

Agreement No. CE 52/2009 (WS)
Improvement of fresh water supply to Cheung Chau
– Design and Construction

Schedule of Resident Site Staff Standards and Duties

1. Resident Engineer (Civil)
2. Resident Engineer (Geotechnical)
3. Assistant Resident Engineer (Civil), (Geotechnical)
4. Resident Inspector of Works (Civil)
5. Resident Assistant Inspector of Works (Civil)
6. Resident Works Supervisor I (Civil)
7. Resident Works Supervisor II (Civil)
8. Resident Survey Officer (Quantities)
9. Resident Survey Officer (Engineering)
10. Resident Technical Officer
11. Labour Relations Officer
12. Resident Assistant Clerical Officer
13. Resident Clerical Assistant

Resident Site Staff
Resident Engineer (Civil) [RE(C)]

1. Qualification

- (1) Corporate Membership of the Hong Kong Institution of Engineers (in an appropriate discipline) elected after 5 December 1975 or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience Required

Three-year experience following attainment of Corporate Membership of which one year shall be as Resident Engineer or above with trenchless construction experience.

3. Duties

- (1) Discharge the duties of the Project Manager/Supervisor's Representative as required by the Conditions of Contract¹.
- (2) Exercise the powers and discharge the duties contained in the provisions of the Contract delegated by the Project Manager/Supervisor.
- (3) Assist the Project Manager/Supervisor to exercise the powers and discharge the duties of those provisions of the Contract that have not been delegated.
- (4) Supervise the preparation and maintenance of the records required by the Project Administration Handbook and the Project Administration Manual together with any other records required by the Project Manager/Supervisor including the taking of photographs.
- (5) Examine and vet all proposals and correspondence received from the Contractor and prepare draft replies and certificates including draft certificates for payment.
- (6) Make recommendations to the Project Manager/Supervisor on contractual matters including contractors' claims.
- (7) Attend meetings with the Contractor on matter relating to the Works including progress, safety and public image and prepare minutes of these meetings.

¹ Conditions of Contract are the core clauses and the clauses for main Option (selected by the Employer), secondary Options (selected by the Employer) of the NEC3 Engineering and Construction Contract (June 2005)(with amendments June 2006), as amended or supplemented by the Articles of Agreement.

- (8) Liaise and attend meetings with parties other than the Contractor on matters relating to the Works and prepare minutes of these meetings.
- (9) Keep the Project Manager/Supervisor apprised of all developments including progress on Site by monthly reports and any special or incident reports.
- (10) Encourage Contractors and other persons on Site to use safe methods of working.
- (11) Bring to the attention of the Contractor and the Project Manager/Supervisor any breach of regulations or good safe working practice observed that could give rise to the injury of any person on the Site or any member of the public.
- (12) Bring to the attention of the Contractor and the Project Manager/Supervisor any working practice that could be detrimental to the Works.
- (13) Uphold the public image of the Government in general and the Water Supplies Department in particular and bring to the attention of the Contractor and the Project Manager/Supervisor any action that is detrimental to a good public image including but not necessarily limited to the provision of clean footpaths and barriers in public areas, lighting, signing and guarding, and mitigation of the environmental impact of the construction activities on the public.
- (14) Supervise the other Resident Site Staff as directed by the Project Manager/Supervisor including provision of such guidance they may need to carry out their duties, advise the Project Manager/Supervisor of any requirements for overtime working and prepare reports on their performance.
- (15) Prepare as-constructed drawings.
- (16) Supervise the deployment and use of any vehicle provided by the Contractor under the terms of the Contract.
- (17) Wear and encourage the Resident Site Staff to wear helmets, protective shoes and reflective jackets.
- (18) Review the techniques involved and analyse the results of any test or trial carried out on or off Site.
- (19) Check the calculation of quantities of work from measurements taken on Site.
- (20) Take measurements and calculate quantities of work measured from the

Drawings.

- (21) Carry out such further duties as may be assigned by the Project Manager/Supervisor.

Resident Site Staff
Resident Engineer (Geotechnical) [RE(G)]

1. Qualification

- (1) Corporate Membership of the Hong Kong Institution of Engineers (in an appropriate discipline) elected after 5 December 1975 or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience Required

Three-year experience following attainment of Corporate Membership of which two year shall be as Resident Engineer or above with relevant experience.

