

## **2017 ANNUAL MESSAGE BY TAN SRI IR. KUNA SITTAMPALAM**

2017 was a successful ground breaking year for HSS Engineers Bhd (HEB). We grew from Strength to Strength on many fronts, both in our services and as well as in our corporate undertakings.

We consolidated our status as a listed company in the Ace Market, within four short months in 2016. In 2017, we applied to be transferred to the Main Market on 3rd May 2017 and thereafter transferred officially on the 8th September 2017.

This was a major milestone for not only are we still the only Engineering Consultancy Company in Malaysia to be public listed but also we are now in the Main Market. Being listed on the Main Market opens up a host of opportunities for HEB but also exposes us to more scrutiny by our stakeholders such as the investing community, the authorities, the media and the General Public. Therefore, its our responsibility to all the above stakeholders and equally important to our clients for us to perform at our utmost with integrity and transparency.

One of the opportunities that we embarked upon immediately on being transferred to the Main Market was for the proposed acquisition of the entire share capital of SMHB Engineering Sdn Bhd for RM270 million, paving the way for HEB Group to become a major player in the Water Resources Engineering sector.

Under the proposed structure, SMHB Engineering Sdn Bhd is the holding company for SMHB Sdn Bhd (SMHB). Established in 1962, SMHB is an engineering consultancy firm, with deep expertise in the water sector across treatment works, distribution, dams, flood mitigation, irrigation and environmental services.

SMHB has also successfully completed many projects overseas, namely in Brunei, Singapore, Indonesia, Vietnam, Papua New Guinea, India and Syria. Currently, SMHB has an outstanding order book of RM337.8 million.

The enlarged entity would also create a formidable workforce exceeding 1,000 strong, with more than 650 personnel in HEB and 403 from SMHB. More than half of them comprise specialist engineers in various disciplines.

We are pleased to share the joy and satisfaction of being involved in 2 successfully completed mega projects in 2017.

Firstly we were the Independent Consultant Engineers (ICE) for MRT 1 and successfully developed a world class MRT running from Sungai Buloh to Kajang.

It was no mean feat, considering that this was the first mega transportation project of its kind while facing challenges in terms of available local expertise, particularly in metro system interfacing and integration, for a fully automated driverless rail service with the following statistics.

## Line wide Features

- 51KM (9.5KM Underground + 41.5KM Elevated)
- 31 Stations (7 Underground + 24 Above ground)
- 5 Inter-Change Stations which allow for connectivity to other lines (KTMB, LRT, Mono Rail & other MRT).
- 2 Depots: - Primary Depot (1) at Sungai Buloh to handle MRT Line1 & MRT Line2 and Secondary Depot (2) at Kajang to handle minor services for MRT Line1. Depot1 has the Main Control Centre that monitors and handles all train movements. There are 7 Master Stations, where there are provisions for local control of trains.
- 52 numbers of 4-car Electric Train sets, each with a carrying capacity of 1,200 passengers. Overall capacity of Line1 is 400,000 passengers per day.
- Fully Automated Driverless Metro with a Signalling System designed to handle train Headway of 109 seconds (CITYFLO 650 CBTC Solutions).
- Currently MRT is running trains at 3.5minutes intervals

The main ingredients for the successful delivery of this project has been the clear vision combined with strong leadership, all in a collaborative spirit of “team work”, wherein the success of the project was at the forefront of every member of the team, representing MRT, PDP, ICE and the Contractors. Therefore, finding a solution for the many challenges faced, along the way, was always underscored by what was important for the ultimate successful delivery of this project on time, within budget and without compromising on safety and quality.

## Carparks & Fare Collection

- 6 dedicated car parks (MSPR) in addition to a number of shared car parks at nearby commercial developments, which are linked to the stations.
- Acceptance of “Touch n Go” cards for seamless travel between different lines and at the “Park n Ride” car-parks.

The second albeit a smaller role was for the very successful SEA Games 2017 held in Kuala Lumpur. HSS was involved in the upgrading of the KL Sports Complex in Bukit Jalil.

Details of the innovation in structural engineering for both the National Stadium and the Aquatic Stadium is explained in the Innovation section.

