



**DELIVERING
YOUR PROJECT NEEDS
IS OUR BUSINESS!**



C.B. & Associates Inc.

ENGINEERING & MANAGEMENT CONSULTANTS

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C O M P A N Y P R O F I L E

Table of Contents

Who we are?	1
Our vision	1
Our mission	1
Core values	2
HSE Policy	2
Our Expertise	3
The Team	4
Organisational Structure	4
Directors	5
Key Technical Members	6
Our Associate	9
Project Experience	10



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Key Note from the Managing Director

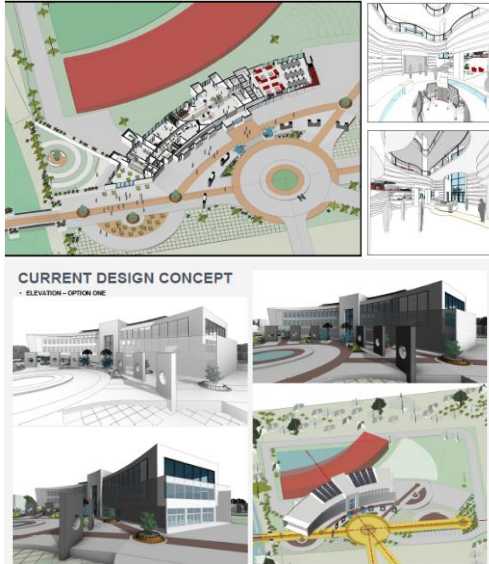
C.B. & Associates Inc. pride ourselves as a professional engineering & management consulting firm, with our key purpose of meeting the needs of our clients. With an experienced core technical unit and accredited associates, both nationally and internationally, we are committed to offering state-of-the-art solutions in infrastructure development and to providing a management team capable of handling small to large scale projects.

Our organization consists of competent, qualified and vibrant individuals, dedicated towards successfully delivering your engineering projects within the core values of time, quality and budget; and ensuring clients' satisfaction.

We look forward to serving you in delivering your project needs.

Bhesram Singh
Director/Secretary

WHO WE ARE?



CBA is a civil engineering and management consulting firm located in Guyana, South America. Initially registered as a business in April 2014, the company was duly incorporated in December (2014), with a board of directors consisting of experienced engineers and business executives.

Since its inception, CBA has expanded, hosting a team of experienced and qualified personnel and offering state-of-the-art engineering design services and construction administration to the private and government sectors.

Delivering your project needs is our business!

OUR VISION

To be sought out as a recognised and trusted firm in the industry and community; retaining, developing and attracting the best in committed consulting leadership; and to drive deliberate and intelligent growth in the company and the industry.

OUR MISSION

Our company is committed to provide accountability and deliver quality engineering and management services above and beyond the standards of the industry.



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CORE VALUE

- Integrity
- Excellence
- Passion
- Innovation
- Team Work
- Safety

CORE VALUES

CBA is built on a set of values embedded within our professional ethics; our requirements to be service oriented; and our desire to be state-of-the-art. These core values represent who we aspire to be:

1

Integrity

We value honesty, trustworthiness and high ethical standards.

2

Excellence

We strive for excellent performance in everything we do.

3

Passion

We are passionate about growing our business locally and regionally.

4

Innovation

We value innovation efforts, ideas and methods to continuously improve.

5

Team Work

We work as one to achieve our corporate goals

6

Safety

Health and safety of our employees, clients, and third party at the workplace is paramount.

HSE Policy

CBA recognizes that its long-term business success depends on our ability to continually improve the quality of our services while optimizing the health, safety, and state of well being of our staff and stakeholders. CBA conducts an active HSE policy to actively strive for ensuring occupational health & safety and environmental protection. Our HSE management system, a living document, is a management system that helps put our HSE policy into action and establishes everyday opportunities addressing risks inherent in our business, including environmental and safety risks. CBA is aware of the impact of its activities and will review our HSE policy annually and revise where needed. The challenge we take is to responsibly manage and reduce the impact of potential risks.



