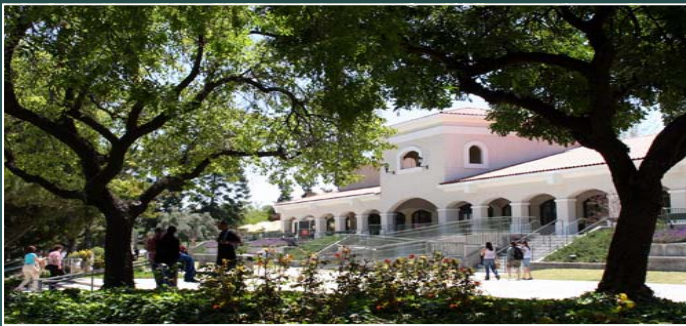


# STATEMENT OF QUALIFICATIONS

## Colleges and Universities



*Pierce College*



*UCLA Weyburn Terrace*



*Los Angeles Community College  
Parking Structure*



*Harbor Community College  
Solar Farm*



Irvine • Torrance • Ontario • Sacramento

San Diego • Victorville

[www.groupdelta.com](http://www.groupdelta.com)

# Company Profile



# Company Profile

*Geotechnical Engineering*

*Geology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*



Group Delta Consultants, Inc. (Group Delta) is a consulting engineering firm with six certified laboratories and offices located in the counties of Orange, Los Angeles, San Bernardino, San Diego, and Sacramento. The firm has highly skilled professionals consisting of civil and geotechnical engineers, engineering geologists, laboratory and field technicians, deputy inspectors, drafting/CADD, and drilling and support personnel specialized in their respective fields. We offer a broad range of services to serve the needs of our clients. Our capabilities and services include geotechnical feasibility study, geotechnical field investigation, in-situ testing, foundation design, construction monitoring and materials testing, ground improvement and design, slope stability investigation and analyses, preparation of plans and specifications, coastal engineering, instrumentation, seismic studies and earthquake engineering.

At GDC we have established a record of completing projects on schedule and within budget for numerous educational facilities throughout southern California and major clients in the public and private sectors since 1986. Our laboratories are licensed as an approved testing facility by various agencies including AASHTO and Caltrans. The involvement of our principals and senior managers in each project and particularly our focus on developing innovative design solutions to reduce overall construction cost has resulted in repeat business. The evidence of our work indicating the unique benefits of our approach and methodologies are provided in various awards and recommendations from well-known organizations in the public and private sectors.

## *Corporate Summary*

Firm's Name:	Group Delta Consultants, Inc.
Firm Type:	California Corporation
Year Established:	1986



# Services



# Geotechnical Services



## **Geotechnical Engineering** – Our services include:

- Feasibility Study
- Field Investigation
- Laboratory Testing
- Shallow Foundation Design
- Pile Foundation Design
- Settlement Analyses
- Ground Improvement & Design
- Slope Stability Investigation & Analyses
- Preparation of Plans & Specifications
- Earthwork & Grading Specifications
- Pavement Design
- Pile Drivability & Load Tests
- Instrumentation & Monitoring
- Forensic Engineering

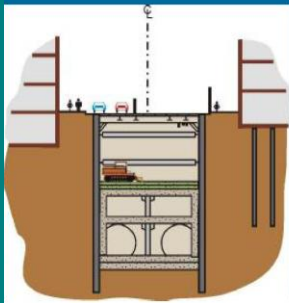
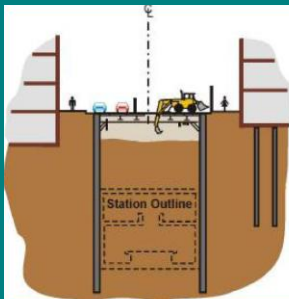
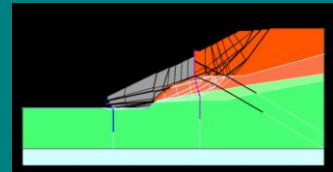
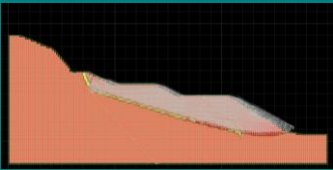
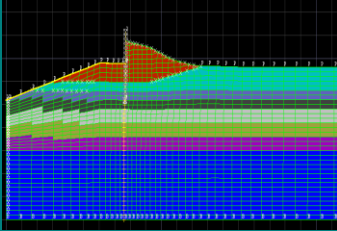
## **Geologic and Seismic Hazard Evaluation** - Our services include:

