Singapore Institute of Building Limited

# Build News

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# Decentralise Operations with Digital Construction Management

*BY VANESSA TANG, ACEPLP*

The COVID-19 pandemic has posed great challenges to businesses, especially in the construction sector. There is a new normal, one that is marked by endless disruptions as we react to the multiple disruptions that come with the rapidly evolving situation. Through digitalization, companies can build their capacity to remain agile and resilient and manage disruptions in the COVID-19 world.

Digital construction management is achieved through the use of Building Information Modelling (BIM) and a connected data environment. It enables project managers and all relevant stakeholders to continue to have a line of sight to the broad and detailed views of all phases in a project. This allows them to mitigate or avoid problems that can stall a project.

This is easier to implement in Singapore due to the existing widespread adoption of BIM in most construction projects. The BIM mandate in Singapore has accelerated the nationwide adoption, in collaboration with government procurement entities (GPE), sets the stage for the use of digital tools that can be implemented on top of the BIM models to productively manage construction processes.

## 4D BIM vs VDC

BIM software provides model-based processes to plan, design, organize and manage buildings and infrastructure. These can include modelling and drafting tools such as Autodesk Revit, Bentley OpenBuilding or MicroStation, Tekla Structures, or ArchiCAD.

BIM models created using these tools can be combined with a digital project schedule that allows you to visualize how the project is planned for construction. This is typically known in the industry as “4D BIM”. Virtual Design and Construction, or VDC, involves taking this one step further to apply process improvements and increase the efficiency of the project through 4D BIM sequencing.

## Construction Schedules

The construction schedule is a blueprint of when and how a project is to be executed. It is the backbone of the project that outlines project timeframes and milestones and tracks the progress of the project to keep the process on time and within budget.

The construction schedule can be created in products such as Microsoft Projects or Oracle Primavera. Newer products on the market, which allow you to perform VDC processes, such as Synchro Pro, offer free integrated tools (Synchro Scheduler) for building the construction schedule.

## Combining the Schedule with the BIM

Products such as Synchro 4D and Navisworks allow for the application of 4D scheduling and simulation by combining the construction schedules with the BIM model. The result of combining the BIM model with the construction schedule results in the animation of the construction project.

By combining the schedule with the BIM, you are using a digital environment to create, analyze, edit, report, and manage projects through a single, visual 4D interface.

The ability to visualize creates a sort of increased situational appreciation from the armchair in your home. These functions allow the construction team to improve the quality, safety, productivity, and efficiency of construction projects.

## Achieve Remote Collaboration

This article simply outlines one way of using digital tools to achieve digital construction management practices. It is very doable considering the high rate of adoptions of BIM in the country.

There are other methods of digital construction management, some that include the use of photogrammetry and drones to capture the context and automatically create 3D models for review.

By applying digital construction management tools and practices, project stakeholders can plan, collaborate, and make real-time decisions regardless of location. On-site or in-person meetings are no longer required. Various teams on a construction project can make decisions based on the model.

## Towards Greater Resilience

All business today, including construction businesses, urgently need to meet today's demand for decentralized and digitalized operations. It is one way in which businesses can mobilize, stabilize and return to work despite the multiple disruptions posed by COVID-19.

## About the Author: Vanessa Tang, AcePLP

*Vanessa Tang is an SIBL Director and a leading BIM Advisor for guiding firms in the Built Environment to digitise and enhance their Integrated Digital Delivery workflows. She is a Corporate Development Director at AcePLP, which offers Building Information Modelling, Virtual Design and Construction, reprography, and digitisation services. Her clients include government agencies, consultants, and contractors working on Singapore's Built Environment projects. She works with Autodesk, Bentley, and Trimble to deliver technological and information management solutions for her clients. She also helps to set up BIM teams and groom future talent for the Built Environment.*

# Reasons for Contract Management Failure in Construction Projects

*BY AMILA GAMAGE, SIHELA CONSULTANTS*

Contract management is not an easy task, and it is a vital part of construction project management. However, some projects end up without success due to poor contract management. A project is said to be successfully delivered when it is completed on time within the cost and according to agreed quality. But, delays and cost overruns are common in most construction projects due to different reasons. Changes to its quality are one of the reasons.

However, if a project fails, this also can be due to conflicts, and as a result, delay and cost overruns occur. Considering all these facts, contract management has a vital role to deliver a successful project. Therefore, it is obvious that poor contract management affects the project's successful delivery. While there are different reasons for contract management failure, this article will share the three most common reasons that we can see in construction projects.

