

SAN FRANCISCO

LOS ANGELES

PORTLAND

PROJECT PORTFOLIO

PARAMETRIC MODELING

BUILDING INFORMATION MODELING (BIM)



NISHKIAN DEAN

CONSULTING AND STRUCTURAL ENGINEERS SINCE 1919

BOZEMAN



NISHKIAN DEAN

Structural Engineering with a Difference

EXPERTISE

- ▶ Project Management
- ▶ Structural Engineering
- ▶ Seismic Analysis/Retrofit
- ▶ Construction Engineering
- ▶ Structural Investigations
- ▶ Structural Rehabilitation
- ▶ Forensic Analysis
- ▶ Peer Review
- ▶ Parametric Modeling (BIM)

PRIMARY MARKETS

- ▶ Educational/Institutional
- ▶ Commercial/Retail/Office
- ▶ Multi-Family Housing
- ▶ Mixed-Use
- ▶ Hotels and Resorts
- ▶ Parking Structures
- ▶ Aerospace Ground Support Facilities

Big Firm Talent, Small Firm Attention

We bring over 60 people—including 50 engineers and technical experts to your challenges. Our three offices—Portland, San Francisco and Bozeman—bring outstanding technical capabilities, coupled with the personal touch and responsiveness that is usually typical of smaller firms. Your projects will always be the highest priority for our principals and project managers, who will draw upon an ample, talented staff to get them done on time and get them done right.

Local Understanding + National Reach

We understand the conditions, technical standards and requirements for structural design in the West. We also understand our culture, and how that affects both design and the process of designing. Yet, our adaptability to other regions and conditions is demonstrated by our award winning work nationally, as well as throughout the West.

Collaboration = Creativity

We relish the creativity that comes from a synergistic relationship with the whole project team. In all of our projects, we closely collaborate with the designers and users to develop the most cost-effective structural system that fully expresses the intent and design of their project while being easily constructible. Our designs are informed by experience with everything from one-story wood frame structures to complex retrofits for rocket launchers, and almost everything in between, but are always precisely tailored to the needs of each project and the people who are creating it.

The *RIGHT* Technology

We strive to use not just the best technology, but the right technology. Our engineers keep a close eye on evolving technology, which allows them to make informed decisions on how new design, communications and collaboration approaches can best serve each of their clients.

And, we always fit the technology to the project. We certainly use the latest software such as 3-dimensional solid modeling and finite element analysis since they allow our engineers to analyze, design and detail complex engineering challenges with enhanced efficiency. Yet, we also use less advanced approaches when they are more appropriate for a particular project.





Solid Modeling Technology

Structural Engineering with a Difference

In-House Modeling Software Platforms

- ▶ Revit® Structure
- ▶ SolidWorks®
- ▶ Navisworks®

Our Subconsultants Modeling Software Platforms

- ▶ Pro/Engineer®
- ▶ CATIA V5

Parametric Modeling Tools

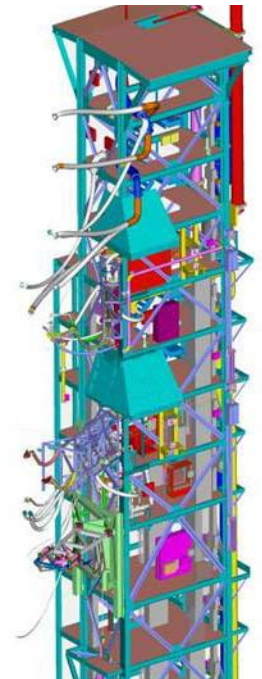
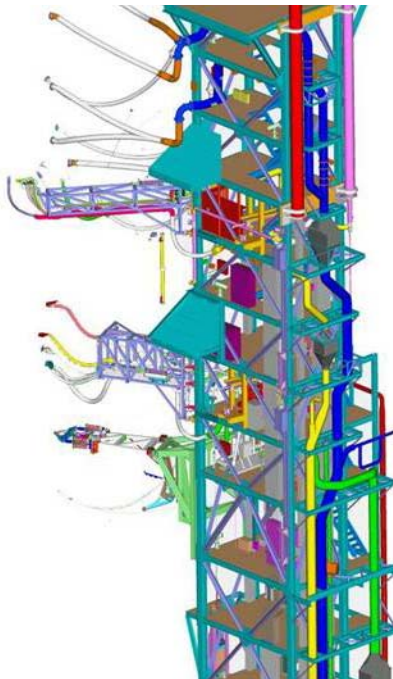
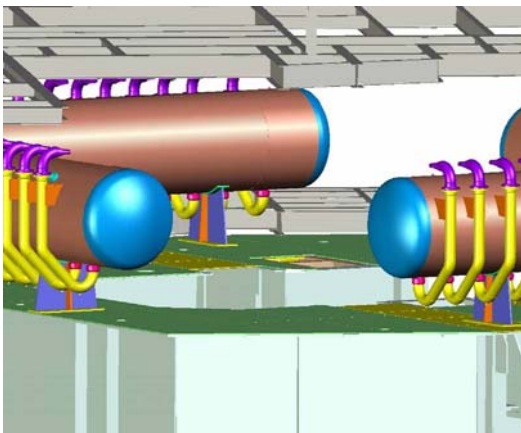
Parametric modeling using either Revit® Structure or SolidWorks® we have the capability to create detailed models that can be used to generate comprehensive designs. The use of Building Information Models (BIM) creates great value for electronic systems coordination and added fidelity in the designs produced. Modeling provides confidence that complicated systems can be integrated without field conflicts -- proven performance in actual projects.

