SOCIETY OF CONSTRUCTION LAW (SINGAPORE)

SINGAPORE CONSTRUCTION LAW NEWSLETTER

SWEET & MAXWELL

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Contents

Society of Construction Law (Singapore)
Level 16, Malacca Centre,
20 Malacca Street,
Singapore 048979
Tel & Fax: +65-31273797 (no 6 prefix)
www.scl.org.sg

Chairman's Message

As I write this message, the Singapore budget is a major talking point. Commentators seem to agree that the construction industry will be significantly affected by the increase in foreign worker levy. Contractors are once again being urged to improve productivity in order to offset the increased cost. Statistics are produced confirming the woefully poor productivity in the industry in comparison with the likes of Japan and Australia. I can't help feeling a little sympathy for the contractors who bear the brunt of the criticism as well as the risk of increased cost.

Productivity is low because the entire industry has become accustomed to the idea that design need not be finalised until the contractor has already started to fix the reinforcing bars. As a result, mistakes are made, late amendments are rushed through and there is little opportunity for efficiency to be cultivated. Often the excess workforce is engaged in rectifying errors which arose from late finalisation of design. It seems to me that any serious review of productivity in the construction industry must involve the entire process, not merely an analysis of site operations. Perhaps the SCL can play a part in any such review, since the inefficiencies often result, it seems to me, from a chronic lack of respect for the 'builder' which seems to have led to a touch of complacency in the air-conditioned designer's office.

SCL INTERNATIONAL CONFERENCE IN HONG KONG

In my last Chairman's Message I urged members to find a 'good excuse' to visit Hong Kong on business at the time of the SCL International conference in December last year. I am pleased to say that the Singapore SCL was represented by approximately 10 members at the conference, including past Chairmen Chow Kok Fong and Mohan Pillay. I consider this to be a very respectable turn-out and would like to thank all who attended. Anil Changaroth has kindly written a comprehensive report on the conference in this newsletter. In two years' time, SCL Australia will be hosting the SCL international conference in Melbourne. We look forward to this, knowing that Hong Kong will be a hard act to follow.

CONSTRUCTION LAW 101 AND CONSTRUCTION 101

The Construction Law 101 training workshop, which was designed and run by Mohan Pillay, was oversubscribed and I was pleased to be able to hand out certificates to attendees at the end of the 4-session course. Many thanks to Mohan for the diligent work in both preparation and presentation. Many thanks also to Audrey Perez who is currently teaching the 3rd run of her highly-rated Construction 101 workshop. There will be more about the 101 courses in the next newsletter.

SOCIAL EVENTS

We held a very successful networking cocktails evening on Club Street in November, sticking to the familiar formula but with a different venue. We have now finalised a date and venue for the next networking event in May. I look forward to seeing many of you there!

Christopher Nunns
Chairman
2010-2012

CALENDAR OF EVENTS - 2011

No.	Date	Event
1	26 January 2011	Latest Developments in Construction Law
2	22 February 2011	Challenges with Infrastructure Projects in India (with a perspective of the Singapore experience)
3	8, 10, 15, 18 March 2011	Engineering 101 (3rd run)
4	21 April 2011	An Introduction to Construction /Engineering Insurance
5	25 May 2011	1st Networking Cocktails Event 2011
6	2 June 2011	The Expert Witnesses: Are Tribunals Expecting Too Much from Them?
7	July 2011	SCL Annual Dinner
8	5 July 2011	The Application Of Force Majeure & Frustration In Construction Contracts
9	August 2011	Industry Debate
10	August 2011	Annual General Meeting 2011
11	September 2011	Annual Construction Law Conference
12	October or November 2011	Construction Law 101 (2nd Run)

Save the Date for the SCL (Singapore) "Industry Debate": 24 August 2011

In August, for our "Pre-AGM event", we are planning an industry debate based on the following motion:

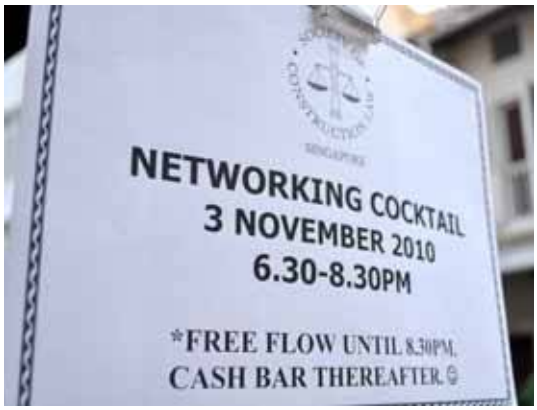
"This House Believes that Construction Contracts in Singapore are Inherently Biased Towards Employers."