3. Duties

- (1) Assist RE(C) to discharge the duties of the Project Manager/Supervisor as required by the Conditions of Contract².
- (2) Exercise the powers and discharge the duties contained in the provisions of the Contract delegated by the Project Manager/Supervisor.
- (3) Assist the Project Manager/Supervisor and RE(C) to exercise the powers and discharge the duties of those provisions of the Contract that have not been delegated.
- (4) Supervise the preparation and maintenance of the records required by the Project Administration Handbook and the Project Administration Manual together with any other records required by the Project Manager/Supervisor including the taking of photographs.
- (5) Examine and vet all proposals and correspondence received from the Contractor and prepare draft replies and certificates including draft certificates for payment.
- (6) Make recommendations to the Project Manager/Supervisor and RE(C) on contractual matters including contractors' claims.
- (7) Attend meetings with the Contractor on matter relating to the Works including progress, safety and public image and prepare minutes of these meetings.
- (8) Liaise and attend meetings with parties other than the Contractor on

² Same as in Note 1.

matters relating to the Works and prepare minutes of these meetings.

- (9) Keep the Project Manager/Supervisor and RE(C) apprised of all developments including progress on Site by monthly reports and any special or incident reports.
- (10) Encourage Contractors and other persons on Site to use safe methods of working.
- (11) Bring to the attention of the Contractor, the Project Manager/Supervisor and RE(C) any breach of regulations or good safe working practice observed that could give rise to the injury of any person on the Site or any member of the public.
- (12) Bring to the attention of the Contractor, the Project Manager/Supervisor and RE(C) any working practice that could be detrimental to the Works.
- (13) Uphold the public image of the Government in general and the Water Supplies Department in particular and bring to the attention of the Contractor, the Project Manager/Supervisor any action that is detrimental to a good public image including but not necessarily limited to the provision of clean footpaths and barriers in public areas, lighting, signing and guarding, and mitigation of the environmental impact of the construction activities on the public.
- (14) Supervise the other Resident Site Staff as directed by the Project Manager/Supervisor including provision of such guidance they may need to carry out their duties, advise the Project Manager/Supervisor of any requirements for overtime working and prepare reports on their performance.
- (15) Prepare as-constructed drawings.
- (16) Supervise the deployment and use of any vehicle provided by the Contractor under the terms of the Contract.
- (17) Wear and encourage the Resident Site Staff to wear helmets, protective shoes and reflective jackets.
- (18) Review the techniques involved and analyse the results of any test or trial carried out on or off Site.
- (19) Check the calculation of quantities of work from measurements taken on Site.
- (20) Take measurements and calculate quantities of work measured from the Drawings.

(21) Carry out such further duties as may be assigned by the Project Manager/Supervisor.

Resident Site Staff
Assistant Resident Engineer (Civil) [ARE(C)]
Assistant Resident Engineer (Geotechnical) [ARE(G)]

1. Qualification

- (1) Degree in Civil Engineering from a Hong Kong university or equivalent;
and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience Required

Three-year relevant post-qualification experience.

3. Duties

- (1) General day-to-day contract administration.
- (2) General correspondence with contractors.
- (3) Answer technical queries and supply further information.
- (4) Prepare draft site instructions and variation orders.
- (5) Prepare reports on progress of works and safety.
- (6) Check contractors' submissions.
- (7) Liaise with Government departments and utility companies.
- (8) Supervise construction works.
- (9) Prepare meeting minutes.
- (10) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Inspector of Works (C) [RIOW(C)]

1. Qualifications

- (1) Diploma or Higher Certificate in an appropriate discipline from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience Required

Eight-year relevant post-qualification experience in an appropriate discipline of which four years shall be in a position equivalent to Assistant Inspector of Works in a Government or quasi Government project.

3. Duties

- (1) Control and direct Resident Works Supervisors and to supervise contractors' activities.
- (2) Check contractors' progress against agreed programme.
- (3) Ensure that the Works are carried out in accordance with specifications and drawings by identifying faulty materials, workmanship, etc.
- (4) Report to professional staff on site problems, progress, quality of workmanship, etc.
- (5) Guide Resident Works Supervisors in the preparation of site measurements and check site measurements.
- (6) Ensure proper contract management and that site measurements, site diary and other records are kept up to date.
- (7) Submit monthly progress reports or any other returns as required by his/her superior.
- (8) Check and verify bills submitted by contractors.
- (9) Check observation of safety precautions for works to be carried out.
- (10) Ensure consistent supervision and measurement standards across all sites.

