MSD INNOVATION

ANNUAL REPORT

THE YEAR IN REVIEW

2020

WELCOME TO OUR

HOME OF INNOVATORS

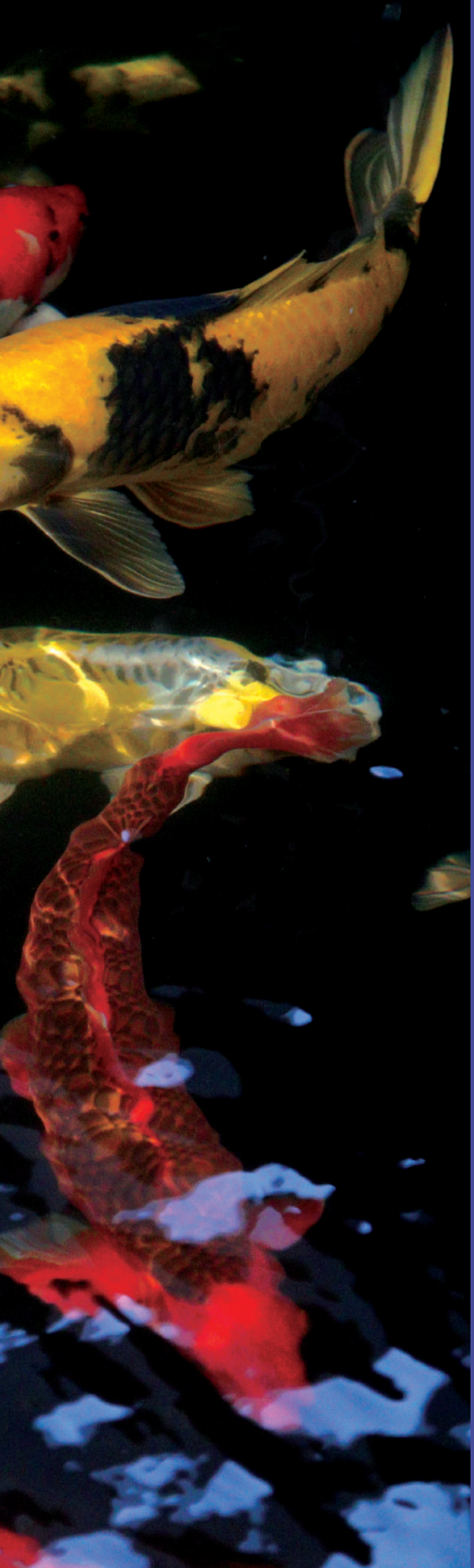


TABLE OF
CONTENTS

CHAIRMAN's MESSAGE

On behalf of the Board of Directors, I am pleased to present our first Annual Report for the year 2020.

2020 is our second year of operation, with MSD Innovation established to spur innovation in area such as agriculture, health, environmental monitoring and flood mitigation, leveraging on new technologies such as IOT to improve lives and social well-being particularly of those in the B40s and youths.

We are pleased that despite the national and global challenges arising from the COVID-19 pandemic and the economic slowdown in 2019 & 2020, we still manage to secure and implement a few initial projects generating a revenue of around RM4.4 million, with one in particular a notable MOSTI project under the National Technology and Innovation Sandbox (NTIS) program.

As we look ahead to 2021, the business is expected to no longer be as usual. This year is expected to be fraught with numerous challenges arising from the COVID-19 outbreak. We must have faith to ride out the storm together as ONE. I am confident that we will be able to successfully navigate through this period of uncertainty and emerge as a stronger and more resilient organisation.

The commendable results of MSD's performance in 2020 is a recognition of our people whose tenacity and focus have steered the organisation forward even during this challenging time. My gratitude is also extended to our Chief Executive Officer, Mr. Jasmi Bin Hassan and all members of the MSD Board of Directors for their guidance and stewardship.

I would also like to express my utmost appreciation to our business partners, vendors and stakeholders for their continued belief in MSD Innovation as their preferred solution partners.

Last but not least, I wish to extend my sincere thanks and appreciation to the Management and staff for their dedication, professionalism and diligent efforts during the year under review.