The intention of the debate, to be held on the same evening as the AGM, is to achieve a balance between: (a) serious discussion about the issues, which often really do lead to such a perception; and (b) an entertaining display of argument and counter-argument by practitioners.

We are hoping to develop the format of the debate so that attendees have the opportunity to participate actively, rather than merely voting on the success or failure of the motion. It should prove to be an interesting and enjoyable evening involving a selection of representatives from various sectors of the construction industry.

2nd Networking Cocktails Event - 3rd November 2010

Darren Benger
ATA Architects Pte Ltd



The second SCL Networking Cocktails event for 2010 was held on 3rd November at the mediterranean-fusion restaurant Seven On Club, a refurbished shophouse within the trendy Club Street enclave. In an appropriately informal social setting, the SCL Council was pleased to be joined in a gathering of approximately 40 members, their guests, and non-members from the construction industry.

Following introductory remarks and a customary welcome by the Chairman, Chistopher Nunns, many acquaintances were renewed, and many new contacts were made, while enjoying the selection of food and beverages on offer. In this conducive environment, those present mingled and enthusiastically chatted over various topics ranging from current construction law issues and initiatives, through to a sharing of experiences in social interests. It was further pleasing to note the range of representation from various fields and disciplines within the construction-related sector, which lead to a depth and diversity of networking and conversations - lending further credence to the observation that the SCL's cocktail events provide a successfully interactive and exciting networking platform for those involved in Construction Law in Singapore.

Meeting of Chairmen of Societies of Construction Law - 5th December 2010

Anil Changaroth
Aequitas LLP

Following a successful meeting in Singapore on 17th September 2009 attended by Adrian Hughes QC (Chairman, SCL UK), Ian Bailey SC (Chairman, SCL Australia), John Cock (Chairman, SCL HK), Christopher Nunns, Anil Changaroth, Simone Fenton, and Gordon Smith (all SCL Singapore), the next discussion amongst the heads of the societies was held in Hong Kong during the International Construction Conference.

In Hong Kong, Adrian, Ian, John, Chris and Anil were joined by Rashda Rana and Donald Charrett, (Secretary and Assistant Treasurer, SCL Australia), Peter Shaw (Vice Chair, SCL Gulf), Ivan Loo (Deputy President, SCL Malaysia), Kailash Dabeesingh, (Chairman, SCL Mauritius), Tony Deans (SCL New Zealand) and Nicholas Turner (Vice Chair, SCL HK).

The discussion covered several matters including: (1) The declaration included in membership applications – Namely, whether members should be "actively involved in construction law" or merely "interested in construction law". SCL HK will produce a proforma declaration for all SCLs; (2) The International Conference 2012 - After a fruitful discussion during the meeting and over the next 2 days at the conference, it was agreed that the 2012 International Construction Conference will be hosted by Australia in May that year; (3) Mutual cooperation - It was agreed that an international liaison sub-committee be formed with one representative from each SCL branch and arrangements would be made for distribution and uploading of international SCL events; and (4) A request from India to help set-up an SCL there and consideration of other emerging countries also.

These two meetings of the heads of international SCLs, have brought with it a greater level of interaction, camaraderie and solidarity between the different SCLs. With the newly formed international liaison subcommittee (with SCL Singapore being represented by the Chair of the External Relations committee) together with swapping of email contacts for easy access, distribution and uploading of events, we will soon have instantaneous and surely unrestricted access to the world SCL community!

Society of Construction Law Hong Kong's International Construction Law Conference - 5th-7th December 2010

Anil Changaroth
Aequitas LLP

The SCL's 3rd biennial International Construction Law Conference was held in Hong Kong over a 3 day period from 5th to 7th December 2010. It was opened by the Honourable Mr. Justice Geoffrey Ma, Chief Justice of Hong Kong, with the keynote address by the Right Honourable Lord Justice Jackson and several other distinguished speakers including the Honourable Mr. Justice Ramsey, Sir Anthony Mason AC, and the Honourable Mrs Carrie Lam JP of Hong Kong.

