GeoAlliance Consultants Pte Ltd

Capability Statement
WHO WE ARE
GeoAlliance Consultants Pte Ltd is a specialist ground engineering consultancy established by a group of registered professional engineers in Singapore. Our team has wide hands-on experience in both design and supervision of civil engineering and geotechnical engineering works in Singapore and overseas. Our team members have been involved in projects on the MRT Northeast Line, MRT Circle Line, MRT Downtown Line and Marina Coastal Expressway, and Kim Chuan Sewerage Plant, Changi Outfall in each of their own capacities. Merging our skill sets, experience and resources, we endeavour to provide innovative technical solutions for geotechnical and underground space projects.

WHY GeoAlliance
- Professional Engineers with PE(Civil), PE(Geo) and AC(Geo) registrations
- Experience with local building authority, international consultants and contractors
- “Can-do” attitude
- Innovative, cost-effective and practical solutions
- Efficient and excellent services
- Reliable business & project partner
- Potential integration with client’s team

WHAT WE DO
Our team has an extensive range of knowledge and experience. Professional services by GeoAlliance Consultants Pte Ltd can be provided at all stages of project implementation, including:

Planning
- Feasibility Studies
- Planning of Geotechnical Investigations
- Engineering Support for Project Tenders
- Preliminary Designs for Cost Estimates
- Value Engineering
- Risk Assessments

Statutory Submission
- PE(Civil) services
- PE(Geo) services
- AC(Geo) services
- Submissions to local authorities (BCA, PUB, LTA, JTC and NParks etc.)

Project & Construction Management
- Construction Planning and Advice
- Construction Methods and Programmes
- Qualified Person (Supervision) services
- Instrumentation & Monitoring
- Expert Witness services

Analysis and Design
- Geotechnical Interpretative Studies
- Earth Retaining Structures (ERSS or TERS)
- Geotechnical Instrumentation
- Numerical modelling (2D and 3D)
- Foundations for Buildings and Bridges
- Coastal and Offshore Foundations
- Underpinning and Strengthening of Existing Structures
- Building Damage Assessments
- Slope Stability & Stabilisation
- Ground Improvement Solutions
- Tunnelling and Pipe-Jacking
- Shafts
- Cofferdams
Er. Niu Jianxin -- Managing Director

Jianxin is a registered Specialist Professional Engineer (Geotechnical) with over 25 years of experience in civil and geotechnical engineering in Singapore, Hong Kong, China, and Australia.

He has expertise in retaining wall for deep excavation, cut and cover tunnels, bored tunnels, embankments, foundations for buildings, transmission towers and offshore structures, dams, slope stability, ground improvements, instrumentation and monitoring.

The major projects he has worked on include:

- Northeast Line Dhoby Ghaut MRT station, Singapore
- Central Circle Line Stage 3, Singapore
- Downtown Line Stage 3 C9181AC3, Singapore
- Marina Coastal Expressway, Singapore
- Thomson Medical Centre at Novena MRT Station, Singapore
- Underpinning and Pile Extraction at Bishan Depot, Singapore
- Deep Tunnel Sewerage System, Changi Outfall, Singapore
- Marine Barrage Independent Checking, Singapore
- Upgrading of Pei Hwa Presbyterian School, Singapore
- Capitol Redevelopment Project, Singapore
- Tuas Power Station CCP5 Project, Singapore
- QP Supervision for Thomson Line T2115 Advance Earth Works at Mandai Depot, Singapore
- JTC Underground Multi-Utility Hub (MUH) at one-north, Singapore
- Finer One - Coastal and Port Development at Tuas, Singapore
- Public Housing Development Comprising 1 Block of 33-storey Residential Building at Woodlands Street 31 (Woodlands N3 C14), Singapore
- Slope Stabilization Using Soil Nails for Slope Facing Block 43 and Carpark B (Behind Marina Deck) at Mount Faber Road, Singapore
- Feasibility Study and Preliminary Design of a Proposed 2200 Diameter Pipeline from Murnane Services Reservoir (MNSR) to Marina South and Marina East via Fort Canning Service Reservoir (FCSR) P&G Innovation Centre (Singapore) at Biopolis Road, Singapore
- QP Supervision for Downtown Line Stage 3 C9188A1 for Civil Contract C937, Singapore
- Three Gorges Dam Project, China
- City of Dreams Casino, Macau
- MPS 13 Link Sewer of the Strategic Tunnel Enhancement Program (STEP) Contract LS02, Abu Dhabi
- Land Reclamation for Vitol Land Oil Tanks at Tanjong Bin Terminal, Johor, Malaysia
- Nam Theun 2 – CW3 Civil Works, Laos
- Ship Lift Retaining Wall of Common User Facility, Adelaide, Australia
- Newcastle Coal Export Terminal 3, NSW, Australia
Er. Chua Chin Hiang -- Director

