

Contract No. DC/2018/02
Upgrading of Sewage Pumping
Stations and Sewerage Along
Ting Kok Road

Condition Survey Report on a
Grade 3 Historical Building
(Yu Cheung Tong)

P19076/CSR/002 (Issue 7)

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June 2021

The Client:
Shanghai Construction Oversea Engineering Limited

DOCUMENT CONTROL			Contract No. DC/2018/02 Upgrading of Sewage Pumping Stations and Sewerage Along Ting Kok Road	No: P19076/CSR/002 (Issue 7)	
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All	September 2019	1	Condition Survey Report (Yu Cheung Tong)	KS	
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All	October 2020	5	Condition Survey Report (Yu Cheung Tong)	TC	
All	May 2021	6	Condition Survey Report (Yu Cheung Tong)	TC	
All	June 2021	7	Condition Survey Report (Yu Cheung Tong)	TC	

Amendment Summary

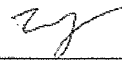
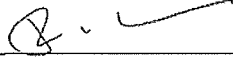
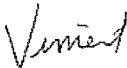
Issue No.	Date of Amendment	Revised Section/ Table
Issue 7	17 June 2021	Appendix H; Appendix I;

General Amendment:

- 1) 9 June 2021 LIAISON MEETING MINUTES are supplement on Appendix H.
- 2) Notice for Installation of Monitoring Instrument at Yu Cheung Tong Block 1 and 2 are supplement on Appendix I.

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1. INTRODUCTION

1.1 Background

1.1.1 The purpose of this condition survey is to record the general conditions and defects of **Yu Cheung Tong**, a **Grade 3 Historic Building** in the vicinity of the site before commencement of construction works of upgrading the sewage pumping stations and sewerage along Ting Kok Road.

1.2 The Extent of Survey

1.2.1 This report describes the identified apparent defects on or inside Yu Cheung Tong. An overview of the apparent defects and details of defects picked up at the survey are addressed.

1.2.2 Our survey team was equipped with camera, survey sheets and layout plan to carry out a visual inspection to the accessible area. Photographs were taken to record the condition of the building.

1.2.3 Any readily apparent defects are identified and recorded in this report.

1.3 Date of Survey

1.3.1 The pre-construction condition survey was conducted on 15th July 2019. The weather was sunny at the time of inspection.

2. DESCRIPTION OF THE TARGET BUILDINGS

2.1 Building Description

- 2.1.1 Yu Cheung Tong is located within 50m away from the construction site of upgrading the sewage pumping stations and sewerage along Ting Kok Road. Yu Cheung Tong is a low-rise building with two-storey height in about 7 meters height. The building was made up of brick masonry with timber support.
- 2.1.2 No as-built record plan can be retrieved from the BRAVO site of the Buildings Department.
- 2.1.3 It consists 3 blocks of buildings named as “1st Block”, “2nd Block” and the 3rd Block”. The survey team is only allowed to enter the 1st Block for this condition survey.
- 2.1.4 On the top of the 3rd Block, there are observable external structures on it. However, the survey team is not allowed to go up and some canvas were posted on the ceiling of the 1/F of the building and blocked the view for the upper floor.
- 2.1.5 The foundation system of Yu Cheung Tong was estimated as a Pad Footing.
- 2.1.6 Yu Cheung Tong is in **satisfactory condition in general** except some spalling and wide cracks are found on the wall from outside. Also, some wide cracks were found on the floor at the front garden.
- 2.1.7 The Location of Yu Cheung Tong and the inspection area can be found in **Appendix A**.

2.2 Historic Grading

- 2.2.1 Yu Cheung Tong was confirmed as Grade 3 historic building by the Antiquities Advisory Board in March 2011. “**Grade 3 Historic Building**” is defined as “buildings of some merit; preservation in some form would be desirable and alternative means should be considered if preservation is not practicable”.

2.3 Materials of Construction

2.3.1 The materials of construction of different parts of the buildings is estimated as follows:

Materials	Roof	Tile Roofing with timber support
	Wall	Brick masonry
	Floor	Concrete
	Stair	Timber

3. DEFECT RECORDS IDENTIFIED IN THE SURVEY

3.1 Definition of Defects and Findings

3.1.1 The terms used in the description of defects shall be interpreted as follows:

1. Fine Crack Maximum crack width smaller than or equal to **0.3mm**
2. Moderate crack Maximum crack width **larger than 0.3mm and smaller than 1mm**
3. Wide Crack Maximum crack width **larger than 1mm**

4. RECORD PHOTOS

4.1 Photo List of Yu Cheung Tong

4.1.1 The photographic record of the general view of the building and all the defects was included in **Appendix B**. The photo list of the building can be found as follows:

Table 4.1 – Photo List of Yu Cheung Tong

Photo No.	Location	Identified defects
001	In front of Yu Cheung Tong (East side)	No
002	In front of Yu Cheung Tong (East side)	No
003	In front of Yu Cheung Tong (East side)	No
004	In front of Yu Cheung Tong (East side)	No
005	In front of Yu Cheung Tong (East side)	No
006	In front of Yu Cheung Tong (East side)	No
007	South wall of Yu Cheung Tong	Spalling on Brick Wall
008	Front Ground of Yu Cheung Tong	Wide Cracks on Concrete Pavement
009	Front Ground of Yu Cheung Tong	Wide Cracks on Concrete Pavement
010	South wall of Yu Cheung Tong	No
011	North Wall of Yu Cheung Tong	No
012	North Wall of Yu Cheung Tong	Spalling on Brick Wall
013	North Wall of Yu Cheung Tong	No
014	North Wall of Yu Cheung Tong	Spalling on Wall
015	North Wall of Yu Cheung Tong	Spalling on Wall and Canopy
016	North Wall of Yu Cheung Tong	No
017	West Side of Yu Cheung Tong	No
018	West Side of Yu Cheung Tong	No
019	West Side of Yu Cheung Tong	No

020	Inside the 2 nd Block of Yu Cheung Tong	Spalling on Wall
021	Inside the 2 nd Block of Yu Cheung Tong	Spalling on Wall
022	Inside the 2 nd Block of Yu Cheung Tong	Spalling on Wall
023	Inside the 2 nd Block of Yu Cheung Tong	Spalling on Wall
024	In front of Yu Cheung Tong (East Side)	Wide Cracks on Wall
025	In front of Yu Cheung Tong (East Side)	Wide Cracks on Wall
026	In front of Yu Cheung Tong (East Side)	Wide Cracks on Concrete Pavement
027	In front of Yu Cheung Tong (East Side)	Wide Cracks on Concrete Pavement
028	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide Cracks on Timber Beam
029	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide Cracks on Timber Beam
030	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide Cracks on Timber Beam
031	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide Cracks on Timber Beam
032	Inside 3 rd Block of Yu Cheung Tong (G/F)	No
033	Inside 3 rd Block of Yu Cheung Tong (G/F)	Spalling on the wall and ceiling
034	Inside 3 rd Block of Yu Cheung Tong (G/F)	Spalling on ceiling
035	Inside 3 rd Block of Yu Cheung Tong (G/F)	Spalling on Ceiling
036	Inside 3 rd Block of Yu Cheung Tong (G/F)	No
037	Inside 3 rd Block of Yu Cheung Tong (G/F)	No
038	Inside 3 rd Block of Yu Cheung Tong (1/F)	No
039	Inside 3 rd Block of Yu Cheung Tong (1/F)	No
040	Inside 3 rd Block of Yu Cheung Tong (1/F)	No
041	Inside 3 rd Block of Yu Cheung Tong (1/F)	No
042	Inside 3 rd Block of Yu Cheung Tong (1/F)	Fine Cracks on Wall
043	Inside 3 rd Block of Yu Cheung Tong (1/F)	No
044	Inside 3 rd Block of Yu Cheung Tong (1/F)	No

4.1.2 The recommendation on crack monitoring on the above identified cracks will be discussed in **Section 5** below.

5. APPRAISAL ON THE EFFECTS OF PROPOSED CONSTRUCTION WORKS ON THE TARGET BUILDING

5.1 Proposed Construction Works in vicinity to the Target Building

5.1.1 The proposed sewerage improvement work will be carried out adjacent to the existing historic building along Ting Kok Road.

5.1.2 The ELS works may be included during the construction.

5.2 Appraisal on the Likely Effects of the construction works Yu Cheung Tong

5.2.1 The excavation works may induce vibration to the historic building and also cause differential settlement and/or tilting.

5.2.2 Monitoring work is therefore proposed during construction period within possible affected area to keep track on the construction effects.

6. RECOMMENDATIONS

6.1 Recommended Structural Monitoring Measures

- 6.1.1 During construction works, the *Contractor* shall carry out closely visual inspection on Yu Cheung Tong and monitor the possible effects.
- 6.1.2 Settlement and tilt monitoring points will be installed to monitor the excavation and the structure settlement adjacent to the subject historic building.
- 6.1.3 Differential settlement of ground is recommended to be measured by pin-type **Ground Settlement Markers** with three directions measurements.
- 6.1.4 Tilting and differential settlement of the building on block 3 (Point T1 & T2) shall be measured by comparing the relative positions of Reflective Tape Targets.
- 6.1.5 Tilting and differential settlement of the building on block 1 (Point T3 & T4) shall be measured by comparing the existing building reference point relative positions.
- 6.1.6 Cracks monitoring by **Crack Meter (Tell-tale Crack Monitoring Gauge)** is recommended for major cracks (i.e. initial crack width more than 3mm) identified during the pre-construction site inspection. The erasable marks shall be marked on the locations as agreed by the *Project Manager/ Supervisor, house owner* as well as the relevant authorities.
- 6.1.7 Also, a **Portable Seismograph** will be used to measure and record the peak particle velocity and amplitude caused by the construction (i.e. driving of sheet piles) to ensure the ground vibrations are kept to within acceptable limits.
- 6.1.8 The recommended locations of the Ground Settlement Markers, Reflective Tape Targets, Existing building reference point, Crack Monitoring and Vibration Monitoring are shown on the updated Plan enclosed in **Appendix C**.

Table 6.1 – Number of Monitoring Point

Structural Monitoring Instrument	Number of Monitoring Point
Ground Settlement Markers	4 nos. (S1, S2, S3 and S4)
Reflective Tape Targets for tilting and differential settlement of the building	2 nos. (T1 and T2)
Existing building reference point for tilting and differential settlement of the building	2 nos. (T3 and T4)
Crack Meter	4 nos. (C3, C3-1, C4 & C5)
Portable Seismograph	2 nos. (V1 and V2)

6.1.9 Typical Details of Ground Settlement Markers, Reflective Tape Targets, Existing building reference point and Crack Meter are illustrated in **Appendix D**.

6.2 Recommended Protective Measures

6.2.1 The assessment on the implication of installation of monitoring instrument to the target buildings / structures is outlined as follows:

Table 6.2 – Assessment on the Implication of Installation of Monitoring Instrument

Structural Monitoring Instrument	Assessment on the Implication
Ground Settlement Markers	No impact to the Target Building. The instrument will be installed on the ground outside the building footprint.
Reflective Tape Targets	No impact to the Target Building. The instrument will be stucked to the wall surface without damage to historic fabric of the target building.
Existing building reference point	No impact to the Target Building. Use existing fixed building features for survey

	reference point without damage to historic fabric of the target building.
Crack Meters (Tell-tale Crack Monitoring Gauge)	Minimal impact to the Target Building. The instrument will be fixed to the wall surface of the target building by means of epoxy resin. (The crack meters shall be installed at locations as agreed by the House Owner as well as the relevant Authorities.)
Portable Seismograph	No impact to the Target Building. The instrument is portable and will put on the ground surface with a levelling pad.

6.2.2 For installation of Ground Settlement Markers, Reflective Tape Targets, Existing Building Reference point and Portable Seismograph, there is no impact to the Target Building.

6.2.3 The crack meters will be removed after completion of the construction works within 50m of the building. As the instrument is fixed using epoxy resin, it can be easily removed without causing damage to the historic fabric. The location of the crack monitoring points shall be agreed with the House Owner as well as the relevant Authorities.

6.3 Monitoring Frequency and Corresponding Limits

6.3.1 When there is construction works within 50m of the graded building, the settlement, tilting and vibration monitoring shall be conducted on **daily basis** except for Ground settlement marker No. S4, which shall be on a **weekly basis** as requested by the House Owner. For cracks identified inside Yu Cheung Tong Block No. 3, the monitoring shall be conducted on a **monthly basis** as requested by the House Owner. (Please refer to the minutes of liaison meeting held on 9 June 2021 – **Appendix H**)

6.3.2 All the relevant monitoring equipment's with operation methodology should be agreed by the *Project Manager*. *Contractor* should seek for the consent of installing the monitoring equipment(s) from the owners of the building and advise them about the nature and type of monitoring to be carried out before installing the corresponding monitoring equipment(s).

6.3.3 The *Contractor* will implement the Monitoring Measures by installation of

instrumentation to collect baseline data in advance of the works. The Contractor will carry out continuous monitoring works when there are construction works to be carried out within 50m of the building.

6.3.4 The monitoring works based on this condition survey will be recorded in separate monitoring reports and submitted to the *Project Manager* during the course of construction. The same monitoring records would be submitted to AMO on a monthly basis, and AMO would be alerted if any irregularities in the monitoring readings are observed.

6.3.5 The recommended Alert, Action and Alarm limits of monitoring works are shown as follow:

Table 6.3 – 3A Level for Structural Monitoring

Type of Structural Monitoring	ALERT Level	ALARM Level	ACTION Level
Crack Width Monitoring	Develop over 20%	Develop over 35%	Develop over 50%
Horizontal and Vertical Settlement	5mm	8mm	10mm
Vibration (Peak Particle Velocity)	5mm/s	6mm/s	7.5mm/s
Building Tilting Marker For Existing Historic Building	1:2000	1:1500	1:1000

6.3.6 According to the P.S. Clause 1.90(9), **3mm/s for continuous vibration** is recommended in accordance with the guide values of maximum ppv as recommended in the PNAP No. APP 137 issued by the Buildings Department.

6.3.7 With reference to the P.S. Clause 1.90(8), Crack meters are proposed to monitor the major cracks (i.e. initial crack width more than 3mm). The crack width should be monitored to ensure no further deterioration. If the cracks are reported to further develop over 50% during the course of construction, the *Contractor* should stop the works and identify the reasons before resuming the construction works.

6.3.8 The recommendations on crack monitoring on the identified cracks are outlined as follows:

Table 6.4 – Recommendations on Crack Monitoring

Photo No.	Location	Identified defects	Recommendations on Crack Monitoring
007	South wall of Yu Cheung Tong	Spalling	Not Applicable for spalling
008	Front Ground of Yu Cheung Tong	Wide cracks on Concrete Floor	Not Required to monitor cracks on concrete floor
009	Front Ground of Yu Cheung Tong	Wide cracks on Concrete Floor	Not Required to monitor cracks on concrete floor
012	North Wall of Yu Cheung Tong	Spalling	Not Applicable for spalling
014	North Wall of Yu Cheung Tong	Spalling	Not Applicable for spalling
015	North Wall of Yu Cheung Tong	Spalling	Not Applicable for spalling
020	Inside the 2 nd Block of Yu Cheung Tong	Spalling	Not Applicable for spalling
021	Inside the 2 nd Block of Yu Cheung Tong	Spalling	Not Applicable for spalling
022	Inside the 2 nd Block of Yu Cheung Tong	Spalling	Not Applicable for spalling
023	Inside the 2 nd Block of Yu Cheung Tong	Spalling	Not Applicable for spalling
024	In front of Yu Cheung Tong (East Side)	Wide cracks	Owner of Yu Cheung Tong Block No. 1 disagreed to installed the crack meter (Point C1)

			(Please refer to “Notice for Installation of Monitoring Instrument at Yu Cheung Tong Block 1 and 2” posted on 16 June 2021 – Appendix H)
025	In front of Yu Cheung Tong (East Side)	Wide cracks	Owner of Yu Cheung Tong Block No. 1 disagreed to installed the crack meter (Point C2) (Please refer to “Notice for Installation of Monitoring Instrument at Yu Cheung Tong Block 1 and 2” posted on 16 June 2021 – Appendix H)
026	In front of Yu Cheung Tong (East Side)	Wide cracks on Concrete Floor	Not Required to monitor cracks on concrete floor
027	In front of Yu Cheung Tong (East Side)	Wide cracks on Concrete Floor	Not Required to monitor cracks on concrete floor
028	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide cracks on Timber Beam	Crack monitoring on <u>monthly basis</u> is recommended (Point C3 & C3-1)
029	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide cracks on Timber Beam	Crack monitoring on <u>monthly basis</u> is recommended (Point C4)
030	Inside 3 rd Block of Yu Cheung Tong (G/F)	Wide cracks on Timber Beam	Crack monitoring on <u>monthly basis</u> is

			recommended (Point C5)
031	Inside 3rd Block of Yu Cheung Tong (G/F)	Wide cracks on Timber Beam	Owner of Yu Cheung Tong Block No. 3 disagreed to installed the crack meter (Point C6) (Please refer the minutes of liaison meeting held on 9 June 2021 – Appendix H)
033	Inside 3rd Block of Yu Cheung Tong (G/F)	Spalling	Defect found to be spalling instead of crack. Thus, crack monitoring is not required (Point C7) (Please refer the minutes of liaison meeting held on 9 June 2021 – Appendix H)
034	Inside 3rd Block of Yu Cheung Tong (G/F)	Spalling	not applicable for spalling
035	Inside 3rd Block of Yu Cheung Tong (G/F)	Spalling	Defect found to be spalling instead of crack. Thus, crack monitoring is not required (Point C8) (Please refer the minutes of liaison meeting held on 9 June 2021 – Appendix H)

042	Inside 3 rd Block of Yu Cheung Tong (1/F)	Fine cracks	Owner of Yu Cheung Tong Block No. 3 disagreed to installed the crack meter (Point C9) (Please refer the minutes of liaison meeting held on 9 June 2021 – Appendix H)
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6.3.9 The *Contractor* shall follow the recommendations on monitoring frequency and all Alert, Action and Alarm limits or the recommendations in accordance with the Particular Specification of the Contract and / or to be agreed with the *Project Manager*. The corresponding actions when reaching the Alert, Alarm and Action levels are shown as follows:

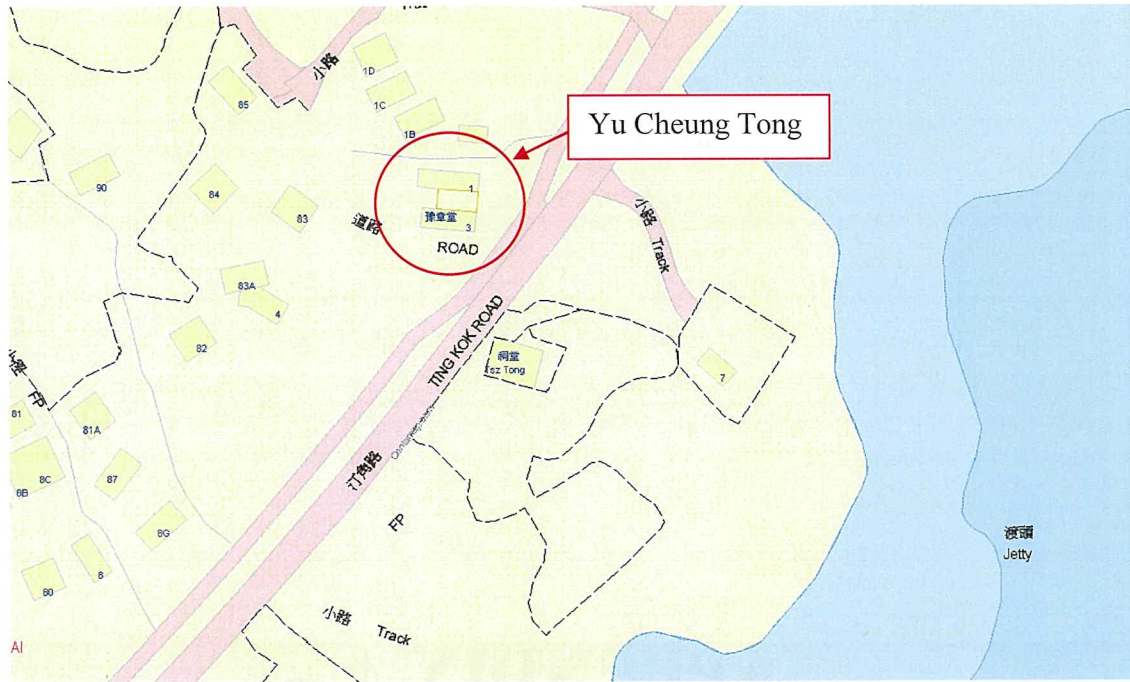
Table 6.5 – Actions for Reaching to 3A Limits

Response Value	Actions to be Taken Immediately by the <i>Contractor</i>
Alert Limit	<ul style="list-style-type: none"> ▪ Inform the Project Manager, beware of it and keep monitoring and recording
Alarm Limit	<ul style="list-style-type: none"> ▪ Inform the Project Manager, review and agree with the Project Manager to a revised working procedure to minimize the construction impact of the works on the existing structures. ▪ Increase the monitoring frequency as agreed with the Project Manager
Action Limit	<ul style="list-style-type: none"> ▪ Cease all construction work and inform the <i>Project Manager</i> immediately. ▪ Further review and agree with the <i>Project Manager</i> on an improved construction method so as to scale down the impact on the existing structures to below the action limit level. ▪ Seek approval from the <i>Project Manager</i> before recommencement of the works.

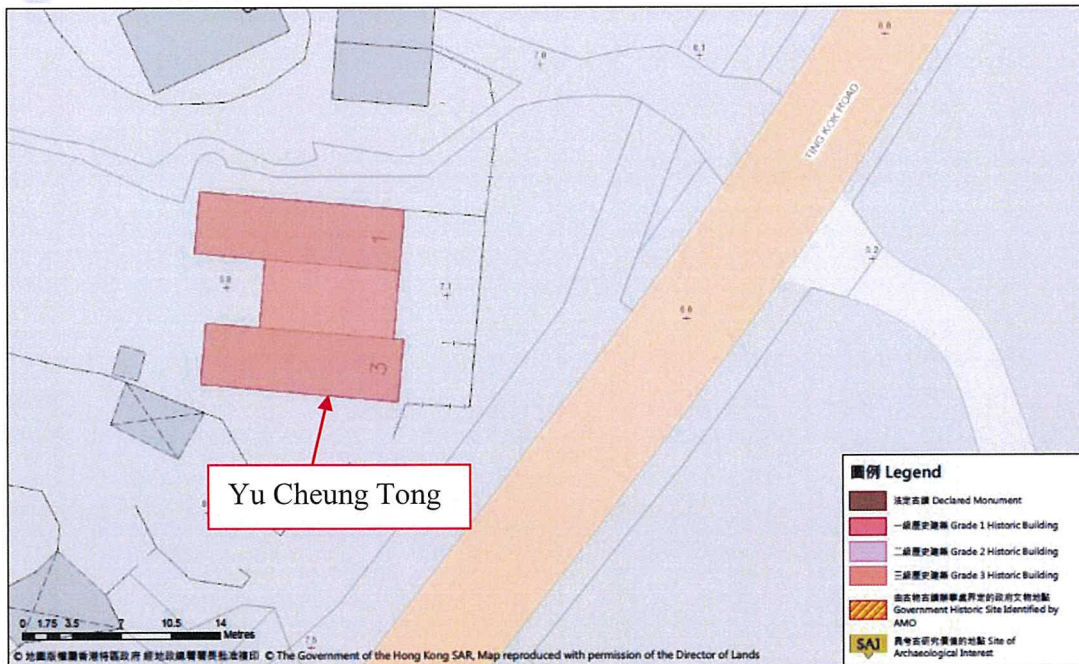
7. CONCLUSION

- 7.1.1 The current status of Yu Cheung Tong is in **satisfactory condition** in general except some spalling and wide cracks found at the timber floor beams. Also, some wide cracks were found on the floor at the front garden.
- 7.1.2 Structural monitoring instruments including ground settlement markers, reflective tape targets, existing building reference point, crack meter and portable seismograph are recommended in this report.
- 7.1.3 When there is construction works within 50m of the graded building, the settlement, tilting and vibration monitoring shall be conducted on a **daily basis** except for Ground Settlement Marker No. S4, which shall be on a weekly basis as requested by the House Owner. For cracks identified inside Yu Cheung Tong Block No. 3, the monitoring shall be conducted on a monthly basis as requested by the House Owner. The monitoring records will be submitted to the Supervisor.
- 7.1.4 The monitoring records would be submitted to AMO on monthly basis and AMO would be alerted if any irregularity of the monitoring reading observed.

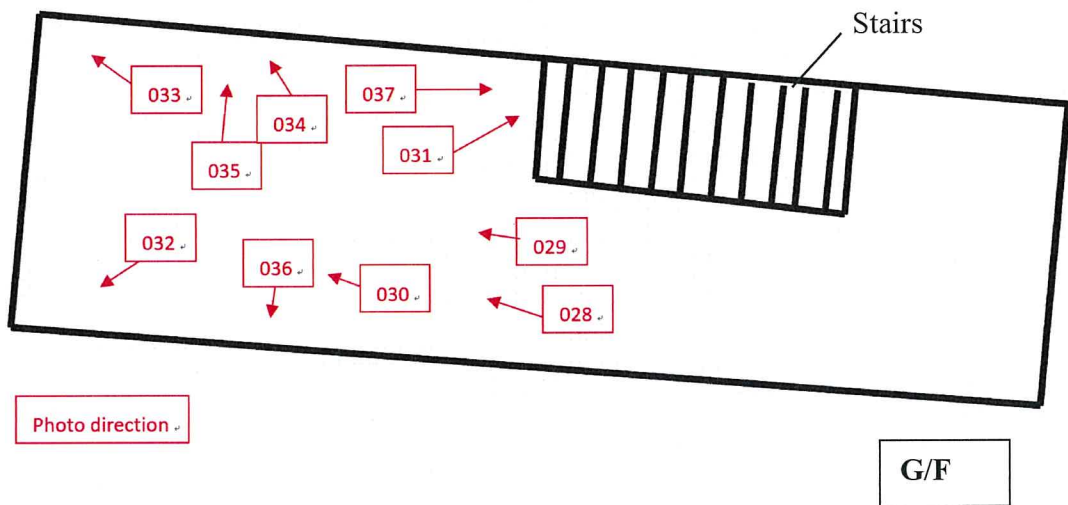
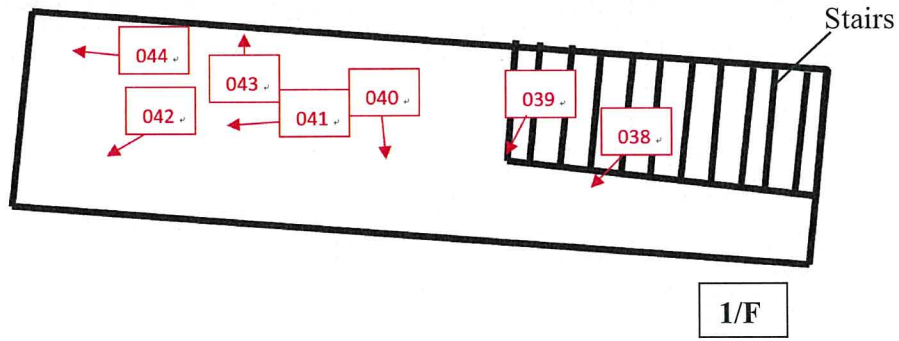
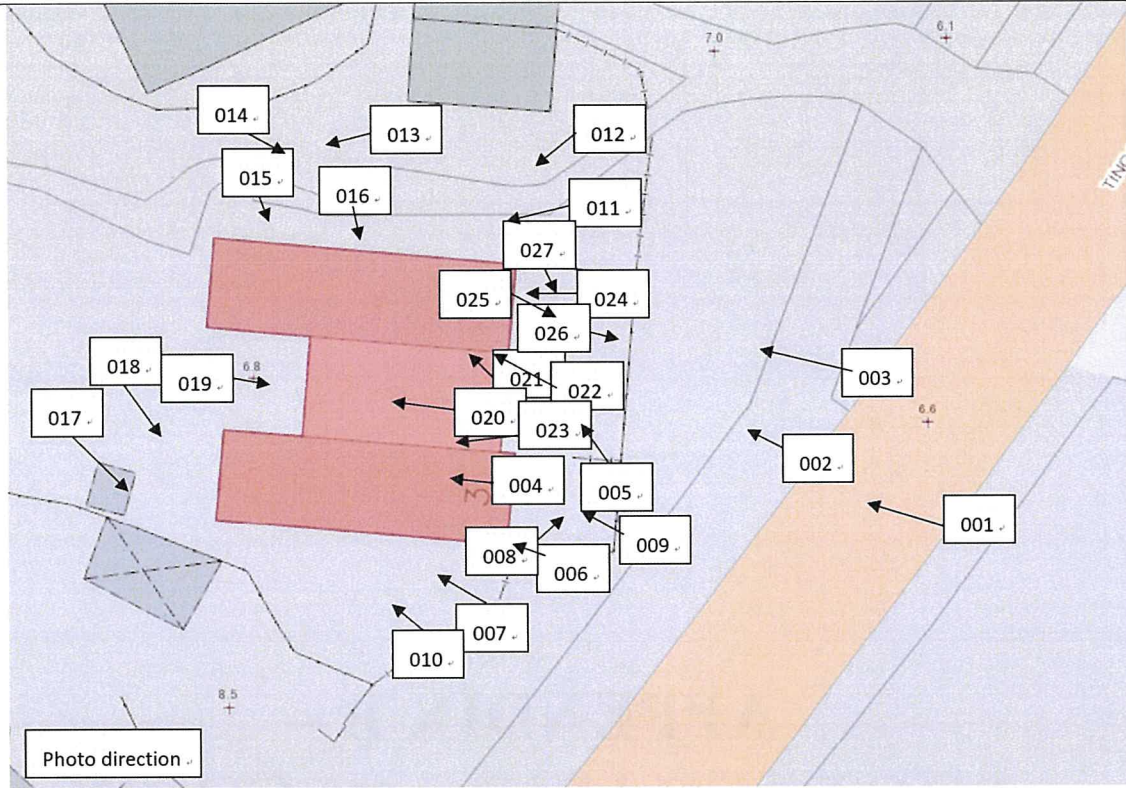
APPENDIX A – BUILDING LOCATION PLAN



香港文物地理資訊系統
 Geographical Information System
 on Hong Kong Heritage



APPENDIX B – PHOTOGRAPHIC RECORDS



PHOTOGRAPHIC RECORD



Photo No:
001

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
General View of
Yu Cheung Tong



Photo No:
002

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
General View of
Yu Cheung Tong

PHOTOGRAPHIC RECORD



Photo No:
003

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
General View of
Yu Cheung Tong

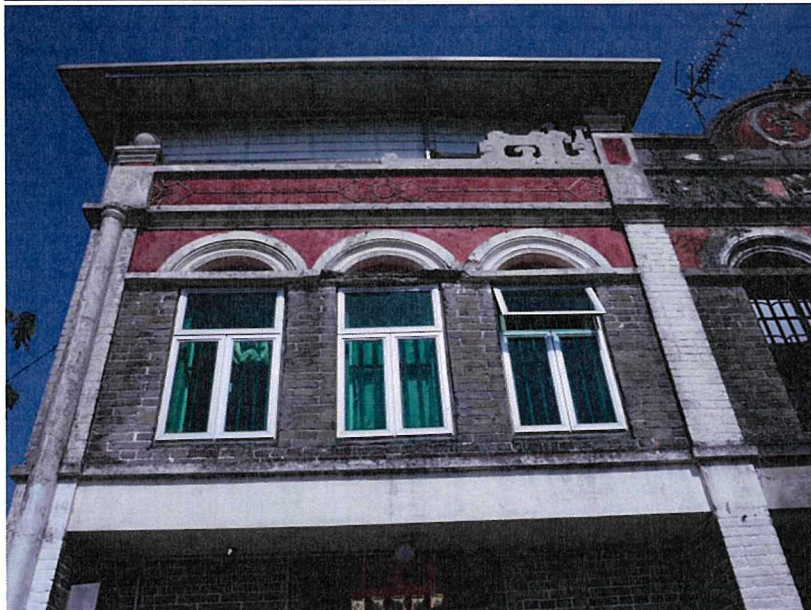


Photo No:
004

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
General view of
the 3rd Block of
Yu Cheung Tong

PHOTOGRAPHIC RECORD



Photo No:
005

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
General view of
all three blocks of
Yu Cheung Tong



Photo No:
006

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East side)

Photo description:
The front door of
the 3rd Block of
Yu Cheung Tong

PHOTOGRAPHIC RECORD

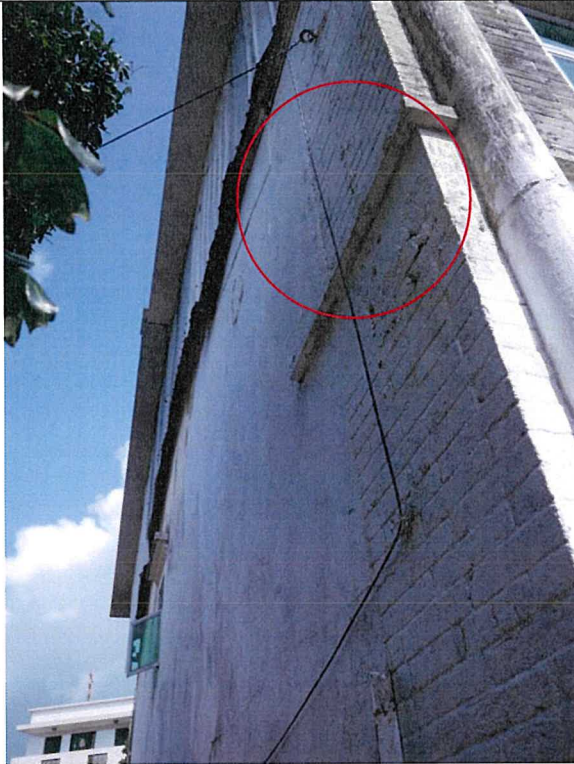


Photo No:
007

Date of taken:
15 Jul 2019

Location:
South wall of
Yu Cheung Tong

Photo description:
Spalling is identified on the
brick wall of the building
(indicated by red circle in the
photo)



Photo No:
008

Date of taken:
15 Jul 2019

Location:
Front Ground of
Yu Cheung Tong

Photo description:
Wide cracks are identified on
the front ground of the
3rd Block of
Yu Cheung Tong
(indicated by red circle in the
photo)

PHOTOGRAPHIC RECORD



Photo No:
009

Date of taken:
15 Jul 2019

Location:
Front Ground of
Yu Cheung Tong

Photo description:
Wide cracks are identified on
the front ground of the 3rd
Block of Yu Cheung Tong
(indicated by red circle in the
photo)

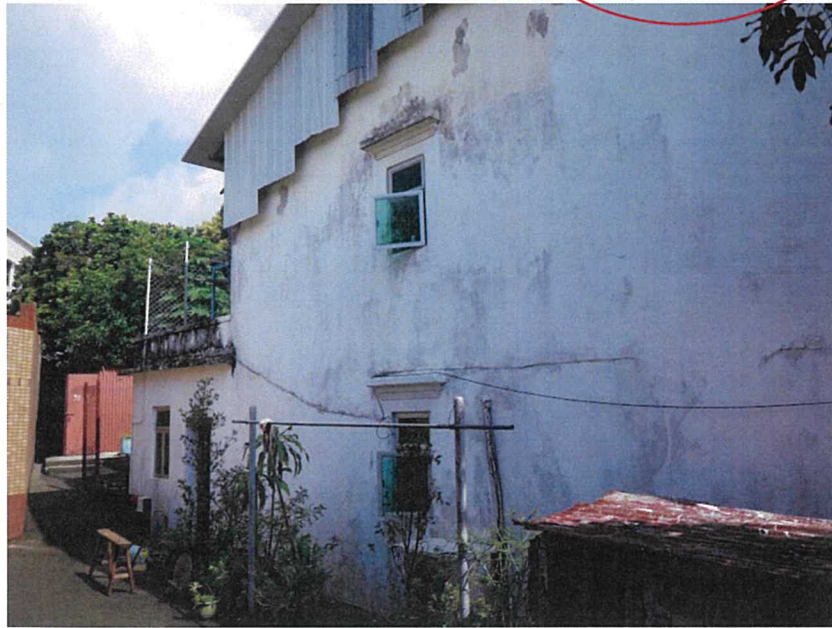


Photo No:
010

Date of taken:
15 Jul 2019

Location:
South wall of
Yu Cheung Tong

Photo description:
General View of the North
side of the building

PHOTOGRAPHIC RECORD



Photo No:
011

Date of taken:
15 Jul 2019

Location:
North Wall of
Yu Cheung Tong

Photo description:
General View of north side
of Yu Cheung Tong



Photo No:
0012

Date of taken:
15 Jul 2019

Location:
North Wall of
Yu Cheung Tong

Photo description:
Spalling is identified on the
north wall (brick wall)
of Yu Cheung Tong
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
013

Date of taken:
15 Jul 2019

Location:
North Wall of
Yu Cheung Tong

Photo description:
General View of north side
of Yu Cheung Tong



Photo No:
014

Date of taken:
15 Jul 2019

Location:
North Wall of
Yu Cheung Tong

Photo description:
Spalling is identified on the
north wall (brick wall)
of Yu Cheung Tong
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
015

Date of taken:
15 Jul 2019

Location:
North Wall of Yu Cheung Tong

Photo description:
Spalling is identified on the north
wall of Yu Cheung Tong
(indicated by red circle in
the photo)



Photo No:
016

Date of taken:
15 Jul 2019

Location:
North Wall of
Yu Cheung Tong

Photo description:
General View of north side
of Yu Cheung Tong

PHOTOGRAPHIC RECORD



Photo No:
017

Date of taken:
15 Jul 2019

Location:
West Side of Yu Cheung Tong

Photo description:
General View of West Side
of the 3rd Block
of Yu Cheung Tong



Photo No:
018

Date of taken:
15 Jul 2019

Location:
West Side of
Yu Cheung Tong

Photo description:
General View of West Side
of the 3rd Block
of Yu Cheung Tong

PHOTOGRAPHIC RECORD



Photo No:
019

Date of taken:
15 Jul 2019

Location:
West Side of Yu Cheung Tong

Photo description:
General View of West Side
of the 2nd Block
of Yu Cheung Tong



Photo No:
020

Date of taken:
15 Jul 2019

Location:
Inside the 2nd Block of Yu Cheung
Tong

Photo description:
Spalling is identified on the wall
of the 2nd Block
of Yu Cheung Tong
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD

