Structural Engineering Services
For Landscape Architects

Studio NYL Structural Engineers provides engineering services to Landscape Architects. The projects benefit from the diverse experience of Studio NYL's staff as well as the collaborative design process that is typical of Studio NYL's work.

Services include:

- Monument and Signage Structures
- Skate Parks
- Shade Structures
- Retaining Walls and Slope Stabilization
- Park Facilities Buildings
- Miscellaneous Park Structures
- Floating Structures
- Piers and Waterfront Structures
- Pedestrian Bridges
Westlands Park
Greenwood Village, Colorado
Architect: Aller-Lingle Architects, Design Concepts

Julian provided full structural engineering services for the park’s building and site structures. This included three restroom buildings with prominent architectural shade canopies featuring cantilevered glulam beams. Other buildings housed a wet well and parks maintenance storage. A unique two-story treehouse structure is accessible by two bridge links that bring visitors into and above a natural wetland area. Other site features include a triumphal entry arch of 60’ span and 30’ rise, a pond overlook and foundation design for numerous site water features.

The Rocky Mountain News listed Westlands Park as No. 1 on their “Top Ten Best Playgrounds in the Denver Metro Area”.

The project has received two awards: The American Society of Landscape Architects Colorado Chapter 1999 Merit Award for Design, and the American Institute of Architects Colorado North Chapter Merit Award for Design of Small Projects 1999.

Personal experience of Julian Lineham at Loris.
Canyon View Park
Grand Junction, Colorado
Architect: Winston Associates

Julian provided structural engineering services to Winston Associates on a variety of structures in this park, the most prominent of which were the shade structures at the center of the ball-field complex. The shade “trees” are umbrella-like structures that cantilever from a mat foundation. Julian also designed the light-pole foundations for the 70’ high lights, the dugout and scoring booth structures, concrete seating areas, and the footings for the backstops and signage structures. The project required foundation design in extremely poor soils.

Personal experience of Julian Lineham at Loris.
Sandstone Ranch Park, Phases I&II
Longmont, Colorado

Phase I of the project included the design of a combined concession and restroom building, dugouts, playground shade structures and miscellaneous site structures, such as 70 ft tall lightpoles and retaining walls. Phase II included the design of another concession and restroom building, storage barn, and the upgrading of an existing historic barn and ice house.

Personal experience of Julian Lineham at Loris.
The park – named to honor Boulder native Scott Carpenter, one of the original Mercury astronauts – is located by Boulder Creek and is a much-loved part of the City’s recreational facilities. A 1970’s playground climbing frame in the shape of a rocket is a favorite feature of the park; Play Environments re-designed the park around this feature and added space elements in adjacent play spaces.

The first challenge was stabilizing the rocket. Over time its foundation had settled and voids had opened up beneath it causing the rocket to wobble when people were inside. Analysis determined that the ground beneath the existing footing should be pressure-grouted with a sand-cement slurry to fill all the voids. After this was completed, strengthening plates were designed to be welded to the rocket’s fins to reinforce the severely corroded steel. Additional steel bars were welded midway between the existing steel bars that formed the rocket’s “skin”, so that small children could not get stuck between the existing bars.

Second, foundations for a sound sculpture composed of two facing stainless steel reflecting dishes is another unique feature in the park.

Personal experience of Julian Lineham at Loris.
Washington Plaza Pedestrian Bridge
Golden, Colorado
Client: TST of Denver

The Washington Plaza Pedestrian Bridge is a cable stayed bridge that straddles the new vehicular crossing. The two eccentric pedestrian plazas are tied together above the roadway using a cable and below using the concrete pier that supports both bridges. The design intent is to merge the historic character of Golden with the strong outlook to the future with subtle modern details seen in the geometry of the cables and the pin at the base of the tower.

Personal experience of Chris O’Hara at Loris
The Gravel Lakes Flying Bridge was designed to facilitate a handicap access ramp to a floating fishing pier. The design resulted from the need to maintain a maximum of 5% slope from shore to the floating platform which changes elevation with the water surface. The bridge is hinged at the shore allowing it to rotate to accommodate multiple water elevations. A counter weight along the backstays is used to minimize the size of the float at the end of the bridge. The counter weight supports the 150 ft long span with prestressed spiral strand cables. The concept developed after the initial design was completed and the City of Thornton asked Chris if he had any other ideas that they should consider. Following a brief presentation and hand sketches Chris was commissioned to design the flying bridge.

Personal experience of Chris O’Hara at Loris.
Signage and Monuments

Studio NYL Structural Engineers have provided designs for foundations as well as other structural elements as part of signage and identity of parks, residential developments and office campuses.

