

# **Singapore**

## *Building & Facilities Services*

- Technical Control
- Site Supervision
- In-Service Inspection & Verification
- Condition Assessment
- Monitoring and Consulting



**CKM CONSULTANTS**  
CIVIL AND STRUCTURAL ENGINEERS  
A Bureau Veritas Group Company



**BUREAU  
VERITAS**

***Move Forward with Confidence***



## Building & Facilities Services

Sustained value engineering is at the core of BV-CKM's philosophy and vision. With a mission to help Clients manage and enhance their existing building facilities, we create economic value for their new facilities through design optimization.

BV-CKM provides customized and performance-driven solutions with a specific concern for domestic regulations and client requirements. In order to meet the needs of our Clients, we provide a wide range of professional services to support construction, operations and enhancement of facilities.

## Construction

The design and construction phases of a project are fraught with risk. A poorly managed implementation program can lead to catastrophic building defects, exponential costs in time & budget and non-compliance with local regulatory standards.

BV-CKM services ensure that projects are managed professionally, with clear and realistic objectives that safeguards buildings soundness and well-being of future occupiers in the most efficient way.

## Operation

The most integral support during the operation stage in a facility's lifecycle comes from experience in regulatory compliance and licensing. The risks of unsafe building, corporate liability and non-compliance can escalate significantly without the support of experts.

Our services help clients minimize risk and improve performance throughout the active and operational stage.

## Enhancement

Beyond the support which BV-CKM provides to owners during the construction and operation of their facilities, we offer specialist knowledge which allows owners to take advantage of changes in local regulations which may present opportunities to enhance the value of their facilities. There are instances where facilities deteriorate or develop serious structural defects, we have the expertise to offer innovative concepts to salvage the situation in the most cost effective manner for Clients.

# Service Portfolio

## Secured Program Prior to Commencement

### Planning

- Feasibility Study
- Permitting Application Assistance
- Technical Due Diligence



## Complying Design Prior to Construction Works

### Design

- Accredited Checking
- Technical Design Review
- Design Management/Coordination



## Installation & Works Complying with Approved Design & Code

### Construction

- Project Management Assistance
- Construction Management
- Schedule Monitoring
- 3rd Party QA/QC
- Qualified Person (Supervision)  
Resident Engineers  
Resident Technical Officers



## In-Service Compliance with Requirements

### In-Service

- Periodic Structural Inspection
- Technical Due Diligence
- Lift Certification
- Fire-life Safety



## Enhancement

### Repair, Upgrading & Demolition

- Structural Investigation / Strengthening
- Forensics Investigation
- Structural Repair



## Accredited Checking Works

BV-CKM is specially licensed as an Accredited Checking Organisation to provide regulatory service in Singapore. Accredited Checking is similar to 3rd Party independent design review and valued engineering and BV-CKM has provided these services outside of Singapore to assist Clients to economise their designs.

Currently, we perform Accredited Checking on large complex projects for international and domestic companies and Government bodies such as Land Transport Authority, Jurong Town Corporation, Shell, Housing and Development Board, SLA and more.



## Qualified Person Site Supervision

BV-CKM is specially licensed to provide the services of Qualified Person (PE-Supervision), Resident Engineers & Resident Technical Officers in Singapore. We perform supervision missions on large complex projects including: Singapore Mass Rapid Transit Underground stations and tunnels, Shell LOBP Plant, Singapore Changi Airport Terminal 1, Total LOBP Plant, JTC industrial projects and others



## Periodic Structural Inspection

Periodic Structural Inspection (PSI) is a regulatory service that is required for all structures in Singapore at certain intervals. BV-CKM is specially licensed to perform services of PSI for all types of structures in Singapore including buildings and infrastructure. We perform inspection missions on large complex structures including: Benjamin Sheares Bridge, CPF Building, several state properties, Ministry of Defence properties and more.



## Structural Investigation

Structural Investigation is not a regulated service in Singapore. The need for this service arises when owners wish to enhance their building or structures to carry additional loads or floors or to change the use of the building. BV-CKM performs structural investigation missions on all kinds of building and infrastructures including: Keppel Viaduct, Former City Hall & Supreme Court, Amara Hotel, Singapore Cricket Club, Abdul Gafoor Mosque, Windy Heights Condominium and others.

Structural investigation works for the former Supreme Court and City Hall buildings for the proposed National Art Gallery, Singapore project >>



## Structural Strengthening and Repair

The need for Structural Strengthening or repair arises when building owner wishes to add loads to a structure beyond the allowable capacity of the existing structure or when it has inherent defects either on the design or its construction resulting in weak structure and when there is no credible data available on the existing building. BV-CKM performs the design reviews of existing structures and analyse structural investigation reports. Many projects have been undertaken including Amara Hotel and Shopping Centre, Evershine Park Apartment, Windy Heights Condominium, Abdul Gafoor Mosque and more.



## In-Service Inspection and Verification

By providing periodic inspection and audit services, BV-CKM helps clients ensure constant compliance, safety and reliability of their facilities and installations in operation, to protect asset, safety and maintain favorable corporate image.

- Fire Fighting System
- Electrical Installation
- Lifts and Escalators
- Heating and Cooling Systems
- Cableways & Amusement Ride

## Technical Due Diligence

The process of selling, buying or leasing a facility is subject to complex risks that require technical due diligence. This process can be applied during the transaction process or as part of an overall technical assessment of an existing building and may include regulator conformity inspections and cost estimates for proposed works.