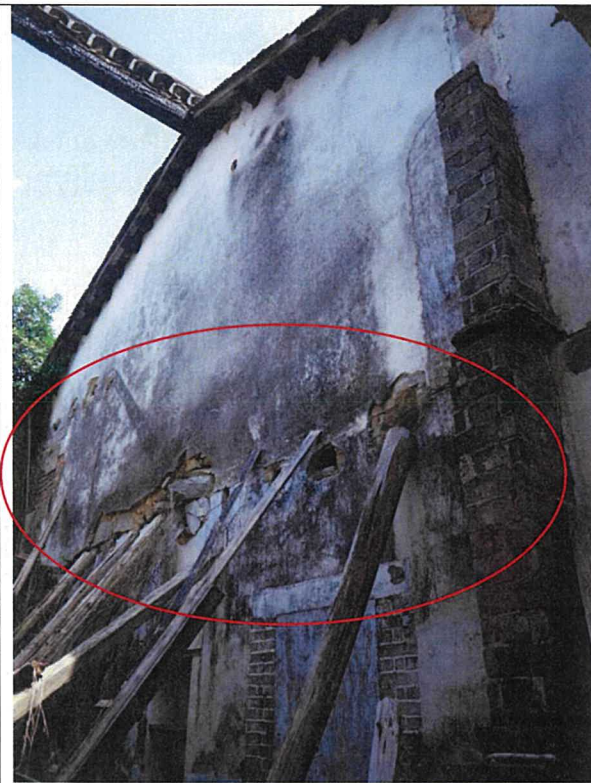


Photo No:
021

Date of taken:
15 Jul 2019

Location:
Inside the 2nd Block of Yu
Cheung Tong

Photo description:
Spalling is found on the wall
of the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)

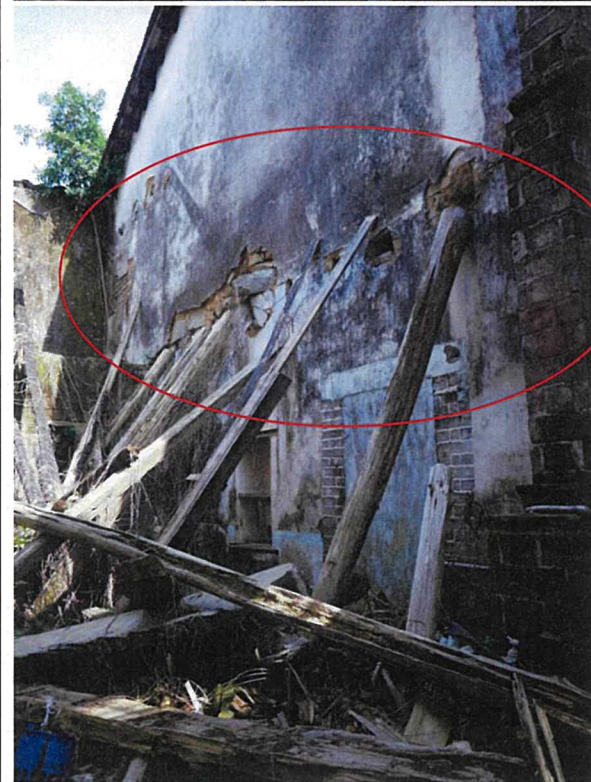


Photo No:
022

Date of taken:
15 Jul 2019

Location:
Inside the 2nd Block of Yu
Cheung Tong

Photo description:
Spalling is found on the wall
of the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
023

Date of taken:
15 Jul 2019

Location:
Inside the 2nd Block of Yu
Cheung Tong

Photo description:
Spalling is found on the wall
of the 3rd Block
of Yu Cheung Tong
(indicated by red circle in
the photo)



Photo No:
024

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung Tong
(East Side)

Photo description:
Wide cracks are found on the
wall adjacent to
the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)
(Point C1)

PHOTOGRAPHIC RECORD



Photo No:
025

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung
Tong (East Side)

Photo description:
Wide cracks are found on
the wall adjacent to
the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)
(Point C2)



Photo No:
026

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung
Tong (East Side)

Photo description:
Wide cracks are found on
the wall adjacent to
the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
027

Date of taken:
15 Jul 2019

Location:
In front of Yu Cheung
Tong (East Side)

Photo description:
Wide cracks are found on
the wall adjacent to
the 1st Block
of Yu Cheung Tong
(indicated by red circle in
the photo)



Photo No:
028

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
Wide cracks are found on
the timber beam and
ceiling of G/F
(indicated by red circle in
the photo)

***[Crack meter is
recommended for
monitoring]
(Point C3)***

PHOTOGRAPHIC RECORD



Photo No:
029

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu Cheung
Tong (G/F)

Photo description:
Wide cracks are found on the
timber beam and ceiling of G/F
(indicated by red circle in
the photo)

***[Crack meter is recommended
for monitoring]
(Point C4)***



Photo No:
030

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu Cheung
Tong (G/F)

Photo description:
Wide cracks are found on the
timber beam and ceiling of G/F
(indicated by red circle in
the photo)

***[Crack meter is recommended
for monitoring]
(Point C5)***

PHOTOGRAPHIC RECORD

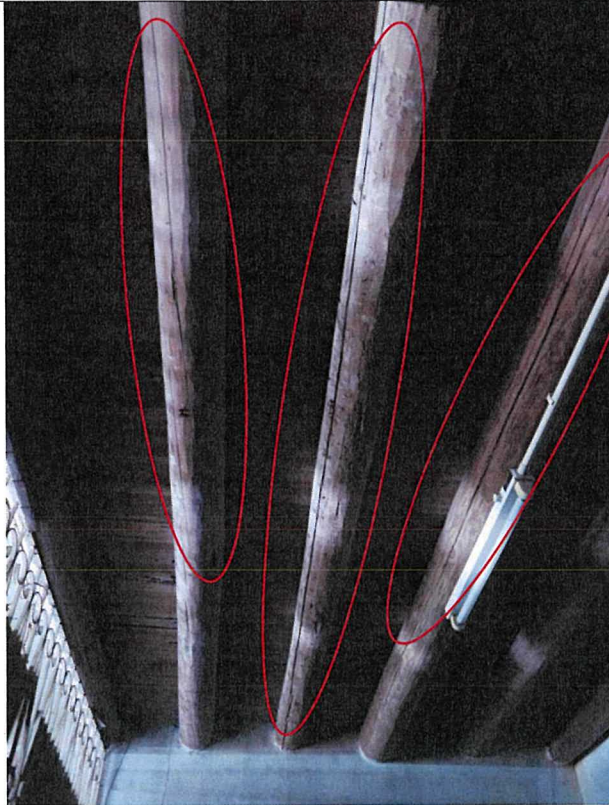


Photo No:

031

Date of taken:

15 Jul 2019

Location:

Inside 3rd Block of Yu Cheung
Tong (G/F)

Photo description:

Wide cracks are found on the
timber beam and ceiling of G/F
(indicated by red circle in
the photo)

(Point C6)



Photo No:

032

Date of taken:

15 Jul 2019

Location:

Inside 3rd Block of Yu Cheung
Tong (G/F)

Photo description:

Fine condition on wall and
ceiling of the 3rd Block
of Yu Cheung Tong
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
033

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
Spalling are found on the
wall and ceiling of G/F
(indicated by red circle in
the photo)
(Point C7)



Photo No:
034

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
Spalling is found on the
wall and ceiling of G/F
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
035

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
Spalling are found on the
wall and ceiling of G/F
(indicated by red circle in
the photo)
(Point C8)



Photo No:
036

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
No observable defects are
found in this corner

PHOTOGRAPHIC RECORD



Photo No:
037

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (G/F)

Photo description:
No observable defects are
found in this corner



Photo No:
038

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Timber structures with
no observable defects

PHOTOGRAPHIC RECORD



Photo No:
039

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Timber structures with
no observable defects



Photo No:
040

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Timber structures with
no observable defects with
canvas cover blocking the
sight to upper possible
structures

PHOTOGRAPHIC RECORD

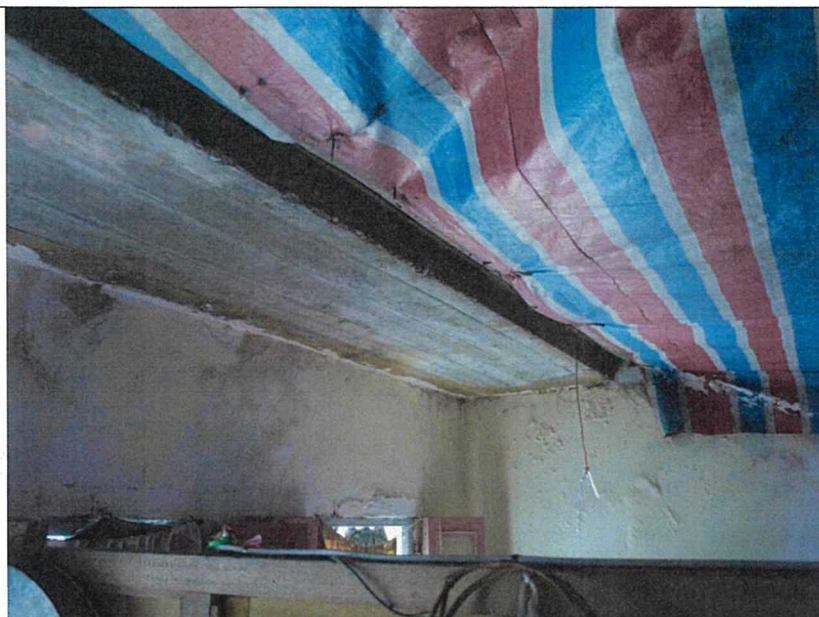


Photo No:
041

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Timber structures and wall
with no observable defects



Photo No:
042

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Fine cracks are found on
the wall of the building
(indicated by red circle in
the photo)
(Point C9)

PHOTOGRAPHIC RECORD



Photo No:
043

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Wall with no observable
defects

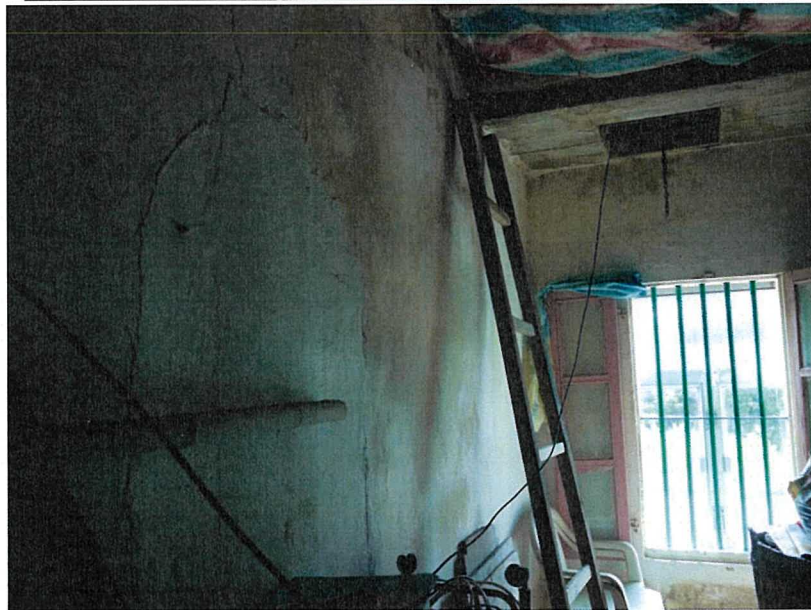


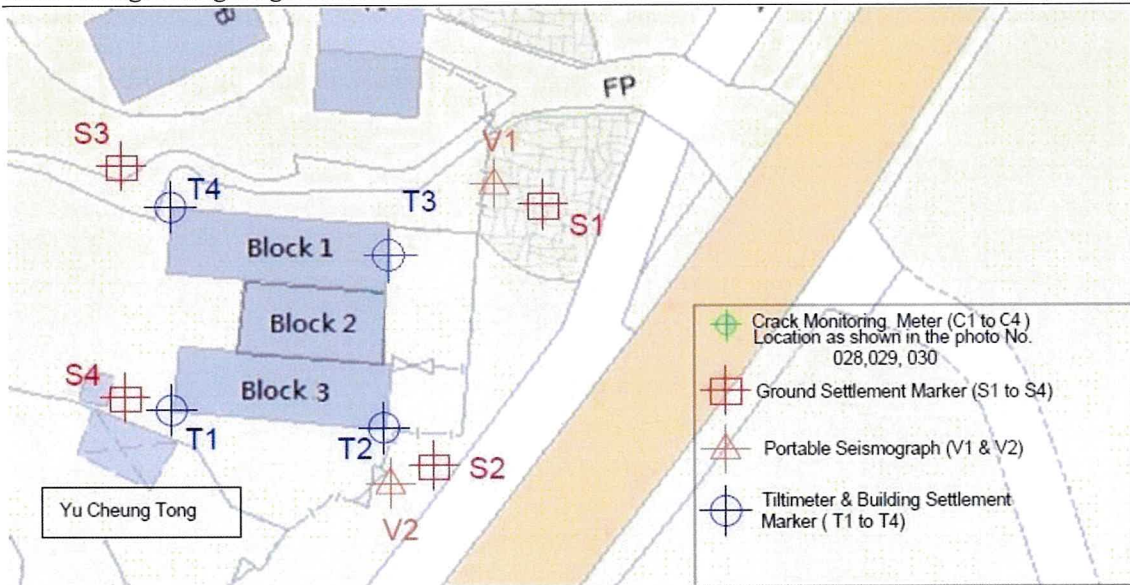
Photo No:
044

Date of taken:
15 Jul 2019

Location:
Inside 3rd Block of Yu
Cheung Tong (1/F)

Photo description:
Wall with no observable
defects

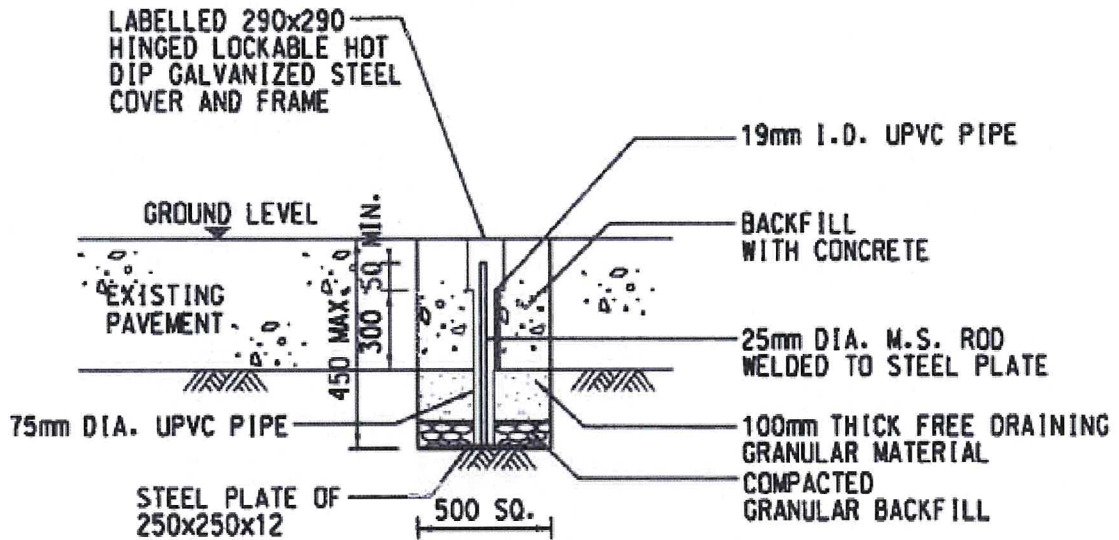
APPENDIX C – LOCATION PLAN OF PROPOSED MONITORING POINTS



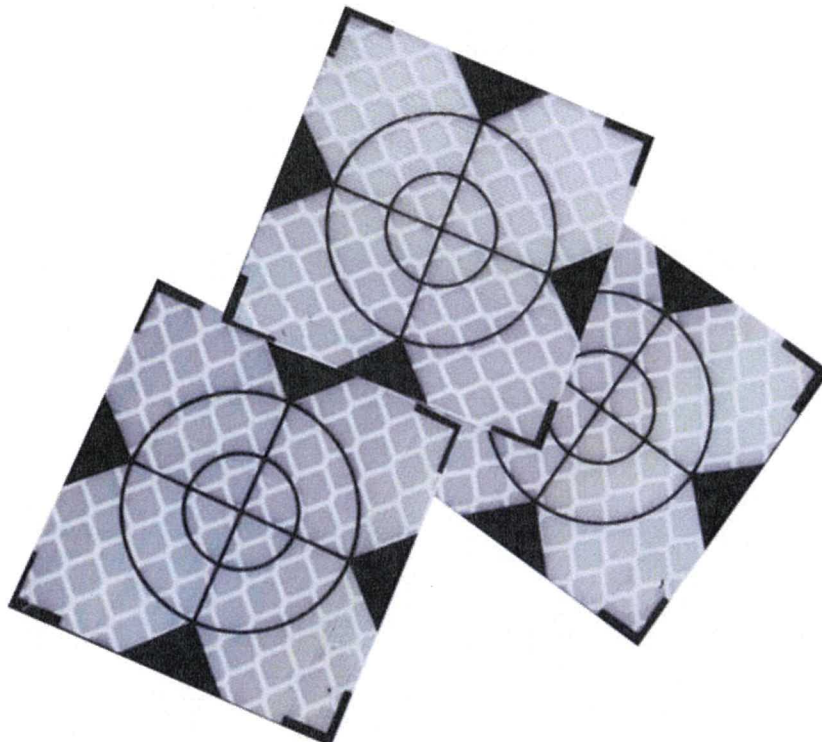
Structural Monitoring Instrument	Number of Monitoring Point
Ground Settlement Markers	4 nos. (S1, S2, S3 & S4)
Reflective Tape Targets for tilting and differential settlement of the building	2nos. (T1 & T2)
Existing building reference point for tilting and differential settlement of the building	2nos. (T3 & T4)
Crack Meter	4 nos. (C3,C3-1,C4,C5)

APPENDIX D – TYPICAL DETAILS OF MONITORING INSTRUMENT

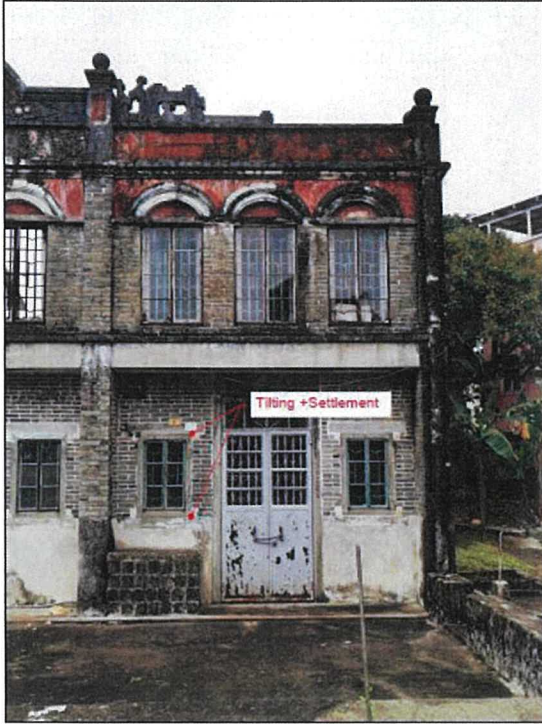
Ground Settlement Markers



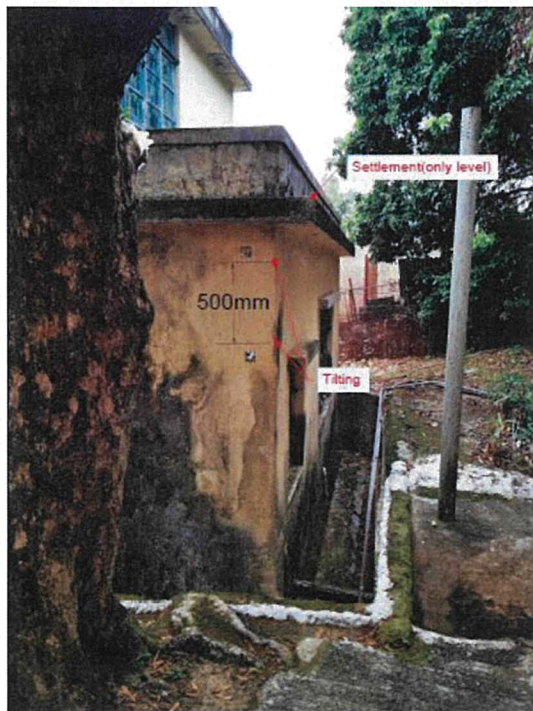
Reflective Tape Targets



**Existing building reference point
for tilting and differential settlement of the building**

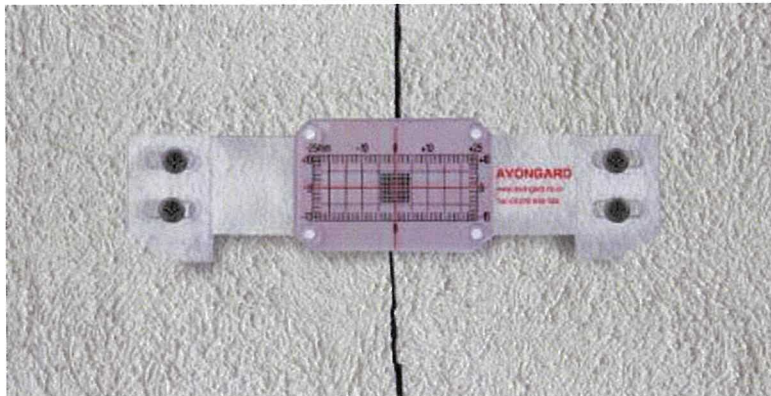
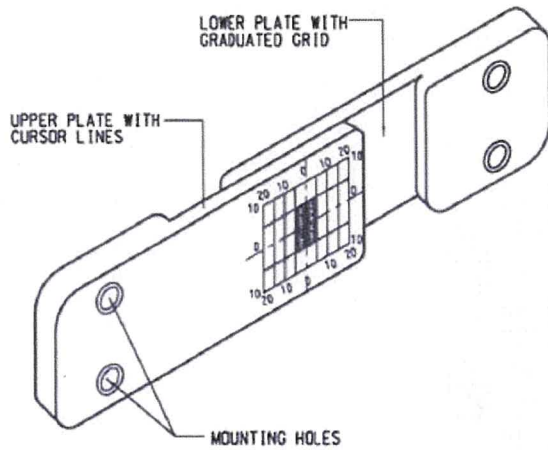


Tilting and settlement point T3



Tilting and settlement point T4

Crack Meter / Tell-Tales Crack Monitoring Gauge



Portable Seismograph



APPENDIX E – METHOD STATEMENT OF THE CONDITION POINTS

Method Statement for carrying out Condition Survey on Existing Structure

- Review the existing record plans, past investigations and studies, geotechnical data collection, aerial photographic interpretation, field reconnaissance, etc.
- Carry out a Desk Study to review including but not limited to the existing record layout and structural details of the existing structure of the Target Buildings and associated facilities in vicinity of the Target Buildings to identify the possible effect on the adjoining buildings and street furniture.
- The “Target Buildings” for the Condition Survey are:
Grade 3 Historic Buildings, **Yu Cheung Tong**
- Conduct visual inspection to all structural components of the building elevations to identify any signs of cracking, spalling, bulging, rebar exposed, water leakages, rust stains, suspected Unauthorized Building Works etc. and any other major structural defect such as deflection, settlement and tilting of structural elements. The material of the building elements and its related finished will also be identified if applicable.
- Carry out a hammer tapping survey to the structural components where accessible to identify any signs of delamination/bulging.
- The scope of condition survey shall be carried out including but not limited to the components listed as follows.
 - Columns;
 - Walls;
 - Beams;
 - Slabs;
 - Staircases;
 - External walls and associated finishes
 - Water tanks and suspended manholes;
 - Protective barriers, railings, parapets and balustrades;
 - Screen walls and basement walls;
 - Hanging structures;
 - Exposed pile caps;
 - Concrete plinths supporting equipment; and
 - Other special type of structural elements that are exposed, such as pits, tanks, chambers and etc.
- All visual defects of the existing building structures together with their locations and sizing shall be recorded in the form of photograph with aid of sketch and need to be

indicated on the as-built drawings. The findings and results shall be incorporated into the survey report.

- The identified defects shall be mapped on floor plan and/or elevation with reference number. Details such as defect pattern, defect widths, defect lengths, and no. of defects shall be recorded. The pattern and size of measured defect shall be clearly shown on the sketches or drawings and documented with photographic references. For the existing building structures without as-built record available or elements are not shown on available as-built record, we shall record the location and sizing of defect on floor plan sketches.
- The crack width shall be determined by using crack microscope or visual gauge. Crack measurements shall be marked with common terminology:
 - “Fine crack” – maximum crack width $\leq 0.3\text{mm}$;
 - “Moderate crack” – maximum crack width $> 0.3\text{mm}$ and $\leq 1\text{mm}$; and
 - “Wide crack” – maximum crack width $> 1\text{mm}$.
- Prior to any testing, we will submit a test plan to the Engineer for approval. We will be responsible for the coordination with relevant government departments to obtain the consents for completion of the field surveys.

Survey Reporting

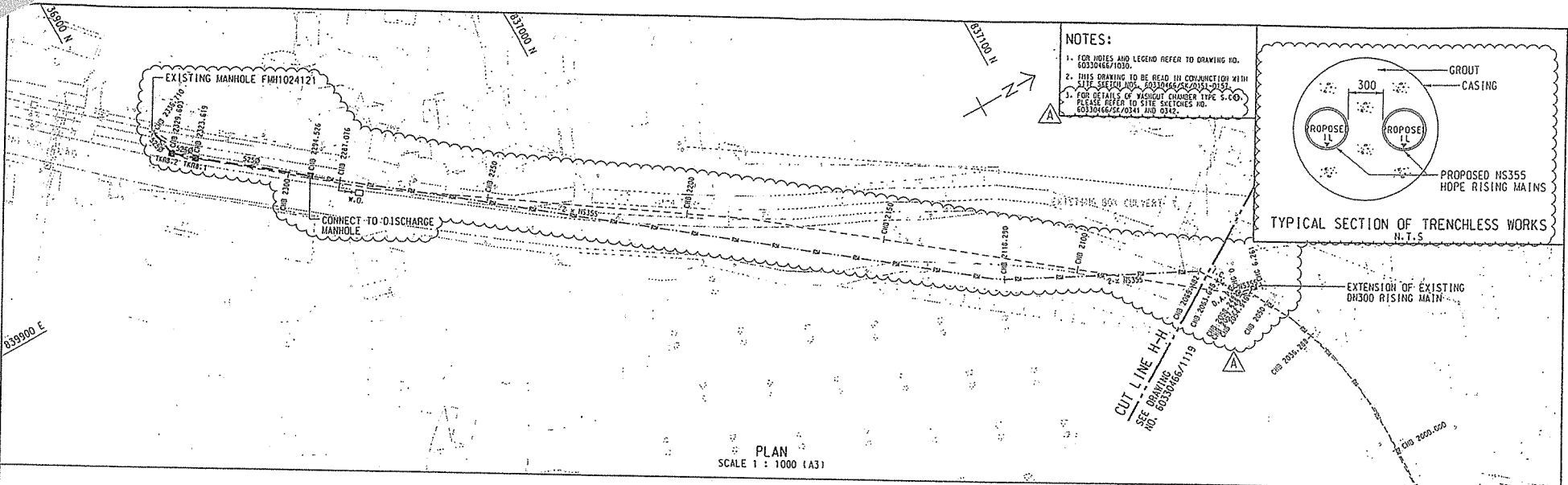
- On completion of all field works, we shall submit to the *Project Manager / the Supervisor*, within 14 days, a draft version of the Survey Report that contains the findings of all works undertaken in the Assignment. The Survey Report shall be a summary of all the works undertaken and shall include, but not be limited to:
 - An introduction;
 - Programme of works;
 - Survey Methodology and equipment used;
 - Record photos of date and time of inspection;
 - The condition and arrangement of the structural elements of the existing building structures of the Target Buildings and associated facilities, and any subsequent alterations carried out;
 - The materials and system components of existing finishes at internal and external wall;
 - Defect records identified in the Survey;
 - The correctness of available information;
 - Drawings and plans in colour to illustrate the survey findings; and
 - Advise the likely effect of the construction works on the existing structures
 - Propose monitoring measures and protective measures
 - Conclusions and recommendations.

Remarks

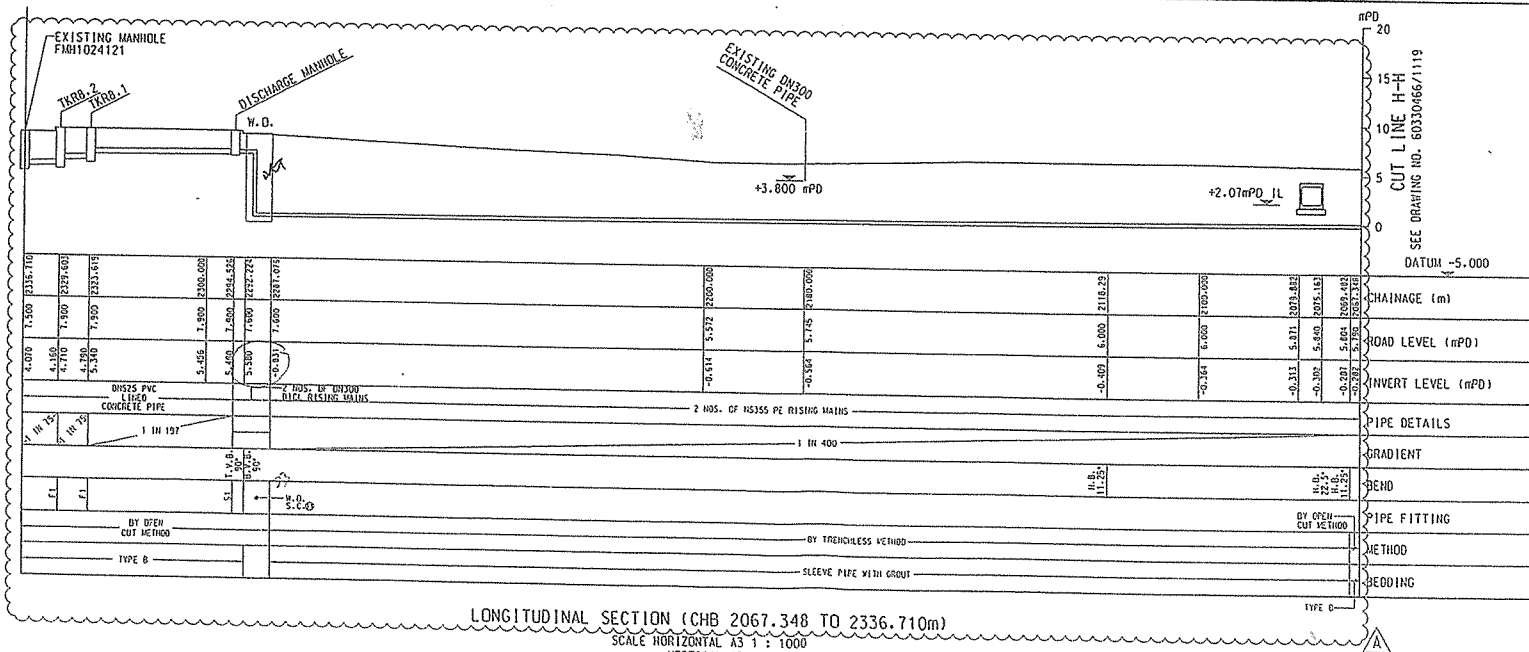
- We shall submit the condition survey report to the *Project Manager* and the Antiquities and Monuments Office (AMO) for approval before commencement of the works.
- We shall agree with the *Project Manager / the Supervisor* on the format and submission arrangement of the Survey Reports before preparing the reports.
- We shall submit within 14 days, 2 sets of the final version of the Survey Report, both in soft and hard copies. The soft copy shall include both editable and image versions of the text and drawings in the Survey Report.

**APPENDIX F –
DRAWINGS OF THE PROPOSED
WORKS TO BE CARRIED OUT
IN VICINITY TO THE TARGET
BUILDING
(YU CHEUNG TONG)**

P:\002 Drawings and Sketches\Site Sketch\60330466 SK 0158 A.dgn



PLAN
SCALE 1 : 1000 (A3)



LONGITUDINAL SECTION (CHB 2067.348 TO 2336.710m)
SCALE HORIZONTAL A3 1 : 1000
VERTICAL A3 1 : 500



DSD CONTRACT NO. DC/2018/02
UPGRADING OF SEWAGE PUMPING STATIONS AND
SEWERAGE ALONG TING KOK ROAD

SEWERAGE WORKS ALONG TING KOK ROAD

SHEET 8 OF 8

SCALE	AS SHOWN	DATE	28/4/2021
CHECKED BY	YS Chong <i>Wing</i>	DRAWN BY	Gary Tam
CONTRACT NO.	DC/2018/02	SKETCH NO.	60330466/SK/0158
		REV	A

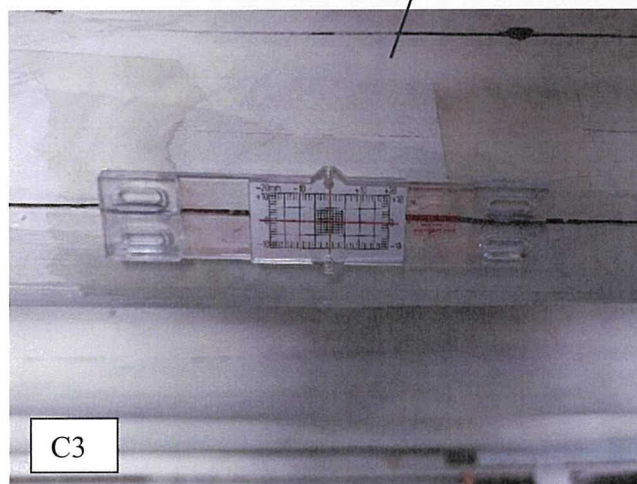
RELATED DRAWING NO. : 60330466/1120

APPENDIX G – Original Crack Widths Photos (YU CHEUNG TONG)

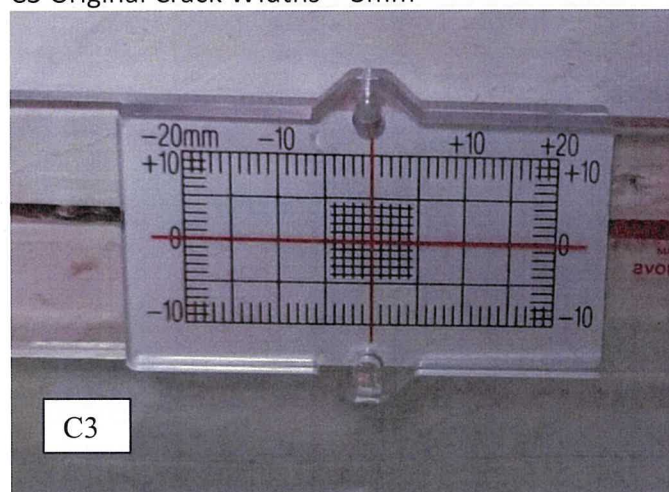
Original Crack Widths Photos

Location: Inside 3rd Block of Yu Cheung Tong G/F

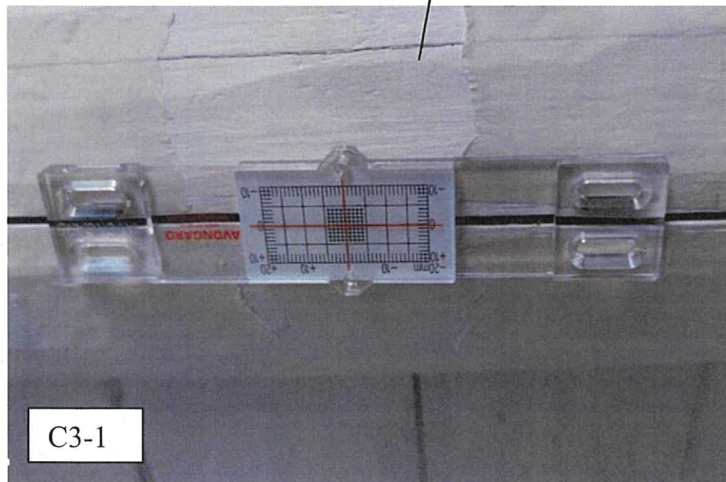
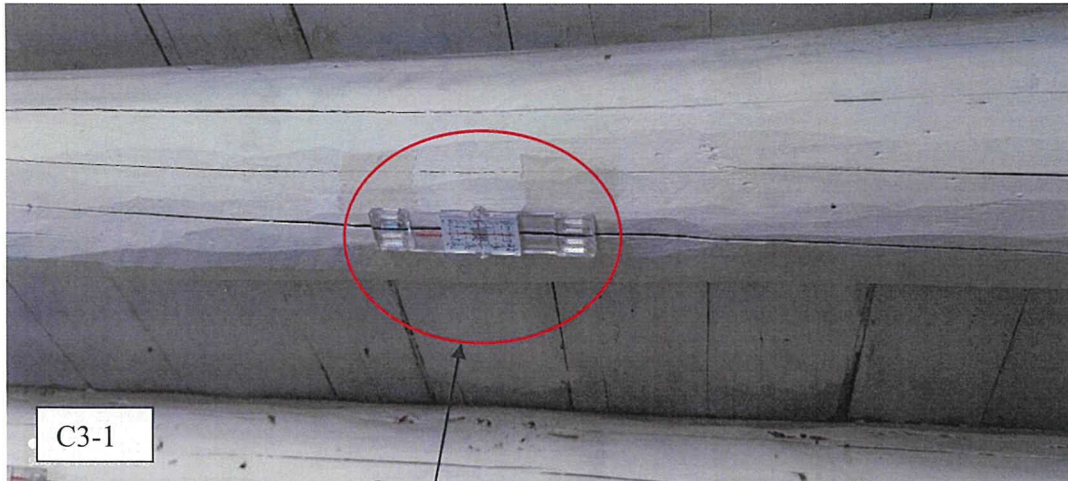
Crack Meter No.: C3