Nishkian Dean has the capability of creating complex models of mechanical systems in SolidWorks or structural framing system in Revit.

Interoperability. Parametric modeling has proven value in sharing electronic data with design and scheduling software and can be used to illustrate construction sequencing.

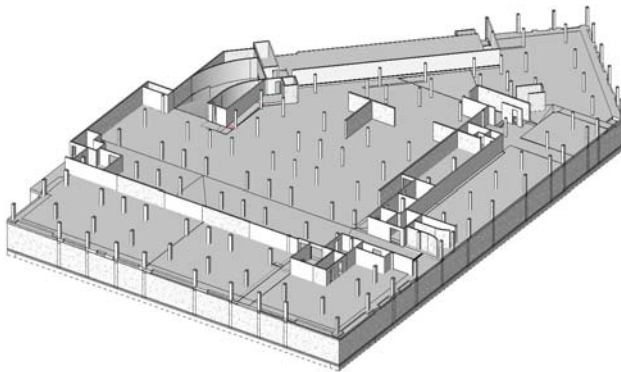
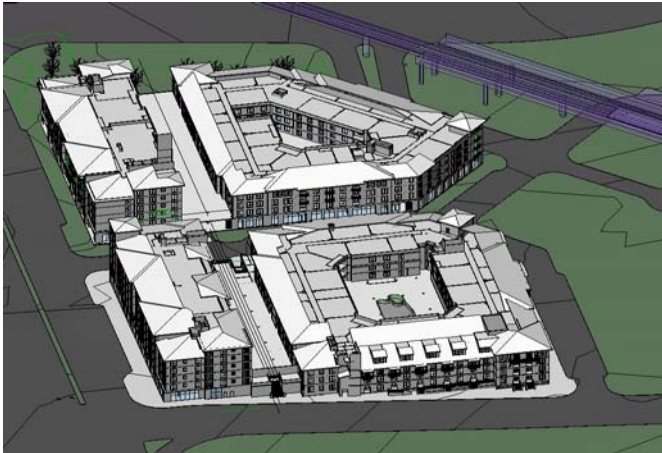
Office Wide Installation

Revit Structure has been implemented as the design platform of choice for our building structure projects and is available on every workstation in the office.





MULTI-UNIT HOUSING (BIM)



Avalon Walnut Creek Walnut Creek, California

Owner

Avalon Bay Communities, Inc..

Architect

MVE Architects

Contractor

Avalon Bay Communities, Inc.

This mixed use development contains 550 residential units, 45,000 square feet of retail space, 29,000 square feet of commercial office space, and parking for about 1,500 cars. The project features two levels of concrete construction for the parking, retail, and office occupancies and swimming pool. The residential units are wood framed ranging from three to five stories tall and located above a concrete transfer slab.

The buildings were designed in Revit Structure in collaboration with the project Architect permitting an extraordinarily high level of electronic coordination. The project broke ground in 2008 with occupancy anticipated in early 2010.





COMMERCIAL/OFFICE (BIM)

Station Landing Office Building Walnut Creek, California

Owner

Equity Office Properties / Harvest Properties

Architect

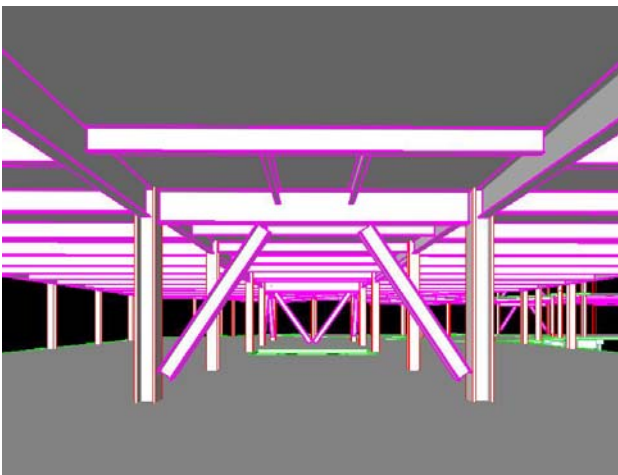
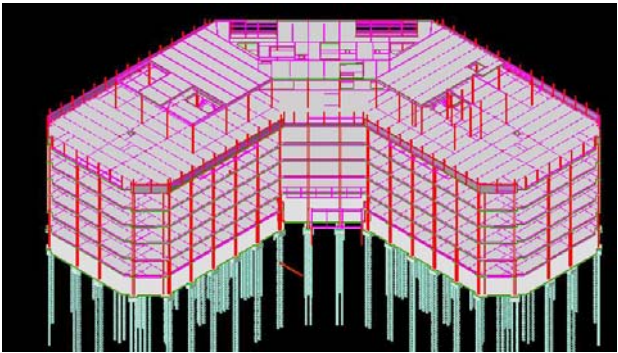
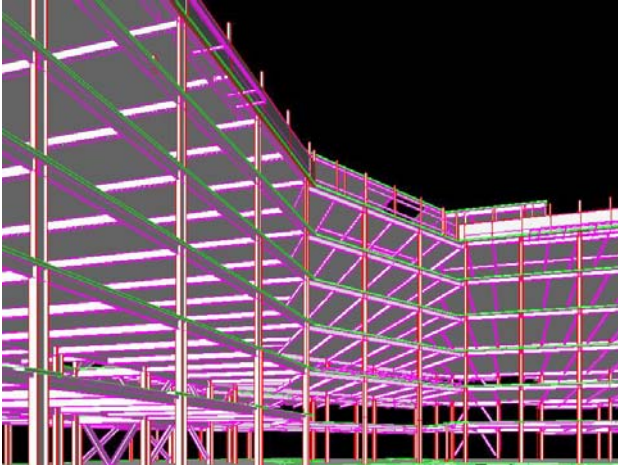
Korth Sunseri Hagey Architects

