PREFABRICATE AND DRYWALL IT UP WITH PIP
FLEXING THOSE PEX: OSK ADOPTS FLEXIBLE PIPING USING PEX
LIGHTS, PRODUCTIVITY, AWARDS!

PRODUCTIVE CONSTRUCTION METHODS
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,

Success. What does it mean to you? This word holds different meanings for different people, for each of us have varying values and goals in life. But one thing for sure, achieving success is not possible without commitment and collaboration. The same goes for business. Success requires the parties involved to collaborate and work at achieving productive relationships.

It was with this belief in mind that BCA held the Singapore Construction Productivity Week in April. The inaugural event, which saw a strong turnout of about 4,300 participants, not only served as a platform for strengthening partnerships, but also gave attendees of the Build Smart Conference – a key highlight of the Week – the opportunity to learn from international and local thought leaders in the construction field.

As a demonstration of our belief in building close partnerships with industry stakeholders, BCA also signed a Memorandum of Understanding (MOU) on Building Information Modelling (BIM) capability building with buildingSMARTKorea, buildingSMARTSingapore and StichtingOpenBIM.info (Netherlands) during the Week.

The signing of the MOU would allow us to work in tandem with like-minded organisations, and we are hopeful that this will enable Singapore to build greater capability in BIM to aid in construction productivity.

Our BCA Awards event in May was also a perfect opportunity for strengthening relationships. That night, we hosted more than 2,000 movers and shakers in the construction industry to honour and pay tribute to displays of excellence in the built environment. This year, we also gave out 31 new Construction Productivity Awards to recognise companies and industry practitioners who embrace a productivity culture in key areas ranging from leadership, people, design and processes to measurement, results and productivity innovation.

There are indeed so many ways to boost productivity in this sector. Do take time to read in this issue about firms who have moved forward to adopt labour-saving technologies and methods, as well as the importance of training up a highly skilled and productive workforce to lead productivity improvements. Let us continue to make productivity the hallmark of our sector’s transformation and success.

Dr John Keung
Chief Executive Officer
THE MECHC BOOST

For many local construction companies, the cost to mechanise can sometimes be overwhelming. But for companies that tap on BCA’s Mechanisation Credit (MechC) scheme, the challenge to mechanise is a thing of the past. BCA has recently enhanced the MechC scheme, giving the construction industry the extra boost it needs to adopt more advanced technologies within the construction process. Build Smart gets in touch with two small-medium enterprises (SMEs) that have benefitted from the enhanced MechC scheme in their bid to achieve higher productivity.

Yes Construction Pte Ltd

Specialising in concrete works and plant construction, Yes Construction is just one of the many SMEs that have benefitted from the MechC scheme. Founded a mere four years ago, Yes Construction is now a Grade C1 contractor under the BCA Contractors Registry and a GB2 licensed builder under BCA Licensing of Builders Scheme.

With the support of MechC, Yes Construction purchased a telescopic handler and two scissor lifts to tackle the challenges in plant construction. Yes Construction is already reaping the benefits of the telescopic handler.

Coupled with a boom extension, the telescopic handler can traverse areas that were previously inaccessible by conventional means. In fact, it doubles as a means of transport for transporting construction materials on site.

Thanks to BCA’s MechC scheme, Yes Construction has been able to purchase this equipment that would otherwise have been unaffordable.

Mr Ma Shen Liang
General Manager and Founder of Yes Construction Pte Ltd

“Productivity has always been our strategic target, which is why we focus heavily on streamlining work processes to optimise project efficiency. Improving our project management capabilities also helps us stay competitive.”

Who: > Yes Construction Pte Ltd
Business: > Specialist in concrete works and plant construction
What they bought: > A telescopic handler and two scissor lifts
Benefits: > Boom extension enables access to areas that were inaccessible by conventional means > Doubles as a means of transport for transporting construction materials on site
The Mechanisation Credit (MechC) scheme is a BCA monetary programme for construction businesses that wish to improve their productivity by mechanisation. MechC can defray the cost of technology adoption up to 50%.

Lai Yew Seng Pte Ltd
As specialists in structural steel and architectural steel-finishing works, Lai Yew Seng is no stranger to the construction industry. With a long list of expertise, it is accredited by the Singapore Structural Steel Society and is a GB1 licensed builder under BCA Licensing of Builders Scheme. It is also currently a C1 General Building and a C3 Civil Engineering contractor under the BCA Contractors Registry.

Through the MechC scheme, Lai Yew Seng acquired a Computer Numerically Control (CNC) gas- and plasma-cutting machine for its steel fabrication works.

With the new CNC machine, Lai Yew Seng reduced the traditional cutting process from four man-days to just one man-day. Because of the overwhelming benefits of mechanisation, Lai Yew Seng had also purchased a gap bed lathe machine with the help of MechC.

