

Statement of Qualifications

Structures

Group Delta Consultants, Inc.



Prepared By:
Group Delta Consultants, Inc.

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Please visit us on the web at www.GroupDelta.com

Company Profile

Company Profile

Geotechnical Engineering

Geology

Hydrogeology

Earthquake Engineering

*Materials Testing and
Inspection*

Forensic Services



Group Delta Consultants, Inc. (GDC) is a consulting engineering firm with offices located in the counties of; Orange, Los Angeles and San Diego. 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.

We have established a record of completing projects on schedule and within budget for major clients in the public and private sectors since 1986. Both of 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
Small Business:	(SBE) State of California



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 Retro-fit Projects
- Seismic Design Criteria
- Earthquake Response Spectra

Laboratory Services



Laboratory Testing Services

Group Delta Consultants, Inc. 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. 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

- 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

Construction Phase Services



Construction Inspection & Materials Testing Services

Group Delta offers a full range of construction phase inspection and materials testing services. Our services during the construction phase are directed towards strict compliance of regulatory guidelines. Adherence to specifications is monitored and documented by registered geotechnical engineers, licensed inspectors and certified laboratories. Our service capabilities in construction monitoring and materials testing areas include:

Materials Testing

- Concrete & Masonry
- Beams
- Blocks
- Cubes
- Cylinders
- Grout/Mortar
- Prisms
- Vapor Emissions Testing

Project Experience – Structures

A-Town Metro, Platinum Triangle

Anaheim, California

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Anaheim's Platinum triangle is envisioned to be a high density, mixed-use, urban environment that could include up to 9,500 dwelling units, 5 million square feet of office space and over 2 million square feet of commercial uses. Lennar's A-Town Metro project is a cornerstone of this development.

Group Delta Consultants (GDC) is the lead geotechnical engineering firm for all phases of this project from preliminary investigation, design, and construction. GDC reviewed existing data, conducted a field and laboratory investigation, assessed the site and subsurface conditions, and provided our recommendations on potential seismic hazards and seismic design parameters, foundations, earthwork and grading, temporary excavation and shoring, retaining walls, and utility trenches.

Project Highlights:

- Critical sequencing of shoring/excavation due to high density structures
- Cost effective foundation recommendations
- Use of on-site demolition material for CMB



Hyatt Regency Grand Coast Resort

Huntington Beach, California

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The project consists of a 504-room hotel complex and associated facilities, including two-levels of subterranean parking, a four-story hotel building, ballrooms and conference rooms, courtyards, retail facilities, tennis courts, landscaping and irrigation, walkways, pedestrian bridges, retaining walls, and other hardscape features. Improvements included construction of two 4-lane roadways: a southeasterly extension of existing Pacific View Drive to its intersection with Beach Boulevard.

Group Delta Consultant's, Inc. (GDC) scope of work for this project consisted of review of existing geotechnical information for the site, performance of 12 cone penetration tests (CPT) and excavation of one test pit; laboratory testing of selected soil samples, engineering analyses to provide geotechnical recommendations for grading, site preparation, seismic hazards, liquefaction evaluation, sur-charge program, footing bearing pressure and settlement, pile capacity, pile installation, pavement design, and foundation support of the proposed structures.

The original geotechnical report for the project by others recommended removal and recompaction to depths of 25-ft below the water or use of piles. GDC recommended a sur-charge program at the site to consolidate soft clayey soils. The surcharge was successfully completed and the number of piles reduced from over 2,700 to about 500.

GDC Achievements:

GDC recommendations resulting in savings of over \$1,000,000 in pile foundation cost.



Playa Vista Development

Los Angeles, California

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GDC is the lead soils and materials testing and geotechnical engineering firm for design and construction of the 1,100 acre, \$6 billion Playa Vista Development. GDC is providing inspection and materials testing services for a dozen projects for the various developers including Warmington Homes, Shea Homes, Standard Pacific Homes, John Laing Homes, The Olson Company and Fairfield Residential. Our services include inspection and testing for soils, reinforced concrete, masonry, structural steel/welding, post tension, DIA and non-destructive testing (NDT)

GDC has an on-site laboratory and office, and is providing deputy inspection and testing required by the City of Los Angeles, Department of Building and Safety and Department of Public Works. Saved millions of dollars in foundation cost using soft ground improvement by surcharging

Playa Vista Development, Parking Structures Los Angeles, California

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The Playa Vista Development project involved 1100 acres of property located just south of Marina Del Rey. The project involved construction of seven parking structures for apartment buildings, condominiums, and townhouses. The seven parking structures are listed below:

- Avalon Condominiums and Townhomes Parking Structure, Los Angeles, CA
- Chatelaine Condominiums Parking Structure, Los Angeles, CA
- Crescent Walk Townhomes Parking Structure, Los Angeles, CA
- Fountain Park Apartments Parking Structure, Los Angeles, CA
- North Crescent Park Apartments Parking Structure, Los Angeles, CA
- Promenade Parking Structure, Los Angeles, CA
- Villa D'Este Condominiums Parking Structure, Los Angeles, CA



Robert F. Kennedy Learning Center

Los Angeles, California

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This project involves the redevelopment of the original Ambassador Hotel site, located west of downtown Los Angeles. The 23.8-acre property is currently being graded to accommodate a \$318 million integrated campus to be named the Robert F. Kennedy Learning Center. The project will be the most expensive facility built by the Los Angeles School District, and will include an 800-student K-3 School, 1000-student Middle School and a 1000-student High School.

