

MEDIA RELEASE

CONSTRUCTION INDUSTRY SETS NEW RECORD AT BCA AWARDS 2010

1. The Building and Construction Authority (BCA) handed out a whopping 159 awards at its annual BCA Awards, which is an indicator of the growing commitment of Singapore's construction industry towards greater contribution to the economy and the built environment.
2. Against the backdrop of the need to improve productivity in the construction industry, the government has introduced a \$250 million incentive funding through the Construction Productivity and Capability Fund (CPCF). The fund consists of seven specific schemes to tackle areas such as technology adoption, manpower development and skills upgrading, as well as capability building in niche areas (*see Annex A*). It is coupled with policy changes such as introducing a new tiered-levy system, reducing the man-year entitlement and enhancing the buildability framework.
3. Although applications for the CPCF will only begin from 1 June 2010, the construction industry has been responding to the productivity call since a series of briefings on the schemes in the CPCF were conducted from mid April to more than 2,000 firms. BCA received more than 300 enquiries on the various schemes within a few weeks.
4. A group of construction companies (comprising a builder, a consultant and a concrete supplier), for example, is preparing to apply for funding under the Productivity Improvement Project scheme (PIP) – one of the schemes under the

\$250 million fund. To improve one of the work processes, the team is proposing to introduce a self-flow concrete, which can reduce the number of workers required to do concreting work by at least two-thirds. It also reduces the need for concrete vibrators for their construction project, thus saving both time and cost (*see Annex B*). The PIP scheme supports 50% of the qualifying costs or up to \$100,000, whichever is lower. A higher level of support may be given for group or industry wide projects.

5. Mr Quek See Tiat, Chairman of BCA, also noted that a common feature that stands out in the Award winners is the incorporation of productive construction methods and delivery in the projects, such as the use of the Building Information Modelling (BIM) software, steel construction and prefab bathrooms. “This highlights the fact that productivity is an integral component in the entire design and construction process,” he said.

6. At this year’s BCA Awards, firms and projects were accorded recognition for categories such as design and engineering safety excellence, construction excellence, universal design, Green Mark, as well as the green and gracious builder award and the built environment leadership award. In addition, a new category of Green Mark awards – BCA-NParks Green Mark for New Parks was created to promote sustainable parks design as well as to identify best practices in parks design, construction management and upstream maintenance planning.

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Schemes under the Construction Productivity and Capability Fund

Type of Fund	What is Funded?	How Much is the Funding?	Who is Eligible?
(i) Workforce Development			
Workforce Training and Upgrading	Cost of selected skills assessment and training courses for workers	<ul style="list-style-type: none"> Up to 80% of the course/ training/ skills assessment fees 	Industry firms
BCA-Industry Built Environment Scholarship	Sponsorship of scholarship for undergraduate study in built environment courses	<ul style="list-style-type: none"> 50% of the annual scholarship sum, capped at \$7,000 for each scholar who is either a Singaporean or a Singapore Permanent Resident 	Industry firms
(ii) Technology Adoption			
Mechanisation Credit (MechC)	Cost of purchasing or leasing of equipment that improves productivity of the specific work process by at least 20%	<ul style="list-style-type: none"> Up to 50% co-funding for equipment purchase, capped at \$20,000, whichever is lower Up to 50% co-funding for equipment leasing, capped at \$5,000, whichever is lower 	Contractors, specialist contractors & subcontractors
Productivity Enhancement Voucher (PEV)	Cost of engaging Knowledge Institutions (KIs) or external consultants to develop ideas to improve productivity of specific work process by at least 20%	<ul style="list-style-type: none"> Up to 50% co-funding, capped at \$20,000, whichever is lower 	Contractors, specialist contractors & subcontractors
Productivity Improvement Project (PIP)	Cost of undertaking projects which involve the application of technology and re-engineering of work processes to improve productivity by at least 20%	<ul style="list-style-type: none"> Up to 50% co-funding at firm & group level Up to 70% co-funding at industry level 	Contractors and prefabricators
BIM Fund	Cost of adopting BIM technology into work processes	<ul style="list-style-type: none"> Up to 50% co-funding for training & consultancy, capped at \$7,000 per firm Up to 50% co-funding for consultancy & software/ hardware for a group of firms working on a project, capped at \$70,000 per project 	Design, consultancy and construction firms