# REASONS FOR CONTRACT MANAGEMENT FAILURE IN CONSTRUCTION PROJECTS

## Poor understanding of the contract document

Contracts are legal documents. Sometimes, due to lack of understanding of the contract document can create conflicting situations. There are times that the same contract clause is interpreted in different ways by team members and still it sounds valid. Such situations can cause delays and even disputes that affect the project delivery.

## Poor communication between the teams

Any construction project includes different teams. Poor communication between these teams can affect contract management. This is why good communication is crucial for project success. Poor communication among the project stakeholders can lead to delays, rework, and even disputes.

## Scope changes

While there are ways to handle scope changes contractually, if not managed properly, these changes can affect the project performance. Poorly defined scope or incomplete drawings can later create grounds for changes to the contract. If not handled on time and wisely, that affects the contract management and the success of an overall project with issues such as delays and cost overruns.

Finally, project delivery is not all about completing the project as per the drawings. A project should be delivered according to the time, cost and quality specified and agreed upon in the contract. Therefore, successful contract management is equally important in construction management. By identifying the possible reasons for failures in contract management, the contract team can contribute effectively towards the success of any construction project.

## About the Author: Amila Gamage , Sihela Consultants

*Amila Gamage is the founder and contracts manager of Sihela Consultants, where she offers quantity surveying services, consultancy, and training solutions for her clients in Singapore and overseas. As an ACLP certified trainer and a lecturer for various educational institutes and organizations, she helps learners to gain industry knowledge on relevant topics, including Facilities Management and Contract Management.*

SINGAPORE GREEN BUILDING COUNCIL

gmap.sgbc.online

# Accrediting Green Building Professionals

The SGBC Green Mark Professional Qualification Scheme succeeds the BCA Green Mark Specialist programme and aims to uplift, upskill and recognise green building competencies of professionals active in the built environment sector.

## Certification Types

### Green Mark AP

The Green Mark AP certification qualifies industry professionals with the knowledge and expertise needed for the implementation of Green Mark projects.

- Green Mark Accredited Professional *(Green Mark AP)*
- Green Mark Advanced Accredited Professional *(Green Mark AAP)*

### Green Mark AP (FM)

The Green Mark AP (FM) certification qualifies industry professionals with the knowledge and expertise needed to maintain and operate green buildings.

- Green Mark Accredited Professional (Facilities Management) *[Green Mark AP(FM)]*
- Green Mark Advanced Accredited Professional (Facilities Management) *[Green Mark AAP(FM)]*

## Continuing Professional Development

A key feature of the SGBC Green Mark Professional Qualification Scheme is the establishment of a Continuing Professional Development (CPD) framework for all Green Mark APs. Through a host of meaningful programmes and activities, Green Mark APs are able to remain abreast of industry trends and stay ahead of sectoral developments.

Green Mark AP certifications are renewed annually upon fulfillment of the renewal requirements.

Renewal requirements **for Green Mark AP and Green Mark AP (FM)** → **12** SGBC-GMAP CPD Points

Renewal requirements **for Green Mark AAP and Green Mark AAP (FM)** → **18** SGBC-GMAP CPD Points

About the scheme

Upcoming CPD activities

Renewal Requirements

Frequently Asked Questions

**Singapore Green Building Council**
Block H Level 2, BCA Braddell Campus
200 Braddell Road, Singapore 579700

Tel: (65) 6732-5518
Email: gmap@sgbc.sg

# 39th ANNUAL GENERAL MEETING

The 39th ANNUAL GENERAL MEETING of the Institute held on Wednesday, 30th September 2020, on the virtual platform, ZOHO. The meeting was called to order at 8.00 pm sharp by President; Dr. Victor Ong.

With the due process of nomination paper and votes (unless uncontested), the following member was duly elected to serves on the Board of Committee for 2020/2022 :

## BOARD OF DIRECTORS

## 2020-2022

President
Dr.Sussie Ketit
**sussie@sibl.com.sg**

1st Vice President
Shane D Ward
**1vp@sibl.com.sg**

2nd Vice President
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d'Avezac de Moran
**2vp@sibl.com.sg**

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Asst. Hon. Treasurer
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# 2020-2022

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Director
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# 2020-2022
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In-House Auditor
Ivan Teo Leon Shen
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## Secretariat

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PA to President
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SIBL - CIJC Admin
Marianne Ang
marianne@sibl.com.sg