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HIGHLY QUALIFIED PERSONNEL (HQP)

- Directors
- Structural Engineer
- Geotechnical Engineer
- Hydraulic Engineer
- Civil Engineers
- Quantity Surveyors
- Environmentalist
- Project Managers
- Surveyors
- Architects
- Inspector of works
- Civil engineering technicians
- CAD Technicians
- REVIT Technicians
- Administrative and Accounting

OUR EXPERTISE

CBA possesses an extensive networking capacity that extends locally, regionally, and internationally, and can mobilise an expert team to handle jobs within any engineering discipline. With an experienced team and service-oriented approach, we provide a competent level of stewardship for the successful delivery of projects, from design to commissioning. We have successfully delivered several designs, construction supervision, and design-construct jobs, within both the private and public sectors, across various engineering disciplines. Some of our key company expertise includes:

- CBA offers state-of-the-art subsurface investigation with our **MC-23 Rotary Auto Hammer (TMG Manufacturing) with SPT/CPT and UD sampling** capability. The robust MC-23 is the only automated geotechnical exploratory machine available locally and with its CPeT-IT (by GeoLogismiki) software, allows easy data collection and interpretation and borehole logging capability. Through the application of the CPT interpretation software, we can generate 1D, 2D and tabular datasets for reporting insitu soil engineering properties including shear strengths, dissipation data, and settlement.
- We are extremely competent in geotechnical application, and the application of **Geostudio Suite for application in complex soil seepage, stress, and stability problems.**
- We expertly apply building information modeling (BIM) and structural simulations through the application of the state of art **AutoDesk REVIT and ROBOT** for logical, accurate, and fast delivery of engineering designs.





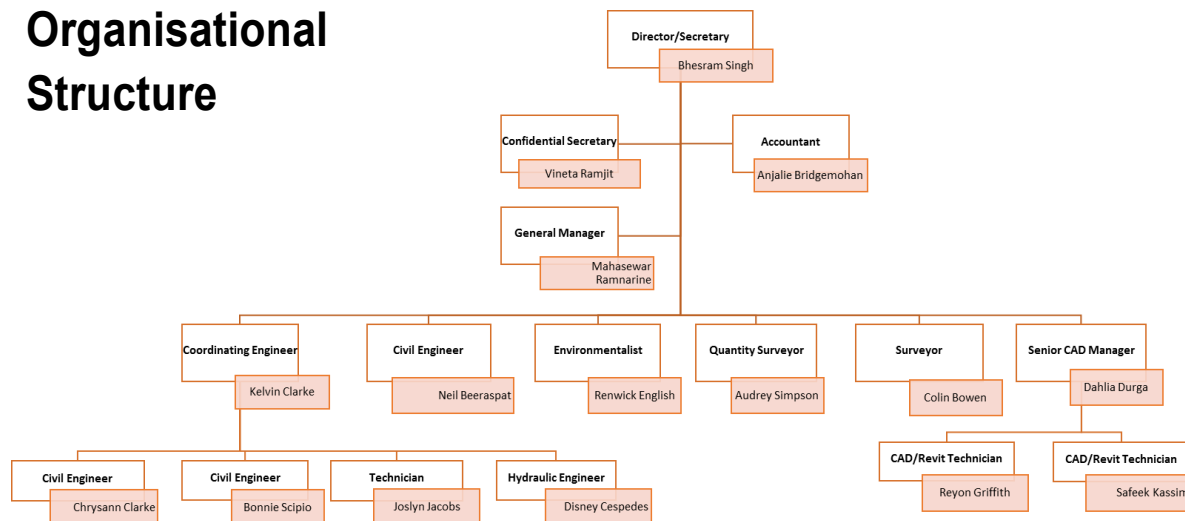
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- We are experts in coastal and hydraulic engineering and have extensive capability in **hydrological and hydraulic modeling with the application of HEC-RAS**.
- We are extremely proficient in the design of foundations and provide optimized solutions due to our vast experience in local conditions.
- Our team of experts provides excellent stewardship, quality control, contract administration, and project management service, by combining experience and young innovation on our projects.

