Singapore Sports Hub

Asia’s most inspiring destination for sports and entertainment

The Singapore Sports Hub is the world’s largest sports infrastructure development under a private-public partnership (PPP). It is developed by Sports Hub Pte Ltd. The concession contract to design, construct, finance and operate the facilities for 25 years was signed with the Singapore Sports Council. The construction project, which is carried out entirely by Dragages Singapore, a subsidiary of Bouygues Construction, is worth SGD 1.33 billion. Work has begun in September 2010 for delivery in the second quarter of 2014, involving more than 250 staff and 3,000 workers.

The Sports Hub features a new state-of-the-art 55,000-capacity National Stadium, with a retractable roof, moveable tiers and an environmentally friendly bowl cooling system. The integrated development also includes a multipurpose arena for indoor sports, an Olympic size aquatic centre, a watersports centre, retail facilities, offices for the Singapore Sports Council and the sports federations, a visitor centre and the existing Singapore Indoor Stadium.

Mr. Ludwig Reichhold, Managing Director of Dragages Singapore, shares with The Project Manager, how his team handles the various challenges in this special project and what he feels are the success factors for the project.

As our economy strives towards achieving higher productivity growth, Project Managers will play a key and strategic role in steering the construction value chain towards greater productivity and the realisation of our 2020 vision for the built environment sector. Project Managers need to constantly upgrade their skills and constantly seek out solutions to innovate and realign the methods in which complex projects can be carried out to boost productivity and quality. A proficient Project Manager is definitely an invaluable asset to the Owner or developer, the project team and to the built environment sector.

This was what our guest-of-honour, Dr. Teo Ho Pin shared at the SPM 18th Anniversary Dinner. The Mayor of North West District and Deputy Government Whip noted SPM’s relentless efforts to lift the standards and professionalism of the project management profession in engaging all stakeholders of the project delivery process to work together towards a common goal of higher level of productivity and efficiency.

Dr Teo went on to encourage all Project Managers to continue to work together with SPM to bring the standards of the project management profession and the built environment sector to new heights.
SPM President’s Message

The year is almost over.
We have reached out to members in many ways this year. We had three lunch time talks covering topics like “Singapore Sports Hub”, “Singapore Power’s Transmission Cable Tunnel Project” and “Building Information Modelling – An Executive Overview”. We also conducted the SPM-BCAA course on project management for professionals in the building and construction industry in October - November.

Our book launch event on “Construction Adjudication in the Context of Project Management” was very well supported. The book was authored by none other than our founding president, Mr Chow Kok Fong.

Our annual dinner on 26 September is still the talk of the town as everyone who came enjoyed themselves so much. They also left with many fond memories as well as gifts. Many had expressed support for SPM’s generous donation to the Singapore Children’s Society and the Children’s Cancer Foundation. Some are already looking forward to the dinner next year!

We revamped our SPM website. Members will find that they have access to more information. Go and check it out www.sprojm.org.sg.

Besides participating in the Construction Industry Joint Committee, recently, SPM had a dialogue with BCA to give feedback on the PM service tender terms and conditions.

On the international front, we participated in all three GAPPS working sessions, WS27 in Cape Canaveral, Florida, WS28 in London, UK and WS29 in Edinburgh, UK. We were at the apfpm meeting in Seoul but were unable to muster anyone to go for the meeting in New Delhi.

As we enter the new year, we can expect many exciting activities from SPM.

I wish all our readers a wonderful holiday season, great expectations for the New Year ahead and of course, a prosperous Lunar Year!

Dr Ting Seng Kiong
President
Society of Project Managers

New Members - a Warm Welcome!

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<th>S/N</th>
<th>MEMBERSHIP TYPE</th>
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<tr>
<td>1</td>
<td>Associate</td>
<td>Tan Beng Tong</td>
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<td>2</td>
<td>Associate</td>
<td>Ng Saye Phin</td>
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<td>3</td>
<td>Associate</td>
<td>Shaikh Javed Allaudin</td>
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<td>4</td>
<td>Associate</td>
<td>Ramesh Chidambar Dixit</td>
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Meet our new committee. From left to right, Jason Lee, Shaun Yeo, Tan Kok Siong (Chairman), Toh Kim Sai, Yip Kim Seng (Advisor), and Manish Banga.