Tan Sri Halim Shafie

Chairman

ABOUT US

Vision

"Enhancing Lives and Communities Through Technology and Innovation"

Origins of Our Vision Statement

MI's vision statement was crafted based on two core ideals, namely –

- We shall aspire to do good and ensure that what we do shall positively impact the lives of the people and communities; and
- We shall focus on being an innovative, technology driven company.

MI's vision "Enhancing Lives and Communities Through Technology and Innovation" succinctly captures the two core ideals as mentioned above.

"Your innovative and responsive technology partner, driven by passion & reinforced by ideals"

Our Mission Statement "Your innovative and responsive technology partner, driven by passion & reinforced by ideals" certainly encapsulates all of the ideals envisaged above.

Origins of Our Mission statement

- to always remain innovative in order to provide the best solutions to clients and the public. This will also enable us to stay competitive and thrive;
- to be responsive to the needs of clients and end users;
- being passionate about what we do is a pre-requisite for all members of MI; and
- we shall always remain grounded and stay true to our ideals.

MSD INNOVATION PHASES OF DEVELOPMENT

Phase I : "Establishing Presence" (2019-2020)

MI is in its nascent stage of development and its IoT-related solutions have been undergoing R&D and trialling/ piloting through various POCs throughout the past few years.

Phase I is meant to prepare MI for the commercialisation stage ie Phase II, albeit the learning curve during Phase I shall be steep.

Phase I has commenced in 2019 and will be completed at the end of 2020. During Phase I, MI shall focus on targeted advocacy, engagement & promotion activities. This is meant to "plant a seed" in the minds of key stakeholders and decision-makers to ensure that MI's presence as an IoT-solution provider and more importantly, as a technology partner of choice, is ingrained in the consciousness of many. MI has started to carry out its activities towards fulfilling the goals for Phase I and the key initiatives currently undertaken are in various stages of development eg MyKB, MPSJ, Lot 23, SONIC etc.

Besides that, Phase I will also see the completion and launching of SONIC which is an important cog in MI's positioning as a player in the market. Targeted invitations to SONIC issued to key stakeholders will help reinforce MI's image and presence on the national scene. Through SONIC, there are also possibilities for joint training and capacity building initiatives and currently there are already developmental agencies keen to collaborate with MI on this.

Before the end of 2020, it is a key goal for MI to establish its presence on the national scene and this can be established by way of active advocacy and engagement with key stakeholders (governmental and industry). Throughout 2020, MI shall be speaking at key events and conferences, participate in impactful exhibitions and begin to position itself with key stakeholders through high level engagements.

During Phase I, MI shall also begin the process of creating revenue pipelines which shall be tapped in Phase II. MI shall also initiate work to secure contracts (including strategic POCs / pilots). It is also to be noted that the KPIs set during this Phase will very much be tied to development related items in preparation for Phase II and will not focus too much on achieving high revenue numbers.

Phase II : "Commercialisation" (2021-2023)

Phase II shall be the time when MI's commercialisation related activities is at full swing. However, continued advocacy, engagement, promotion & capacity enhancement shall continue to be pursued. At this stage, MI should have already attained MSC status and we shall need to ensure that MI benefits from the various capacity building and market access programmes led by relevant Ministries and developmental agencies.

MI shall also continue to establish new revenue pipelines whilst ensuring that existing clients are maintained through our responsiveness and high quality of service.

As Phase II is the commercialisation phase, the realisation of revenue targets through the pipelines established in Phase I shall be actively pursued. KPIs in Phase II will also reflect revenue generation to ensure sustainability and profits.

During Phase II, MI shall be the national champion for IOT and related solutions. This shall mean that MI should be a well known technology solution provider in the market, with market share in all of its focus areas. At this stage, MI's personnel shall be the speakers and panellists of choice in related forums and platforms. This will also mean that MI shall be gearing up to go beyond our shores and start exploring the regional / international market.

This will also entail preparation in terms of adaptability of personnel, customisation of solutions, adherence to standards and compliance to regulatory requirements.

Targeted capacity building initiatives for MI's personnel shall be continued, both in terms of technological/ professional expertise and also in preparation of carrying out MI's succession plan.

Phase III : "Going Global" develop Global Business (2024-2026).

At Phase III, MI shall be able to consolidate all of its strengths and capabilities gained from Phase II and begin to venture out in building a regional / global presence.

MI shall ensure that it leverages on the regional / international market access programmes conducted by all relevant bodies whether from the public or private sector.