Chin Hiang is a registered Professional Engineer (Civil) with over 14 years of postgraduate experience in civil design and supervision of major infrastructure projects.

His major project experience in Singapore, Malaysia, India and Australia includes underground infrastructure works for mass rapid transit, roads, highways and port developments. Chin Hiang’s recent involvement in Singapore projects includes the Circle Line, Marina Coastal Expressway and Downtown Line.

The projects he has worked on include:
- Delhi Metro Corridor 1B, New Delhi, India
- SMART tunnels, Kuala Lumpur, Malaysia
- Kallang-Paya Lebar Expressway, Singapore
- Central Circle Line Stage 3, Singapore
- Pacific Highway Ungrades, NSW, Australia
- Newcastle Coal Export Terminal 3, NSW, Australia
- P&G Innovation Centre Project, Singapore
- Capitol Redevelopment Project, Singapore
- Tuas Power Station CCP5 Project, Singapore
- Downtown Line 2 Bt Panjang Underpass Project, Singapore
- Thomson Line Mandai Depot Earthworks Project, Singapore
- Thomson Line Mt Pleasant Station Project, Singapore

Er. Dr. Wen Dazhi -- Senior Consultant

Dr. Wen has more than 25 years of experiences in planning, design and implementation of large-scale infrastructure projects in Singapore, Australia and China.

Throughout his career he has specialized primarily in the management, design and construction of underground infrastructures. He leads and manages a team of civil & structural and geotechnical & tunnel engineers, surveyors and land executives in implementing numerous underground MRT lines and expressways in Singapore, involving site investigation, tunnelling, underground structures, deep excavations, foundations and management of multi-disciplinary consultants. He was the Principal Geotechnical Engineer responsible for the tunnel support design for the North South Bypass Tunnel in Brisbane, Australia.

The projects he has worked on include:
- Kallang-Paya Lebar Expressway, Singapore
- Central Circle Line MRT Project, Singapore
- Clem Jones (North South Bypass) Tunnel, Brisbane, Australia
- Downtown Line MRT Project, Singapore
- Thomson Line MRT Project, Singapore
- Eastern Region Line MRT Project, Singapore
Er. Wee Soon Eng -- Principal

Soon Eng is a Principal with GeoAlliance Consultants Pte Ltd and has over 30 years’ experience of civil and structural engineering works, including the design of structural steelworks, reinforced and pre-stressed concrete structures in buildings and bridges. He is a Professional Engineer and Accredited Checker in Singapore.