OUR TECHNICAL TEAM

Organisational Structure





Directors

Bhesram Singh (*M. Eng, B.Eng, Dip.Tech.M. PMI*) is the director/secretary of CBA and is the main business co-ordinator. Mr. Singh holds a Masters Degree from Auckland University and is heavily experienced with more than 16 years in the engineering fraternity. Mr. Singh is both experienced and qualified in hydraulics (drainage & irrigation), pavement and highway engineering and geotechnical analysis and designs.



Mahasewar Ramnarine (*B. Eng.; Dip. Tech.; M. PMI; M. ASCE*) is a member of the board of directors and a qualified civil engineer with over 20 years of planning, designing, supervising and directing the construction of civil engineering infrastructure. Mr. Ramnarine has worked in various sectors over the years and has delivered many projects both locally in Guyana and abroad. He is skilled in project management, contracts' administration and onsite implementation of QA/QC programs during construction phase of projects.



Vineta Ramjit is a member of the board and senior administrative officer, with over 8 years' experience in the line of business, she is both competent and resourceful and our first line of communication. Ms. Ramjit forms a key member of the team and forms an important ally to Mr. Singh, with the responsibility for day-to-day management within the organization. Ms. Ramjit expertly multitasks across a range of responsibilities, including organization and scheduling of resources, recruitment and tender administration.



Key Technical Members



Kelvin Clarke (*M.Tech, B. Eng; Dip. Tech.*) is a senior member of staff and a qualified structural engineer. Mr. Clarke holds a Master's Degree from the National Institute of Technology Karnataka (NITK), INDIA and has more than 15 years of post-graduate experience. Mr. Clarke is an expert in the design of bridges, wharves and jetties, multi-storey structures and industrial complexes. He is a former senior engineer within the Ministry of Public Works and has vast experience in public infrastructure.



Neil Beeraspat, MSc (UWI) BSc (UoG). is a qualified and experienced Civil Engineer with a Master of Science degree in Civil Engineering from the University of the West Indies (St. Augustine). Has over three years of experience in construction supervision and designs. Skilled in conducting slope stability analysis using GeoStudio along with conducting structural analysis and design according to the Eurocode standards using Autodesk ROBOT. Mr Beeraspat is a young mind that is well motivated and aspires to grow through every experience and challenge encountered.



Bonnie Scipio (*B. Eng, Dip. Tech.*) is a gifted and versatile engineer with approximately 5 years working experience and has worked on several multi-storey building designs . Ms. Scipio is analytical in her approach and has an affinity for structural engineering. She is also extremely proficient in HVAC designs and is proficient in the use of ROBOT Structures, Revit and several engineering software.



Chrysann Clarke (*B. Eng, Dip. Tech*) graduated from the University of Guyana, in June 2016, with a bachelor's degree in civil engineering. She has four years post-degree experience, and a one-year stint as a technician engineer, during her formative years. Ms. Clarke has an affinity for geotechnical engineering and has developed tremendously in this area over her short career. With an inclination also for project management, Chrysann provides assistance to the senior engineers in the supervision and administration of construction.



Disney Cespedes (*B. Eng*) holds a Bachelor's Degree in Hydraulic Engineering from Oriente University. He also holds a certificate in AutoCad. Mr. Cespedes has worked on several projects in the capacity of a hydraulic engineer in designing, operating and maintaining hydraulic structures such as hydraulic network systems, sanitary facilities buildings, pumping stations, sewage water systems, etc. Mr. Cespedes is also proficient in the use of Epanet hydraulic software, AutoCAD and Revit.



Joslyn Jacobs (*Dip Tech.; Dip. QS*) has in excess of twenty years experience as a civil engineering technician and has worked extensively offering quality control and assurance on construction sites. With a primary focus on building technology, Mr. Jacobs has provided invaluable service on several multi-story complexes in Guyana. Joslyn is also qualified in quantity surveying and provides CBA an important avenue of experience with the Standard Method of Measurement (SMM) and other quantity standards.