- Authorization / Permit Assessment
- Main Structure Elements Assessment
- Roofs and Facades Condition Assessment
- Mechanical, Electrical and Plumbing Installations Inspection
- Interior and Exterior Finishing Works Assessment
- Roads and Utilities Infrastructure Condition Assessment
- Structural Inspection

## Green Building Services

The Objectives of the Green Rating initiatives are to assess rate and benchmark the environmental performance of buildings and to evaluate the main aspects of a building's use to monitor its performance and to recommend energy savings solutions.

Consulting Services are offered to help building owners achieve BCA Green Marking / LBBB Certification.

## Registrations and Prequalifications

BV-CKM has license to provide professional engineering services under the Professional Engineer Act and as Accredited Checker Organisation (ACO) in Singapore. Additionally, BV-CKM has staff who are registered professionals in other countries in the region. CKM has also prequalified to tender for various consultancy projects in Singapore. The following are a list of BV-CKM's registrations and pre-qualifications:

1. Public Procurement Panel of Consultants – Grade CS01
2. Panel of pre-qualified consultants with Public Utilities Board (PUB) which enables CKM to tender for all PUB consultancy projects including sewerage, water and drainage projects
3. Government Supplier Registration EPPU Grade S8 for providing Consultancy Services (SER34 and SER19) which enables BV-CKM to take on consultancy contracts of values up to S\$10 million
4. Panel of pre-qualified consultants to carry out Accredited Checking (AC) works for all Public Housing Development Projects. This enables CKM Consultants Pte Ltd to carry out proof-checking works for all the high-rise residential buildings which are mostly of precast concrete construction.



### Americas

16,300 employees  
270 offices & labs



### Europe

14,000 employees  
380 offices & labs



### Middle East Africa Eastern Europe

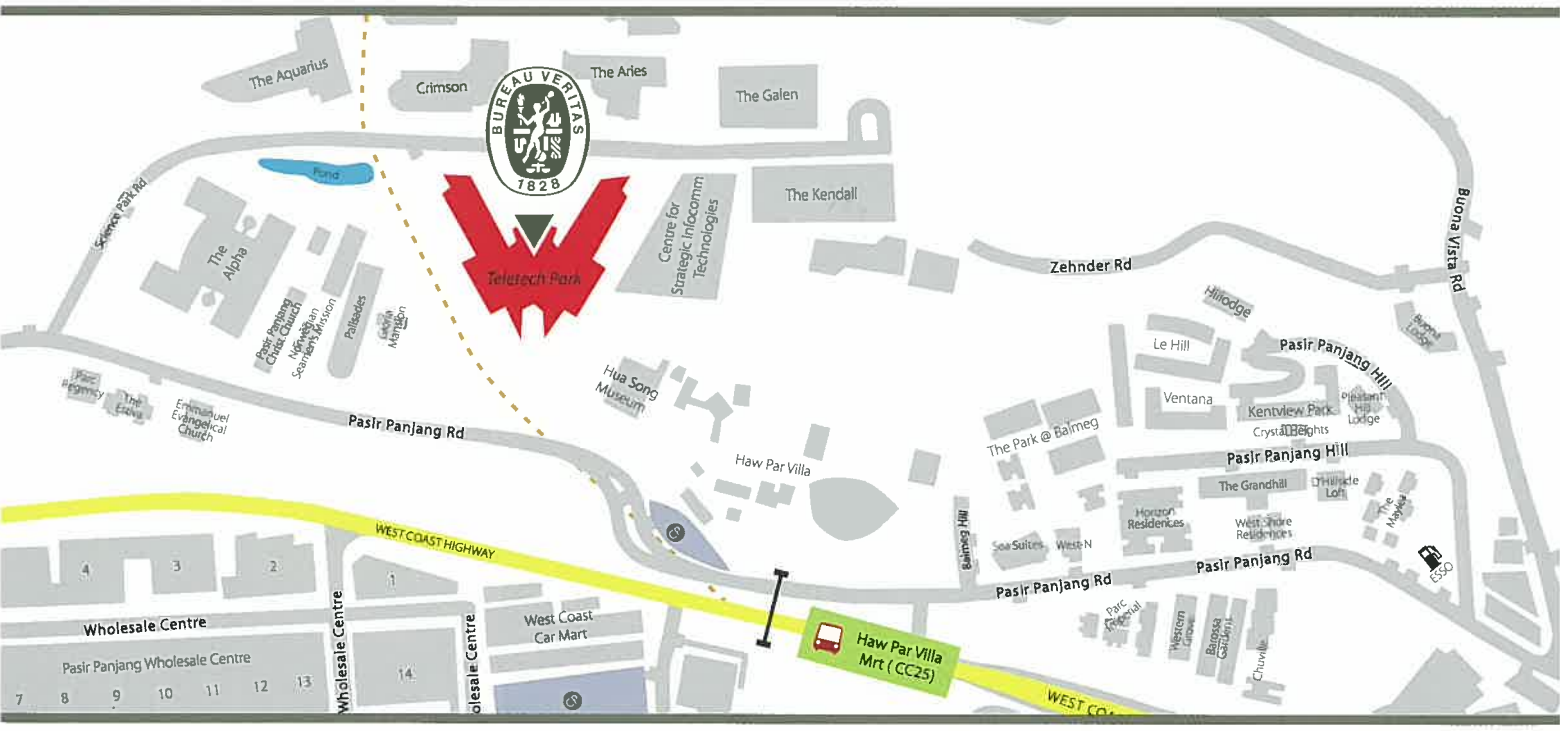
9,600 employees  
290 offices & labs



### Asia Pacific

21,700 employees  
390 offices & labs

- ▶ Fast growing countries 54%
- ▶ 64,000 employees
- ▶ 1,330 offices & labs



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