Industry professionals, dispute resolution specialist and lawyers spoke on and discussed a wide range of industry related topics including: procurement and conditions; time and programme; and dispute avoidance and resolution. Singapore had its fair share of speakers and chairs with Christopher Nunns, Mohan Pillay and Gordon Smith all taking part. The Singapore contingent at the conference was about 10 strong.

The conference was supported by 8 SCLs and about 40 other organisations. It was managed mainly by the SCL Hong Kong council members and support staff. They unreservedly took on most of the key conference duties and their dedication to carrying out their respective tasks showed in the warm hospitality and a thoroughly professional conference.

With the 4th International Construction Law conference due to be held in Melbourne Australia from 6th to 8th May 2012, SCL Hong Kong has indeed shown the commitment to making these international construction conferences an absolute must for all SCL members.

"Latest Developments in Construction Law" Singapore Construction Law Society Seminar - 26th January 2011

Gordon Smith
Kennedys

The first SCL seminar for the calendar year was held on 26 January 2011, and was well attended with about 100 delegates attending.

Mr Ho Chien Mien from Allen & Gledhill commenced by reviewing recent cases on the Singapore Security of Payment Act ("SOP") on the issue of setting aside an adjudicator's decision, and whether an adjudicator is entitled to consider reasons not contained in a Payment Response. Chien Mien also discussed the recent Singapore High Court decision in *JBE Properties Pte Ltd v Gammon Pte Ltd*, where the contractor was successful in resisting a call on a performance bond on the ground of unconscionability.

Ian De Vaz from Wong Partnership covered the topic of "Lessons from Recent Adjudications under the SOP Act". He covered four topics; the valid service of a Payment Claim, limitation period for service of a Payment Claim, the law on what constitutes a Payment Claim, and a "default judgment" under the SOP.

One of the cases discussed by Ian was the important decision of the Singapore High Court in *Chua Say Eng v Lee Wee Lick Terence*, where the Court held that the combined effect of Section 10(2) of the SOP and Regulation 5 was to create a limitation period for service of a Payment Claim, being either (a) such time as specified in the contract or where no such time is specified (b) the last day of the month. In *Chau Say Eng*, the Payment Claim was served one month after the due date, and the High Court held that this was out of time, and set aside the adjudicator's determination.

The decision in *Chua Say Eng* will have implications for contractors ensuring that they are prepared to submit Payment Claims in accordance with the terms of the contract.

Emerson Holmes from Nabarro LLP covered "Recent Cases from the UK". He discussed, in particular, the decision of the English Technology and Construction Court in *BskyB Ltd v HP Enterprise Services*, involving allegations of fraudulent misrepresentation during contractual negotiations by a contractor as to its resources, technology and methodology. He also covered the Scottish decision of *City Inns Ltd v Shepherd Construction Limited* involving concurrent delays.

The decision of the Scottish Inner House in *City Inns* may have wider implications for English and Commonwealth courts on the issue of concurrent delays. The Court held that in situations where it is not possible to identify the dominant cause of two operative delays, (one for which the contractor is entitled to an extension of time, and one for which the contractor is responsible), it is permissible to apportion both the delay and delay costs in a fair and reasonable manner. Whilst the decision may give contractors comfort of a remedy from complex delay claims, the Court's reasoning arguably involves a departure from the principles of causation of loss established in earlier English cases.

The speaker's presentations gave rise to a number of questions and resulting discussions, particularly on the issues of limitation periods under the English Security of Payment Act and concurrent delays.

Challenges with Infrastructure Projects in India - 22nd February 2011

Anil Changaroth
Aequitas LLP

In this 2nd seminar in the SCL Professional Development Series 2011, Ramesh Vaidyanathan, a partner of the Indian law firm of Advaya Legal, Mumbai, India, presented his views on the challenges with infrastructure projects in India. His experience from his time spent in-house with the Mumbai International Airport shed light on some of the unique business and legal challenges faced in India. Ramesh also considered the mechanism of the construction development in India.

Stephen Choo, Senior General Manager, Projects (International) with Keppel Land International Limited (who initially was only going to speak as a panelist) then took the stand with a shorter presentation he called “The Good, the Bad and the Ugly”. Stephen, with his 35 years of experience, spoke passionately about his experience in India including managing projects in India, the differing construction process, groups/categories of contractors and the skills of construction professionals.