- Geologic Mapping
- Landslide Studies & Mitigation
- Groundwater Investigations
- Fault Hazard Investigations
- Geophysical Investigations
- Deterministic/Probabilistic Ground Motion Analyses
- Liquefaction & Lateral Spreading Analyses

## **Earthquake Engineering** - Our services include:

- Liquefaction & Lateral Spreading Analyses
- Seismic Earth Pressure
- Seismic Deformation Analysis
- Seismically Induced Settlement
- Liquefaction Mitigation Measures
- Design Recommendations for New and Retrofit Projects
- Seismic Design Criteria
- Earthquake Response Spectra

# Forensic Services



GDC provides consultation, expert guidance, and investigations involving geotechnical and geological issues. GDC aids judges, attorneys, arbitrators, insurance companies and others in the evaluation and remediation of soil related distress to structures, and other matters related to adverse soil, geologic, or hydrologic conditions. Services include identification of soil issues with preliminary site investigations, review of technical reports, maps, plans, specifications and other relevant documents regarding the grading and development of a site, performance of subsurface investigations, laboratory testing of earth materials, and development of remedial recommendations. Our areas of expertise include the investigation of structural distress related to adverse soil and/or geologic conditions such as landslides, slope failures, seepage, surface and subsurface drainage, earthquakes, construction vibrations, soil creep, and soil subsidence and expansion.

Representative project experience includes:

- **Earthquake Damage Assessments:** Causation studies and preparation of repair recommendations.
- **Landslide Investigations:** Causation studies and/or development of stabilization schemes.
- **Construction Vibrations:** Vibration monitoring and geotechnical testing.
- **Dam Investigations**
- **Settlement Analyses:** Floor level (manometer) surveys, causation studies and/or preparation of repair recommendations.
- **Expansive Soils:** Subsurface investigations, preparation of repair recommendations.
- **Groundwater:** Subsurface investigations, preparation of subsurface drainage recommendations.

# Environmental Services



## Initial Site Assessments (ISAs) / Phase I Environmental Site Assessments (ESAs) – Our services include:

- Historical records searches and reviews for prior land uses, including summarizing previous ISAs and ESAs by others;
- Site geology, hydrogeology, and groundwater evaluations;
- Property reconnaissance with surrounding site observations;
- Review of hazardous substances and petroleum product storage, disposal, and spill records;
- Local, regional, state, and federal file reviews for site and surroundings;
- Interviews with the property occupants and owners;
- Review of environmental liens and related land title records;
- Evaluation of Recognized Environmental Conditions (RECs) for full, partial and non-acquisition properties;
- Survey of asbestos-containing materials (ACMs) and asbestos-containing construction materials (ACCMs);
- Assessing lead in paint and drinking water; and
- Coordinating and completing ISA/ESA reports with client reviewers and interested third parties following current standards.

## Aerially Deposited Lead (ADL) - Our services include:

- Collecting and summarizing previous ADLs by others;
- Field investigation of the future zone of soil disturbance;
- Collection of soil samples including QA/QC and rinseate samples;
- Analytical testing for total lead, including TCLP and STLC Citrate and DI methods;
- Statistical evaluation using software such as ProUCL current version for population distribution, upper confidence limits, and regression analysis;
- Conclusions and recommendations for suitable on-site reuse; and
- Coordinating and completing ADL reports with Caltrans reviewers and interested third parties following current standards.

