

For information

**Legislative Council Panel on Transport**  
**Delayed submission**  
**of the Request for Inspection and Survey Checking Forms**  
**by the Contractor of the Hong Kong Link Road**  
**of the Hong Kong-Zhuhai-Macao Bridge**

This paper briefs Members on the delayed submission of the Request for Inspection and Survey Checking Forms (RISCFs) by the contractor of the Hong Kong Link Road (HKLR) of the Hong Kong-Zhuhai-Macao Bridge (HZMB).

**HZMB HKLR Project**

2. Commenced on 31 May 2012, Contract No. HY/2011/03 “HZMB HKLR – Section between Scenic Hill and Hong Kong Boundary Crossing Facilities” is a design and build contract under the Highways Department (HyD). The Contract comprises the design and building of the section of the HZMB HKLR from the Scenic Hill on the Airport Island to the Hong Kong Boundary Crossing Facilities as well as the roads connecting the Hong Kong Boundary Crossing Facilities to the Hong Kong International Airport. The Contractor is China State Construction Engineering (Hong Kong) Limited (CSCE).

3. HyD employed Ove Arup & Partners Hong Kong Limited (the Project Consultant) as the engineering consultant to assist in the management of the concerned works contracts. The Project Consultant has to follow the Government’s project administration procedures and the relevant guidelines to supervise the contractors and make sure that the contractors have complied with the contract specifications and relevant regulations in the construction. In addition, the Project Consultant is required under the consultancy agreement to report regularly to HyD on the works progress, quality, safety, environmental issues, etc. HyD also closely monitors the work of the Project Consultant through regular meetings, monitoring of progress of works, site inspections, technical and works quality audits, etc.

## **“RISCFs”**

4. In accordance with the general requirements of public works projects, certain works items (such as fabrication of mould, steel reinforcement fixing, concreting and road paving, etc.) completed by the contractors are required to be inspected or surveyed by the Project Consultant’s Resident Site Staff (RSS). The contractors are required to submit RISCFs to request the RSS to inspect and survey the works concerned with a view to proceeding to the subsequent works procedure. The RISCFs are for recording the information between the Contractor and the RSS with respect to inspection or survey checks, e.g. date and time of the inspection or survey checking, sequence of works procedures, responsible personnel, etc. RISCFs serve as a tool to record the works of the Contractor and the supervision carried out by the RSS. The information can be retrieved for checking if needed. It is a proper site management practice.

5. According to the records, HyD was copied with a letter issued by the RSS in July 2016 to the Contractor, pointing out that the Contractor had not timely submitted the RISCFs according to the contract requirements. HyD acknowledged that the RSS had been following up the matter with the Contractor.

## **Follow-up Actions by HyD**

6. Since June 2018, HyD has received copies of letters issued by the RSS to the Contractor stating that the Contractor had not timely submitted the RISCFs according to the contract requirements. In late July 2018, HyD requested the RSS to submit the construction and supervision records, and reported the incident to the Transport and Housing Bureau (THB). In end July 2018, the RSS reported to HyD that the Contractor had not timely submitted, according to contract requirements, about 10,000 RISCFs. This accounts for about 28% of all the RISCFs (about 52,500 in total).

7. For prudence sake, having discussed with THB, HyD separately employed PYPUN-KD & Associates Limited as its independent audit consultant in early August 2018 to carry out an independent audit of the site records provided by the RSS in order to confirm that the RSS has carried out their duties in supervising the works carried out by the Contractor. In consideration of the urgency and uniqueness of appointing an independent audit consultant, HyD engaged the independent audit consultant by means of a single tender, which is in accordance with the relevant guidelines in the Stores and Procurement Regulations. The expenditure of appointing the independent audit consultant is about \$2.3 million.

8. The RSS submitted all the relevant site records and the inspection records from August to September 2018. These records include a large number of site photos taken by the RSS during construction. Besides, the RSS also confirmed with HyD that the Contractor had informed them to carry out inspections and survey checks for the works completed through phone calls, emails, instant messaging applications, verbal notices, etc. The RSS has carried out corresponding inspections and survey checks but had been waiting for subsequent submissions of the RISCs by the Contractor.

