UNISON CONSTRUCTION GROWS
WITH MECHC
GEAR UP FOR THE SINGAPORE
CONSTRUCTION PRODUCTIVITY WEEK 2012!
BIM: A LOOK AT
THE VERMONT@CAIRNHILL

BIM SPOTLIGHT:
SINGAPORE
SPORTS HUB
We would love to hear from you if you would like to share any best practices and latest technologies that could improve construction productivity. Please email us at bca_enquiry@bca.gov.sg

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Dear reader,

We’ve just ushered in the year of the Dragon, the most popular and auspicious zodiac sign among the twelve signs. This year is expected to be a good one for our industry with strong construction demand of between $21 billion to $27 billion projected for 2012. 60% of the demand is expected to come from the public sector.

According to the Chinese Five Element Astrology Calendar, 2012 is the Year of the Water Dragon. Water has a dual quality – you can ride on its powerful wave or be submerged by it. Certainly, the element is a reminder that we must always be aware of changing trends, emerging issues and have a plan to deal with them.

In fact, many countries are facing the challenge of an ageing workforce, and Singapore is no exception. This is especially so for the construction sector, where young people below 30 formed a meagre 12% of the local workforce, according to our 2010 Construction Manpower Survey.

To sustain the construction industry, it is therefore critical that we retain and further develop the current core which comprises 20,000 to 25,000 local tradesmen/foremen at the technical and supervisory levels.

There are manpower development initiatives available under the Construction Productivity and Capability Fund (CPCF), and we would like to urge firms to take full advantage of them for manpower planning and staff development. Aside from supporting workers’ training and upgrading, the CPCF also helps firms in improving productivity through technology adoption and process re-engineering. Currently, close to $40 million of the Fund has been committed to more than 1,100 firms in their productivity initiatives.

Meanwhile, our second Singapore Construction Productivity Week will be returning in May. The hallmark productivity event is a great platform for suppliers, developers, architects, consultants and contractors to come together and be involved in transforming the construction industry. Do come and join us to learn about the latest happenings in the construction sector.

The Year of the Water Dragon might not be without its challenges, but if we work together as an industry, we can ride the wave and emerge even stronger.

Dr John Keung
Chief Executive Officer
Since the launch of the Mechanisation Credit (MechC) scheme in 2010 by the Building and Construction Authority (BCA), there has been a growing number of small and medium-sized enterprises (SMEs) tapping into the scheme to improve their construction productivity. In fact, more than half of the successful applicants are SMEs. After all, the aim of the MechC scheme is to extend support to as many local construction companies as possible, no matter the size of the business.

For instance, MechC facilitated the relatively new firm, Unison Construction Pte Ltd, in its productivity efforts. Founded in 2009, Unison Construction faced immense challenges in securing medium- to large-scale projects due to a lack of capital to procure better technologies.

"Financial constraint is one of the biggest headaches for a young SME contractor like us who want to forge ahead," said Project Director Tan Thiam Huat.

The reflectorless total station measures a greater distance and eliminates the need for an additional worker to carry a prism. Only one surveyor is required to operate the equipment from a stationary point.
Nevertheless, its management, led by Managing Director Tan Soon Kian, remained steadfast in its productivity journey. In addition to having a team of experienced and capable staff, Unison Construction began to look into mechanisation so that it could gain a competitive edge over its established competitors.

It quickly took up the MechC scheme to expand its technology adoption. Through co-funding with MechC, the company bought its first reflectorless total station. The equipment, which uses laser technology to carry out site surveying, allows greater accuracy and distance in measurement. It also eliminates the need for an additional worker to carry a prism, thus reducing the amount of manpower needed.

Subsequently, the company invested in another reflectorless total station, three builders’ hoists and two scissor lifts. These enhanced its capability of delivering safe and productive building projects.