We continuously improve and strengthen the organisation and as part of that, the boards of the main and subsidiaries are re-organised especially to reflect the various disciplines and bring in more women participation onto the boards.

Our congratulation to all the directors and a warm welcome to the newly appointed director.

<b>HSS Engineers Bhd</b>	
1.	Dato' Mohd Zakhir Siddiqy Sidek
2.	Tan Sri Ir. Kunasingam Sittampalam
3.	Dato' Ir. Nitchiananthan Balasubramaniam
4.	Mohan Ramalingam
5.	Foo Lee Khean
6.	Ir. Sharifah Azlina bt Raja Kamal Pasmah
7.	Ng Kuan Yee (Alternate to Dato' Ir. Nitchiananthan B)

<b>HSS Engineering Sdn Bhd</b>	
1.	Dato' Ir. Nitchiananthan Balasubramaniam
2.	Ir. Sharifah Azlina bt Raja Kamal Pasmah
3.	Ir. Kenneth Ten Fui Chan
4.	Ng Kuan Yee
5.	Ir. Reuben Selvarajah
6.	Ir. Sivaanathan MV Chelladurai

<b>BIM Global Ventures Sdn Bhd</b>	
1.	Ir. Sharifah Azlina bt Raja Kamal Pasmah
2.	Ir. Sundrarajan L. Krishnan
3.	Ir. Md Jamil Ishak

<b>HSS BIM Solutions Private Ltd</b>	
1.	Ganesh Balasubramanian
2.	Ragunathan Jagannathan
3.	Dato' Ir. Nitchiananthan Balasubramaniam
4.	Ir. Reuben Selvarajah

<b>HSS Integrated Sdn Bhd</b>	
1.	Tan Sri Ir. Kunasingam Sittampalam
2.	Dato' Ir. Nitchiananthan Balasubramaniam
3.	Ir. Sharifah Azlina bt Raja Kamal Pasmah
4.	Ir. Kenneth Ten Fui Chan
5.	Ir. Sundrarajan L. Krishnan
6.	Ir. Md Jamil Ishak
7.	Ir. Mathew Philip
8.	Ir. Aruljothy Pahavan
9.	Ir. Khamsah bt Rais

<b>HSS Mekanikal &amp; Elektrikal Sdn Bhd</b>	
1.	Dato' Ir. Khairudin Sidek
2.	Ir. Azman Ab Rahman

We are also pleased to inform you that HSSI is registered with The Unit Peneraju Agenda Bumiputera (TERAJU). Teraju was established as a strategic unit in the Prime Minister's Department to lead, drive and coordinate the Bumiputera agenda as part of the National Transformation Plan.

It is a privilege to be part of the Teraju programme and currently we have over 60% permanent Bumiputera staff and 60% Bumiputera professionals.

## **HSS's innovative efforts in 2017**

### **Integrating Document Management**

With the advancement of internet technology; HSS has taken the quantum leap to migrate many of its day-to-day operations into the paper-less environment.

This includes integrating document management system for a seamless and effective information management across all divisions. The utilization of the system allows for quick access to documents including drawings, reports, correspondence etc. improving work efficiency. It significantly reduces time and effort required for administrative tasks permitting resources to focus towards the design/technical effort and keeping the projects' schedule on time. The use of the document management software also allows projects to be run on site and off site as much as in the office, giving our team the flexibility to collaborate on the go, providing information on the finger tips. This is made possible through mobile-access across organization and geographies.

### **Latest 3D Computer Aided Design (CAD) Software**

Over the years, 2D computer-aided design (CAD) technology virtually eliminated traditional manual drafting tools and has helped engineering companies' increase production of engineering drawings.

As we enter a new era, 3D drawings play an important role in engineering practice, and it is a mature technology that has practical benefits in virtually all phases of engineering design & development processes.

This year HSS has met these challenges by upgrading most of its CAD software to the latest 3D version. These latest software are from CAD market leaders worldwide

### **Secure Virtual Private Network (VPN).**

Due to workplace expansion, HSS has setup two new additional offices away from its headquarters. A secure virtual private network which creates a safe and encrypted connection was required to be setup for the staff at these workplaces to enable them to communicate and share resources such as software applications and file sharing

## **Replacing Desktop computers to Workstation class computers.**

HSS's current mega projects such as ECRL & HSR require high speed computers to meet the demands of these projects. HSS is well into replacing desktop computers to workstation class machines in order to store and open large capacity files with high quality graphics

## **Innovations in Railways**

Our Railway Department have, in this past year, added to their portfolio two (2) mega projects i.e. the East Coast Rail Link (ECRL) Project and the KL to Singapore High Speed Rail (HSR) Project.

