



# **WORK AT HEIGHT**

**by**

**Francis Tay**

**Director**

**Aedge Technologies Pte Ltd**

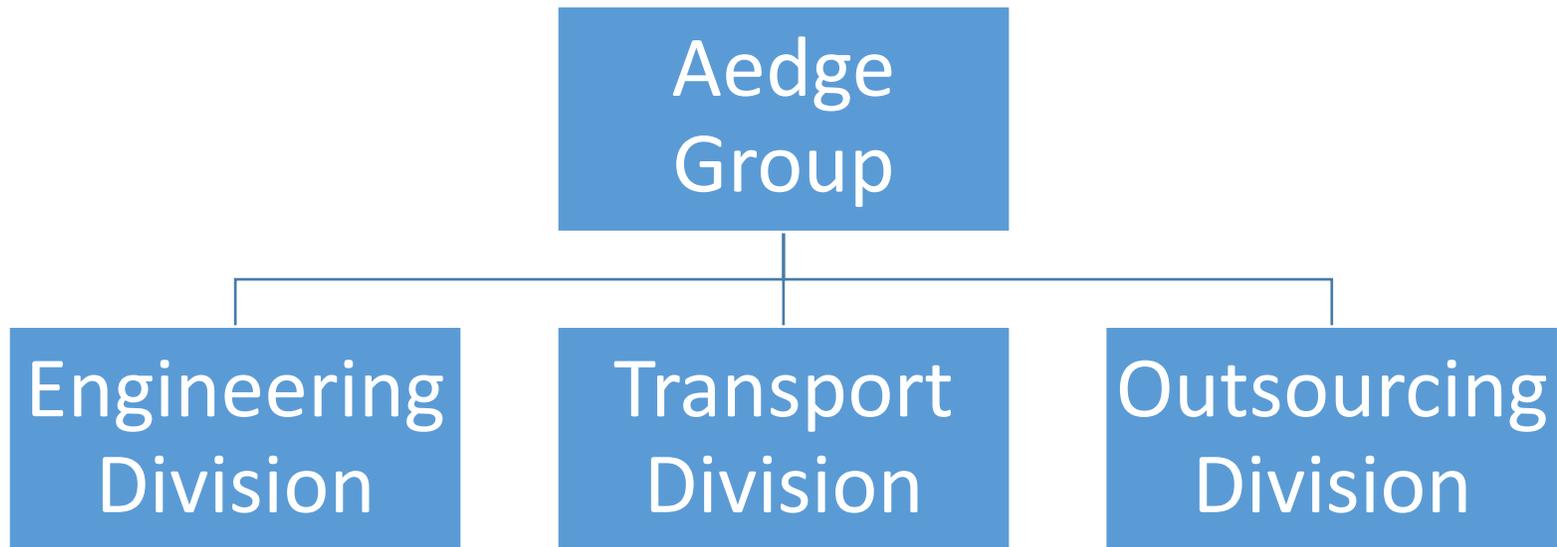


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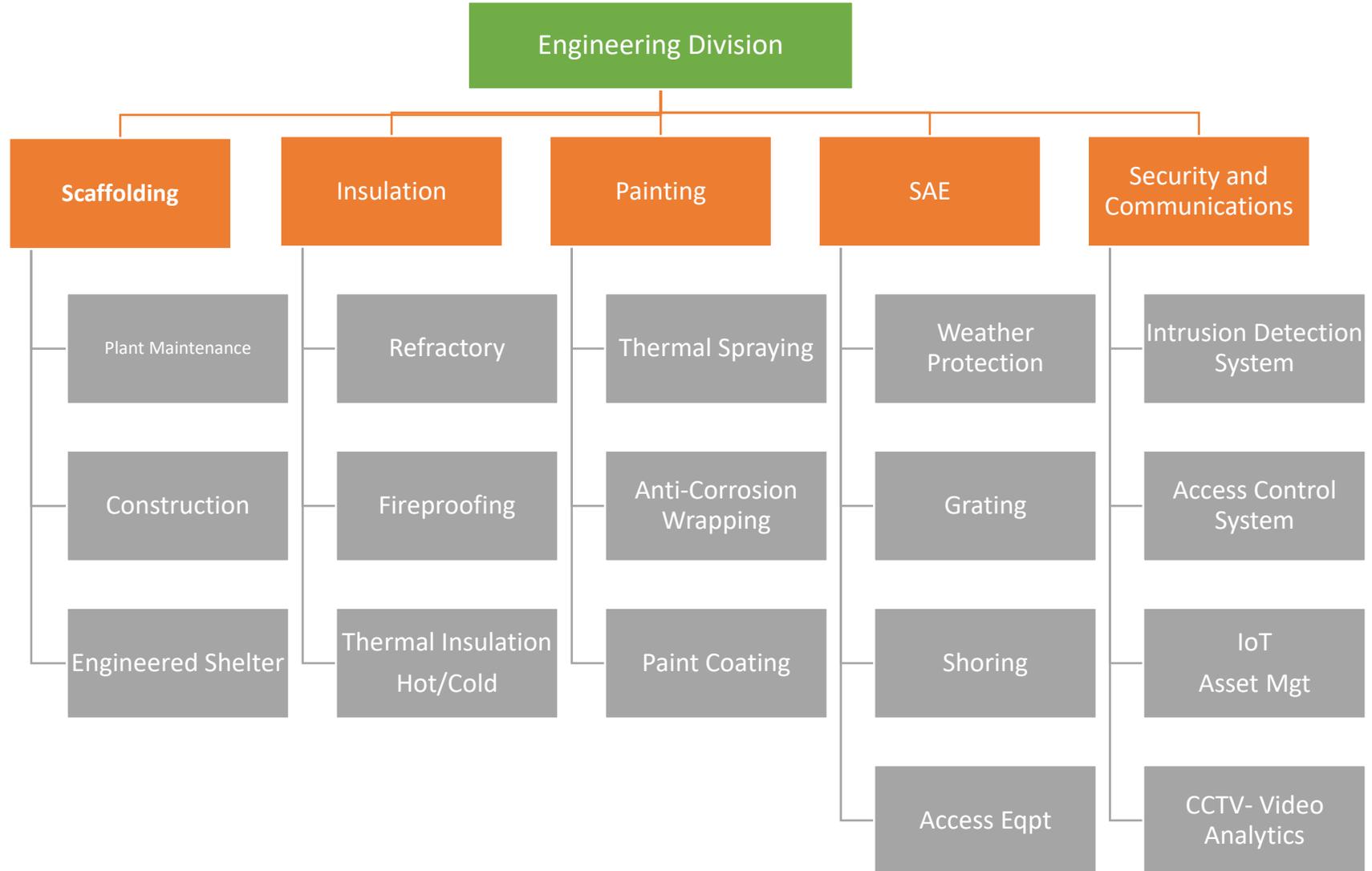
# INTRODUCTION





# Capabilities and Resources

Line of Business	Principal Activities
Engineering	<ul style="list-style-type: none"><li>▪ Scaffolding – Total Access Solutions</li><li>▪ Insulation and Painting</li><li>▪ Engineered Shelter &amp; Gratings</li><li>▪ Communications and Security Systems</li><li>▪ Shoring and Formwork</li><li>▪ Light Access Solutions</li></ul>
Transport	<ul style="list-style-type: none"><li>▪ Premium Bus Services</li><li>▪ Shuttle Bus Services</li><li>▪ School and Excursion Bus Services</li><li>▪ Private Bus Chartering</li></ul>
Outsourcing	<ul style="list-style-type: none"><li>▪ Physical Security and Systems</li><li>▪ Security Risk Survey</li><li>▪ Manpower staffing</li><li>▪ Cleaning services</li></ul>