“Who:
Lai Yew Seng Pte Ltd
Business:
Specialist in structural steel and architectural steel-finishing works
What they bought:
CNC gas- and plasma-cutting machine for its steel fabrication works
Benefits:
Traditional cutting process reduced from four man-days to just one man-day

Mr Richard Tan,
Business Development Manager of Lai Yew Seng Pte Ltd

“...“The MechC scheme assists companies to achieve their highest productivity potential through mechanising their operations. With this support, our company’s capabilities will eventually have a more competitive edge.”
DISPELLING
PRODUCTIVITY
MYTHS

When businesses are trying to keep productivity up, it’s easy for them to fall prey to common misconceptions. Build Smart sheds light on these productivity myths.

The Construction Productivity Centre comprises a team of dedicated account managers who take a keen interest in helping construction companies to raise their productivity. They actively meet companies to advise them on how to improve their work processes. The team handling Productivity Improvement Project (PIP) looks forward to discuss any interesting ideas to improve site productivity with your firms. If you any queries, please call BCA’s CPCF hotline at 1800-325-5050.

Common myths abound in the quest for productivity. While BCA has introduced the Productivity Improvement Project (PIP) scheme to help the industry accelerate productivity, there are some continuing misconceptions have impeded businesses from applying for the PIP scheme. The PIP team helps us dispel some of these myths.

**MYTH 1**

Although precast designs enhance constructability, the PIP scheme does not support precast construction.

The PIP scheme, as a whole, aims to increase the capabilities of all contractors that continuously seek to improve productivity.

Hence, the PIP scheme will, most likely, support systems or equipment that help contractors improve future capabilities. However, apart from a few exceptions, the PIP scheme will not support construction materials that will only benefit a single project.

BCA has identified the following materials that will be supported under the PIP scheme: self-compacting concrete, prefabricated bathrooms and drywalls used in residential projects. (It is important to note that ‘drywall’ refers to gypsum boards or similar wall systems.)

The PIP scheme can also support the manpower and consultancy costs needed to convert non-precast designs into precast designs.

**MYTH 2**

Companies should “shop” for the incentive scheme that rewards the most.

While there are several schemes that defray costs for firms adopting productive technologies, BCA encourages firms to identify their productivity gaps and formulate the measures needed to achieve long-term and sustainable competitiveness. The incentive schemes will eventually end. Going for the more attractive incentive scheme for the short term is not sustainable.

**MYTH 3**

The PIP scheme does not support software that will improve our office operations.

The main objective of the PIP scheme is to improve the productivity of construction work on-site. That said, it would be difficult to justify the productivity benefits of backend office software, such as the on-site Enterprise Resource Planning (ERP) system.

However, other construction-related IT solutions, such as radio-frequency identification (RFID) for construction-material tracking, site planning and management software could be supported if it leads to productivity improvement on-site.

Did you know that other than the PIP scheme, you can also tap on the Productivity and Innovation Credit (PIC) scheme?

Introduced into the Singapore Budget in 2010 and administered by the IRAS, PIC provides tax benefits for business investments and a wide range of range of activities along the innovation value chain.

Firms interested in upgrading their operations through IT can also benefit from the PIC scheme. Companies can enjoy a whopping 400% tax deduction on software expenditure.

Please visit [http://www.iras.gov.sg/irashome/PICredit.aspx](http://www.iras.gov.sg/irashome/PICredit.aspx) for more information.
FLEXING THOSE

OSK ADOPTS FLEXIBLE PIPING USING PEX

OSK Engineering Pte Ltd has been at the forefront of the local plumbing industry in recent years. As the company to plan and implement plumbing systems for the Marina Bay Sands and the Quayside Hotel at Sentosa Cove, OSK has been quick to train its workforce under BCA’s Workforce Training and Upgrading (WTU) scheme.

But even then, OSK understands that improving productivity does not stop with worker training. With the help of the Productivity Improvement Project (PIP) and Mechanisation Credit (MechC) schemes, OSK discovered cross-linked polyethylene (PEX), a new flexible pipe material that halves the installation time of plumbing pipes.

After years of using copper and propylene random copolymer (PP-R) piping, OSK Engineering Pte Ltd (OSK) has discovered a new piping material that could revolutionise the plumbing industry.

What’s so special about PEX piping?
The plumbing industry has traditionally used copper piping as its core material for its plumbing solutions. To combat copper corrosion issues, propylene random copolymer (PP-R) was introduced. Because of the huge cost difference between copper and PP-R, the industry quickly switched to PP-R.

The problem was that PP-R plumbing systems required the same amount of skilled labour as copper-piping solutions – they both required workers skilled enough with oxy-fuel or acetylene torches to fuse joints.

Requiring only simple tools, the PEX-piping system not only uses fewer joints, but also removes the difficult pipe-fusing process through a press-fit jointing system that eliminates the need for skilled labour.