Leveraging on our knowledge and track record, our Railway Department performed remarkably by completing the ECRL Railway Scheme within a record time of three (3) months in order to carry out the Public Inspection with SPAD's approval of our scheme designs.

We also secured the longest stretch of the HSR, carrying out the reference designs for the alignment and stations in Johor. It is a proud achievement for the Group, to be a part of this iconic project for our nation.

Both of these projects have tremendously sharpened our skill sets and capability, namely through the exposure due to the international nature of these projects and also with the technology and knowledge transfer obtained during working with international consultants and contractors.

We embrace challenges like this, as it stands for what brand HSS strives to achieve, being at the forefront of innovative developments and using sustainable, renewable energy sources in infrastructure development projects to add value and be environment friendly. We are Malaysia's Engineering DNA!

## **Innovations in MRT ICE**

The ICE for MRT Line 2 takes an overview of all designs – both civil and systems for the Project. The challenges of carrying out design reviews in a very tight schedule and consistently meeting 100% of the client's KPI's is a reflection of the professionalism and organisation of the HSSI's ICE staff. Using the HSSI's QESH system ensured a consistent and high quality review for all packages.

During 2017 ICE has reviewed over 15,000 drawings and raised over 1,600 Design Review Records, as well as participating in over 250 meetings to verify designs, construction, payments, risk issues and Project progress.

The ICE established a systems assurance and interface team to provide oversight and advice on reliability and interface issues. To address the highest risk on MRT Line 2 of an unreliable train system due to inadequate integration between rail systems and civil works, this was established early in the project and looks into design and installation issues between Civil

and Systems packages. Addressing interface and integration matters early in the project and continuing this work through to installation and testing and commissioning will help ensure that a fully functioning and reliable metro railway will be available from day one of operations. Such attention by ICE to interface and integration is a unique approach in these complex metro rail projects and will pay good dividends to MRTC and the travelling public.

## **Innovations in Highways**

An emerging trend in the highway industry is the usage of 3D modelling and HSSI has embarked on this in innovative ways to serve our clients better.

In the Coronation Square Mixed Development project located in Johor Bahru, Trimble SketchUp, was used to convert our interchange design from the conventional 2D design layout into a 3D format for presentation to the client.

Our design involved the reconfiguration of an existing interchange to provide connection between the existing roads and the development in highly complex multiple tiers within the Johor Bahru city centre. The client's response was overwhelmingly positive as the design concept for the interchange ingress and egress ramps can be easily grasped with a 3D perspective.

The design for 3 vehicular tunnels for access to the Bukit Bintang City Centre (BBCC) development, located in a highly congested and sensitive zone in the heart of Kuala Lumpur, also utilized 3D modelling in order to minimize disruption to utility services. Building Information Modelling (BIM) was used as an innovative way to develop a clash free model detailing the existing underground services and tunnel interface.

For the Bukit Bintang City Center project tunnels, contiguous bored piles (CBP) and box cells spanning across Jalan Hang Tuah, Jalan Pudu and Jalan Galloway were adopted to provide seamless access while maintaining live traffic flow. Where the tunnels cross the existing monorail line, we designed a series of contiguous micro piles to cater for the limited vertical clearance beneath the soffit of the monorail structure. To minimize utility relocation, support for existing utilities using I-beam contiguous micro piles (CMP) with timber lagging was designed to allow the tunnel to traverse perpendicularly across the utilities without interference, with a 2m utility reserve for placement of future utilities.

## **Innovations in Building Structures**

A number of Innovating Structural features were introduced in the upgrading of KL Sports City.

### **National Stadium Façade**

A unique façade system made from a series of vertical louvres that has been twisted in response to climatic conditions, offering sun-shading and natural ventilation to the concourse. The main frame is formed by steel truss at varying height which is cantilevered five meters from the existing Piers to cover all the external features of the stadiums. Special

attention was given to the connection design and detailing for construction tolerances, thermal expansions and aesthetics.