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Dahlia Durga (*BSc. Arch., Dip. Tech*) is our architect. She has over 6 years' experience in drafting, designing and reviewing of detailed engineering drawings and is proficient in the use of Revit and AutoCad. Ms. Durga's specific project experience includes production of architectural drawings and preparation of bill of quantities for the upgrade and expansion of a cargo facility at the Cheddi Jagan International Airport and the designing of the NEC administrative building for Ministry of Business. She is also experienced in preparing as-built drawings and overseeing projects of a similar nature from conceptualization to completion.



Reyon Griffith (*Dip Tech.*) is a young and talented addition to CBA's architectural team. He holds a diploma in architecture from the University of Guyana and is experienced and proficient in the use of REVIT and developing building information modelling (BIM). His artistic ability, combined with his formal training, provides CBA with a technician of true value and skill in building rendering and BIM, for the development of innovative building designs.



Safeek Kassim (*Dip. Tech*) holds a diploma in architecture from the University of Guyana. He has approximately three years working experience and is highly skilled in the use of Revit and AutoCAD. Safeek provides the senior team with a competent young technician capable of handling sophisticated rendering, architectural support and structural detailing.



Anjali Bridgemohan (*Accountant/Admin Assistant*) is an accounting technician and holds certificates in ACCA. She is in charge of the day to day financial operations of the company and provides financial projections and analysis to determine which sectors should be targeted.



OUR ASSOCIATES

CBA network extends to several associates locally, regionally and internationally, from which we can access resources. We have previously worked with and remain closely linked to:

- **Colin Mattis & Associates** an experienced and qualified local geotechnical consultant primarily involved in sampling and testing of soils. With over 30 years' experience in the business, Colin Mattis and Associates is a reliable and competent and performs all geotechnical investigation for CBA.
- **Brisbane O'Garro Alvaranga (BOA) Architects** (St. Kitts) is a full scale, award winning multi-discipline consulting firm, noted for innovation, versatility and providing value for our clients in the areas of architecture, land planning, real estate development consulting, engineering and energy efficiency optimization planning. With over 30 years' experience, BOA offers a true ally to CBA in architectural design and planning.
- **Beston (Trinidad)** is a multi-disciplinary engineering consulting organization initially founded in 1992 under the original flagship name, BBFL. With over 25 years in the business and a wealth of experienced and talented technical staff, Beston is our one of our first point of resources.
- **Englobe** is one of Canada's premier firms specializing in the areas of engineering, soil/biomass treatment, quality management and asset integrity, and environmental engineering.



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PROJECTS EXPERIENCE

Since its commencement in 2014, CBA has undertaken a plethora of projects in various sectors, in the capacity as planners, designers and/or project managers /executioner. We feature a synopsis of some of our marque projects below.

Buildings: Our expert buildings team has undertaken several state of the art commercial and industrial type facilities in Guyana.



The Pesticide and Toxic Chemical Laboratory Construction and Office Facility Extension (Mon Repos, Guyana) was completed in 2016. CBA provided architectural and structural design services and construction supervision for the now accredited laboratory facility.



The Yesu Persaud's Medical Teaching Facility (Georgetown, Guyana) is a state-of-art facility designed and supervised by CBA. The building consists of 26,000 square feet of space assigned to classrooms, laboratory facility and living quarters.



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CBA was contracted to undertake the design and construction supervision for the expansion of the **Tropical Orchard Products Company (TOPCO) Fruit Processing Plant at Demerara Distillers Limited** (Diamond, East Bank Demerara). The works consisted of an expansion to the existing TOPCO Facility in the northern and eastern directions to accommodate a new production line, equipment, and office block. The works included the expansion of the tarmac located to the west of the existing TOPCO Main Building as well as the expansion of the tarmac to the east of the TOPCO Juice Factory. CBA successfully designed and supervised the construction of this multi-million dollar facility and civil works.