PEX-plumbing systems are so innovative that they just about halve the installation time. Because of this exponential increase in productivity, PEX-plumbing systems are being used for projects such as the NUS University Town and the Quayside Hotel at Sentosa Cove.

With the new PEX-plumbing system, OSK has experienced a dramatic improvement on two fronts: labour costs and installation time. OSK Engineering Pte Ltd estimates a whopping 50% increase in productivity after switching to PEX piping.
City Developments Limited (CDL) swept four inaugural platinum Construction Productivity Awards (CPA) at the recent BCA Awards 2011. Build Smart finds out the secret to their success.

As a developer, CDL initiated the productivity movement for its projects such as Parc Emily (pictured above) by specifying the use of various productivity enhancing systems, such as prefabrication and drywalls, in its projects.

The BCA Awards 2011 was nothing short of spectacular. Held at Resorts World, Sentosa, the event saw more than 2,000 of the construction industry’s movers and shakers in attendance, making the BCA Awards 2011 Singapore’s largest gathering of construction professionals to date.

But amidst the glitz and glamour, there was one shining star. City Developments Limited (CDL) swept four platinum awards from the inaugural Construction Productivity Awards (CPA). It was also accorded the inaugural BCA Green Mark Platinum Champion Award. Build Smart spoke to CDL about their win.

**Build Smart**

**CDL**

How did you feel after winning more than half of BCA’s CPA?

CDL is honoured by BCA’s recognition. The awards were strong affirmations of CDL’s high level of productivity that was demonstrated by our respective project teams. Winning these awards was only possible through the collaboration and support rendered by our stakeholders.
Our vision is to employ the latest technology available to improve the construction process. We hope to achieve a “lego” construction style, where most of the components are made in the factory and assembled on-site.

What productivity processes did CDL adopt that helped it win multiple BCA platinum awards?

CDL

As part of CDL’s concerted efforts to raise our builders’ Environmental, Health and Safety (EHS) standards, we developed the 5-Star EHS Assessment System to assess their management commitment to safety and occupational health at our sites.

With this rigorous system of checks and balances in place, CDL achieved a 4% to 18% reduction in waste generation and water and energy usage at our worksites.

CDL also facilitated the smooth construction of several projects without compromising on the quality by extensively using precast components. The adoption of precast components not only greatly simplified the construction sequence by ensuring efficiency, but such practices also helped to reduce construction wastage.

Is CDL exploring other processes, technologies or products that might improve productivity?

CDL

Our drive towards productivity is a continuous process.

Our vision is to employ the latest technology available to improve the construction process. We hope to achieve a “lego” construction style, where most of the components are made in the factory and assembled on-site.

In areas where precasting is not possible, we are looking into ways to use less concrete and speed up the entire concreting process. We believe that these initiatives will not only deliver a high-quality development, but also result in greater productivity and a safer worksite.

We are also endorsing the Building Information Modelling (BIM) format to improve the productivity for design, construction and even facilities management of our projects. By end 2012, we expect all of our new projects to fully adopt BIM.

What are the strategies, methods and initiatives that have made CDL among the most progressive and productive in the industry?

CDL

Innovation is the key to our success. Through innovative thinking, we influenced our consultants and builders to adopt sustainable, easy and safe-to-build best practices such as extensive prefabrication.

We have also been using innovative technologies. We are now using the labour-efficient dry wall instead of the conventional brick wall. To date, we have constructed some 5,000 apartments with dry walls.

We stopped the use of scaffolds for external wall construction and struts for basement construction since 2003 in favour of system formworks and precast external walls.

These are just some examples of our commitment to improve productivity at our worksites. In our pursuit to make further improvements in productivity, we will continue to explore and deploy relevant technologies as they evolve.

Now that CDL has won multiple awards, what’s next? What does CDL hope to achieve in the future, in terms of productivity?

CDL

CDL will continue to work closely with our builders to explore innovative ways to increase productivity. As a developer, we can play a pivotal role in influencing the industry to bring about change. We hope to influence the industry to adopt an irreversible baseline of Social Responsibility and to facilitate easy and resource-friendly construction.

In the long run, we hope to achieve a highly productive workforce and a fatality-free workplace, while ensuring the highest level of building quality.
There are many things that can be said about prefabricated bathroom units and drywalls. But sometimes, just laying out the simple facts can help construction companies make the right decisions. Build Smart explores prefabricated units, drywalls and BCA’s Productivity Improvement Project scheme that aims to help construction companies adopt change.

It has been challenging for the construction industry to accept drywalls and prefabricated bathroom units (PBUs) into its repertoire of products. Even with the blessing of BCA’s Productivity Improvement Project (PIP) scheme, the construction industry is still apprehensive. Build Smart lays out the simple facts for companies to decide.