We look forward to bringing you interesting articles on Project Management and news of the Singapore construction industry. We welcome you to contribute your ideas, articles and comments to make The Project Manager as interesting and appealing to SPM members and readers at large.
The Society of Project Managers celebrated its 18th anniversary on 26 September 2013 at the Grand Copthorne Waterfront Hotel.

Dr Ting Seng Kiong, in his newly appointed role as President of the SPM, welcomed some 600 guests and members to the evening’s celebrations. In his address, he recounted the salient involvements of SPM in the local construction industry as well as its engagement with fellow project management institutions on the international front. SPM would continue to engage with its partners and stakeholders in the construction industry, particularly in regard to safety and health, productivity and sustainability through BIM and Green Mark initiatives. SPM would continue to work with institutions of higher learning to further promote project management by furthering PM education and training.

The guest of honour of the evening was Mr Teo Ho Pin, Mayor of North West District and Deputy Government Whip.

In his address to the SPM, Mr Teo noted that the SPM had helped elevate the profile of project managers through its active participation and contribution to the construction industry, as member association of the Construction Industry Joint Committee and the Singapore Green Building Council. On the international platform, SPM is a founding member of the Global Alliance for Project Performance Standards (GAPPS).

The evening saw SPM hand out 2 awards to Master of Science students, Miss Frisca Chewandi and Mr Kenny Quek Zhao Hon, for their outstanding performance in their respective Master of Science courses. SPM would certainly be looking forward to their contributions in the field of project management in the future. Keeping to our tradition of giving, SPM made donations to the Children’s Cancer Foundation and Singapore Children’s Society.

Throughout the 10-course dinner, members and guests were entertained by a three piece band which belted out familiar favourites. The MC of the evening led all down memory lane in which questions relating to old Singapore were asked in a friendly competition. The question that stumped many people was “What is the actual street name of “Mang Gah Kah.” Numerous suggestions, some of them hilarious, were thrown up. Eventually, it was answered correctly by a not too senior gentleman.

Amidst the celebratory mood of the evening, it was also an opportune time to catch up with fellow professionals in the industry. Old friendships were rekindled and new contacts were made as members and guests mingled among each other. All too soon, the evening came to an end. As the good byes, were said, it was time to look forward to the next SPM dinner in 2014.
The Singapore Power Transmission Cable Tunnel Project covers 18 km from Gambas to May Road (in the north-south direction) and 17 km from Ayer Rajah to Airport Road (in east-west direction). It involves the design and construction of 18 shafts, approximately 60m below ground surface, adits and tunnel enlargements (about 9 to 11m in diameter), bored tunnel (6m in diameter), tunnel fit-out works (civil and mechanical & electrical works), 3 cut & cover tunnels, basements and construction of ventilation and equipment buildings, including key M&E systems, such as tunnel ventilation system, fire fighting system, power circuit cooling system and the supervisory control and data acquisition (SCADA) system.

The project is massive, both in geographical extent as well as depth into the ground. It is driven by the following key objectives and factors: safety, quality, cost/time, teamwork and core values. While time is critical, it would not be at the expense of safety and quality. Team members are constantly encouraged to work closely together, embracing values, like honesty, fairness, respect, integrity and ethical behaviour.

**Safety is No. 1.**

The team adopted a Risk Management framework involving the Project Safety Review (PSR) process which required the contractor to submit design and construction methodology for key activities, identify and address risks in a live risk register. Measures to mitigate the risks are communicated to supervisors in workshops.

**Safety Pledge**

Apart from the expected training and refresher courses for workers and sharing and reminders at toolbox meetings, as an added emphasis and to create a good safety culture on site, all stakeholders ranging from client, consultants and contractors

At the Annual Dinner 2013, SPM presented awards to the best students from Masters of Science, Project Management, National University of Singapore (NUS) and Masters of Science, International Construction Management, Nanyang Technological University (NTU). The Project Manager caught up with the two winners after the Awards to find out more about their feelings and aspirations.

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**Frisca Chewandi**

Frisca first received her BSc in Building (Hons) from NUS in 2009, after which she joined the Land Transport Authority (LTA), Singapore as Deputy Contracts Manager. Her main role is managing contract matters for the Design and Construction of Tan Kah Kee Station, cut-and-cover and bored tunnels of the Downtown Line 2 Stage 2.

At our interview, Frisca was euphoric about the award. She felt that her hard work had gained recognition. She is grateful to her employer, where the superiors personally congratulated her on the award. The MSc (PM) course has provided her with insights into the various aspects of managing projects. The award will certainly spur her further to excel by improving her understanding in project management.

