

Chapter VI Incident No. 2 - Shek Yam Estate Phase 2

Introduction

6.1 In July 1994 HA decided to redevelop Shek Yam Estate in four phases. Phase 2 comprised three domestic blocks and one car-park podium-cum-commercial centre. The term "SY" in this Report stands for the construction of the superstructure in Shek Yam Estate Phase 2 only.

6.2 The foundation works of SY were completed on 30 October 1997, followed by the commencement of the Building Contract on 31 October 1997. On 28 March 2000, the Independent Commission Against Corruption arrested 16 persons, including site staff and employees of the Contractor and subcontractors for alleged bribery in connection with the construction works at SY. It was alleged that stainless steel cladding not in compliance with the Contract Specification had been used on the facades of the commercial centre and that the building subcontractors had offered advantages to the Contractor's site staff for accepting non-compliant work. Two employees of the stainless steel subcontractor were subsequently charged and convicted of conspiracy to defraud. A Community Service Order of 200 hours was imposed by the court on each of them on 28 September 2001.

6.3 The non-conforming stainless steel cladding was demolished by the Contractor in March 2000, and steel cladding in compliance with the Specification was re-installed. To assess the structural integrity of the project, HD carried out internal independent checking. The checking was completed in June 2000. It concluded that there was no problem with the structural safety of the buildings. The SY project was completed on 16 September 2000.

6.4 The Select Committee understands that in the SY project, apart from problems related to stainless steel cladding, there were also problems of workmanship. However, since public concern about the SY incident was in relation to stainless steel cladding, the Select Committee has adhered to its scope of inquiry and focused its attention on the events relevant to it. It is in

this context that the Select Committee examines the system and the procedures adopted by HD, if any, to ensure that the use of building materials was in compliance with the contract. This Chapter analyses the events and circumstances surrounding the installation of stainless steel cladding to the exterior of the commercial centre of SY. A chronology of activities relevant to stainless steel cladding is in **Appendix VI(1)**.

Planning and design

6.5 The SY project went through the planning and design stages smoothly in accordance with HD's established procedures. The client brief, scheme design and project budget for the SY project was first discussed by BC on 16 May 1996. Having regard to the views of BC members on the design of the development, HD revised the layout of the project and the project budget, which were approved by BC by way of a "presumption paper" on 30 September 1996. The approved project budget for the Building Contract was \$1,110.19 million.

Tendering

6.6 Six selected contractors who were on the HA List of Building Contractors for Building (New Works) Group NW2 were invited to tender for the project on 16 May 1997. Tenderers were required to submit a basic tender (Tender A), with an option to submit an alternative tender (Tender B). For Tender A, the works should be completed within 32 months. For Tender B, the works should be completed within a shorter period of not less than 24 months, to be proposed by the tenderer (see paragraph 3.39).

6.7 HD received five tenders by close of the tendering period. China State Construction Engineering Corporation (CSCEC) submitted a Tender A and a Tender B, proposing to complete the works within 32 months and 30 months respectively. The Tender B submitted by CSCEC in the amount of \$1,096 million was the lowest. On 21 August 1997 BC discussed the tender

result and, on the recommendation of HD, approved the award of the SY Contract to CSCEC with its Tender B.

Management of the project

Consultant Architect

6.8 SY was among the first batch of consultant projects outsourced to architect-led consultants to relieve the impact of bunching anticipated by HD in the light of the 1995 PHDPs. Dennis Lau & Ng Chun Man Architects & Engineers (H.K.) Ltd (DLN) was approved by BC on 26 October 1995 as the Architectural Consultant for Shek Yam Redevelopment Phases 2 and 3 from scheme design to completion of the project, including both foundation works and building works. Like other consultant projects, DLN took up the role of CM and was responsible for administering the Contract and supervising the execution of works by the Contractor in accordance with the Contract. DLN assigned Ms Hanna HSU Yu-ming as the Project Architect (PA/SY) and ACM.

Liaison Team of Housing Department

6.9 In line with other outsourced projects of HD, a Liaison Team headed by the Director's Representative (DR) comprising liaison officers of various disciplines was responsible for managing the Consultant Architect in the performance of its work. During the period relevant to the installation of the stainless steel cladding, Mr CHAN Nap-ming was DR/SY and Mr CHEUNG Kun-sing was the Senior Liaison Manager.