### **National Stadium Corporate Box**

The construction involves removal of part of the existing precast risers to accommodate the construction of a new floor with escalators and lifts. Steel construction with composite deck was considered for the new floor to achieve higher strength to weight ratio and faster construction. Hilti drill fix connection was applied for all primary connection to existing RC piers. The construction was executed under close supervision by HSSI engineers to eliminate construction errors and risk.

### **Aquatic Stadium New Diving Platform**

The construction involves demolition of existing diving platform structure and reconstruction of a new diving platform structure with complex shape and wall arrangement. The design considers integration of existing bored piles with new micropile foundation for support and rigorous structural analysis to meet the serviceability limits as per FINA's standard. Building Information Modeling (BIM) technology was used as an enabling tool for interfacing and coordination.

## **Innovations in Bridge and Marine Engineering**

In the year 2017, our Bridge and Marine Department has successfully completed design of bridges, elevated viaducts and port structures for many prestigious projects in Malaysia, which involved many innovative planning, analysis and design. Each project had its own intrinsic uniqueness with regards to the complexity and challenges.

We have carried out highly sophisticated analysis using latest software for the reference design of the proposed High Speed Rail (HSR) from Kuala-Lumpur to Singapore (Package 05) comprising about 80 km long elevated viaduct.

Particular effects which are critical like frequency of repetition, fatigue of materials, repetitive load applications, dynamic structural response, resonance effect, interaction of track and structure, seismic behavior using response spectra etc are considered in the design using Eurocodes guidelines, in order to comply with the passenger comfort and other serviceability criteria for high speed rail operation. We have also developed BIM model for the entire stretch of the viaduct

In developing the concept for the 40 km long bridge / viaduct of the proposed East Coast Rail Link (ECRL), we put major emphasis on the reduction in the in-situ concrete works by adopting mostly precast units for the bridge deck to ensure better quality control and speed of construction.

This year, we have completed detailed design of container terminal (CT9) in Westports, Port Klang, which was designed to cater for the largest container vessel in Malaysia. The construction work of this terminal is ongoing.

## **Innovations in Energy and Environmental Sectors**

### **Providing the base design criteria for the provision of an Information & Communications Technology (ICT) guide for the creation of a SMART CITY in Kwasaland.**

We had assisted KLSB in developing the ICT masterplan RFP in order for them to call tenders to create a SMART CITY within the KLSB development. This will be the first Smart City built from a Greenfield area in Malaysia. A smart city is an urban area that uses different types of electronic data collection sensors to supply information used to manage assets and resources efficiently. The development of this smart city is with a vision to integrate multiple information and communication technology (ICT) and Internet of Things (IoT) solutions in a secure fashion to manage a city's assets – the city's assets include, but are not limited to, local departments' information systems, schools, libraries, etc.

### **The application of solar power as an alternative power source for the operation of Big Dutchman's Warehouse.**

This system incorporated the usage of solar panels and storage battery cells from Germany to minimize the usage of fossil fuel power provided by TNB and reduce the carbon footprint. Once approved by the Energy Commission of Malaysia, the Solar energy stored over the weekend will be fed back into TNB's Power grid thus again reducing the dependence on fossil fuel for power generation.

### **The usage of microwave to incinerate clinical waste for safe disposal.**

The generation of clinical waste in Malaysia has increased significantly over last few decades. Even though the serious impact of the clinical waste on human beings and the environment is significant, only minor attention is directed to its proper handling.

The Telok Kalong clinical waste plant consists of microwave waste treatment hall which has the space for 6 units microwave, loading / unloading facilities for trucks, waste receiving and sorting area, cold room storage, bin washing & drying, treated waste storage, admin office, workshop and other supporting buildings for the development.

### **The application of Fire Safety Design Philosophy (FSDP) for high speed train operations.**

This is an innovative approach to address the conventional designs based on the Uniform Building By-Laws (UBBL). Bomba had highlighted concerns on the fire protection and firefighting systems as the HSR was something new to them. We had developed a FSDP using international standards as well as providing computer simulations to show smoke movement and catchment areas to providing a more comprehensive fire escape system.