Contractor

Rudolph and Sletten

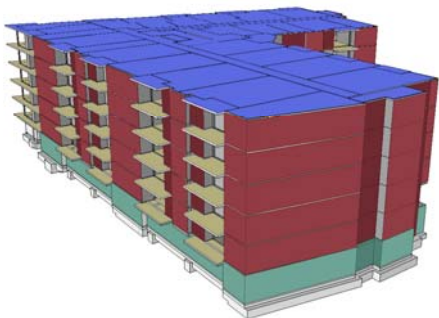
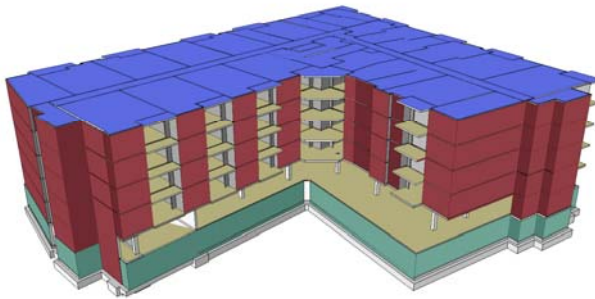
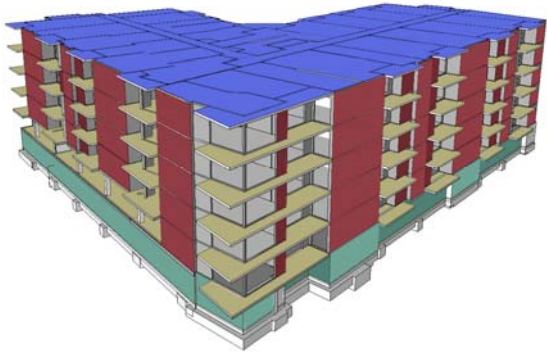
The future home of the American Automobile Association's offices, the project is designed to achieve a Gold rating in the LEED® NC program. The 6-story, 230,000 sq. ft. steel framed office building is supported on precast concrete piles. Concerns of excessive settlement at the site led to the solution of a structured concrete ground slab supported by concrete grade beams framing between the pile caps. A lateral system consisting of steel eccentrically braced frames was also utilized on this project. In order to meet the project's fast tracked schedule, Nishkian Dean used an integrated analysis with a BIM model using Revit Structure for the design of this project.

Structural analysis and design were performed using Bentley Ramsteel and Ramframe and results were interoperably linked to the Revit Structure model.





MULTI-UNIT HOUSING (BIM)



Riverhouse Condominiums

Tualatin, OR

Owner

Regency South Incorporated

Architect

LRS Architects

Contractor

WG Clark

Design is completed for a 5-story, 152,000-sf residential building with two levels of vehicle parking. The building includes 65-residential units, ground floor retail, and 112 parking stalls on two levels.

The building is situated adjacent to the Tualatin River with the basement lying below the 100-year flood level; special detailing was required to assure flood waters could flow into and out of the building without improperly loading the structural basement walls and foundation. Additionally, the site's low soil bearing capacity would not allow conventional spread footings. The structural design team investigated driven piles, auger piles, and Geopier piles prior to proceeding with a 48" thick mat foundation, resulting in the most efficient site-specific building foundation system.

The structure's second floor through roof framing is constructed using ComFlor Composite Floor System, steel joists, and steel stud bearing walls in lieu of post-tensioned concrete slabs. The use of the innovative system allows the contractor to significantly reduce slab shoring and re-shoring and avoid the complexities associated with a post-tensioned slab, minimizing construction costs without sacrificing performance.