# SIBL SUB COMMITTEE 2020 - 2022

1. Accreditation & Professional Development (APDC)
Chairman : Dr.Keow Yeong Ming
Members : Mr.Moong Khai Chee, Dr.Parvathy, Ms.Vanessa Tang, Mr.Vineet Shrivastava ,Mr.Sonny Andalis, Mr. Darren Tang, Ms.Valerie Tang

2. Commercialisation Strategy Committee (CSC)
Chairman : Mr.Moong Khai Chee
Members : Mr.Shane D Ward,
Mr.Ng Pin Yuan, Ms.Danna Er

3. Enterprise Membership Services Committee (EMSC)
Chairman : Mr.Ivan Teo
Members : Mr.Vineet Shrivastava, Mr.Shane D Ward, Mr.Hossain, Mr. David Shanmugam

4. Media, Marketing & Industrial Relationship Committee (MM & IRC)
Chairman : Ms.Shirley Chan
Members : Mr.Shane D Ward ,Mr.Vineet Shrivastava, Ms.Vanessa Tang, Ms.Amila

5. Membership Services Committee (MSC)
Chairman : Mr.Shane D Ward
Members : Mr.David Shanmugam, Mr.Ho Wee Leong
Mr.Ivan Teo

We welcome all members' involvement in our various internal and external Sub-committees. Contact SIBL Secretariat to indicate your interest at admin@sibl.com.sg.

## SIBL SUB COMMITTEE 2020 - 2022

6. Memorandum & Association Committee (M & AC)
Chairman : Dr.Sussie Ketit
Members : Mr.Vineet Shrivastava, Mr.Ho Wee Leong

7. Environment and Sustainability Committee (E&S)
Chairman : Ms.Farizan
Members : Ar.Tan Szue Hann, Dr.Parvathy,
Ms.Vanessa Tang

8. Corporate Social & Event Committee (CS & EC)
Chairman : Dr.Sussie Ketit
Members : Mr.Vineet Shrivastava, Mr.Thomas Loh

9. Young Member Committee (YMC)
Chairman : Ms.Siddhi
Members : Mr.Ng Pin Yuan

## SIBL EXTERNAL COMMITTEES REPRESENTATIVES 2020 - 2022

**Construction Industry Joint Committee (CIJC)**
**BCA – CIJC Committee**
1.Dr.Sussie Ketit
2. Mr.Shane D Ward
3. Ms.Farizan
4.Mr.Ho Wee Leong
5.Mr.Moong Khai Chee

**Constructing Our World Conference and 40th Anniversary Celebration**
1. Dr. Sussie Ketit
2. Mr Shane Ward
3. Ms. Farizan d'Avezac Moran
4. Mr. Ho Wee Leong
5. Mr. Moong Khai Chee
6. Dr. Parvathy
7. Dr. Keow Yeong Ming
8. Ms. Vanessa Tang
9. Ms. Siddhi Suresh Nevkar
10. Ms. Rohaidah