MI shall also continue to establish new pipelines, including those outside Malaysia, whilst maintaining existing clients.

MI shall ensure the achievement of its revenue targets.

Compliance with standards and regulatory requirements shall be also be ensured and maintained.

Stakeholder engagement in Malaysia and beyond our shores shall also be strengthened. There should also a systematic plan to introduce identified personnel to key stakeholders and contacts to ensure a smooth transition, in line with the succession plan.

Capacity building programmes for MI's personnel to be continuously carried out. MI shall have put in place its succession plan.

OVERVIEW

An overview of the key development goals for MI over the 3 phases is as shown below :

PHASE I – ESTABLISHING PRESENCE (2019-2020)	PHASE II – COMMERCIALISATION (2021-2023)	PHASE III GOING GLOBAL (2024-2026)
• Establishing Presence Targeted advocacy, engagement & promotion • Completion and launching of SONIC • Establish MSD Innovation's presence on the national scene • Initiate creation of revenue pipelines • Start securing contracts & revenue	• Continued advocacy, engagement, promotion and capacity enhancement • Establishment of new pipelines whilst maintaining existing clients • Realisation of revenue targets through pipelines established National champion for IOT	• Consolidation of strengths and capabilities • Establishment of new pipelines whilst maintaining existing clients • Achievement of revenue targets • Strengthen stakeholder engagement • Regional/global presence