Group Delta performed the comprehensive foundation investigation for the project, which included preparation of a geologic seismic hazard evaluation report and a design-level geotechnical investigation. In addition, an extensive materials investigation and testing program was conducted to assess the structural members, strength and connections for assessing conversion of the original Coconut Grove nightclub to the assembly for the new school.

The campus buildings are set at different grades across the site, which created some interesting engineering issues. The High School Building has entrances at several levels. As a result, the east wall of the building has a 30-foot high basement wall, while the east side of the building is at grade, with no basement. As a result, there is a significant unbalanced lateral earth and seismic pressure across the structure that must be addressed by the design. To solve this problem, a soil nail wall will be used to support the retained earth loading and a gap will be maintained between the soil nail wall and the building framing.

Westminster Housing

Westminster, California

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This project consists of construction of two- to three- story residential senior and townhouse apartments at a 3.07 acre site located east of the intersection of Beach Blvd. and 13th street in the City of Westminster. Eight buildings with a total 83,206 square feet will be constructed at the site.

A previous geotechnical investigation report recommended the use of stone columns for ground improvements or deep foundation options which made the project economically unfeasible. GDC recommended that a surcharge program could be used to mitigate post-construction settlement at the site. In addition, differential settlement due to liquefaction was addressed by design of a mat slab.

Project has been constructed successfully. In addition to design GDC also provided construction phase soil inspection and testing services.

Children's Hospital

San Diego, California

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Group Delta Consultants, Inc. (GDC) performed geotechnical design and inspection work on major projects at Children's Hospital, including a three-story patient care wing, expansion of the Hahn Pavilion Surgical Wing and energy plant; a four-story, 82,460-square-foot medical office building and day surgery; a multi-story parking structure; 3,000-linear-feet of paved roadway; and numerous small off-site improvements.

As the geotechnical member of the design team for the expansion program, GDC performed geotechnical and geologic site investigations, developed site seismic risk assessment and response spectra in accordance with the requirements of the Office of the State Architect and the California Division of Mines and Geology, and provided engineering recommendations and design review for shallow and deep foundation systems and earth retaining structures.

During the construction phase, GDC worked closely with both State and local inspectors, providing on-site inspection and testing services, quick response to construction problems, and design changes to keep the projects on schedule.



Future Hotel

Huntington Beach, California

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The proposed site is located on Pacific Coast Highway between the existing Waterfront Hilton Hotel and Hyatt Regency Grand Coast Resort Hotel. The preliminary development concept includes demolition of the existing facility and construction of a new hotel (12 story tower and 5 story building).

Group Delta Consultant's, Inc. (GDC) scope of work for this project consisted of: review of existing geotechnical information for the site, performance of cone penetration tests (CPT) and drilling; laboratory testing, engineering analyses to provide geotechnical recommendations for grading, site preparation, seismic hazards, seismic parameters, liquefaction evaluation, footing bearing pressure settlement, and pile capacity (axial and lateral capacity curves, tip depths, and preliminary driving criteria for driven piles

In addition to geotechnical evaluation and foundation design, our scope work includes site specific seismic evaluation including:

- Performing shear wave velocity measurements at the site
- Performing probabilistic seismic hazard assessment to define 10% and 50% probability of exceedance bedrock accelerations
- Selecting three to seven time-histories, scaling the time histories to appropriate bedrock target spectrum
- Running the time histories thru the soil profile using SHAKE
- Developing an envelope spectra

Double Tree Hotel

Irvine, California

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The Doubletree Hotel Irvine Spectrum offers 252 elegantly designed guest-rooms. The hotel is an eight story building featuring an outdoor swimming pool and two story parking structure.

The original geotechnical report by others recommended 14-in. square prestressed concrete piles with loads of 110 to 150 kips and lengths of 50 to 60 feet.

Group Delta's scope of work for this project was:

- Reviewing existing report,
- Performing wave equation analyses on the hammer and driving equipment,
- Mobilizing Goble Rausche Likins & Associates (GRL), the PDA subcontractor, to make dynamic measurements on 10 indicator piles,
- Performing analyses and developing recommendations regarding:

Based on the indicator program, Group Delta recommended a pile length of 40 feet and a design capacity of up to 230 kips. A total of 247 piles were successfully driven to the design capacity.

GDC also provided construction monitoring services including shoring design and monitoring, monitoring during indicator and production pile driving, compaction testing, pavement testing, and footing observations, etc.

GDC recommendations resulted in savings of over \$200,000 dollars in pile foundation cost.