“Mechanising work processes is the quickest way to see a real difference in on-site productivity,” said Mr Tan Thiam Huat. “We have been fortunate to be introduced to MechC when we needed it most. The scheme co-funded the purchase of much-needed equipment, which helps us to enjoy savings today.”

Unison Construction actively encourages its subcontractors to attend seminars and talks organised by BCA to keep up-to-date on the latest productivity initiatives and ideas.

Project Director Tan Thiam Huat has more than 20 years of experience in the construction industry and is an advocate for safe and productive construction practices.

Mr Tan said: “Contrary to common belief that government funding is always hard to get, the MechC application process is simple and help is only a phone call away. We have recovered our investment costs and saved greatly on manpower requirements.”

Unison Construction Pte Ltd

| Business: | > General building contractor |
| Equipment purchased with MechC: | > 3 builders’ hoists | > 2 scissor lifts | > 2 reflectorless total stations |
| Benefits: | > Increased productivity | > Reduced manpower | > Improved work processes, occupational health and safety | > Increased savings from cost-effective solutions |
Pass by Upper Changi Road East and you will notice beautiful landed properties built with concrete and brick. Now, SG Concept Builder is all set to change the way these residential buildings are made. It has embarked on the construction of a semi-detached unit that will utilise light gauge steel and magnesium oxide boards for construction.

Project Director of SG Concept Builder Khor Yew Chai has always believed in taking new approaches towards building and construction. For the latest project at Upper Changi Road East, Mr Khor decided to adopt the light gauge steel frame with drywall system – using magnesium oxide boards – because of the numerous advantages that these materials yield.

Though steel structures have been widely used in the construction of other types of buildings, they are rarely found in local residential projects. It is also SG Concept Builder’s first foray into steel construction.

For the construction of the three-storey semi-detached dwelling, light gauge steel frames are used from the second storey up to the roof. Magnesium oxide boards are used for the floors and walls in both the exterior and interior of the building. The first storey, where the household shelter is located, is constructed using reinforced concrete.

In this project, SG Concept Builder has begun reaping the benefits of adopting steel construction. It saves more than half of the manpower needed as it engages only four workers per day instead of the usual 10.

On-site environment is much tidier as the builder no longer needs to stock-pile bricks, cement and rebars. Besides these benefits, SG Concept Builder is also enjoying reduced housekeeping works as the new construction method greatly cuts down on the volume of debris produced.

Riding on the success of this project, Mr Khor is confident of adopting light gauge steel construction again for his future landed property projects.

Advantages of the Light Gauge Steel Frame and Drywall System:

- **Reduced time and manpower required for structural works.**
  The original construction time of 8 weeks with 10 workers was reduced to just 3 weeks with 4 workers.

- **Reduced noise and waste material generated during the construction process.**
  These advantages are critical for landed housing construction to maintain a peaceful environment for neighbours.

- **Increased design flexibility.**
  The steel structure allows for larger unsupported spans. Magnesium oxide boards are lightweight but strong and durable. They are also easy to install.

- **Reduced thermal conductivity.**
  This helps increase energy efficiency within the house.

- **Concealed mechanical and engineering services within the drywall structure.**
  This minimises hacking works required during installation.
THE CONSTRUCTABILITY APPRAISAL SYSTEM

SOAR WITH BEST PRACTICES

What does “good industry practice” under the CAS entail? Build Smart zooms in on this.

Last year, the Constructability Appraisal System (CAS) was introduced by the Building and Construction Authority (BCA) to take into account builders’ contribution to construction productivity. The CAS results in a Constructability Score of the building works.

 Builders achieve on-site productivity through various methods. These include switching from traditional labour-intensive construction methods to various labour-efficient construction processes and equipment. More specific examples are the use of advanced external access systems and system formwork. Additional aspects critical to driving productivity are good project management and site practices.

The CAS recognises these best practices by awarding builders up to 10 points under Part C: Good Industry Practices in the Constructability Score framework.