When asked of how SPM could reach out to have more members and the view that Project Management is always understated, she suggested SPM could consider active promotion of SPM activities both at the institutions of higher learning and organizations/companies engaging them in exchanging of views on project management issues. She also suggested that SPM could participate in graduation fairs to create greater awareness and help the graduates to plan for their career development.

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**Kenny Quek Zhao Hong**

Kenny received his BSc in Building (Hons) from NTU in 2007. He joined LTA, Singapore as Deputy Contract Manager. His main duties are preparation, evaluation and award of major civil contracts such as the Downtown Lines, Marina Bay Station and Thomson Line. In 2013 he graduated from NTU with MSc in International Construction Management.

Kenny was pleasantly surprised to receive the award. He shared that this would serve as a form of encouragement and a reminder for him to work hard and maintain the highest standards when discharging his duties. Thus he wants to be open to opportunities to handle more interesting and challenging projects as part of his career advancement.

When asked of how SPM could reach out to have more members. He felt that SPM should collaborate with industry professional bodies, such as IES and SIA, and lead in organizing programmes at tertiary institutions to reach out to more people to create awareness of Project Management.

Kenny views Project Management is a mixture of art and science, especially in today’s context, more emphasis should be placed on the human and people management aspect. His take is that if you can get people to collaborate and focus on the end in mind, there will be lesser technical issues that need to be managed. Many technical issues were results of lack of co-ordination among the project team members; and good co-ordination comes with soft skills. This is where Project Management will play a very significant role in getting the technical issues resolved.
Submitted tenders of each batch were assessed on quality first with the price envelope unopened. A submitted tender must meet the basic Quality assessment first before the price is considered. If not, evaluation of that particular submitted tender ends there. “Project specific proposal” takes up 70% of the total Quality score, with “safety & risk” taking up 15% and other criteria taking up the remaining 15%. To pass the basic Quality assessment, the tender must meet the following criteria: (a) more than 50% of maximum score for “safety & risk,” (b) more than 50% of maximum score for “project specific proposal,” and (c) more than 60% of the total Quality score. Tenders that clear the Quality assessment will be evaluated using the PQM scoring with the weighting of 70:30.

Project Management Organisation and Process
A daily and weekly reporting regime was implemented on each site, focusing on 8 areas: i. actual progress of works vs baseline programme, ii. health & safety, and environmental issues, iii. risk management issues, iv. design & development issues, v. instrumentation & monitoring issues, vi. QA/QC, vii. public relations and viii. commercial issues. In addition, 5 key functions reported directly to the Project Director: risk management facilitator, health safety & environment officer, QA/QC officer, instrumentation & monitoring officer and PR officer.

An integrated data management system (IDMS) was used to facilitate the real time access and monitoring of the instrumentation data, from both the owner’s and contractor’s contractors.

Success Factors
Michael Chin summarized the key success factors for the project: teamwork and ownership of the project goals. To the contractors his message was good planning, anticipate problems, be open, tell bad news, embrace teamwork, honesty and integrity, and do a good job! To the consultants, we trust you to perform but be mindful of resource crunch, be attentive to details, uphold project interests and don’t let complacency creep in. To his project team, respect contractors, consultants and other team members, maintain honesty and integrity, tell the bad news, be pro-active, listen well and be receptive to ideas and suggestions, have passion and commitment to deliver and maintain work-life balance.

The team that works together and eats together, stays together.

Contributed by:
Mr Michael Chin
MD (Special Projects), SP PowerGrid

Tunnel Project

Mr Michael Chin, Managing Director (Special Projects) of SP PowerGrid, shared his experience in the NSEW Cable Tunnel project with 77 SPM members at a lunch talk on 14 June 2013.
Located on a 35 hectare site on the Kallang waterfront, well served by the East Coast Parkway, Kallang-Paya Lebar Expressway, the Circle and East-West MRT lines, the Singapore Sports Hub will be a state-of-the-art integrated sports and leisure complex. Built for Singaporeans to play, watch and support local and international world-class sports and entertainment events, the Sports Hub will host multiple facilities:

- a new 55,000-capacity National Stadium with a retractable roof and air-conditioned seating
- a 6,000-capacity indoor Aquatic Centre and a water sports centre for the general public
- a 3,000-capacity multi-purpose arena that will be fully scalable
- the existing 12,000-capacity Singapore Indoor Stadium, which will be incorporated into the programme
- a library, a sports museum and office space for sporting associations
- 41,000 sq m of commercial space and food and beverage outlets.