- (11) Maintain overtime records of all site staff.
- (12) Liaise with Government departments, utility companies, public on site, etc.
- (13) General outdoor staff management.
- (14) Provide on job training to his/her subordinates.
- (15) Offer comments on method statements and material submissions.
- (16) General supervision of construction work and check whether it complies with contract documents and approved method statements.
- (17) Maintain contemporary site records.
- (18) Arrange and monitor site and laboratory tests.
- (19) Assign works to RAIOW(C), RWSI and RWSII daily and provide guidance and instructions.
- (20) Inspect all works on site as regards safety to workers.
- (21) Check lighting, signing and guarding for traffic diversion.
- (22) Prepare and maintain all site records up to date.
- (23) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Assistant Inspector of Works (Civil) [RAIOW(C)]

1. Qualifications

- (1) Diploma or Higher Certificate in Civil Engineering from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience

Four-year relevant post-qualification experience in civil engineering discipline of which one year shall be in a position equivalent to WSI in a Government and quasi Government project.

3. Duties

- (1) Assist RE/RIOW in the supervision on site of construction works.
- (2) Ensure that the works are carried out in accordance with contract documents and approved method statements.
- (3) Report to the RIOW and the professional staff on site problems, progress, quality workmanship, etc.
- (4) Maintain proper and contemporary site measurements, diaries and other records.
- (5) Check and verify bills submitted by contractors.
- (6) Guide Resident Works Supervisors in the preparation of site measurements and check such measurements.
- (7) Assist the RIOW in overseeing the junior staff.
- (8) Carry out field investigations on the works and to assist professional staff in problem investigation and planning.
- (9) Arrange and monitor site and laboratory tests.
- (10) Liaise with Government departments, utility companies, public on site, etc.
- (11) Submit monthly progress reports or any other returns as required by his/her

superior.

- (12) Check observation of safety precautions for works to be carried out.
- (13) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Works Supervisor I (Civil) [RWSI(C)]

1. Qualifications

- (1) Ordinary Certificate in an appropriate discipline from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) A proficiency in English and Chinese languages equivalent to Form 5 standard (Syllabus B for English Language) in Hong Kong or minimum Form 3 Education with five-year appropriate experience and service.

2. Experience Required

Three-year relevant post-qualification experience in an appropriate discipline as Works Supervisor in a Government or quasi Government project.

3. Duties

- (1) Assist inspectorate staff in supervising site works.
- (2) Ensure that the site works are constructed in accordance with contract specifications, drawings, site instructions and agreed method statements.
- (3) Check material quality and workmanship.
- (4) Prepare estimates and assist checking of interim certificates submitted by contractors.
- (5) Take quantities from drawings and site measurements.
- (6) Perform routine site tests.
- (7) Keep site records, site diaries, weather charts, progress reports, material delivery records, etc.
- (8) Assist in preparation of reports.
- (9) Report to his/her supervisor on site difficulties, day-to-day progress of works, quality of workmanship, adequacy of contractors' plant and labour force required for the proper execution of the works, etc.
- (10) Check that all contractors' site staff observe safety precautions for works to be carried out.
- (11) Liaise with Government departments, utility companies, public on site, etc.

- (12) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Works Supervisor II (Civil) [RWSII(C)]

1. Qualifications

- (1) Ordinary Certificate in an appropriate discipline from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) A proficiency in English and Chinese languages equivalent to Form 5 standard (Syllabus B for English Language) in Hong Kong or minimum Form 3 Education with five-year appropriate experience and service.

2. Experience Required

One-year relevant post-qualification experience in an appropriate discipline as Works Supervisor in a Government or quasi Government project.

3. Duties

- (1) Assist inspectorate staff in supervising site works.
- (2) Ensure that the works are constructed in accordance with contract specifications, drawings, site instructions and agreed method statements.
- (3) Check material quality and workmanship.
- (4) Keep daily records of site operations and details and prepare test request forms.
- (5) Take quantities from drawings and site measurements.
- (6) Perform routine site tests.
- (7) Report to his/her supervisor on site difficulties, day-to-day progress of works, quality of workmanship, adequacy of contractors' plant and labour force required for the proper execution of the works, etc.
- (8) Check that all contractors' site staff observe safety precautions for works to be carried out.
- (9) Liaise with Government departments, utility companies, public on site, etc.
- (10) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Survey Officer (Quantity) [RSO(Q)]

1. Qualifications

- (1) Diploma or Higher Certificate in Quantity Surveying or an allied subject from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience

One-year relevant post-qualification experience in quantity surveying.