Good Industry Practices (Maximum 10 Points)

a) To use Building Information Modelling (BIM) for whole project duration to:
   i) Check for clashes between mechanical and electrical (M&E) services, structural provision and architectural objects
   ii) Produce M&E coordination drawings, architectural shop drawings and concrete body plan for construction purposes
   iii) Simulate construction schedules and resource planning

   Allocated Points: 5

b) To adopt a trade productivity monitoring system for whole project duration to:
   i) Establish “workers’ productivity norms”
   ii) Conduct work studies on the processes if the productivity levels deviate from the norm
   iii) Implement measures to improve productivity whenever possible

   Allocated Points: 2

c) To produce and distribute step-by-step work manuals for all trades, and to set up site mock-ups to educate on how works should be done properly for whole project duration for:
   i) Wall installation
   ii) Waterproofing
   iii) Suspended ceiling installation
   iv) Window installation

   Allocated Points: 2

d) To conduct monthly work-study sessions, to scrutinise and improve the work process on site as well as minimise wastage and improve productivity.

   Allocated Points: 2

e) To use tools like the CCTV to conduct real-time monitoring on site and to study resource, schedule and work process flows.

   Allocated Points: 2

f) To conduct the following daily:
   i) Tool box meeting (every worker to be informed on his task for the day)
   ii) Sub-contractors coordination meeting (to coordinate on work process and resource allocation)

   Allocated Points: 1

SOAR WITH BEST PRACTICES

5
GEAR UP FOR THE SINGAPORE CONSTRUCTION PRODUCTIVITY WEEK 2012!

This May, don’t miss out on a meeting of great minds at Marina Bay Sands
### WHAT'S HAPPENING IN 2012

#### Singapore Construction Productivity Week

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Marina Bay Sands® - Sands Expo and Convention Centre

A hallmark event not to be missed, the upcoming Singapore Construction Productivity Week 2012 celebrates the best of the industry’s productivity journey.

From May 14 to 18, Marina Bay Sands will be abuzz with numerous activities including the Skilled Builders and BIM Competition, BuildTech Asia Exhibition, Build Smart Conference and the International Panel of Experts on Construction Productivity and Prefabrication Technology.

The event offers a great platform for suppliers, developers, architects, consultants and contractors to come together and be involved in transforming the construction industry. Come be a part of it!

For more information, please contact:

**Ms Phang Li Bin**
Tel : 6325 5071
Email : phang_li_bin@bca.gov.sg

**Mr Havesh Nagarajan**
Tel : 6325 5099
Email : havesh_nagarajan@bca.gov.sg

### Driving Productivity: The CPCF

The Building and Construction Authority (BCA) has been steering the construction industry towards achieving higher productivity. This gained greater momentum with the introduction of the $250 million Construction Productivity and Capability Fund (CPCF) in 2010.

The CPCF supports firms in improving productivity through technology adoption, process re-engineering as well as workers’ training and upgrading programmes. Close to $40 million from the Fund has been committed to more than 1,100 firms for their productivity initiatives.

To find out more, please call the CPCF toll-free hotline at 1800-325 5050 or visit [http://www.bca.gov.sg/CPCF/cpcf.html](http://www.bca.gov.sg/CPCF/cpcf.html)
BIM SPOTLIGHT: SINGAPORE SPORTS HUB

Early detection of issues, risk minimisation and improved communication across multiple disciplines were some of the benefits gained from using BIM, according to two of the senior design managers at the Sports Hub.

For the construction of the Singapore Sports Hub, Dragages Singapore and its mechanical and electrical partner, BYME Engineering Hub, deployed 80 Building Information Modelling (BIM) specialists and operators. With BIM, the building processes were not only smoother and faster, but many potentially costly reworks were addressed and resolved digitally. Build Smart chats with two BIM managers, Marcel Finlay from Dragages Singapore and Sophie Montenot from BYME Engineering Hub, to find out more.

Why did you decide to use BIM for the construction of the Singapore Sports Hub?