## Environmental Services (cont'd)

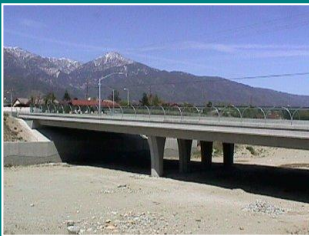


### Phase II Site Investigations (SIs) – Our services include:

- Review of previous ISAs/ESAs and SIs by others;
- Evaluation of site geology, hydrogeology, and groundwater conditions, including reasonable theories of contaminant migrations on and off the property of concern;
- Preparing work plan for soil exploration and chemical testing program;
- Preparing a site specific health and safety plan (HASP);
- Marking soil borings and carefully clearing utilities in the subsurface exploration zone;
- Advancing direct push (geoprobos) or hollow-steam auger borings to collect adequate soil and water samples;
- Properly prepare samples and analyze collected samples for chemical contaminants of concern;
- Evaluation of vertical and lateral extent of subsurface soil and groundwater contamination;
- Coordinating and completing SI reports with client reviewers and interested third parties following current standards.



# Materials Testing Services



Group Delta has in-house geotechnical and materials testing laboratory facilities to conduct a variety of testing on soils and other building materials. Our laboratories are equipped with state-of-the-art equipment to perform tests in accordance with the American Society of Testing and Materials (ASTM) and other applicable standards and our laboratories are certified by Caltrans and the City of Los Angeles. Our service capabilities in geotechnical and materials laboratory testing include the following:

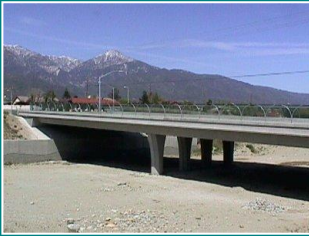
## **Materials Testing & Special Inspection**

- Asphaltic Concrete (AC)
- Concrete
- Epoxy
- Masonry
- Structural Steel
- Reinforcing Steel
- Welding
- Fireproofing
- Batch Plant
- FRP

## **Asphalt Concrete Testing**

- Stripping test
- Ash Content
- Asphalt Concrete density tests (nuclear)
- Density of asphalt cores
- Index of retained strength
- Hveem mix design and laboratory testing
- Marshall density
- Theoretical maximum specific gravity (Rice)
- Stability and Flow
- Moisture content
- Stabilometer value
- Swell
- Moisture-Vapor susceptibility
- Extraction (Ignition oven, vacuum, reflux, hot solvent)
- Extracted sample sieve analysis

# Laboratory Services



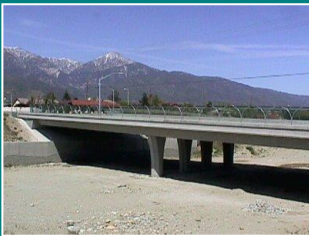
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## Materials Testing & Special Inspection

- Moisture Content
- Dry Density
- Maximum Density & Optimum Moisture Content
- Specific Gravity
- Atterberg Limits
- Sieve Analysis
- Hydrometer Analyses
- Sand Equivalent
- Corrosion Potential (pH, Sulfate, Chloride, and Resistivity)
- Consolidation/Collapse
- R-Value
- California Bearing Ratio (CBR)
- Los Angeles Abrasion
- Shear Shrinkage
- Swell Expansion Index
- Direct Shear
- Asphaltic Concrete (AC)
- Concrete
- Epoxy
- Masonry
- Structural Steel
- Reinforcing Steel
- Welding
- Fireproofing
- Batch Plant
- FRP

# Laboratory Services (Continued)



## Asphalt Concrete Testing

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## College and University Experience

# Harbor College Child Development Center

## Wilmington, California

*Geotechnical  
Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

### **Client**

*Los Angeles Community  
College District  
C/O Arcadis  
1111 Figueroa Pl.  
Wilmington, CA 90744*

### **Client Contacts**

*Nghi Nghiem  
(310) 221-8308*

**Completion**  
*2009*



This project involved the construction of a Child Development Center, located on the Harbor College Community College campus in Wilmington. This 12 million dollar project was built to accommodate 96 children under five years old.

Group Delta performed the geotechnical investigation for the project, which included preparation of a geologic seismic hazard evaluation report and a design-level geotechnical investigation.