The **University of Guyana New Library Facility** is a flagship building facility undertaken by the JV of BOA Architects and CBA. The new state-of-the art multi storey facility will consist of approximately 21,000 square feet of dedicated library space. CBA was responsible for the field investigation, structural and MEP design, and preparation of tender documents, bills of quantities, and estimates.



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CBA was contracted to undertake the architectural and structural designs for a **Shore Base Office Block (Houston, E.B.D)** for **Guyana Shorebase Inc. (GYSBI)**. The building consists of 22,669 square feet of space assigned to offices, conference room, etc. The works included HVAC, plumbing, electrical and foundation designs, as well as architectural and structural designs.

The Basic Needs Trust Fund Implementing Agency (BNTF IA) contracted C.B. & Associates Inc. to undertake the design of an **Early Childhood Development Centre** at Rosehall to aid in the early development and stimulation of children within the region. This centre is comprised of a single-storey reinforced concrete and timber structure, approximately 3800 sq. ft in size.



C.B. & Associates Inc. was contracted by the Demerara Harbour Bridge Corporation (DHBC) to undertake design and supervision services for the construction of DHBC Asphalt Plant Administrative & Quality Control Laboratory building at Garden of Eden, East Bank

Demerara. The building consists of two-storey with the ground floor designated the quality control laboratory while the first floor is the administrative office.



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Roads, Drains & Parking Lots: Our engineering team has designed and supervised the construction of several roads and parking lots and ancillary works.

C.B & Associates Inc. was contracted in association with *Rites Limited* to provide supervision services for the construction of the **East Bank – East Coast Road Linkage Project (Ogle to Eccles (Haags Bosch) – Phase 1**. The scope of the construction works includes the pavement sub-base and base course work, asphaltic concrete works, construction of concrete drains and bridges, cleaning and realignment of earthen drains, relocation of utilities, etc.



The MARINS Project (Macorp, Providence, EBD, Guyana) was completed in 2019. CBA undertook its first major design-construct project. The multi-million dollar project consisted of the construction of a heavy-duty parking lot; two bridges and approximately 175m of vinyl sheet pile retaining wall. With the challenges of swampy areas and a compact delivery schedule, the requirements for soil enhancement and strengthening were accomplished through piling and geotextile fabric. With an expert team and prudent project management, the project was completed within the deadline and to the satisfaction of the client.



CBA provided consultancy services to the National Drainage & Irrigation Authority (NDIA) for the **design and supervision of the pump station at Nootenzuil, Region 4**. Included in the works was the upgrade of the all-weather access road to the pump station.



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CBA was contracted to provide design and supervision services for the **construction of the road, drain and parking lot facility for the PTCCB**. The parking lot was designed with a flexible pavement and an asphaltic concrete surface, entrance details, curb, drainage, and retaining wall details.



CBA was contracted to provide design and supervision services for a **Parking Lot Facility to the DSL Supermarket at Great Diamond, E.B.D (Guyana)**. The parking lot requirements included a flexible pavement with asphaltic concrete wearing surface, entrance details, curb, drainage and retaining wall details, and the design of a security fence and lighting. During the construction supervision, emphasis was placed on traffic management at the supermarket and on the East Bank Of Demerara Public Road, to reduce the risk of accidents within this active zone.



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Bridges: With extensive knowledge in bridges and structures design in accordance with AASHTO, our engineering team has designed and supervised several structures. CBA was contracted by the C.H.&P.A. to undertake the ***Design of Heavy Duty Bridges & Drainage Structures at two locations along the East Bank Demerara/ East Coast Demerara Secondary Road Link***:

- (1) Mocha Arcadia, where an elevated multi-span bridge was to be designed, which allows a rural arterial road to pass under the bridge; and
- (2) Ogle, where two options had to be considered: a high level multi-span bridge and a low level multi-span bridge.

The bridges are to be constructed along a virgin road alignment to form part of a secondary road link between the East Coast of Demerara and the East Bank of Demerara, Guyana. The bridges typically were designed with a reinforced concrete substructure founded on pre-stressed concrete piles, and a superstructure consisting of steel girders and reinforced concrete deck slabs and Jersey Barriers.