The projects he has worked on include:

- Design of PWD’s SLE Lentor Interchange (bridge)
- Design and Supervision of Holcim Cement Silo, Singapore
- Design of LTA’s North East Line Contracts C701 (new MRT depot at Hougang)
- Design of LTA C704 (Woodleigh and Serangoon MRT Stations with connecting twin bored tunnels)
- Design of LTA C711 (Harbourfront MRT Station with crossover tunnel and sidings tunnel at World Trade Centre)
- Accredited checking of Downtown Line Stage 3 Contract C9181AC3 (6 Civil Defence underground MRT stations, tunnels and shafts)
- Accredited checking of Downtown Line Stage 2 Contract C918AC (Tan Kah Kee MRT station and tunnels)
- Accredited checking of Lee Kong Chian School of Medicine, Singapore, Nanyang Technological University
- Accredited checking of Singapore Management University

Dr. Wong Kwong Yan -- Senior Consultant

Dr Wong Kwong Yan is a geotechnical engineer with over 35 years of experience in civil design and supervision of major infrastructure projects across Asia.

His major project experience in Singapore and around Asia includes highway construction, bridge structures, building developments and underground mass rapid transit infrastructure works. Dr Wong’s recent involvement in Singapore projects includes the Changi Water Reclamation Plant and ION Orchard Development.

The projects he has worked on include:

- Shell Temana Exploration Project, Sarawak, Malaysia
- Oil Exploration Projects, Persian Gulf
- Bangkok Don Maung Airport, Thailand
- Central Expressway (CTE), Singapore
- Seletar Expressway (SLE), Singapore
- Chinatown MRT Station C709, Singapore
- Changi Water Reclamation Plant, Singapore
- ION Orchard Development, Singapore
Er. Dr. Wong Ing Hieng -- Technical Advisor

Dr I H Wong is a renowned geotechnical expert with over 40 years of experience in the fields of geotechnical and civil engineering, of which 19 years were accumulated in Singapore. Dr Wong has worked on a large number of geotechnical engineering projects in the United States, Middle East, China, Singapore, Malaysia and Indonesia. Dr Wong has also served as an expert witness in a number of court and arbitration cases.

Dr Wong was a professor with Nanyang Technological University and has published numerous technical papers in international conferences and technical journals.

The following are selected projects Dr Wong had played a lead role in:

- Central Expressway Tunnels, Singapore
- Northeast Line Dhoby Ghaut MRT station, Singapore
- Central Circle Line Stage 3, Singapore
- Central Circle Line Stage 2, Kim Chuan Depot, Singapore
- Inquiry on Nichol Highway Collapse, Singapore
- Deep Tunnel Sewerage System, Changi Outfall, Singapore
- Changi Water Reclamation Plant, Singapore
- 74-Storey Raffles City Complex, Singapore
- Phase V land reclamation project in Marina South and Tanjong Rhu area, Singapore
- Dams for Kranji, and Pandan Reservoir and the proposed Serangoon and Punggol Dams, Singapore.

Mr. Max Goi Meng Hwee -- Principal Geotechnical Engineer

Max is a geotechnical engineer with over 12 years of postgraduate experience in civil design and supervision of major infrastructure projects.

His major project experience in Singapore and Australia includes highway construction, bridge structures, building developments and underground mass rapid transit infrastructure works. Max’s recent involvement in Singapore projects includes the Circle Line, Marina Coastal Expressway and Downtown Line.

The projects he has worked on include:

- Kallang-Paya Lebar Expressway C421, Singapore
- Circle Line Stage 4 & 5, Singapore
- Northern Busway RCH to Herston, QLD, Australia
- Ipswich Motorway Upgrade Dinmore to Goodna, QLD, Australia
- Downtown Line Stage 3, C9181AC3, Singapore
- Marina Coastal Expressway, C482AC, Singapore
- North-South Line Extension, C156AC, Singapore
- SSNT(West) School Addition & Alterations, Singapore
Er. Lee Yeong -- Geotechnical Consultant

Lee Yeong is a Professional Engineer and Specialist Professional Geotechnical Engineer with about 20 years of experience in a diverse range of geotechnical engineering. He has designed and supervised excavations, foundation and ground improvement (especially geotechnical grouting works).