COMMERCIAL/OFFICE (BIM)

Rosewood at Sand Hill Office Building Menlo Park, California

Owner

Stanford University

Architect

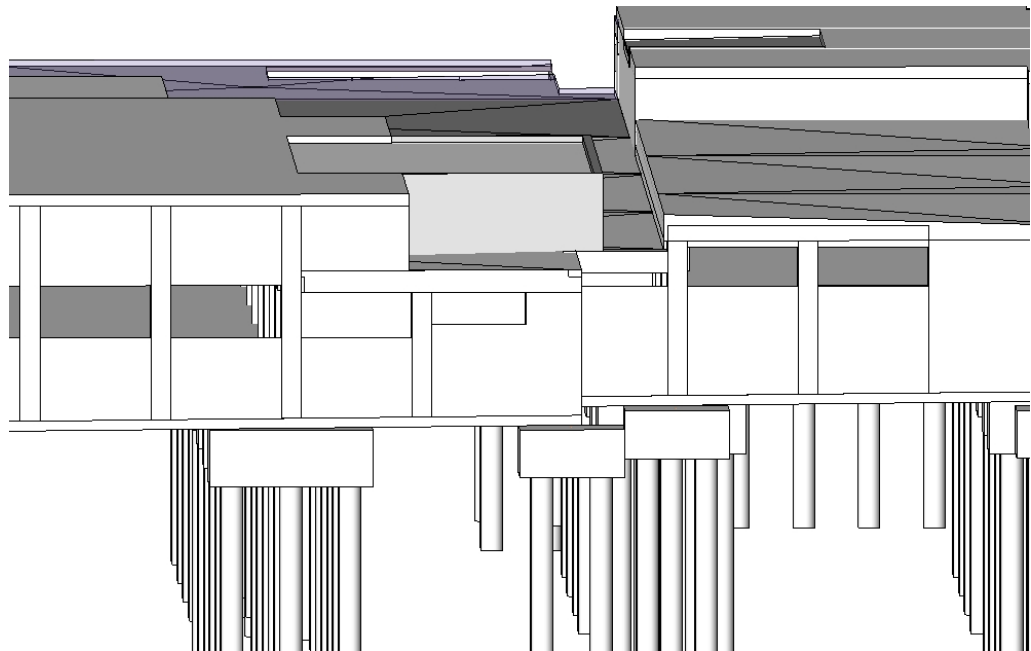
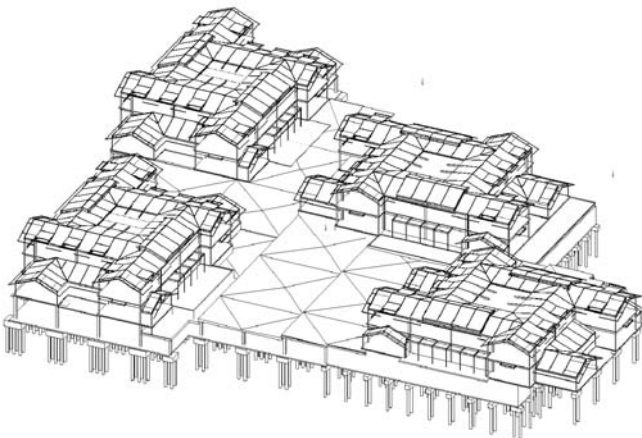
Hoover Associates

Contractor

Vance Brown Builders

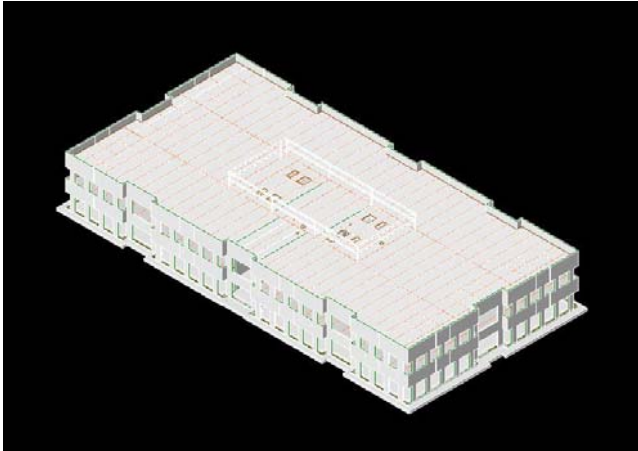
Construction is completed for a large office development consisting of four, two-story, 25,000-sf office buildings situated on a structured podium concrete slab over a 230 car basement garage. The garage is cut into the hillside and the podium structure incorporates an articulate landscape plan creating a campus park setting for the office buildings.

The entire design was completed using Revit Structure on a hyper-fast-track schedule.





COMMERCIAL/OFFICE (BIM)