Group Delta also performed compaction testing for all placed fill materials including soils, base material and asphalt. Our inspectors were responsible for special inspections in welding including mill cert review, fabrication shop and field inspections, concrete including batch plant inspection, cylinder fabrication, slump tests and temperature measurements, reinforcing steel including tag & sampling, masonry inspections including mortar and grout sampling, non destructive testing, ceiling wire pull testing, material identification, wood moisture, torque testing of expansion anchors and tensile & bend testing. Our City of Los Angeles, Caltrans, DSA and AASHTO certified Torrance laboratory was responsible for maximum density determinations for all soils and base materials placed on the project, compressive strength testing for concrete cylinders, tensile and bend testing for reinforcing steel. Our geologists were responsible for retrieving environmental soil samples in order to determine if the materials met DSA environmental guidelines. Marshall Density determinations done on the placed AC were conducted at our Caltrans, DSA, and AASHTO certified laboratory located in Ontario, CA.



# Croul Hall – University of California Irvine

Irvine, California

*Geotechnical Engineering*

*Geology*

*Earthquake Engineering*

*Environmental Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

Client  
University of California  
Irvine  
Irvine, CA 92697

Hensel Phelps  
Construction Company  
18850 Von Karman Ave.  
#100  
Irvine, CA 92612



Group Delta provided geotechnical services to the Design/Build team for the new Earth Systems Science Building. The major components of the project include evaluating the load bearing capacity of the bedrock stratum underlying and providing estimated elevation contours for the alluvial/bedrock contact as well as an evaluation of temporary construction slopes required for basement construction and underground utility installation.

- Provided geotechnical analysis and value engineering to the Design/Build team
- Significant cost savings were achieved by optimizing the foundation design



# Harbor College Photovoltaic Parking Lot

## Wilmington, California

*Geotechnical  
Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

### **Client**

*Los Angeles Community  
College District  
C/O Pacifica Services  
106 S. Mentor Ave.  
Pasadena, CA 91106*

### **Client Contacts**

*David Valdez  
626-405-0131*

**Completion**  
*2009*



This project involved the redevelopment of an existing parking lot, located on the Harbor College Community College campus in Wilmington. New photovoltaic panels were then placed throughout the project area in order to implement solar power energy to the school.

Group Delta performed the geotechnical investigation for the project, which included preparation of a geologic seismic hazard evaluation report and a design-level geotechnical investigation.

Group Delta also performed compaction testing for all placed fill materials including soils, base material and asphalt. Our special inspectors were responsible for special inspections in welding including mill cert review, fabrication shop and field inspections, concrete including batch plant inspection, cylinder fabrication, slump tests and temperature measurements, reinforcing steel including tag & sampling, lap splicing and spacing, torque testing of expansion anchors and framing. Our City of Los Angeles, Caltrans, DSA and AASHTO certified Torrance laboratory was responsible for maximum density determinations for all soils and base materials placed on the project, compression testing for concrete cylinders, tensile and bend testing for reinforcing steel. Our geologists were responsible for retrieving environmental soil samples in order to determine if the materials met DSA environmental guidelines. Marshall Density determinations done on the placed AC were conducted at our Caltrans, DSA, AASHTO certified laboratory located in Ontario, CA.



# LACCD West LA Parking Structure 1

*Culver City, California*

*Geotechnical Engineering*

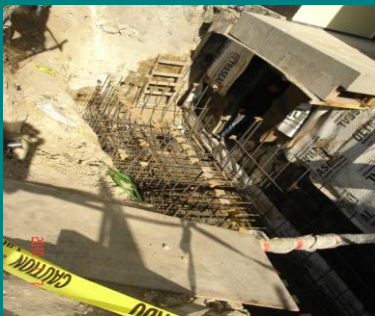
*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*



Group Delta was the geotechnical engineer for the first of the two structures is being built on the West Los Angeles College campus in Culver City was complete in 2008. The estimated cost is just over \$23.5 million for a four-level, 302,689-square-foot structure holding 998 parking spaces. Designed by Choate Parking Consultants of Irvine, Calif. in conjunction with AC Martin Partners of Los Angeles, the structure's facade has a decorative, cast-in-place concrete wall with colored cement tiles and stainless steel perforated panel fins. The facility included a framed elevator shaft with a glass curtain wall. The rooftop of the parking structure supports over 2,000 photovoltaic panels to help support the campus electricity needs.