**The Building Blocks of the Future**

If time is money, then construction must be about speed. The challenge lies in building a superior-quality product that ensures a safe process with less manpower. In fact, we’re talking about the building blocks of the future.

Drywalls are gypsum plasters pressed together by fibreglass panels and fixed onto steel frames with self-tapping screws. Faster to construct than brick walls, drywalls are made in factories, so consistency in finishing and quality workmanship is ensured. Its easy installation brings down the cost of manpower and saves time.

Drywalls also hold a number of unseen benefits: they conceal M&E services, have better thermal and acoustic insulation; are fire resistant and hold a minimum loading of 25 kg at each point. Because of the material used in drywalls, homeowners are afforded the flexibility to change the layout of their homes as they please.

PBUs share the same principal qualities of drywalls. Because they are fabricated in factories, they are more consistent in quality. The many tradesmen and skilled labour previously needed to finish a bathroom is done away with, decreasing the number of wet trades.

PBUs are fast and easy to install, and yet are able to withstand the very toughest of bathroom tests.
Adopting Change Through CPCF

BCA understands that change is sometimes hard to adopt, especially with the current doubts and misconceptions of drywalls and PBUs. That’s why BCA has qualified both drywalls and PBUs for funding through the Productivity Improvement Project (PIP) Scheme. The table reveals some of the details.

<table>
<thead>
<tr>
<th>Supportable cost under PIP scheme</th>
<th>Original</th>
<th>Enhanced (from Mar 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50% of extra cost over conventional material (for self compacting concrete only)</td>
<td>Up to 80% of extra cost over conventional materials for prefab bathroom, drywall (for residential projects only) and self compacting concrete.</td>
</tr>
<tr>
<td></td>
<td>Total grant capped at $100,000 per PIP application</td>
<td>Total grant capped at $100,000 per PIP application</td>
</tr>
</tbody>
</table>

In addition, Buildable Design points (under Buildable Design Appraisal System) are awarded for the extensive use of PBUs.

<table>
<thead>
<tr>
<th>Bonus Points</th>
<th>Module</th>
<th>Unit of Coverage</th>
<th>Percentage of Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Integrated Components</td>
<td></td>
<td></td>
<td>≥ 65% to ≤ 80%</td>
</tr>
<tr>
<td>A.1. Prefabricated bathroom / toilet units complete with piping / wiring</td>
<td>–</td>
<td>no.</td>
<td>3.00</td>
</tr>
</tbody>
</table>

Build Smart hopes that, after reviewing the facts, your company will adopt the safer, quicker and more cost-efficient way of construction in the future. If you have any queries about BCA’s schemes, please visit [http://www.bca.gov.sg/CPCF/cpcf.html](http://www.bca.gov.sg/CPCF/cpcf.html) for more information.
So you want to improve your productivity on-site. But do you know the ways? Build Smart shows you the first steps to greater productivity.

1. **High capacity tower cranes** can lift bigger and heavier prefabricated building components compared to normal cranes.
   - Productivity improvement: At least 20%
   - Incentive scheme available: MechC, IAS

2. **Self-compacting concrete** needs no help spreading, levelling and compacting, as it flows like a liquid during concrete placement.
   - Productivity improvement: 60%
   - Incentive scheme available: PIP

3. **Screedless floor** can immediately receive tile/stone finishing using thin bed adhesives or carpet/raised floor finishing.
   - Productivity improvement: 20% – 30%
   - Incentive scheme available: PIP

4. **Self-climbing scaffold** is equipped with a climbing mechanism that moves the entire scaffold upwards – making it unnecessary for builders to erect the traditional scaffold system from the ground up.
   - Productivity improvement: 40%
   - Incentive scheme available: PIP, PIC, IAS
Light, durable and easy to install, **drywalls** are quickly becoming the de facto option over the traditional brick in private residential developments because of their consistent quality.

Productivity improvement: **150% – 200%**
Incentive scheme available: **PIP**

**Biometric/smart card manpower systems** accurately recognise workers based on unique physical traits such as fingerprints.

Productivity improvement: **Accurate manpower tracking leads to precise manpower management.**
Incentive scheme available: **PIP**

**Building Information Modelling (BIM)**, a 3D modeling programme that allows information-sharing among professionals, analyses and resolves potential design clashes before construction begins.

Productivity improvement: **Time and cost savings for construction projects.**
Incentive scheme available: **BIM Fund**

With homogenously better quality, **steel sections**, which are built in factories, result in faster construction.

Productivity improvement: **Faster construction time. Steel sections can also be recycled.**
Incentive scheme available: **PIP**

The **telescopic handler** functions like a small crane, with a single telescopic boom that can extend forwards and upwards. It reduces the labour needed for the transportation of material.