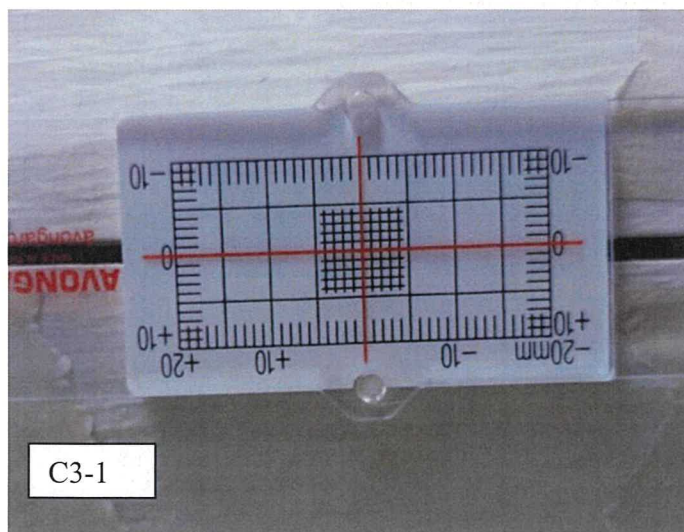
C3 Original Crack Widths – 3mm



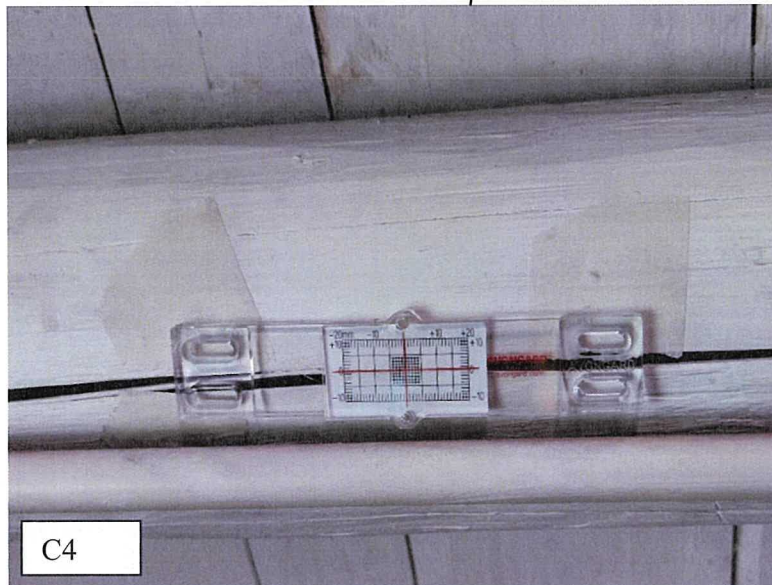
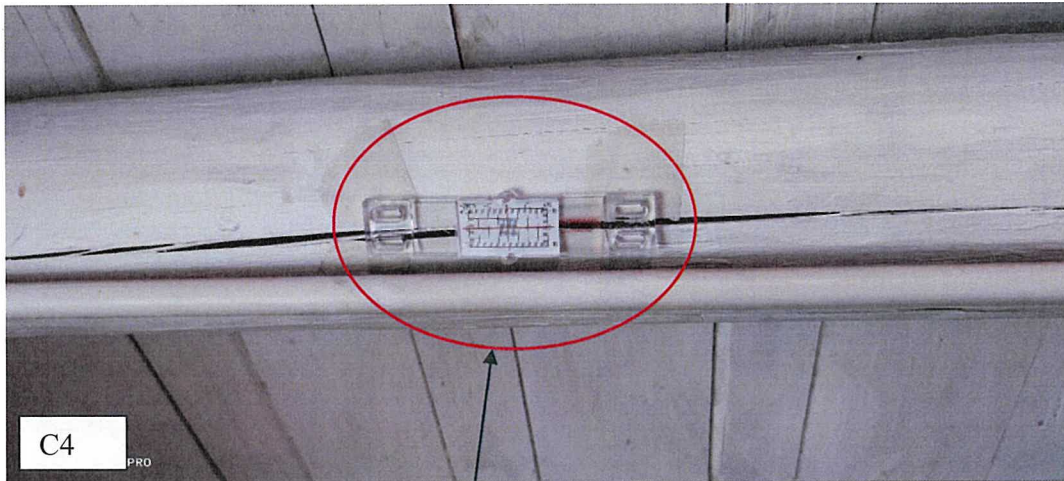
Location: Inside 3rd Block of Yu Cheung Tong G/F
Crack Meter No.: C3-1



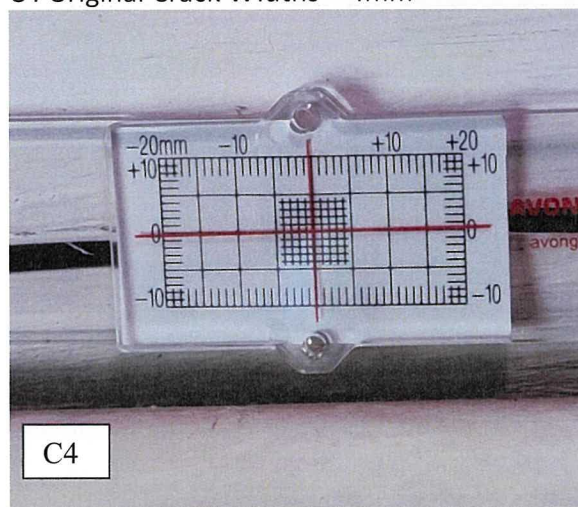
C3-1 Original Crack Widths – 3mm



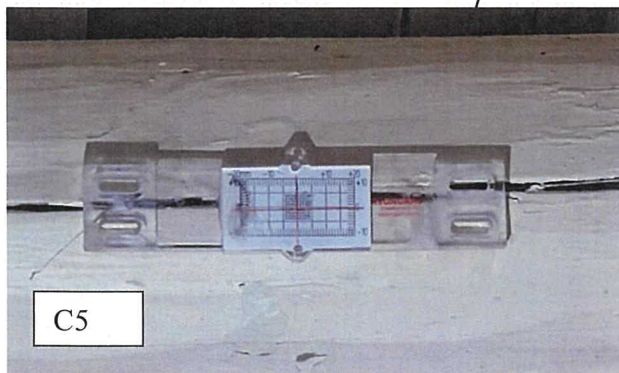
Location: Inside 3rd Block of Yu Cheung Tong G/F
Crack Meter No.: C4



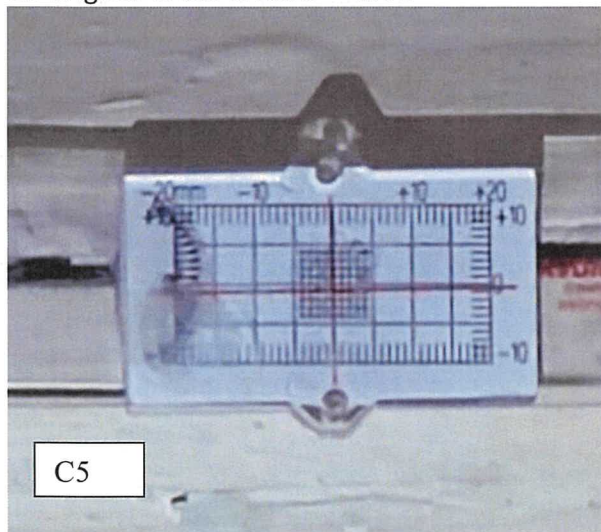
C4 Original Crack Widths – 4mm



Location: Inside 3rd Block of Yu Cheung Tong G/F
Crack Meter No.: C5



C5 Original Crack Widths – 4mm



APPENDIX H – LIAISON RECORD WITH THE OWNER

渠務署合約 DC/2018/02
汀角路污水泵房及污水收集系統改善工程
工地聯絡會議記錄

日期：2020年10月08日（星期四）

時間：上午10時30分

地點：豫章堂及羅家祠

出席者		電話
	豫章堂三號屋及羅家祠負責人	
	羅煌生先生	6440 9197
	(渠務署顧問公司-Aecom Asia Co. Ltd.)(AECOM)	
	鄭燕萍小姐(駐地盤工程師/AECOM)	9347 5139
	傅亦輝先生(駐地盤高級工程督察 /AECOM)	9438 5037
	孫梓峰先生(駐地盤助理工程師/AECOM)	9347 7162
	(渠務署承建商-上海建工海外工程有限公司)(上海建工)	
	楊思勁 (副地盤代表/上海建工)	9047 9952

項目	內容
	就汀角路污水收集系統改善工程在豫章堂及羅家祠內及附近設置工程監察點與豫章堂三號屋及羅家祠負責人作出相討

1	地點：豫章堂		
1.1	上海建工就汀角路近豫章堂及羅家祠進行的污水收集系統改善工程作出說明，並指出此段工程將會在 2020 年 11 月展開，預期於 2021 年 7 月完成。		
1.2	上海建工表示，為監察工程期間對豫章堂及羅家祠之影響，工程團隊將會在豫章堂及羅家祠內及附近安裝工程監察裝置。此次會議目的為與羅先生相討監察裝置的安裝方法，位置及監察頻率。		
1.3	沉降監察		
1.3.1	<u>沉降監察點 S1</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S1 與羅先生現場視察 (位置詳見附件相片 001)。		
b.	羅先生同意在上述位置安裝沉降監察點 S1。		
1.3.2	<u>沉降監察點 S2</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S2 與羅先生現場視察 (位置詳見附件相片 002)。		
b.	羅先生同意在上述位置安裝 S2 沉降監察點，並要求上海建工需確保在設置監察裝置期間泥土不會阻塞鄰近渠道及在安裝沉降監察點後用石屎鋪平該位置。		
c.	上海建工同意並將會安排於施工期間鋪設木板以防止泥石阻塞鄰近渠道。		
1.3.3	<u>沉降監察點 S3</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S3 與羅先生現場視察 (位置詳見附件相片 003)。		
b.	羅先生同意在上述 S3 位置安裝沉降監察點。		
1.3.4	<u>沉降監察點 S4</u>		

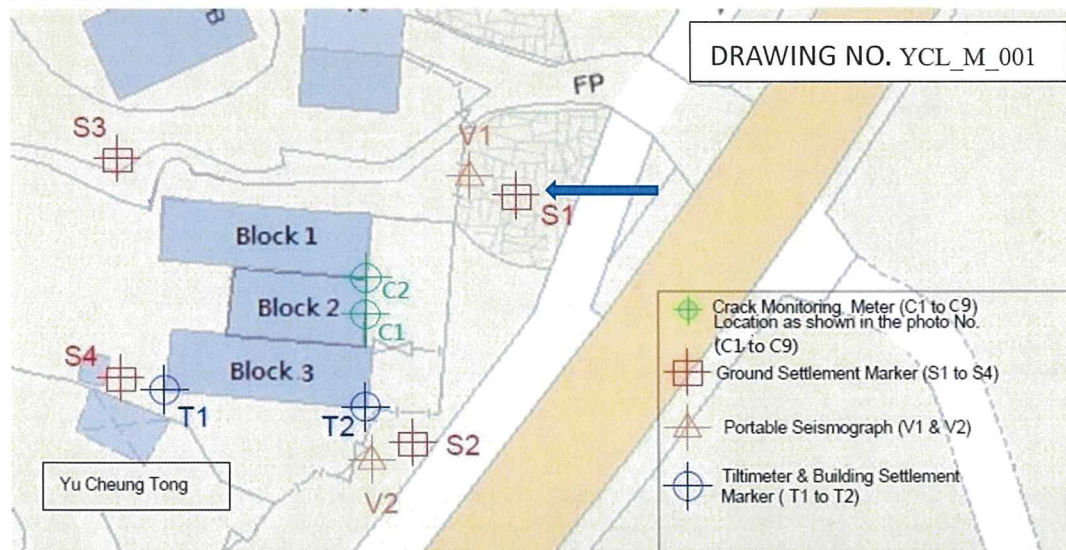
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S4 與羅先生現場視察 (位置詳見附件相片 004)。		
b.	羅先生同意在上述位置安裝 S4 沉降監察點，並要求在安裝沉降監察點後用石屎鋪平該位置。		
c.	上海建工同意。		
1.4	傾斜監察		
1.4.1	<u>傾斜監察點 T1</u>		
a.	上海建工就圖則編號:YCL_M_001 所示傾斜監察點 T1 與羅先生現場視察 (位置詳見附件相片 005)。		
b.	羅先生擔心安裝傾斜監察裝置會對建築物的外牆造成損害(詳見附件相片 007A)，因此不同意在豫章堂三號屋的外牆安裝傾斜監察裝置。他希望工程團隊能使用其他方法進行監察。		
c.	上海建工提出改用貼紙式測量標記(詳見附件相片 007B 及 007C)進行監察。羅先生同意上述方法。		
d.	羅生同意在上述位置安裝 T1 傾斜監察點。		
1.4.2	<u>傾斜監察點 T2</u>		
a.	上海建工就圖則編號:YCL_M_001 所示傾斜監察點 T2 位置與現場視察 (位置詳見附件相片 006)。		
b.	羅生同意在上述位置安裝 T2 傾斜監察點。		
1.5	裂紋監察		
1.5.1	上海建工就附件相片 C1 至 C9 所示屋內外位置安裝裂紋監察儀作出說明。		
1.5.2	羅先生擔心安裝裂紋監察儀(詳見附件相片 007)會對天花上的橫樑造成損害，因此不同意在豫章堂三號屋內安裝裂紋監察儀以監察附件相片 C3 至 C9 所示之裂紋。他希望工程團隊能使用其他方法進行監察。		
1.5.3	上海建工提出在工程開展前在各裂紋監察位置量度及記錄裂紋闊度和長度以代替安裝裂紋監察儀。		
1.5.4	羅先生同意上述方法。		
1.5.5	另外上海建工向羅先生表示，經多返聯絡亦未能聯絡豫章堂一及二號屋屋主，上海建工向羅先生查詢可否聯絡到豫章堂一及二號屋屋主或負責人。羅先生表示豫章堂一及二號屋屋主已移民未能取得聯絡。‘		
1.5.6	上海建工就附件相片 C1 及 C2 所示豫章堂 2 號屋外位置安裝裂紋監察儀，羅先生表示沒有意見。		
1.6	監察頻率		
1.6.1	上海建工指出在工程進行期間需要每日量度上述工程監察裝置的數據，包括沉降、裂紋及傾斜監察。		
1.6.2	羅先生指出進入豫章堂範圍及室內進行監察必須先與住戶聯絡安排。為減少對住戶的影響，羅先生希望在沉降監察點 S4、傾斜監察點 T1 及 T2 進行監察的頻率定為一星期一次。另外量度於屋內裂紋(即附件相片 C3 至 C9 所示之裂紋)的監察頻率定為一個月一次。其餘監察點的監察頻率則可以維持每天一次。		
1.6.3	AECOM 明白羅先生的要求並表示工程團隊需提交以上建議予有關部門再作審批。		
2	地點：羅家祠		
2.1	上海建工就羅家祠安裝工程監察點作出說明。		
2.2	沉降監察		
2.2.1	<u>沉降監察點 S1</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S1 與羅先生現場		

	視察 (位置詳見附件相片 008)。		
b.	羅先生同意在上述位置安裝沉降監察點 S1。		
2.2.2	<u>沉降監察點 S2</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S2 與羅先生現場視察 (位置詳見附件相片 009)。		
b.	羅先生同意在上述位置安裝沉降監察點 S2。		
2.2.3	<u>沉降監察點 S3</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S3 與羅先生現場視察 (位置詳見附件相片 010)。		
b.	羅先生同意在上述位置安裝沉降監察點 S3。		
2.2.4	<u>沉降監察點 S4</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點與羅先生現場視察 (位置詳見附件相片 011)。		
b.	羅先生同意在上述位置安裝沉降監察點 S4。		
2.3	傾斜監察		
2.3.1	<u>傾斜監察點 T1</u>		
a.	上海建工就圖則編號:LAW_M_001 所示傾斜監察點 T1 與羅先生現場視察 (位置詳見附件相片 012)。		
b.	羅先生擔心安裝傾斜監察裝置會對建築物的外牆造成損害(詳見附件相片 007A), 因此不同意在豫章堂三號屋的外牆安裝傾斜監察裝置。他希望工程團隊能使用其他方法進行監察。		
c.	上海建工提出改用貼紙式測量標記(詳見附件相片 007B 及 007C)進行監察。羅先生同意上述方法。		
d.	羅先生同意在上述位置安裝傾斜監察點 T1。		
2.3.2	<u>傾斜監察點</u>		
a.	上海建工就圖則編號:LAW_M_001 所示傾斜監察點 T2 與羅先生現場視察 (位置詳見附件相片 013)。		
b.	羅先生同意在上述位置安裝傾斜監察點 T2。		
2.4	裂紋監察		
2.4.1	上海建工就附件相片 LC1 至 LC3 所示屋內位置安裝裂紋監察儀作出說明。		
2.4.2	羅先生要求羅家祠的裂紋監察方法與豫章堂一樣在不需要安裝裂紋監察儀的情況下進行監察工程。		
2.4.3	上海建工提出在工程開展前在各裂紋監察位置量度及記錄裂紋闊度和長度以代替安裝裂紋監察儀。		
2.4.3	羅先生同意上述方法。		
2.5	監察頻率		
2.5.1	上海建工指出在工程進行期間需要每日量度上述工程監察裝置的數據, 包括沉降, 裂紋及傾斜監察。		
2.5.2	羅先生對沉降監察及傾斜監察的監察頻率沒有意見。羅先生指出進入室內進行監察必須先與其聯絡安排, 為減少對其影響, 希望量度屋內裂紋(即附件相片 LC1 所示之裂紋)的監察頻率定為一個月兩次。其餘量度屋外裂紋的監察頻率則可以維持每天一次。		
2.5.3	AECOM 明白羅先生的要求並表示工程團隊需提交以上建議予有關部門再作審批。		
3	上海建工提出會先進行安裝豫章堂及羅家祠的沉降監察點, 而安裝其他工程監察裝置將會再進一步聯絡羅先生。		
3.1	羅先生提出上海建工可先安裝豫章堂 S2 及 S4 沉降監察點, 並在動工前安排簡單拜神。		
3.2	上海建工同意。		

3.3	羅先生對上述安裝工程監察裝置沒有其他意見。		
	會議結束		

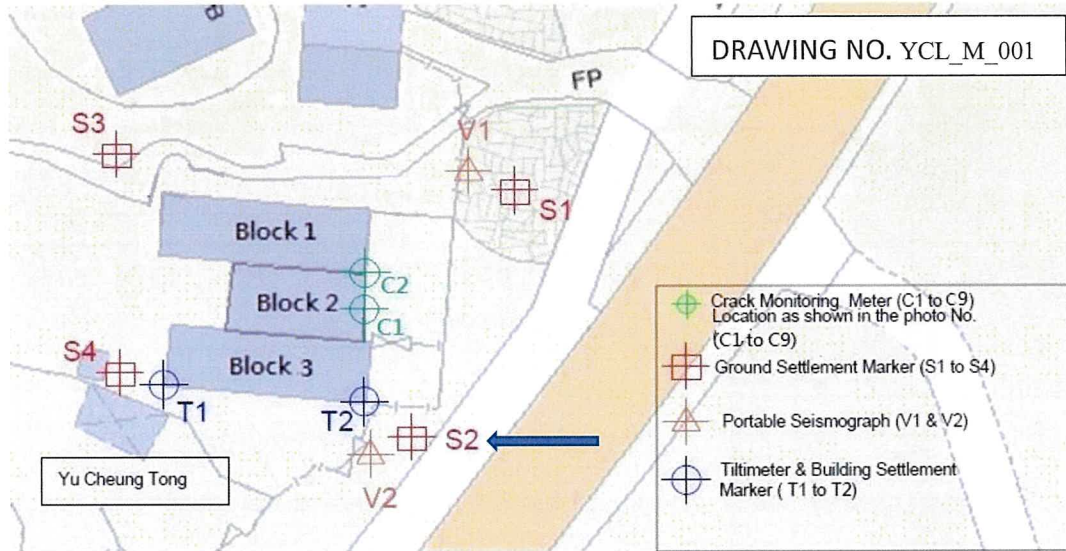
豫章堂

沉降監察點 S1



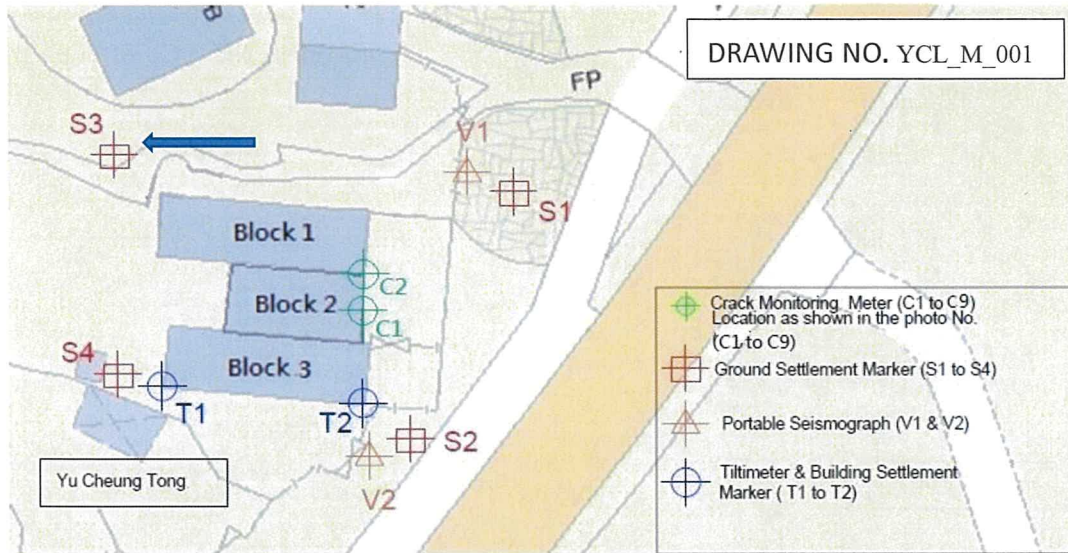
相片 001

沉降監察點 S2



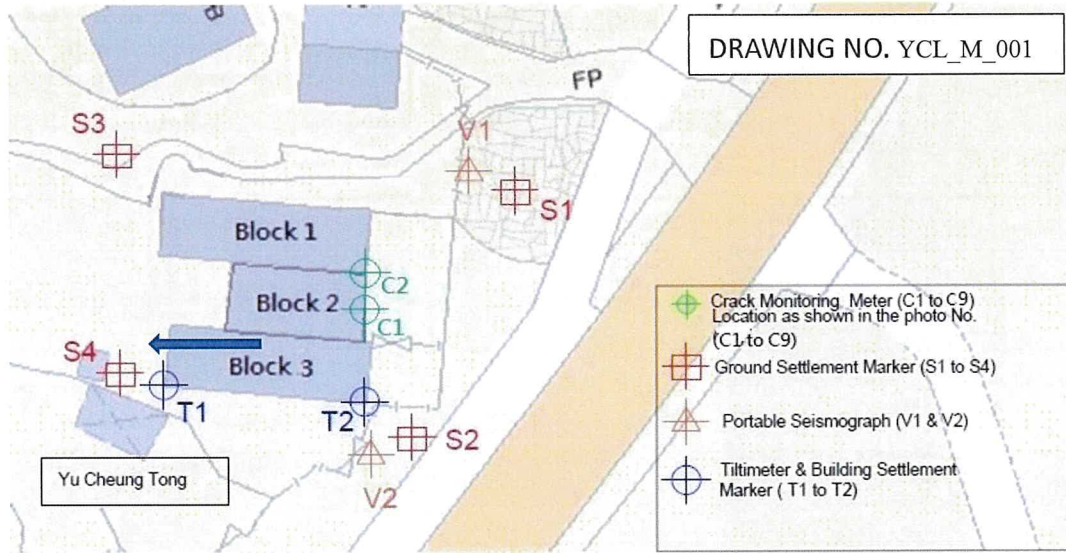
相片 002

沉降監察點 S3



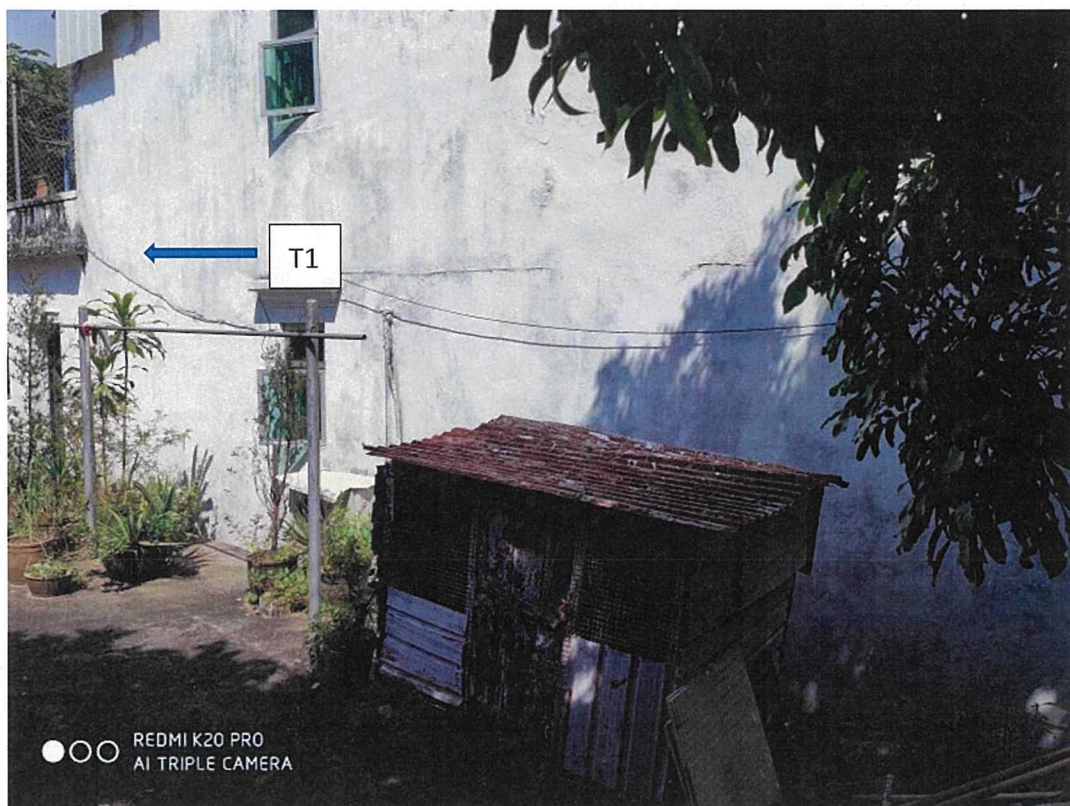
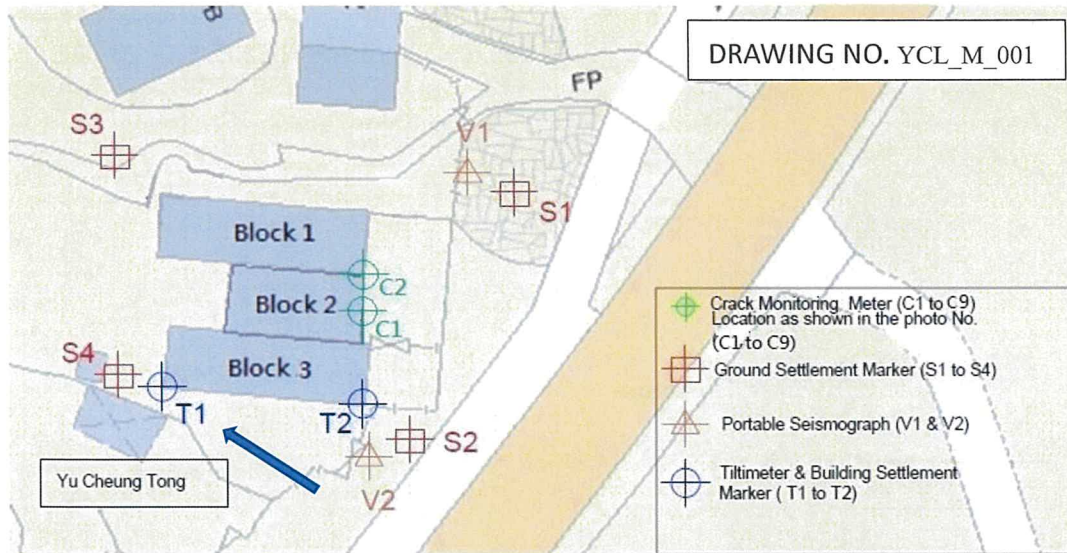
相片 003

沉降監察點 S4



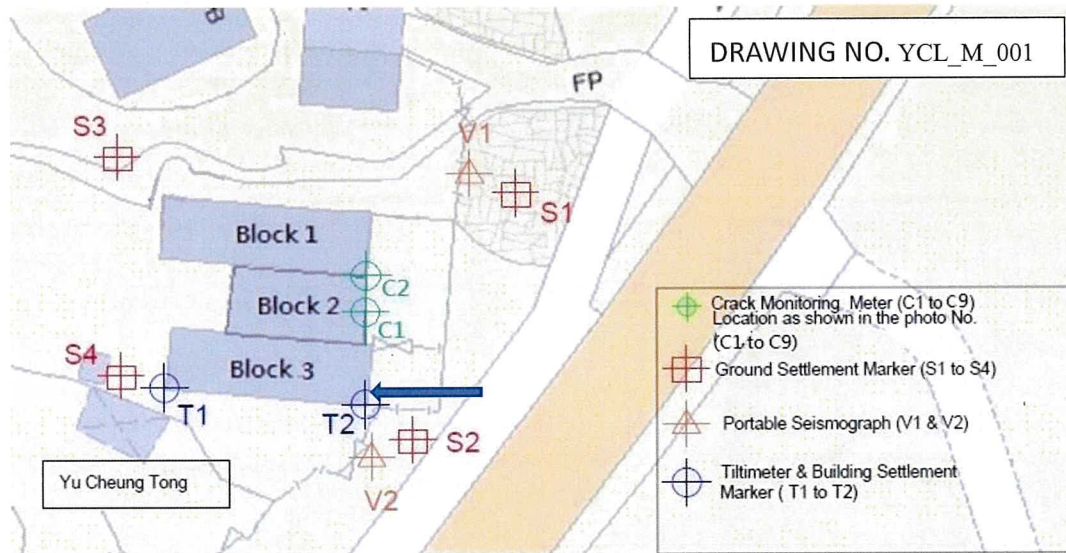
相片 004

傾斜監察點 T1



相片 005

傾斜監察點 T2

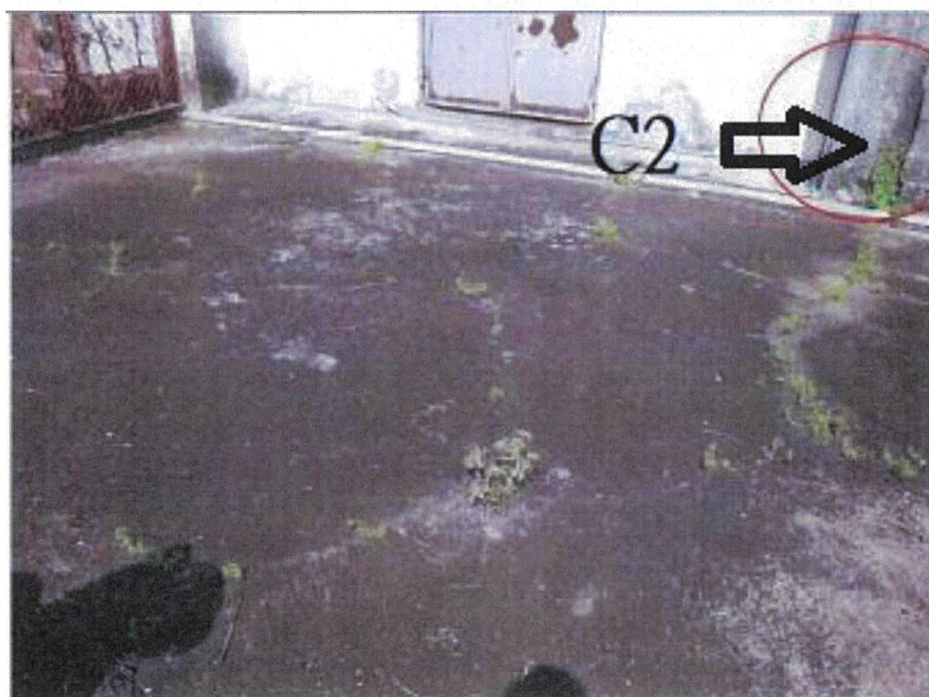


相片 006

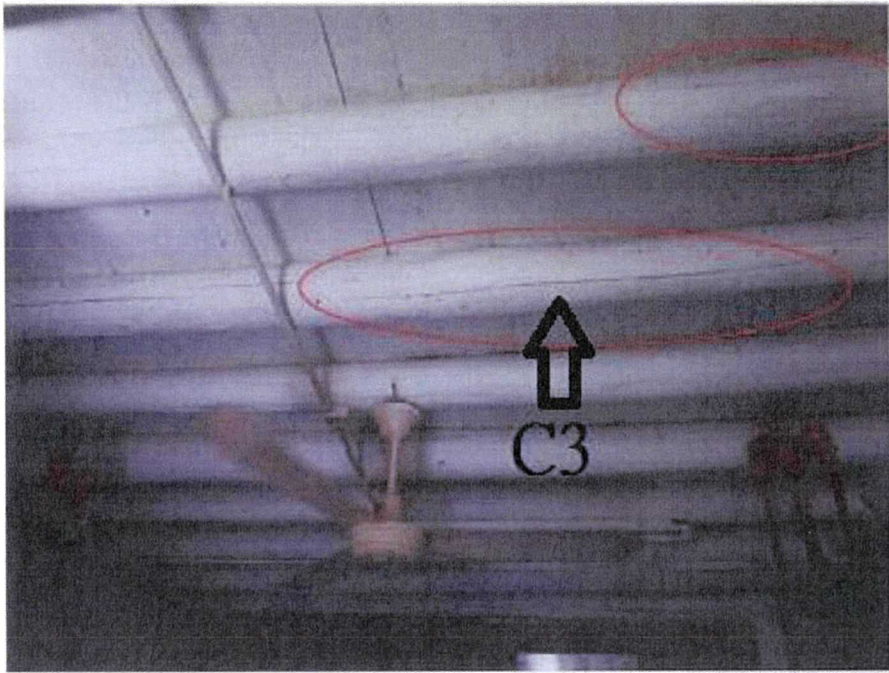
裂紋監察點



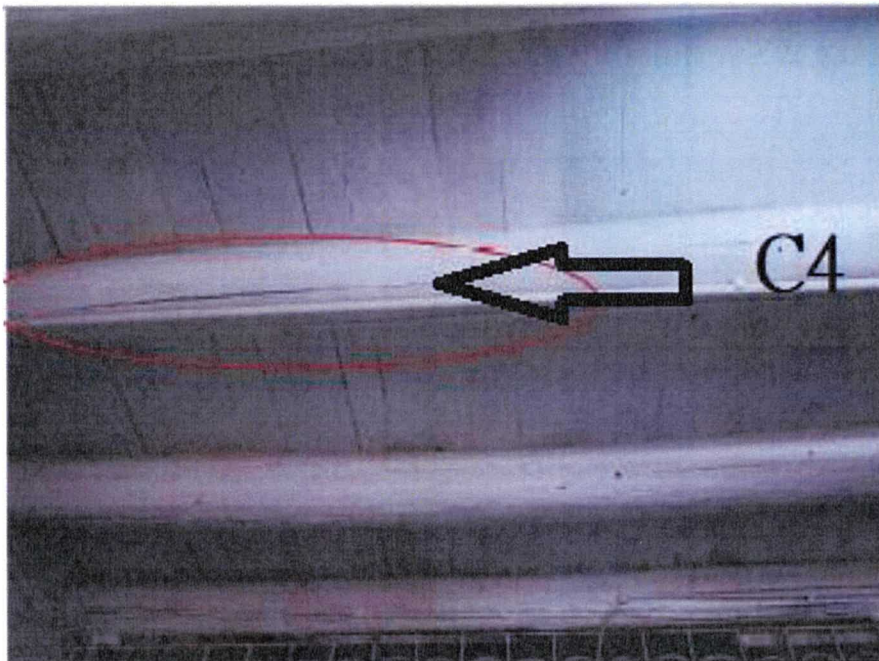
相片 C1 (豫章堂 2 號屋外)



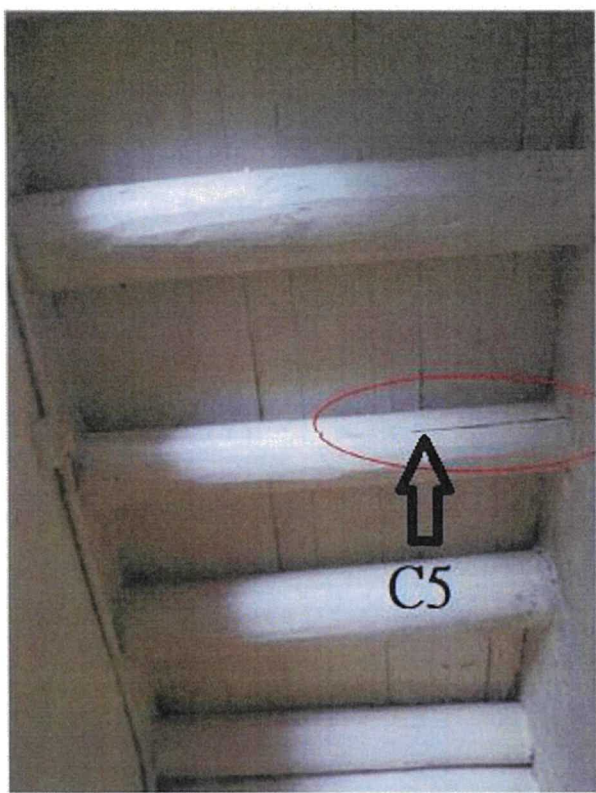
相片 C2 (豫章堂 2 號屋外)



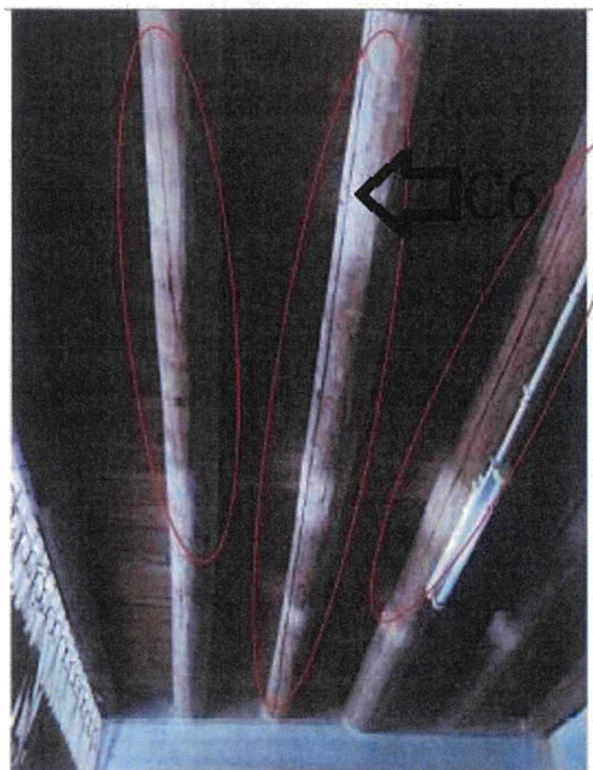
相片 C3 (豫章堂 1 號屋內)



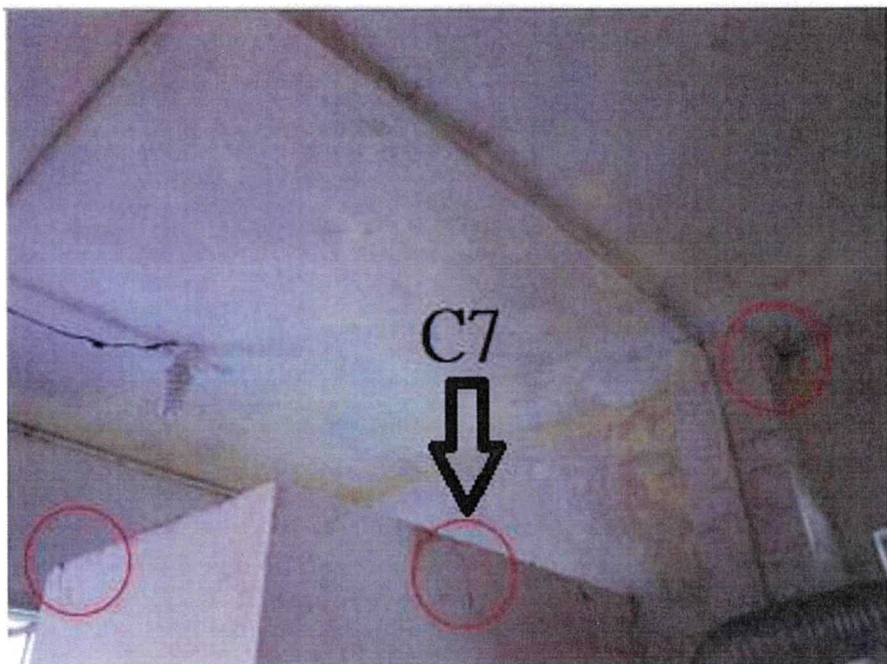
相片 C4 (豫章堂 1 號屋內)