# SIBL EXTERNAL COMMITTEES REPRESENTATIVES 2020 - 2022

**Singapore Green Building Council SGBC-SIBL (2 Reps)**

1. Mr.Vineet Shrivastava
2. Ms.Siddhi

**SPRING Technical Committee (2 reps)**

1. Dr.Victor Ong
2. Mr.Moong Khai Chee

**BCA BuildSG Tripartite Committee (2 reps)**

1. Mr.Vineet Shrivastava
2. Ms.Vanessa Tang

**Smart FM Conference -yearly with BuildTech Asia (3 reps)**

1. Mr. Vineet Shrivastava
2. Ms. Danna Er
3. Mr.David Shanmugam
4. Ms. Amila

**BCA Manpower and Industry Development TaskForce (FM)**

1. Dr. Sussie Ketit
2. Ms. Farizan d'Avezac de Moran
3. Mr. Darren Tang

# Membership Admissions - New Members/Associate Members

| S/N | Name | M/No. | Membership Class | Company | Title/Position |
|---|---|---|---|---|---|
| 1 | Moorthy Perumal | 326570 | Member | Oxley Holding Ltd | Construction Manager |
| 2 | Chun Sin (Deckson) Ang | 372577 | Member | Mott Macdonald Singapore Pte Ltd | Senior Engineer |
| 3 | Kim Hwee Alan Goh | 372793 | Member | CPG Facilities Management Pte Ltd | Deputy Chief Executive Officer |
| 4 | Philip Kwang | 374336 | Member | Facade Global Master Pte Ltd | Managing/Director |
| 5 | Shaju | 376437 | Associate Member | Hong Dat Engineering Pte Ltd | Assistant General Manager |
| 6 | Marianne Ang | 376482 | Member | Marine Parade Town Council | Quality Service Manager |
| 7 | Thamaraiselvan Natarajan | 378234 | Associate Member | Hong Dat Engineering Pte Ltd | Project Manager |
| 8 | Keith Vincent | 391080 | Member | Land Transport Authority | Principal Assistant Project Engineer |
| 9 | Hualan Wong | 391994 | Member | Ginlee Construction Pte ltd | Contracts Manager |
| 10 | Karthick Muthu | 398040 | Associate Member | Hong Dat Engineering Pte Ltd | BIM Modeller |
| 11 | Sarker Nandan Chandra | 398199 | Associate Member | Joydom Engineering Pte Ltd | Operation Manager |
| 12 | Samsudeen Sheik Abdul Nazeer | 425533 | Associate Member | Hong Dat Engineering Pte Ltd | Electrical Engineer |
| 13 | Nora Tan | 429420 | Associate Member | | |
| 14 | Chin Hin Chong | 434109 | Member | Santarli Construction Pte Ltd | Head, Corporate HSE/PE |

# Membership Admissions - New Members/Associate Members

| S/N | Name | M/No. | Membership Class | Company | Title/Position |
|---|---|---|---|---|---|
| 15 | Guo Wei, Desmond | 434485 | Member | Dr. D Plumping and Sanitary | Owner |
| 16 | Seak Hong Cheng | 445775 | Member | AD Incorporation Pte Ltd | Director |
| 17 | Nelson Ng | 445780 | Member | AD Incorporation Pte Ltd | Project Manager |
| 18 | Kelly Zhang | 445782 | Member | AD Incorporation Pte Ltd | Quantity Surveyor |
| 19 | Kwan Wan Fung Ken | 451551 | Member | Hong Kong Productivity Council | Manager |
| 20 | Tin Pui Alex Leung | 468762 | Member | China Harbour (Singapore) Engineering Pte. Ltd. | Senior Business Development Manager |

# Membership Admissions - Affiliate Members/Enterprise Members

| S/N | Name | M/No. | Membership Class | Company | Title/Position |
|---|---|---|---|---|---|
| 1 | Vijay Shinde | 370822 | Affiliate Member | Jacobs International Consultants Pte. Ltd. | Sr. Project Manager |
| 2 | Andre Chia | 380825 | Affiliate Member | JA Signature (Pte. Ltd.) | Director |
| 3 | Jiayun Summer Foo | 385598 | Affiliate Member | AIA Singapore | Financial Service Consultant |
| 4 | Jun Hao Seah | 395619 | Affiliate Member | Simple-Group Private Limited | Director |
| 5 | Jayden Lek | 398000 | Affiliate Member | JA Signature (Pte. Ltd.) | Co-Founder |
| 6 | Chris Yio | 378228 | Enterprise Member | Procore Technologies | Regional Sales Director ASEAN |
| 7 | Teo Ho Pin | 447400 | Enterprise Member | Building & Estate Management Alumni | President |
| 8 | Cindy Chong | 455073 | Enterprise Member | iClick Media Pte Ltd | General Manager |
| 9 | Chua Eng Eng | 465586 | Enterprise Member | King Wan Corporation Limited | Managing Director |
| 10 | Jonathan Tan | 466206 | Enterprise Member | Silver Eagle Construction Pte Ltd | Chairman |


# Microgreens – Next Super food of every Urbanite!

*BY PARVATHY SUBHADRA, GREEN IN FUTURE*

Did you know that you can grow your own healthy superfoods from the comfort of your own home? That's right! Microgreens can be your newfound hobby and source of vitamins for your daily diet. Microgreens are tiny versions of leafy vegetables that contain richer nutrients than their full-sized counterparts. At a glance, microgreens may seem similar to sprout, but do not confuse the two! Just like baby greens, only the stems and leaves of microgreens are considered edible.

With the growing urban population, the availability of arable land continues to deplete. Yet, at the same time, there is a constant, if not sprouting, demand for “healthier choice products” and consumption of vegetables. To address these spreading urban needs, we have seen the rise of vertical farming technology to facilitate the production of high-value crops. While efficient utilisation of space is undoubted, vertical farming has the capacity to produce a higher yield than conventional farming and plays a big part in reducing carbon footprint as well.