(iii) Capability Development			
Construction Engineering Capability Development	<p>The programme includes:</p> <p><u>Postgraduate Scholarship Incentive</u> Sponsorship of scholarship for postgraduate courses in complex construction</p> <p><u>Overseas Industry Immersion Incentive</u> Cost of specialized overseas project immersions</p> <p><u>Professional Engineer (PE) Incentive</u> Cost of professional services to build up in-house construction engineering capabilities in complex construction projects</p> <p><u>Design & Build (D&B) Project Opportunity Enhancement Incentive</u> Cost of professional services, equipment and material for D&B complex construction projects</p> <p><u>Specialist Consultant Incentive</u> Cost of professional services for complex construction processes</p> <p><u>Additional Construction Performance Bond (PB) incentive</u> Cost of additional construction performance bond for complex construction projects</p>	<ul style="list-style-type: none"> • 60% co-funding, capped at \$60,000 (overseas postgrad scholarship) & \$30,000 (local postgrad scholarship) • 50% co-funding, capped at \$25,000, per overseas industry immersion • Up to 50% co-funding, capped at \$120,000 per PE (up to 2 PEs per builder) over 3 years • 50% co-funding, capped at \$150,000 per project application • 50% co-funding, capped at \$350,000 per project application • 50% co-funding, capped at \$1.35 million per project application 	Builders

*Firms applying for the funds above should be registered and operating in Singapore.

List of Existing Trades for CoreTrade Registration

Key trades for construction tradesmen

- Construction plant operation
- Electrical works
- Plumbing and piping works
- Tiling and stone laying

Key trades for construction foremen

- Electrical works
- Plumbing and piping works
- Tiling and stone laying
- Waterproofing works
- Reinforced concrete works
- Structural steel works

Higher Value Adding Courses to be supported under CPCF

S/N	Course title
1	Certificate in Interior Finishing Coordination
2	Certificate in Pavement Construction and Maintenance
3	Certificate in Precast Concrete Construction Supervision
4	Certificate in Waterproofing Supervision
5	Certificate in Building Measurement
6	Certificate in Geotechnical Instrumentation for Supervisors
7	Certificate in Levelling and Setting Out
8	Certificate Course for Structural Steel Supervision
9	National Building Qualification in Project Supervision
10	Higher National Building Qualification in Project Supervision
11	Advanced National Building Qualification in Project Supervision
12	National Building Qualification in Supervision and Coordination of M&E Works
13	Higher National Building Qualification in Supervision and Coordination of M&E Works
14	Advanced National Building Qualification in Supervision and Coordination of M&E Works
15	National Building Qualification in Green Building Operation & Maintenance
16	Higher National Building Qualification in Green Building Operation & Maintenance
17	Advanced National Building Qualification in Green Building Operation & Maintenance

Sponsoring Industry Firms/Associations for 2010 Industry Scholarships

Developers	Consultants
CapitaLand Limited	Beca Carter Hollings & Ferner (S.E.Asia) Pte Ltd
City Developments Limited	Building System & Diagnostics Pte Ltd
Far East Organization	CPG Corporation Pte Ltd
Frasers Centrepoint Limited	DP Architects Pte Ltd
Keppel Land Limited	G-Energy Global Pte Ltd
Lend Lease	KTP Consultants Pte Ltd
Builders	Meinhardt (Singapore) Pte Ltd
Low Keng Huat (Singapore) Pte Ltd	ONG&ONG Pte Ltd
Obayashi Corporation	Rider Levett Bucknall LLP
Straits Construction Singapore Pte Ltd	RSP Architects Planners & Engineers (Pte) Ltd
Swee Hong Engineering Construction Pte Ltd	Associations
Tiong Seng Contractors (Pte) Ltd	Singapore Contractors Association Ltd
Woh Hup (Private) Limited	Singapore Structural Steel Society

POTENTIAL PRODUCTIVITY IMPROVEMENT PROJECT (PIP) ON APPLICATION OF SELF COMPACTING CONCRETE



Traditionally, as concrete is poured into the formwork, workers need to compact the fresh concrete to ensure its consistency. The operation requires workers to insert vibrators into the concrete to compact continuously, depending on the size of the pour area. In most construction sites, this tedious process is carried out manually.

However, there is a self-compacting concrete available in the market that eliminates such compacting process. It is made by adding superplasticiser and stabiliser to the concrete mix to significantly increase the ease and rate of flow. It achieves compaction in the formwork by means of its own weight.

The self-compacting concrete has the potential to replace 3 to 5 workers with just 1 worker. It is not yet widely adopted in Singapore because it has been perceived as more costly than conventional concrete product.

To address this issue, BCA plans to collaborate with contractors, concrete suppliers to do a Productivity Improvement Project with the self-compacting concrete - EASECRETE¹.

Preliminary Information on the Potential PIP

The project will measure the productivity and compare the use of conventional concrete and EASECRETE at two ongoing construction sites.

In the projects, the application of EASECRETE will be compared with conventional concrete in terms of:

- Labour usage
- Concrete placing duration for each casting operation
- Construction cost associated with concrete trade
- Concrete mechanical properties
- Others

¹ EASECRETE is a type of self compacting concrete using less cementitious materials which makes it more environmental friendly.