Green Valley Office Building Fairfield, California

Owner

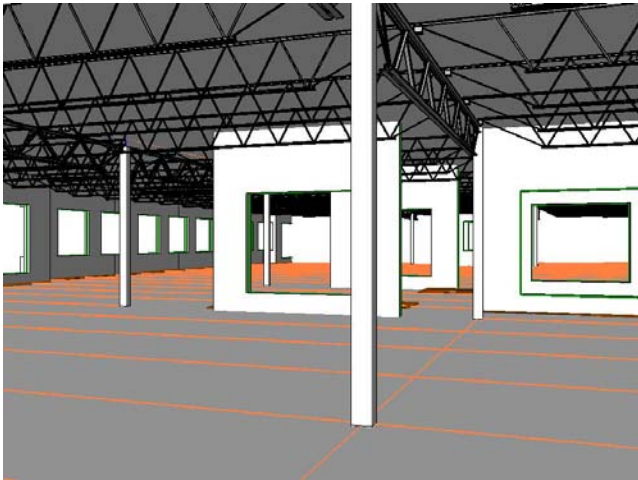
H.J. Shein, Inc

Architect

LPA

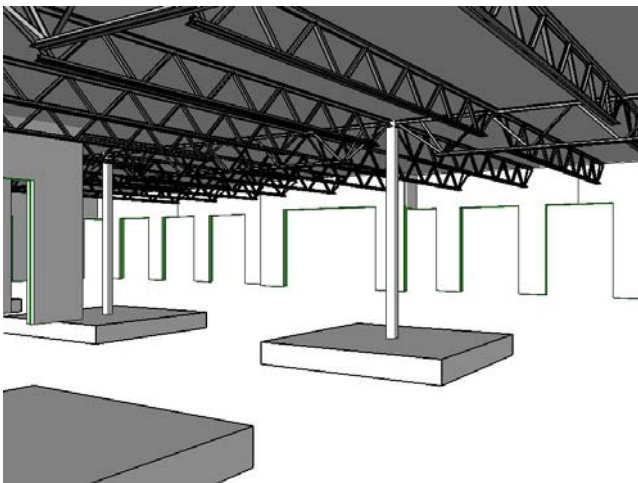
Contractor

Devcon Construction



Design is complete for two, two-story, 30,000-sf office buildings. The buildings are constructed with tilt-up concrete walls with steel bar-joist floor and roof framing.

The entire design was completed using Revit Structure on a fast-track schedule.

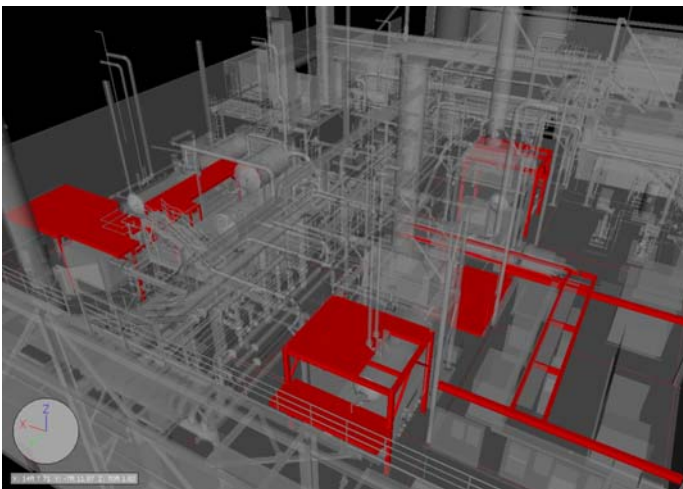


NISHKIAN DEAN

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HIGHER EDUCATION (BIM)



Oregon State University Energy Center

Corvallis, Oregon

Owner

Oregon State University

Client/Contractor

Andersen Construction

(Currently Under Construction)

Structural design of four steel frame elevated platforms that provide maintenance access to large-scale mechanical equipment. Additional design work included structural support for elevated electrical equipment and mechanical vent piping, seismic anchorage of mechanical units, and a steel frame service catwalk to span between fuel tanks outside the building.

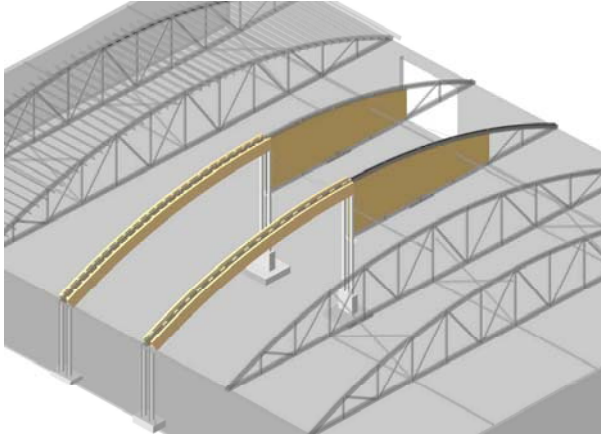
Nishkian Dean was hired by the general contractor during the construction phase to provide structural design services for several items that were critical to the project schedule. After careful coordination with the contractor, structural design documents were delivered in a timely manner to maintain the ongoing success of the project. Revit Structure was used for the elevated platforms, allowing for a higher level of detail needed in a densely populated building space.

“In the construction business one needs a dependable consulting engineering firm that can take on multiple and challenging projects and set a course of action to keep the project on a straight path and Nishkian Dean fits the bill. I’ve had the pleasure to work on projects that were structurally designed by Nishkian Dean and found their structural design to be straightforward in complicated situations. When problems arise, they have the solution to get the project back on track.”

Daniel Bott
Superintendent
Andersen Construction



CONSTRUCTION ENGINEERING (BIM)



Calbag Metals Truss Upgrade Portland, Oregon

Owner

Calbag Metals

Engineer

Nishkian Dean

Contractor

SM Andersen Company, Inc.



Design – Build project with design concept to eliminate a large portion of the existing bowstring truss bottom chords. The existing bottom chords had been severely damaged due to dump truck lift operations and the owner requested a clear space above the lifting zone.

Nishkian Dean and SM Andersen collaborated to develop a design that met the owner's occupancy needs, was cost effective, and was staged to allow the warehouse to remain operational during truss upgrade installation.

