

The recently launched Construction Industry Master Plan (CIMP) 2006-2015 by Y.A.B. Dato' Seri Mohd. Najib bin Tun Haji Abdul Razak The Honorable Deputy Prime Minister of Malaysia has chartered the strategic direction for the construction industry to move from 2006-2015. The importance of research is stipulated in the CIMP's fifth Strategic Thrust (ST5) as the defining tool to generate innovativeness that shall improve the quality, performance and standard of the construction industry through research and development (R&D).

Construction Research Institute of Malaysia (CREAM) is a subsidiary company of Construction Industry Development Board (CIDB) incorporated on 26th. March 2004. CREAM started to operate under company limited by guarantee status with effect from January, 2006. It focuses on enhancing the productivity and competitiveness for construction industry through R&D. CREAM disburses fund, manages and undertakes R&D focussing on applied research. As of October 2007, CREAM has funded over 30 research projects valued at approximately RM 16.5 Million.

**For year 2008/2009, CREAM invites application for its research funding from:**

1. Universities;
2. R&D Institutes;
3. Public Sectors;
4. NGOs;
5. Private Sectors (contractors, developers, consultants etc.) ;
6. Local Authorities;
7. Individual;

The application is opened all year round (2008/2009) to ALL parties and not restricted solely to construction related stakeholders or institutions. Priority will be given to research application that considers collaboration with the construction industry in their proposal.

**CREAM has finalised the themes and R&D titles to the following three Strategic Areas:**

1. Construction Material, Product and Design
2. Construction Process, Project Management, Environment and Sustainability
3. Human Capital and Financial Issues