CORPORATE STRUCTURE

BOARD OF DIRECTORS

Abdul Jalil
Mohamed

Adrian
Abdul Ghani

Mathialagan A/L
M Kanthan

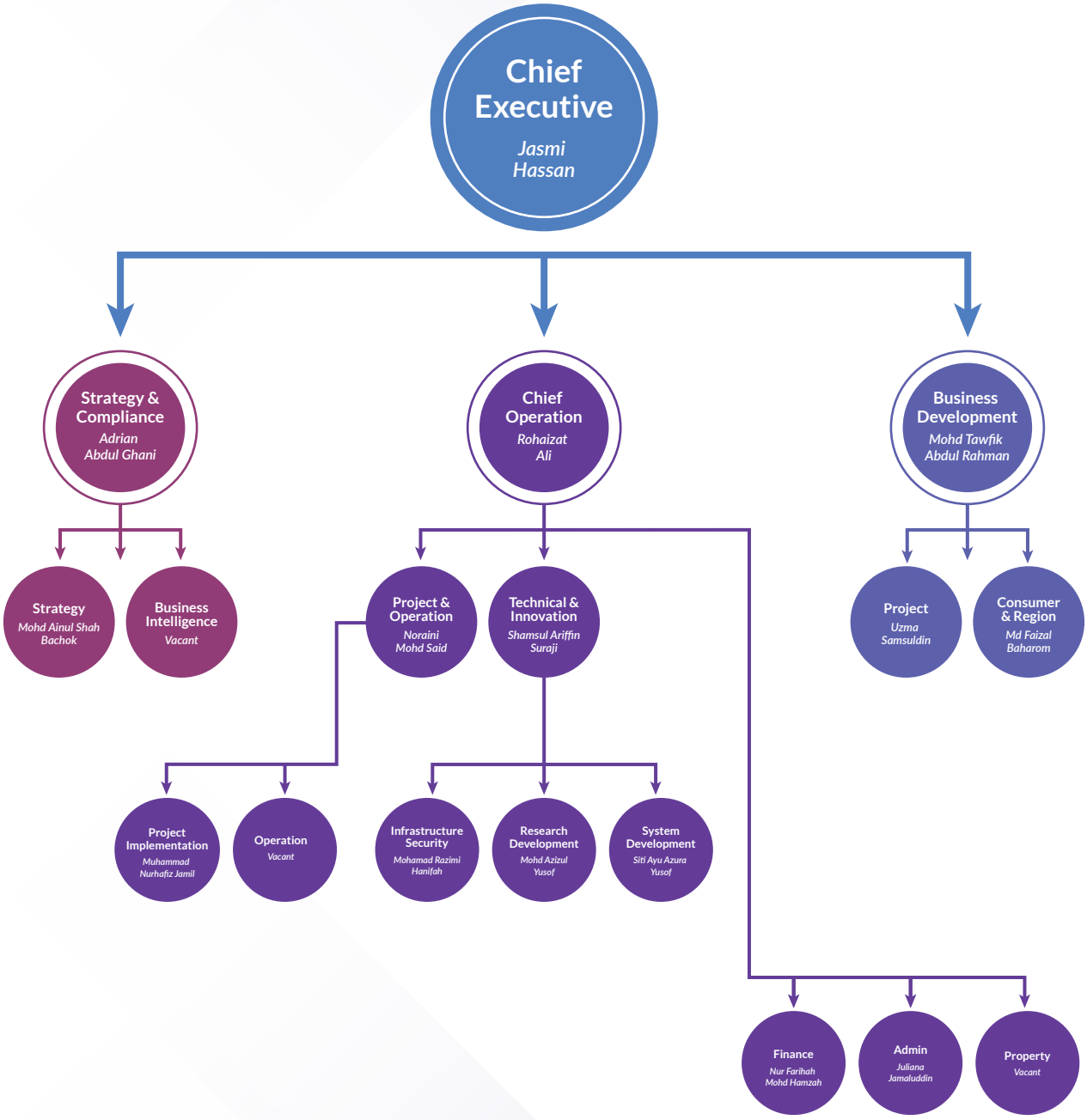
Saliah
Dol Salam

Siti Nur Husna
Mohamad Zawawi

SENIOR MANAGEMENT

Picture: From left Tawfik Abdul Rahman, Noraini Mohd Said, Jasmi Hassan, Rohaizat Ali, Shamsul Ariffin Suraji

ORGANIZATION CHART



OUR SOLUTIONS

ENVIRONMENT
KOTA BELUD

SAIFON system implemented in Kota Belud is a platform that aims to help Local Authorities (PBT) and Disaster Management Committees regulate before, during and after floods occur in a district/state not only alerting users located in different, distant places but also working with numerous people and providing knowledge support to new users.

All stored data is processed and analyzed based on information from depth measured in collaboration with JPS Sabah. The system allows authorized users to access reports, documentation and other operational data to analyze the current water level situation

This system can help the authorities monitor the condition of the evacuation center during a disaster, especially the check-in and check-out of disaster victims in the evacuation center to ensure the situation runs smoothly and orderly. By using this system, each disaster victim only needs to provide an identity card number or full name to the disaster worker to be registered into the system.

Picture: Installation of Smart Safe Solutions/CCTV at Pasar Besar Awam

Picture: Kota Belud river

Picture: Smart Water Level Monitoring MBSJ at Balai Polis USJ

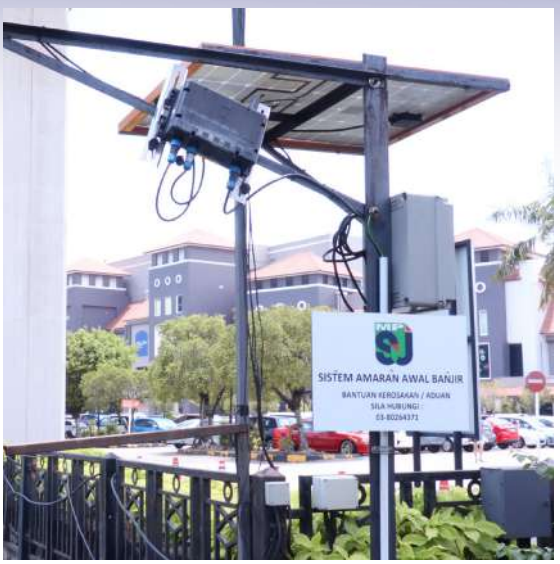
Picture: Smart Water Level Monitoring MBSJ at Balai Polis USJ