Our Engineering team conducted the field sampling including CPT sampling and performed all the geotechnical testing in our City of Los Angeles, DSA, Caltrans and AASHTO certified laboratory including shear testing, consolidation, expansion index, M & D determinations, Atterberg property determinations, gradations and various other investigative tests.





# East Los Angeles Community College Photovoltaic Parking Lot Monterey Park, California

*Geotechnical  
Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

## **Client**

*Los Angeles Community  
College District  
C/O Jacobs/Pacifica  
1200 West Floral Dr.  
Monterey Park, CA  
91754*

## **Client Contacts**

*Victor Supan  
714-209-8577*

**Completion**  
*2009*

**Project Value**  
*1.2 Million*



One of LA Community College District's most impressive green projects, this \$1.2 million megawatt photovoltaic farm at East LA College is made up of 5,952 panels, the rooftop solar project provides shaded parking for over 500 vehicles and occupies 3 acres. It can generate 1.9 million kilowatt hours of electricity per year, satisfying 45% of the college's energy needs and reducing utility costs by \$270,000 annually. Our inspection team was responsible for both geotechnical and special inspections including concrete cylinder fabrication including slump and air measurements, batch plant, reinforcing steel, field welding, shop welding and materials identification. Our soils inspectors were responsible for in-situ density testing for the soils and base materials placed at the project site including trench backfills, pad fills including over-excavation, slab on grade, drive and parking sections and associated flatwork sections. The project additionally required density testing and laboratory analysis of AC materials and Caisson excavation approvals. Our AASHTO, Caltrans, City of Los Angeles and DSA certified Torrance laboratory performed most of the materials testing services including compressive strength determinations of concrete cylinders, tensile and bend testing for reinforcing steel and maximum density/optimal moisture percentage for the soils and base materials placed at the site. Marshall density determinations for the asphalt were completed by our Caltrans, DSA and AASHTO certified Ontario facility. The project was completed following DSA parameters using certified ICC, DSA, AWS/CWI, ACI and City of Los Angeles certified inspectors.



# San Diego City College Mathematics and Social Sciences Building San Diego, CA

*Geotechnical  
Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Client*

*San Diego City College*



Group Delta is providing geotechnical consulting and materials testing and special inspection services for the 5 story, 73,000 square foot, general purpose building containing classrooms, a health center, a corporate education center and associated support space along with a 7 tier, 400-car, parking garage currently under construction.

Group Delta is also providing special inspection and testing services for all of the reinforcing steel (including headed rebar), reinforced concrete, post-tensioned concrete, structural steel, high-strength bolts, shop and field welding, masonry, anchors, and fire proofing.

Group Delta provided geotechnical parameters for foundation design including 149 caissons ranging from 2 feet to 6 feet in diameter and up to 90 feet in length.



# San Diego State University Aztec Center Student Union San Diego, California

*Geotechnical  
Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Client*

*San Diego State  
University*



Group Delta is providing geotechnical consulting services for the new Aztec Center Student Union complex starting in June of 2011. Demolition of the existing Aztec Center, Student Union Building and associated improvements will be followed by construction of a new 3-story steel-framed structure with a partial basement. The new building will contain conference rooms, cafes, a restaurant, bar and market, as well as a bank, bowling alley and courtyard on the first floor. The second floor will house Associated Student offices, as well as a two story movie theater and a large ballroom. The third floor will contain the Student Council chambers, as well as additional conference areas, and a fitness center. Site development will also include relocation of existing storm drain, sewer and water utilities, and the construction of various new underground utilities and basement retaining walls. Aztec Circle Drive will be expanded and lowered along the eastern edge of the site in order to provide direct access for delivery trucks to the basement of the structure.

Group Delta provided geotechnical recommendations for backfilling the existing basement with crushed concrete generated by demolition of the existing facilities, foundation design (including caissons), and for the utilization of lightweight cellcrete adjacent to the existing MTS Trolley alignment.