Chairing the talk, Anil Changaroth had a slightly challenging task of managing the expression of two, somewhat differing, views of the Construction Industry in India. The discussion and sharing of experiences did however provide an exciting platform for the discussion that followed with the participants.

This talk followed the recent “India Show” held in Singapore from 14th to 16th January 2011 (and attended by the Honourable Anand Sharma, the Indian Minister of Commerce and Industry), where there were strong indications that the Indian construction and infrastructure industry is a high potential sector for Singapore companies to collaborate with India. The timely SCL seminar was therefore a perfect example of the SCL’s continued efforts at engaging with, and so providing an invaluable service to, the Construction industry here in Singapore.

Enforcement of DAB Decisions under FIDIC Contracts: Pitfalls and Solutions

PT Perusahaan Gas Negara (Persero) TBK v. CRW Joint Operation [2010] SGHC 202

Those who are engaged in international project contracting will no doubt be familiar with the FIDIC forms of contracts and the requirement therein for disputes to be referred to a Dispute Adjudication Board ("DAB") for its decision in the first instance. One of the potentially difficult issues in this area relates to the enforcement of a DAB decision by means of arbitration. Many have found this issue problematic and it would appear to us that a large part of the problem may be due to the fact that the wording and significance of the relevant FIDIC provisions are not always fully understood. In the recent decision of *PT Perusahaan Gas Negara (Persero) TBK v. CRW Joint Operation [2010] SGHC 202* ("PGN case"), the Singapore High Court had the opportunity to consider this issue. This brief note will touch upon the key aspects of the PGN case and highlight both the potential pitfalls posed by the language of the relevant FIDIC provisions, and some practical solutions that may be adopted to avoid the problems.

BACKGROUND OF CASE

Under a contract which was based upon the FIDIC Conditions of Contract for Construction (1st Edition, 1999) ("1999 Red Book") but with modifications, PT Perusahaan Gas Negara (Persero) TBK ("PGN") engaged CRW Joint Operation ("CRW") to design, procure, install, test and pre-commission a pipeline and an optical fibre cable in Indonesia ("Contract"). While the Contract was being performed, a dispute arose between the parties over certain variation order proposals and requests for payments submitted by CRW.

Pursuant to Clause 20.4 (see excerpts below), the parties referred the dispute to a DAB which had been appointed. The DAB heard the dispute and made several decisions, all of which were accepted, save for one which required PGN to pay CRW the sum of US$17,298,834.57. In accordance with the Contract, PGN submitted a Notice of Dissatisfaction ("NOD") in respect of that decision. The matter remained unresolved and CRW subsequently brought an arbitration against PGN in an attempt to enforce the DAB decision. Following a hearing which was conducted before an arbitral tribunal comprising three arbitrators, a majority final award was rendered holding that the DAB decision in question was binding and that PGN had an obligation to make immediate payment for the sum of US$17,298,834.57 to CRW.

CRW subsequently took out an application before the High Court of Singapore to register the award as a judgment in Singapore. In response, PGN applied to Court to set aside the registration order. PGN also applied to Court to set aside the arbitral award pursuant to Section 24 of the Singapore International Arbitration Act and Article 34(2) of the UNCITRAL Model Law.

THE DECISION

The Court found in favour of PGN and set aside the award which had been obtained by CRW under Article 34(2)(a)(iii) of the UNCITRAL Model Law.

In reaching its decision, the Court discussed the fundamental distinction between an arbitration contemplated under Clause 20.6 and one contemplated under Clause 20.7, as follows:

- Clause 20.7 is confined to that narrow category of cases where a DAB decision had become "final and binding" - meaning that neither party had submitted an NOD after the receipt of the DAB decision and the unsuccessful party had failed to comply with that decision - and such a "final and binding" decision is sought to be enforced against the non-complying party by means of arbitration. This provision does not involve an enquiry into the merits of the DAB decision. There is a "lacuna" in that Clause 20.7 does not confer any right on a successful party to bring an arbitration against an non-complying party for a DAB decision that is merely "binding" (as opposed to "final and binding"); and

- On the other hand, Clause 20.6 sets out the procedure for parties to bring a "fresh" arbitration which will be decided on the merits. An arbitration under Clause 20.6 will have to be referred to a DAB in the first instance for its decision.