His major project experiences in Singapore as designer, QP and QP(Geo) for various deep excavation works for basement and services tunnel in reclaimed land and marine clay. Lee Yeong is also experience in design, execution, and management of specialist works, such as jet grouting, permeation TAM grouting in sand and fractured rocks, micropiling, bored piling etc. in numerous private and infrastructure projects. His recent involvement in Singapore projects includes underpass across Orchard Road and supervision for MCE C485 and C487.

The projects he has worked on include:
- Kallang Expressway Contract 421 & 424
- Pinnacle at Duxton, Singapore
- Common Services Tunnel CST 3A, Singapore
- Orchard Central, Singapore
- 30 Alexandra Lane, Singapore
- Le Nouvel at Ardmore Park
- 8 Bassien Lane
- Marina Coastal Expressway MCE C485 and C487

Dr. Liu Lufeng -- Principal Engineer

Dr. Liu has been in the civil engineering industry field since 1995 and acquired vast knowledge and experience, especially in Geotechnical Engineering. He has extensive experience in liaison with developers, consultants, contractors and designers on technical issues, the design and supervision of deep excavation works and temporary earth retaining system; foundation design; ground anchor and soil nail design; slope rehabilitation and stabilization; soil improvement; geotechnical & structural instrumentation; field testing and analyses, soil investigation and pile testing, etc. Liaison with developers, consultants and designers on technical issues. Dr Liu has also worked in P R China and the United States.

His major project experiences in Singapore as Design Manager led the design department of main contractor for Thomson Line Design and Build, Project Manager for the design and submission of Earth Retaining & Stabilization System (ERSS) for various projects, and a team leader for geotechnical & temporary works Downtown Line Stage 3.

The projects he has worked on include:
- LTA Contract T209 - TSL Lentor Station & Tunnels, Singapore
- LTA Contract ER296 - Sentosa Gateway, Singapore
- LTA Contract C902 Singapore
- LTA Contract C907 & C903 Singapore
- LTA Downtown Line Stage 3 (Contract 9181B) Singapore
Company Organisational Structure

GEOALLIANCE CONSULTANTS PTE LTD

MANAGING DIRECTOR
Er. NIU JIANXIN

TECHNICAL ADVISORS
Er. Dr WONG IENG HIENG
Er. Dr. WEN DAZHI

DIRECTOR
Er. CHUA CHIN HIANG

STRUCTURAL TEAM LEADER
Er. Wee Soon Eng

LEE EE HUI (SNR ENGR)
S. ATHAVAN (SNR ENGR)
YULIUS GUNAWAN (ENGR)
YANG MING (ENGR)

GEOTECHNICAL TEAM LEADER
MAX GOI

Dr. LIU LUFENG (PR. ENGR)
CAVAN CHAI (ENGR)
YOHAN CHANDIMAL (ENGR)
VERA HIE (ENGR)

DRAFTERS

JIANG YIJIE (ENGR)
Recent Projects

**Capitol Redevelopment Project, Singapore**

The project involves the proposed conservation of Capitol Theatre, Capitol Building & Stamford House as a new commercial and hotel development with 6 basements and subway under North Bridge Road in the vicinity of existing City Hall MRT Station and Tunnel.

GeoAlliance Consultants was engaged by Beca Carter Hollings & Ferner (SEA) Pte Ltd to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS system which was designed by Arup Singapore.

![Image of Capitol Redevelopment Project](image.png)

**Second Changi NeWater Plant (DBOO), Singapore**

The project involves the construction of an extension to the existing Changi NeWater Plant.

GeoAlliance Consultants Pte Ltd was engaged by United Engineers (one of the JV partner of the DBOO contractor) to provide Accredited Checker (Structural and Geotechnical) services.

![Image of Second Changi NeWater Plant](image.png)

**Jin Choon Warehouse & Office Building, Singapore**

The project involves the design and construction of a new 5-storey warehouse cum office building.