R&D Themes and Titles						
Strategic Area	Theme	Title	Strategic Area	Theme	Title	
Construction Material, Product and Design	Developing A New Material for Construction	<ol style="list-style-type: none"> <li>1. The use of recycle construction waste as structural elements in building construction</li> <li>2. Enhancement of advance material to produce lightweight component for IBS</li> <li>3. Developing sustainable and environmental friendly material for construction</li> </ol>		Pioneer Status as Platform for IBS Success	<ol style="list-style-type: none"> <li>1. Development of standard in aesthetically pleasing buildings based on Industrialised Building System (IBS)</li> <li>2. Development of implementation strategy and effectiveness of IBS Pioneer Status Program</li> </ol>	
	Sustainable and Reliable IBS Solution	<ol style="list-style-type: none"> <li>1. Development of guidelines on the Quality Assurance/Quality Control on IBS delivery systems involving planning, design, manufacture, logistic and installer</li> <li>2. Development of benchmarking mechanism for assessing demand for construction resources requirements (e.g. material, labour and plant, etc.)</li> </ol>		Strategic Studies on Current Implementation	<ol style="list-style-type: none"> <li>1. Development of guidelines and checklist for proper site appraisal, management and auditing of construction projects</li> <li>2. Development of guidelines on Corporate Social Responsibility (CSR) reporting for G6 and G7 contractors</li> <li>3. Review of environment related guidelines and regulations applicable to the construction industry</li> <li>4. Documentation of good practices for landscape design and management for urban heat island mitigation and slope stability</li> <li>5. A policy on future international environmental requirements for the construction sector (e.g. post 2012 Kyoto Protocol negotiations; regional Ministerial meetings etc.)</li> </ol>	
	To Harmonize with the Malaysian Standard	<ol style="list-style-type: none"> <li>1. Development of guidelines on structural joints for industry implementation</li> <li>2. Development of joint design (wet and dry/ structural steel) including earthquake forces considerations for both concern</li> <li>3. Developing of a full scale testing on joint design involving static and dynamic loadings</li> </ol>		Construction Waste Management	<ol style="list-style-type: none"> <li>1. Develop comprehensive assessment of waste management technology in construction industry towards life cycle assessment (LCA) approach</li> <li>2. Develop emission inventory for green house gas (GHG) from the construction sector</li> <li>3. Develop mechanism to establish supply chain management of construction waste material</li> <li>4. Development of waste database portal for creation of new cluster industries for construction</li> </ol>	
	To Harmonize IBS Construction with the JKR	<ol style="list-style-type: none"> <li>1. The application of seismic design criteria for Peninsular Malaysia (0.1g – normal structures, 0.2g – important structures) and East Malaysia (0.15g – normal structures, 0.25g – important structures)</li> <li>2. The application of earthquake protection from locally produced products (e.g. rubber bearings, base isolators Seismic Design Guidelines and dampers)</li> <li>3. Development of local technology and innovation on Rubber Dampers and Bearing for bridges and highways for earthquake protection.</li> </ol>		Construction Material Environmental Friendly	<ol style="list-style-type: none"> <li>1. Development of local eco-friendly and implementing of eco-labeling scheme for construction materials</li> <li>2. Identification and management of hazardous construction materials</li> <li>3. Development of standards and guidelines for recycled construction aggregates (RCA)</li> </ol>	
Construction Process, Project Management, Environment and Sustainability	Strategic Approach on Occupational, Safety and Health (OSH) Practice in Construction	<ol style="list-style-type: none"> <li>1. Education and awareness on OSH</li> <li>2. Benchmarking best practices, identify and analyze the gap on OSH with developed countries</li> <li>3. Measurement of occupational, safety and health performance of contractors</li> <li>4. Gap analysis of existing rules, framework, laws, regulations and standards of OSH in the construction industry vis-à-vis other developed nations</li> <li>5. A mechanism to implement OSH strategies effectively in the entire value chain (end to end)</li> <li>6. A mandatory reporting system on accident at construction site</li> </ol>	People (Human Capital) and Financial Issues	Rainwater Utilisation & Storm Water Management	<ol style="list-style-type: none"> <li>1. Develop effective implementation of erosion and sediment control at construction sites</li> <li>2. Develop effective stormwater drainage management for flood mitigation</li> <li>3. Towards zero water pollution from construction</li> <li>4. Development of rainwater harvesting technology                             <ol style="list-style-type: none"> <li>i. Utilisation in buildings for human needs and the environment</li> <li>ii. Utilisation at construction sites</li> </ol> </li> </ol>	
	Transfer of Best Practices in the Construction Value Chain	<ol style="list-style-type: none"> <li>1. Procurement best practice strategy</li> <li>2. Benchmarking the Malaysian Construction Industry</li> <li>3. Integrating Supply Chain in Malaysian Construction Industry</li> <li>4. Collaboration and partnering as the way forward for the Malaysian construction industry</li> <li>5. Technology transfer from a successful housing project that prioritized integration, communication and knowledge management as the project management tool</li> </ol>		Energy Efficiency	<ol style="list-style-type: none"> <li>1. Technology development and economic analysis for energy efficient building envelopes in construction</li> <li>2. Development of construction industry standard (CIS) for integrated design to promote daylighting in construction of tropical buildings</li> <li>3. Development of database and labeling on thermal conductivity for construction material</li> <li>4. Integrating energy saving to life cycle costing approach in conventional and IBS buildings.</li> </ol>	
	Enhancing Construction Delivery System: Rethinking the Construction Process	<ol style="list-style-type: none"> <li>1. A systematic approach on method to reduce long procedure in housing development approval process</li> <li>2. Creating values from Facilities Management in the whole life cycle costing</li> <li>3. Accelerating Change in Malaysian Construction Industry through partnering strategy</li> </ol>		Reducing Construction Cost and Value for money	<ol style="list-style-type: none"> <li>1. A comparative on construction costs, performance and acceptance of house buyers for IBS as compared to conventional construction method</li> <li>2. The importance and ability to predict material price escalation.</li> <li>3. Cost Benefit Analysis (CBA) on IBS value chain with respect to manpower and business development</li> </ol>	