SOPHIE MONTENOT (BYME):
The Singapore Sports Hub is a very large design and build project with a tight schedule. With BIM, we were able to visualise the project at an early stage and quickly identify the main design issues. BIM allows swift and accurate comparison of different design options, enabling the development of more efficient, cost-effective and sustainable solutions.

MARCEL FINLAY (DRAGAGES): With so many interlinked buildings and so many interfacing designers on the Sports Hub project, we knew accurate coordination would be key to the success of the project. BIM gave us a better opportunity to get things right.

What have been the qualitative and quantitative benefits of using BIM, specifically for the Singapore Sports Hub project?

SOPHIE MONTENOT (BYME) AND MARCEL FINLAY (DRAGAGES): With BIM, loss of information is rare but the quantity of information can be enormous. Our models become both a description of the building and a huge database of information that can be sorted, extracted and manipulated. Everything is done under the 3D process. In order to manage all this, we have had to develop and manage robust processes.
How has BIM helped in enhancing the (i) architectural, (ii) structural and (iii) mechanical, electrical and plumbing (MEP) aspects of the Singapore Sports Hub?

**SOPHIE (BYME):**

BIM is a great tool for MEP contractors. We can combine our models with the architectural and structural models, run clash detection, enhance communication and identify problems quickly. On the Sports Hub project, some areas were particularly complicated. For example, the moving roof requires full coordination between the MEP team (especially on the sports lighting), the architect and the structural engineers. The complexity of the steel structure would have been hard to understand in 2D but there is no such problem with BIM, which allowed us to concentrate on the coordination.

What is the most important productivity benefit gained from using BIM?

**SOPHIE (BYME):**

BIM enables the team to “build” the project in a virtual environment. In some areas of the Sports Hub like the Energy Centre and the chiller plant rooms, the MEP will be entirely prefabricated. To ensure an accurate and optimised design, we can develop the model to a level of detail that allows us to get accurate quantity take-offs and prefabrication drawings when we need them.

We initially thought that BIM would only be used as a tool for coordination and visualisation. We thought we would have to revert to 2D to produce our working drawings. We are now discovering that once our models are accurately built, it is safer and much more efficient to take our architectural shop drawings directly from the models. Once the “views” in the model are created, they stay there for the rest of the project, so accommodating changes is rapid and less risky.

How has BIM helped the communication and workflow with your partners involved in this project?

**SOPHIE (BYME) AND MARCEL (DRAGAGES):**

BIM demands new methods of communication and working processes. It is not just 2D++. The BYME and Dragages’ design teams now communicate almost exclusively in 3D, which gives rise to a much quicker understanding and resolution of the issues. It must be noted that some contributors work in 2D and some in 3D, so communication can become more complex than if everyone was still using just 2D. During this transitional phase, developers and construction companies need to understand this and do all they can to ensure that BIM is enshrined in project protocols and contracts at the beginning of the project.

Where do you see BIM in the future?

**SOPHIE (BYME) AND MARCEL (DRAGAGES):**

There is no doubt that BIM is the new “big thing” in the construction industry. It will really take off when all owners, developers and procurers of construction projects see the benefits of BIM and insist on its implementation.

To get the best out of BIM, it has to be used in all project disciplines and for file sharing. At the moment, there are many different types of software being used with various compatibility issues. Over the next few years, we foresee both consolidation within the software industry and more work on a universal BIM-language.

BIM will initially take over the traditional 2D architectural, structural and MEP methods of coordination and documenting buildings. In the future, it will become a fully integrated tool encompassing planning, procurement, construction sequencing, testing and commissioning and facilities management for the lifetime of the building.

BIM is flexible enough to be able to take many further technological innovations into its overall structure. BIM will just get bigger.

HELP IS JUST AN APPLICATION AWAY

BYME applied for and was awarded a grant from the BIM Fund under the Construction Productivity and Capability Fund (CPCF). The funds were used to consolidate its core processes and implement a solid and rigorous framework for its BIM users.