GeoAlliance Consultants was engaged by Jin Choon Civil Engineering Pte Ltd to provide detailed structural design and submission services.
### Extension to Chestnut Avenue Waterworks, Singapore

**Client**  
Black & Veatch (SEA) Pte Ltd

**Services Provided**  
Geotechnical Consultancy

**Date Completed**  
In Progress (30% completed)

The project involves the construction of a extension to the existing Chestnut Ave Waterworks.

GeoAlliance Consultants Pte Ltd was engaged by Black & Veatch (SEA) Pte Ltd to provide specialist geotechnical services for retaining wall and foundation designs.

### Keppel Cogeneration Plant at Jurong Island, Singapore

**Client**  
Gammon Construction Ltd

**Service Provided**  
Specialist Accredited Checker (Geotechnical) – ERSS System

**Date Completed**  
March 2014

The project involves the construction of a Cooling Water Outfall Culvert.

GeoAlliance Consultants was engaged by Gammon Construction Ltd to provide Specialist Accredited Checker (Geotechnical) services for the culvert ERSS system.

### SmartTrack Project, Australia

**Client**  
Ang & Ong Consultants Pte Ltd

**Services Provided**  
Geotechnical Consultancy

**Date Completed**  
March 2012

The project involves the review of a proprietary railway track support system that allows floodwater to flow through without undermining its underbearing soils.

GeoAlliance Consultants was engaged by Ang & Ong Consultants Pte Ltd to provide Geotechnical consultancy services for the works.
<table>
<thead>
<tr>
<th>Client</th>
<th>Gammon Construction Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services Provided</td>
<td>Qualified Person (Design) – ERSS System</td>
</tr>
<tr>
<td>Date Completed</td>
<td>January 2013</td>
</tr>
</tbody>
</table>

### Tuas Power Station  New Combined Cycle Plant, Singapore

The project involves the construction of culvert, seal pits, HV duct banks and MV trenches for the new plant.

GeoAlliance Consultants was engaged by Gammon Construction Ltd to provide Qualified Person (Design) services for the ERSS system.

### Murnane Pipeline Project, Singapore

The project involves the planning and design of a PUB water pipeline from Murnane Service Reservoir to Marina South. The pipe line are crossing below serveral MRT tunnels, road and buildings.

GeoAlliance Consultants was engaged by Black & Veatch (SEA) Pte Ltd to provide geotechnical consultancy, construction method, alignment study and cost estimate for the works.
### Temasek Polytechnic – SIT Project, Singapore

<table>
<thead>
<tr>
<th>Client</th>
<th>V3 Construction Pte Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services Provided</strong></td>
<td>Specialist Accredited Checker (Geotechnical) – ERSS System</td>
</tr>
<tr>
<td><strong>Date Completed</strong></td>
<td>Sep 2014</td>
</tr>
</tbody>
</table>

The project involves the construction of a 8-storey institutional building with 2 basements.

GeoAlliance Consultants was engaged by V3 Construction Pte Ltd to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS system.

### Private Residential Development Project at 19 Swettenham Road, Singapore

<table>
<thead>
<tr>
<th>Client</th>
<th>The Visionary Residence Pte Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services Provided</strong></td>
<td>Qualified Person (Design) – ERSS System</td>
</tr>
<tr>
<td><strong>Date Completed</strong></td>
<td>Aug 2014</td>
</tr>
</tbody>
</table>

The project involves the construction of a 2-storey detached house with 2 basements.

GeoAlliance Consultants was engaged by The Visionary Residence Pte Ltd to provide Qualified Person (Design) services for the basement ERSS system.

### Private Residential Development Project at 10 Namly Grove, Singapore

<table>
<thead>
<tr>
<th>Client</th>
<th>Guan Chuan Engineering Pte Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Services Provided</strong></td>
<td>Specialist Accredited Checker (Geotechnical) – ERSS System</td>
</tr>
<tr>
<td><strong>Date Completed</strong></td>
<td>January 2012</td>
</tr>
</tbody>
</table>

The project involves the construction of a 2-storey detached house with 1 basement.