As part of the design scope of works, the consultant was required to conduct hydraulic analysis on two existing canals and designed 2 No. reinforced concrete box culverts with gated devices to control the water flows. The hydrological design utilized a peak discharge estimator for the hydraulic check on the capacity of the existing canals. The heavy-duty culverts were designed to carry the maximum loading situation of HL-93 and was equipped with gates to ensure the control of the water downstream.



The Manari Bridge (Pomeroon, Guyana) was designed in accordance with AASHTO LRFD. The deck slab and steel girders were designed as composite to carry the HL-93 and lane loads and the hydro-dynamic forces of the Manari River. The substructure was designed to carry the dead and imposed loads of the superstructure and included scour protection to the abutments and pier. The pier was designed with a shallow footing, while the abutments consisted of a piled foundation. The superstructure consisted of reinforced concrete beams, columns (for high-level bridges) and pile caps. CBA also monitored the construction.



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Drainage & Irrigation Systems: One of our core disciplines is drainage and irrigation. Our engineering team has designed and supervised several pump stations across the coast of Guyana



CBA was contracted by the National Drainage and Irrigation Authority (NDIA) to undertake supervision services for the **rehabilitation of the drainage pumps at Three Friends, Essequibo Coast (Guyana)**. The dual 150 cusec pumping station was redesigned during the supervision stage and delivered within the contract period by the consulting team.



The Nootenzuil Drainage Pump Station (E.C.D, Guyana) consists of a single 120 cusec pump module. CBA was contracted to design and supervise the construction of the pump station, sheet pile bulkhead, access road and ancillary works. Similar pumping stations were designed and supervised by CBA at **Hampton Court (Essequibo)**, **Devonshire Castle (Essequibo)** and **Hope (E.C.D)**.



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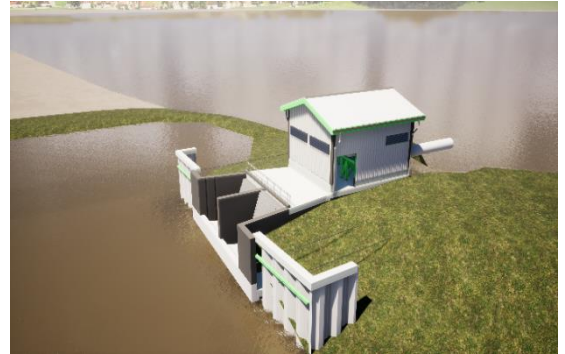


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Currently ongoing:

The Cottage, West Coast Berbice, Region #5 (Guyana) pump station consists of four one hundred cusec pump modules. CBA was contracted to design and supervise the construction of the pump station, sheet pile bulkhead, access road, and ancillary works. Similar pumping stations were designed and are being supervised by CBA at **Andrews, Essequibo Coast, Region #2.**





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Marine Structures & Oil & Gas Shore Base:

With support from our overseas based experts, CBA has undertaken the design of several Marine Structures.

Charity Wharf Feasibility Study and Detailed Design,

a Government of Guyana Project allowed for a feasibility study of a new structure to serve the Pomeroon community and the development of a detailed design from the most feasible alternative. The project allowed for extensive consultation, field



investigation; hydrographic surveys, geotechnical data collection, hydrologic and hydraulic modelling, and detailed designs. The finalised wharf design consisted of prestressed/precast piles and pre-cast beams and slabs and a steel-framed superstructure.

Development of Shorebase, T.K.K. Properties Inc., Eccles, E.B.D. Guyana:

CBA has conducted conceptual design for the development of a waterfront shore base and lay down yard at Eccles on the right bank of the Demerara River. Two options were considered for the wharf frontage: (i) a reinforced concrete rigid wharf structure design and (ii) an open cell design. CBA conducted geotechnical investigations and advanced the preliminary design of the wharf, river defence steel sheet pile bulkhead, structural fill and access road formed the scope of the works. CBA provided preliminary estimates, drawings, and specifications and worked on all statutory approvals for the developer.