# **WORK AT HEIGHT**

**by**

**Daniel Ng**

**Chief Operation Officer**

**Aedge Group Ltd**



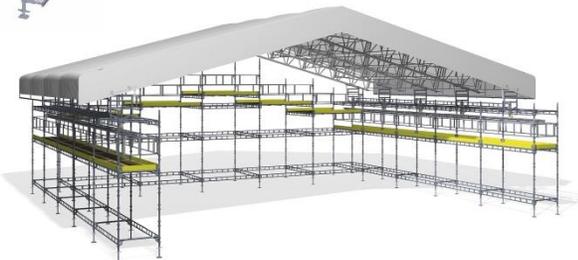
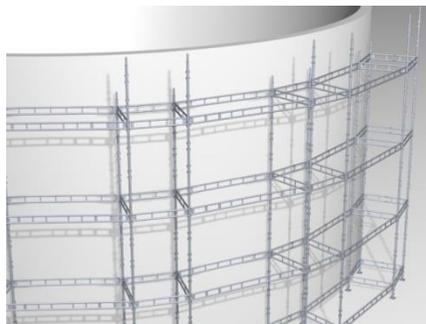
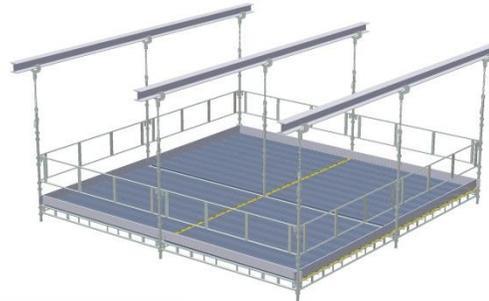
## Work at Height

- Adopting the best approach to Work at Height
- Site Survey – Pre start RA with client's participation
- Risk Assessment by Trained Supervisor
- Design and Planning of Work Access

## Operation Excellence and Case Studies



## Multi-functional Components for Maximum Utilization

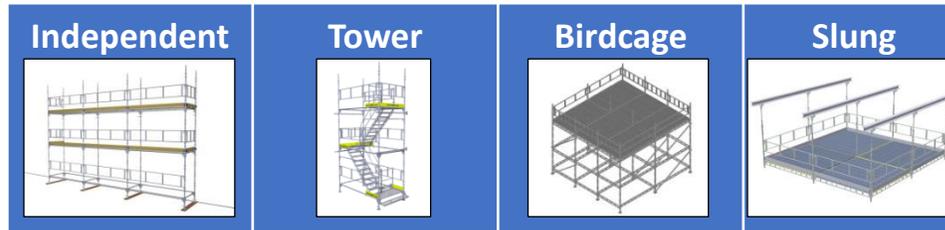


- Various different type of System Scaffolding – Cuplok/Ringlock/T/F
- HAKI Universal utilizes the same 7 to 10 basic components in a wide range of structures
  - Maximum utilization
  - Minimum investment

Other systems require different standards, ledgers and frames for different applications