ENVIRONMENT
WATER LEVEL MBSJ

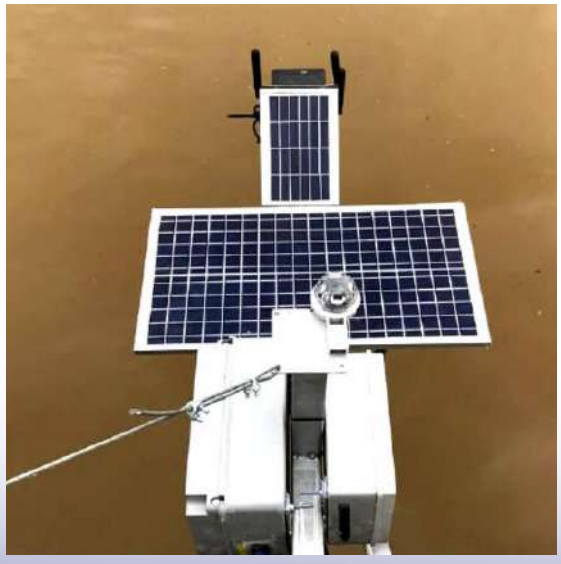
Water level monitoring system as an early warning of water level that can prevent unwanted things like flash floods. The innovative system will inform the resident about the water level and to prepare for the worst can happen is very important nowadays, especially when it rains heavily

This system works by using an ultrasonic sensor that places the water surface. The water level measurements is to give an early warning when the water level reaches a certain height. The sensor was installed in four locations, namely IOT Mall, Balai Polis USJ, Taman Park Siong, Kinrara and USJ 13.

Picture: Smart Water Level Monitoring MBSJ at iOi Mall, Puchong



Picture: Information signage by MBSJ at site location



ENVIRONMENT

WATER LEVEL JPS KELANTAN

Proof of Concept (POC) Water Level dan Water Quality Monitoring with Jabatan Pengairan dan Saliran (JPS) Kelantan.

Collaboration with Zedcon Engineering (M) Sdn Bhd Installation water level dan rain gauge sensor at Sg Melor & Pengkalan Chepa.

Picture: Smart Water Level Monitoring JPS at Sg Melor, Pengkalan Chepa

Picture: Smart Urban Farming Solution

AGRICULTURE
SMART FARMING

MSD Innovation has developed a Smart Farming solution which has enabled to create conducive operational conditions through the application of IoT which will provide resource and time savings, heighten convenience and minimise human intervention.

The automation of functions for inputs such as nutrients and artificial lighting within the controlled environment is further enhanced by the use of digital dashboards and mobile applications to enable farm management to be done remotely.

MSD Innovation Sdn Bhd is participating in The National Technology & Innovation Sandbox (NTIS) Initiative. MOSTI leads the NTIS which is supported by the NTIS Secretariat represented by Malaysia Global Innovation and Creative Centre (MaGIC), Technology Park Malaysia (TPM), MIMOS Berhad and Futurise to coordinate and facilitate implementation. Malaysia Technology Development Corporation (MTDC) provides funding for the entire NTIS initiative.

Our main objective in participating in the NTIS programme is to make Smart Urban Farming accessible to all, prove that we can provide an affordable smart urban farming solution based on the Internet of Things (IoT), and use SUF as a means of empowerment where it can improve the socio-economic status of target groups such as youth, B40 and underserved communities.

There are three objectives to be achieved through the MSD Innovation for NTIS programme:

Providing an affordable Smart Urban Farming Solution can be rolled out and will be able to generate revenue for the smart farmer.

Providing a user friendly dashboard and mobile application that can be used by farmers and also provide a monitoring dashboard for funding agencies.

To work with MTDC Academy to provide a training module for the SUF Agroprenuer.

To achieve objective 1, we are working 3 agencies to set up indoor NFT at 4 sites and outdoor Dutch Bucket at 2 sites

System	Location	Partnert
Indoor NFT	Faculty of Engineering, MMU	MMU
Indoor NFT	Taman Lestari Perdana	Bioeconomy
Indoor NFT	Plaza Serdang Raya	Bioeconomy
Indoor NFT	Pusat Bandar Puchong	MBSJ
Indoor NFT	Adjacent Executive Apartment EA1 & EA 2, MMU	MMU
Indoor NFT	Kebun Komuniti Taman Puchong Intan	MBSJ

Picture: Dutch Bucket system at MMU

Picture: Commercial Hydroponic Dutch Bucket System for Eggplants at Kebun Komuniti Puchong Intan

AGRICULTURE
SANDBOX

The implementation of an IOT-driven smart urban farming solution can be priced low enough & be made easy to operate and manage, without sacrificing any of its efficacy and productivity.

This shall mean that the solution will benefit all segments of society, where it can provide an avenue for income generation and be a useful tool to empower and elevate target groups such as the youth, B40, underserved communities etc.