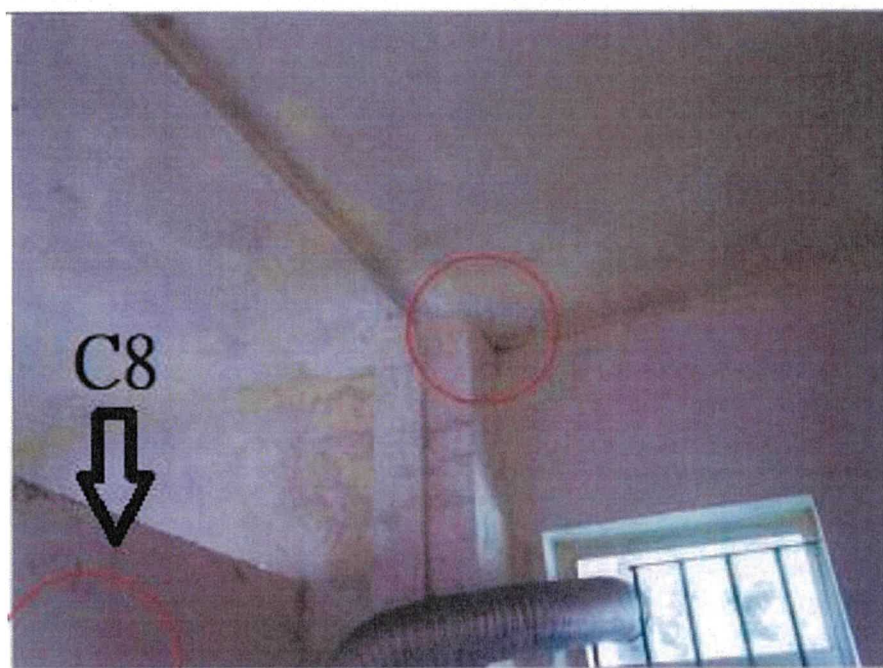
相片 C5 (豫章堂 1 號屋內)



相片 C6 (豫章堂 1 號屋內)



相片 C7 (豫章堂 1 號屋內)

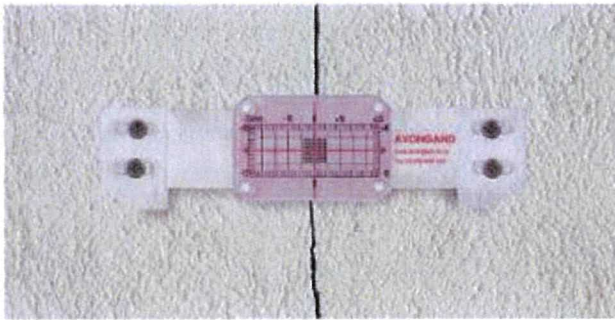
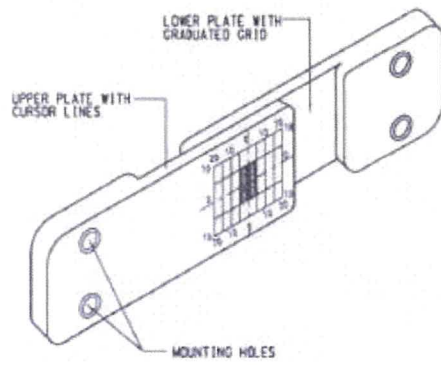


相片 C8 (豫章堂 1 號屋內)



相片 C9 (豫章堂 1 號屋內)

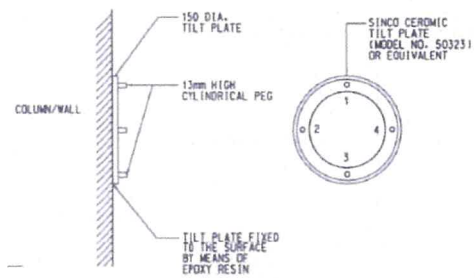
豫章堂及羅家祠 2020 年 10 月 8 日會議記錄附件
裂紋監察儀



相片 007

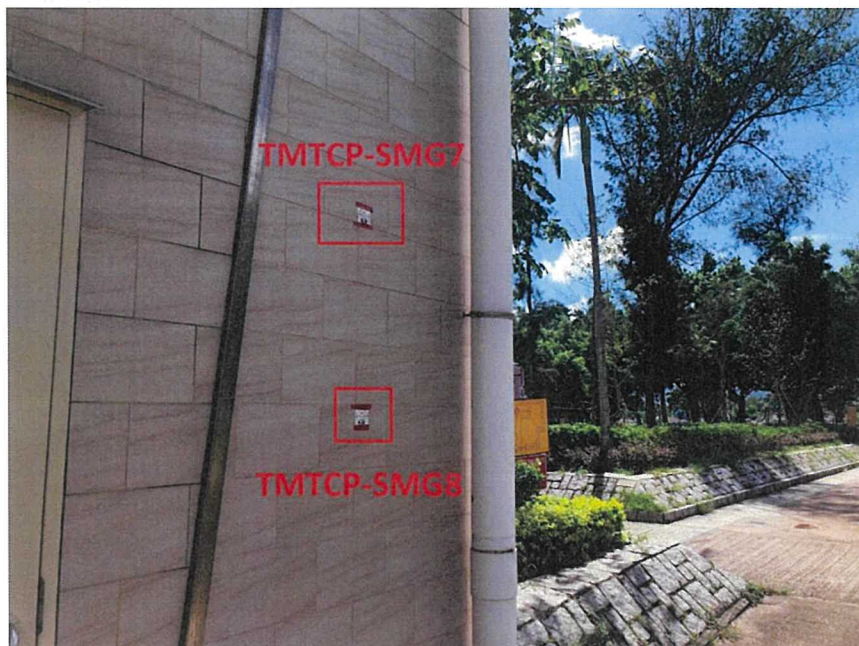
傾斜監察裝置

Tiltmeter

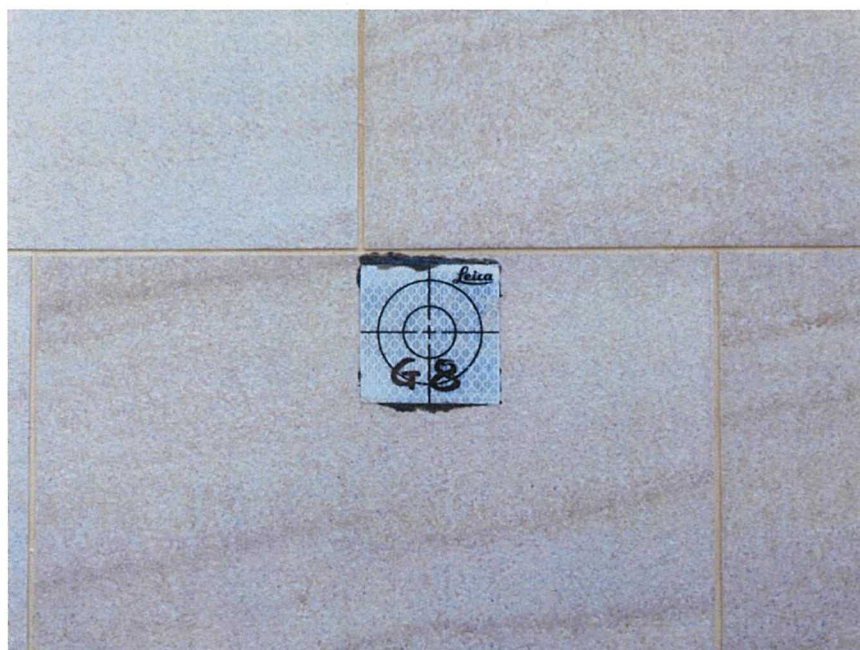


相片 007A

貼紙式測量標記



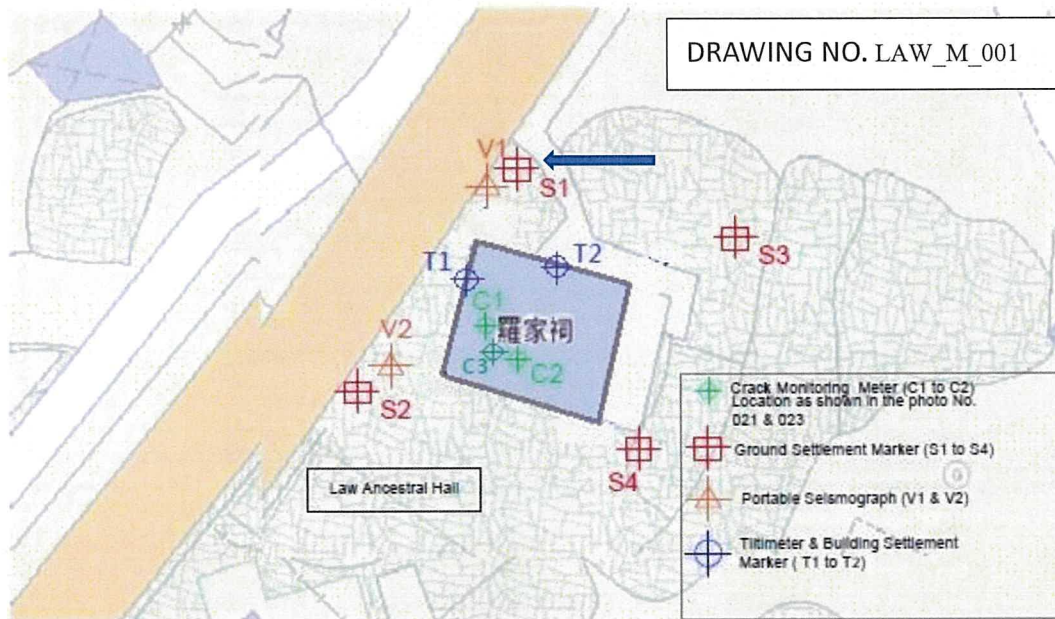
相片 007B



相片 007C

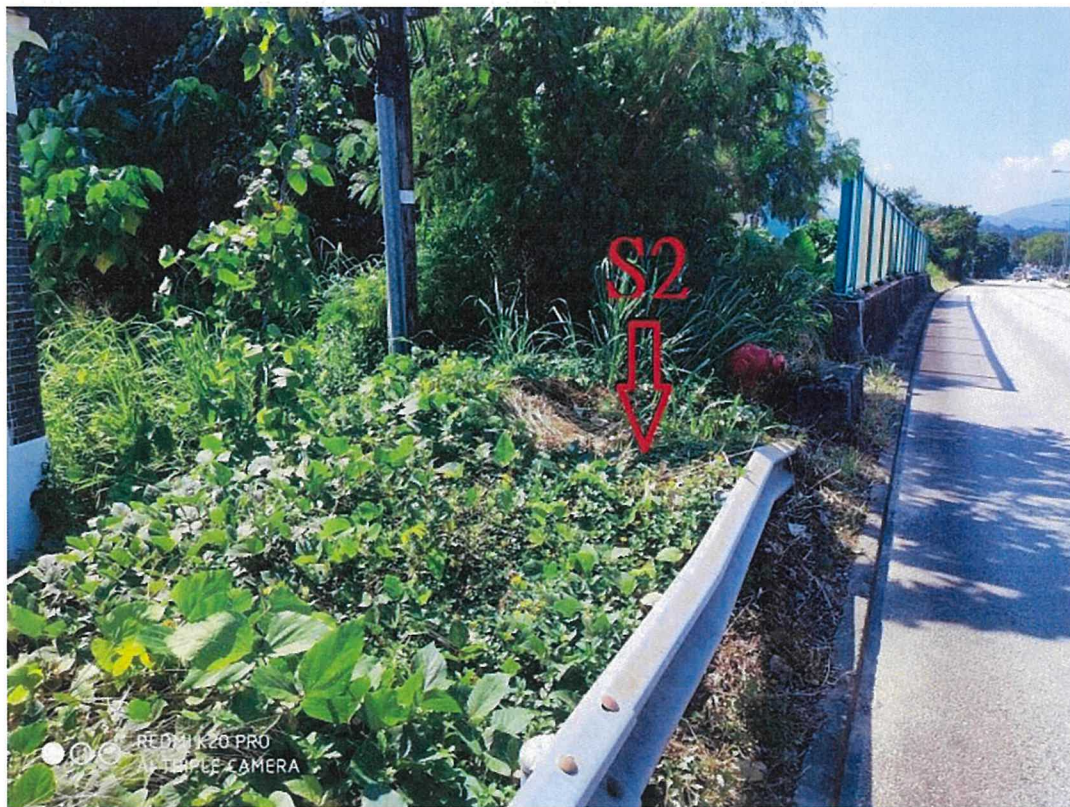
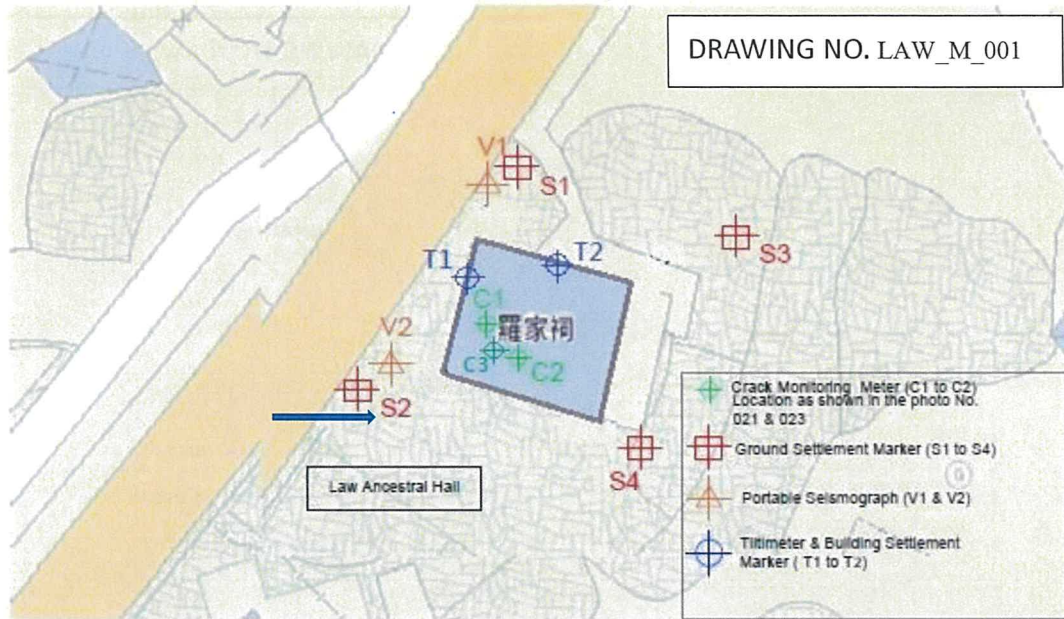
羅家祠

沉降監察點 S1



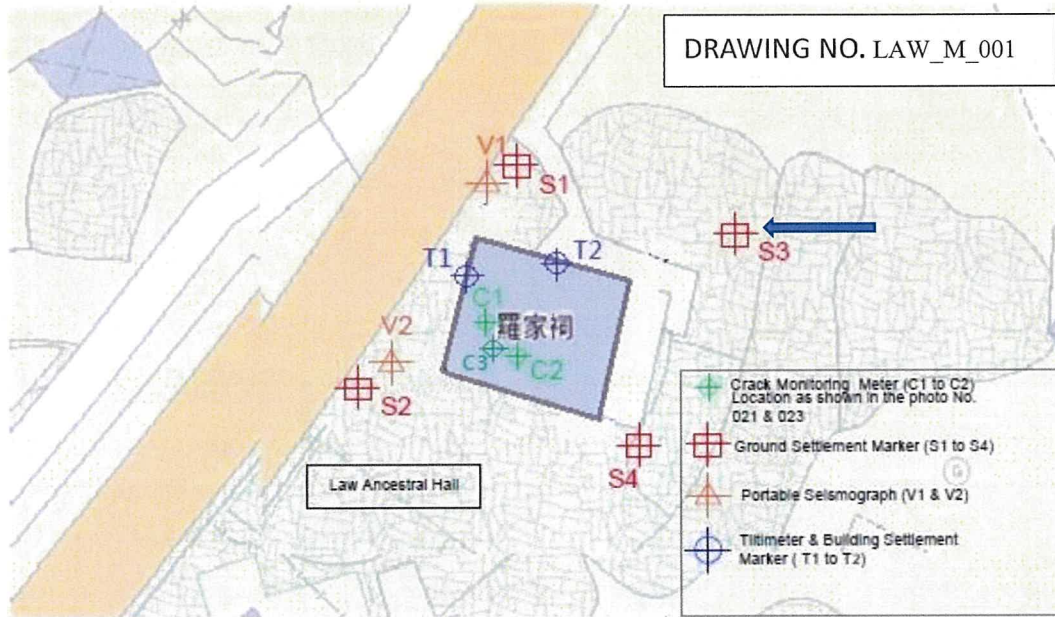
相片 008

沉降監察點 S2



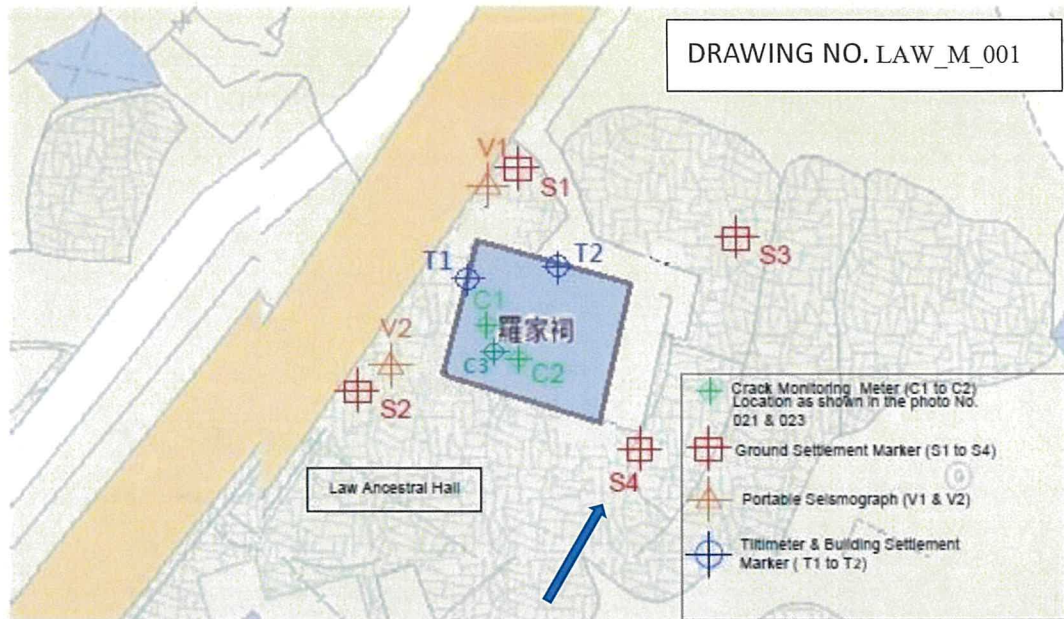
相片 009

沉降監察點 S3



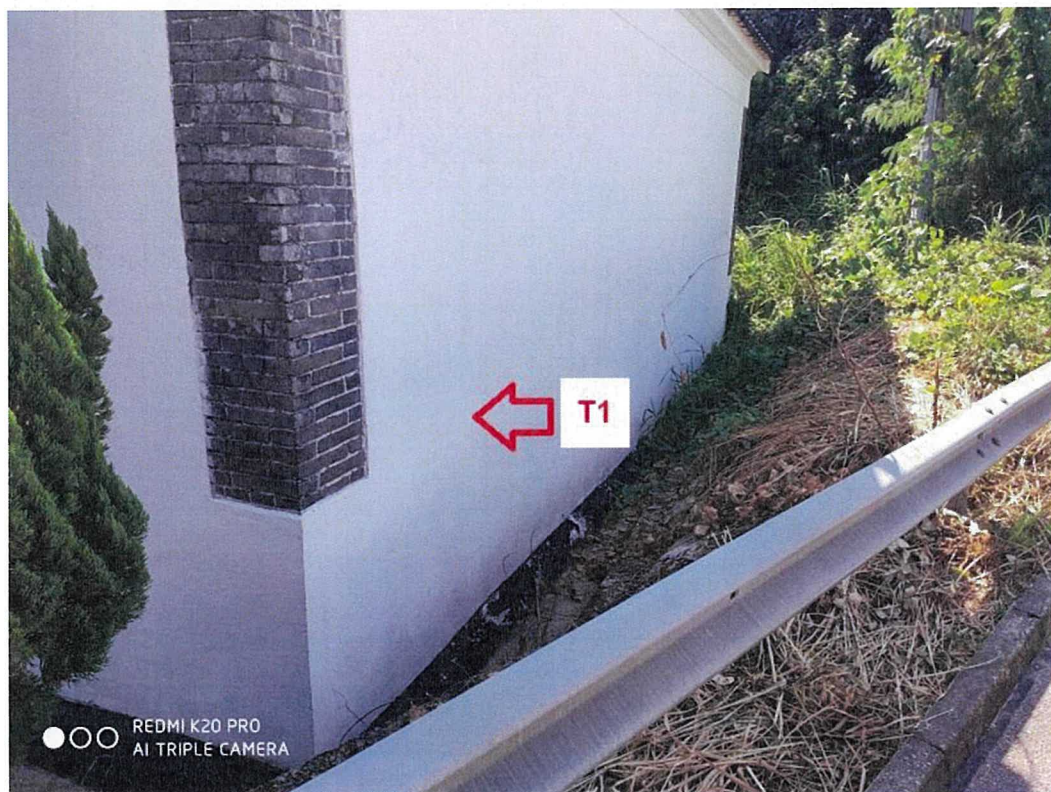
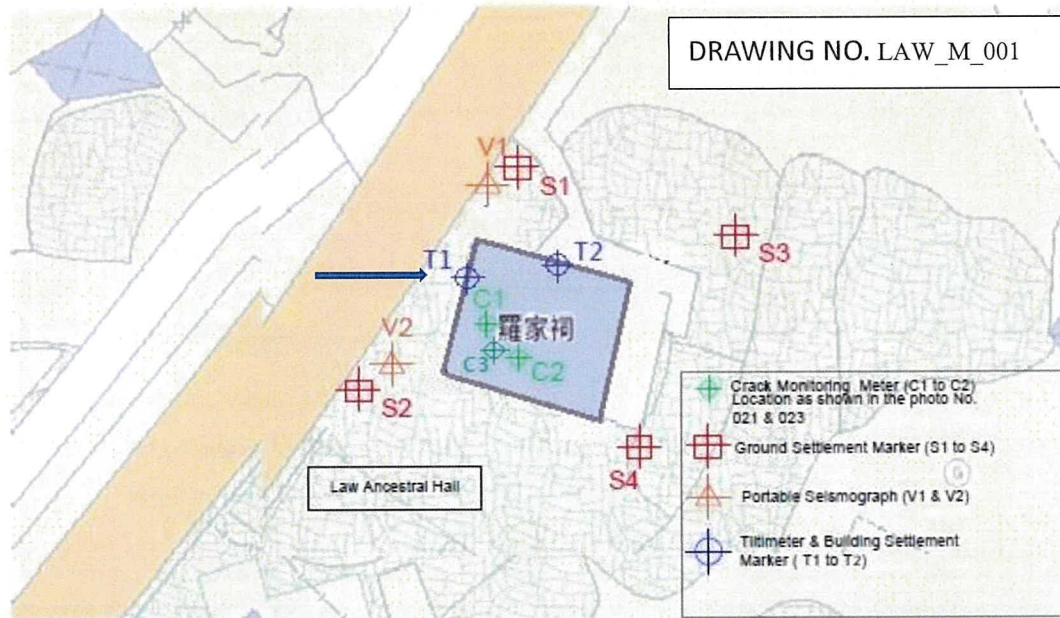
相片 010

沉降監察點 S4



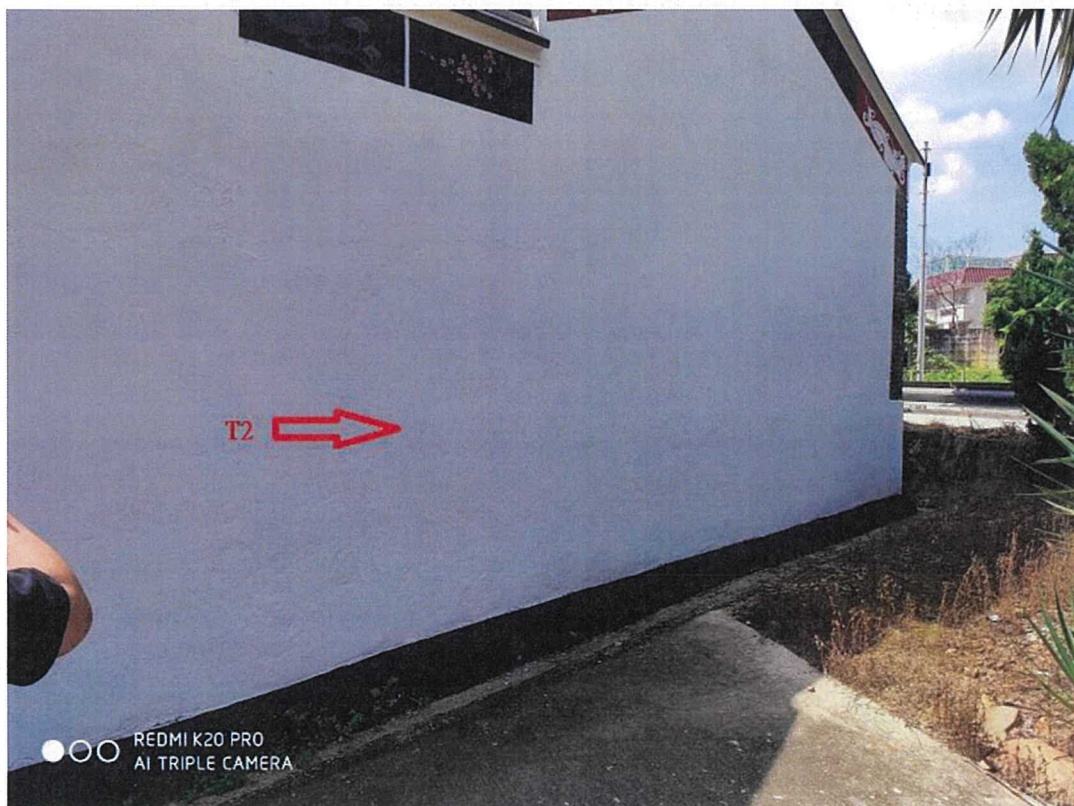
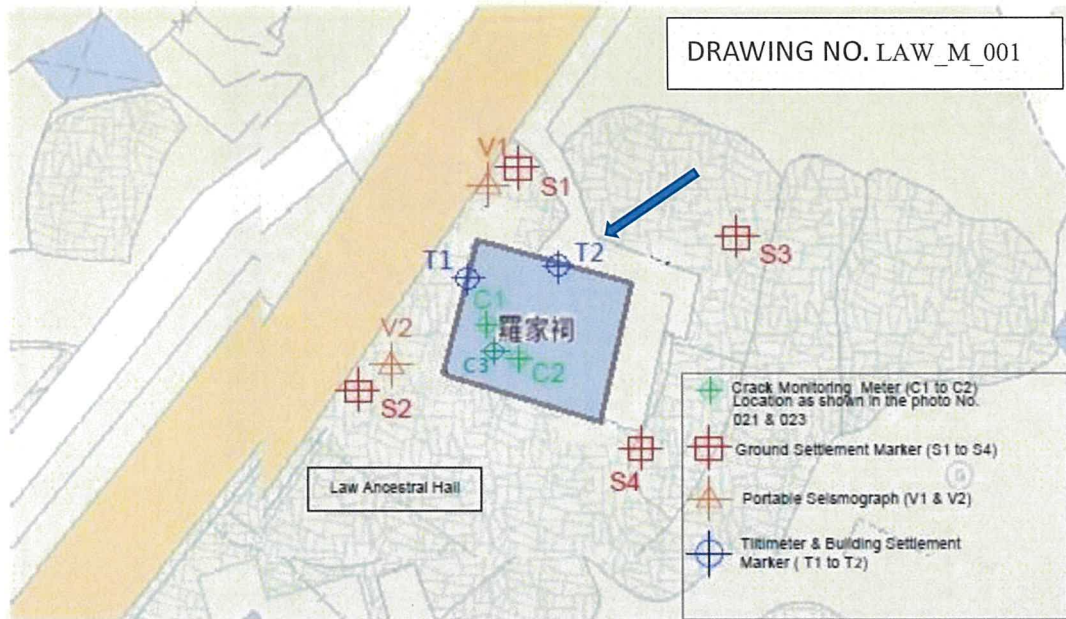
相片 011

傾斜監察點 T1



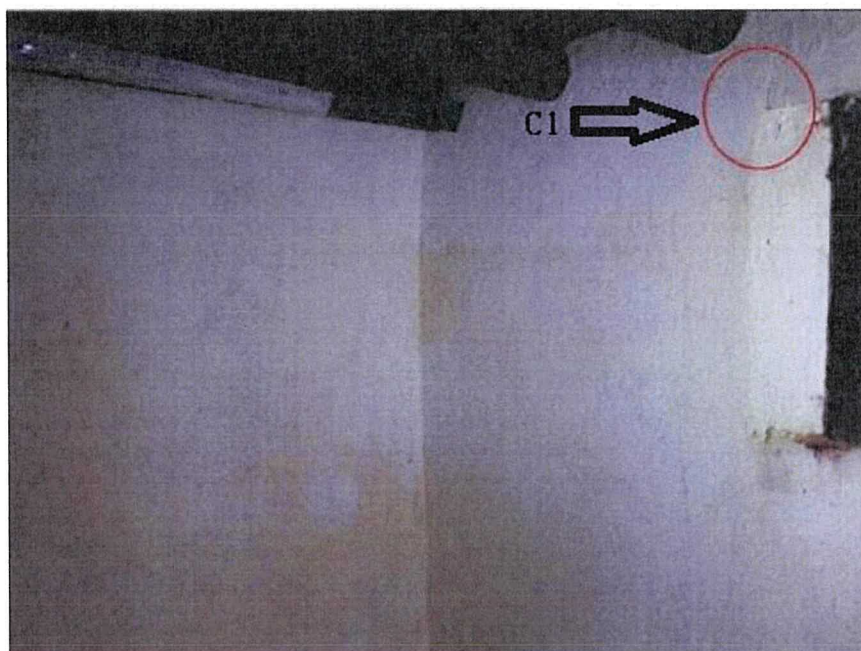
相片 012

傾斜監察點 T2

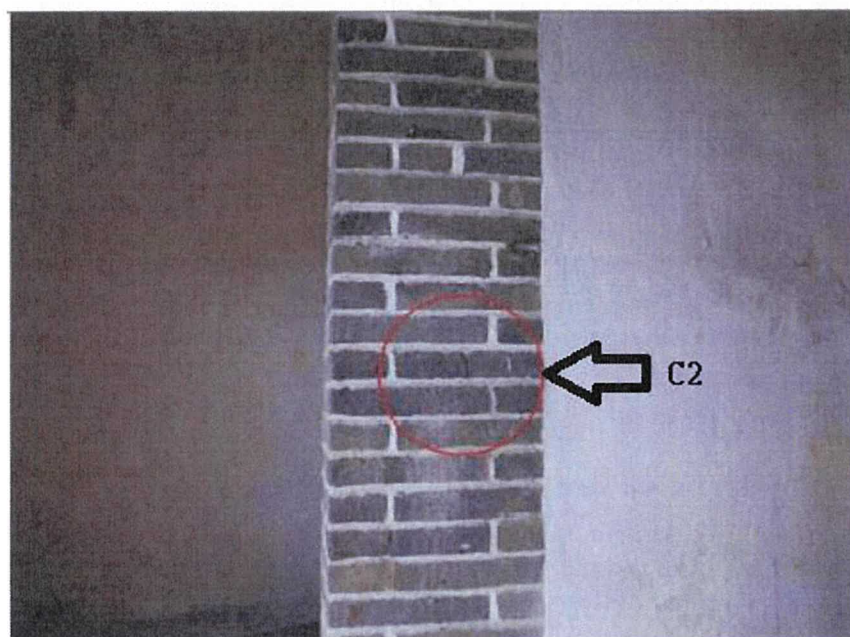


相片 013

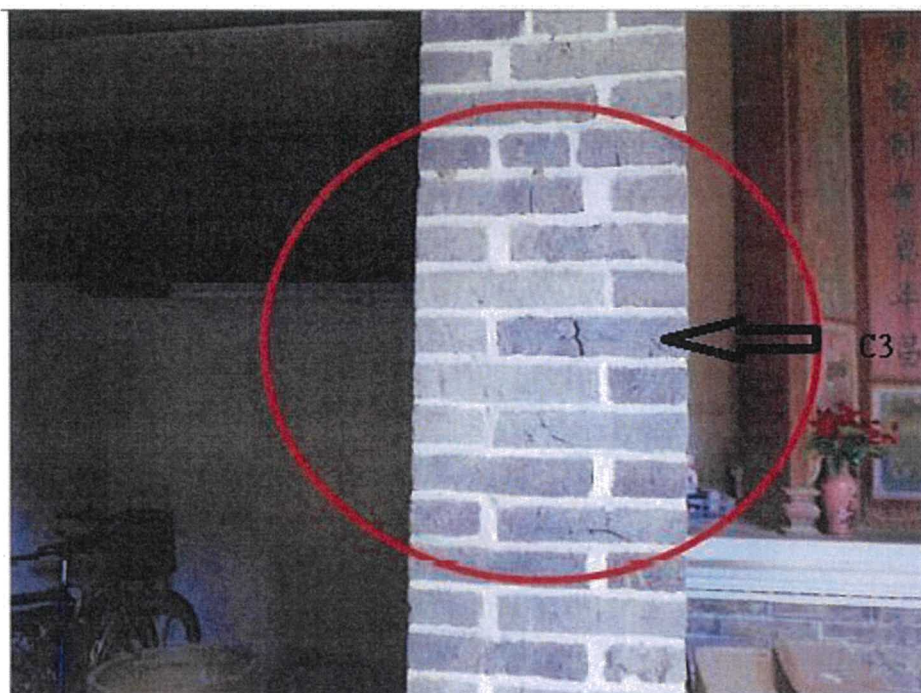
裂紋監察點



相片 LC1



相片 LC2



相片 LC3

渠務署合約 DC/2018/02
汀角路污水泵房及污水收集系統改善工程
工地聯絡會議記錄

日期：2021年02月25日（星期四）

時間：上午10時00分

地點：豫章堂及羅家祠

		電話
出席者	豫章堂三號屋及羅家祠負責人 羅煌生先生	6440 9197
	(渠務署顧問公司-AECOM Asia Co. Ltd.)(AECOM) 林舉興先生(駐地盤工程督察 /AECOM)	9043 7804
	(渠務署承建商-上海建工海外工程有限公司)(上海建工) 楊思勁先生 (副地盤代表/上海建工)	9047 9952

項目 **內容**
就汀角路污水收集系統改善工程在豫章堂及羅家祠內及附近
設置工程監察點與豫章堂三號屋及羅家祠負責人作出相討

1	地點：豫章堂		
1.1	上海建工表示，此次會議目的就跟據古物古蹟辦事處對工程期間的工程監察建議，與羅先生對監察裝置的位置及監察頻率再進行商討。		
1.2	沉降監察頻率		
1.2.1	上海建工提出沉降監察點 S4 (位置詳見圖則編號:YCL_M_001A 所示) 的監察頻率可否由一星期一次，增加為每天一次。		
1.2.2	羅先生指出沉降監察點 S4 位於豫章堂圍網內，工程人員進行監察需要家人開關並陪同。考慮到提升監測頻率會為其家人帶來滋擾及影響，因此不同意增加監察頻率，維持一星期一次。		
1.3	增加樓宇沉降監察位置		
1.3.1	上海建工提出在豫章堂 1 號屋外加設樓宇沉降監察點 T3,T4 (位置詳見圖則編號:YCL_M_001A 所示) 進行樓宇沉降監察。樓宇沉降監察點將使用貼紙式測量標記 (詳見附件相片 007B 及 C) 進行監察。		
1.3.2	羅先生同意。		
1.4	樓宇沉降監察頻率		
1.4.1	上海建工提出可於豫章堂圍網外進行樓宇沉降監察，因此建議監察頻率為每天一次。		
1.4.2	羅先生同意上述安排。		
1.5	傾斜監察頻率		

1.5.1	因應古物古蹟辦事處的建議，上海建工詢問可否更改傾斜監察點 T1 及 T2 (位置詳見圖則編號: YCL_M_001A 所示) 的監察頻率，由一星期一次增加為每天一次。上海建工指出工程人員可於豫章堂圍網外進行監察。		
1.5.2	羅先生對上述建議沒有意見。		
1.6	裂紋監察		
1.6.1	承上次會議所述，上海建工希望羅先生能考慮讓工程團隊在附件相片 C1 至 C9 所示屋內外位置安裝裂紋監察儀，並現場展示裂紋監察儀樣板相片(詳見附件相片 007)。		
1.6.2	經了解後，羅先生認同安裝裂紋監察儀較為穩妥，並同意在附件相片 C1 至 C9 所示位置安裝裂紋監察儀進行裂紋監察。		
1.6.3	上海建工提出在工程開展前需在各裂紋監察位置安裝裂紋監察儀及量度及記錄裂紋闊度和長度。		
1.6.4	由於需進入屋內範圍進行安裝，羅先生表示工程團隊需提早兩日通知安裝監察裝置以便作出安排。		
1.6.5	上海建工同意。		
1.7	裂紋監察頻率		
1.7.1	因應古物古蹟辦事處的建議，上海建工詢問可否增加屋內裂紋 (即附件相片 C3 至 C9 所示)的監察頻率，由一個月一次增加為每日一次。		
1.7.2	羅先生提出因裂紋監察點需要進入豫章堂屋內進行監察，考慮到其母親年紀老邁，工程人員頻繁進入屋內進行監察將為其家人帶來滋擾及嚴重影響。基於上述原因，羅先生要求監察頻率維持一個月一次，建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
1.7.3	上海建工表示明白，並將如實向有關部門反映。		
1.8	總結		
1.8.1	AECOM 及上海建工明白羅先生的要求並表示工程團隊會進一步提交以上建議予有關部門再作審批。		
2	地點：羅家祠		
2.1	增加樓宇沉降監察位置		
2.1.1	上海建工提出在羅家祠更改樓宇沉降監察點 T1 及 T2 位置，並另外加設樓宇沉降監察點 T3 及 T4 (位置詳見圖則編號: LAW_M_001A 所示) 進行樓宇沉降監察。樓宇沉降監察點將使用貼紙式測量標記(詳見附件相片 007B 及 C)進行監察。		
2.1.2	羅先生同意。		
2.2	樓宇沉降監察頻率		
2.2.1	上海建工建議監察頻率為每天一次。		