The only stadium in the world designed specifically for tropical climate

At a breathtaking clear span of 312m diameter, the new National Stadium dome will be the largest in the world. The dome rises to an awesome height of 75 metres. The moving roof responds to several functional needs: sheltering people from the sun and rain, helping to ensure grass on the pitch grow healthily at all times, and increasing the stadium’s long term viability by increasing the number of hours that it can be used per day.

The new National Stadium will also benefit from a unique cooling system specifically designed for Singapore's tropical climate. The stadium has been designed to maximise the use of natural ventilation with the addition of a cooling system allowing to provide thermal comfort on even the hottest days. To do this, 10L/s of air at 23°C will be supplied from under each spectator seat. Efficient use of shade and walkways also means that energy costs for cooling are kept at an absolute minimum, reducing the environmental impact of the complex to very modest levels.

Flexible, World-class, Multi-functional Facilities

As the centre piece of the Sports Hub, the new National Stadium provides a flexible and multi-functional sports facility for local and international athletics, football, cricket, rugby and major spectacular events, including the National Day Parade. The configurable tiers will provide optimum spectator viewing distances. The dual hall Multi Purpose Indoor Arena will be flexible enough for both elite athlete and community use, scalable for hosting big and small competitions and modular to permit parallel training and competition use. Unparalleled flexibility will allow a very large spectrum of sports activities and events, with up to 3,000 spectators per hall and nine simultaneous sports (badminton, table tennis, fencing, wushu, pencak silat, shooting, gymnastics, bodybuilding, cue sports). The main Olympic pool will also have a moveable seat arrangement that can seat up to 6,000 for major world championship events, ensuring plenty of spectator excitement.
In line with Singapore Sports Council’s Vision 2030 master plan, the Sports Hub will offer a unique opportunity and access to live better through sports. It will be a platform for national athletes to hone their sporting talents and inspire participation in sports among the community.

When completed in 2014, the Sports Hub will reinforce Singapore’s position as a major international sports destination, following the success of events like the F1 and the Youth Olympic Games.

**Multiple Technical and Project Management Challenges**

The Sports Hub features a number of tailor-made technical “firsts”, such as the bowl cooling system, the tier retraction mechanism and the moveable roof that requires the development of specifically designed equipment, including whole-life wear tests in the factory, and careful integration into the building. The size, complexity and multiple functions of the facilities, on the other hand, resulted in exceptional management challenges to ensure proper coordination of the large and multidisciplinary design, procurement and construction teams.

One of the first decisions made at the start of design development was to co-locate the entire team involved in construction on the site. Also, developing the whole of the design on Building Information Modelling (BIM) has greatly facilitated the coordination and implementation of the design, although input was still required from a number of specialists based overseas. The latest communication tools were used to overcome distances and differences in time zones. The use of BIM across all disciplines was essential in finalising the coordination of structures, services and architecture in such non-typical and non-repetitive facilities. It also provided a very efficient tool in the management of design changes and output documents such as room data sheet, which is essential on a PPP project of this size.

**Procurement of the huge variety and quantities of materials and equipment from overseas was another concern in respect of quality control and timely delivery. For this purpose the project was supported by the Bouygues Construction procurement network with offices in Shanghai, Istanbul, Paris and Dubai.**

Whereas the design and procurement teams were organised according to trade and speciality, the construction management had to be split into various buildings and areas as to address specific coordination, quality and safety issues in each facility.

Physical activity on site was preceded by an extensive period of engineering and planning. Construction methods for concrete structures were designed to minimise the use of labour and to allow for speedy erection progress. This is achieved using pre-casting techniques. The erection of the roof steel structures and cladding had to be carefully coordinated with the concrete works, and it required huge quantities of lifting gear and temporary propping.

**The greatest challenges during construction** were related to the difficult ground conditions of the site (with very irregular layers of marine clay), and to the increasing scarcity of construction resources in Singapore. The design of foundations took much longer than expected because almost each pile location had to be assessed individually. Significant lateral movements of foundations during construction could not be avoided, requiring the addition of large numbers of compensation piles. The shortage of sufficient dumping grounds in Singapore, and the limited number of qualified workers available resulted in extensive re-sequencing and re-programming to minimize associated delays.