Productivity improvement: **At least 20%**
Incentive scheme available: **MechC**

**Strut-free excavation** prevents the earth from collapsing during excavation because of the compression pressure around the excavation’s unique ring surface.

Productivity improvement: **Saves time and manpower and creates an unobstructed working space.**
Incentive scheme available: **PIP**

The compact size of **scissor lifts** provides a platform for workers in high places, both on the inside of a building and out.

Productivity improvement: **20% – 30%**
Incentive scheme available: **MechC**

**High-density polyethylene (PEX) flexible piping** isn’t just strong, durable and corrosion-resistant. It’s also bendable, which means fewer joints, making pipe installation around corners much easier.

Productivity improvement: **30% – 50%**
Incentive scheme available: **PIP**

**Concrete pump and placing booms** allow the transfer of large amounts of concrete from a trailer at a distance, removing the need for cranes to hoist concrete.

Productivity improvement: **60%**
Incentive scheme available: **MechC**

The **system formwork** is a modular system made from aluminium, plastic or steel that allows for speedy formwork setup and can be reused for more than 50 times with regular maintenance.

Productivity improvement: **35% – 50%**
Incentive scheme available: **MechC, PIP, IAS**

**Prefabricated bathroom units** not only come complete with finishes and fittings, they come homogenously made, so that you can reduce the specialist labour needed on-site.

Productivity improvement: **30%**
Incentive scheme available: **PIP**
The inaugural Singapore Construction Productivity Week (SCPW) started off impressively, bringing together the construction industry’s biggest names to celebrate productivity. Build Smart covers the details.

Held from 25 to 29 April 2011, the inaugural Singapore Construction Productivity Week (SCPW) attracted more than 4,300 local and international visitors with displays of the latest building technology, initiatives and best practices.

Speaking at SCPW’s opening, Ms Grace Fu, former Senior Minister of State for National Development and Education, emphasised the importance of a knowledge-based workforce and technology adoption for the local construction industry.

She also praised the progress of BCA’s efforts to encourage technology and skilled-labour adoption through its Construction Productivity Roadmap.

As the Roadmap’s flagship programme, CPCF has helped more than 500 firms in the construction industry through its S$250 million fund to date.

The Conference’s opening ceremony also saw BCA signed a Memorandum Of Understanding (MOU) on BIM capability building with buildingSMARTKorea, buildingSMARTSingapore and StichtingOpenBIM.info (Netherlands).
The Build Smart conference and BuildTech Asia exhibition 2011 were warmly received by the industry. 27 papers were presented at the inaugural conference while 160 exhibitors took part in the exhibition.

“I would like to encourage small- and medium-sized construction businesses to act now to take advantage of the incentive schemes under the Construction Productivity and Capability Fund to improve their productivity.”

Dr John Keung
CEO of BCA
Singapore’s first nationwide Skilled Builder and BIM Competitions brought together 47 teams and 41 teams respectively to pit their skills against one another. Build Smart caught up with the winners of both competitions.

**TEAM SPORTSHUB**
*BIM Competition Winner, Architecture (Professional Category)*
Hailing from DP Architects Pte Ltd, Team SportsHub comes from a long line of award-winning projects. Build Smart caught up with team members Mr Ephraim Baluyot, Mr Richard Galang and Mr Wykeith Ng to find out how winning felt.

**Build Smart**
How did you feel after winning the BIM Skills competition for Architecture (professional)?

**Sports-Hub**
It was an honour to represent DP Architects in this prestigious event. We were also relieved when it was over! The results were really gratifying as the team put great effort into the competition.

**Build Smart**
Do you think that BIM is the future of designing architecture?

**Sports-Hub**
For us, BIM is a superb and necessary platform for complex designs to be achieved and understood by many. We recognise that the BIM platform is most efficient in the context of multi-disciplinary construction projects.

**Build Smart**
What are the things you have learnt from this project?

**Sports-Hub**
We learnt that with cooperation and good teamwork, we could create a good design. With BIM, we can anticipate the clashes in a project. BIM has remarkable capabilities and we should not stop learning what BIM can do.

**TEAM VAL**
*BIM Skills Competition Winner, Architecture (Student Category)*
Welcome the next generation of aspiring architects. Hailing from the National University of Singapore, VAL’s unexpected win shows us that nothing is impossible. Team VAL lets Build Smart in on a taste of victory.

**Build Smart**
How did you feel after winning the BIM Skills competition for Architecture (student)?

**VAL**
It came as a surprise because we hadn’t taken part in previous competitions before. We were elated when we brought home more than just an experience, but also a trophy!

**Build Smart**
Do you think that BIM is the future of designing architecture?

**VAL**
Definitely. BIM was conceived precisely to deal with the shortcomings of existing workflows. With more stakeholders and time and budget constraints, BIM allows effective collaboration on project designs. Information such as plans, elevations and sections can be generated with ease and, more importantly, with line-weights to convey visual depth. BIM also addresses issues such as interoperability between 3D modeling and simulations, which allows us to optimise the design’s performance.