2.2.2	羅先生同意。		
2.3	裂紋監察		
2.3.1	承上次會議所述，上海建工希望羅先生能考慮讓工程團隊在附件相片 LC1 至 LC3 所示屋內位置安裝裂紋監察儀，並現場展示裂紋監察儀樣板相片(詳見附件相片 007)。		
2.3.2	經了解後，羅先生認同安裝裂紋監察儀較為穩妥，並同意在附件相片 LC1 至 LC3 所示位置安裝裂紋監察儀進行裂紋監察。		
2.3.3	上海建工提出在工程開展前需在各裂紋監察位置安裝裂紋監察儀及量度及記錄裂紋闊度和長度。		
2.3.4	羅先生表示希望工程團隊安排與豫章堂同日安裝裂紋監察儀。		
2.3.5	上海建工同意。		
2.4	裂紋監察頻率		
2.4.1	因應古物古蹟辦事處的建議，上海建工詢問可否增加屋內裂紋 (即附件相片 LC1 至 LC3 所示)的監察頻率，一個月兩次增加為每日一次。羅先生提出因需要進入羅家祠內進行監察，其本人必須陪同工程人員入內，因此要求與豫章堂同日進行裂紋監察，頻率改為一個月一次。與豫章堂情況一樣，建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
2.4.2	建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
2.5	總結		
2.5.1	AECOM 及上海建工明白羅先生的要求並表示工程團隊會進一步提交以上建議予有關部門再作審批。		
	會議結束		

會後備註

豫章堂

於 2021 年 3 月 15 日下午 2 時在豫章堂進行安裝裂紋監察儀(C1 至 C9 所示位置)，羅先生表示跟據現場所見裂紋監察儀 C6 及 C9 位置分別在睡房內及 1 樓位置。這兩個位置羅先生都不同意工程團隊進入，在以上位置安裝裂紋監察儀。而裂紋監察儀 C7 及 C8 位置現場所見為牆壁油漆剝落未發現裂縫，因此羅先生同意取消 C7 及 C8 位置安裝裂紋監察儀。

羅家祠

於 2021 年 3 月 15 日下午 2 時在羅家祠進行安裝裂紋監察儀(C1 至 C3 所示位置)，裂紋監察儀 C1 位置現場所見為牆壁油漆剝落未發現裂縫，因此羅先生同意取消 C1 位置安裝裂紋監察儀。

於 2021 年 4 月 14 日上午 10 時與羅先生相討在羅家祠外牆發現的新裂縫，需另行安裝裂紋監察儀 C4 及 C5。羅先生同意加裝 C4 及 C5 裂紋監察儀，並同意 C4 及 C5 裂紋監察儀在工程期間每日進行量度。

豫章堂

於 2021 年 4 月 16 日下午 3 時，豫章堂 1 及 2 號屋負責人羅先生致電，反對在豫章堂 1 及 2 號建築物上安裝任何方式的測量儀及標記。經現場相討後羅先生只容許進行地面沉降監察，其他一律不同意在豫章堂 1 及 2 號建築物上安裝任何方式的測量儀及標記。

工程名稱	合約編號DC/2018/02 – 汀角路污水泵房及污水收集系統改善工程
會議	汀角路污水收集系統改善工程聯絡會議 – 商討於施工期間監察汀角路豫章堂三號屋及羅家祠結構安排
地點	大埔汀角路豫章堂三號屋外
時間	二零二一年六月九日 上午十時正

出席人士	<u>豫章堂三號屋及羅家祠：</u>	
	羅煌生 先生	豫章堂三號屋業主代表及羅家祠負責人
	仇麗敏 女士	豫章堂三號屋業主代表及羅家祠負責人
	<u>渠務署 – Drainage Services Department：</u>	
	趙詩慧 小姐	工程師
	<u>渠務署顧問公司 – AECOM Asia Co. Ltd. (AECOM)：</u>	
	劉達明 先生	駐地盤高級工程師
	傅奕輝 先生	駐地盤高級工程督察
	李采穎 小姐	社區聯絡主任
	<u>渠務署承建商 – 上海建工海外工程有限公司 (上海建工)：</u>	
	楊思勁 先生	助理地盤代表

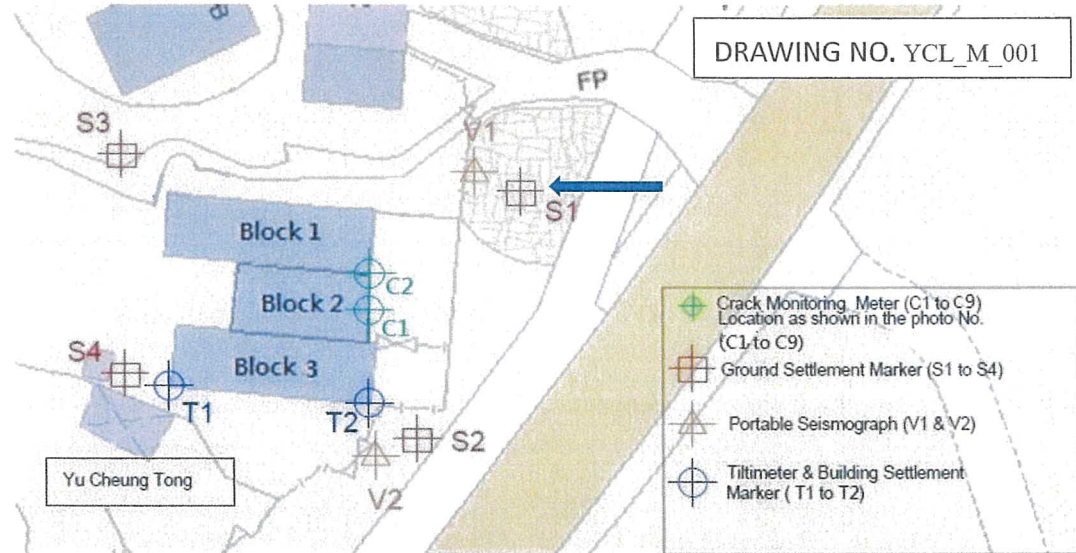
	內容	資料/執行
1	<u>介紹</u>	
1.1	上海建工表示是次會議的目的是向豫章堂三號屋業主代表及羅家祠負責人羅煌生先生及仇麗敏女士商討於工程期間量度安裝在豫章堂三號屋內及羅家祠建築物內的測量及裂縫監測儀器之安排。	資料
2	<u>討論事項</u>	
2.1	上海建工表示，就本年二月二十五日與羅先生商討於工程期間量度豫章堂三號屋及羅家祠的測量及裂縫監察儀器之安排後，已將羅先生的意見（即同意容許工程人員每月進入上址進行監測工作一次），提交古物古蹟辦事處審視，並於本月二日收到古物古蹟辦事處就上述安排的回覆。古物古蹟辦事處建議工程團隊再與羅先生商討增加進入豫章堂三號屋內及羅家祠建築物內進行監測次數至每日一次，以確保工程期間豫章堂三號屋及羅家祠的結構安全。	資料
2.2	仇女士表示若工程人員需每天進入上址進行監測工作，必定對居住於豫章堂三號屋內的家人，特別是對患有腦退化症的家人構成嚴重滋擾及影響。此外，羅先生亦難以安排每日陪同工程團隊進入羅家祠內進行監測。因此，羅先生及仇女士表示強烈反對增加量度次數的要求。仇女士指出，工程團隊已於豫章堂三號屋及羅家祠外牆安裝移動及沉降監測儀器，並可於不進入上址的情況下每天進行監測工作，沒有必要增加進入上址進行監測的次數。	資料

內容	資料/執行
2.3 AECOM表示明白羅先生及仇女士的憂慮，但解釋增加進入上址進行監測次數之目的，是在上址50米範圍內進行工程期間對上址進行狀況監察，以減低工程可能對上址構成的影響。若工程人員未能每天監察上址屋內情況，將可能增加工程對上址構成不良影響的風險。	資料
2.4 羅先生及仇女士表示明白工程團隊的用意，但認為按照早前會議商討的安排（即在不進入上址的情況下每天監察屋外各項測量指標的情況，並每月進入屋內一次進行監測工作），足以了解工程對上址結構的影響。因此，反對增加進入上址進行監測的次數。	資料
2.5 AECOM表示明白羅先生及仇女士的意見，並會再與古物古蹟辦事處商討有關安排。儘管如此，為把工程對上址可能構成之風險減低，工程團隊將於工程期間密切留意上址屋外的狀況。如發現監測數據有異常情況，工程團隊將即時與羅先生及仇女士聯絡商討增加進入上址屋內進行監測工作之次數。	資料
2.6 AECOM及上海建工表示感謝羅先生及仇女士抽空出席會議，並歡迎他們隨時與工程團隊聯絡。	資料
2.7 會議約於上午十時三十分結束。	資料

-會議記錄完畢-

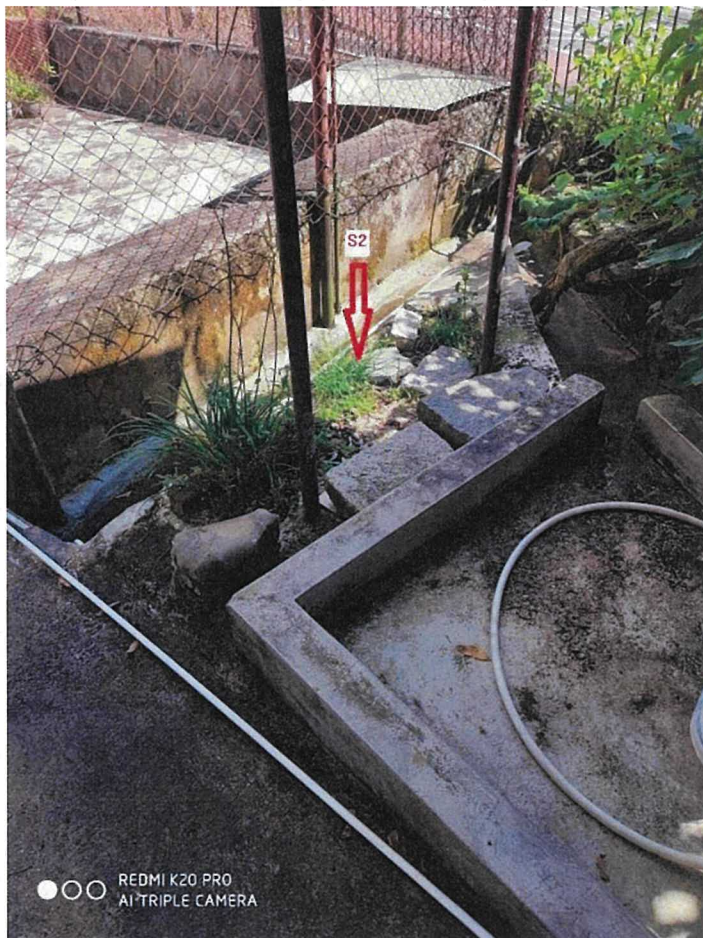
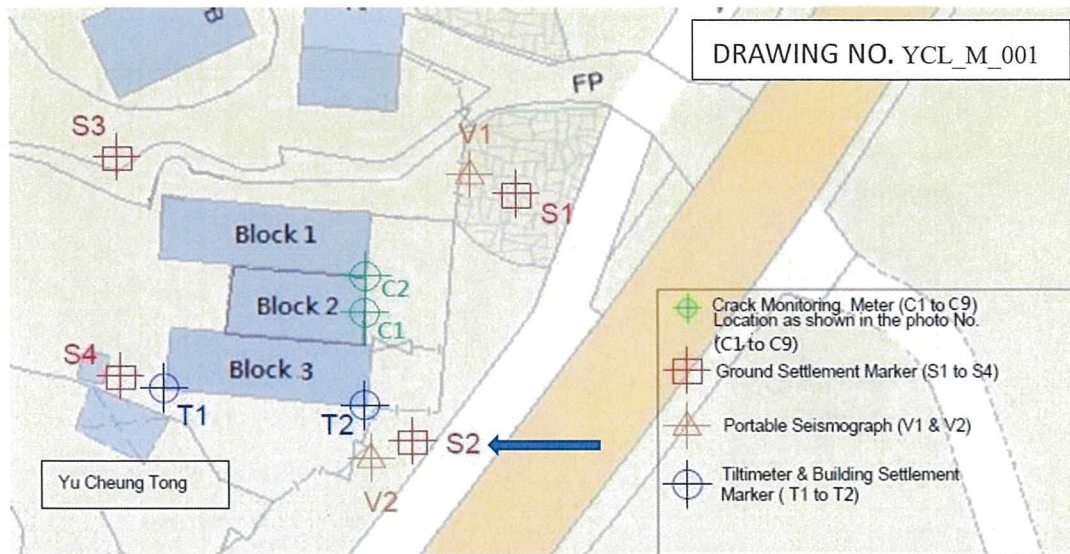
豫章堂

沉降監察點 S1



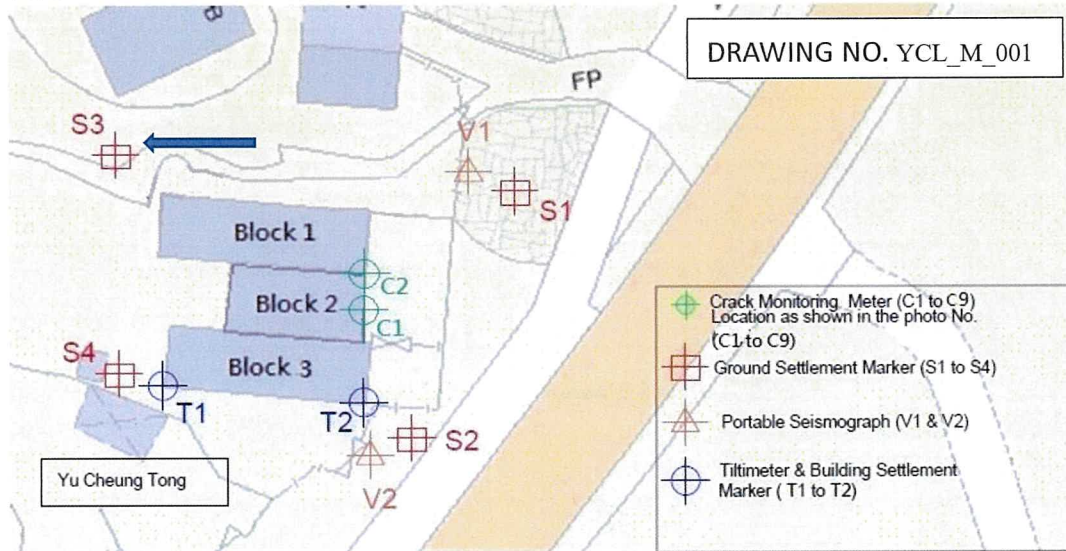
相片 001

沉降監察點 S2



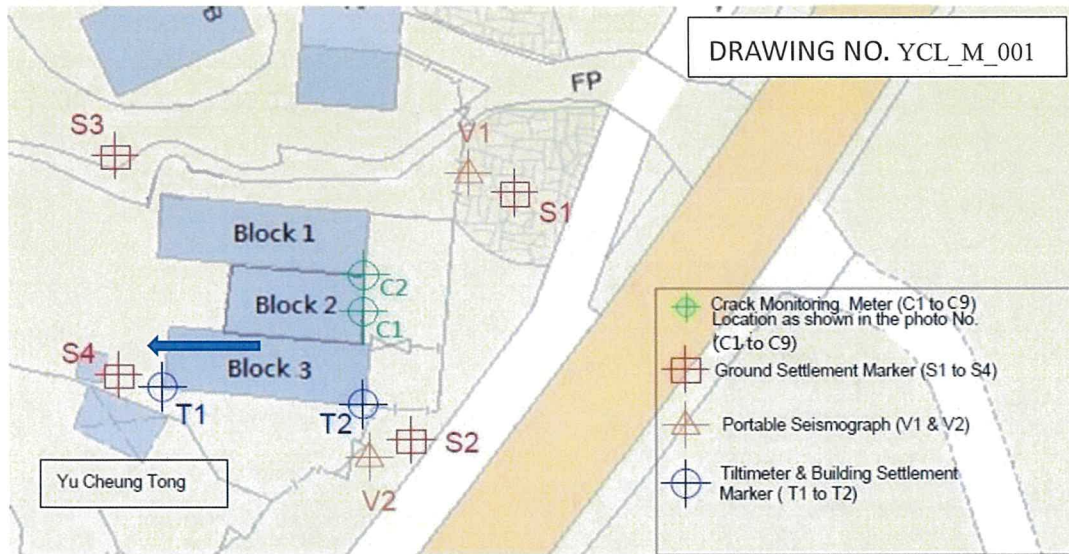
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沉降監察點 S3



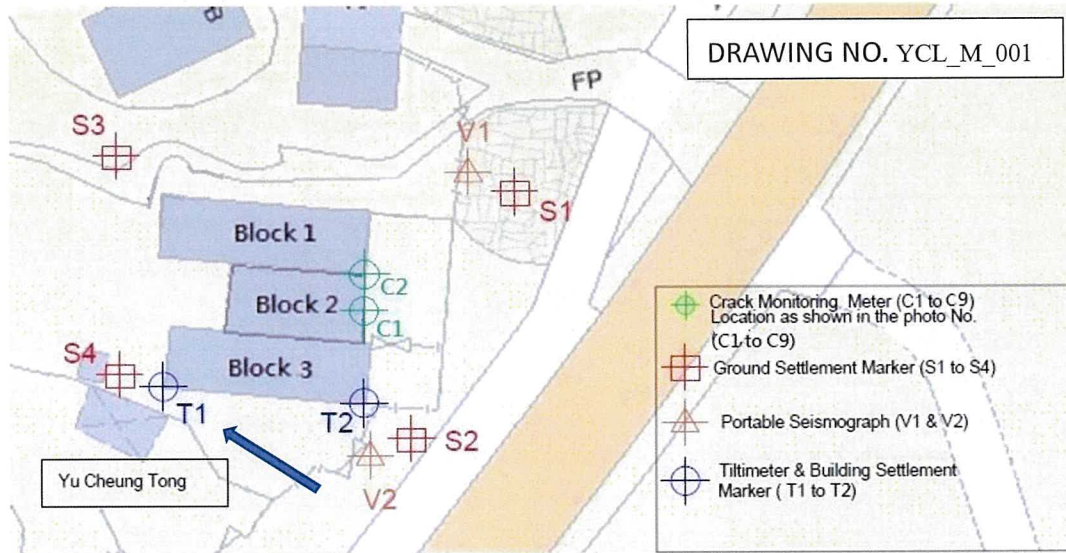
相片 003

沉降監察點 S4



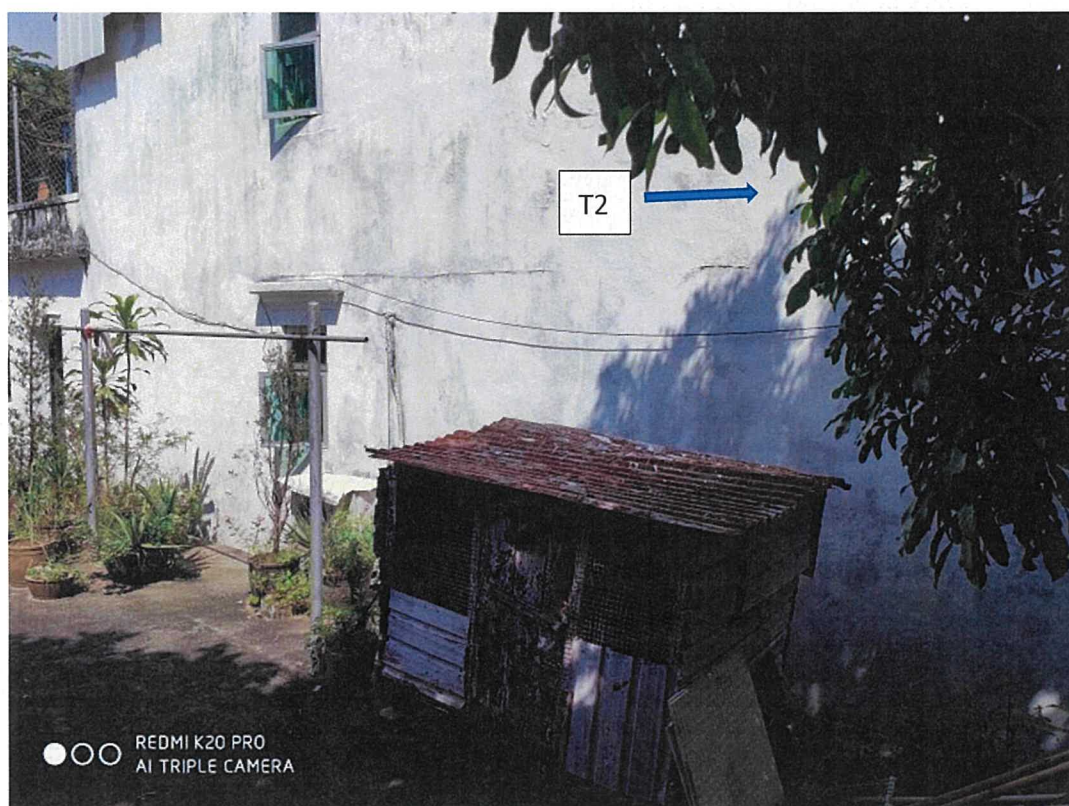
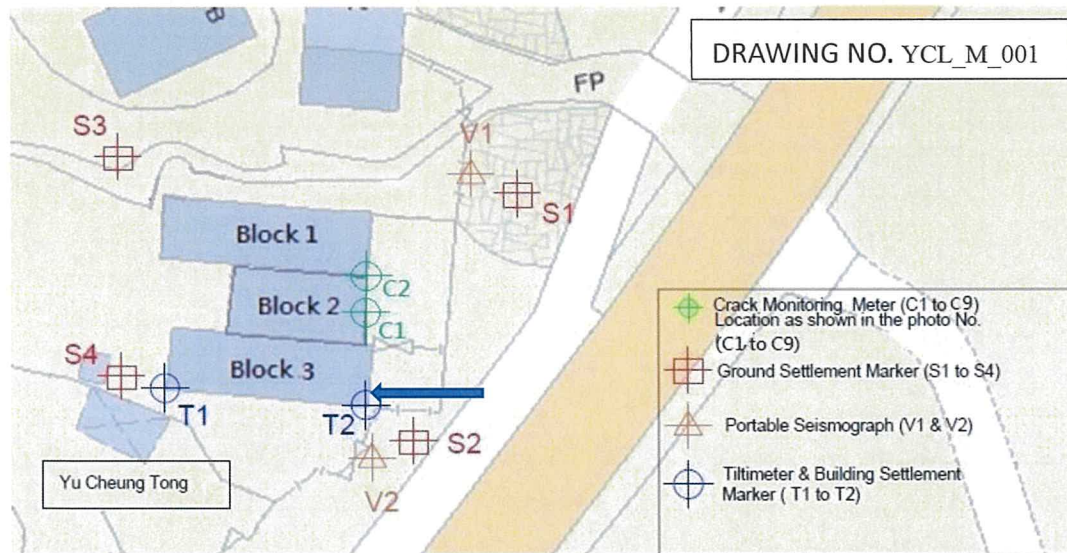
相片 004

樓宇沉降及傾斜監察點 T1



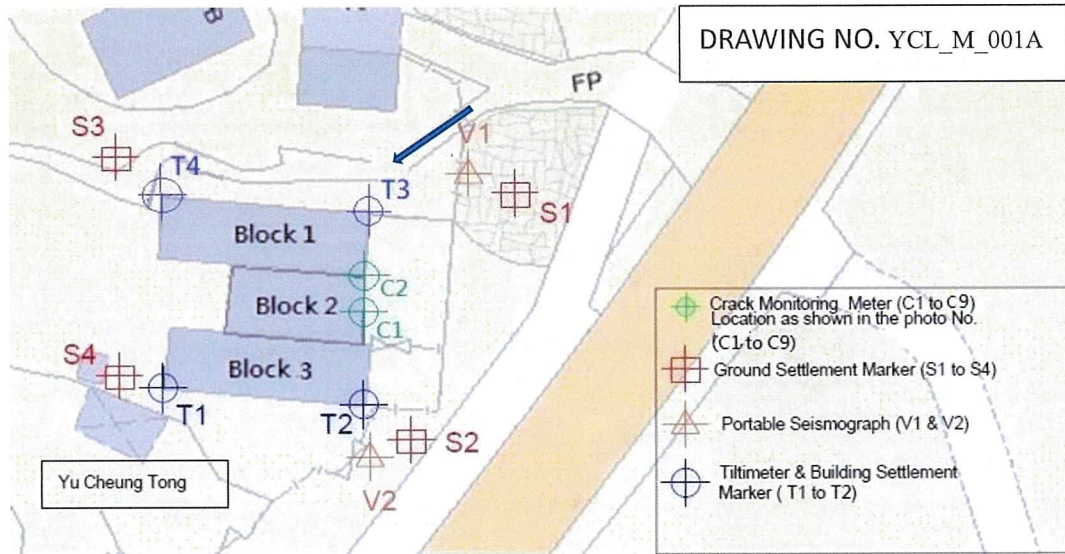
相片 005

樓宇沉降及傾斜監察點 T2



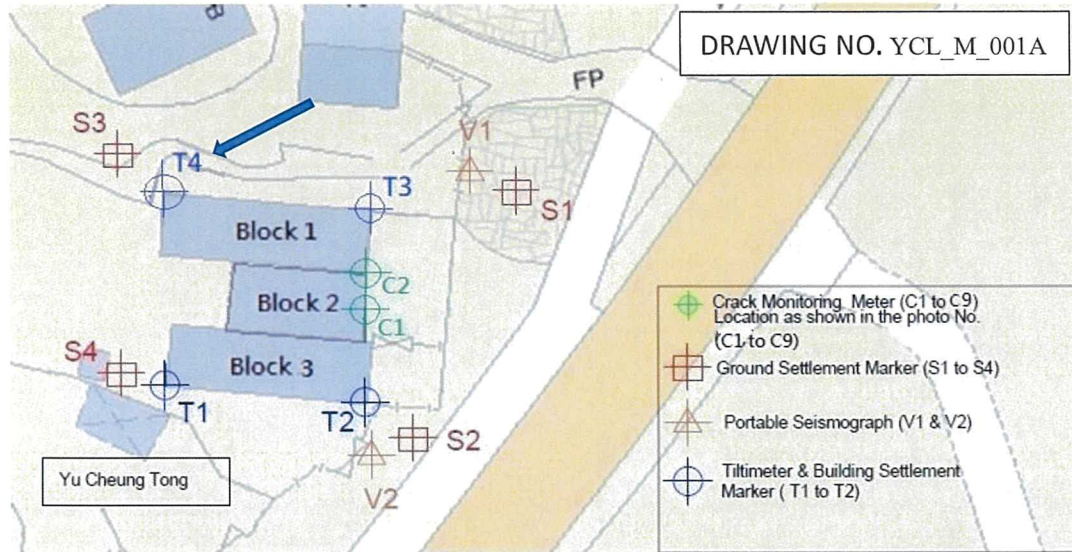
相片 006

樓宇沉降及傾斜監察點 T3



相片 005

樓宇沉降及傾斜監察點 T4

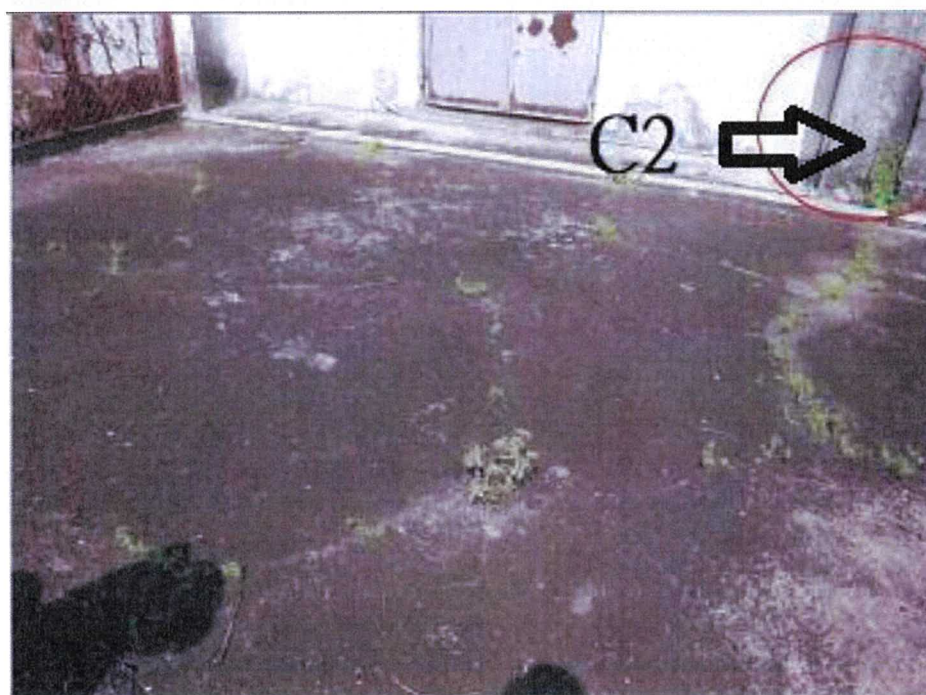


相片 006

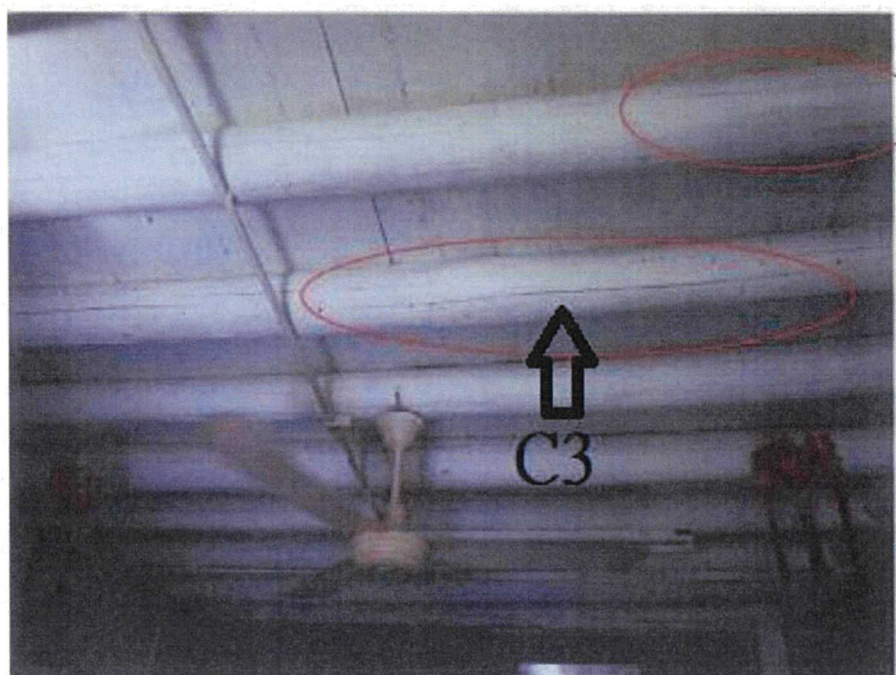
裂紋監察點



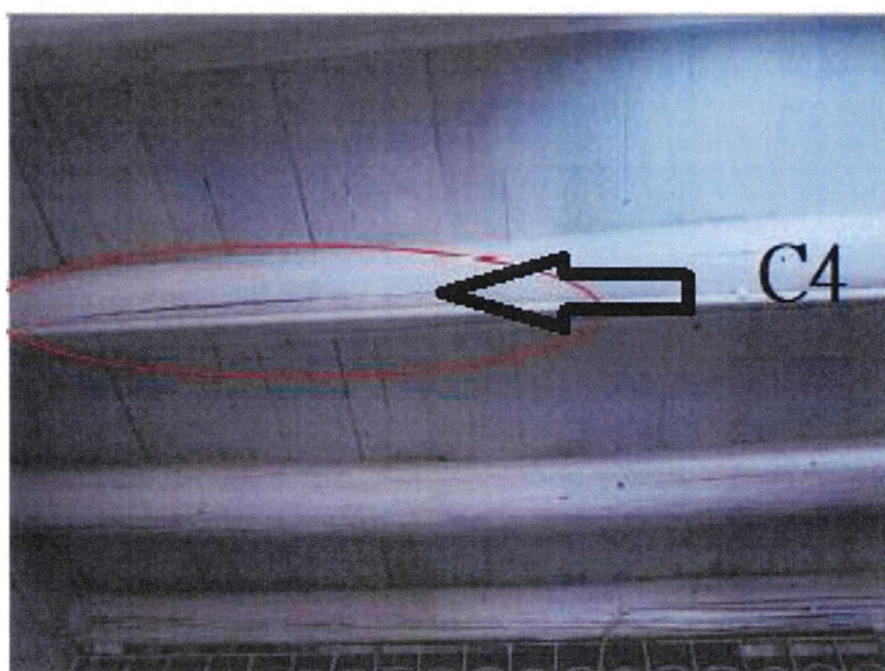
相片 C1(豫章堂 2 號屋外)



相片 C2(豫章堂 2 號屋外)



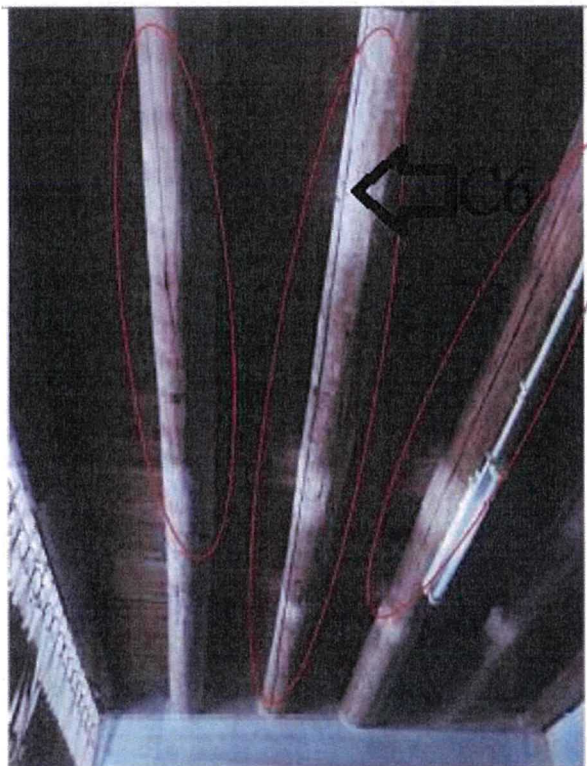
相片 C3(豫章堂 1 號屋內)



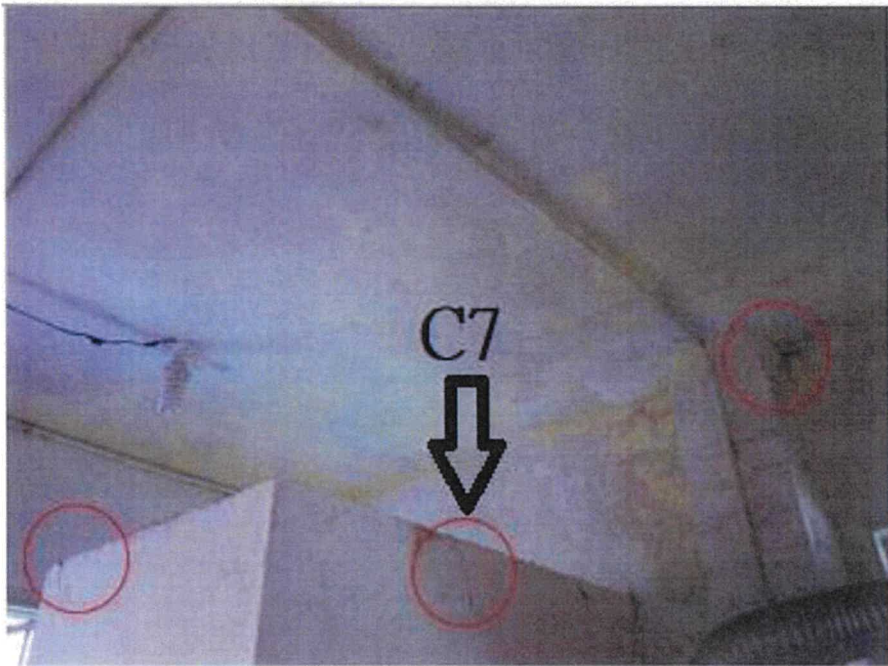
相片 C4(豫章堂 1 號屋內)



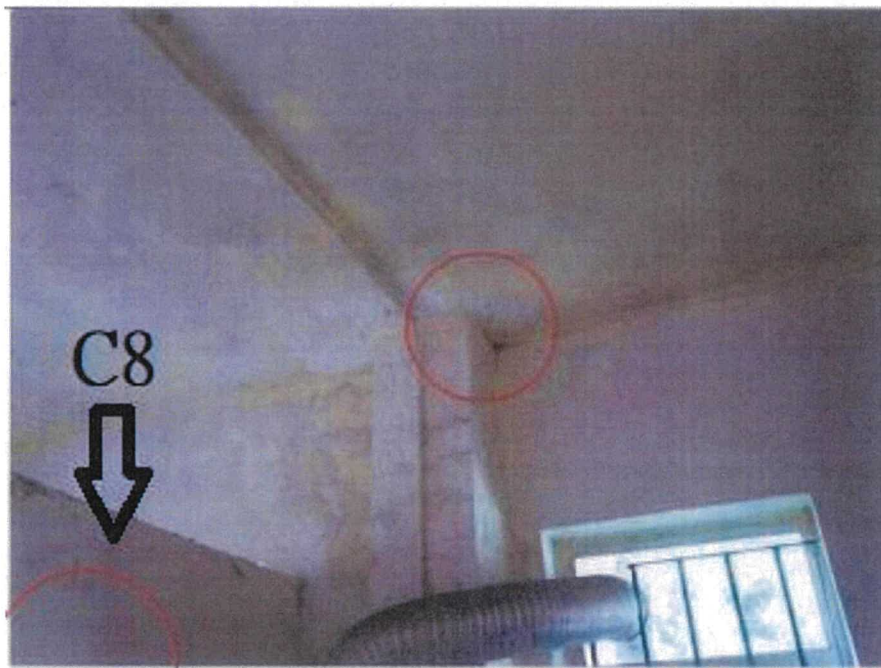
相片 C5(豫章堂 1 號屋內)



相片 C6(豫章堂 1 號屋內)



相片 C7(豫章堂 1 號屋內)

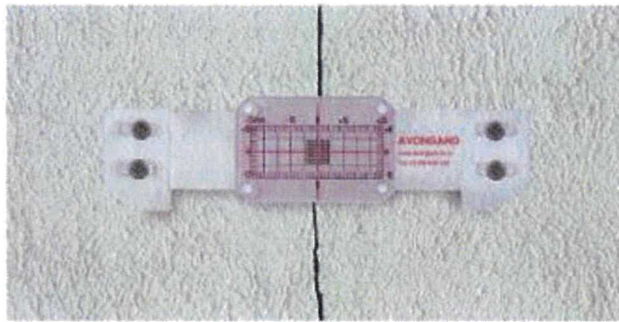
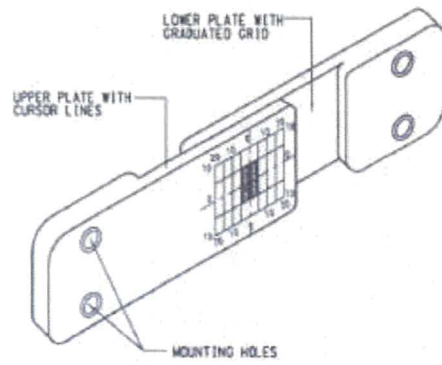