9. All delayed RISCs were submitted by the Contractor by batches during July to September 2018 and were signed and dated by the Contractor at the time of signature. The dates when the works were carried out, which were at an earlier time, were also indicated on the forms. This shows that submissions of the RISCs were delayed. All the late submitted RISCs were signed by the RSS who had reviewed their relevant site diaries and inspection records.

### **Methodology of the Independent Audit Consultant**

10. The independent audit consultant reviewed from mid-August to end September 2018 all the late submitted RISCs with a view to verifying whether the RSS had discharged the duties in supervising the works relevant to the late submissions. The results rest mainly on the relevancy, completeness and authenticity of the supporting materials presented by the RSS. The independent audit consultant ensured that the investigation process was conducted in a scientific, impartial, authentic, holistic and practical manner.

11. In order to record and organise key information registered in the late submitted RISCs efficiently and systematically, the independent audit consultant built up a comprehensive database in the form of spreadsheets during the review process. Its main function was to facilitate the independent audit team to carry out bulk data analysis, sorting of information, tracking of unsettled cases and results of review actions when necessary.

12. The independent audit consultant assessed the trustworthiness of the supporting materials (mainly photos taken during the construction) provided by the Project Consultant from three main aspects: (1) Relevancy, (2) Completeness and (3) Authenticity. In general, the relevancy of the materials represents whether the information given is directly related to the late submitted RISCs; completeness of the materials represents whether there was adequate useful information to support all the works covered by the RISCs; and the authenticity represents whether there were reasons to believe the integrity of the given information.

13. After the relevancy, completeness and authenticity of the materials have been evaluated, the engineering team of the independent audit consultant would determine which late submitted RISCs review could be concluded and which would require further verification. Follow-up actions include (1) cross-checking of the Project Contractor's supporting information; (2) seeking further clarification (including viewing more photos, emails, etc.) from the Project Consultant and/or the Contractor; (3) verification of the raw data of materials by the independent audit consultant's Information Technology (IT) specialist; (4) checking of drawings, method statements, Inspection, Testing and Approval Plan (ITAP) and site diaries, etc. Meetings/interview sessions with the Project Consultant were also organised so as to substantiate allegedly problematic RISCs.

14. The independent audit consultant has reviewed 14,839 late submitted RISCs, of which around 5,255 were classified as "structural" and 9,584 were classified as "non-structural". Emphasis was put on those structurally related late submitted RISCs in order to verify whether the inspection procedures and frequency fulfilled requirements of the works quality supervision mechanism.

15. RISCs related to structural works were grouped into 39 items and were accorded higher priority in the review. These forms cover foundation works and reinforced concrete works including tunnels, bridges, buildings, culverts, etc.

16. The other RISCs related to non-structural works were grouped into 65 items. After review of each RISC from the same item, a collective assessment would be conducted. These forms cover drainage, roadworks, seawall, pavement, profile barriers, architectural builders' works and finishes, landscaping, etc.

17. The independent audit consultant's IT team audited the Project Consultant's site photo library in the production server of the Project Consultant in the site office. Photos of relevant RISCs were inspected on a random basis. Information from photos in current production server, such as date taken and file date, were analysed to verify whether the photos were taken on the day.

### **Findings of the Independent Audit Consultant**

18. The review by the independent audit consultant on all late submitted RISCs was completed on 28 September 2018. The overall assessment revealed that all the 14,762 late submitted RISCs (i.e. 99.5% of total 14,839 late RISCs) were found to be substantiated by authentic and acceptable

supporting materials, proving that the Project Consultant had directly involved in on-site supervisions.

19. The remaining 77 late submitted RISCs (0.5% of total) were all “non-structural”, covering manhole installation, cable hangers works and painting works etc. HyD had followed up with the RSS on the aforementioned late submitted RISCs. The independent audit consultant had inspected the completed works associated with the 77 late submitted RISCs in early October 2018. No abnormalities were observed by the independent audit consultant.