Nishkian Dean utilized Revit Structure to design and detail the combination of existing framing and upgrade components resulting in zero field conflicts.



NISHKIAN DEAN
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SCHOOLS AND INSTITUTIONS (BIM)

Gladstone Center for Children & Families

Gladstone, Oregon

Owner

Gladstone School District

Architect

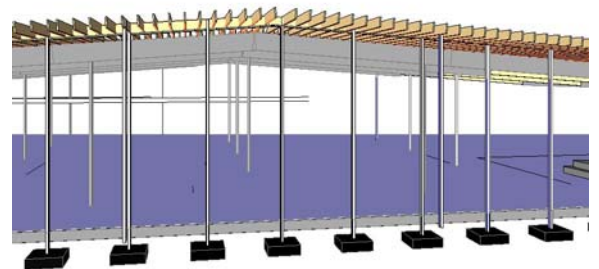
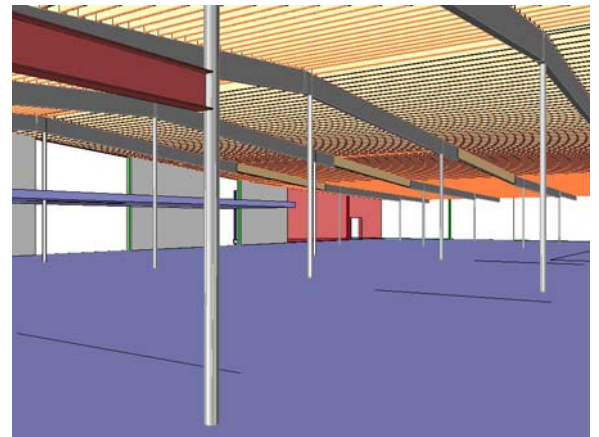
DOWA Architects

Contractor

Brockamp + Jaeger

The Gladstone CCF is an adaptive re-use of a 32,000-sf former grocery store converted into a community learning center for children and families.

Using Revit Structure for the building design allowed for close coordination of a complicated renovation project of new and existing structural components within the architectural program.



Revit Rendering by DOWA Architects



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AEROSPACE (SOLIDWORKS)



LC - 39B Lightning Tower Installation

Kennedy Space Center, Florida

Owner

NASA

Designer

R & H

Contractor

Ivey's Construction

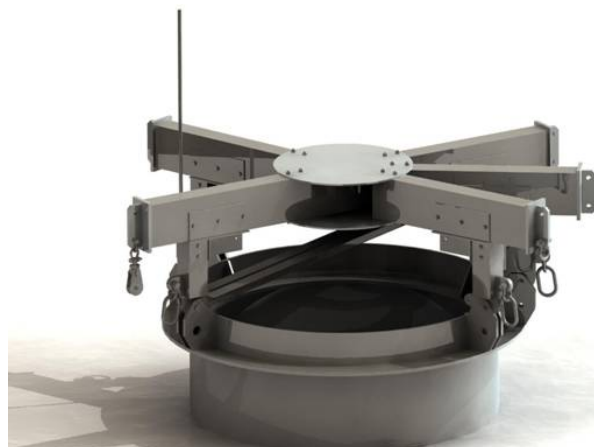
Provide construction engineering support for installation of three 600-foot tall lightning towers and associated cable arrays at the Constellation space craft launch pad, the replacement vehicle for the space shuttle.

Engineering services included custom rigging design for lifting the tower tiers and 100-foot long lightning mast, tower splice connection design, monitor tower and connection design stresses during erection and potential hurricane prior to tower completion, and provide detailed cable stressing procedures for installation of complex cable array system.

"All of us at Ivey's agree that Nishkian Dean played a very key role in helping us to make this happen (completing erection 8 months ahead of schedule).

Thank you so much for your performance in such a key role on this team."

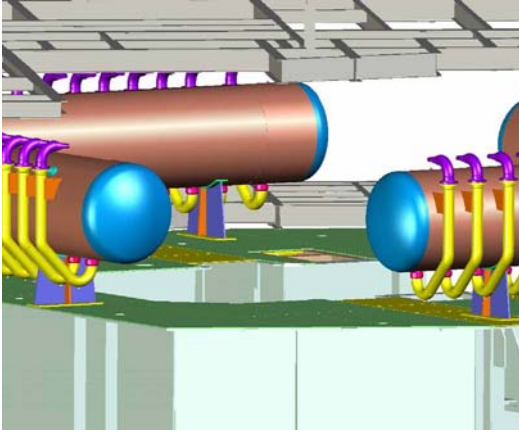
Rocky Johnson
Vice President
Ivey's Construction



NISHKIAN DEAN
CONSULTING AND STRUCTURAL ENGINEERS SINCE 1919



AEROSPACE (SOLIDWORKS)



SLC-3E Atlas V Exhaust Duct Exit Acoustic Suppression Water System Vandenberg Air Force Base, CA