相片 C8(豫章堂 1 號屋內)



相片 C9(豫章堂 1 號屋內)

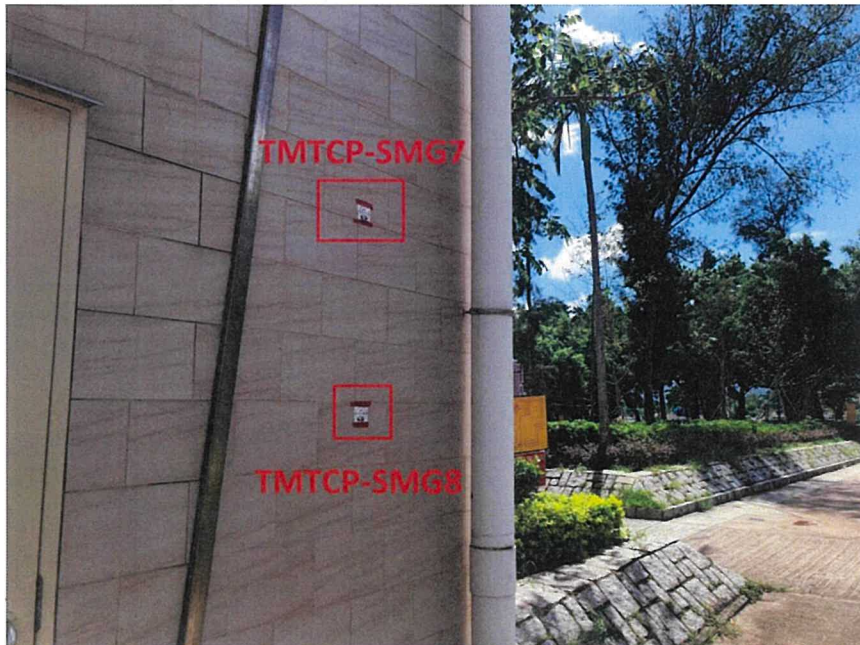
裂紋監察儀



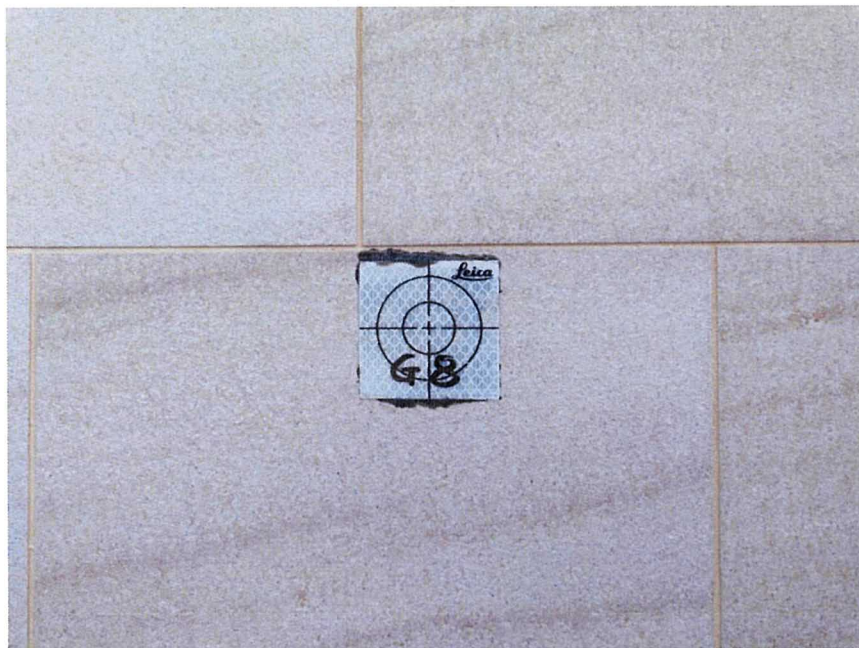
相片 007

樓宇沉降及傾斜監察裝置

(貼紙式測量標記)



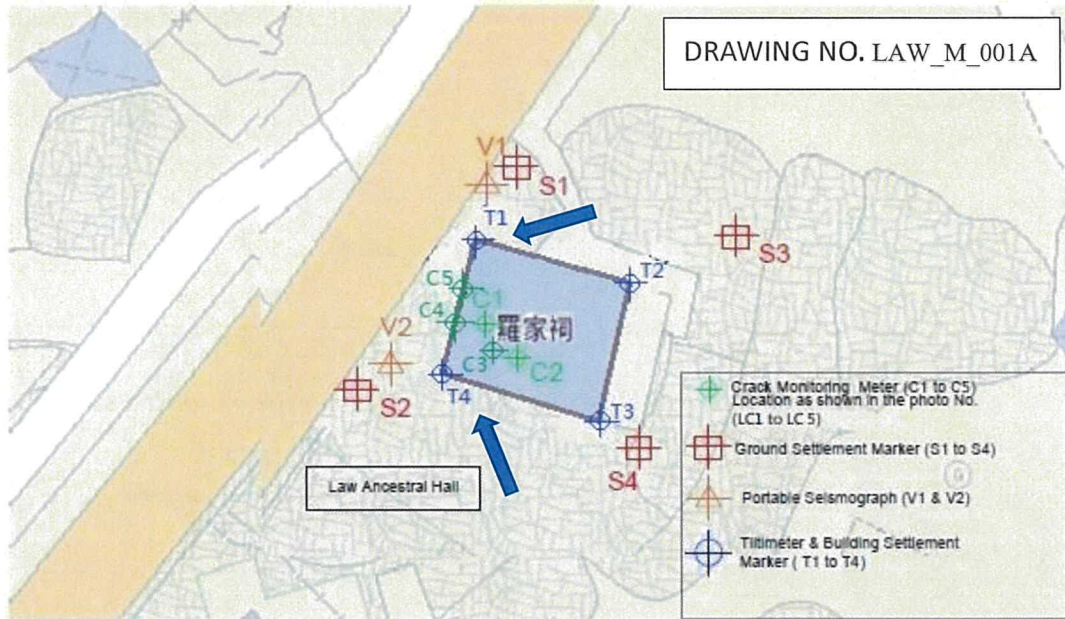
相片 007B



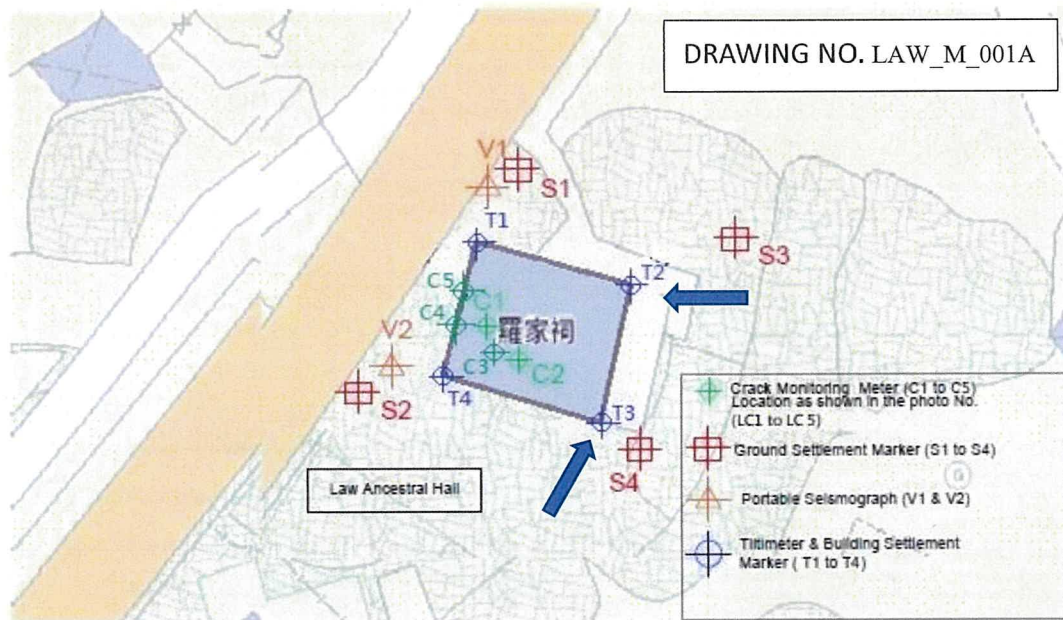
相片 007C

羅家祠

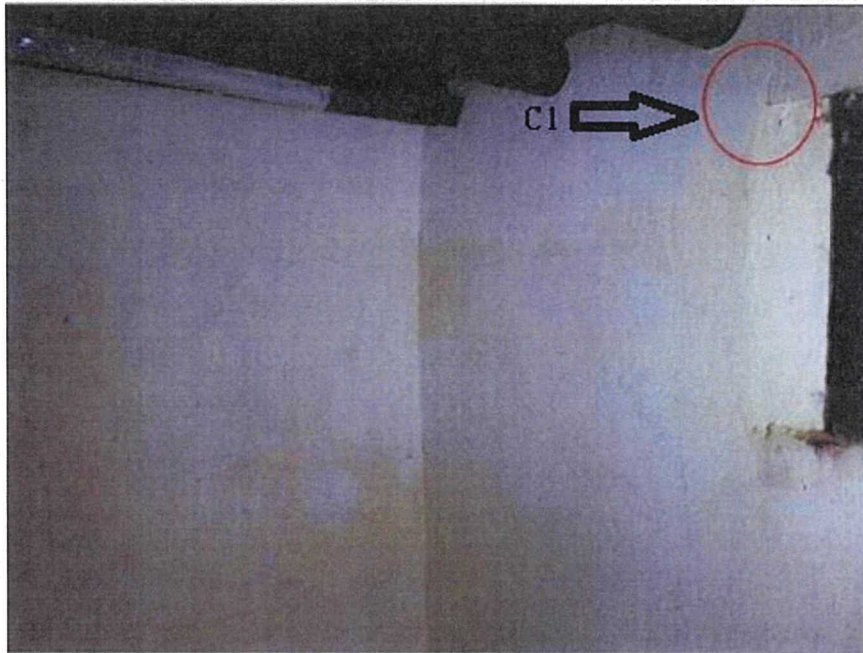
樓宇沉降監察點 T1 及 T4



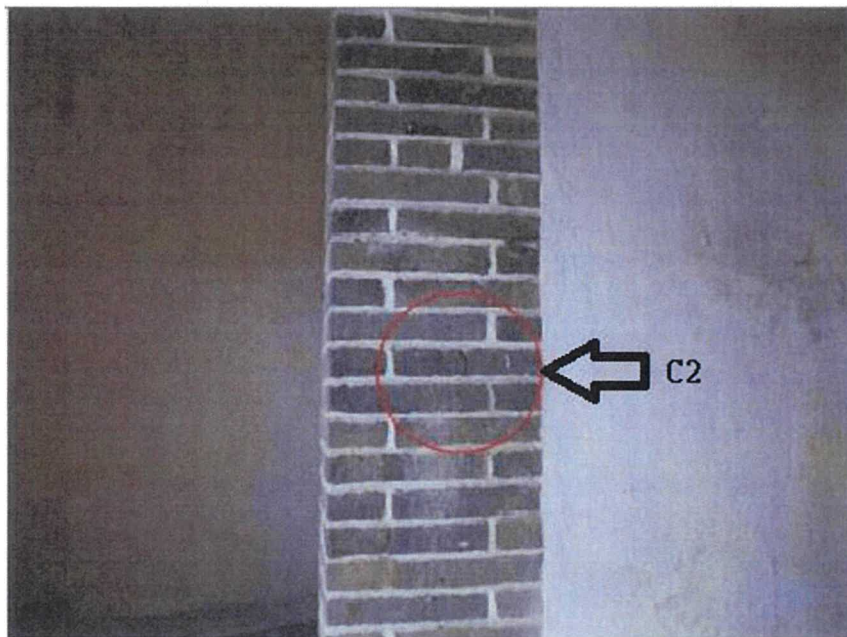
樓宇沉降監察點 T2 及 T3



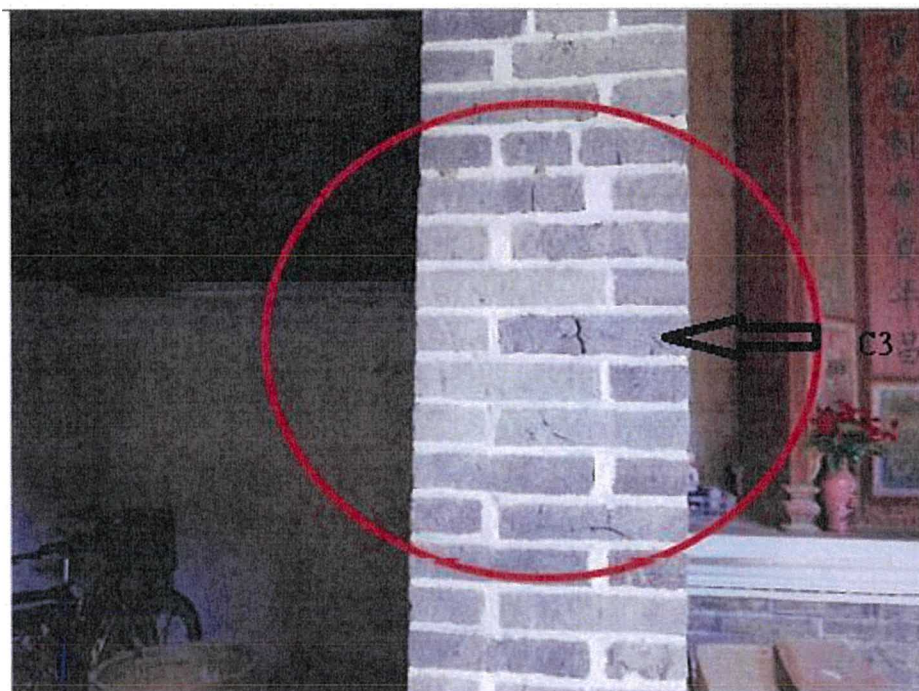
裂紋監察點



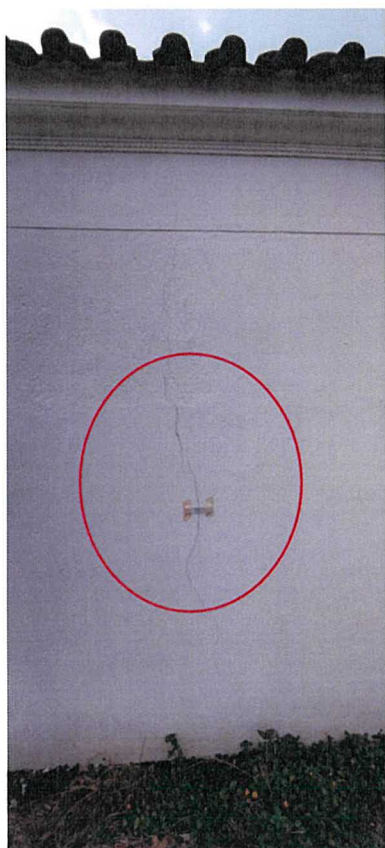
相片 LC1



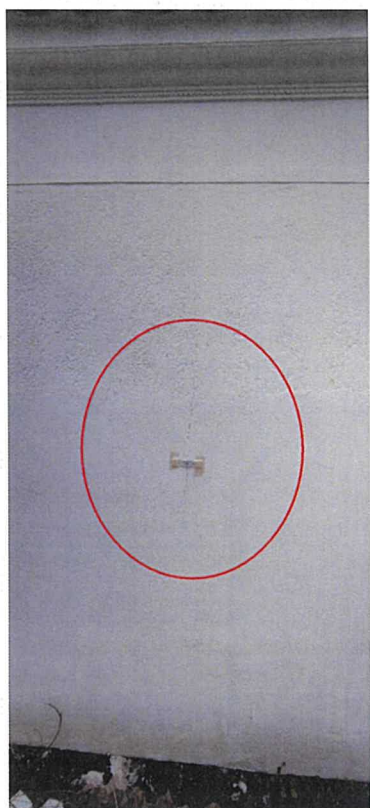
相片 LC2



相片 LC3

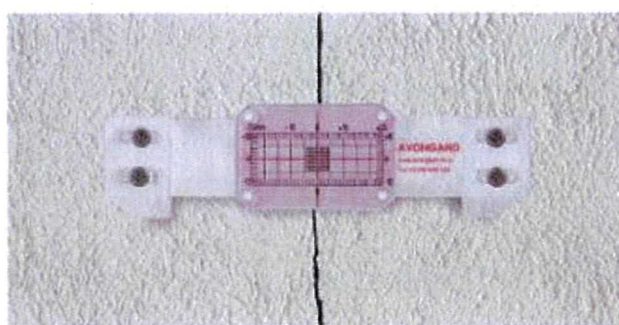
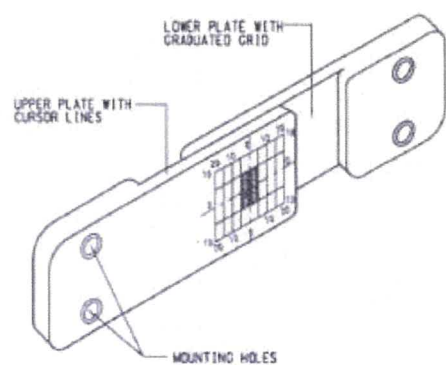


相片 LC4



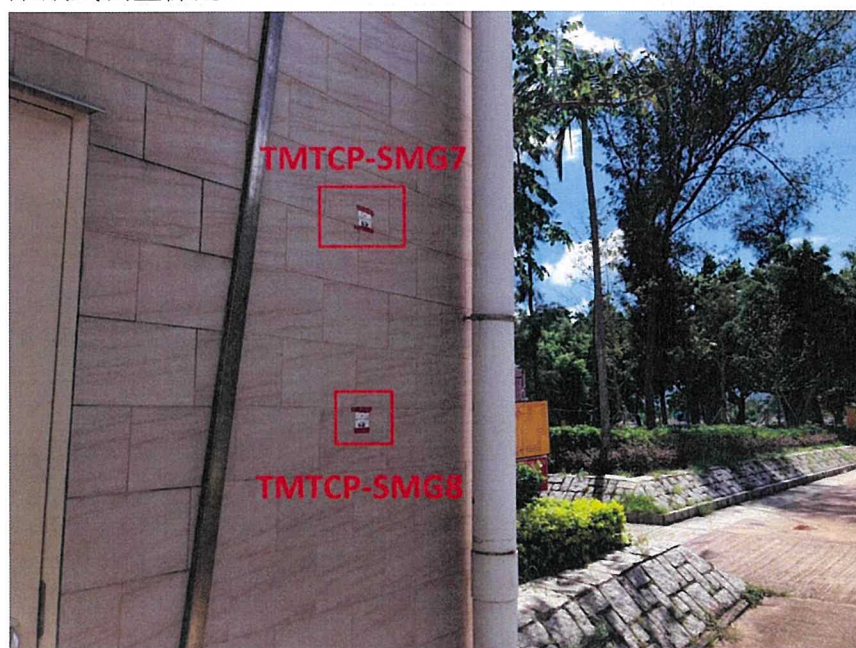
相片 LC5

裂紋監察儀

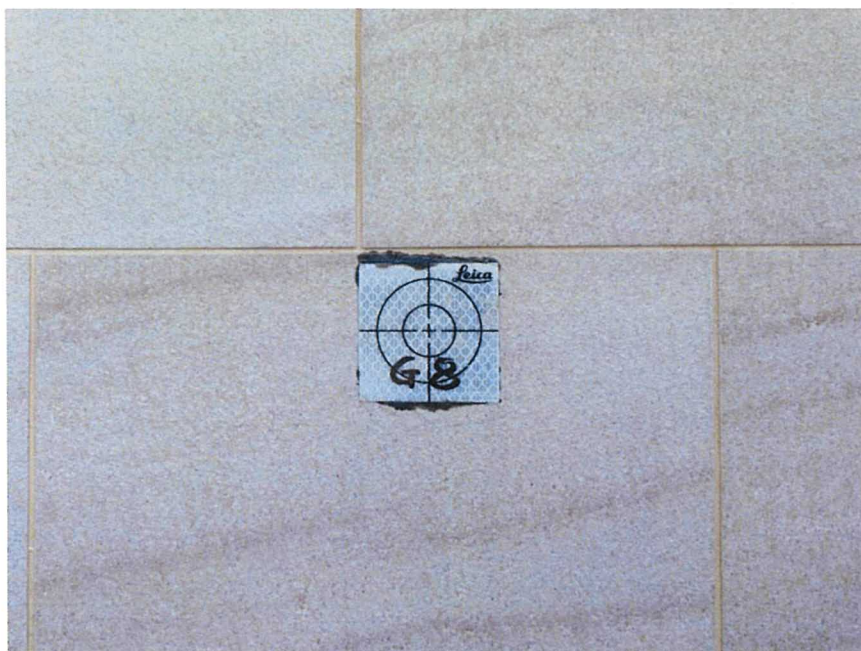


相片 007

傾斜監察裝置
貼紙式測量標記



相片 007B



相片 007C

APPENDIX I –

**Notice for Installation of Monitoring
Instrument at Yu Cheung Tong
Block 1 and 2**



Shanghai Construction Overseas Engineering Ltd
上海建工海外工程有限公司

Tel:(852) 2682 6691 Fax:(852) 2682 2783

Room 603, Elite Industrial Centre,
883 Cheung Sha Wan Road,
Lai Chi Kok, Kowloon
九龍荔枝角長沙灣道883號
德利工業中心6樓603室

本署檔號: DC201802-SUB-4469

致豫章堂 1 及 2 號屋負責人羅玉華先生:

渠務署工程合約編號: DC/2018/02
汀角路污水泵房及污水收集系統改善工程

於豫章堂 1 及 2 號屋安裝測量監測儀器

為配合汀角路近豫章堂的污水收集系統改善工程，本司及工程顧問公司代表曾於本年 4 月 16 日到訪與閣下相討在豫章堂 1 及 2 號屋建築物上安裝測量及裂縫監測儀器的安排，以便在工程進行期間對豫章堂進行狀況監察，以減低工程可能對上址構成的影響。唯在會面期間，閣下表示反對於豫章堂 1 及 2 號屋建築物上安裝任何測量及裂縫監測儀器，只同意讓工程人員在建築物外圍進行有關測量監察工作。

在會面後本司已將閣下的意見提交古物古蹟辦事處審視，並於本年 6 月 2 日收到古物古蹟辦事處就上述安排的回覆。古物古蹟辦事處建議本司再次與閣下聯絡，解釋加裝相關測量及裂縫監測儀器並增加監測次數的重要性。唯本司曾多次到訪及致電閣下，仍未能與閣下接觸。故本司希望在此重申，有關測量及裂縫監測儀器是為確保於工程進行期間，工程人員能對豫章堂的狀況進行密切監察，以減低工程可能對豫章堂構成之不良影響的風險。

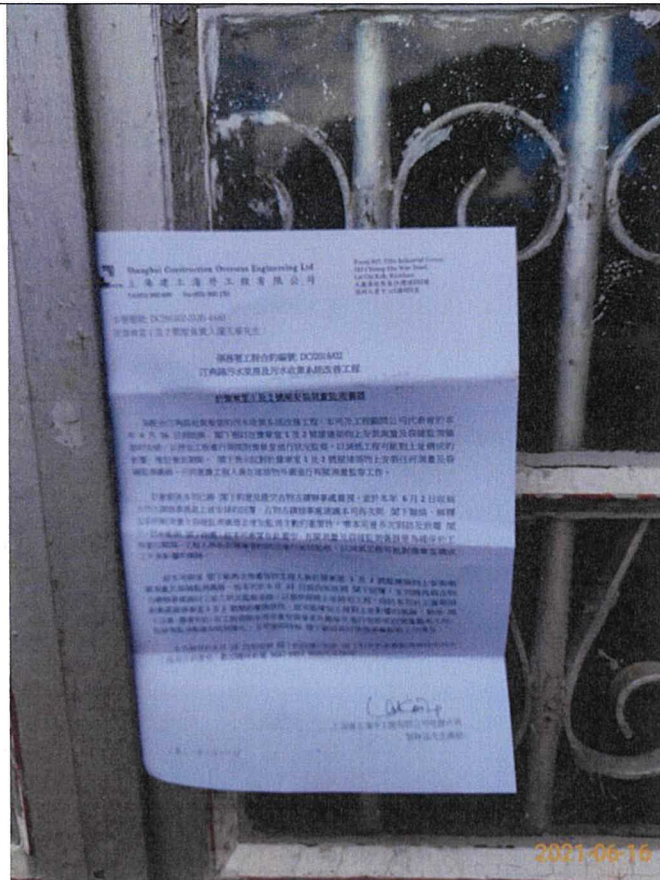
故本司期望閣下能再次考慮容許工程人員於豫章堂 1 及 2 號屋建築物上安裝相關測量及裂縫監測儀器。如本司於本月 23 日前仍未收到閣下回覆，本司將再與古物古蹟辦事處商討上址之狀況監察安排，以盡快展開上址附近工程。由於本司於工程期間較難掌握豫章堂 1 及 2 號屋的實際狀況，故可能增加工程對上址影響的風險，敬希閣下注意。儘管如此，在工程期間本司亦會在豫章堂外圍每天進行有限度的測量監察工作。如發現監測數據有特別變化，本司會即時與閣下聯絡商討加強測量監察工作事宜。

本司期待於本月 23 日前收到閣下的回覆。如果閣下對安裝測量監測儀器或對本工程有任何意見，歡迎隨時致電 9047 9952 與楊先生聯絡

上海建工海外工程有限公司地盤代表
黎幹廷先生謹啟

二零二一年六月十六日





Contract No. DC/2018/02
Upgrading of Sewage Pumping
Stations and Sewerage Along
Ting Kok Road

Condition Survey Report on a
Grade 3 Historical Building
(Law Ancestral Hall)

P19076/CSR/001 (Issue 7)

Wings & Associates Consulting Engineers Ltd.
6th Floor, Everwin Centre,
72 Hung To Road,
Kwun Tong,
Kowloon

June 2021

The Client:
Shanghai Construction Oversea Engineering Limited

DOCUMENT CONTROL			Contract No. DC/2018/02 Upgrading of Sewage Pumping Stations and Sewerage Along Ting Kok Road	No: P19076/CSR/001 (Issue 7)	
AMENDMENT RECORD				Prepared By:	TC
Condition Survey Report on a Grade 3 Historical Building (Law Ancestral Hall)			Client Shanghai Construction Oversea Engineering Limited	Initial:	TC
				Date:	June 2021
Pages	Date	Issue No	Description	Initials	
All	September 2019	1	Condition Survey Report (Law Ancestral Hall)	KS	
All	January 2020	2	Condition Survey Report (Law Ancestral Hall)	TC	
All	May 2020	3	Condition Survey Report (Law Ancestral Hall)	TC	
All	July 2020	4	Condition Survey Report (Law Ancestral Hall)	TC	
All	October 2020	5	Condition Survey Report (Law Ancestral Hall)	TC	
All	May 2021	6	Condition Survey Report (Law Ancestral Hall)	TC	
All	June 2021	7	Condition Survey Report (Law Ancestral Hall)	TC	

Amendment Summary

Issue No.	Date of Amendment	Revised Section/ Table
Issue 7	17 June 2021	Appendix C; Appendix H; Appendix I;

General Amendment:


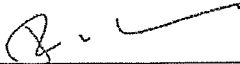
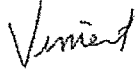
- 1) 9 June 2021 LIAISON MEETING MINUTES are supplement on Appendix H.
- 2) Notice for Installation of Monitoring Instrument at Yu Cheung Tong Block 1 and 2 are supplement on Appendix I.
- 3) Monitoring Plan are revised on Appendix C.

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APPENDICES

Appendix A	– Building Location Plan
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Appendix C	– Location Plan of Proposed Monitoring Points
Appendix D	– Typical Details of Monitoring Instrument
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Appendix H	–Liaison Record with The Owner

	Name	Signature	Date
Prepared by	Terry CHAU		17 June 2021
Checked by	Dickson FU		17/6/2021
Authorized by	Vincent TAM MHKIE, MICE CEng, RPE (CVL, STL, GEO)		17/6/2021

1. INTRODUCTION

1.1 Background

1.1.1 The purpose of this condition survey is to record the general conditions and defects of **Law Ancestral Hall**, a **Grade 3 Historic Building** in the vicinity of the site before commencement of construction works of upgrading the sewage pumping stations and sewerage along Ting Kok Road.

1.2 The Extent of Survey

1.2.1 This report describes the identified apparent defects on or inside Law Ancestral Hall. An overview of the apparent defects and details of defects picked up at the survey are addressed.

1.2.2 Our survey team was equipped with camera, survey sheets and layout plan to carry out a visual inspection to the accessible area. Photographs were taken to record the condition of the building.

1.2.3 Any readily apparent defects are identified and recorded in this report.

1.3 Date of Survey

1.3.1 The pre-construction condition survey was conducted on 15th July 2019. The weather was sunny at the time of inspection.

2. DESCRIPTION OF THE TARGET BUILDINGS

2.1 Building Description

- 2.1.1 Law Ancestral Hall is located within 50m away from the construction site of upgrading the sewage pumping stations and sewerage along Ting Kok Road. It is a low-rise building with only one-storey height in about 3 meters height. The building was made up of brick masonry with timber supports.
- 2.1.2 No As-built record plan can be retrieved from the BRAVO site of the Buildings Department.
- 2.1.3 The foundation system of Law Ancestral Hall was estimated as a Pad Footing.
- 2.1.4 Law Ancestral Hall is in **fair condition** in general except some wide cracks are found on columns. Also, significant wide cracks were found on the ground pavement at the front garden.
- 2.1.5 The Location of Law Ancestral Hall and the inspection area are shown in **Appendix A**.

2.2 Historic Grading

- 2.2.1 Law Ancestral Hall was confirmed as Grade 3 historic building by the Antiquities Advisory Board in March 2011. “**Grade 3 Historic Building**” is defined as “buildings of some merit; preservation in some form would be desirable and alternative means should be considered if preservation is not practicable”.

2.3 Materials of Construction

- 2.3.1 The materials of construction of different parts of the buildings is estimated as follows:

Materials	Roof	Tile Roofing with timber support
	Wall	Brick masonry
	Floor	Concrete

3. DEFECT RECORDS IDENTIFIED IN THE SURVEY

3.1 Definition of Defects and Findings

3.1.1 The terms used in the description of defects shall be interpreted as follows:

1. Fine Crack Maximum crack width smaller than or equal to **0.3mm**
2. Moderate crack Maximum crack width **larger than 0.3mm and smaller than 1mm**
3. Wide Crack Maximum crack width **larger than 1mm**

4. RECORD PHOTOS

4.1 Photo List of Law Ancestral Hall

4.1.1 The photographic record of the general view of the building and all the defects was included in **Appendix B**. The photo list of the building can be found as follows:

Table 4.1 – Photo List of Law Ancestral Hall

Photo No.	Location	Identified defects
001	Opposite road of Law Ancestral Hall	No
002	North side of Law Ancestral Hall	No
003	North side of Law Ancestral Hall	No
004	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement
005	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement
006	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement
007	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement
008	In Front of Law Ancestral Hall (East side)	No
009	In Front of Law Ancestral Hall (East side)	Wide cracks on Concrete Pavement
010	In Front of Law Ancestral Hall (East side)	Wide cracks on Concrete Pavement
011	South Side of Law Ancestral Hall	No
012	South Side of Law Ancestral Hall	No
013	Inside Law Ancestral Hall	No
014	Inside Law Ancestral Hall	No
015	Inside Law Ancestral Hall	Spalling on the Wall near the Window
016	Inside Law Ancestral Hall	No
017	Inside Law Ancestral Hall	No

018	Inside Law Ancestral Hall	No
019	Inside Law Ancestral Hall	No
020	Inside Law Ancestral Hall	No
021	Inside Law Ancestral Hall	Wide cracks on the Brick Column of the Building
022	Inside Law Ancestral Hall	No
023	Inside Law Ancestral Hall	Wide cracks on the Brick Column of the Building
024	Inside Law Ancestral Hall	No
025	Inside Law Ancestral Hall	No
026	Inside Law Ancestral Hall	No
027	Inside Law Ancestral Hall	No
028	Inside Law Ancestral Hall	No
029	Inside Law Ancestral Hall	No
030	Inside Law Ancestral Hall	No
031	Inside Law Ancestral Hall	No
032	Inside Law Ancestral Hall	No
033	Inside Law Ancestral Hall	No
034	Inside Law Ancestral Hall	No
035	Inside Law Ancestral Hall	No
036	Inside Law Ancestral Hall	No
037	Inside Law Ancestral Hall	No
038	External Law Ancestral Hall	Wide cracks on external wall
039	External Law Ancestral Hall	Wide cracks on external wall

4.1.2 The recommendation on crack monitoring on the above identified cracks will be discussed in **Section 5** below.

**5. APPRAISAL ON THE EFFECTS OF PROPOSED CONSTRUCTION WORKS
ON THE TARGET BUILDING**

5.1 Proposed Construction Works in vicinity to the Target Building

5.1.1 The proposed sewerage improvement work will be carried out adjacent to the existing historic building along Ting Kok Road.

5.1.2 The ELS works may be included during the construction.

5.2 Appraisal on the Likely Effects of the construction works on Law Ancestral Hall

5.2.1 The excavation works may induce vibration to the historic building and also cause differential settlement and/ or tilting.

5.2.2 Monitoring work is therefore proposed during construction period within possible affected area to keep track on the construction effects.

6. RECOMMENDATION

6.1 Recommended Monitoring Measures

- 6.1.1 During construction works, the *Contractor* shall carry out closely visual inspection on Law Ancestral Hall and monitor the possible effects.
- 6.1.2 Settlement and tilt monitoring points will be installed to monitor the excavation and the structure settlement adjacent to the subject historic building.
- 6.1.3 Differential settlement of ground is recommended to be measured by pin-type **Ground Settlement Markers** with three directions measurements.
- 6.1.4 Tilting and differential settlement of the building shall be measured by comparing the relative positions of a **Reflective Tape Targets**.
- 6.1.5 Cracks monitoring by **Crack Meter** (Tell-tale Crack Monitoring Gauge) is recommended for major cracks (i.e. initial crack width more than 3mm) identified during the pre-construction site inspection. The erasable marks shall be marked on the locations as agreed by the Project Manager/ Supervisor, house owner as well as the relevant authorities.
- 6.1.6 Also, a **Portable Seismograph** will be used to measure and record the peak particle velocity and amplitude caused by the construction (i.e. driving of sheet piles) to ensure the ground vibrations are kept to within acceptable limits.
- 6.1.7 The recommended locations of the Ground Settlement Markers, Reflective Tape Targets, Erasable Marks and Vibration Monitoring are shown on the updated Plan enclosed in **Appendix C**.

Table 6.1 – Number of Monitoring Point

Structural Monitoring Instrument	Number of Monitoring Point
Ground Settlement Markers	4 nos. (S1, S2, S3 and S4)
Reflective Tape Targets	4 nos. (T1, T2, T3 & T4)
Crack Width Ruler	2 nos. (C2, C3, C4, C5)
Portable Seismograph	2 nos. (V1 & V2)

- 6.1.8 Typical Details of Ground Settlement Markers, Reflective Tape Targets, Crack Meter and Portable Seismograph are illustrated in **Appendix D**.

6.2 Recommended Protective Measures

6.2.1 The assessment on the implication of installation of monitoring instrument to the target buildings / structures is outlined as follows:

Table 6.2 – Assessment on the Implication of Installation of Monitoring Instrument

Structural Monitoring Instrument	Assessment on the Implication
Ground Settlement Markers	No impact to the Target Building. The instrument will be installed on the ground outside the building footprint.
Reflective Tape Targets	No impact to the Target Building. The instrument will be stucked to the wall surface without damage to historic fabric of the target building.
Crack Meters (Tell-tale Crack Monitoring Gauge)	Very minor impact to the wall surface of the Target Building. The instrument will be fixed to the wall surface of the target building by means of epoxy resin. (The crack meters shall be installed at locations as agreed by the Owner as well as the relevant Authorities.)
Portable Seismograph	No impact to the Target Building. The instrument is portable and will put on the ground surface with a levelling pad.

6.2.2 For installation of Ground Settlement Markers, Reflective Tape Targets and Portable Seismograph, there is no impact to the Target Building.

6.2.3 The crack meters will be removed after completion of the construction works within 50m of the building. As the instrument is fixed using epoxy resin, it can be easily removed without causing damage to the historic fabric. The location of the crack monitoring points shall be agreed with the House Owner as well as the relevant Authorities.

6.3 Monitoring Frequency and Corresponding Limits

- 6.3.1 When there is construction works within 50m of the graded building, the settlement, tilting, cracks and vibration monitoring shall be conducted on a **daily basis** except for those cracks identified inside Law Ancestral Hall, which would be conducted on a **monthly basis**. (Please refer to Item 2.4 in the minutes of liaison meeting held on 9 June 2021 – Appendix H))
- 6.3.2 All the relevant monitoring equipment's with operation methodology should be agreed by the *Project Manager*. *Contractor* should seek for the consent of installing the monitoring equipment(s) from the owners of the building and advise them about the nature and type of monitoring to be carried out before installing the corresponding monitoring equipment(s).
- 6.3.3 The *Contractor* will implement the Monitoring Measures by installation of instrumentation to collect baseline data in advance of the works. The *Contractor* will carry out continuous monitoring works when there are construction works to be carried out within 50m of the building.
- 6.3.4 The monitoring works based on this condition survey will be recorded in separate monitoring reports and submitted to the *Project Manager* during the course of construction. The same monitoring records would be submitted to AMO on a monthly basis, and AMO would be alert if any irregularities in the monitoring readings are observed.
- 6.3.5 The recommended Alert, Action and Alarm limits of monitoring works are shown as follow:

Table 6.3 – 3A Level for Monitoring

Type of Structural Monitoring	ALERT Level	ALARM Level	ACTION Level
Crack Width Monitoring	Develop over 20%	Develop over 35%	Develop over 50%
Horizontal and Vertical Settlement	5mm	8mm	10mm
Vibration (Peak Particle Velocity)	5mm/s	6mm/s	7.5mm/s

Building Tilting Marker For Existing Historic Building	1:2000	1:1500	1:1000
---	--------	--------	--------

6.3.6 According to the P.S. Clause 1.90(9), **3mm/s for continuous vibration** is recommended in accordance with the guide values of maximum ppv as recommended in the PNAP No. APP 137 issued by the Buildings Department.

6.3.7 With reference to the P.S. Clause 1.90(8), Crack Width Ruler is proposed to monitor the major cracks (i.e. initial crack width more than 3mm) excluding the spalling identified during the pre-construction site inspection. The crack width should be monitored to ensure no further deterioration. If the cracks are reported to further develop over 50 % during the course of construction, the *Contractor* should stop the works and identify the reasons before resuming the construction works.