NFT Outdoor at Petting Zoo, Kompleks 3C MBSJ - Corporate Social Responsibility Project Student from Maahad Tahfiz will be operate the farm and monitor by MBSJ

Picture: Indoor Nutrient Film Technique (NFT) hydroponic system at MMU

Picture: Clooser look at Romaine Lettuce growing in our (NFT) system at Lestari Perdana

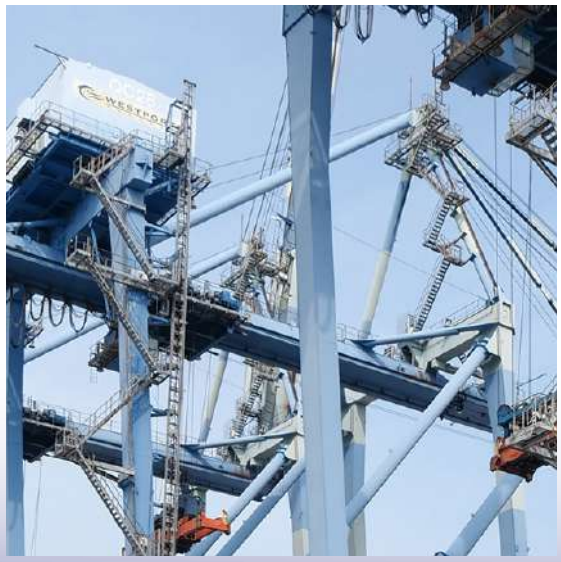
Picture: Air Quality Monitoring system at Westport, Port Klang

Picture: Architecture of Air Quality Monitoring System

ENVIRONMENT
AIR QUALITY MONITORING WESTPORT, PORT KLANG

The air quality monitoring system with integrated sensors and software measures the concentrations of air pollutants in an urban environment such as PM2.5, PM10, etc. It transmits the data in real-time to a cloud platform via a wireless communication protocol. The device is fully solar-powered and has a long battery backup. The data is accessible through the monitoring software, which visualizes and analyzes the data in desired formats such as alerts, maps, trend analysis, etc.

The processed and analyzed data is also made available to the employees of Westports Sdn Bhd through our proposed mobile application. This mobile application is a platform that allows the community to receive the latest localized information and events including alerts and haze warnings.



CONTINUOUS RESEARCH AND DEVELOPMENT

SENSOR APPLICATION INNOVATION CENTRE

Sensor ApplicatiON Innovation Centre or SONIC for short is a modern workplace where the culture of innovation is built. The main purpose of setting up SONIC is to create the centre of user experience in the organization. It has a wide range sensor applications inside and outside the building that can be monitored and commanded from a single control centre.

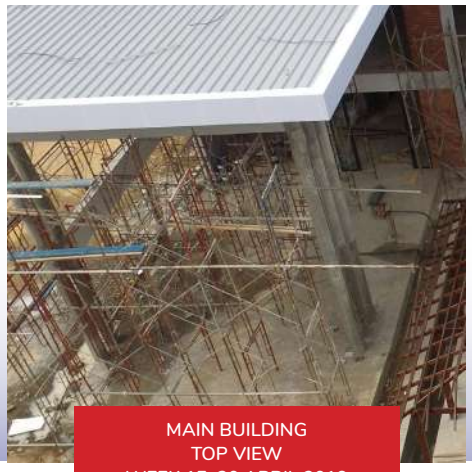
In planning for the future, SONIC is able achieve the goal of Sustainable Development Goals)SDGs through good health and well-being, living on the land, decent work and economic growth, responsible consumption and production, and creating a strong and global partnership.

Dynamic, multidisciplinary team helps our partners and clients solve the problem and deliver the solution using the Internet of Things (IoT), with a particular focus on agriculture, environment and healthcare. SONIC also provides opportunities for staff and visitors to learn with real sensor applications for real users and customers.