GeoAlliance Consultants was engaged by Guan Chuan Engineering Pte Ltd to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS support system which was prepared by GeoEng Consultants.
### Private Commercial & Residential Development at Jalan Legundi, Singapore

The project involves the construction of a 3-storey mixed development building with 2 basements.

GeoAlliance Consultants was engaged by Kwang Lee Hang Pte Ltd to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS system.

### NeWater Infrastructure Pipeline Contract 7, Singapore

The project involves 17m deep vertical shafts and laying of 4km of deep pipes via tunnelling for NeWater network in Tuas. The tunnel crosses existing PIE expressway.

GeoAlliance Consultants was engaged by the Public Utilities Board to provide Specialist Accredited Checker (Geotechnical) services for the works.
GeoAlliance Consultants Pte Ltd

<table>
<thead>
<tr>
<th>Client</th>
<th>Thomson Line Mandai Depot Advance Works, Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services Provided</td>
<td>GeoAlliance Consultants was engaged by Land Transport Authority, Singapore, to provide Qualified Person (Supervision) services.</td>
</tr>
<tr>
<td>Date Completed</td>
<td>Sep 2014</td>
</tr>
</tbody>
</table>

The project involves the site clearance and formation works for the future Thomson Line Mandai Depot.
GeoAlliance Consultants Pte Ltd

Client
Beca Carter Hollings & Ferner (SEA) Pte Ltd

Services Provided
Geotechnical Advisor and 3D Analysis for ERSS System

Date Completed
In progress

Marina South Mixed Development, Singapore

The development involves the proposed 2 blocks of 31 storey office and 2 blocks of 28 storey residential buildings with 4 level basement and underground shopping malls at Straits View/Marina Way.

GeoAlliance Consultants was engaged by Beca Carter Hollings & Ferner (SEA) Pte Ltd to provide geotechnical conceptual design and carry out Plaxis 3D analysis for the basement ERSS system to verify Beca’s 2D analysis.
Mixed-Use Development at 428-434 River Valley Road (Loft @ Nathan), Singapore

The project involves the construction of a 6-storey mixed development building with 2 basements.

GeoAlliance Consultants was engaged by Admin Construction Pte Ltd to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS system.
Bukit Timah First Diversion Canal Contracts 1 & 2, Singapore

The project involves the proposed improvement to the drainage canal at the Bukit Timah area.

GeoAlliance Consultants was engaged by Public Utilities Board to provide Specialist Accredited Checker (Geotechnical) services for the ERSS system.
**Bukit Panjang Mixed Development, Singapore**

The new development at Bukit Panjang is a Mixed development, comprising of Commercial, Residential and SOHO integrated with a bus interchange. Residential Flat Development comprising 3 blocks of 23-storey Residential Condominium with 2 basement. The basement is within a railway protection zone of Bukit Panjang MRT station.

GeoAlliance Consultants was engaged by Sim Lian Group to provide Civil and Specialist Geotechnical design and consultancy for the basement ERSS system including 13m wide Canal diversion.

**Widening of Upper Paya Lebar Road, Singapore**

The project involves widening of Uppaer Paya Lebar Road from Bartley Road to Upper Serangoon Road.

GeoAlliance Consultants was engaged by Land Transport Authority, Singapore, to provide Qualified Person (Supervision) services.
<table>
<thead>
<tr>
<th>Client</th>
<th>CDM Smith Singapore Pte Ltd</th>
</tr>
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<tbody>
<tr>
<td>Services Provided</td>
<td>Qualified Person Supervision (Geotechnical) for C937</td>
</tr>
<tr>
<td>Date Completed</td>
<td>In Progress (90% completion)</td>
</tr>
</tbody>
</table>

**Qualified Person Services QP(Supervision) for DTL3 Contract 9188A1, Singapore**

The contract 9188A1 is the appointed consultant service for Construction Supervision and review for LTA civil contract, C937 – construction and completion of River Valley Station, shafts and associated tunnels under Singapore River for DTL 3. Basement excavation is within railway protection zone of live tunnels and and tunnelling across under and below existing MRT tunnels.