6.3.8 The recommendations on crack monitoring on the identified cracks are outlined as follows:

Table 6.4 – Recommendations on Crack Monitoring

Photo No.	Location	Identified defects	Recommendations on Crack Monitoring
004	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
005	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
006	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
007	Front ground of Law Ancestral Hall	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
009	In Front of Law Ancestral Hall (East side)	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
010	In Front of Law Ancestral Hall (East side)	Wide cracks on Concrete Pavement	Not Required to monitor cracks on Concrete Pavement
015	Inside Law Ancestral Hall	Spalling on the Wall near the	Defect found to be spalling instead of crack. Thus,

		Window	crack monitoring is not required (Point C1) (Please refer to the minutes of liaison meeting held on 9 June 2021- Appendix H)
021	Inside Law Ancestral Hall	Wide cracks on the Brick Column of the Building	Crack monitoring on <u>monthly basis</u> is recommended (Point C2)
023	Inside Law Ancestral Hall	Wide cracks on the Brick Column of the Building	Crack monitoring on <u>monthly basis</u> is recommended (Point C3)
038	Behind of Law Ancestral Hall (West Side)	Wide cracks on the wall	Crack monitoring on <u>daily basis</u> is recommended (Point C4)
039	Behind of Law Ancestral Hall (West Side)	Wide cracks on the wall	Crack monitoring on <u>daily basis</u> is recommended (Point C5)

6.3.9 The *Contractor* shall follow the recommendations on monitoring frequency and all Alert, Action and Alarm limits or the recommendations in accordance with the Particular Specification of the Contract and / or to be agreed with the *Project Manager*. The corresponding actions when reaching the Alert, Alarm and Action levels are shown as follows:

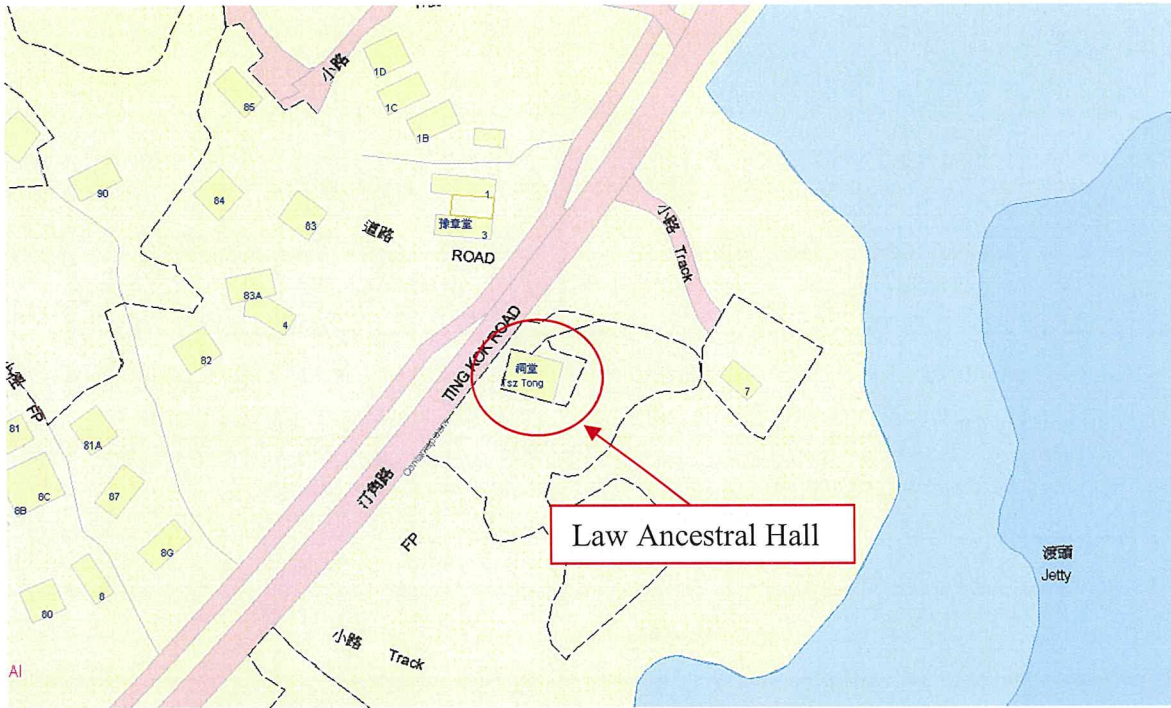
Table 6.5 – Actions for Reaching to 3A Limits

Response Value	Actions to be Taken Immediately by the <i>Contractor</i>
Alert Limit	<ul style="list-style-type: none"> ▪ Inform the Project Manager, beware of it and keep monitoring and recording
Alarm Limit	<ul style="list-style-type: none"> ▪ Inform the <i>Project Manager</i>, review and agree with the <i>Project Manager</i> to a revised working procedure to minimize the construction impact of the works on the existing structures so as to control and maintain the level. ▪ Increase the monitoring frequency as agreed with the <i>Project Manager</i>
Action Limit	<ul style="list-style-type: none"> ▪ Cease all construction work and inform the <i>Project Manager</i> immediately. ▪ Further review and agree with the <i>Project Manager</i> on an improved construction method so as to scale down the impact on the existing structures to below the action limit level. ▪ Seek approval from the <i>Project Manager</i> before recommencement of the works.

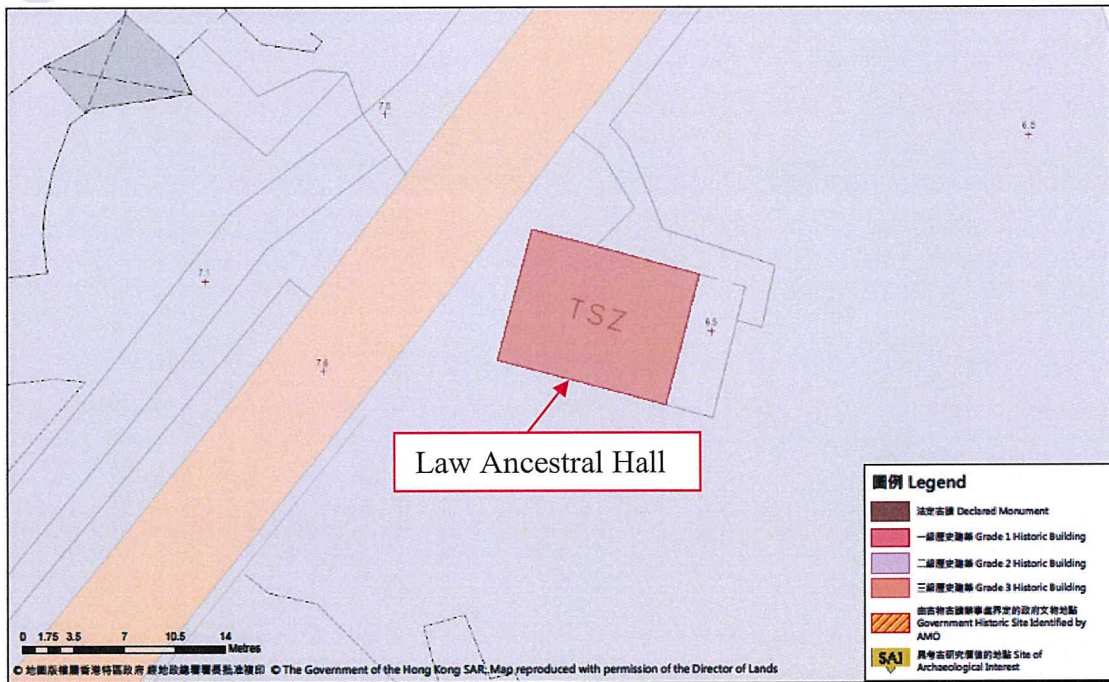
7. CONCLUSION

- 7.1.1 The current status of Law Ancestral Hall is in **fair condition** in general except some wide cracks are found on columns. Also, significant wide cracks were found on the ground pavement at the front garden. No severe defect is found on the building.
- 7.1.2 Structural monitoring instruments including ground settlement markers, reflective tape targets, crack width ruler and portable seismograph are recommended in this report.
- 7.1.3 When there is construction works within 50m of the graded building, the settlement, tilting, cracks and vibration monitoring shall be conducted on a **daily basis** except for those cracks identified inside Law Ancestral Hall, which would be conducted on a monthly basis. The results will be submitted to the Supervisor.
- 7.1.4 The monitoring records would be submitted to AMO on monthly basis and AMO would be alerted if any irregularity of the monitoring reading are observed.

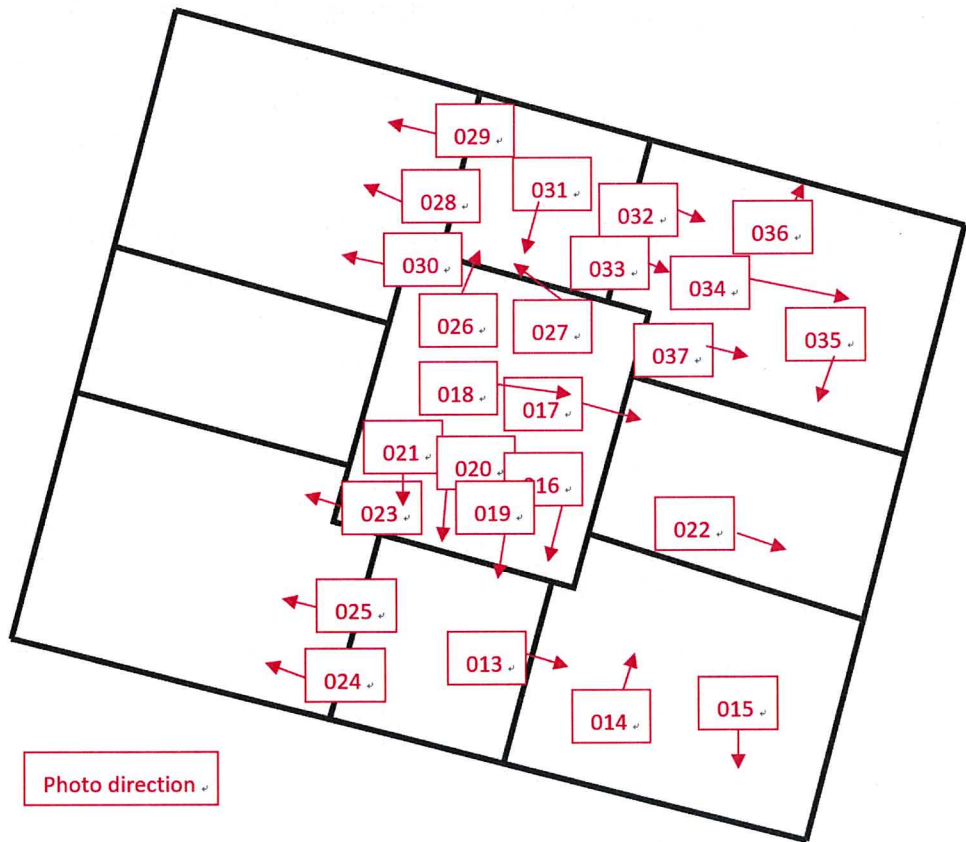
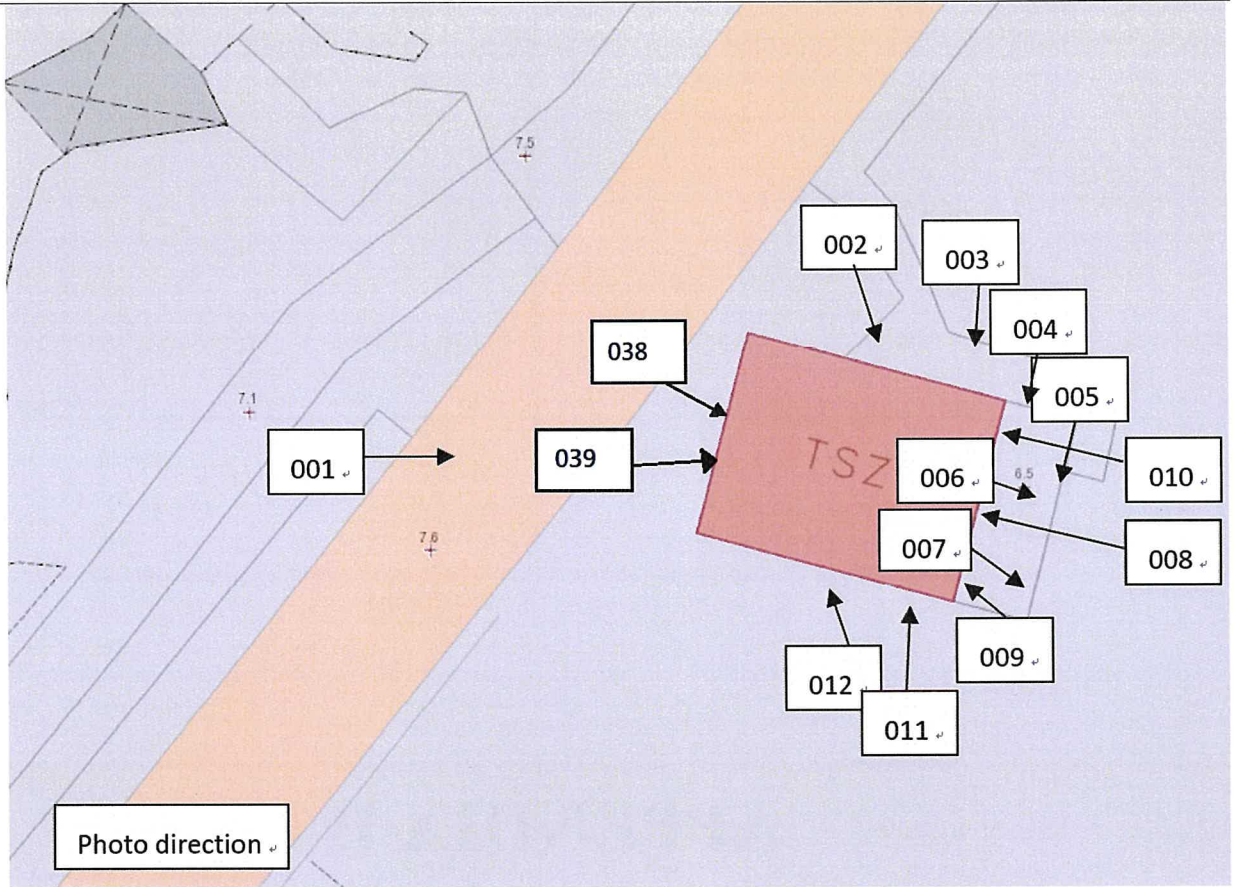
APPENDIX A – BUILDING LOCATION PLAN



香港文物地理資訊系統
 Geographical Information System
 on Hong Kong Heritage



APPENDIX B – PHOTOGRAPHIC RECORDS



PHOTOGRAPHIC RECORD



Photo No:
001

Date of taken:
15 Jul 2019

Location:
Opposite road of
Law Ancestral Hall

Photo description:
General View of
Law Ancestral Hall



Photo No:
002

Date of taken:
15 Jul 2019

Location:
North side of
Law Ancestral Hall

Photo description:
Fine condition of north-
faced wall of Law
Ancestral Hall with
no observable cracks

PHOTOGRAPHIC RECORD



Photo No:
003

Date of taken:
15 Jul 2019

Location:
North side of
Law Ancestral Hall

Photo description:
Fine condition of the
north-faced wall of
Law Ancestral Hall
with no observable cracks



Photo No:
004

Date of taken:
15 Jul 2019

Location:
Front ground of
Law Ancestral Hall

Photo description:
Wide cracks are identified in
the front ground of
the building
(indicated by red circle
in the photo)

PHOTOGRAPHIC RECORD



Photo No:
005

Date of taken:
15 Jul 2019

Location:
Front ground of
Law Ancestral Hall

Photo description:
Wide cracks are identified
in the front ground of
the building
(indicated by red circle
in the photo)



Photo No:
006

Date of taken:
15 Jul 2019

Location:
Front ground of
Law Ancestral Hall

Photo description:
Wide cracks are identified
in the front ground of
the building
(indicated by red circle
in the photo)

PHOTOGRAPHIC RECORD



Photo No:
007

Date of taken:
15 Jul 2019

Location:
Front ground of
Law Ancestral Hall

Photo description:
Wide cracks are identified
in the front ground of
the building
(indicated by red circle
in the photo)



Photo No:
008

Date of taken:
15 Jul 2019

Location:
In Front of
Law Ancestral Hall
(East side)

Photo description:
Front Door of
Law Ancestral Hall

PHOTOGRAPHIC RECORD

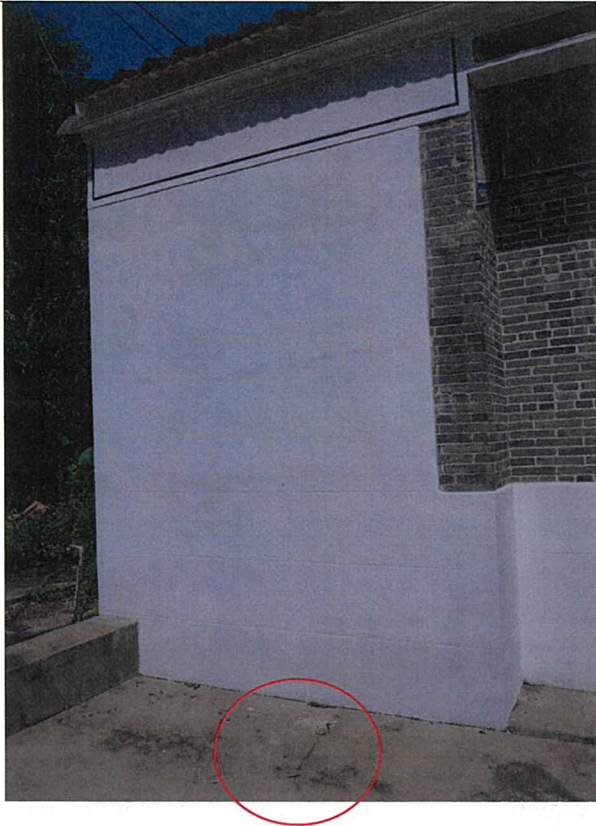


Photo No:
009

Date of taken:
15 Jul 2019

Location:
In Front of
Law Ancestral Hall
(East side)

Photo description:
Fine condition on the wall of
the building with
no observable cracks.
Wide cracks are identified in the
front ground of the building
(indicated by red circle in
the photo)

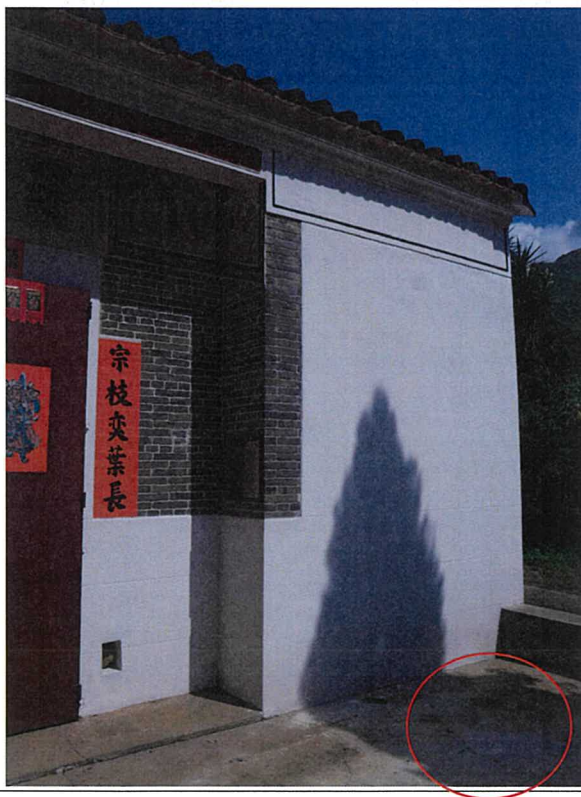


Photo No:
010

Date of taken:
15 Jul 2019

Location:
In Front of
Law Ancestral Hall
(East side)

Photo description:
Fine condition on the wall of the
building with
no observable cracks.
Wide cracks are identified in the
front ground of the building
(indicated by red circle in
the photo)

PHOTOGRAPHIC RECORD



Photo No:
011

Date of taken:
15 Jul 2019

Location:
South Side of
Law Ancestral Hall

Photo description:
Fine condition on east-faced wall
with no observable cracks

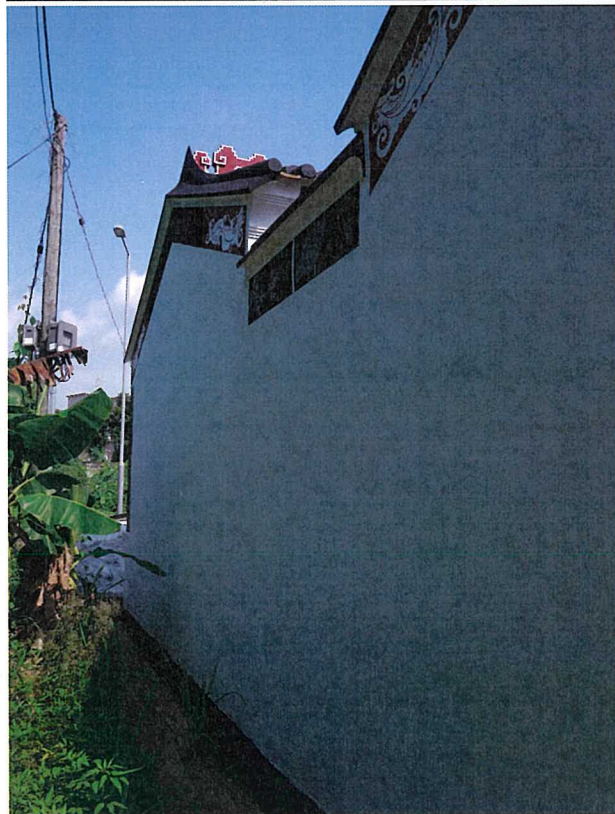


Photo No:
012

Date of taken:
15 Jul 2019

Location:
South Side of
Law Ancestral Hall

Photo description:
Fine condition on east-faced wall
with no observable cracks

PHOTOGRAPHIC RECORD



Photo No:
013

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the internal wall
of Law Ancestral Hall
with no observable cracks



Photo No:
014

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition with the tile
roofing inside Law Ancestral Hall
with no observable defects.

PHOTOGRAPHIC RECORD

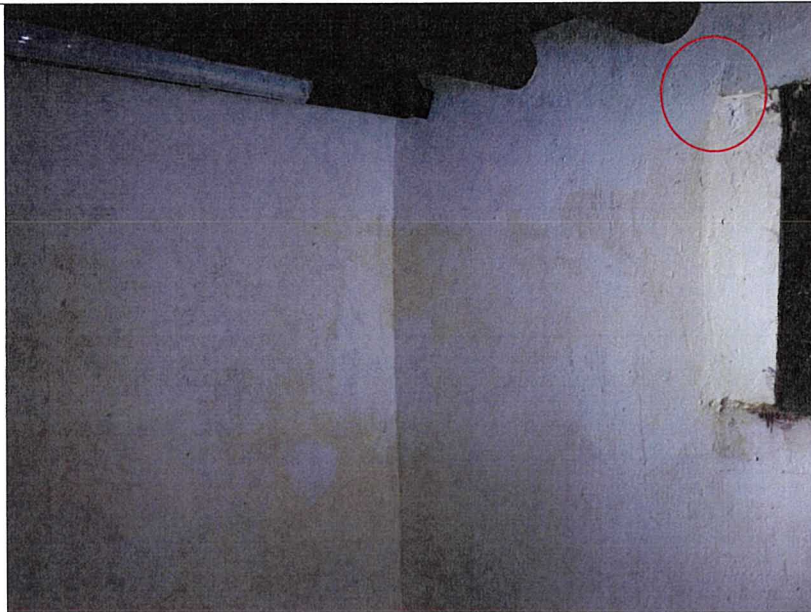


Photo No:
015

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Spalling on
the wall near the window
(indicated by red circle in
the photo)
(Point C1)



Photo No:
016

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
General View of
the internal environment
of Law Ancestral Hall

PHOTOGRAPHIC RECORD



Photo No:
017

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the timber
structures inside
Law Ancestral Hall
with no observable defects



Photo No:
018

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition with the
tile roofing inside
Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
019

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
General view of the internal
structural elements of
Law Ancestral Hall
with no observable defects



Photo No:
020

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
General view of column
and wall inside
Law Ancestral Hall

PHOTOGRAPHIC RECORD



Photo No:
021

Date of taken:
15 Jul 2019

Location:

Inside Law Ancestral Hall

Photo description:
Wide cracks are identified
on the brick column of
the building
(indicated by red circle in
the photo)

***[Crack Meter is
recommended for crack
monitoring]
(Point C2)***



Photo No:
022

Date of taken:
15 Jul 2019

Location:

Inside Law Ancestral Hall

Photo description:
General view of wall inside
Law Ancestral Hall

PHOTOGRAPHIC RECORD



Photo No:
023

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Wide cracks are identified
on the brick column of
the building
(indicated by red circle in
the photo)

***[Crack Meter is
recommended for crack
monitoring]
(Point C3)***

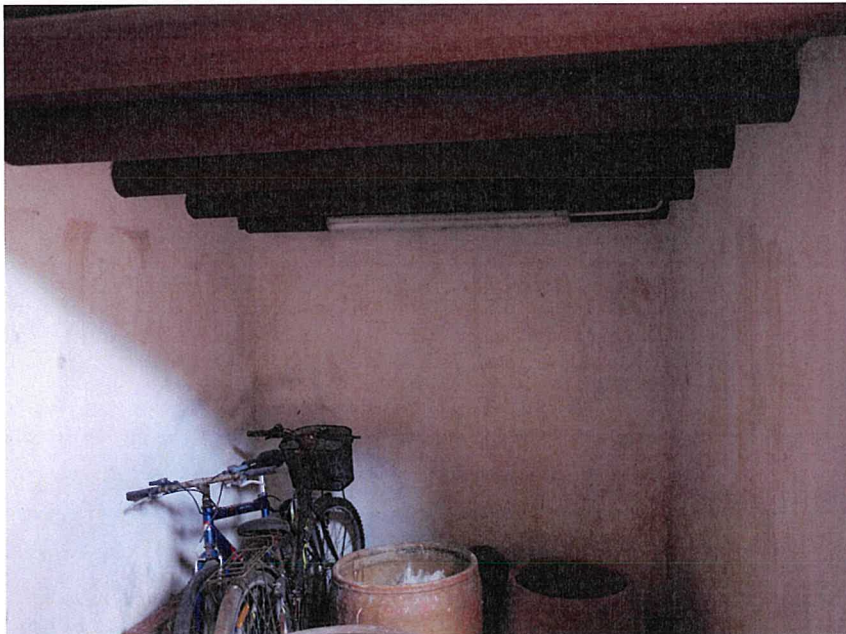


Photo No:
024

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the internal
structural elements of
Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
025

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the tile roofing
of Law Ancestral Hall
with no observable defects



Photo No:
026

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
General view of column inside
Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
027

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
General view of the internal
structural elements of
Law Ancestral Hall

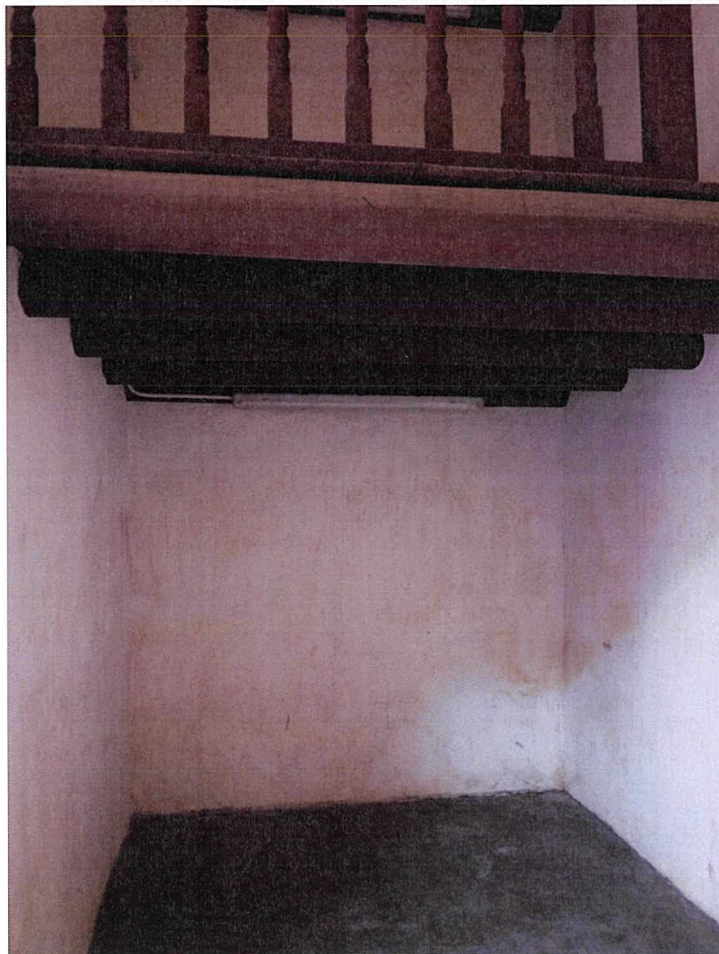


Photo No:
028

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the wall
and timber structures of
Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
029

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects



Photo No:
030

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
031

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects



Photo No:
032

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
033

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements of
Law Ancestral Hall
with no observable defects

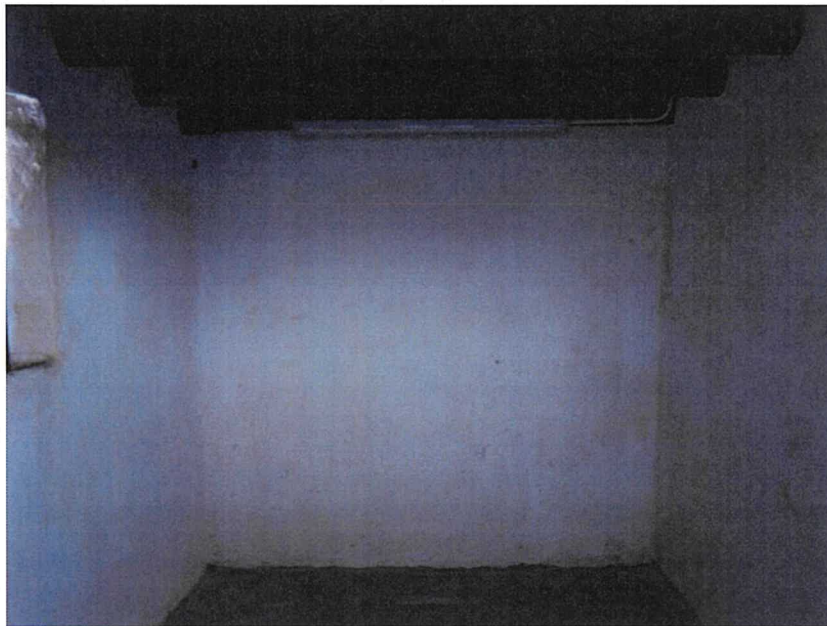


Photo No:
034

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD



Photo No:
035

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the internal
structural elements of
Law Ancestral Hall with no
observable defects



Photo No:
036

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the
internal structural elements
of Law Ancestral Hall
with no observable defects

PHOTOGRAPHIC RECORD

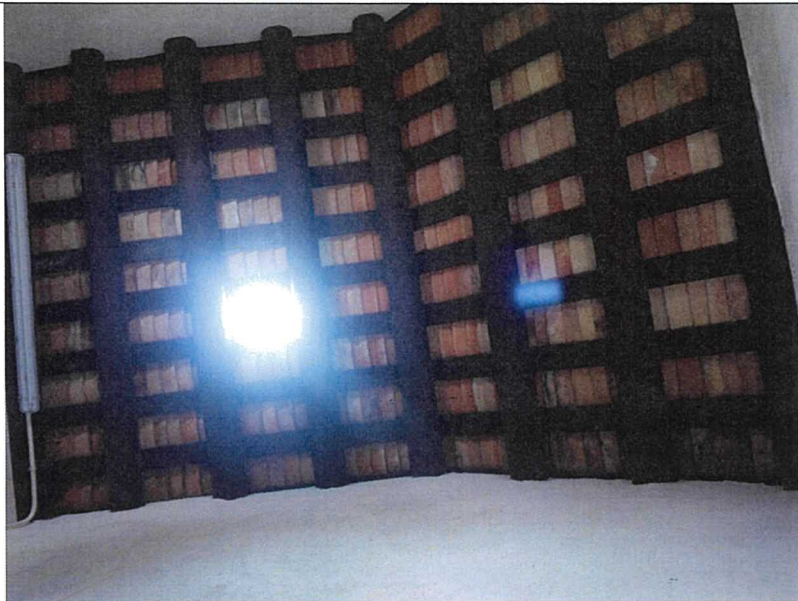


Photo No:
037

Date of taken:
15 Jul 2019

Location:
Inside Law Ancestral Hall

Photo description:
Fine condition of the tile roofing
of Law Ancestral Hall
with no observable defects

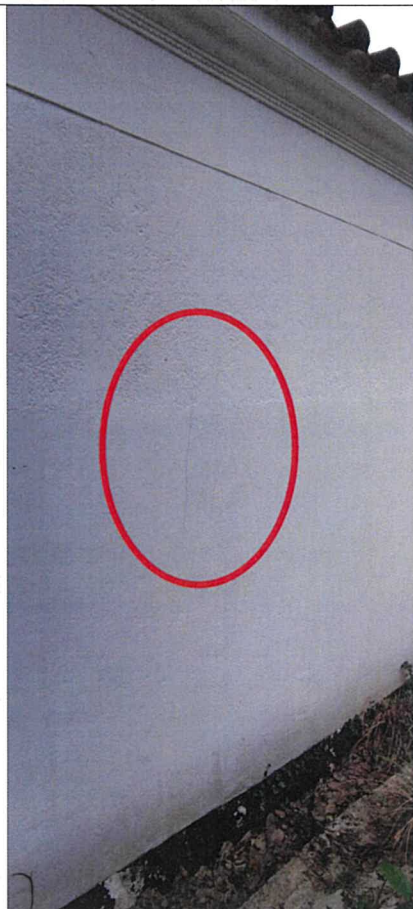


Photo No:
038

Date of taken:
15 Apr 2021

Location:
External Law Ancestral Hall

Photo description:
Wide cracks are identified
on the external wall of
the building
(indicated by red circle in
the photo)
**[Crack Meter is recommended
for crack monitoring]
(Point C4)**



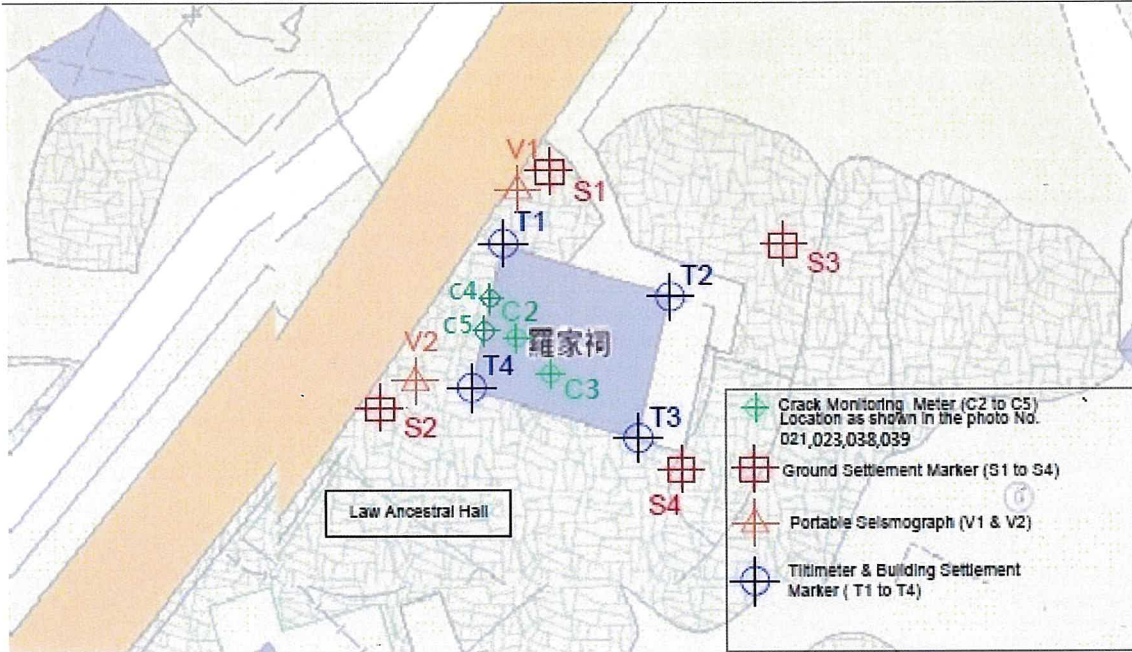
Photo No:
039

Date of taken:
15 Apr 2021

Location:
External Law Ancestral Hall

Photo description:
Wide cracks are identified
on the external wall of
the building
(indicated by red circle in
the photo)
**[Crack Meter is recommended
for crack monitoring]
(Point C5)**

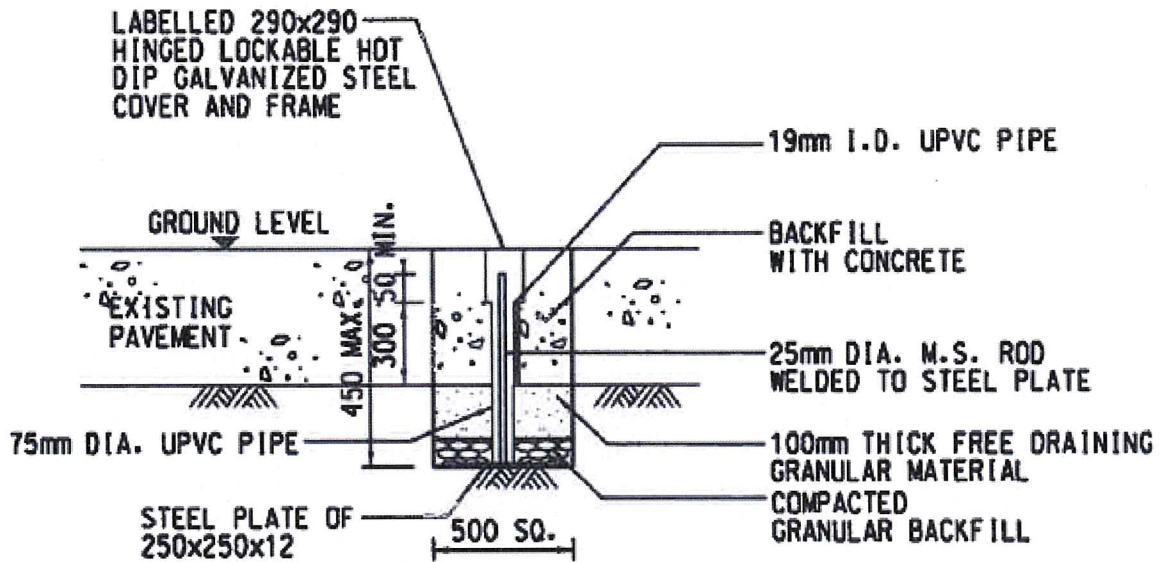
APPENDIX C – LOCATION PLAN OF PROPOSED MONITORING POINTS