The Court held that:

- In seeking to enforce the DAB decision against PGN by means of arbitration, CRW had erroneously conflated the provisions of Clause 20.6 and Clause 20.7;

- Given that an NOD had been submitted by PGN, the DAB decision in question was not "final and binding" (though it was "binding") and hence, Clause 20.7 did not apply;

- The real dispute was whether the DAB decision in question was correct and consequent to that, whether CRW was entitled to payment of the amount that the DAB had decided was due and payable by PGN. CRW however tried to limit the dispute to whether payment of the said sum should be made immediately and in so doing, CRW wrongly relied on Clause 20.6 and failed to satisfy the following requirements under Clause 20.6:

  - the matter had to be referred to the DAB for its decision in the first instance;

  - the arbitral tribunal (which is vested with the "full power" under Clause 20.6 to "open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the Dispute") had to review the merits of the DAB decision and then either confirm or revise the correctness of that decision;

- In the circumstances, given that neither of the above requirements had been met, the majority tribunal had exceeded its powers by rendering a final award on a dispute which had not been referred to the DAB for its decision and which was outside of the scope of the parties' arbitration agreement as contained in the Contract. Accordingly, the majority award was set aside under Article 34(2)(a)(iii) of the UNCITRAL Model Law; and

- The Court also held, obiter, that it would be possible for a successful party such as CRW to rely upon Clause 20.6 to obtain an interim or provisional award, pending a final determination of the dispute at large, as a means of enforcement. On the facts, however, CRW had not sought an interim or provisional award and the majority tribunal had also proceeded to render a final award in the matter.

COMMENTARY

The PGN case provides a timely reminder of the fundamental yet often overlooked distinction between Clause 20.6 and Clause 20.7. Whether a DAB decision should be enforced by means of arbitration under Clause 20.6 or Clause 20.7 will depend entirely on whether a valid NOD had been submitted and consequently, whether the DAB decision is "final and binding" (no NOD submitted) or merely "binding" (valid NOD submitted).

To summarise the position, a DAB decision may be enforced by means of arbitration under a FIDIC contract in one of two ways:

- Where the DAB decision is "final and binding", the party seeking to enforce the decision has to bring an arbitration against the non-complying party under Clause 20.7. The arbitral tribunal will not be required to review the merits of the DAB decision; and

- Where the DAB decision is merely "binding", the party seeking to enforce the decision has to bring an arbitration against the non-complying party under Clause 20.6. The arbitral tribunal must be asked to review the merits of the DAB decision and then either to confirm or revise that decision.

As can be seen from the PGN case, it is critical to ensure that the DAB decision is enforced by arbitration under the correct provision, so that the eventual award will be less susceptible to being challenged by the unsuccessful party and set aside by the Court.

For drafting purposes, it should be noted that the wording of Clause 20.7 of the 1999 Red Book (specifically the term "final and binding") has been retained in both the FIDIC Multilateral Development Bank Harmonised Edition forms published in 2005 (as amended in 2006) and 2010. To avoid the problem posed by "final and binding" requirement, the wording of Clause 20.7 (or the corresponding provisions) could be amended so as to exclude the "final and binding" requirement altogether. One way to do this would be adopt the wording used under the FIDIC Conditions of Contract for Design, Build and Operate Projects (1st Edition, 2008) ("the Gold Book"), which provides as follows:

"In the event that a Party fails to comply with any decision of the DAB, ***whether binding or final and binding****, then the other Party may, without prejudice to any other rights which it may have, refer the failure itself to arbitration under [Clause 20.8] for summary or other expedited relief, as may be appropriate."*

Finally, and as mentioned above, even if the "final and binding" requirement has been retained, it remains open for the successful party to rely upon Clause 20.6 to obtain an interim or provisional award, pending a final determination of the dispute at large. CRW did not pursue this option in the PGN case, but this is an approach that can potentially be adopted to overcome the "final and binding" requirement imposed by the wording of Clause 20.7.

For further information, please contact Paul Teo or your usual contact at Hogan Lovells.

Paul Teo
Consultant
Hogan Lovells Lee & Lee

E-mail: paul.teo@hoganlovells.com

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[1] Fédération Internationale des Ingénieurs-Conseils: the International Federation of Consulting Engineers.

[2] Also termed "Dispute Board" in some of the FIDIC contracts.