	Improving Customers Satisfaction	<ol style="list-style-type: none"> <li>1. Determine customer satisfaction level to low cost housing scheme on quality performance and workmanship for houses constructed in Klang Valley</li> <li>2. Determine the client satisfaction level to quality performance and workmanship on government administration offices</li> <li>3. Develop a contractor rating system</li> </ol>		Developing Human Capitals	<ol style="list-style-type: none"> <li>1. A quantitative and qualitative approach on performance measurement to increase professionalism and competency in Malaysian construction industry</li> <li>2. The competitiveness of small contractors in integrating with main contractors : A development plan for small contractors to success</li> <li>3. The economic viability to support IBS vendor development programme to obtain the optimum volume solutions.</li> </ol>	
	Productivity	<ol style="list-style-type: none"> <li>1. Develop measurement tool for Contractor Productivity</li> <li>2. Develop measurement tools for Skilled / Unskilled construction personnel on productivity</li> <li>3. Development of measuring productivity tool at project level</li> </ol>		Human Capital and Capacity Building	<ol style="list-style-type: none"> <li>1. Aligning Human Resource and Training Needs to meet CIMP's Requirement</li> <li>2. Planning on Human Capital and Capacity Building for the Construction Industry</li> <li>3. Identification of Critical success factor in implementing RMK9 with respect to specialize trade in the construction workforce</li> <li>4. Determination of the extent of dependency on foreign human resources in construction industry.</li> <li>5. Determination of the percentage breakdown of local and foreign human resources for major occupational titles/trades</li> <li>6. Determination of the implication and impacts of foreign human resources in construction industry</li> <li>7. Cost and effect of foreign workforce dependency to Malaysian construction industry.</li> <li>8. Determination of the factors for the dependency on foreign workforce in construction industry.</li> <li>9. Determination of the factors for the shortage of local manpower.</li> <li>10. Malaysian construction workforce: Are we ready?</li> <li>11. Malaysian construction workforce: Whether local youth interested to enroll into training institution such as Akademi Binaan Malaysia (ABM) to undergo training to be skilled construction workers?</li> <li>12. Developing education, awareness and career development in construction industry from secondary education</li> <li>13. Determination of the effectiveness of CIDB's efforts in construction human resources development.</li> </ol>	
	Contractor Evaluation	<ol style="list-style-type: none"> <li>1. Develop a rating system and tool to evaluate contractors performance</li> <li>2. Develop standardize in-house and internal measurement tool (self-assessment) for contractor</li> <li>3. Benchmarking Malaysian contractors performance against contractors in developed countries</li> </ol>			IBS Human Capital	<ol style="list-style-type: none"> <li>1. Analysing the qualitative aspect of IBS human capital development in relation to dependency, implication, effectiveness of current implementation, knowledge transfer and proposed strategies for industry implementation.</li> <li>2. Analysing the quantitative aspect of IBS human capital development in relation to current and future availability, productivity and manpower development requirement.</li> </ol>
	Project Management, Tender and Contract Administration	<ol style="list-style-type: none"> <li>1. Measurement for productivity and efficiency for IBS and conventional method of construction process.</li> <li>2. Study on advantages on applying life cycle costing in traditional funding and PFI approach.</li> <li>3. Develop guideline on the application of Life Cycle Costing (LCC) in building development.</li> <li>4. Development of buildability index and energy efficiency index in building design.</li> <li>5. Establishing benchmarking methodology for construction best practices for IBS on contract and procurement strategies.</li> <li>6. Optimizing Malaysian construction industry portal as an enabler for resource pooling of knowledge to integrate with existing R&amp;D.</li> <li>7. Establishing organizational hierarchy metrics for data gathering on construction market indicators as the basis of Data Mining to be shared by architecture, engineering and construction (AEC).</li> </ol>			Financial Costing/ Incentives for Occupational, Safety and Health (OSH)	<ol style="list-style-type: none"> <li>1. Determine the actual cost of OSH practices in the entire construction value chain and in various categories of projects</li> <li>2. An outlook of current practice on pricing of OSH requirement and to automate (by way of formulae) the determination of the costs involve in projects from various project categories, e.g., size of project, type of project and location of project</li> <li>3. Detail requirement of OSH element in the contract document in the entire construction value chain for various types of construction project</li> </ol>
	Industry Sustainability and Viability	<ol style="list-style-type: none"> <li>1. Develop the financial support requirements on the creation of a sustainable new IBS industry.</li> <li>2. Analyse existing government procurement system, study lessons learned and proposed implementation including ICT tools to support IBS industry.</li> <li>3. Application of life cycle costing (LCC) and life cycle analysis (LCA) for new project development</li> </ol>				
	Capacity and Capability of IBS Management	<ol style="list-style-type: none"> <li>1. Analyse industry capacity on readiness to support National IBS Roadmap targets (involving authorities and equipments).</li> <li>2. Benchmarking with the IBS Best Practices application for supply chain management methodologies to support IBS implementation.</li> <li>3. Establish the strategic plan for Bumiputera Commercialised Industrial Community and Vendor Development Programme involving Bumiputera participation and migration plan.</li> </ol>				
	Technology Transfer on IBS	<ol style="list-style-type: none"> <li>1. Development of technology transfer model to capture EU experience and technical viability on Industrialised Building System (IBS) and Open Building System (OBS) technology. This model will be captured from the implementation in EU and Japan for IBS Demonstration Project Programmes involving issues related to benchmarking, funding, certification and incentives.</li> <li>2. Effective dissemination and integration among architecture, engineering and construction (AEC) on the use of ICT to support IBS delivery system in Malaysia.</li> </ol>				

Interested applicants are invited to write to us or visit our office to get the application form and further details on fund application process. The application form can also be downloaded and available on-line at [www.cream.com.my](http://www.cream.com.my).

Private sectors (multinational companies, consultancy companies, developers, SME's, manufacturing companies etc.) keen on R&D and developing local technologies are encouraged to apply.

The application is open throughout the year and applicants should complete and submit the form to:

**EXECUTIVE DIRECTOR**

**CONSTRUCTION RESEARCH INSTITUTE OF MALAYSIA (CREAM) (646889-V)**

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Successful applicants will be informed by mail. Alternatively, you can check your status online at [www.cream.com.my](http://www.cream.com.my) For any inquiries, kindly e-mail us at [kamarul@cidb.gov.my](mailto:kamarul@cidb.gov.my), [maria@cidb.gov.my](mailto:maria@cidb.gov.my), [khairoiden@cidb.gov.my](mailto:khairoiden@cidb.gov.my), [hazim@cidb.gov.my](mailto:hazim@cidb.gov.my)