Guyana Shorebase Inc. (GYSBI): CBA has been involved in the design of several aspects of civil engineering works for the GYSBI shorebase. As a consultant to GYSBI, we have completed extensive sub-surface investigations and detailed designs for the development of the Houston Shore Base including detailed design of a **bulkhead** for land reclamation and the structural flexible pavement design of the offloading facility, to the requirements of the oil & gas sector (Exxon). Additionally, CBA was contracted to undertake the architectural and structural designs for a **Shore Base Office Block (Houston, E.B.D).**



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Hydrologic and Hydraulic Analysis

CBA was subcontracted to provide a modelling approach towards vulnerability mapping and flood mitigation through recommendations of geometric improvements of the river channel and structures for the St Johns River, Grenada. We utilized Hec-Ras 5.0.7 modeling software to perform river hydraulic and hydrologic analysis of the St Johns study area.



Geotechnical Investigation: Our experienced geotechnical team has conducted geotechnical investigations throughout the length and breadth of Guyana to determine representational soil parameters for the foundation design of building, bridges, roads, pump stations, wharves, etc.



Guyana Shorebase Inc. (GYSBI): C.B. & Associates Inc. provided geotechnical services for the purpose of establishing representative soil parameters for a revetment design. Cone penetration testing (CPT), and standard penetration testing (SPT) were executed to classify the soil strata and to establish parameters for the design.



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GUYANA POWER & LIGHT (GPL): C.B. & Associates Inc., provided geotechnical services for the purpose of establishing representative soil parameters for the development of photovoltaic solar farms on the Essequibo Coast and Berbice. Cone penetration testing (CPT), and standard penetration testing (SPT) were executed to classify the soil strata and to establish parameters for the design.



ETK INC.: C.B. & Associates Inc. provided geotechnical services for the bridge foundation designs for the upgrade of the South Access Road (SAR), Puruni, Region No.7. Cone penetration testing (CPT) and standard penetration testing (SPT) via continuous auger drilling were conducted.



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Tristar Inc: CBA provided geotechnical services at Toevlugt, West Bank Demerara for the **design of a shorebase facility**.

Geotechnical investigations were conducted both on land and within the Demerara River. The subsurface investigation included the drilling of three (3) boreholes to a depth of 35m below ground on the land and two (2) boreholes to a depth of 50m below the Demerara River bed, both via standard penetration testing (SPT).

At Versailles, WBD, CBA also provided geotechnical services for Tristar Inc. This investigation was also for a shorebase facility and included three (3) 35m deep boreholes.



Ministry of Public Works (MoPW):

CBA was contracted to provide a geotechnical services and structural design review of thirty-two (32) bridges divided among six (6) Lots, along the Iwokrama-Lethem trail.

C.B. & Associates Inc. provided geotechnical services for the purpose of establishing representative soil parameters along the Iwokrama-Lethem

trail. Standard Penetration Testing and shear vane testing were conducted. The bridges were designed in accordance with AASHTO LRFD. The deck slab and steel girders were designed as composite to carry the HL-93 and lane loads and the hydro-dynamic forces, including the Pirara River. The substructure was designed to carry the dead and imposed loads of the superstructure and included scour protection to the integral abutments and pier. The pier was designed with a shallow footing, while the abutments consisted of a piled foundation. The superstructure consisted of steel girders, a reinforced concrete deck and pile caps.



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 - Standard Penetration Testing
 - Shear Vane Testing
 - Dynamic Cone Penetration Testing
- Highway, road and bridge designs;
- Pure Water Distribution Systems;
- Engineering and Topographic Surveys
- Construction supervision and project management



With the Government of Guyana's plans to rehabilitate the New Amsterdam to Moleson Creek Road Corridor, CBA was contracted to provide soil testing at each structure location along the road way from Brighton to Moleson Creek. This project include subsurface investigation via cone penetration testing (CPT) and standard penetration testing (SPT) at 50 structure locations along the road corridor.