[3] Excerpts from the 1999 Red Book as follows, with bold emphasis added:

"20.4 Obtaining Dispute Adjudication Board's Decision

If a dispute (of any kind whatsoever) arises between the Parties in connection with, or arising out of, the Contract or the execution of the Works, including any dispute as to any certificate, determination, instruction, opinion or valuation of the Engineer either Party may refer the dispute in writing to the DAB for its decision, with copies to the other Party and the Engineer. Such reference shall state that it is given under this Sub-Clause.

…

Within 84 days after receiving such reference, or within such other period as may be proposed by the DAB and approved by both Parties, the DAB shall give its decision, which shall be reasoned and shall state that it is given under this Sub-Clause. The decision shall be binding on both Parties, who shall promptly give effect to it unless and until it shall be revised in an amicable settlement or an arbitral award as described below. Unless the Contract has already been abandoned, repudiated or terminated, the Contractor shall continue to proceed with the Works in accordance with the Contract.

If either Party is dissatisfied with the DAB's decision, then either Party may, within 28 days after receiving the decision, give notice to the other Party of its dissatisfaction. If the DAB fails to give its decision within the period of 84 days (or otherwise approved) after receiving such reference, then either Party may, within 28 days after this period has expired, give notice to the other Party of its dissatisfaction.

In either event, this notice of dissatisfaction shall state that it is given under this Sub-Clause, and shall set out the matter in dispute and the reason(s) for dissatisfaction. Except as stated in Sub-Clause 20.7 [Failure to Comply with Dispute Adjudication Board's Decision] and Sub-Clause 20.8 [*Expiry of Dispute Adjudication Board's Appointment*] neither Party shall be entitled to commence arbitration of a dispute unless a notice of dissatisfaction has been given in accordance with this Sub-Clause.

If the DAB has given its decision as to a matter in dispute to both Parties, and no notice of dissatisfaction has been given by either Party within 28 days after it received the DAB's decision, then the decision shall become final and binding upon both Parties."

"20.6 Arbitration

Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by international arbitration. Unless otherwise agreed by both Parties:

(a) the dispute shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce,

(b) the dispute shall be settled by three arbitrators appointed in accordance with these Rules, and

(c) the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [*Law and Language*].

The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the dispute. …"

"20.7 Failure to Comply with Dispute Adjudication Board's Decision

In the event that:

(a) neither Party has given notice of dissatisfaction within the period stated in Sub-Clause 20.4 [*Obtaining Dispute Adjudication Board's Decision*],

(b) the DAB's related decision (if any) has become final and binding, and

(c) a Party fails to comply with this decision,

then the other Party may, without prejudice to any other rights it may have, refer the failure itself to arbitration under Sub-Clause 20.6 [*Arbitration*], Sub-Clause 20.4 [*Obtaining Dispute Adjudication Board's Decision*] and Sub-Clause 20.5 [*Amicable Settlement*] shall not apply to this reference."

About Construction and Construction Law

This is part of a series of articles written by engineer, Audrey PEREZ, the author and presenter of SCL's Engineering 101 series of seminars.

BUILDING ENCLOSURES: THE IMPORTANCE OF MAINTENANCE

In the November 2010, No. 13 edition of this newsletter, an overview was provided on the various forms and functions of buildings' facades. A focus on windows, doors and curtain walls was provided. Some particular constraints in the curtain wall market were highlighted.

In order to have a comprehensive, yet simple, overview of the decorative part of facades, this article will deal with other types of finishes commonly used in today's constructions. Due to the size limitations of this article and to move on to other exciting aspects of construction in the next edition, in this article, a brief description of common facade defects and their very likely causes will be provided. This will hopefully offer the reader another perspective on actual sources of disputes between parties when it comes to facades, regardless of whether parties opt to: look at the matter objectively to solve the defect per se effectively; or opt for claiming damages through the Courts (or in Arbitration) deferring the physical repair of the defective façade, to the detriment of the building users.

PAINTED FAÇADES: MAINTENANCE, MAINTENANCE, MAINTENANCE!

It is very common to find painted facades on residential developments. Such standard paints are designed by paint manufacturers to be, to a certain degree, water and fungus resistant. These are usually silicone-based. There are a few ranges available in the market, yet there are no custom-made paints made available today: For economical reasons, the costs of such paints would be prohibitive and would defeat their purpose, i.e. paints being the lowest cost wall finishes.