3. Duties

- (1) Process and check interim and final payment certificates.
- (2) Calculate fluctuations for contract payments.
- (3) Assist professional officers in assessing claims and proposed rates for variations.
- (4) Investigate and bring to the attention of professional officers problems associated with the work and suggest solutions.
- (5) Check variation bills and cross-check bills of quantities rates.
- (6) Check quantity transfer in bills of quantities and final accounts.
- (7) Prepare and check abstracts of re-measured engineering works.
- (8) Assist in technical checking and in preparation of interim and final accounts including site measurement.
- (9) Prepare simple estimates.
- (10) Check and undertake or supervise site measurement or remeasurement contracts.
- (11) Assist in preparation of bills of quantities for works projects by taking off quantities from drawings, abstracting and billing.
- (12) Prepare bar schedules from reinforced concrete drawings.

- (13) Advise on areas of dispute and discrepancies in the presentation of accounts and on more efficient methods of measuring on site and checking of accounts.
- (14) Answer general enquiries and queries relating to work of his/her unit.
- (15) Take off quantities and prepare bar schedules from contract drawings, and prepare abstracts and bills of quantities.
- (16) Prepare and check site measurements of remeasurement contracts including squaring and other related arithmetic operation.
- (17) Prepare and maintain records of certified work up to date.
- (18) Assess effective values of works and materials on site.
- (19) Value dayworks.
- (20) Assist in the preparation of financial reports.
- (21) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Survey Officer (Engineering) [RSO(E)]

1. Qualifications

- (1) Diploma or Higher Certificate in an appropriate discipline from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience

One-year relevant post-qualification experience in land surveying.

3. Duties

- (1) Co-ordinate the survey support to RE on computerisation of survey work. Advise RE on all computerisation requirements including hardware, software, staff requirements including training, implementation of the facilities of the survey section.
- (2) Report and advise on administrative matters relating to survey standards, procedures, personnel and equipment.
- (3) Organise and carry out land/marine field surveys.
- (4) Provide monthly and final measurement quantities to the QS section for the purpose of certifying interim and final payments to the Contractor.
- (5) Attend technical meetings with the Contractor.
- (6) Ensure as far as possible that all Works included in various Contracts are constructed to correct lines, levels and dimensions.
- (7) Provide surveys and information as requested by the Project Manager/Supervisor and supervising officers.
- (8) Liaise with contractors, site staff, engineers and others to receive work and convey results and organise use of shared resources.
- (9) Check the Contractor's submissions, compute quantities, monitor movement and settlement.
- (10) Supervise, direct and control a survey party of Chainmen, Workmen II and

driver who work for him/her.

- (11) Perform complicated and high accuracy demanding tasks including highway geometry design computation, its setting out on ground and subsequent monitoring.
- (12) Carry out field survey works for control positions, initial survey data for planning and design, quality control, setting out and comply with all survey requests of the engineering staff in relation to the design and construction of the project.
- (13) Check the Contractor's setting-out work and verify positions of as-built works by the Contractor.
- (14) Carry out all office calculation, reduction and plotting of the field work including use of computers and specialised software.
- (15) Assist RSO(Q) for measuring purpose including computation of earthwork quantities.
- (16) Ensure that survey instruments under his/her control are maintained in good adjustment and proper working order at all times.
- (17) Any other duties as may be assigned from time to time by his/her superior.

Resident Site Staff
Resident Technical Officer (RTO)

1. Qualifications

- (1) Diploma or Higher Certificate in an appropriate discipline from a Hong Kong polytechnic/polytechnic university, the Hong Kong Institute of Vocational Education or technical college/technical institute, or equivalent; and
- (2) Grade E or above in English (Syllabus B) and Chinese Language in the Hong Kong Certificate of Education, or equivalent.

2. Experience

One-year relevant post-qualification experience.