Examples of other local companies that are adopting innovation and technology to enhance productivity

Name of Company:

PQ Builders Pte Ltd

Brief description of company:

PQ builders Pte Ltd is registered with BCA as a Grade C1 contractor for general building and Grade L4 for repair and redecoration works. The company's key activities include Addition and Alteration, Repair and Redecoration, eco-coating solutions, corrosion protection and architectural works.

Examples of innovation and technology adoption to enhance productivity:

PQ builders Pte Ltd has undertaken various A&A and R&R projects as Main-con or supporting main contractors in many projects. Although the company is small, compared to many big players in the construction industry, the firm innovates and adopts technology to make improvement in quality, safety and technology.

For example, in the recently completed project at the new Bartley Viaduct, the firm was awarded the contract to paint the 1.6km viaduct. With only 6 months and 4 workers, the work was completed on time with the help of mechanized spraying machine. It has used the spray machines instead of conventional roller and brushes that would need about 10 workers to carry out the same amount of work.

In another building project, the firm was awarded with a contract to skim and paint the curve external façade of the Iconic Marina Bay Sands Integrated resort. The common way to access the curve façade of the high rise structures would be to erect external scaffolding or install mast climbing platform. Although it was common to use gondola to access the flat façade, the use of gondola for curve façade was not possible before. PQ Builders has ingeniously designed and modified the gondola system by installing a Retaining and Guide Cable System to guide the Gondola traveling path along the curve façade. With modification to the standard Gondola system, it has eliminated the need for laborious installation of scaffold, reinstallation of Mast Climbing platform and multiple shifting of Conventional Gondola system, and vastly improve productivity.

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Name of Company:

GinLee Construction Pte Ltd

Brief description of company:

GinLee Construction Pte Ltd is registered with BCA as a Grade L3 contractor for concrete repair and demolition works. Their key activities include Addition and Alteration, Repair and structure strengthening works.

Examples of innovation and technology adoption to enhance productivity:

GinLee Construction Pte Ltd is currently working on the A&A works at the Changi Airport Terminal 1. The constraint imposed includes no disturbance/obstruction to the Check-in counters and shops, strict compliance to public safety and housekeeping requirement, building interiors to be protected and that airport is in full operation during the entire A&A works.

GinLee Construction has to ensure that proper care is taken during the demolition work and generation of noise is at a minimum. Hence instead of using hand-held breaker that generates noise and would affect the operation of the airport, the firm uses remote controlled concrete crusher to crush the concrete into small pieces before disposal. It also uses diamond wire saw to cut the large concrete beams and remove them segment by segment. The equipment has helped the firm to operate within the constraint and at the same time uses less labour on site.

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Name of Company:

LAUD Architects Pte Ltd

Brief description of company:

Laud Architects is registered in BCA's Public Sector Panels of Consultants under AR01. It undertakes government building development projects above \$10M and up to \$65M. Project track records include range of projects including churches, condominiums, shopping/office complexes, institutional buildings, hotels and industrial buildings.

Examples of innovation and technology adoption to enhance productivity:

LAUD Architects' positive firsthand experience with Building Information Modelling (BIM) also led the firm to be one of the first few pilot firms involved in the CORENET BIM Architectural e-Submission for regulatory approval in 2009, which enables the firm's lean team to design in a more resource and time efficient manner.

The Revival Centre Church in Singapore was the first project that LAUD Architects designed fully using BIM technology and submitted online for regulatory approval. The design project was also widely featured by Autodesk as a success story for BIM implementation in 2009.

Currently, LAUD Architects is also exploring, together with BCA, the integration of architecture and structure using BIM models, for a 4-storey church building project at Aljunied Avenue.

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Name of Company:

Tay and Wong Associates (TWA)

Brief description of company:

Established in 1995, TWA is an experienced firm and has handled many local landed housing projects.

Examples of innovation and productivity adoption:

Although it is considered as SME from its staff strength, it is able to establish a very well-defined company standard for Building Information Modelling (BIM), which has been widely reported worldwide as a key technology that would transform the construction industry in terms of capability building and achieving productivity.

Within a short time-frame, TWA has successfully integrated their company's standards with BCA BIM e-submission template. This also allows a fast-track process re-engineering for the firm and has resulted in 100% BIM implementation, in which 11 live projects have been submitted to-date for BIM Architectural e-Submission since the BIM pilot exercise begun in Jan 2009, and this is the highest record so far in local.

To catch up with the green move, TWA has also attempted to apply green building study (e.g. wind flow, solar study and vertical greenery) and integration with BIM modelling for a 2-storey corner terrace dwelling house project.

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