The façade paint ageing process is what we are dealing with here. It will therefore depend on the paint composition and the built-up paint system selected for a given building for adapting to a given building-specific environment. (Several paint layers may be applied to a façade, and up to 1.8 to 2cm thick!) It is therefore the duty of the Architect or any other party providing façade paint specifications, as well as any paint supplier, to thoroughly study the idiosyncratic environment and various exposures of a particular building to choose the most appropriate paint system, regardless of any cost saving considerations. This study and selection process must remain objective. The point is not to expect anyone to specify maintenance-free paint systems that would hypothetically last forever (or at least be maintenance-free during the warranty period) but to reduce any premature defects to the paint system opted for.

At the paint design stage, while crafting the most suitable built-up paint system before awarding the contract to a supplier and applicator, the various facades of a building are to be considered according to their respective exposures, to the sun, the wind, to any neighbouring particular trees or forests, any roads or highways and related gas emissions, any railway tracks and stations or other sources of pollution. Gas emissions from transport vehicles, spores transported by the wind and depositing on facades from forests and/or trees in the vicinity, maritime saline aggressive areas, acid rains in polluted zones, high humidity levels at various times in the day and solar exposure, are few causes of premature aging of paints and therefore façade paint systems.

Unfortunately, to the layman, premature aging of painted facades is seen as dirt and the contractor's defects. Utterly wrongly, yet often, painted façade defects are systematically associated to design, workmanship or material issues. It takes a long educational process to make the interested parties be aware of the limitations of façade paints, whether the paint system is covered by a warranty or not! It is, to the trained eye very easy to distinguish between: genuine defects on façade paints (material or workmanship defects, the pattern of which would be extensive and/or regular in a given façade elevation); and defects due to external factors (specific defects on localised areas or elevations such as stains/dirt).

Yet painted facade disorders may stem from more complicated factors such as: humidity (in Singapore, between 6am and 7am as well as between 6pm to 7pm, high condensation appears on most facades); variations on a given part of a façade from its exposure to the sun in a day; and condensation (formation of water on the wall surface) on various areas of a given façade due to temperature gradient between the ambient air outdoors and the interior temperature of a given unit at various hours in a day (under air-conditioning in hot countries or heating in cold countries).

These are all causes of defects that are not manageable from the design point of view. Regular maintenance (yearly inspection and repair and total re-paint every 5 years is necessary. Yet the most important source of defects for any type of façade is frost, something that Singapore is very lucky to be spared from!! Finally, dirt is generally the main cause of defects on facades and, without regular maintenance and/or

re-paint, even with the best paint system provided, a façade will (sooner or later) appear dirty, unsightly and "defective". Accumulation of dirt does cause damages to a paint system, triggering and accumulating subsequent defects as described above.

Therefore, no matter how specifically adapted the paint system is, the best recommendations from paint manufacturers, suppliers, architects, engineers and other experts, is that building owners conduct regular inspections and cleaning to any painted façade to make sure that it doesn't suffer from premature ageing through defects coming from external factors. Finally, painted facades should be re-painted every 5 years, should cleaning not be enough to keep an acceptable appearance.

STONE CLAD BUILDINGS: MAINTENANCE, MAINTENANCE, MAINTENANCE!

It is common to find, in large cities, buildings clad with stone. Such stone may range from granites to Limestone to Shanghai plaster. Designs for such systems are generally very elaborate and take into account comprehensively any factors that may affect the stone cladding, including very accurate tests and analyses of the stone being used. The fixing system is fitted in such a manner that it allows a safe installation, whether the stone cladding is glued or mechanically fixed. Fixing systems do take into consideration safety coefficients beyond specifications as a precaution. In normal circumstances where a stone cladding system is internationally recognized and approved by acknowledged parties and experts such as renowned international façade firms and consultants, it is not incorrect to state that granite claddings are as safe as any other façade finish, including paints and curtain walls.

These systems are, during construction, comprehensively inspected, tested, commented on and corrected, prior to the hand-over of the façade from the builder to the building owner. Stone clad facades are generally covered by 10 years warranties (rarely 15 years), for their design, materials and workmanship. Furthermore, stone clad facades are expensive and therefore, careful attention is paid to this trade, from the concept stage, through the specification stage, until the completion of its construction.