3. Duties

- (1) Enable professional engineering staff to obtain the necessary technical support.
- (2) To be responsible for processing and editing of all survey data input and production of joint survey record plans.
- (3) Prepare documentation and the estimation of bulk quantities for all contracts.
- (4) Carry out technical guidance on computerised data gathering and recording to site survey officers.
- (5) Undertake the more complex designs, calculations and drawings.
- (6) Acquire drawing equipment and stores and coordinate their issue and use with proper record-keeping.
- (7) To be responsible for the safe keeping of drafting equipment, stationery and drawing materials, etc.
- (8) To be responsible for keeping and updating of divisional records and information systems regularly.
- (9) Assist professional staff in the technical matters.
- (10) Give advice on the usage of the computer software currently in use.
- (11) Develop and maintain software for simple management and technical

applications.

- (12) Undertake preliminary system analysis and design.
- (13) Maintain an inventory record of the computer items and library.
- (14) Process the procurement of standard computer equipment.
- (15) Carry out minor design work and prepare drawings and sketches.
- (16) Carry out plotting related to engineering surveys.
- (17) Carry out site visits and prepare field sketches.
- (18) Prepare programme charts, works progress schedules and plans.
- (19) Check and coordinate for amendment of drawings.
- (20) Produce record drawings.
- (21) Maintain records of drawings and charts.

Resident Site Staff
Labour Relations Officer (RLRO)
(Equivalent to Resident Assistant Clerical Officer (RACO) rank)

1. Qualifications

- (1) Five subjects at Grade E or above in the Hong Kong Certificate of Education (HKCEE) (including Chinese Language, English (Syllabus B) and Mathematics) or equivalent; and
- (2) Preferably have completed a post secondary certificate programme on human resources or personnel management.

2. Experience

One-year working experience on personnel management or human resources related duties and good job records. Good command of both oral and written English and Chinese and good computer knowledge preferably with past experience on the operation of a computerized smart-card system.

3. Duties

- (1) To act as a one-point contact for the Site Personnel on Site on any enquires to employment matters.
- (2) To conduct briefing sessions to inform and to educate the Site Personnel the benefits of the wage payment control measures being implemented under the Contract, in particular the workers' obligations to report wage arrears.
- (3) To conduct regular site visits to promote the monitoring system and to establish contacts with Site Personnel to obtain feedback.
- (4) To monitor payment of wages and MPF contributions and to assess whether they are made timely by the Contractor and all subcontractors.
- (5) To oversee the setting up and maintenance of a record system on employment contracts, workers attendance, re-deployment, and wage payments.
- (6) To undertake regular physical checks to verify the accuracy and reliability of the records and to identify irregularities, if any, for early intervention.

- (7) To establish a simple and user friendly complaint system, including the operation of a telephone hotline to receive enquires from Site Personnel on employment matters and to receive reports on wage defaults.
- (8) To alert the Project Manager/Supervisor of anomalies and to refer the same to the Contractor for investigation and appropriate follow up actions.
- (9) To refer to the Labour Department complaints on wage arrears as soon as they are received and to provide necessary assistance to the Labour Department to facilitate investigation and/or dispute resolution where appropriate.

Resident Site Staff
Resident Assistant Clerical Officer (RACO)

1. Qualifications

5 passes in HKCEE including English Language (Syllabus B), Chinese Language and Mathematics or equivalent.

2. Experience

Two-year relevant experience.

3. Duties

- (1) Assist the professional staff in the establishment and maintenance of a system for filing of site documents including contract documents, correspondence, reports, forms, drawings, charts and records.
- (2) Handle day-to-day matters relating to receipt and despatch of correspondence, cleaning and maintenance of the site office, coordination of site transport, etc.
- (3) Provide clerical support to the site staff including compilation of statistics and preparation of routine returns.
- (4) Coordinate with the Consultants on personnel, office administration and accounting matters of the site staff.
- (5) Any other duties as may be assigned from time to time by the RE.

**Resident Site Staff
Resident Clerical Assistant (RCA)**

1. Qualifications

Completion of Form IV or equivalent.

2. Experience

Two-year relevant experience.

3. Duties

- (1) Carry out general secretarial and clerical duties.
- (2) Type correspondence and associated documents by using a computer as a tool in the discharge of these duties.
- (3) File correspondence and associated documents.
- (4) Answer phones and take messages.
- (5) Maintain register of appointments.
- (6) Receive visitors and maintain records of visitors to site.
- (7) Any other duties as may be assigned from time to time by his/her superior.