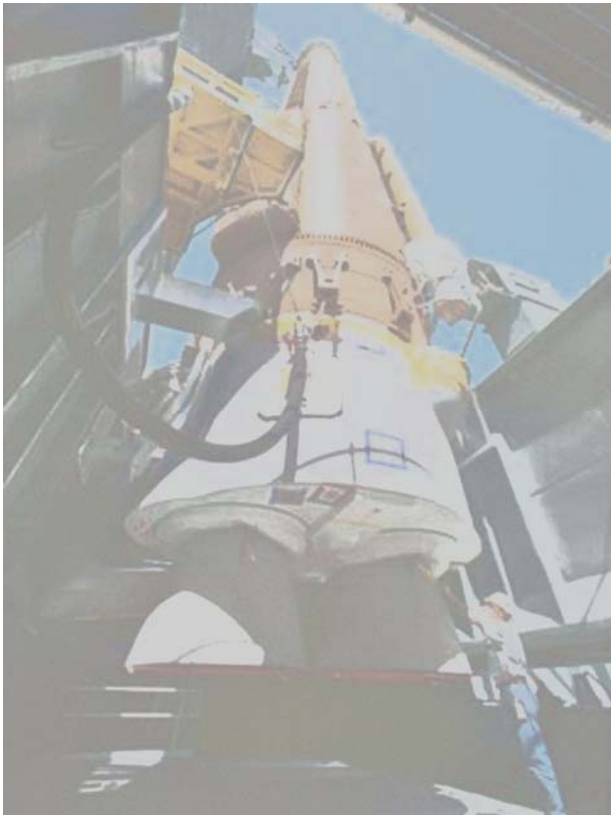
Client

Lockheed Martin

Contractor

Sauer Construction

AJ Diani

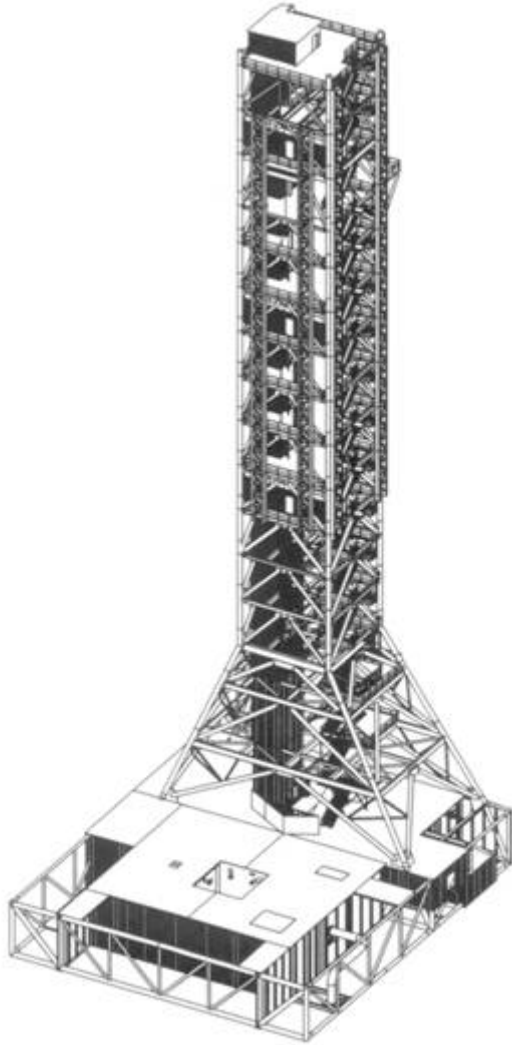


This system provides a water sheet overlay on the launch exhaust plume providing a synthetic extension of the exhaust duct and resultant reduction in acoustical intensity at the spacecraft. The system consists of 67 water nozzles arranged around the launch duct opening, mounted to a 36" pipe manifold and fed by a 45,000 gallon pressurized water storage tank, set to discharge the vessel contents in 8 seconds during the initial launch sequences.





AEROSPACE (SOLIDWORKS)



Mobile Launch Tower Construction Kennedy Space Center, Florida

Owner

NASA

Designer

R & H

Contractors

Hensel Phelps

Ivey's Construction

Sauer

The mobile launch tower is a 350-foot tall, 9,000,000 pound structure that will support the next generation Constellation space craft from assembly to lift off.

Construction engineering services include the design of temporary erection fixtures and foundations so all tiers can be ground constructed with the fixture connection matching the tier splice interface, assistance with tier site layout to assure crane capacity and mobility with layouts, and custom rigging design for lifting the tiers.

"I have never worked with a more professional team of engineers! Your experience in the construction industry makes my job like a walk in the park. When I can just make a phone call and discuss any of many complicated issues with anyone on your team and get answers, sketches usually in just one day, its just amazing how the team understands the small amount of information supplied , and turns it into drawings that can be used to solve real time field problems!!"
"I always look forward to calling and working with your team!"