Notable projects include:

- Frank Shorter Statue
- Sandstone Ranch Phase 1&2
- Westlands Park
- Challenger Park
- Highlands Ranch Golf Club
- Colorado Academy Sign
- Jim Hamm Pond
- Cobblestone Ranch
- Legacy Ridge
- Spanish Hills

All projects are the personal experience of Julian Lineham and Chris O’Hara.
Skate Parks

Julian Lineham has extensive experience designing skate parks. The key engineering challenge in the design of skate parks is to ensure that they don't become buoyant and rise up out of the ground. Skate parks are like swimming pools without water in them. If groundwater levels are high, uplift hydrostatic forces tend to want to float the concrete bowls, so drainage systems to take groundwater away are integrated into the design to relieve these forces.

With shotcrete technology, some complex and challenging geometries for bowls and tricks areas can be built. To achieve a smooth skating surface, joints are minimized and differential slab movements are eliminated through reinforcement detailing across any necessary joints. Other traditional concrete features such as stairs and ramps and retaining walls are integrated into the design of each park, many of which include pipe features on the upper surfaces for the skaters to grind on.

Notable projects include:

- Carson Skate Park  Design Concepts
- Boulder Skate Park Shapins Associates
- Laramie Skate Park Design Concepts
- Redstone Skate Park Design Concepts
- Gatehouse Skate Park City of Colorado Springs
- Windsor Skate Park EDAW

Projects are the personal experience of Julian Lineham
Shade Structures

The structural design of shade structures ranges from the design of custom lattices tensile systems and roof structures to the design foundations for proprietary structures. Studio NYL’s knowledge of many innovative structural systems can provide for truly unique solutions that can improve the experience of public places.

Notable projects include:

- CU Alumni Shade Structure Design Concepts
- Sandstone Ranch Phase 1&2 Aller Lingle-Winston Assoc.
- Westlands Park Aller Lingle-Design Concepts
- Jump Route Bus Shelters Studio 2
- Highlands Ranch Golf Club DTJ Design
- Valley View Park Winston Associates
- Gravel Lakes Park Design Concepts
- Jim Hamm Pond Norris Dullea
- Legacy and Whispering Ridge DTJ Design
- British Embassy Shade Struct. YRM Architects and Planners

Projects are the personal experience of Julian Lineham and Chris O’Hara
Retaining Walls and Slope Stabilization

Most projects on which Studio NYL has worked, whether it is a building or a landscape project has involves some earth retention. Both Julian and Chris have extensive experience with numerous retention systems including cantilevered retaining walls, counterforts, tangent and secant walls, soil nailing, tied-back walls and many proprietary systems.

Notable projects include:
- Cherrywood Park
  Design Concepts
- 64th and Indiana Site Walls
  EDAW
- North Boulder Rec Center
  Winston Associates
- UNC Campus Improvements
  Aller Lingle
- Fukaye Fields
  Design Concepts
- North Jeffco Rec Center
  Winston Associates
- Farmington Sports Complex
  Winston Associates

Projects are the personal experience of Julian Lineham and Chris O’Hara
Studio NYL has worked with landscape architects and planners to design park structures which include concession stands, restrooms, offices, storage, baseball dugouts, light poles, foundations for basketball goals and lights, and design of park play elements.

Notable projects include:
- Broadmoor Golf Starter House
  CSNA Architects
- Sandstone Ranch Phase 1&2
  Aller Lingle-Winston Assoc.
- Westlands Park
  Aller Lingle-Design Concepts
- Canyon View Park
  Winston Associates
- Scott Carpenter Park
  Play Environments
- Jim Hamm Pond
  Norris Dullea
- Northglenn Sensory Park
  Slaterpaull-Design Concepts
- Ute Creek Golf Maintenance
  Aller Lingle
- Farmington Sports Complex
  Winston Associates

Projects are the personal experience of Julian Lineham and Chris O'Hara
Floating and Waterfront Structures

Chris O’Hara has extensive experience designing floating structures and waterfront structures. While in New York, Chris designed over 20 floating dock projects for Sullivan Flotation throughout the US constructed of aluminum, steel and timber. Further Chris has designed piers, ferry terminals and floating venues such as the 2003 European Cultural Exhibit shown in the photograph below. Design of floating and waterfront structures requires a knowledge of dynamic loads resulting from waves, currents, ice flows, and vessel impact. Anchoring these systems is also a challenge.

Notable projects include:
- US Coast Guard Training Center, Cape May, NJ
- 1500 Hudson St, Hoboken Cove, NJ
- Brooklyn Navy Yard, Brooklyn, NY
- Tops Appliance Bulkhead Brooklyn, NY
- Long Beach Waterfront Park Long Beach, NY
- 2003 European Cultural Exhibit, Graz Austria
- Gravel Lakes Park Thornton, CO
- Jim Hamm Pond Longmont, CO

Projects are the personal experience of Chris O’Hara