## Selecting Equipment for Each Application

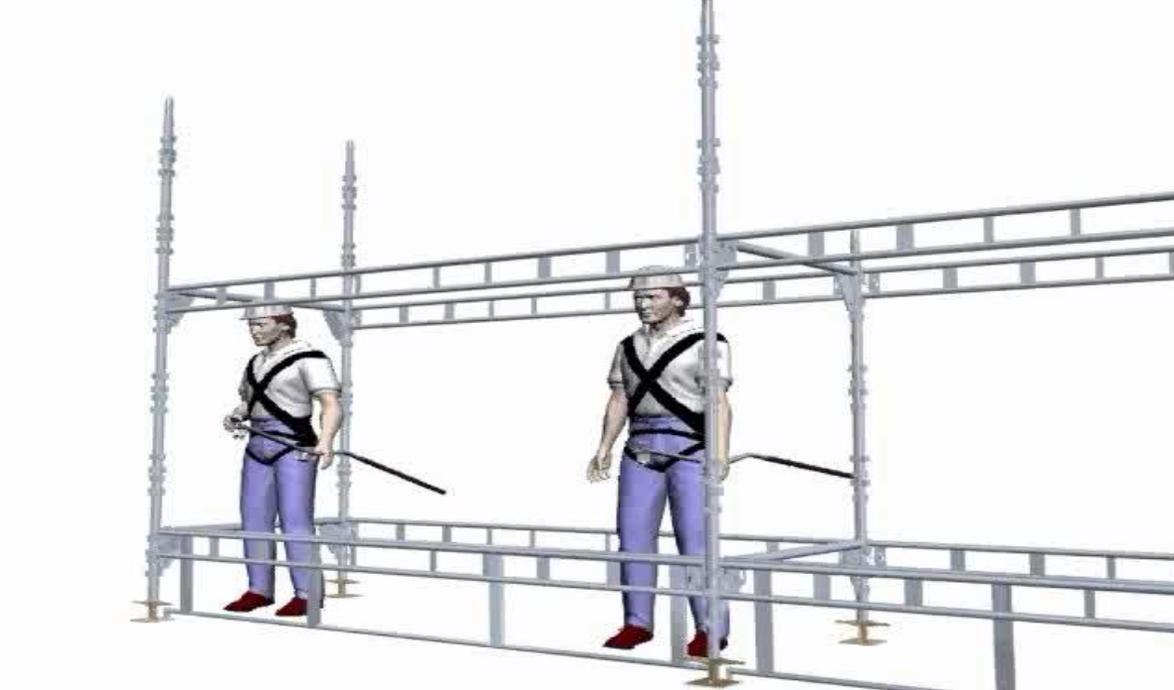


### Comparison with ring-type system scaffold

	Independent	Tower	Birdcage	Slung	
Base Jack	✓	✓	✓		<b>Single base jack with 550mm adjustment.</b> Ring-type: 3 variants for different applications with additional starter collar.
Standard	✓	✓	✓	✓	<b>Single standard for all applications.</b> Ring-type: Different standard (with a spigot) for slung scaffolds, plus other components
Ledger Beam	✓	✓	✓	✓	<b>Single load-bearing ledger for all applications.</b> Ring-type: Different heavy-duty version required for towers, birdcages and some slung scaffolds.
Transom	✓	✓	✓	✓	<b>Single transom for all decking options.</b> Ring-type: Different transom for different decks, not compatible with usual scaffold board widths.
Guard-frame	✓	✓	✓	✓	<b>Single guard frame, also utilized in roof &amp; beam systems.</b> Ring-type: 2 components required, plus temporary guard rail system for safety compliance.
Beam Rider	✓	✓	✓	✓	<b>Unique HAKI component enables off-node connections.</b> Ring-type: Standards required at all nodes, increasing component count and restricting bay sizes.
Steel Deck	✓	✓	✓	✓	<b>Class 4 HD loading in 3m bays, standard UK board widths.</b> Ring type: Non-standard widths, requires additional component to lock against lift off (LALO).



## Advanced Guard Rail



- The simple-to-use HAKI Advanced Guard Rail (AGR) tool allows Universal guard frames to be positioned from a safe position on the ground (as illustrated) or from a lower lift

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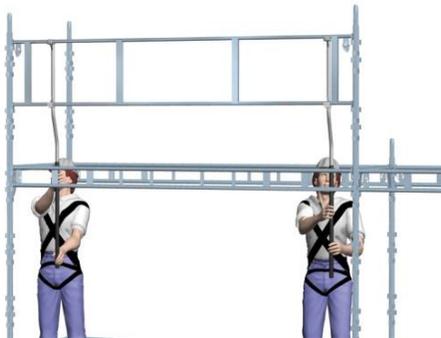


## Operation Excellence





## Advanced Guard Rail



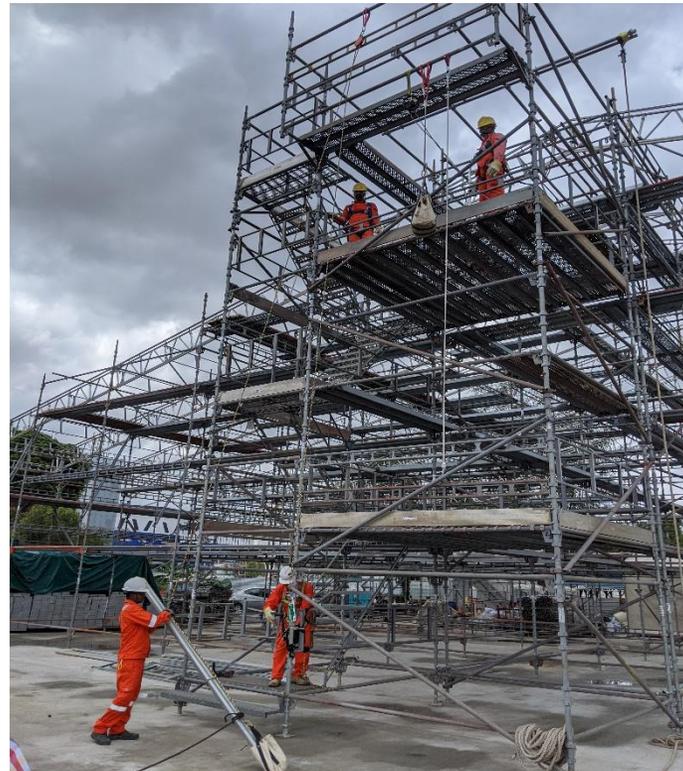
- The simple-to-use HAKI Advanced Guard Rail (AGR) tool allows Universal guard frames to be positioned from a safe position on the ground (as illustrated) or from a lower lift
- This maintains collective protection for scaffolders in line with safety guidance
  - No additional scaffolding material required
  - No temporary guard-rail to install and remove
  - No additional labour time
- Other systems require installation (and removal) of temporary guard frames or use of the scaffolder's step with lanyards