**Safety has been the number one concern** in planning and controlling the construction works. The number of incidents has been kept to a very small number thanks to extensive training, generalisation of method statements, efforts in house-keeping and strict controls on site.

There are currently more than 3,500 people on site, including 250 management and supervisory staff from Dragages, working hard to deliver this new icon in 2014.

**Success Factors**

The successful development and delivery of the project has been highly dependent on some key factors listed below:

- From Day One, the involvement of operators, maintenance teams and builder in the design development, allowing optimisation of whole life cycle costs, and incorporation of construction methods in the design development.
- Co-location of all parties on site during design development.
- Full and integrated usage of BIM technology by all disciplines, resulting in better design coordination and easier management of changes.
- Careful planning and follow up of design, procurement and construction activities from the onset of the development.
- Systematic usage of state-of-the-art lifting and formwork equipment resulting in improved productivity, quality and safety.
- Self-production of structural works by the main contractor, enabling better planning and training of workforce and better control of site activities and quality of the works.

*Contributed by: Ludwig REICHHOLD*
*Managing Director (Dragages Singapore)*
1. Japanese Construction Industry

Current Status of Japanese Construction Industry

Trend of Japanese Construction Investment

The above figure shows the trend of Japanese construction investment in the past 20 years. The investment has been declining since its peak in 1992. What is notable here is that although the investment slightly recovered in the following year of the great earthquake, it dropped further in the next year. Considering this feature, although the investment has slightly increased in 2012 after the Great East Japan Earthquake in 2011, the trend of Japanese construction investment will be uncertain after next year.

Japan's construction market is roughly 20 times as large as the one of Singapore. While the public construction investment is made mostly for civil engineering work in Japan, the one in Singapore is equally divided into civil engineering work and building work.

Since established in 1610 as a builder of shrines and temples, TAKENAKA has built relations of trust with our clients based on the spirit of master builder with the design & build system. Although we had specialized in building shrines and temples for about 300 years, TAKENAKA Corporation, the current organization, was established in 1899 and since then, we have been developing our businesses providing various services with advanced technologies always ahead of the times.

2. Design-Build

Advantages of Design & Build System

We believe that the design & build system is a practical building supply system that benefits our clients most. In the design & build system in the U.S. and Europe, a team of a design firm and a construction company performs together under a design & build contract. In Japan, on the other hand, especially at TAKENAKA, we have organizations and human resources in both areas of design and construction to meet the clients' needs and complete their projects successfully with one project manager who is responsible for the entire project.

Let me explain about many advantages in our design & build system. It enables shortening the construction period of the project because some parts of the design process and the construction process are overlapped, unlike the conventional processes of design, bid and construction. It also enables our clients to review in the most timely manner whether the project with VE meets the budget because they can verify the cost at an early stage of the project. In the conventional system of design, bid and construction, however, clients have to conform the competitive cost at a bid to their budget, which could be insufficient and sometimes have a risk of additional works that cannot be controlled during the construction period.

While clients are satisfied in many aspects, they are dissatisfied with its lack of cost accountability, as the figure shows. In addition, it is true that the construction market has been more and more diverse. We need to deal with diverse requirements such as social needs from environmental problems, inclination for new designs, specialized and complex technologies, etc., with the design & build system.

We have some other systems as well: one where the client personally employs a consultant to advise on the project management, cost, construction period, design, etc. and another called “bridging” where a design firm takes charge of the stage up to a basic design, then another contractor takes over the project with the design & build system based on the cost and construction period fixed at the bid following the basic design.

3. Case Examples

Let me introduce three projects as examples.

TV Asahi Project, a complex of an office building for rent and a theater that TV Asahi, our client, planned to build in Roppongi, where new cultures and entertainment have been created. While we were awarded the design & build contract from basic design to construction and completion of the project, the client asked Sumitomo Mitsui Trust Bank for the cost assessment of the project. Sumitomo Mitsui will be responsible for giving advice to the client whether the cost is appropriate as the project was exclusively awarded to us.
Second, **New Iino Building Project**, located near the Imperial Palace, involved the rebuilding of the Iino Building, which we first completed 50 years ago, to meet new needs of the age using the design & build system. The client employed Nikken Sekkei, one of the largest design firms in Japan, as a consultant, although we were awarded a design & build contract. Nikken played a role in helping the client understand the design which is a cutting-edge environmental design, and giving advice to the client whether the investment cost was appropriate.