MTDC-NFT (Timeseries)
Nutrient Ta
BLUELAB MTDC - WATER QUALITY
Real time - last day
PH
EC
WT


Air Quality

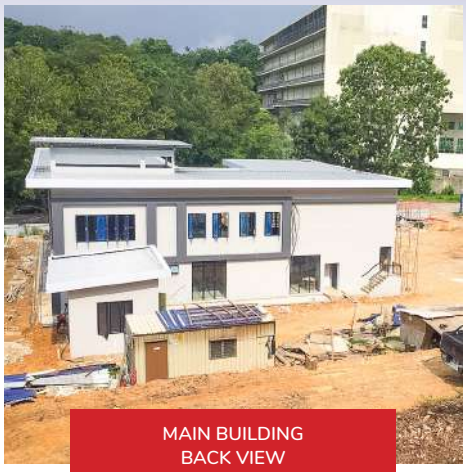
SONIC DEVELOPMENT



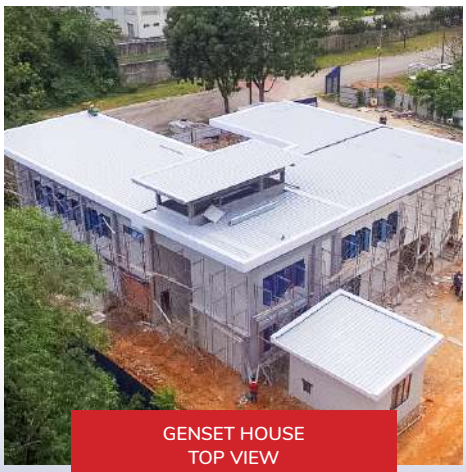
MAIN BUILDING
TOP VIEW
WEEK 15: 30 APRIL 2019

