focused on meeting the changes in design once the tenant became involved.

The construction team exceeded expectations by finishing their work in time even though the project changed direction and thus changed the original construction plans. The team came together to overcome project changes, take on overtime work to meet new deadlines and work hand-in-hand with the TI contractor.

Construction Innovations/State-of-the-Art Advancement:

The major innovation in the building is that it is the first 5-story load bearing tilt-wall constructed building in the state and in the greater region. The unique approach to utilizing this low-cost, low-tech construction technology to achieve a Class-A investment grade asset was a daring piece of a larger real estate deal puzzle that allowed the highest-end, most-effective rent rate balance to be achieved. The method involved stacking a one-story panel atop a 4-story base building in a totally integrated manor. The structural integrity and capability of the building is

enhanced by this technique to create a truly resilient building. Because of this approach, the floorplates are “column free” (all interior columns are buried in the core and there are no exterior columns required) and thus extremely efficient.

The floor plate is set up as two “pods” of 20,000-sf connected by a 35-foot wide bay which accommodates the lobby on the first and second floors and facilitates a flow-around, fully connected leasing configuration on the upper levels. This approach allows for optimized market responsive lease bays with a range of single bay, half-floor and full-floor tenants without any compromises.

Environmental/Safety:

The project team successfully completed the project over a 16-month project duration without any safety incidents.

The panel load was a concern and since the project team was trying something new, safety planning and training took place specific to the tilt-up process. A safety meeting was conducted beforehand; employee locations were laid out and the area was coned off before embeds were welded into the panels.

The team created a new way of enhancing fall-protection during panel construction. When forming the tilt-wall panels, conduit was installed at specific locations where steel cabling would then be threaded through to create a safety rail once the panels were lifted into place. When it was time to install the windows, the cables were then simply pulled out. This fall protection innovation – which replaced building 2x4 barriers – saved time, labor, materials and money on the project while still meeting safety standards.

Due to the proximity of the project to the Centennial Airport, the project team had to coordinate with the airport and have a FAA permit to comply with air safety regulations.

The rain and lack of drainage lead to muddy and wet areas on the jobsite. The team followed through on their stormwater management plan and brought in several hundred tons of additional rock to fill the wet areas. This prevented safety issues and kept the public streets clean going in and out of the site.

The team recycled jobsite materials by setting up separator bins for designated materials which led to 75% diverted construction waste from landfills. The team also met the goals of using 20% regional materials and using recycled materials, which gave points toward the LEED Silver certification.

Excellence in Client Service and/or Contribution to Community:

The site had historically been vacant, undeveloped land until its joint-venture purchase in October 2014. Upon purchasing the 58-acres, the joint venture annexed the land into the City of Centennial. This annexation was in line with Centennial's long-range goals which allowed the City to offer economic incentives and provide zoning to allow for the incorporation of a residential parcel and the ability to use tilt-up construction technology for the commercial buildings.

INOVA I began as a speculative development and a vision to create an innovative suburban Class-A building that offered extraordinary value and amenities. INOVA I is the first building of the campus and successfully optimized the land for a corporate office building and corporate user bringing jobs and employment to the area. The office building is now fully leased by Comcast Corporation with a 10-year commitment. INOVA I delivered what the marketplace needed – modern, low-cost, highly efficient floor plates with abundant parking, combined with a convenient location in the Southeast Suburban market.


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