Related Companies, Block 8

Little Tokyo, Los Angeles, California

Geotechnical Engineering

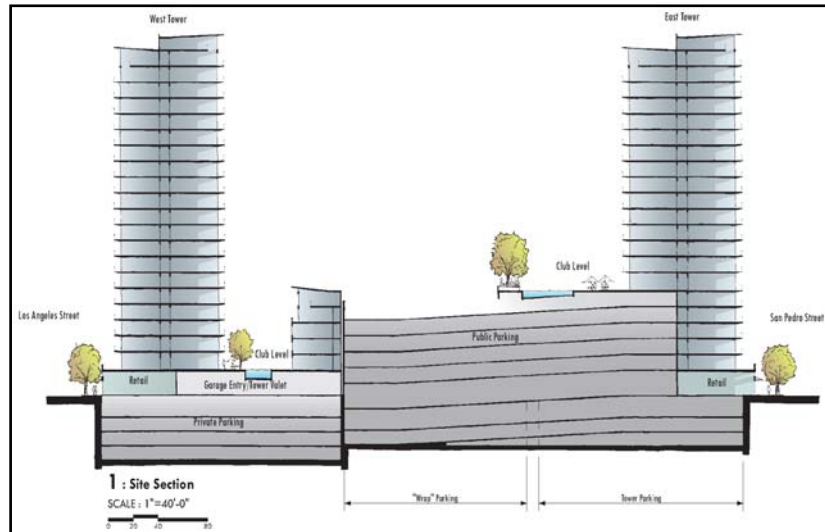
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By 2007 the Related Companies plans to finish construction of two 20-story apartment towers which will include an 850-unit, market-rate complex featuring a mix of condos and apartments, as well as 50,000 square feet of retail. The property known as Block Eight in Little Tokyo was a parking lot south of Second Street between Los Angeles and San Pedro Streets in downtown Los Angeles.

Group Delta Consultants, Inc. (GDC) completed a foundation investigation to provide design level recommendations for:

- Bearing capacity and settlement estimates for the mat foundations supporting 20-story towers
- Differential settlement between the high rise and low rise buildings.
- Seismic Design both based on UBC 1997 seismic provisions and site specific response spectra.

Key issues:

- City of Los Angeles Approval
- Excavation and Shoring
- Mat Foundation
- Construction Phasing for five different portions of the project built at different times by two or three owners
- Seismic Design

GDC will also provide construction monitoring services including soil and material testing.

Central Park Development Project

Irvine, California

Geotechnical Engineering

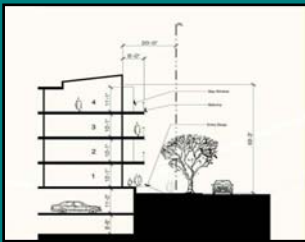
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GDC is providing geotechnical recommendations for the various upcoming Luxury flats in Irvine, California. Each project will consist of the construction of a four-story building over 2 levels of basement parking.

- Michelson Lofts (107 units, 1.62-acre parcel).
- Luxury Flats South (87 units, 1.5-acre parcel).
- Luxury Flats North (90 units, 1.56-acre parcel).
- Loop Road Lofts (372 units, 5.03-acre parcel).

GDC is responsible for providing the following services:

- Review previous field and laboratory data collected for the project; Drill and sample borings and perform CPT soundings on the subject lots;
- Perform site-specific geotechnical analyses to develop recommendations for the final foundation design and construction of the proposed structure.

Key Geotechnical issues:

- Shallow Groundwater;
- Heavy Measurements;
- Mat Foundation.

Key Staff

Technical Staff

QUALIFICATIONS AND EXPERIENCE			
NAME	FUNCTION	REGISTRATION	YRS OF EXP.
Dr. Kul Bhushan	Principal Geotechnical Engineer	RCE, GE	40
Tom Swantko	Principal Geotechnical Engineer	RCE, GE	35
Mike Reader	Principal Geotechnical Engineer	RCE, GE	23
Curt Scheyhing	Senior Geotechnical Engineer	RCE, GE	13
Shah Ghanbari	Principal Engineer	RCE	25
Eugene Lewis	Senior Geologist	CEG	10
Chris Guesnon	Geologist	CEG	17
Joe Barr	Geologist	RCE, CEG	10
Eric Holliday	Geologist		7
Opjit Ghuman	Environmental Engineer	RCE, GE	33
Vesna Glisic	Project Engineer	RCE	5
Nava Navaratnarajah	Field Engineer	RCE	5
Dr. Ying Liu	Seismic Engineer	RCE	12
Ray Basilio	Senior Field Engineer	ACI	25
Konrad Fernandes	CADD Manager	-	15
Jeanette Moreno	CADD Designer		5
Ray Green	Materials Testing Manager	ME	30
Richard Mahoney	Manager of Soils Testing	Deputy Inspector	15
Eric Ycoy	Soils Lab Manager-Torrance	Caltrans Certified	15
Henry Kim	Soils Lab Manager-Irvine	Caltrans Certified	34
Ray Basilio	Senior Geotechnical Technician	Deputy Inspector	25
Mike Jacobs	Senior Geotechnical Technician	Deputy Inspector	20
Arnold Ramirez	Senior Geotechnical Technician	Deputy Inspector	15
Pool of Technicians (25)	Inspectors	ICBO, DSA, City of Los Angeles & Caltrans	5 to 25
Support Personnel (11)	Support	-	2 to 20