20. The IT review on the authenticity of the photographic record was completed. The assessment result was satisfactory. When reviewing the photographic record in the computer server, the independent audit consultant noted that a massive amount of construction site photos were maintained systematically in the Project Consultant’s server, far exceeding the number of photos submitted for checking. All these evidences had helped to draw the conclusion that the photos and relevant filling system were not a sham.

## **Conclusion**

21. The independent audit consultant substantially completed the entire investigation with preliminary findings in September 2018 and submitted their preliminary review report on 10 October 2018 and the final review report on 31 October 2018. The conclusion of the final review report was in line with the preliminary findings. The investigation result confirmed that these late submitted RISCs cover part of the works implemented during the period from 2012 to 2018, with a majority of works implemented during 2015 to 2017.

22. The independent review consultant considered that the short retrieval time in providing sufficient evidence (approximately 20,000 photographic records) by the RSS could show that the Project Consultant has been systematically archiving the photos. The independent audit consultant noted that the Project Consultant could retrieve the large number of photo records from their computer record and allotted them to the corresponding late submitted RISCs within about a month’s time could prove that their RSS’ had direct involvement in on-site supervisions. This could reflect that the Project Consultant had maintained a system to keep a large number of photo records during construction. It would be unlikely that such large amount of substantiation could be retrieved in such short duration in the absence of established records and system. Hence, the independent audit consultant confirmed the authenticity of the records and the system maintained by the Project Consultant.

23. Throughout the process of facilitating the independent audit consultant to conduct photo checking, the RSS had demonstrated that they have good understanding of the photo filing system and the records by being able to efficiently locate the relevant photos from the system. Furthermore, over the course of the investigation, the independent audit consultant had interviewed the RSS at different ranks to learn more about the details of the construction works and the records kept. All the RSS interviewed were found to be knowledgeable with the details of the supervision works, indicating that they had truly been involved in the supervisory duties. The huge volume of photo evidence and the level of familiarisation of staff with the filing system and the records had strengthened the independent audit consultant's confidence in their assessment that the submitted photos and the filing system were not mocked up for satisfying this review exercise.

24. Based on the above assessment, the independent audit consultant considers that the Project Consultant had provided adequate and reliable substantiations to demonstrate that the RSS had discharged their supervisory duties. The independent audit consultant also believed the photos and the relevant filing systems were authentic.

25. The Final Review Report submitted by the independent audit consultant has been uploaded to HyD's website on the Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road project ([http://www.hyd.gov.hk/en/road\\_and\\_railway/hzmb\\_projects/6787th/HMW\\_SD\\_2\\_2018.pdf](http://www.hyd.gov.hk/en/road_and_railway/hzmb_projects/6787th/HMW_SD_2_2018.pdf)).

### **Summary**

26. After careful examination of the review reports submitted by the independent audit consultant, HyD was convinced with the investigation result. This matter is about the Contractor not submitting the documents on time according to the contract requirements rather than forms being destroyed or lost. It does not involve quality issues.

27. The late submission of RISCFS by the Contractor is undesirable. HyD has reflected the unsatisfactory performances of the Consultant and the Contractor in this matter in their quarterly performance reports, and has urged them for improvement. HyD will ask the Contractor for compensation of the cost for engaging the independent audit consultant.

28. The Government has all along attached great importance to the quality and safety of works. In view of this incident, we will seriously review how to further strengthen the monitoring of work of project consultants, including establishing a monitoring system on the submission of

RISCFs; assigning dedicated RSS to supervise the submission of RISCFs during construction with regular reporting to HyD; and stepping up the checking of submission status of RISCFs in the regular technical audits of HyD. We will also explore appropriate measures to improve the system of the request for inspection and survey.

29. The Government stressed that, HyD had confirmed, before the commissioning of the HZMB, that the Contractor had carried out the works in accordance with the contract requirements and that the technical and safety requirements of the works were met.

Transport and Housing Bureau  
Highways Department  
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