Meanwhile, Dragages Singapore has benefited from employing staff who have been through BCA’s BIM training. Moving forward, Dragages Singapore will be making an application under the Firm Level category of the BIM Fund to help fund its research on linking the contents of its BIM models with its Access databases.

If your firm is interested to embark on a BIM journey, please contact Cindy Liew at 6325 1107 or email cindy_liew@bca.gov.sg.
BIM: A LOOK AT THE VERMONT@ CAIRNHILL

Discover how Kimly Construction used BIM at the pre-construction and construction stages of a recent project.

Construction is a highly complicated process involving multiple parties. More often than not, construction clashes are inevitable on site – a crucial point where all the building elements come together.

Now, these potential setbacks are a thing of the past for Kimly Construction since it embarked on utilising the Building Information Modelling (BIM) technology for its projects.

Kimly Construction is primarily involved in general building works. Incorporated since 1975, it has vast experience in both public and private construction projects.

In 2010, Kimly Construction took the bold step of enhancing its productivity on all fronts. The firm became aware of BIM as an essential tool for improving efficiency from the design to the downstream construction stages.

With financial assistance from the Building and Construction Authority’s (BCA’s) BIM Fund, Kimly Construction purchased the hardware and software it needed and hired an external BIM consultant to train its staff. Today, besides being well-equipped with the technology, it also boasts a pool of 18 staff with BIM know-how.

We zoom in on the firm’s use of BIM for one of its recent projects, The Vermont@Cairnhill.

The Vermont@Cairnhill Project
Advantages Gained from BIM Usage

Pre-construction stage

Clash detection: Kimly Construction was able to detect all possible clashes swiftly with BIM even before it began actual construction. BIM allowed the firm to visualise these clashes, which would have been impossible with 2D drawings.

Time savings: It streamlined its processes and achieved up to 20% savings on time spent on construction documentations. With BIM, the firm could speedily convert 2D drawings into 3D models. BIM facilitated a quicker turnaround time by generating accurate schedules and cost estimation data.

Construction stage

Cost savings: At this stage, Kimly Construction enjoyed total cost savings of $50,000. This was possible with reduced wastage. For instance, the firm did away with the need to re-cast the concrete.

Time savings: Construction was completed two weeks earlier than usual.

Empowering its People

Kimly Construction also sees the value in raising its employees’ potential through training and development.

Besides sending its staff to BCA’s CoreTrade courses, some of its engineers also attend supplementary workshops such as Design of Precast Concrete Structures.

It believes that adequate training will greatly improve on-site productivity.

Tapping into BCA’s Construction Productivity and Capability Fund (CPCF), the cost of human capital development for Kimly Construction came up to less than $4,000.
To combat an ageing workforce, new manpower development initiatives have been launched to benefit both employers and employees.

In recent years, the Singapore construction sector has been facing the challenge of an ageing local workforce. Based on the Building and Construction Authority’s (BCA’s) Construction Manpower Survey 2010, almost half of the local workforce are above 45 years old. Young locals below 30 formed a meagre 12% of the total construction labour pool.

This highlights a need for the industry to come together to build a healthy pipeline of skilled workers to meet the demands of the local and global construction sector. Tapping into the $250 million Construction Productivity and Capability Fund (CPCF), BCA will be spearheading manpower development initiatives through the launch of new programmes at the technical, supervisory and foreman levels.

The new programmes launched are the Built Environment Apprenticeship and the BCA-Industry Built Environment Diploma Scholarship/Sponsorship, which will be co-funded by BCA. Don’t fall behind your manpower planning needs! If your firm is keen to take part, simply call our hotline or email us.