## Design and Planning of work access

- **Risk Assessment and Method Statement**
  - Adopting Pre-start risk assessment
  - Safety Co-Ordinator and Safety Officer

### On-Site and Off-Site – Safety Management





# Inspection of Access Solutions –Digital Inspect 7



Real time Asset Management information

Better Inventory Control  
Increase safety

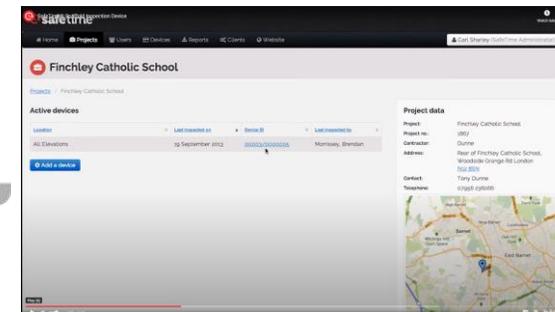
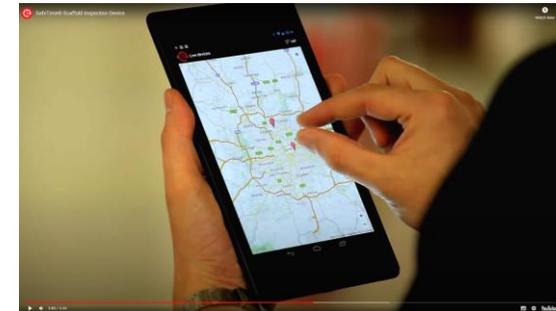
## Scaffold Inspection



RFID tag and QR CODE



## Scaffold Inspection – Report and Analysis



RFID tag and QR CODE



## Worker Safety Compliance checker station



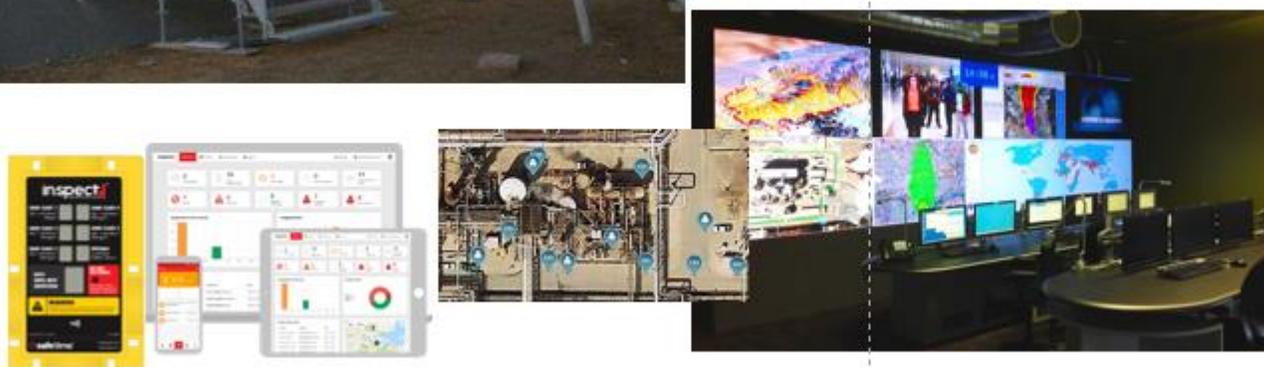
### Working at height monitoring system



### SC mobile station features:

**Worker safety compliance - Relief Safety officer (HSSE) pain-points onworker at height or authorized location:**

- Safety at height (camera+RTLS)
- Check for toxic or combustible gas presence at ground level
- Geofencing alarm (no intruder, RTLS option) and worker number present
- Inspect 7 digital device lets you see how long a given inspection has got left on Scaffold and alerts you when the scaffold has failed or expired.
- Solar panel (Optional in case no AC)