It is however important to note that according to local and/or international standards, it is prohibited to use stone cladding for buildings in seismic areas, such as southern France or Japan or other regions known to experience earth quakes.

Likewise, it is commonly known in the construction sector that vibrations – not necessarily coming from tremors – to buildings are the source of many disorders. Therefore, authorities in various states do impose controls and risk management over construction projects neighbouring existing buildings, when they plan for works possibly generating vibrations. Deep excavations often lead to subsequent neighbouring soil movements, as well as related neighboring soil de-watering accompanied by the buckling of neighbouring steel piles. These are usual causes to many facade defects, including to stone and/or glass clad facades.

The use of Building Maintenance Units (or gondolas) for maintaining the façade can cause defects sometimes by impacting a stone cladding or a window, under sudden strong winds. Gondola operators are trained to highlight forthwith such defects to the building owner and repairs should be carried-out immediately accordingly to prevent any deterioration of the cladding and prevent it from falling off.

Like any other façade finish or feature, regular inspections and cleaning are of upmost importance, and should be undertaken at least yearly. This should be part of a building maintenance program, in particular when the building is 5 years old or older. Regardless of liabilities, as a matter of safety and prevention of premature aging of the façade, it is very much recommended for a building owner to inspect its building façade regularly and carry out related cleaning maintenance works. In some countries, this is done by statute. In some other countries, an imposed insurance system to cover the building maintenance – and therefore protecting the occupiers' rights – leaves no choice for the building owner but to carry out such regular inspections, cleaning and/or repair works.

CONCLUSION

Building maintenance and management of completed projects are necessary. These do exist in some instances and yet generally are unheard of. Surprisingly, they are not considered noble or are not practiced at all. In contract, apart from the defects liability period and other joint and several warranties covering design, materials and workmanship, there is little drafted in any common construction forms of contract when it comes to management of completed projects and differentiation between various categories of defects and related liabilities.

There is a visible lack of communication – but not a lack of knowledge – on the existing phase of completed project maintenance. There is a lack of generosity from the experts to share and spread, voluntarily, their knowledge accordingly. This is often limited to sharing in Court for a given case and a given party and the usual on-going tendency to blame the "contractor" for breach of warranty or negligence during the construction, even many years after project completion. All these do not help the construction industry to move forward productively.

It is essential that: education is developed in this line; accompanied with better drafted contracts regarding defects vs. building maintenance; together with the set-up of building owners' duties and other building maintenance standards; and why not a more explicit regulatory frame work. This would help to to keep up the best image and reputation of the building industry, for any party to fairly and duly fulfill its duties, whether a contractor, a consultant or a building owner. More importantly, the safety of the public and the building occupiers' enjoyment are at stake on the one hand. On the other hand, this possible formalisation of building maintenance would certainly prevent wasting unproductively daunting resources and the Courts' time with disputes regarding technical matters that are well known by the industry practitioners yet voluntarily disputed.

From left: Painted façade of a residential development; Granite clad façade, office tower.

Building facades are usually extensive and expensive, exposed to the weather and do age faster than the building interior. Therefore, it is the building area where most disputes start, while it should not be if facade inspections, cleaning and maintenance regimes were not neglected, and were put in place as soon as the building is handed over to the owner.

Like cars and planes, buildings and their features are not maintenance free!

Audrey Perez
PE, FSIArb, GCIA (NUS), Council Member SIArb
QSE and Maintenance Head of Department
Dragages Singapore Pte Ltd (member of Bouygues Construction Group)

E-mail: audrey.perez@bouygues-construction.com

LIST OF NEW MEMBERS WHO HAVE JOINED SCL (SINGAPORE) IN 2011

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3. Charmaine Huiyi Ng
4. Andrew Weiming Lee
5. Thye Ann Toh
6. Erik Van Soestbergen
7. Linda Widjaja
8. Chung Keong Cheong
9. Gee Fat Heng
10. Derek Nelson
11. Mario Durinic
12. Ian Johnston
13. Li Nah Quek
14. David Hardiman
15. Emerson Holmes
16. John Morhall
17. Mui Heng Pang
18. Mahesh Chander Joshi
19. Adrian, Thau Lip Kong
20. Kok Seng Ang
21. Bee Fong Tan
22. Yew Huat, Steven Lim
23. Ganesh Chandru
24. Wang Xing Heng
25. Christabel Cai
26. Jonathan Jun-Xian Guwe
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