# Clinical and Translational Research Institute

UCSD, La Jolla, California

Geotechnical  
Engineering

Geology

Hydrogeology

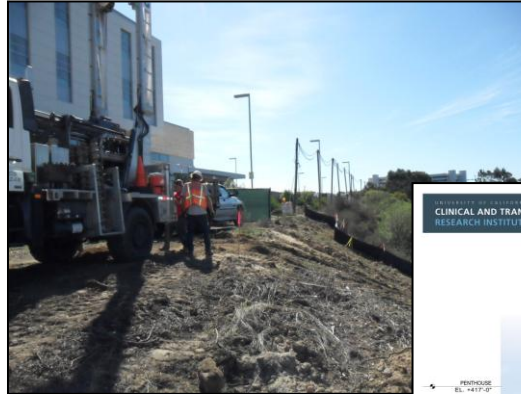
Earthquake Engineering

Materials Testing and  
Inspection

Forensic Services

Client

San Diego State  
University



The new UCSD Clinical and Translational Research Institute building, which is currently in the design phase, will be located east of Interstate 5 and northwest of Thornton Hospital, the Cardiovascular and Cancer Centers, and other East Campus facilities. The site is located in an existing canyon with moderately to steeply sloping topography descending to the northwest.

The reinforced concrete building will have five levels and a penthouse above Medical Center Drive North and three levels below. The project will include a loading dock and truck parking area on the west side of the building. Cuts into the canyon side slope of up to about 35 feet deep and minor fills in the canyon bottom will be required to achieve finish building pad grade.

Group Delta's services included a geotechnical investigation and environmental soils testing. Our geotechnical investigation included subsurface explorations consisting of 5 borings and 11 test pits and laboratory testing to evaluate the geotechnical conditions at the site. Because the site was formerly used for military training, the borings and test pits were monitored for unexploded ordnance. We provided recommendations for site grading, compressible soils, cut/fill transitions, expansive soils, building foundations, shoring, retaining walls, pipelines, and pavements. The environmental soils testing included total petroleum hydrocarbons, toxic metals, and explosives.



# Pierce College

Woodland Hills, California

*Geotechnical Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Client*  
*Build LACCD*  
*Pierce College*  
*7201 Winnetka Avenue*  
*Woodland Hills, CA*  
*91371*

*Contact:*

*David Tsao*



Project consists of the following;

- New maintenance and Operations Complex Approximately 300ft. by 400 ft. that will include at grade parking, a series of one-story facilities including shops for gardening, plumbing, painting, carpentry, custodial service, receiving and maintenance. Solar arrays

***GDC Role:***

- Design Level Geotechnical Investigation
- Pavement and Subsurface Evaluations
- Geologic Seismic Hazard Evaluation
- Geologic and Seismic Recommendations
- Review of Historical Aerial Photos



# San Diego State University

San Diego, California

*Geotechnical Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Client*

*San Diego State University  
5500 Campanile Drive  
San Diego, CA 92182*



## Variety of Different Projects for San Diego State University:

- Student Health Center
- Science Laboratory Building
- SDSU Pool Complex
- Tony Gywnn Stadium Scoreboard
- SDSU Alumni Center
- Rodney Auditorium Seismic Retrofit



## **GDC Role:**

- Geotechnical Investigations and Design
- Grading Inspection
- Materials Inspection and Testing: including, concrete, grout, rebar, structural steel, welding, waterproofing, batch plant
- DSA Level Construction Services



# UCLA Weyburn Terrace

*Los Angeles, California*

*Geotechnical Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Completion: 2012*

*Client:  
University of California  
Los Angeles  
Capital Program Contracts  
Administration  
1060 Veteran Avenue  
Box 951365  
Los Angeles, CA 90017*



- New Graduate Student Housing Complex at UCLA
- Multiple Structures up to Nine Stories

### **GDC Role:**

- Grading Inspection
- Materials Inspection and Testing: including post-tensioning, concrete, grout, rebar, structural steel, welding, shotcrete, waterproofing, drilled anchors, batch plant



# University of Southern California Exposition Park Los Angeles. California

*Geotechnical Engineering*

*Geology*

*Hydrogeology*

*Earthquake Engineering*

*Materials Testing and  
Inspection*

*Forensic Services*

*Client*

*International Parking Design*

*Contact:*

*Armen Megerdumian*

*(818) 986-1494*



- Four-level reinforced concrete parking structure
- 34 foot deep excavation with one side supported by permanent tie-back anchors
- Column loads of up to one million pounds
- Supported on conventional spread footings