WHO’S KEEN?
The following firms have shown an interest in BCA’s new manpower development initiatives:

- Consortium 168 Architects Pte Ltd
- Sembcorp Construction & Design Pte Ltd
- Dai-Dan Co. Ltd
- ST Synthesis Pte Ltd
- DLE M&E Pte Ltd
- Swee Hong Engineering Construction Pte Ltd
- Indeco Engineers Pte Ltd
- Tiong Seng Contractors (Pte) Ltd
- Magnificent Seven Corporation
- Woh Hup (Pte) Ltd

Hotline: 6325 2097
Email: bca_best@bca.gov.sg
Built Environment Apprenticeship

The Built Environment Apprenticeship is a two-stage scheme. The local apprentice will enhance his competency by working for his employer while undergoing training.

Stage 1:

The Tradesman Development Phase is carried out in partnership with the Institute of Technical Education (ITE). At the end of this stage, the apprentice graduates with both a NITEC qualification and an industry-recognised skills certification, which will qualify him for BCA’s CoreTrade Tradesmen registration. Participating firms will pay the apprentice a minimum monthly salary of $1,000 and the government will top it up with an additional $200 per month. The government will also co-fund the course fees for the skills training at the BCA Academy.

Stage 2:

The Foreman Development Phase is a continuation of Stage 1 for ITE graduates, as well as a progression path for firms’ new local recruits and existing local in-house tradesmen. While working for his employer, the apprentice will undertake the part-time Trade Diploma course, which will help him qualify for BCA’s CoreTrade Foremen registration.

How Your Firm Can Benefit

To make this scheme more appealing to locals, BCA will work with firms to provide an attractive remuneration package:

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<tr>
<th>Monthly basic salary</th>
<th>Upgrading incentive</th>
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<tbody>
<tr>
<td>First year of Stage 2</td>
<td>Min. $1,500 from employer</td>
</tr>
<tr>
<td>Second year of Stage 2</td>
<td>Min. $1,750 from employer</td>
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For more details, please visit http://www.bca.gov.sg/workforce/ap.html

BCA-Industry Built Environment Diploma Scholarship/Sponsorship

To attract talents, firms can also partner BCA to offer the BCA-Industry Built Environment Diploma Scholarship/Sponsorship.

Stage 1: Diploma Study Phase

The Diploma Scholarship covers the scholar’s full course fees and provides a monthly allowance of $900, while the Diploma Sponsorship awards an annual $7,000 to the sponsored students. Participating firms will co-pay $2,000 to $5,000 for each student per year, with the government funding the remaining amount. The graduates will serve a minimum two-year bond with the sponsoring firm.

Stage 2: Post-Diploma Development Phase

While working full-time with the sponsoring firm, the Diploma graduate undergoes a structured On-Job-Training (OJT) in the first year. In the second year, the graduate takes a part-time specialist/advanced diploma – sponsored by the firm – to upgrade and become a specialist.

How Your Firm Can Benefit

To make this scheme more appealing to locals, BCA will work with firms to provide an attractive remuneration package as follows:

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For more details, please visit http://www.bca.gov.sg/workforce/dss.html
In December 2011, the Building and Construction Authority (BCA), in collaboration with the Singapore Contractors Association Limited (SCAL), launched the Construction Productivity and Capability Fund (CPCF) Productivity Clinic.

Through the Clinic, SCAL members keen to apply for funding from CPCF can now receive one-to-one consultations with BCA officers. The officers will provide help to SCAL members in a wide range of services, including clarification and application assistance.

Under the CPCF, there is a large platter of incentives for the industry to receive funding and support. These incentives include the Mechanisation Credit (MechC), the Productivity Improvement Project (PIP) scheme, the Workforce Training and Upgrading (WTU) schemes and the Building Information Modelling (BIM) Fund.

To date, 38 firms have attended the sessions. Response to the first four clinics was very encouraging and there was especially strong interest from the firms in the MechC and WTU schemes. Participants, represented mostly by the top management of the firms, came prepared with their queries on the CPCF. BCA officers took the opportunity to guide them on the application and claim forms and to go through the list of documents required to be submitted for the schemes.