GeoAlliance Consultants supported CDM Smith Singapore as the QP Supervision (Geotechnical) to supervise Underground Building Works for C937, which was awarded to GS & EC Singapore Pte Ltd.
Qualified Person Services QP(Supervision) for DTL3 Contract 9188B1, Singapore

The contract 9188B1 is the appointed consultant service for Construction Supervision for two civil contracts, namely, C928 – Bedok town park station and associated tunnels for DTL 3, and C929A – Cut and cover tunnels at UBI and TSFB and bored Tunnels between UBI and KKB stations and Reception Tunnels for DTL3.

GeoAlliance Consultants supported Ecas-EJ Consultants as the QP Supervision (Geotechnical) to two civil contracts, which were awarded to Japanese contractors, Nishimatsu Construction Co. LTD and Sato Kogyo (S) Pte Ltd.
**Accredited Checker Services For Thomson Line Package A Contract C2102AC, Singapore**

The contract 2102AC is the appointed Accredited Checker service for independent checking for LTA Consultancy contract C2102 which includes 3 stations including 1 interchange station with NSL Woodland station, cut and cover tunnels and bored tunnels for MRT Thomson Line - Mainline Package A.

GeoAlliance Consultants supported Ecas-EJ as the AC (Geotechnical) to provide independent geotechnical analysis and checking for Underground Building Works for C2102, which has been designed by Arup Singapore Pte Ltd.

**P&G Innovation Centre, Singapore**

P&G Innovation Centre is situated at BioPolis, Buona Vista. The project involves the construction of a 6-storey research & development centre with 2 basements.

GeoAlliance Consultants was engaged by Gammon Construction Ltd to provide Qualified Person (Design) services for the basement ERSS support system and construction decking.
<table>
<thead>
<tr>
<th>Client</th>
<th>Housing &amp; Development Board (HDB)</th>
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<tr>
<td>Services Provided</td>
<td>Specialist Accredited Checker (Geotechnical)</td>
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<tr>
<td>Date Completed</td>
<td>February 2012</td>
</tr>
</tbody>
</table>

**Specialist Accredited Checker Services For HDB Development Teban Garden Road (Jurong East N4 C16), Singapore**

The development comprises 3 Blocks of 38-Storey Residential Building (Total 518 Units) with a Block of Multi-Storey Carpark, ESS, Childcare Centre, Precinct Pavilion & Community Facilities on Lot 8465W PT MK5 at Teban Garden Road (Jurong East N4 C16).

GeoAlliance Consultants was appointed by HDB to carry out the AC (Geotechnical) service to provide independent geotechnical analysis and checking for pile foundation design and evaluation of pile load tests for the development.

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</table>

**Specialist Accredited Checker Services For HDB Block at Woodland Street 31 (Woodlands N3 C14), Singapore**

The development comprises 1 Block of 33-storey Residential Building (Total 222 Units) With Future Communal Facilities, Precinct Pavilion and ESS at Woodlands Street 31 (Woodlands N3 C14).

GeoAlliance Consultants was appointed by HDB to carry out the AC (Geotechnical) service to provide independent geotechnical analysis and checking for pile foundation design and evaluation of pile load tests for the development.
<table>
<thead>
<tr>
<th>Client</th>
<th>JTC corporation</th>
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</thead>
<tbody>
<tr>
<td>Services Provided</td>
<td>Specialist Accredited Checker (Geotechnical)</td>
</tr>
<tr>
<td>Date Completed</td>
<td>December 2011</td>
</tr>
</tbody>
</table>

**Specialist Accredited Checker Services For Removal of Decommissioned Sewer Pipes And Infrastructure Works at Paya Lebar I-Park at Paya Lebar Walk, Singapore**

The development involves a temporary earth retaining or stabilising structures (ERSS) in facilitating the removal of decommissioned underground sewer pipes at Paya Lebar Walk.