And finally, **Jikei University Aoto Hospital**, a good example realized by the “bridging” system and built as a local health center adjacent to the community. This kind of hospital is probably called **General Hospital** in Singapore. In this project, Mitsubishi Corporation first acted as a construction manager (CM) and Kume Sekkei took charge of the basic design as an architect.

Then, the client called for a bid for the design and build providing the requirements, the drawings and the documents of the basic design.

After Takenaka had been selected at the bid, Mitsubishi entered into the contract with the client as a general contractor and we took charge of a detailed design and construction under Mitsubishi. We successfully completed the project in April 2012 by balancing the design and improvement of functions and performance within the fixed cost and construction period.

### 4. Conclusion

Our corporate philosophy is “Contribute to society by passing on the best works to future generations.” We will pursue this philosophy here in Singapore as well with many project managers and consultants.

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**Contributed by:**

Hirotsugu Yamaguchi AIA
TAKENAKA Corporation

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Mr Yamaguchi shared the Takenaka experience in Design & Build projects at our SPM Seminar in 2012. Here is an extract of his paper.
The 12th China International Construction Project Management Summit Meeting, organized by the China Construction Industry Association (CCIA), was held from 21st to 23rd September 2013 in the historic City of Xian, China. The theme for this Summit Meeting was “Building New form of Urbanization & Innovation in Project Management”. The Summit was well attended by more than 600 project management professionals from all over China, many of them were the winners of this year’s National Outstanding Project Manager Awards.

At the Summit, the Secretary General of CCIA Mr. Wu Tao shared with the participants his thoughts on building a new form of urbanization and innovation in Project Management. Mr. Wu Tao is SPM’s Honorary Fellow. Ms. Li Dequen, Deputy Director from the Policy Research Centre of the Ministry of Housing and Urban-Rural Development shared on her research findings related to the urbanization of the cities.

Other speakers at the Summit included academics from the key universities and practicing professionals from the construction industry. A senior research fellow from the Central Policy Research Institute also shared with the participants on China’s current economic situation and future outlook. The Summit participants were treated to a high standard cultural performance at the end of the 3-days Summit.

I represented SPM and attended the 29th working session of the Global Alliance for Project Performance Standards (GAPPS) from 20-22 September 2013 at APEX International Hotel, Edinburgh, Scotland. This working session was hosted by Heriot Watt University, Edinburgh. The GAPPS participants come from a selection of standards and qualifications bodies, professional associations and academic institutions and industries.

The work of this initiative is undertaken on a voluntary basis by GAPPS members and attendees. Most of the substantive work of GAPPS is produced during these working sessions. So, it is no holiday for us. The format of the working session is largely informal with an emphasis on “working” and getting as much done as possible during these sessions. This approach has proven successful in achieving significant progress and output.

Together with participants from USA, UK, Australia, South Africa and other countries, we continued working on the framework for performance competency standards for Project Sponsors. Other areas that the group worked on were marketing, Project Control and Project Managers standards. All in all, it was a wonderful experience of sharing and working together for all of us from different cultural background. There was so much commonality in the management of projects that we learn much from the studies carried out in other countries. A few Heriot Watt University students joined the workshop. They not only participated in the discussions, they also shared how much they had learned from just being with us over the three days.

I would encourage other SPM members to go for such working sessions if time permits. The next working session, WS30, is in February 2014 in Dubai, UAE.
Dear Readers,

Wishing you and your family ...

* **a Merry Christmas & Happy New Year!**

### Looking Forward...

You can look forward to the following in the coming issues:

1. **Project and Program Management in the Space of Complexity and Uncertainty**
2. **Building Information Modeling - An Executive Overview**
3. **The Power of Early Contractor Involvement**

### Calendar of 2014 Events

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<td>14 Feb 2014</td>
<td>“The Green Journey Ahead” by Er Ng Eng Kiong, President of Singapore Green Building Council</td>
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<td>26 Feb - 1 Mar 2014</td>
<td>GAPPS Working Session 30 at The British University in Dubai (BUiD)</td>
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<td>May 2014</td>
<td>“Green Concrete” by Mr. Sujit Ghosh, MD &amp; CEO of Holcim</td>
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<td>Sep 2014</td>
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<td>SPM Annual Dinner</td>
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**SPM Publications Committee**

For information and enquiry, write to [sprojm@yahoo.com.sg](mailto:sprojm@yahoo.com.sg) or refer to our website [www.sprojm.org.sg](http://www.sprojm.org.sg)

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