Site staff

6.10 DLN was also responsible for site inspection under the Contract. DLN was required under the Consultancy Agreement to appoint a suitably qualified team of resident site staff to carry out site inspection. The full staff costs were reimbursed by HA, while DLN was paid an administrative fee calculated at 7% of staff on-cost for recruiting, appointing and managing the site staff. Under BCM-501(3), the size of the site staff establishment was

determined by the consultant. The team of site supervisory staff DLN hired on behalf of HD included a PCOW, an ACW and a few WSs. The site staff appointed for the relevant period and referred to in this Chapter were Mr KU Chun-lung, PCOW/SY from December 1997 to September 2000, and Mr CHAN Hon-keung, ACW/SY from May 1998 to April 2001.

The Contractor's team

6.11 The key personnel deployed by CSCEC for the SY project included a site manager, a QCE, a project quantity surveyor, a site agent and a general foreman. Mr AU Chun-kuen was the Site Agent (SA/SY) for the entire period of the Contract.

The Subcontractor

6.12 CSCEC subcontracted part of the project involving the installation of the stainless steel cladding to the exterior of the commercial centre to Hung Fung Engineering Limited (Hung Fung). Mr MAN Chai-wah and Mr CHENG Tak-wai were Assistant General Manager and Assistant Project Manager of Hung Fung respectively.

6.13 An organization chart showing the relationship among the Consultant, the Liaison Team of HD, the site staff, the Contractor and the Subcontractor and their key personnel is in **Appendix VI(2)**.

Construction

Requirements in the Contract

6.14 Under Clause 49 of the General Conditions of Contract, the SY project was divided into sections with different completion dates. Section 1 covered the car-park and associated external works, and was to be completed by January 1999. The commercial centre, which was in the same structure of the car-park, came under Section 2 which was to be completed in October 1999. It was not entirely clear from the Contract whether the stainless steel cladding

to the exterior of the commercial centre was regarded as part of the associated external works within Section 1.

6.15 According to the Bills of Quantities (BQ) of the Contract, the stainless steel cladding to be installed to the exterior of the commercial centre must be 3 mm thick at a contract sum of \$599,955. However, the 3 mm thickness was an inadvertent error owing to inconsistency of the contract drawings prepared by DLN. Some of the DLN drawings showed the stainless steel cladding as 2 mm thick and some 3 mm thick. The discrepancy of thickness was detected by DLN during a review of the construction drawings after the commencement of the Contract. DLN clarified the discrepancy by issuing an Architect's Instruction to CSCEC on 26 November 1998. The Architect's Instruction confirmed that 2 mm thick stainless steel cladding was to be used. It was copied to HD and PCOW/SY for information.

Requirements in Housing Department manuals on inspection of materials

6.16 HD manuals lay down the requirements on inspection of materials used in a project. Manuals relevant to the SY project were the Site Inspection Manual for Building Works (ASM) and the Project Procedures Manual (BPP) for PHDP. According to these manuals, materials used in a project should be subject to the following checking procedures:

- (a) the PCOW to assess the sample of material submitted by the main contractor by checking against the specification, the BQ and drawings. The PCOW to record his recommendation, findings or areas of non-compliance in the Assessment of Material Sample and Approval Form and forward it to the PA or PSE as appropriate (ASM-202(10) and BPP-802(39));
- (b) PA and PSE to assess the sample and reply to the main contractor on the submitted sample and approval form within 14 working days of the date of submission (BPP-802(40));

- (c) upon approval of the samples, PCOW to fix the "Approval" label form signed by PA/PSE and retain the approved sample in the sample room until completion of contract (BPP-802(43));
- (d) PCOW to check materials subsequently supplied to site against the approved samples and record all deliveries made or rejected (BPP-802(44)); and
- (e) should there be any non-conformities or deficiencies identified, the PCOW is to record such non-conformities or deficiencies in the relevant records and issue a Site Direction to the contractor to require the contractor to take necessary action to rectify the non-conformities or deficiencies (ASM-202(3)).

6.17 ASM-203(12) further specified the inspection percentage for different categories of works, ranging from 100% to one inspection per trade or item. Stainless steel cladding work, not being a standard item, was not specified under any category of works. At the commencement of the Contract, DLN specified that external cladding should be subject to Category 'D' check, i.e. one inspection per block at the minimum. The site staff concerned were informed of the inspection requirement.