## Can Microgreens be the answer to our ever-growing nutrient needs?

One of the superfoods harvested from innovative vertical farming technology includes Microgreens. These baby leaf vegetables are packed with nutrients. They are rich in antioxidants and can be harvested in a short period of time under controlled environmental conditions. They can also act as a good source of minerals to satisfy both adult and child diet requirements without exposing them to harmful nitrates. Furthermore, Microgreens are also versatile. They are popularly used to add flavour and colour to soup, sandwiches, pizzas, but there’s no limit to how Microgreens can be consumed. They are a good addition to juices and smoothies, or a side to any main dishes.

There are various types of Microgreens, but the most popular varieties are broccoli, arugula, kale, fennel, spinach, which come from these different Microgreens families:

- **Brassicaceae family**: Cauliflower, broccoli, cabbage, watercress, radish, and arugula
- **Asteraceae family**: Lettuce, endive, chicory, and radicchio
- **Apiaceae family**: Dill, carrot, fennel, and celery
- **Amaryllidaceae family**: Garlic, onion, leek
- **Amaranthaceae family**: Amaranth, quinoa swiss chard, beet, and spinach
- **Cucurbitaceae family**: Melon, cucumber, and squash

While Microgreens are mostly grown commercially through vertical and horizontal farming technology, they can be easily grown indoors under a household setting too.

Better yet, growing your own Microgreens means you will be able to harvest them fresh, whenever you want, to enrich your daily nutritional needs. These plants have a short growing cycle and are usually ready to be harvested after 7-10 days.

Fortunately for us in Singapore, the country's humid and sunny weather presents a perfect climate for growing Microgreens all year round. All you need is natural light with adequate moisture and airflow to grow a whole range of wonderful flavours in just one week.

## Small steps matter - Start growing your own microgreens all year round

Many may mistake Microgreens with sprout, but they are more different than we thought. Both can grow easily with adequate water but Microgreens may need a little more than just that. Microgreens require a base, either a growing pad or soil. That aside, do prepare a good growing medium such as a container (transparent one is recommended) and proper lighting for healthy growth, either sunlight or ultraviolet light, ideally 4-8 hours of direct light per day. Lastly, and most importantly, make sure to purchase good-quality seeds of the Microgreens of your choice.

The COVID-19 pandemic has posed great challenges to businesses, especially in the construction sector. There is a new normal, one that is marked by endless disruptions as we react to the multiple disruptions that come with the rapidly evolving situation. Through digitalization, companies can build their capacity to remain agile and resilient and manage disruptions in the COVID-19 world.

Once you have all of these sorted, you are all set to harvest your own superfoods!

1. Fill your container with soil. Water to moisten the soil and do not ever let the soil dry out. Alternatively, you may also fill your container with a soaked growing pad.
2. Soak and drain the seeds. Depending on the size of your container, spread the seeds on top of the soil or growing pad as evenly as possible.
3. Place your container in a spot where your seeds can receive at least 4 hours of direct sunlight - or ultraviolet light.
4. Cover your container. If you're using an open-air tray/container, seeds will need to be misted at least once a day, or as needed. Remember to keep the seeds moist and do not let the soil dry out.
5. If you are using a transparent container, you can easily monitor the growth of your seeds. Once the seeds have germinated, you may remove the lid to expose them to light.
6. Let nature take its course for your Microgreens to grow and gain colour.
7. After 7-10 days, or once your Microgreens have reached your desired heights, they are now ready to harvest.
8. Once harvested, you would need a new set of soil or growing pads to grow your next batch of Microgreens.

Growing your own Microgreens is simple, and you can do this all year round. Eager to kick off your microgreens harvesting but unsure of which variety to start with? The broccoli sprouts are one of the most nutrient-dense microgreens you can grow, so you might want to give this a try!

Do reach out to the team at Green In Future if you want to know more about growing your own Microgreens or have any experience to share on harvesting them at paru@greeninfuture.com.

## About the Author: Parvathy Subhadra, Green in Future

*Dr. Parvathy leads the Green in Future team in achieving the vision through organization of conferences, events, and research programs in the Green. She is the Editor and Publishing Manager for Green Pulse, a digital publication circulated every month. With 12+ years of experience in the Media industry, she is passionate about Sustainability, Urban Greenery, and Circular Economy.*

# Have something to tell us? We'd love to hear from you!

Write us at admin@sibl.com.sg