GeoAlliance Consultants was appointed by JTC to carry out the AC (Geotechnical) service to provide independent geotechnical analysis and checking for ERSS for the project.

<table>
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<tr>
<td>Services Provided</td>
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<tr>
<td>Date Completed</td>
<td>March 2012</td>
</tr>
</tbody>
</table>

**Specialist Accredited Checker Services For Construction Of Roads, Drains, Sewers and Ancillary Works at Finger One, Tuas View Extension, Singapore**

The development involves a temporary earth retaining or stabilising structures (ERSS) such as cofferdams, working shafts and retaining walls for construction of drains and sewers at Tuas View Extension.

GeoAlliance Consultants was appointed by JTC to carry out the AC (Geotechnical) service to provide independent geotechnical analysis and checking for ERSS for the project.
GeoAlliance Consultants Pte Ltd

Consultancy Services For Preliminary Studies And Visual Inspections For Slopes In Labrador Nature Reserve, Singapore

The consultancy service requires a visual inspection and preliminary risk analysis on the existing slopes in the natural reserve. Suitable slope strengthening and protection method are also part of the service.

GeoAlliance Consultants was appointed by NParks to carry out the professional engineering services to provide inspection, risk assessment, and recommendation for the slopes.
Consultancy Services For Contract ER357- Access Road Connecting Faber Walk To Commonwealth Avenue West, Singapore

The consultancy service requires an Accredited Checker service on the proposed up to 8m high cantilever CBP retaining wall to retain high slopes for a road widening.

GeoAlliance Consultants was appointed by LTA to carry out the independent geotechnical analysis for both temporary and permanent retaining walls and slope stability.
Appointment of Consultant for Supervision of LTA Thomson Line Contracts T211 (Sin Ming) and T215 (Mount Pleasant), Singapore

GeoAlliance Consultants was engaged by Land Transport Authority, Singapore, to provide Qualified Person (Supervision) services.

The scope involves Qualified Person (Supervision) services including the provision of Qualified Site Supervisors (RE/RTO) for the Thomson Line Sin Ming Station, Mount Pleasant Station and associated Cut&Cover Tunnels and Bored Tunnels.
Specialist Accredited Checker Services for Yishun Community Hospital Project, Singapore

The project involves the proposed construction of the new Yishun Community Hospital development with 2 basements.

GeoAlliance Consultants Pte Ltd was engaged by Engineers 2002 (Pte) to provide Specialist Accredited Checker (Geotechnical) services for the basement ERSS system.

Specialist Accredited Checker Services for Proposed Reclamation at Tuas Finger One

The consultancy service requires an Accredited Checker service on the proposed reclamation work at Tuas View Extension. Expected area of reclamation is around 157Ha and perimeter bund is around 4km.

GeoAlliance Consultants was appointed by JTC Corporation to carry out the independent geotechnical analysis for slope stability of caisson structures and slope revetments.
Consultancy Services For Development of Drainage Master Plans for Waterways – Group 2 Catchment: Bukit Timah Canal (Upper) to Sungei Pandan

The consultancy service is to improve flow of waterways and to provide mitigation measures to address flooding at identified locations from Bukit Timah Canal (Upper) to Sungei Pandan.

GeoAlliance Consultants was appointed by Black & Veatch (Singapore) to provide specialist consultancy services on construction methodology, geotechnical matters and temporary works design support.
Laying of gas transmission pipeline from Jalan Bahar to Old Chua Chu Kang Road (TL4.2A) & (TL4.2B)

The consultancy service requires an QP(D) and QP(Geo) service on the proposed 14 nos of pipejacking shafts (max depth of 22m) as well as the open cut excavation along Jalan Bahar to Old Chua Chu Kang Road.

GeoAlliance Consultants was appointed by the contractor to carry out the detailed geotechnical analysis and structural design for the ERSS system in this project.
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