Actual works done

Submission and inspection of samples

6.18 Given the specified inspection percentage, the Select Committee has examined why the non-conforming cladding could have escaped the attention of the various parties involved in the inspection procedures. To start with, the Contract required CSCEC to submit samples of construction materials for approval by PA/SY before the materials could be used for the project. According to the witnesses and based on available records, the samples of stainless steel cladding (probably those provided by Hung Fung in late 1998/early 1999) were submitted by CSCEC to DLN on 19 May 1999. The

samples, according to the former staff concerned of Hung Fung, were 2 mm thick. According to SA/SY, CSCEC did not know whether the samples submitted to DLN were 2 mm thick, because CSCEC focused during its checking on the surface finishing, such as shape, size and colour. The samples were subsequently checked and confirmed to be in compliance with the Specification and drawings by PCOW/SY on 21 May 1999. Based on the recommendation of PCOW/SY, DLN informed CSCEC on 27 May 1999 that the sample submission was approved subject to the condition that:

"all materials submitted shall be installed in accordance with the approved shop drawings."

Submission and approval of shop drawings

6.19 The BQ stipulated that the shop drawings of stainless steel cladding must be submitted by the Contractor to the CM for approval. Records show that CSCEC submitted the relevant shop drawings to DLN on 12 January 1999. DLN gave its conditional approval on 10 May 1999, almost four months after the submission of the shop drawings. The approval then given was not final, as CSCEC was requested to amend the shop drawings to take account of DLN's comments. The Select Committees notes that as late as 23 July 1999, DLN was still corresponding with CSCEC concerning the shop drawings for stainless steel cladding.

6.20 On the late processing of the shop drawings, DLN explained to the Select Committee that it was always necessary to discuss with the contractors the details of their submissions several times before approval could be given. Despite this normal practice in the industry, PA/SY admitted that DLN had taken longer than normal time to approve the shop drawings for stainless steel cladding submitted by CSCEC.

Installation of stainless steel cladding

6.21 Procedurally, stainless steel cladding should be installed after the relevant samples and shop drawings were approved. However, the former employees of Hung Fung and SA/SY indicated that the cladding was installed

in late 1998 and early 1999 before approval of the samples and shop drawings. The reasons given by them were that CSCEC was initially unsure whether external decoration of the car-park building-cum-commercial centre formed part of the Section 1 works to be handed over to DLN in January 1999 under the Contract. Although it was subsequently confirmed with DLN that external decoration was not included in the Section 1 works, CSCEC considered it expedient to make use of the scaffolding erected for the construction of the car-park building to complete installation of the external wall cladding. According to SA/SY, the scaffolding had to be dismantled to enable the Fire Services Department to conduct fire safety check of the car-park building. To save the work of re-erecting the scaffolding for the installation of the external cladding, CSCEC agreed with Hung Fung that the external cladding should be installed before the Lunar New Year in February 1999. The Contractor Reports also indicated that external wall cladding had been in progress since November 1998, and progress payment from 20% (as at 30 November 1998) to 85% (as at 30 March 1999) of the value of external stainless steel cladding was made to the Contractor for progressive completion of the cladding work. The Payment Applications were prepared by the Project Quantity Surveyor (PQS/SY), a consultant separately employed by HD for the SY project, and endorsed by DLN.

6.22 As the Contractor Reports were made available to DLN and the Payment Applications were endorsed by DLN, DLN should have stopped the Contractor from proceeding with the works in late 1998 and early 1999, as the samples and shop drawings had yet to be approved. DLN explained that external wall cladding included both aluminium cladding and stainless steel cladding, and it was not entirely clear from the Contractor Reports which of these cladding works were being referred to. Nevertheless, PA/SY agreed that the Payment Applications in question proved that the stainless steel cladding was installed in late 1998 and early 1999, as PQS/SY had to verify the percentage of works completed on site before payment was made to the Contractor. DLN, however, pointed out to the Select Committee that it was not unusual in the construction industry that contractors commenced non-essential works before the approval of the relevant shop drawings, on condition that they would bear the risks of demolishing the works if the works completed were eventually found not in compliance with the approved shop drawings.

PA/SY could not confirm whether DLN had reached such an understanding with CSCEC. She admitted that there might be an oversight on the part of DLN for releasing payment to CSCEC for installation of the external cladding before the approval of samples and shop drawings.