## Operation Excellence – Case Study 1

- Safety Culture – Behavioral Based Safety By Example





## Operation Excellence – Case Study 1

- Safety Culture – Behavior Based Safety



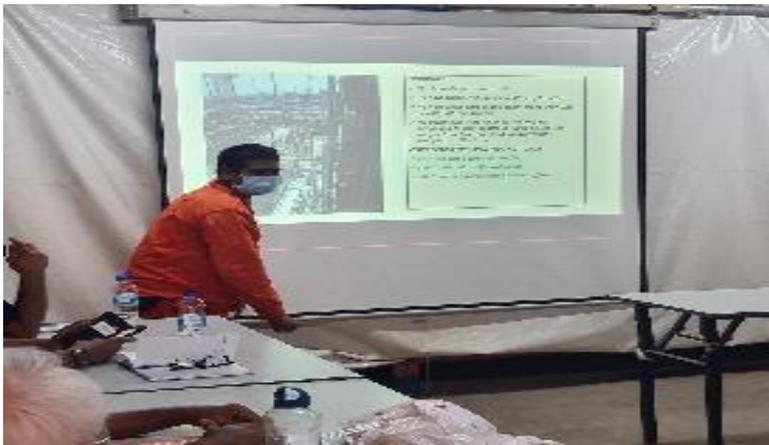


## Operation Excellence – Case Study 1

### ➤ Safety Culture – Behavioral Based Safety



- *Incident presented at the company's HSE meeting*



- *The scaffolder explained what/how/why the incident happened.*



## Operation Excellence - Case Study 1

### ➤ Safety Culture –Behavioral Based Safety

\*\*\*Fast I take 2 bags couple safety. 2th bag of couple's not able to reach. That's why I put one leg up to the plank and other leg scaffold tube put want to reach. That's moment shall Safety watch and take photo. An immediate stop that jobs.

- 1) anything do before I need to think. Because of I have the family. In my home country they are waiting for me And They are defense of my good health to work.
- 2) anyway I Work before I think my safety.
- 3) if I cannot do that I take support someone My co-worker
- 4) we need to support each other
- 5) if any facing the problem informed to supervisor
- 6) next time other people I interface and give this message. Nobody do like that.
- 7) I commitment next time I don't do like that anymore.

MD SYEEDUL  
Sik

30-7-21

① ସର୍ବ ପ୍ରଥମେ 'ଆମି' 2ଟା ବ୍ୟାଗ୍ କାମ କରୁଥିଲି। ଉଭୟ ବ୍ୟାଗ୍ ଉଠାଏଇ ସ୍ଥିତିରେ ରହିବା ଆମି ଏକାକୀ କାମ ଯେ ପଥର ଆମି ବାହାର କରିବି। ତାହା ଆମି ବ୍ୟାଗ୍ ଫଳ ନାହିଁ ନିମ୍ନରେ ଦେଖି, ଆମି ବ୍ୟାଗ୍ ଘଟି ଯାଏ ନାହିଁ। ସୁରକ୍ଷା ନିୟମରେ ଦେଖି, ଆମି/ପଥର ବ୍ୟାଗ୍ ଫଳ କରିବା ପାଇଁ ଚାହାଁ ଉପର ପାଦ ଉଠାଏ ଯାହା ଉପର ଆଡ଼େ, ଆମି ବ୍ୟାଗ୍ ଘଟି ଯାଏ।

② ଉପର ବ୍ୟାଗ୍ କାମ କରୁଥିଲି ସର୍ବ ପ୍ରଥମେ ଚିନ୍ତା କରୁ ଥିଲି ଯେ ବ୍ୟାଗ୍ ଉଠାଏ ତେଣୁ ସୁରକ୍ଷା ନିୟମ ନାହିଁ। ତାହା ଆମି ବ୍ୟାଗ୍ ଘଟି ଯାଏ ଯାହା ଉପର ପାଦ ଉଠାଏ ଯାହା ଉପର ଆଡ଼େ ଦେଖି ନିମ୍ନରେ ଦେଖି