**Build Smart**
What are the things you have learnt from this project?

**VAL**
We have learnt that collaboration is a key contributing factor to productivity, especially in the building and construction industry, where there are so many skilled professionals. The full potential of their contributions can only be realized when their talents are applied in a timely and collaborative fashion.

LIAN BENg CONSTRUCTION PTE LTD
Skilled Builder Competition Winner, Overall
With a prolific history in local construction, the Lian Beng Construction Pte Ltd (LBC) rose to the task to clinch top spot in the Skilled Builder Competition. Build Smart spoke to Project Manager Mr Shie Chee Hwa about the win.

Build Smart
What does winning this competition mean to you?
LBC
After competing with the big boys, we felt that we accomplished an ‘unachievable’ task. It’s great to finally gain this kind of achievement and recognition in the construction industry.

Build Smart
How did you overcome the challenges you faced while preparing for the competition?
LBC
Practice makes perfect. We spent many nights after work practising to win. Communication was also essential as we exchanged ideas to perform our tasks better.

Build Smart
Finally, what’s your advice to aspiring winners of the Skilled Builders competition?
LBC
Set an objective, have a clear mindset to win and you will achieve the impossible.

PQ BUILDERS PTE LTD
Skilled Builder Competition Winner, Drywall Category
With a professional track record dating back to 1984, the PQ Builders Pte Ltd (PQ) team used their immense experience and expertise to emerge victorious in the Drywall Category of the Skilled Builder Competition. Build Smart interviewed Director Peh Ke Pin on PQ’s victory.

Build Smart
What does winning this competition mean to you?
PQ
Winning this competition is a testimony of our team’s capability and determination to be the best in what we do. The years of open communication with company staff and dialogues have proven effective and allow us to inculcate a sense of responsibility and belonging to PQ family.

Build Smart
Did you have a particular mindset before competing?
PQ
The ones with the winning mindset were my employees. They said, “Boss, we will help PQ get the trophy”. And I just empowered them and replied, “Thanks for the initiative. You are the experts in this trade, and I leave it in your good hands.” And they won. They have done the company proud.

Build Smart
What were the challenges while preparing for the competition and how did you overcome those challenges?
PQ
The PQ team surveyed the competition area prior to the competition. The team realised that the equipment provided wasn’t what they had been trained to use. However, they took the time to prepare themselves. The effort, coupled with the desire to make the PQ family proud, allowed the PQ team to win.
If there were anything close to the “Academy Awards” for Singapore’s construction industry, this would be it. The BCA Awards 2011 was celebrated with pizazz, but not before BCA unveiled its new award category. Build Smart gets the details.
The BCA Awards 2011, which took place on 19 May, was nothing short of impressive. Held at the delightful Resorts World, Sentosa, the BCA Awards 2011 hosted more than 2,000 movers and shakers of the construction industry that came together to celebrate excellence and achievements.

But that wasn’t all that was in the making. BCA launched, in spectacular fashion, the inaugural Construction Productivity Awards (CPA), an award given to those who embrace the productivity culture in key areas like leadership, people, design and processes, measurement and results and productivity innovation.

There are three categories to CPA:

- **Projects**, which rewards development project teams that have demonstrated productivity improvement concepts in their construction projects from start to finish;
- **Best Practices and Innovations**, which honours organisations that have developed, introduced and implemented best practices or innovative ideas in construction productivity;
- **Value-Added Productivity (VAP)**, which recognises progressive firms that strive towards higher productivity.

The CPA is meant to encourage employers and employees alike to take ownership and strive for improvements in productivity. A total of 31 awards for construction productivity were given out at the ceremony.

City Developments Limited and Gammon Construction Limited were the biggest winners, walking home with several platinum CPA for Project and Best Practices & Innovations. Lum Chang Building Contractors Pte Ltd clinched the Best VAP Builder, while Sembawang Engineers and Constructors Pte Ltd and Lian Soon Construction Pte Ltd both earned the title of Best VAP Improvement Builder.

Mr Kevin Wong, Chairman of the CPA Assessment Committee, said, “The construction productivity award received strong support from the industry with 85 nominations in its inauguration launch... this is an encouraging sign that the industry is making some headway in productivity improvements.”