Inspection of stainless steel cladding

6.23 The resident site staff concerned should have full knowledge of whether and when the cladding works had commenced. The Select Committee, however, notes the conflicting evidence provided by PCOW/SY and ACW/SY. PCOW/SY claimed that he noticed the installation works by the Contractor in late 1998 and early 1999 before the relevant shop drawings were approved. Inspection was carried out by ACW/SY who then found that the thickness of the cladding was not in compliance with the contract requirement. PCOW/SY also claimed that he had issued a site direction in this regard and had raised the matter with PA/SY at site meetings, which the latter denied. ACW/SY confirmed that the stainless steel cladding was installed in late 1998 and early 1999 but said that he had never inspected the works, as the samples and the shop drawings had yet to be approved then. That being the case, there were no yardsticks against which inspection could be made. He also denied that he had ever informed PCOW/SY about the non-conformity in thickness of the cladding. Nevertheless, like PCOW/SY, he said that site directions concerning the installation of the cladding before the approval of shop drawings had been issued by PCOW/SY to the Contractor. The Select Committee, however, cannot find any documentary evidence in this regard. Even if site directions were issued as claimed, it appears that no follow-up action was taken.

6.24 The Select Committee notes the absence of any completed inspection forms on the stainless steel cladding for the relevant period. There is also no written evidence to show that the thickness of the stainless steel cladding was ever discussed at site meetings. As told by the former employees concerned of Hung Fung, although the sample given to CSCEC for submission to DLN was 2 mm thick, the stainless steel cladding installed to the external walls of the commercial centre was only 1.5 mm thick, as Hung Fung

was unable to procure 2 mm thick stainless steel cladding within the very tight time frame.

6.25 The delivery notes submitted by Hung Fung to CSCEC, however, showed that the thickness of the stainless steel cladding was 2 mm. According to SA/SY, as in the case of all other materials procured by its specialist subcontractors, CSCEC relied entirely on Hung Fung to provide stainless steel cladding in compliance with the requirements in the Contract and did not check the thickness of the cladding when it was delivered to site. The 1.5 mm thick stainless steel cladding had not therefore been detected by CSCEC when it was installed in late 1998 and early 1999.

6.26 As the overseer of the project, DLN expected the site staff to monitor the materials delivered to site and to draw its attention to any material which should not be used on site with reference to the requirements in the Contract and drawings. Notwithstanding this expectation and the express provisions in ASM and BPP concerning checking of materials by site staff as set out in paragraph 6.16 above, PCOW/SY told the Select Committee that there was no mechanism in place to enable the site staff to monitor materials in and out of the site. PCOW/SY said that the site staff would not and could not inspect the materials delivered to site, as they did not know whether the materials would actually be used on the site and in which work process they would be used. The site staff would only inspect the materials when they were being used on site in the context of inspection of works. Given the absence of completed inspection forms on external cladding, the Select Committee believes that the cladding works had not been inspected when they were first installed, hence DLN was unaware of the non-conformity in thickness. HD, relying entirely on DLN to monitor the execution of works by CSCEC in accordance with the Contract, was similarly in the dark about the stainless steel cladding being short of the required thickness by 0.5 mm.

Revelation of the problem and remedy

6.27 Without any inspection by CSCEC and the site staff concerned when the cladding was delivered to site and when it was installed, the thickness of the stainless steel cladding remained unknown to the Contractor, DLN and

HD long after it had been installed. When HD conducted audit check on 12 May 1999 and found that the shop drawings for stainless steel cladding were outstanding, it did not know that the cladding had already been installed. In June 1999 when DLN discovered warping and uneven surface in the external stainless steel cladding facing Tung Chi Street, it was not yet aware of the problem of non-conformity in thickness. CSCEC took several months to find out the cause of these defects. SA/SY told the Select Committee that CSCEC had initially suspected that the warping and uneven surface were caused by the looseness of the frames supporting the cladding. The matter thus remained outstanding for many months, resulting in the issue of an Architect's Instruction by DLN in August 1999 requesting CSCEC to propose remedial actions and the deduction of payment to CSCEC for unsatisfactory works. After seeking clarification with Hung Fung, CSCEC suspected that the problem might rest with the thickness of the cladding. Part of the completed cladding was opened up, thus bringing to light the non-conformity in thickness. CSCEC terminated its contract with Hung Fung, demolished the completed cladding in March 2000 and re-installed the cladding in May 2000 in accordance with the Contract Specification and the approved shop drawings.

Observations

6.28 The use of construction materials in compliance with the requirements in the contract is a prerequisite to good quality works. In the SY case, although stainless steel cladding is for decorative purpose and has no bearing on the structural integrity of a building, the incident reveals fundamental deficiencies in the overall management of materials on site and at various stages of works. Those deficiencies resulted in works being proceeded with prior to approval of samples and shop drawings, and non-conforming materials being used on works without being detected in time by the Contractor, the Consultant and the auditing team of HD.