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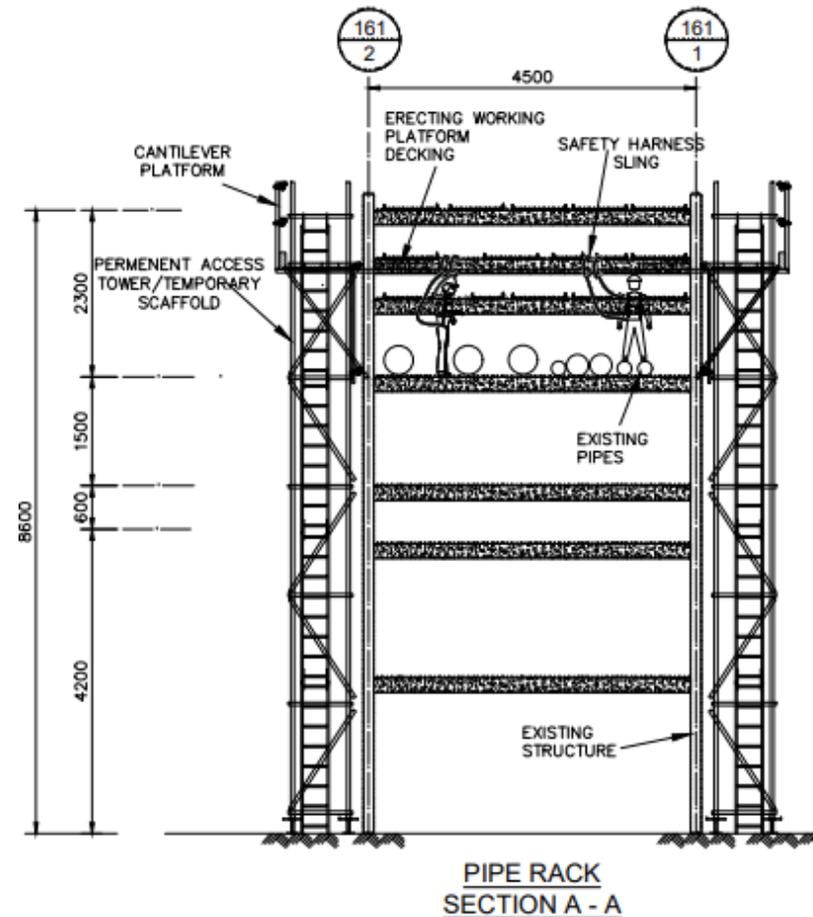
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## Operation Excellence - Case Study 2

- Working on very tight space





## Summary

- Bi Monthly Operation Meeting
- Address Safety Issues on Site
  - Pro-Active – investigate near miss incident
  - Train Supervisors
- Digitalisation Support
  - Inventory System
  - BIM
  - Resources Tracking
- Training and Re-training – SS659