Firms who are interested to attend the CPCF Productivity Clinic are required to register with SCAL. This consultation service is limited to 12 companies per session and it will be on a first-come-first-served basis.

For more information, or to register for the CPCF Productivity Clinic, please contact:

Mr Chow Chang See from SCAL
Tel: 6248 9577
Email: chowchangsee@scal.com.sg
or fax your enquiry to: 6273 3977

The clinic sessions will be held at SCAL:
1 Bukit Merah Lane 2,
Construction House,
Singapore 159760.

Take part in the CPCF Productivity Clinic to get all your funding queries answered.
STARTING THE YEAR WITH A BANG: THE SMART BUILDERS LEADERSHIP SERIES

A showcase of the latest technology and productivity tools

Riding on its success in 2011, the Smart Builders Leadership Series 2012, which encourages productivity, drew a record number of 164 participants at its first show this year.

The participants were introduced to the latest equipment and technologies at the event held on February 17 at the MND Complex. They were also informed about the courses and financial assistance schemes available from the Employment and Employability Institute (e2i), which will help companies improve their productivity and growth.

The opening address was given by Mr Tan Chee Kiat, Deputy Director, the Construction Productivity Centre, Building and Construction Authority (BCA). Ms Tan Ying Ying from e2i then shared on the importance of having a competent local core workforce. She also gave an overview of how e2i is helping companies to work towards the goal.

Mr Patrick Andersson from Aquajet Systems AB treated the participants to an intriguing presentation on how hydrodemolition – a method of concrete removal overseas – can be applied in Singapore. By employing the technique, builders enhance their productivity exponentially. While the traditional practice needs a good number of workers and jackhammers for demolition, the hydrodemolition equipment requires only one or two operators.

Recent developments in radio frequency identification (RFID) technology were presented by Mr Kenny Tsen from Bartronics. He demonstrated the various RFID-enhanced applications that can be used in the construction industry. RFID now has a widespread use in the industry to track and manage manpower. The new RFID tracking system does away with manual clocking and allows builders to monitor on-site manpower through the use of portable scanners and rugged tags. Paired with proper manpower database software, RFID can be used by site management teams to plan and manage their construction processes more efficiently.

Mr Sam Tay from Intercorp Solutions thrilled the crowd with a presentation on the facial recognition biometric system. The new system is faster, more accurate and more secure than current biometric systems. Not having any contact point between the user and the system provides the additional advantage of less wear, tear and erroneous readings. When used in conjunction with an entry system like turnstiles or gantries, the facial recognition biometric system prevents unauthorised access and helps monitor on-site manpower. The system can also be customised to generate monthly productivity reports for submission to BCA’s Electronic Productivity Submission System.

The presenters also participated in a mini exhibition to give the participants a better understanding and visualisation of their products and services. The event was a roaring success. The next Smart Builders Leadership Series will be held in April. In our subsequent sessions, we plan to showcase more productive equipment, technologies and materials. Do join us!

To sign up, please call Ezrin at 6325 5093 or email ezrin_raof@bca.gov.sg
NEW:
LORRY CRANE OPERATOR COURSE

A new programme aims to reduce lorry crane accidents at work sites

By September 2013, all lorry crane operators will have to be certified under a new training course aimed at improving the safe operation of cranes.

Unsafe lorry crane work practices have resulted in four fatalities and more than 40 accidents over the past five years. With that, the Building and Construction Authority (BCA) sees a need to ensure operators are better trained in safe work procedures.

The BCA Academy has been accredited to conduct a 2.5-day Lorry Crane Operator Course designed by the Workplace Safety and Health Council and the National Crane Safety Taskforce.

The course consists of classroom and on-site lessons that will educate trainees on following safety guidelines, spotting hazards and responding to emergencies.

Trainees who meet the passing criteria will be awarded the Certificate of Successful Completion (CSC), which is valid for five years. The course is now open for registration at the BCA Academy.