6.29 Construction works for Sections 1 and 2, namely the car-park and the commercial centre, were to be completed by January and October 1999 respectively. It was the responsibility of the Contractor to complete the installation of steel cladding to the commercial centre before October 1999.

According to the evidence received, there was initial confusion as to whether the steel cladding installed to the commercial centre should fall within Section 1 or Section 2 of the SY project, as the commercial centre and the car-park were in the same structure and shared the same external walls. However, the Select Committee notes that the query was clarified and there was no misunderstanding on the part of the Contractor about the timetable on the installation of steel cladding. The Contractor, however, advanced the completion of the steel cladding works to January 1999. Therefore, the working procedure for the steel cladding works became highly compressed.

6.30 The Select Committee notes that the purpose of advancing the steel cladding works for the commercial centre was to make use of the scaffolding already erected for constructing car-park and associated external works in Section 1 before it was dismantled for the inspection of the fire safety works of the car-park. It is evident that such advancement of works would avoid the need to re-construct the scaffolding and hoarding.

6.31 As claimed by the former staff concerned of Hung Fung, Hung Fung encountered great difficulty in getting 2 mm thick cladding in large quantities in late 1998/early 1999 due to the long holidays. Hung Fung therefore brought in cladding of 1.5 mm thick and commenced the installation works. PCOW/SY and ACW/SY were aware of the installation of external cladding being undertaken without approved shop drawings. But there is no documentary evidence to show that action was taken by them to call for a stop of the works. The installation of the cladding was eventually completed without any inspection.

6.32 In the view of the Select Committee, the conditional approval of the shop drawings of the stainless steel cladding by DLN in May 1999 could not be regarded as having been delayed, because the completion date of the cladding works was supposed to be October 1999. Problems arose mainly because CSCEC and Hung Fung proceeded ahead of schedule to install the stainless steel cladding without waiting for the approval of the relevant samples and shop drawings. Processing of the samples and the shop drawings was conducted in the normal manner. No corresponding measures were

undertaken to advance the processing or the checking procedures in parallel with the advancement of the installation works.

Monitoring of materials

6.33 Apart from the above observations, the Select Committee has examined the procedure and practice in the monitoring of materials used in a contract.

The Contractor

6.34 Hung Fung, as the Subcontractor for installing the stainless steel cladding, had the immediate responsibility for using construction materials specified in the Contract. Although the construction timetable might be tight and sourcing of complying material might be difficult, there was no excuse to use non-conforming cladding. Being a party to the Contract, the Contractor had the ultimate responsibility for ensuring that the materials supplied by its subcontractors complied with the Specification. In the SY case, the main Contractor relied entirely on the specialist Subcontractor to provide materials that complied with the Specification. Evidence shows that CSCEC neither checked the thickness of the samples of stainless steel cladding submitted by Hung Fung nor the stainless steel cladding to be used for installation.

The Contract Team

6.35 The second party having the responsibility for ensuring the use of materials in compliance with the contract is the contract team which was, in the SY case, DLN. Given that PA/SY was not resident on site, the day-to-day monitoring of materials rested with the site supervisory staff concerned. While BPP-802(44) expressly required PCOW to check the materials supplied to site against approved samples and record all deliveries made or rejected, the Select Committee finds that there is no effective mechanism to make this requirement achievable. In the SY case, there was no system for the site staff concerned to monitor the delivery of materials to and the removal of them out of the site, not to mention the checking of the materials against samples. Given the great variety and large volume of materials to be used in the project

and in the absence of an effective checking system, it was practically difficult for the site staff to work in accordance with this requirement in the BPP. In the first place, the site staff did not know what materials were to be delivered to site and when the deliveries were made, unless the Contractor chose to report to them. In the SY case, it seems that even CSCEC itself did not know when and what materials were delivered by its subcontractors to site, and could not have informed the site staff of DLN about deliveries of materials. Under the circumstances, the only safeguard was to require the site staff to check the materials when they were being used. However, it was HD's practice for checking to be done when informed by the contractor and when the shop drawings and samples were available. As a result, checking of the cladding did not take place in the SY case and, in advancing the work schedule concerned before approval of the samples and shop drawings, the Contractor was taking the risk of having to demolish the cladding if it was non-conforming.