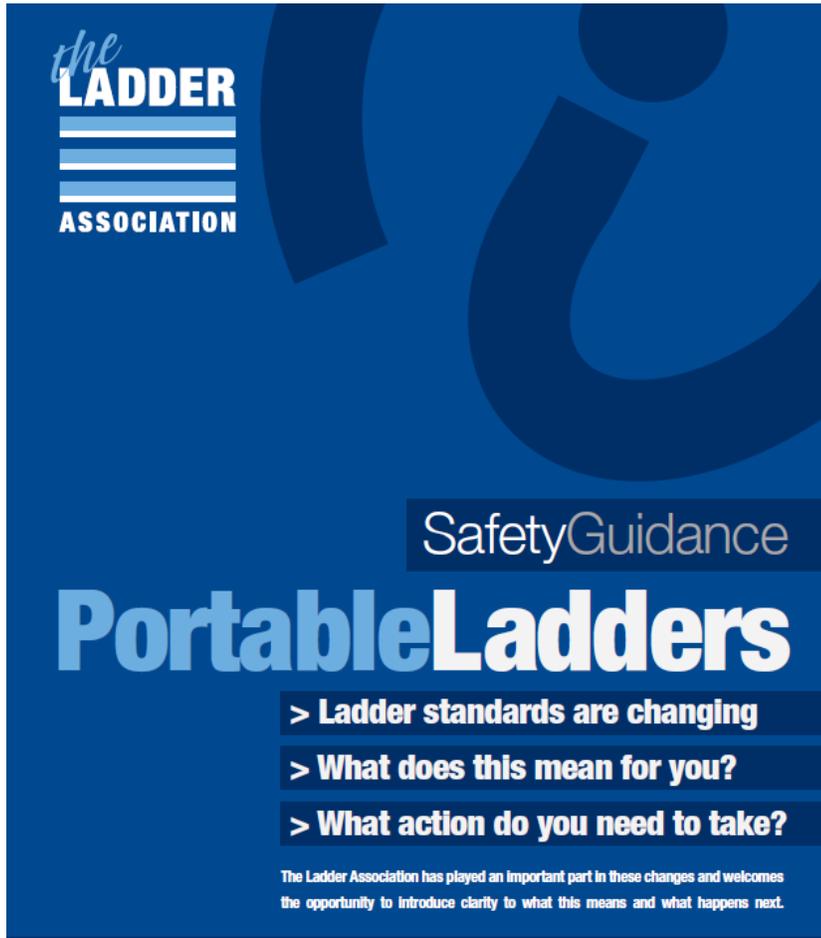
# **WORK AT HEIGHT**

**by**

**Edward Tan**  
**Senior Manager**



## Training - PASMA and Ladder Training Centre



Our company emphasis is on training and more training to upgrade workers' knowledge and skill set.

# Aedge Technologies Pte Ltd



This in turn will increase all relevant parties in our company to be comprehensively aware of all kinds of WAH products in the course of their work.

With training it will help promote Vision Zero.

**They will be able to choose and differentiate how to select the right products for the right job.**

The new SS659 is now more comprehensive as compared to the now obsolete CP14 and together with the new Singapore Ladder Standard EN131 replacing the old ladder guidelines, these will finally cover the light duty and very low access part of WAH .

In fact, many accidents happen with this group of numerous users for Aluminium Scaffolds and Ladders . On record, UK has above 30% of fall from height accidents from this category.

Many near miss accidents on workplaces are also on these products range due to misuse or wrong application.

All these are partly attributed to lack of available training.





## Singapore Adopted The New Standard In Ladders

- SS EN 131-1:2019 have been communicated to the relevant stakeholders in our company as we have found it to be complementary to the other WAH courses available in the training market.
- To understand the new code of practice, we do practical training in addition to our verbal communication to our personnel.
- Disposed away ladder that does not comply with the new standards.



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**SS EN 131-1 : 2019**  
**EN 131-1:2015, IDT**  
(ICS 01.040.97; 97.145)

**SINGAPORE STANDARD**

**Ladders**

– Part 1 : Terms, types, functional sizes

The national standard is the identical implementation of EN 131-1:2015 and is adopted with permission of CEN, Avenue Marnix 17, 1000 Brussels





## The 1<sup>st</sup> Approved Training Centre in Asia Pacific Region

### Ladder for User and Ladder Inspection 1 Day Course

At present, there is no course that dedicates one full day to do practical & theory.

At most, any Work at Height course will dedicate a few sentences on ladder use.

The Ladder Association

SafetyGuidance

# Portable Ladders

- > Ladder standards are changing
- > What does this mean for you?
- > What action do you need to take?

The Ladder Association has played an important part in these changes and welcomes the opportunity to introduce clarity to what this means and what happens next.



There are many shops selling all kinds of ladders and we found that at times , our users are not sure what is approved, what is workable and what to select.

We have found that there is no recognised dedicated course available, and as such, we have enrolled and registered as a ladder training centre to teach and educate our personnel on the correct ways.

One day course lay emphasis on the latest EN131 Standard and is important that all management & ladder users understand why they need to use the correct ladder based on task and duration.



## Type of Low Level Access Being Used in Our Company



### SS 659 Chapter 12

This together with being a registered PASMA Training Centre for aluminium scaffolds, we now have the full spectrum of WAH training for our manpower who are involved in WAH jobs.

And the training goes on.....





**Thank You**