Roy Rafferty
Ivey's Construction, Inc.
General Superintendent





SELECT PROJECT LIST

Revit Structure Design Projects

Avalon Walnut Creek - Walnut Creek, CA - *AvalonBay Communities, Inc.*

Riverhouse at Commons Harbor - Tualatin, OR - *Regency South Inc.*

Rosewood at Sandhill Office Building- Menlo Park, CA - *Stanford University*

Green Valley Office Buildings - Fairfield, CA - *H.J. Shein, Inc.*

Gladstone Center for Children & Families - Gladstone, OR - *Gladstone School District.*

Kiewit Office Building - Fairfield, CA - *Devcon Construction*

Oregon State University Energy Center - Corvallis, OR - *Andersen Construction*

University of Oregon PK Park Stadium Light Towers - Eugene, OR - *Musco Lighting*

Brevard County Jail Wall Bracing - Brevard Co., FL - *Ivey's Construction*

Prescott Building - Portland, OR - *Myhre Group Architects*

University + Palm Buildings - Palo Alto, CA - *Devcon Construction*

Cole Center - Bend, OR - *GGL Architects*

Titlewave Bookstore ADA Ramp - Portland, OR - *Multnomah County*

Calbag Metals Truss Upgrade - Portland, OR - *SM Andersen*

Halvorson Residence - Bozeman, MT

Residence at Spanis Peaks - Big Sky, MT

SolidWorks Design Projects

Atlas V Launch Facility Rebuild SLC-3E, Vandenberg Air Force Base, CA

Atlas V Movable Platforms SLC-3E, Vandenberg Air Force Base, CA

ASWS Flame Trench SLC-3E, Vandenberg Air Force Base, CA

LC-39 B Lightning Tower Installation - Kennedy Space Center, FL

VIF Emergency Door Replacement LC-41, Cape Canaveral Air Force Station, FL

VIF Permanent Doors LC-41, Cape Canaveral Air Force Station, FL

Mobile Launch Tower Construction - Kennedy Space Center, FL





KEY PERSONNEL



Edwin T. Dean, P.E., S.E.
Principal

EDUCATION

Bachelor of Science, Civil Engineering
University of Washington, 1985

PROFESSIONAL REGISTRATION

California • Florida • Montana • Oregon •
Washington

Professional Appointments

- Structural Engineers Association of Oregon,
Board of Directors
- ACE / Portland, *Board of Directors*
- Building Seismic Safety Council, *Board of
Directors*
- Applied Technology Council, *Board of
Directors, President*
- Oregon Seismic Safety Policy Advisory
Commission, *Vice Chair*



Gerald L. Gotchall, P.E., S.E.
Principal

EDUCATION

Bachelor of Science, Civil Engineering
Oregon State University, 1967

PROFESSIONAL REGISTRATION

Oregon • Washington

Professional Affiliations

- American Concrete Institute, Oregon
- American Institute of Timber Construction
- American Plywood Association
- Consulting Engineers Council of Oregon
- Light Gauge Steel Engineers Association
- Structural Engineers Association of Oregon



Kenneth E. Oliphant III, P.E., S.E.
Associate

EDUCATION

Master of Science, Civil Engineering
Portland State University, 2001

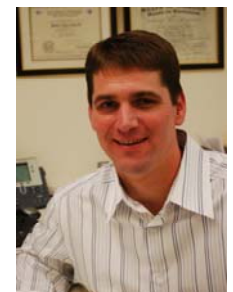
Bachelor of Science, Civil Engineering
University of Notre Dame, 1996

PROFESSIONAL REGISTRATION

California • Oregon

Professional Affiliations

- Structural Engineers Association of Oregon



Robert A. Aman, P.E., S.E.
LEED ® Accredited Professional
Associate

EDUCATION

Bachelor of Science, Civil Engineering
Portland State University, 1995

PROFESSIONAL REGISTRATION

California • Oregon

Professional Affiliations

- American Institute of Steel Construction
- Structural Engineers Association of Oregon





OFFICE LOCATIONS, AWARDS, AND REGISTRATIONS

OFFICE LOCATIONS

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f 503/ 273-5696

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p 406/ 582-9901
f 406/ 582-9992

Nishkian Menninger
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San Francisco, CA 94103
p 415/ 541-9477
f 415/ 543-5071

Nishkian Chamberlain
5120 W. Goldleaf Circle, Suite 190
Los Angeles, CA 90056
p 323/596-2300
f 323/596-2304
<http://www.nishkian.com/>

CURRENT REGISTRATIONS

Alaska	Montana
Arizona	New Mexico
California	New York
Colorado	Nevada
Florida	Oregon
Hawaii	Washington
Idaho	Wyoming
Illinois	
Indiana	
Louisiana	

AWARDS



Ken Oliphant, Nathan Hoesly and Ed Dean of **Nishkian Dean** pose with project display panel and **2006 ACEC Oregon Excellence in Engineering Grand Award** for the Cape Canaveral AFS LC-41 VIF Emergency Door Replacement project.



Ed Dean, rt., **Nishkian Dean**, accepts the Design Build Institute of America (DBIA) **2005 Design-Build Excellence Award**, at the *Minds and Master Works Awards Program* for engineering the Atlas V Launch Facility Rebuild, alongside Len Phillips, It., Lockheed Martin Space Systems and John Saul, ct., Hensel Phelps Construction.



AGC of America
Building Your Quality of Life

The 2006 Associated General Contractors of America Design-Build **Renovation Award** for the Atlas V Space Launch Complex-3 East Activation, Vandenberg Air Force Base, California was won by Hensel Phelps Construction Company and **Nishkian Dean** in partnership with Simon Wong Engineers and architect Reynolds Smith & Hills.