LORRY CRANE OPERATOR COURSE STRUCTURE

Are you a NEW lorry crane operator?

You’ll undergo:
A theory course + a test component: Sit in on a 1-day classroom lesson, which will emphasise on safety procedures in lorry crane operation, legal requirements as well as responsibilities of various stakeholders. At the end of this course, a 1-hour written test will be conducted.

A practical course + a test component: Upon passing your written test, you are eligible for the 1.5-day practical training course. At the end of this course, a 3-hour practical test will be conducted.

Are you an EXPERIENCED lorry crane operator?

You’ll undergo:
A theory test component: This is a 1-hour written test.

A practical test component: Upon passing your written test, you are eligible to take a 3-hour practical test to attain your certification.

For more information, please call the BCA Academy at 6248 9999 or email bca_academy@bca.gov.sg
RIDE ON THE PRODUCTIVITY WAVE
BY SIGNING UP FOR THESE COURSES

CONSTRUCTION PRODUCTIVITY AND CAPABILITY FUND (CPCF) COURSES

- Certificate in Interior Finishing Coordination
- Certificate in Pavement Construction and Maintenance
- Certificate in Precast Concrete Construction Supervision
- Certificate in Waterproofing Supervision
- Certificate in Building Measurement
- Certificate in Geotechnical Instrumentation for Supervisors
- Certificate in Levelling and Setting Out
- Certificate Course for Structural Steel Supervisors
- NBQ in Project Supervision
- Higher NBQ in Project Supervision
- Advanced NBQ in Project Supervision
- NBQ in Supervision and Coordination of M&E Works
- Higher NBQ in Supervision and Coordination of M&E Works
- Advanced NBQ in Supervision and Coordination of M&E Works
- NBQ in Operation & Maintenance
- Higher NBQ in Operation & Maintenance
- Advanced NBQ in Operation & Maintenance

16 NEW COURSES ARE NOW AVAILABLE.
UP TO 50% TO 80% OF THE TRAINING COST CAN BE SUBSIDISED UNDER THE CPCF SCHEME.

The additional courses are:

**Certificate courses (PMETs)**
- Certificate course in BIM Modelling
- Certificate course in BIM Management
- Project Management for Professionals in the Building and Construction Industry (in collaboration with SPM)
- Construction Productivity Management (in collaboration with SCAL)
- Design of Precast Concrete Structures for Engineers
- Workshop on Site Management of Precast Concrete Construction

**Trade Diplomas (Foremen / Supervisors)**
- Structural Steel Supervision
- Reinforced Concrete Supervision
- Plumbing Technology
- Electrical Technology

**Certificate courses (Tradesmen / Foremen)**
- Builders Cert in Plumbing and Pipefitting
- SEC(K) in Precast Concrete Components Erection
- SEC(K) in Structural Steel Fitting
- SEC(K) in Interior Drywall Installation
- System Formwork Training
- Mechanical Elevated Work Platform

FOR ENQUIRIES, PLEASE CONTACT:
BCA ACADEMY
TEL: 6248 9999  EMAIL: bca_academy@bca.gov.sg
CONSTRUCTION PRODUCTIVITY AND CAPABILITY FUND (CPCF)

TECHNOLOGY ADOPTION

MECHANISATION CREDIT (MECHC) SCHEME
Provides assistance to companies to defray up to 50% (S$100,000) of machinery cost

PRODUCTIVITY IMPROVEMENT PROJECT (PIP) SCHEME
Provides assistance to companies to defray up to 70% (S$1 million) of the cost for adopting more productive work processes

BUILDING INFORMATION MODELLING (BIM) FUND
Provides assistance to companies to defray up to 50% (S$105,000) of the cost for incorporating BIM into their work processes

For more information, please call the CPCF toll-free hotline at 1800-325 5050 or visit http://www.bca.gov.sg/CPCF/cpcf.html