POND & MEETING ROOM
TOP VIEW
WEEK 19: 28 MAY 2019

MAIN BUILDING
SIDE VIEW
WEEK 21: 18 JUNE 2019



MAIN BUILDING
BACK VIEW
WEEK 21: 18 JUNE 2019

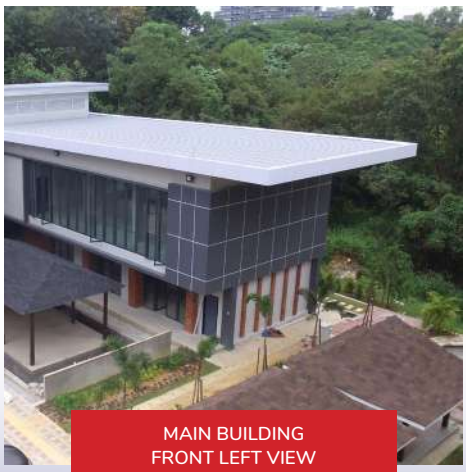


GENSET HOUSE
TOP VIEW
WEEK 25: 16 JULY 2019

MAIN BUILDING
FRONT LEFT VIEW
WEEK 29: 13 AUG 2019

POND & GAZEBO
TOP VIEW
WEEK 29: 13 AUG 2019

POND & GAZEBO
TOP VIEW
WEEK 29: 13 AUG 2019

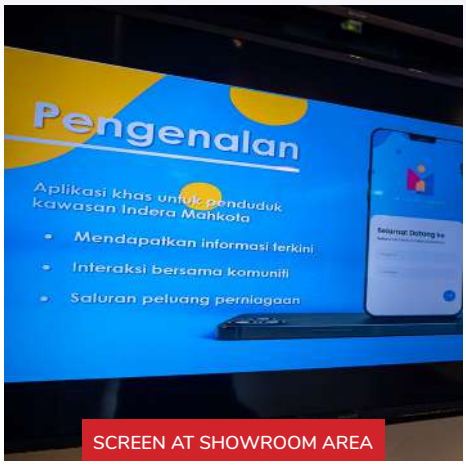


MAIN BUILDING
FRONT LEFT VIEW
WEEK 43: 12 NOV 2019

MAIN BUILDING
FRONT LEFT VIEW
WEEK 43: 12 NOV 2019

SONIC FACILITIES

LABORATORY

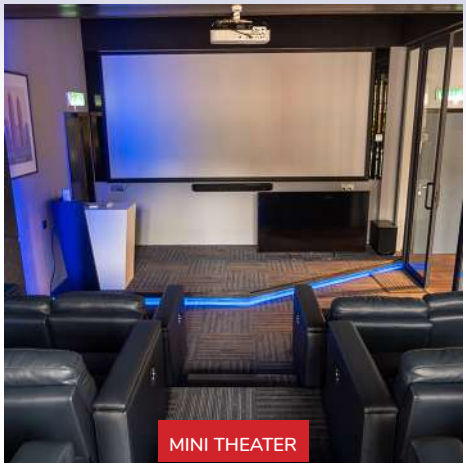


SCREEN AT SHOWROOM AREA

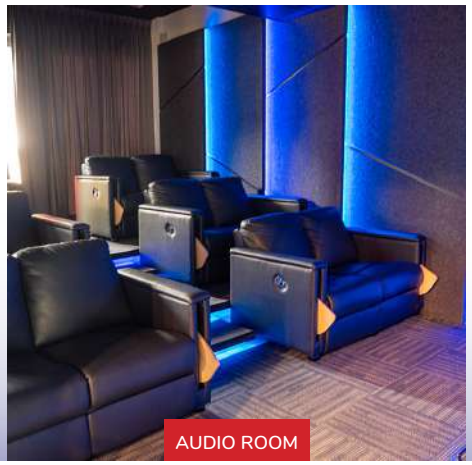
IOT SENSOR

SHOWROOM

DISPLAY AREA



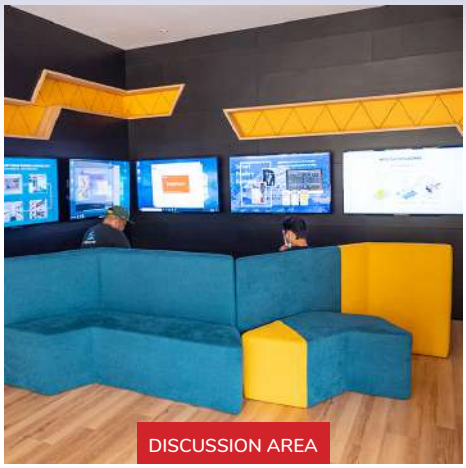
MINI THEATER



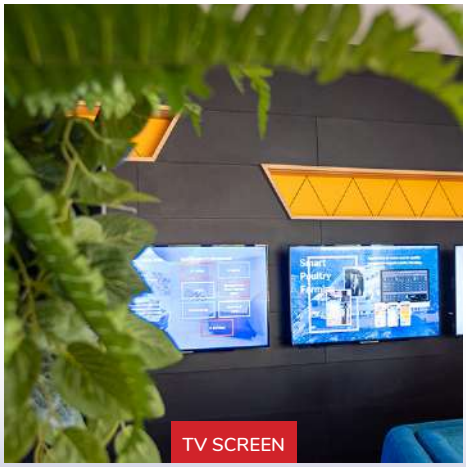
AUDIO ROOM

WORK STATION

HANGING CUBE & RACK



DISCUSSION AREA



TV SCREEN

DISCUSSION AREA

PARTNERS

Introduction to Hydroponic for Students at Kompleks 3C involves MBSJ & MI's Corporate Social Responsibility (CSR) initiative and will involve selected students who will be monitored by appointed supervisors. supervised.

The objective of Flood Alerts initiative is to assist in detecting flash floods early by way of monitoring the rise in water levels at the relevant rivers and monsoon drains which contributes to flooding.

MI and MTDC entered into a collaboration in relation to Smart Urban Farming, specifically for the deployment of two (2) smart urban farming sites in UPM-MTDC Technology Centre showcasing a rooftop installation (Dutch Bucket - hydroponics) and also an indoor installation (Nutrient Film Technique (NFT) – hydroponics).

MMU agreed to provide two (2) suitable locations in MMU's campus for the provision and installation of the SUF System Dutch Bucket (outdoor) and (Nutrient Film Techniques (indoor).

MMU has provided a list of students (5 students) whom are the families are from B40 category (bottom 40% of low-income earners) or beneficiaries of zakat ("Asnaf") to run both SUF projects.

Bioeconomy has agreed to collaborate with MSD Innovation to develop the SUF value chain such as to increase the production of agricultural products such as obtaining sources of supply of quality seeds, bio-nutrients, cooperation in terms of planting technology and also agriculture.

Bioeconomy has selected and recommended two (2) participants who are from B40 category.

We have collaborated with TENTRA, MTDC to come up with the SUF Training Manual which consists of (2) modules, namely the SUF Technical Module and the SUF Entrepreneurship Module.

On the 3rd December 2020, we had conducted 3 days' workshop to develop Level 2 & Level 3 Standard of SUF Training Module with TENTRA.

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