The site staff

6.36 The Select Committee finds that similar to other incidents, the site staff of the SY project played a passive role in performing their duties. If the site staff only inspected materials upon notification by the contractor, there was no way they could perform their supervisory function effectively. It is therefore not surprising to the Select Committee that despite the high standards stipulated in the specification, non-conforming materials could easily be used on site. Where the contractor was prepared to take the risk by, for example, advancing the works procedure, no checking of materials would take place.

6.37 The SY case illustrates that while a consultant would be paid an administrative fee for recruiting, appointing and managing the site staff, there is no guarantee that the site staff would be adequately trained to be conversant with the HD manuals. The Select Committee is not convinced that PCOW/SY issued a site direction to CSCEC when he became aware of the installation of cladding before the approval of shop drawings.

Quality awareness

6.38 Insufficient quality awareness among the parties concerned was the main problem in the SY incident. According to PA/SY, it was common practice in the industry that non-essential works could commence before the approval of the relevant shop drawings, provided that the contractor concerned was willing to run the risk of demolishing the works should they eventually be found to be non-compliant. This flexibility, however, was not accompanied by appropriate adjustment to the checking system in HD in the SY incident, where the site staff would only check the materials according to the approved shop drawings and samples. The inspection arrangement did not provide sufficient flexibility to cater for the common practice of re-scheduling non-essential works according to the needs of the project. Since remedying non-compliant works, if found, would entail both costs and time, contractors might have an incentive to cover up non-compliant works.

6.39 The Select Committee notes that the stainless steel cladding in the SY incident was a non-standard and non-essential item, the value of which constituted only a small fraction of the contract sum. Their installation should nevertheless be in compliance with the requirements in the Contract. Being the Consultant Architect for the SY project, DLN should be fully aware of the activities at the site. The mere fact that it endorsed the various Payment Applications from CSCEC for installation of the stainless steel cladding makes it difficult for the Select Committee to believe that DLN did not know the installation of the cladding before the relevant shop drawings were approved. Even if this had been the case, it only reflects DLN's lax attitude both in monitoring the installation of the cladding and in scrutinizing the Payment Applications. The Select Committee finds it ironic that after DLN had already found out defects with the installed stainless steel cladding in June 1999, it still corresponded with CSCEC in July 1999 about the shop drawings as if the cladding had not been installed. It appears to the Select Committee that the approval of shop drawings by DLN, in the case of stainless steel cladding, was a mere formality and for record purpose without any specific meaning. The Select Committee considers that it was not merely an oversight of DLN to endorse the progress payment to CSCEC as claimed by PA/SY, but that DLN was remiss in its duty.

6.40 PCOW/SY and ACW/SY seemed to show little concern for quality of work. They did not consider it their duty to check the materials as the shop drawings were still pending. Being the leader of the site supervisory staff concerned, PCOW/SY was expected to play a pivotal role in site inspection and to report any irregularity or non-conformity on site. The Select Committee, however, has serious doubt about whether PCOW/SY performed his role. If PCOW/SY, as he claimed, had done any checking and was aware of the non-conforming stainless steel cladding in early 1999 and, had issued a site direction to CSCEC about non-conformity in accordance with BPP-802(73), there should be a record of such a site direction. However, no such site direction could be traced. If PCOW/SY had drawn the attention of PA/SY to the non-conforming stainless steel cladding at site meetings as he claimed, there should be such records in the minutes of site meetings. No such record could be found. Moreover, if PA/SY had been informed by PCOW/SY of the non-conformity in the thickness of the stainless steel cladding, there would be no reason for her not to take up the matter with CSCEC, in particular when she noticed warping and uneven surface in the external cladding. The Select Committee also notes the conflicting and unconvincing evidence provided by PCOW/SY at the hearing and in writing thereafter. For example, in the early part of the hearing he attended, he said that the cladding should have been installed in late 1998 and early 1999. However, when he was shown the sample approval form, he changed his answer and said that the installation time should be around May 1999. In the paper he provided to the Select Committee after the hearing, after stating in an earlier paragraph that cladding installation should have started in late 1998, he went on to conclude that the stainless steel cladding should have been installed between May and July 1999. His statement at the hearing that the thickness of cladding could be measured with a ruler was also unconvincing. Under the circumstances, the Select Committee does not find the evidence of PCOW/SY entirely credible.

Concluding observation

6.41 Quality work requires various parties to vigilantly carry out their respective duties in the right way. Any slackening of such vigilance, be it on the part of the contractor, the subcontractor or the contract team, provides an

opportunity for the execution of non-compliant work and the provision of non-conforming material, as evident in the SY case.