## **HSS Quality Policy and Sustainability Statement**

The Group continues to aspire to be the industry leader driving engineering solutions vital for a low-carbon, climate-resilient future for the wider society. We endeavour to ensure our business operations are conducted in a responsible manner while creating value for our planet and the people. To this end, we incorporate relevant sustainability considerations within our strategy, policies, systems and processes in order to build a holistic sustainable business. The Group's environmental and social commitments, policies and processes are currently embedded within our Quality, Environmental, Safety and Health (QESH) Management Systems which are OHSAS 18001, ISO 9001, and ISO 14001 certified.

This year, QESH Department has embarked on pursuing QESH certification for ICE with our mega project, KVMRT Line 2 in getting this ISO certification from SIRIM QAS International. This would be a pilot project. We have also started our journey towards BIM's QESH certification which will certify one more entity, that is BIM Global Ventures.

This additional scope of certification and additional certified entities will enable HSSI to be more competitive as an engineering consultant company in Malaysia. We are proud to have integrated companies, integrated systems and certifications, for HSSI, HSSME, HSSE, and coming on board for BGV. All our effort in an Integrated Management System is to ensure quality of our deliverables and to satisfy all our interested parties and stakeholders.

In 2017, our sustainability initiative included expanding our Sustainability Statement to further address matters that are important to both our internal and external stakeholders. This is done via our Stakeholders Materiality Survey, which highlighted several key priority sustainability themes that are relevant to our organisation and business. We have expanded the number of sustainability themes to include environmental theme for a more holistic coverage of sustainability within HEB. We believe that by adopting a more comprehensive sustainability reporting, we will be able to enhance and refine our sustainability framework. Additionally, we have established a Green Taskforce (Taskforce) to champion various green initiatives within the Group. The Taskforce is focused on spearheading a group-wide digitization strategy that would improve resource efficiency and drive wastage reduction within all processes of the Group. The Taskforce also embarked on an energy savings initiative for the headquarters. This resulted in a 14% improvement in total energy consumption levels of the headquarters in comparison to the previous year.

In line with our aspirations, we have also sought an external assessment on the Group's sustainability framework and disclosures. The exercise also involved identifying action plans that would enhance our group-wide sustainability practices.

Moving forward, we plan on further breathing sustainability into the Group. This will include formalising a sustainability committee to drive sustainability within the Group. The new committee's task will include assessment of our consulting projects for positive environmental and social impact indicators, improve our data collection process to create a sound baseline for a systematic monitoring process and increase our vigilance in enhancing material usage efficiencies throughout the Group.

## **Financial performance**

### **2017 YTD Results**

For the 9 months ended 30 September 2017, the Group achieved its revenue of RM104.5m and its highest ever profit after tax (PAT) of RM8.9m as compared to similar corresponding periods in history. The revenue of RM104.5m, represents an increase of 2.2% over 2016 whilst PAT of RM8.9m, represents remarkable increase of 25% over 2016.

Together with major contracts secured by both engineering services and project management divisions of RM92m to date, the Group's order book has grown to a record level of RM400m.

### **2018**

With the completion of the proposed acquisition of SMHB in early 2018, this shall enhance the Group in terms of market position, track record, order book and financial position. We believe that the enlarged group would be a major beneficiary from the recent Malaysia Budget 2018 particularly from water related projects

In terms of order book, projects and financial position of the Group, these will be covered as per BURSA's requirements in our 2017 Annual Report due out in second quarter of 2018.

Today we are in a very healthy position, both in terms of order book and strengthening of our sectorial portfolios especially with the acquisition of SMHB Engineering Sdn Bhd.

For the coming year, the Group is optimistic of FY 2018 as our healthy order book provides visibility in sustainable earnings moving forward. In addition, our strong tender book in hand sets to position the Group to achieve another record year.

Together as one, we are HEB. We must continue to be looked upon with awe and respect. That is to sustain this image and build HEB further to be the Premier Service Provider locally and regionally.

Wishing all of you A Happy & Prosperous 2018

**With best regards**

**Tan Sri Ir. Kuna Sittampalam**

28th Dec 2017