“The winners are exemplary companies and industry practitioners who embrace a productivity culture in key areas,” added Dr John Keung, CEO of BCA. “We are confident that the winners of these awards will serve as catalysts that help transform the construction industry and inspire the rest of the industry to embark on their own productivity journeys.”
## Construction Productivity Awards (CPA) – Projects

<table>
<thead>
<tr>
<th>Award</th>
<th>Project</th>
<th>Team members</th>
<th>Type of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Platinum</strong></td>
<td>ARTE @ Thomson</td>
<td>Dragees Singapore Pte Ltd, SCDA Architects Pte Ltd, LSW Consulting Engineers Pte Ltd, Conteem Engineers Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>Parc Emily</td>
<td>Tiong Seng Contractors (Pte) Ltd, ADDP Architects LLP, LSW Consulting Engineers (Pte) Ltd, United Projects Consultants Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>St. Regis Hotel &amp; Residences</td>
<td>Kajima Overseas Asia Pte Ltd / Tiong Seng Contractors (Pte) Ltd, RSP Architects Planners &amp; Engineers (Pte) Ltd, Square Mech Pte Ltd</td>
<td>Mixed Development</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>The Sail @ Marina Bay</td>
<td>Dragees Singapore Pte Ltd, Team Design Architects Pte Ltd, Meinhardt (Singapore) Pte Ltd</td>
<td>Mixed Development</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>Henderson Waves</td>
<td>Evan Lim &amp; Co Pte Ltd, RSP Architects Planners &amp; Engineers (Pte) Ltd, Square Mech Pte Ltd</td>
<td>Civil Engineering</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>The Solitaire</td>
<td>Poh Lian Construction Pte Ltd, Team Design Architects Pte Ltd, KTP Consultants Pte Ltd, Square Mech Pte Ltd</td>
<td>Residential Non-Landed &lt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Dakota Residences</td>
<td>Dragees Singapore Pte Ltd, Architects 61 Pte Ltd, KTP Consultants Pte Ltd, Alpha Consulting Engineering Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>City Square Residences</td>
<td>Woh Hup Pte Ltd, Ong &amp; Ong Architects Pte Ltd, Meinhardt (Singapore) Pte Ltd, Parsons Brinckerhoff Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Oceanfront @ Sentosa Cove</td>
<td>Ssangyong Engineering &amp; Construction Co. Ltd, Axis Architects Planners Pte Ltd, KTP Consultants Pte Ltd, Square Mech Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Queenstown R24</td>
<td>Strats Construction Singapore Pte Ltd, Surbana International Consultants Pte Ltd</td>
<td>Residential Non-Landed &gt; 25,000 sqm</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Marina Bay Financial Centre Phase 1</td>
<td>Kajima Overseas Asia Pte Ltd &amp; Tiong Seng Contractors (Pte) Ltd joint venture, DCA Architects Pte Ltd, Meinhardt (Singapore) Pte Ltd</td>
<td>Commercial and Office</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Bedok Town Central C6 (Linear Green @ Bedok)</td>
<td>China Construction (South Pacific) Development Co Pte Ltd, Surbana International Consultants Pte Ltd</td>
<td>Mixed Development</td>
</tr>
</tbody>
</table>

## Construction Productivity Awards (CPA) – Value-added Productivity

<table>
<thead>
<tr>
<th>Award</th>
<th>Firm</th>
<th>Award Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best VAP Builder</strong></td>
<td>Gammon Pte Limited</td>
<td>Category 1 (Turnover ≥ S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder &amp; Best VAP Improvement Builder</strong></td>
<td>Lum Chang Building Contractors Pte Ltd</td>
<td>Category 1 (Turnover ≥ S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder &amp; Best VAP Improvement Builder</strong></td>
<td>Sembawang Engineers and Constructors Pte Ltd</td>
<td>Category 1 (Turnover ≥ S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder</strong></td>
<td>Antara Koh Pte Ltd</td>
<td>Category 2 (Turnover &lt; S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder</strong></td>
<td>Expand Construction Pte Ltd</td>
<td>Category 2 (Turnover &lt; S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder</strong></td>
<td>Guan Ho Construction Co. Pte Ltd</td>
<td>Category 2 (Turnover &lt; S$100 million)</td>
</tr>
<tr>
<td><strong>Best VAP Builder &amp; Best VAP Improvement Builder</strong></td>
<td>Lian Soon Construction Pte Ltd</td>
<td>Category 2 (Turnover &lt; S$100 million)</td>
</tr>
</tbody>
</table>

## Construction Productivity Awards – Best Practices & Innovation

<table>
<thead>
<tr>
<th>Award</th>
<th>Firm</th>
<th>Best practices/innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Platinum</strong></td>
<td>Dragees Singapore Pte Ltd</td>
<td>Special formwork cantilever platform and precast system on site</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>Arbeit Sicher Pte Ltd</td>
<td>TeMP system – cantilever working platform and temporary access frame for light installation</td>
</tr>
<tr>
<td><strong>Platinum</strong></td>
<td>Gammon Construction Limited Singapore Branch</td>
<td>Usage of the precast retaining wall to expedite construction of Chinatown MRT station and tunnels</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>OSK Engineering Pte Ltd</td>
<td>Adoption of flexible compression mechanical piping system for hot and cold plumbing work</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Gammon Pte Ltd</td>
<td>Pipe work modularisation</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Ssangyong Engineering &amp; Construction Co. Ltd</td>
<td>Hoisting and installing system of prefabricated bath unit (The Oceanfront @ Sentosa Cove)</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Gammon Pte Ltd</td>
<td>Positioning device developed at “Mole” project for rock probing</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>Deluge Fire Protection (SEA) Pte Ltd</td>
<td>Best practices for sprinkler dropper installation</td>
</tr>
<tr>
<td><strong>Gold</strong></td>
<td>China Jinye Engineering Corporation Limited (Singapore branch)</td>
<td>Energy-saving acoustic lightweight external wall system for steel structural building</td>
</tr>
</tbody>
</table>
There’s been a lot of talk in the industry about the Construction Registration of Tradesmen Scheme (CoreTrade). But what exactly is CoreTrade, and how does it build a smarter, more productive workforce? Build Smart has the answers.

What is CoreTrade?
CoreTrade (the Construction Registration of Tradesmen) is a worker-registration scheme aimed at recognising, upgrading and retaining skilled and experienced construction personnel.

Why the CoreTrade scheme?
CoreTrade establishes clear career progression for both local and suitable foreign workers. Through CoreTrade, general workers are able to become construction foremen by specialising in specific trades. In fact, from July 2011, CoreTrade personnel could qualify for the higher-skilled levy tier, which lowers costs for construction companies with CoreTrade-registered workers.

Mr Khoo Swee Kok, Woh Hup’s Human Resource Manager, revealed that his company has promoted some CoreTrade personnel to take on higher responsibilities. “We have converted their salary scheme from daily to monthly-based wages as they are higher value-adding workers.”

What’s new in CoreTrade?
Since 15 April 2011, the number of CoreTrade vocations has more than doubled, covering 17 trades and 48 associated skills qualifications.

**Current Trades**
- 01. Construction Plant Operation Works
- 02. Electrical Works
- 03. Plumbing and Piping Works
- 04. Reinforced Concrete Works
- 05. Structural Steel Works
- 06. Tiling, Stone Laying and Floor Finishing Works (Formerly known as Tiling and Stone Laying Works)
- 07. Waterproofing Works

**Additional Trades**
- 01. Cladding and Curtain Wall Installation
- 02. Glazing Works
- 03. Drywall Installation
- 04. Suspended Ceiling Installation
- 05. Doors and Windows Installation
- 06. Joinery Works
- 07. Air-Conditioning Ducting Installation
- 08. Fire Protection Works
- 09. Gas Pipefitting Works
- 10. Lift Installation

Mr Jason Sim, Jason Parquet Specialist’s Managing Director, supports BCA’s efforts to elevate the skills and productivity of Singapore’s construction workforce through the CoreTrade scheme. “With the addition of the new trade in timber flooring, we are now able to upgrade and retain our specialist tradesmen with such crafts skills,” he elaborated.
The role of the trade foreman is often seen as the person who gives orders on-site. But it's much more than that. Build Smart looks at the importance of trade foremen and how you can become one.

We all know that the construction industry plays a pivotal role in supporting Singapore’s economic growth and enhancing the quality of life. From the impressive Singapore skyline to the comfort of the residential flat, it’s the construction industry that articulates the vision of Singapore’s future.

But behind every building, there is an unsung hero. It is, in fact, the trade foremen of each building. They drive their tradesmen teams to achieve awe-inspiring landmarks with safety and quality.

If you are ready to be in the driver’s seat of Singapore’s construction industry, there is no better place to start than at BCA Academy’s Trade Diploma Course.

The three-part Trade Diploma course will cover foundation skills, technical knowledge as well as craft skills and knowledge. They will also include trade specialisations like Plumbing Technology, Reinforced Concrete Construction, Structural Steel Works and Electrical Technology.

BCA Academy is looking for passionate and driven people to become trade foremen. If you are ready for the challenge, BCA Academy welcomes you to a rewarding career in the construction industry.

For more information, please call BCA Academy at 6248 9999. You can also email our friendly staff at 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. 50% TO 80% OF THE TRAINING COST CAN BE SUBSIDISED UNDER THE CPCF SCHEME.

The additional courses are:

Specialist Diplomas (PMETs)
> Building Information Modelling (BIM)

Certificate courses (PMETs)
> 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, PLS 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
Encourages companies to build up their work processes to achieve productivity gains with up to 70% (S$100,000 to S$1 million) co-funding

BUILDING INFORMATION MODELLING (BIM) FUND
Provides assistance to companies to incorporate BIM into their work processes to offer new value-added services with up to 50% co-funding (S$20,000 to S$210,000)

For more information, please call the CPCF toll-free hotline at 1800-325 5050