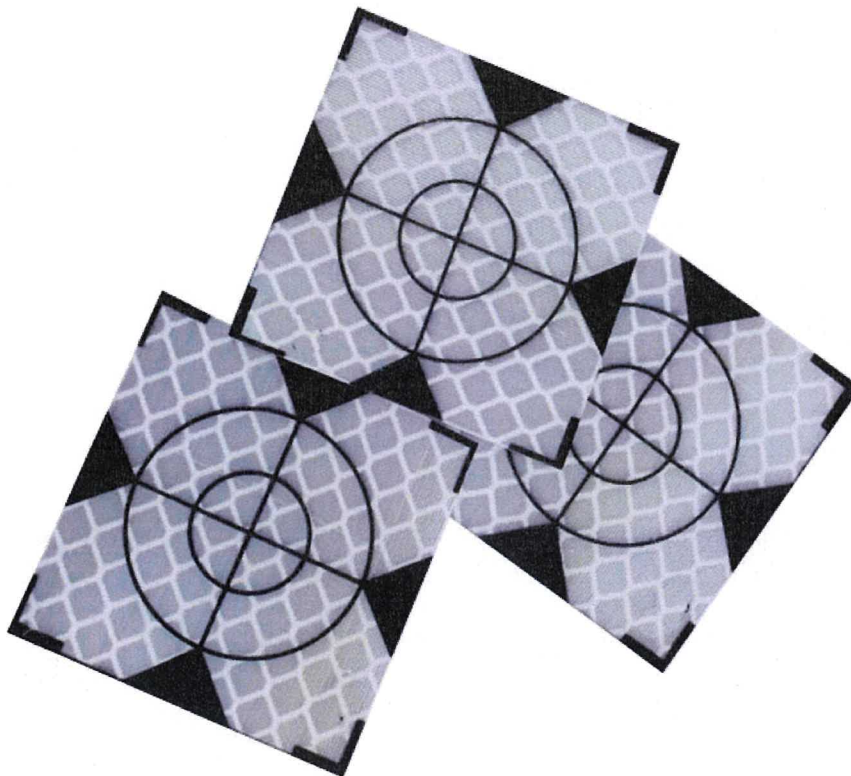
Structural Monitoring Instrument	Number of Monitoring Point
Ground Settlement Markers	4 nos. (S1, S2, S3 & S4)
Reflective Tape Targets	4 nos. (T1, T2, T3 & T4)
Crack Width Ruler	4 nos. (C2 to C5)
Portable Seismograph	2 nos. (V1 & V2)

APPENDIX D – TYPICAL DETAILS OF MONITORING INSTRUMENT

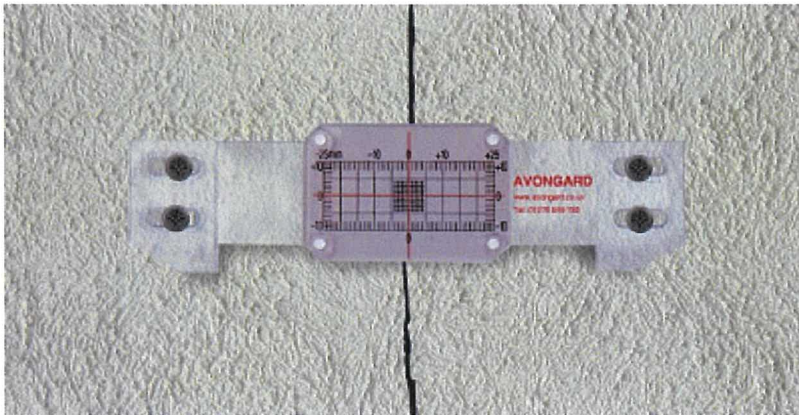
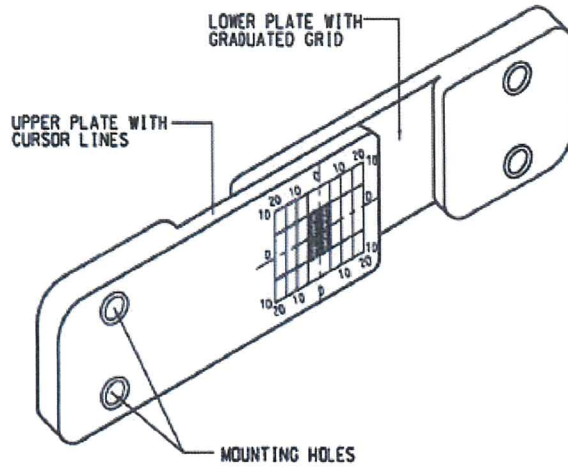
Ground Settlement Markers



Reflective tape targets



Crack Meter / Tell-Tales Crack Monitoring Gauge



Portable Seismograph

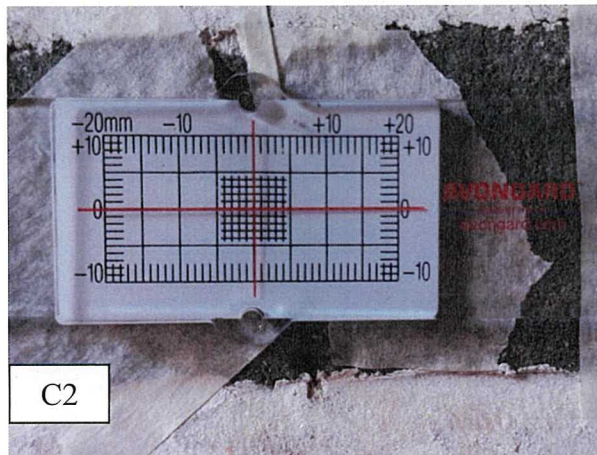


APPENDIX E – METHOD STATEMENT OF THE CONDITION POINTS

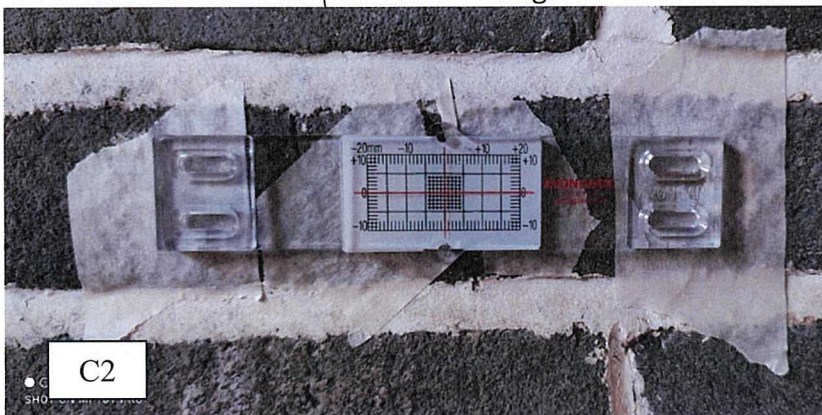
APPENDIX G – Original Crack Widths Photos (LAW ANCESTRAL HALL)

Original Crack Widths Photos

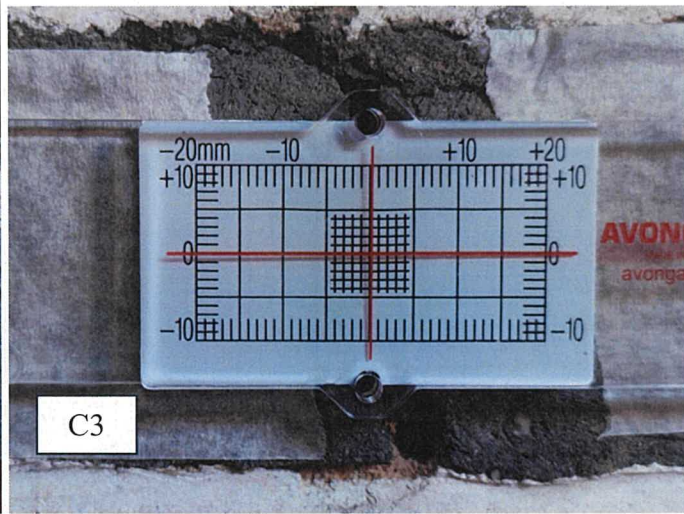
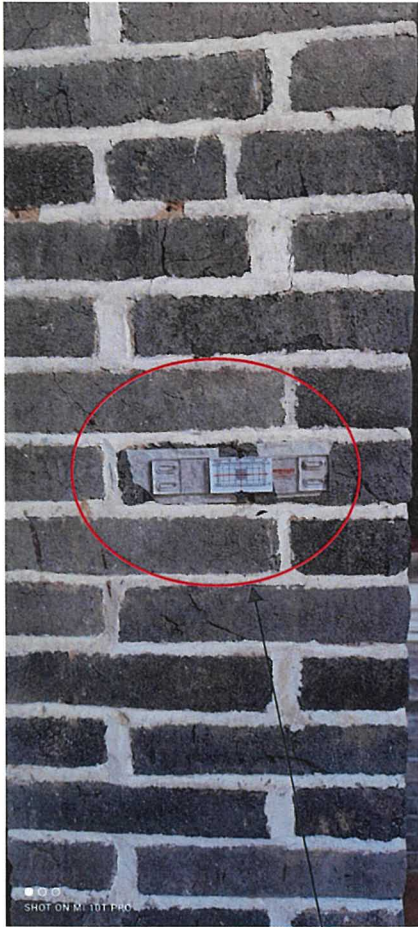
Location: Inside Law Ancestral Hall
Crack Meter No.: C2



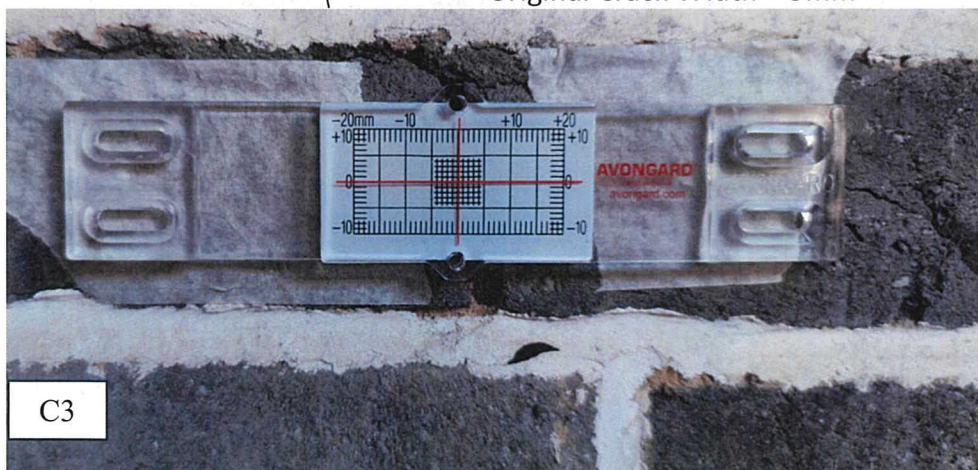
Original Crack Width – 4mm



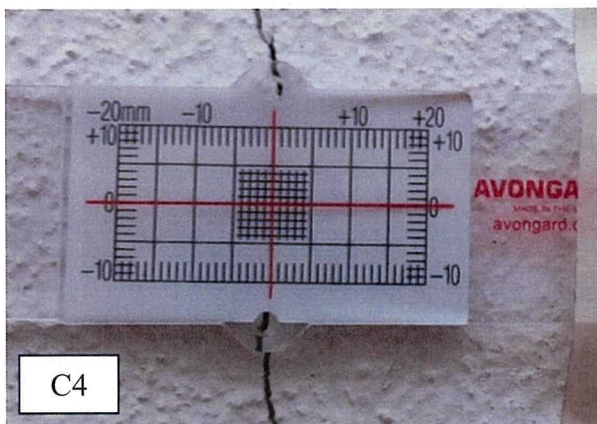
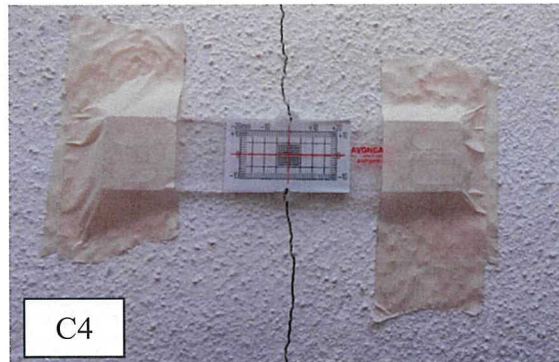
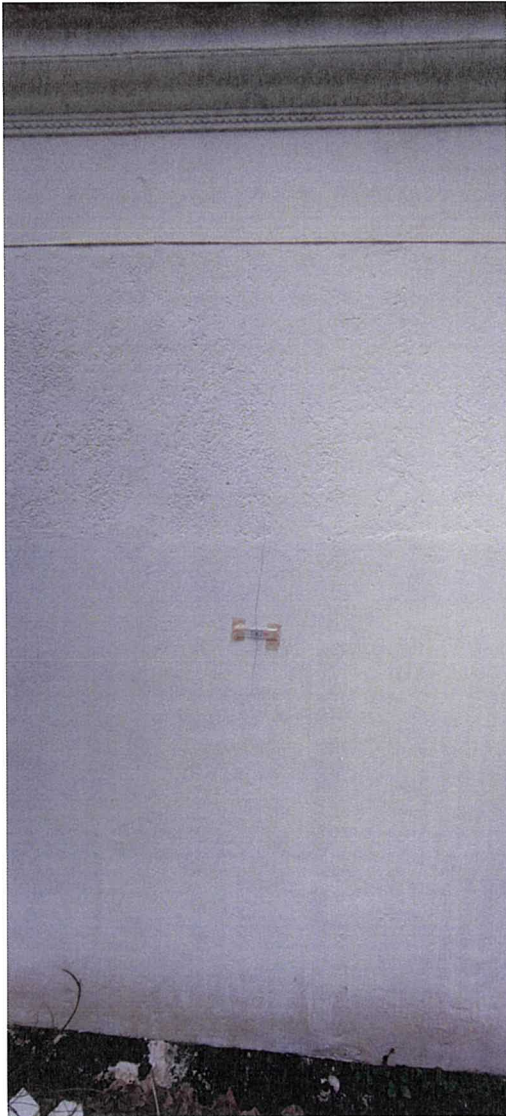
Location: Inside Law Ancestral Hall
Crack Meter No.: C3



Original Crack Width – 5mm

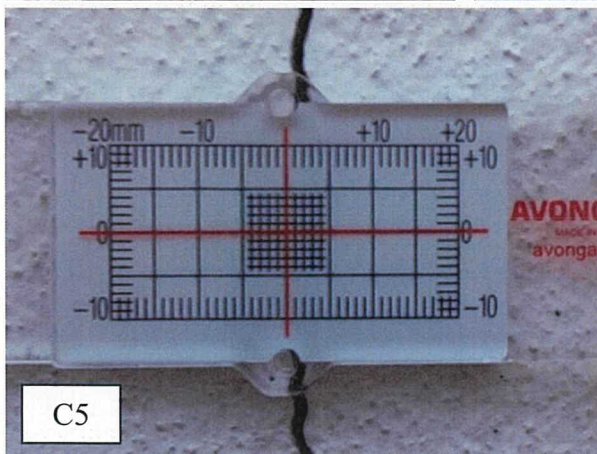
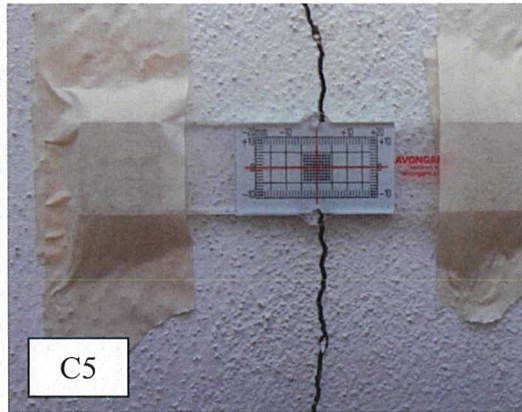


Location: Inside Law Ancestral Hall
Crack Meter No.: C4



Original Crack Width – 1mm

Location: Inside Law Ancestral Hall
Crack Meter No.: C5



Original Crack Width – 3mm

APPENDIX H – LIAISON RECORD WITH THE OWNER

渠務署合約 DC/2018/02
汀角路污水泵房及污水收集系統改善工程
工地聯絡會議記錄

日期：2020年10月08日（星期四）

時間：上午10時30分

地點：豫章堂及羅家祠

出席者	<u>豫章堂三號屋及羅家祠負責人</u> 羅煌生先生	電話 6440 9197
	<u>(渠務署顧問公司-Aecom Asia Co. Ltd.)(AECOM)</u> 鄭燕萍小姐(駐地盤工程師/AECOM) 傅亦輝先生(駐地盤高級工程督察 /AECOM) 孫梓峰先生(駐地盤助理工程師/AECOM)	9347 5139 9438 5037 9347 7162
	<u>(渠務署承建商-上海建工海外工程有限公司)(上海建工)</u> 楊思勁 (副地盤代表/上海建工)	9047 9952

項目 **內容**
就汀角路污水收集系統改善工程在豫章堂及羅家祠內及附近
設置工程監察點與豫章堂三號屋及羅家祠負責人作出相討

1	地點：豫章堂		
1.1	上海建工就汀角路近豫章堂及羅家祠進行的污水收集系統改善工程作出說明，並指出此段工程將會在 2020 年 11 月展開，預期於 2021 年 7 月完成。		
1.2	上海建工表示，為監察工程期間對豫章堂及羅家祠之影響，工程團隊將會在豫章堂及羅家祠內及附近安裝工程監察裝置。此次會議目的為與羅先生相討監察裝置的安裝方法，位置及監察頻率。		
1.3	沉降監察		
1.3.1	<u>沉降監察點 S1</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S1 與羅先生現場視察 (位置詳見附件相片 001)。		
b.	羅先生同意在上述位置安裝沉降監察點 S1。		
1.3.2	<u>沉降監察點 S2</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S2 與羅先生現場視察 (位置詳見附件相片 002)。		
b.	羅先生同意在上述位置安裝 S2 沉降監察點，並要求上海建工需確保在設置監察裝置期間泥土不會阻塞鄰近渠道及在安裝沉降監察點後用石屎鋪平該位置。		
c.	上海建工同意並將會安排於施工期間鋪設木板以防止泥石阻塞鄰近渠道。		
1.3.3	<u>沉降監察點 S3</u>		
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S3 與羅先生現場視察 (位置詳見附件相片 003)。		
b.	羅先生同意在上述 S3 位置安裝沉降監察點。		
1.3.4	<u>沉降監察點 S4</u>		

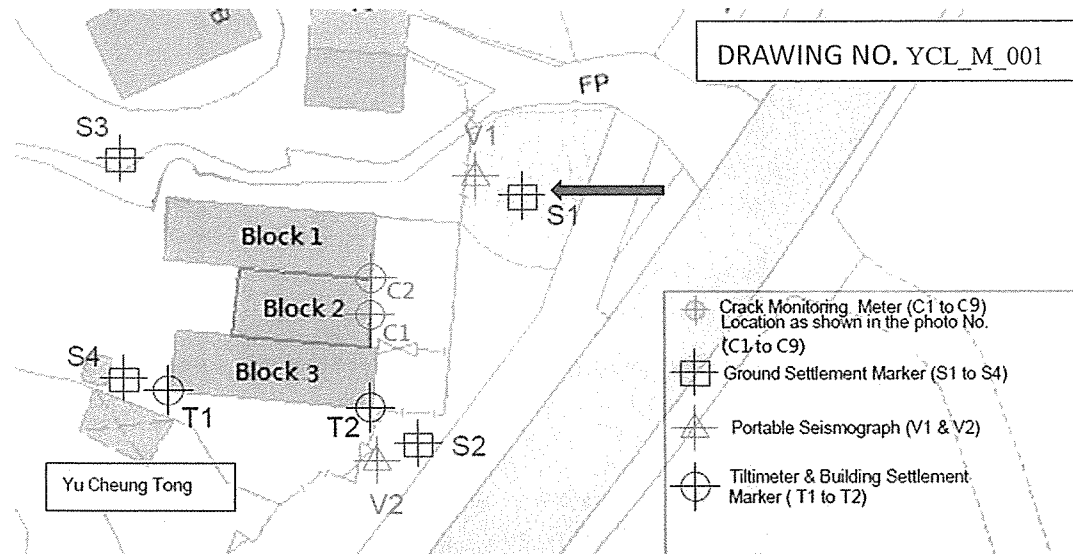
a.	上海建工就圖則編號:YCL_M_001 所示沉降監察點 S4 與羅先生現場視察 (位置詳見附件相片 004)。		
b.	羅先生同意在上述位置安裝 S4 沉降監察點，並要求在安裝沉降監察點後用石屎鋪平該位置。		
c.	上海建工同意。		
1.4	傾斜監察		
1.4.1	<u>傾斜監察點 T1</u>		
a.	上海建工就圖則編號:YCL_M_001 所示傾斜監察點 T1 與羅先生現場視察 (位置詳見附件相片 005)。		
b.	羅先生擔心安裝傾斜監察裝置會對建築物的外牆造成損害(詳見附件相片 007A)，因此不同意在豫章堂三號屋的外牆安裝傾斜監察裝置。他希望工程團隊能使用其他方法進行監察。		
c.	上海建工提出改用貼紙式測量標記(詳見附件相片 007B 及 007C)進行監察。羅先生同意上述方法。		
d.	羅生同意在上述位置安裝 T1 傾斜監察點。		
1.4.2	<u>傾斜監察點 T2</u>		
a.	上海建工就圖則編號:YCL_M_001 所示傾斜監察點 T2 位置與現場視察 (位置詳見附件相片 006)。		
b.	羅生同意在上述位置安裝 T2 傾斜監察點。		
1.5	裂紋監察		
1.5.1	上海建工就附件相片 C1 至 C9 所示屋內外位置安裝裂紋監察儀作出說明。		
1.5.2	羅先生擔心安裝裂紋監察儀(詳見附件相片 007)會對天花上的橫樑造成損害，因此不同意在豫章堂三號屋內安裝裂紋監察儀以監察附件相片 C3 至 C9 所示之裂紋。他希望工程團隊能使用其他方法進行監察。		
1.5.3	上海建工提出在工程開展前在各裂紋監察位置量度及記錄裂紋闊度和長度以代替安裝裂紋監察儀。		
1.5.4	羅先生同意上述方法。		
1.5.5	另外上海建工向羅先生表示，經多返聯絡亦未能聯絡豫章堂一及二號屋屋主，上海建工向羅先生查詢可否聯絡到豫章堂一及二號屋屋主或負責人。羅先生表示豫章堂一及二號屋屋主已移民未能取得聯絡。		
1.5.6	上海建工就附件相片 C1 及 C2 所示豫章堂 2 號屋外位置安裝裂紋監察儀，羅先生表示沒有意見。		
1.6	監察頻率		
1.6.1	上海建工指出在工程進行期間需要每日量度上述工程監察裝置的數據，包括沉降，裂紋及傾斜監察。		
1.6.2	羅先生指出進入豫章堂範圍及室內進行監察必須先與住戶聯絡安排。為減少對住戶的影響，羅先生希望在沉降監察點 S4、傾斜監察點 T1 及 T2 進行監察的頻率定為一星期一次。另外量度於屋內裂紋(即附件相片 C3 至 C9 所示之裂紋)的監察頻率定為一個月一次。其餘監察點的監察頻率則可以維持每天一次。		
1.6.3	AECOM 明白羅先生的要求並表示工程團隊需提交以上建議予有關部門再作審批。		
2	地點：羅家祠		
2.1	上海建工就羅家祠安裝工程監察點作出說明。		
2.2	沉降監察		
2.2.1	<u>沉降監察點 S1</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S1 與羅先生現場		

	視察 (位置詳見附件相片 008)。		
b.	羅先生同意在上述位置安裝沉降監察點 S1。		
2.2.2	<u>沉降監察點 S2</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S2 與羅先生現場視察 (位置詳見附件相片 009)。		
b.	羅先生同意在上述位置安裝沉降監察點 S2。		
2.2.3	<u>沉降監察點 S3</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點 S3 與羅先生現場視察 (位置詳見附件相片 010)。		
b.	羅先生同意在上述位置安裝沉降監察點 S3。		
2.2.4	<u>沉降監察點 S4</u>		
a.	上海建工就圖則編號:LAW_M_001 所示沉降監察點與羅先生現場視察 (位置詳見附件相片 011)。		
b.	羅先生同意在上述位置安裝沉降監察點 S4。		
2.3	傾斜監察		
2.3.1	<u>傾斜監察點 T1</u>		
a.	上海建工就圖則編號:LAW_M_001 所示傾斜監察點 T1 與羅先生現場視察 (位置詳見附件相片 012)。		
b.	羅先生擔心安裝傾斜監察裝置會對建築物的外牆造成損害(詳見附件相片 007A), 因此不同意在豫章堂三號屋的外牆安裝傾斜監察裝置。他希望工程團隊能使用其他方法進行監察。		
c.	上海建工提出改用貼紙式測量標記(詳見附件相片 007B 及 007C)進行監察。羅先生同意上述方法。		
d.	羅先生同意在上述位置安裝傾斜監察點 T1。		
2.3.2	<u>傾斜監察點 T2</u>		
a.	上海建工就圖則編號:LAW_M_001 所示傾斜監察點 T2 與羅先生現場視察 (位置詳見附件相片 013)。		
b.	羅先生同意在上述位置安裝傾斜監察點 T2。		
2.4	裂紋監察		
2.4.1	上海建工就附件相片 LC1 至 LC3 所示屋內位置安裝裂紋監察儀作出說明。		
2.4.2	羅先生要求羅家祠的裂紋監察方法與豫章堂一樣在不需要安裝裂紋監察儀的情況下進行監察工程。		
2.4.3	上海建工提出在工程開展前在各裂紋監察位置量度及記錄裂紋闊度和長度以代替安裝裂紋監察儀。		
2.4.3	羅先生同意上述方法。		
2.5	監察頻率		
2.5.1	上海建工指出在工程進行期間需要每日量度上述工程監察裝置的數據, 包括沉降, 裂紋及傾斜監察。		
2.5.2	羅先生對沉降監察及傾斜監察的監察頻率沒有意見。羅先生指出進入室內進行監察必須先與其聯絡安排, 為減少對其影響, 希望量度屋內裂紋(即附件相片 LC1 所示之裂紋)的監察頻率定為一個月兩次。其餘量度屋外裂紋的監察頻率則可以維持每天一次。		
2.5.3	AECOM 明白羅先生的要求並表示工程團隊需提交以上建議予有關部門再作審批。		
3	上海建工提出會先進行安裝豫章堂及羅家祠的沉降監察點, 而安裝其他工程監察裝置將會再進一步聯絡羅先生。		
3.1	羅先生提出上海建工可先安裝豫章堂 S2 及 S4 沉降監察點, 並在動工前安排簡單拜神。		
3.2	上海建工同意。		

3.3	羅先生對上述安裝工程監察裝置沒有其他意見。		
	會議結束		

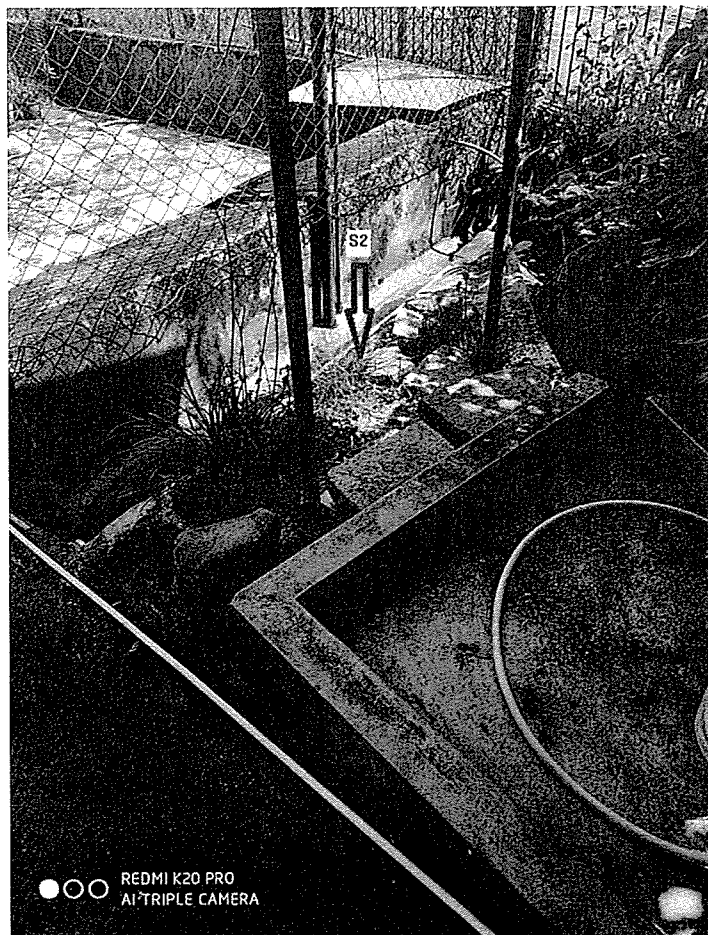
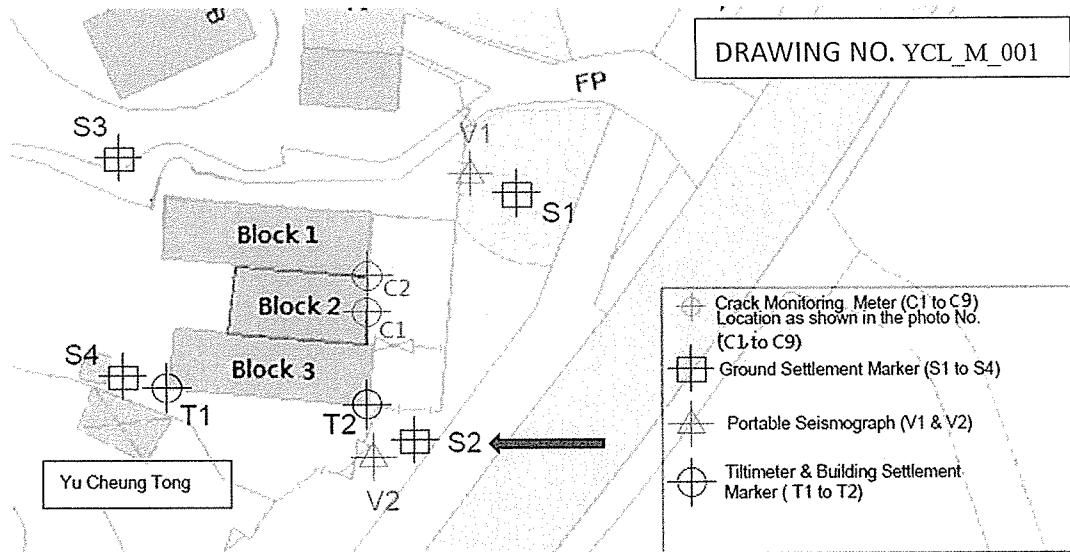
豫章堂

沉降監察點 S1



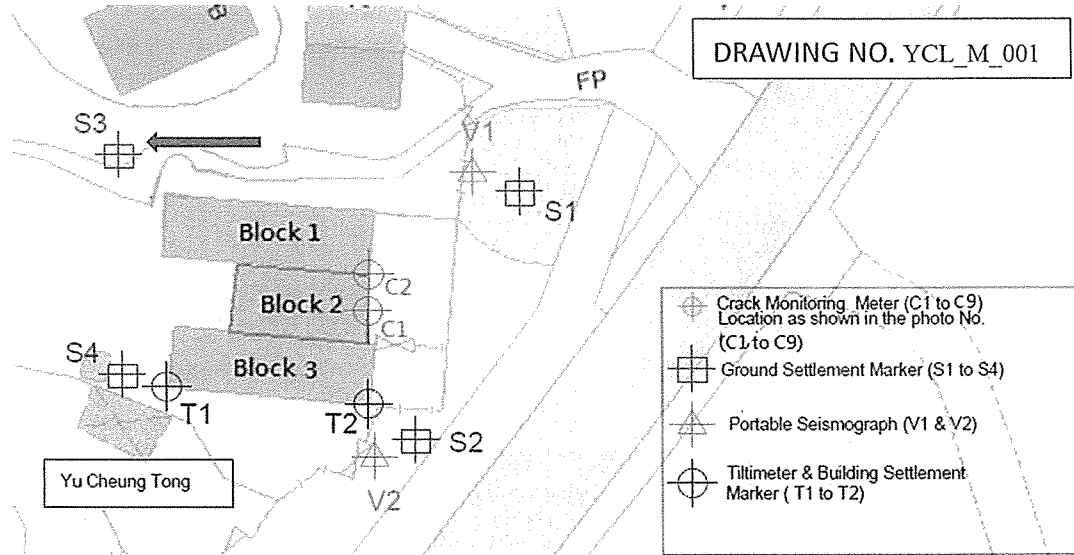
相片 001

沉降監察點 S2



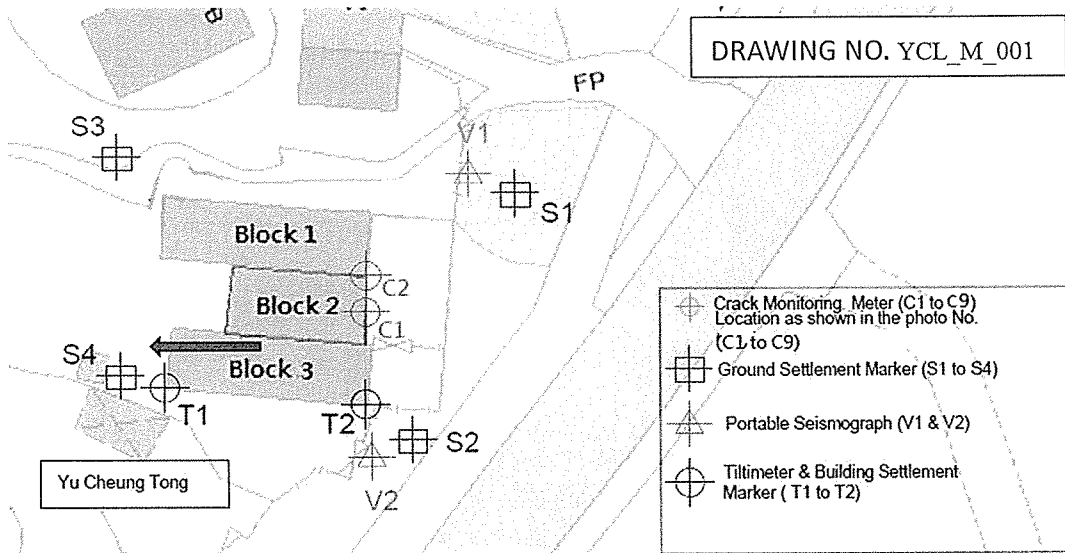
相片 002

沉降監察點 S3



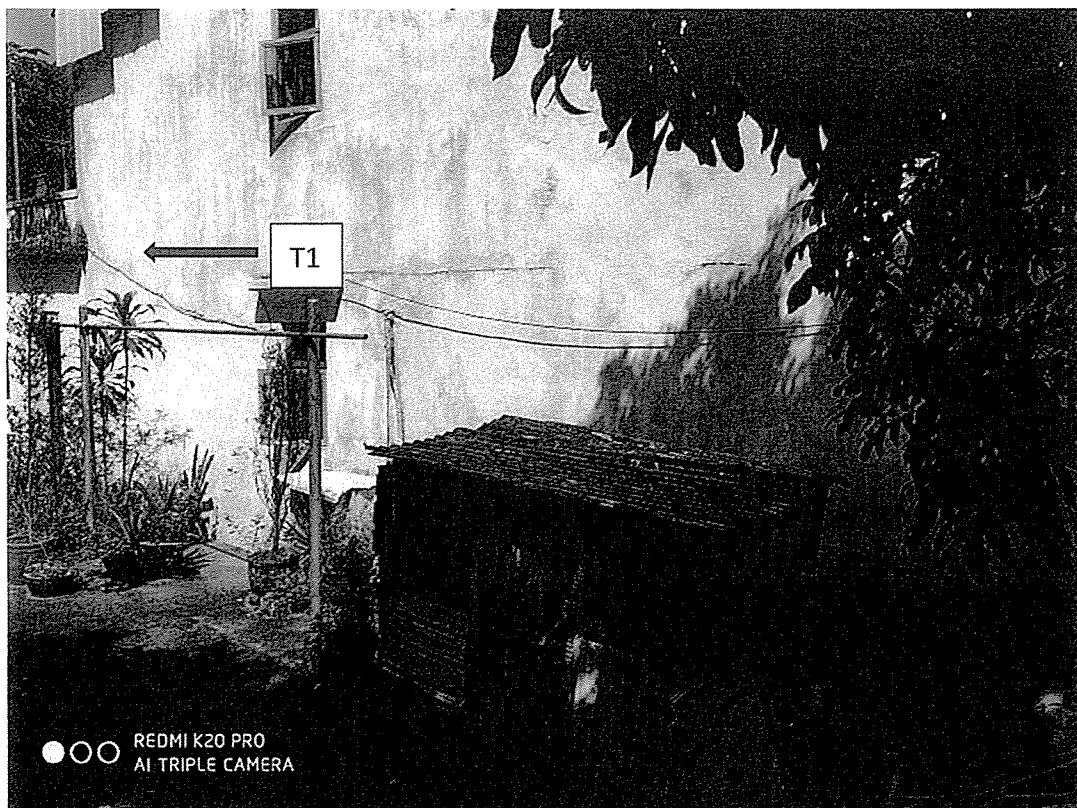
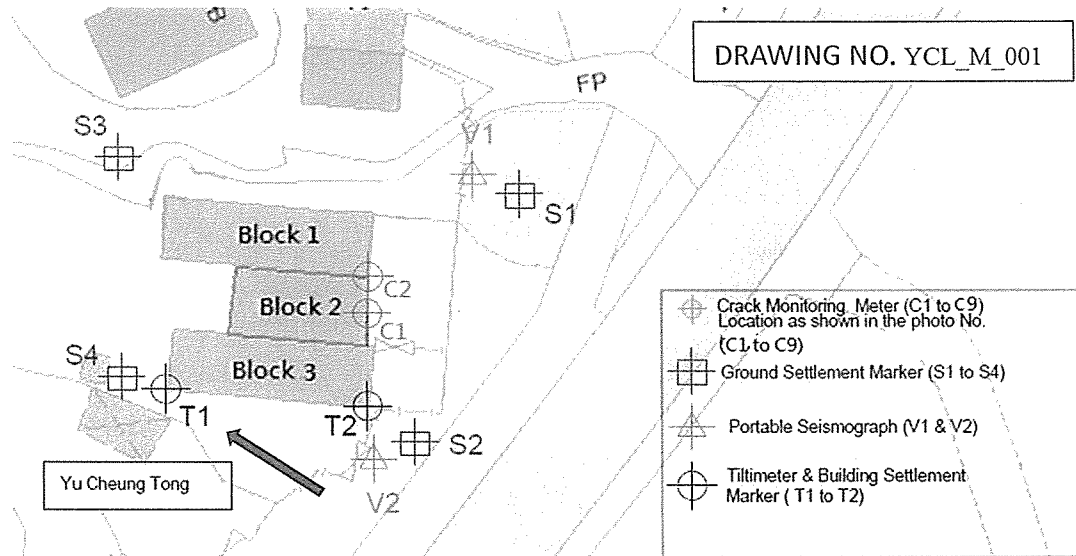
相片 003

沉降監察點 S4



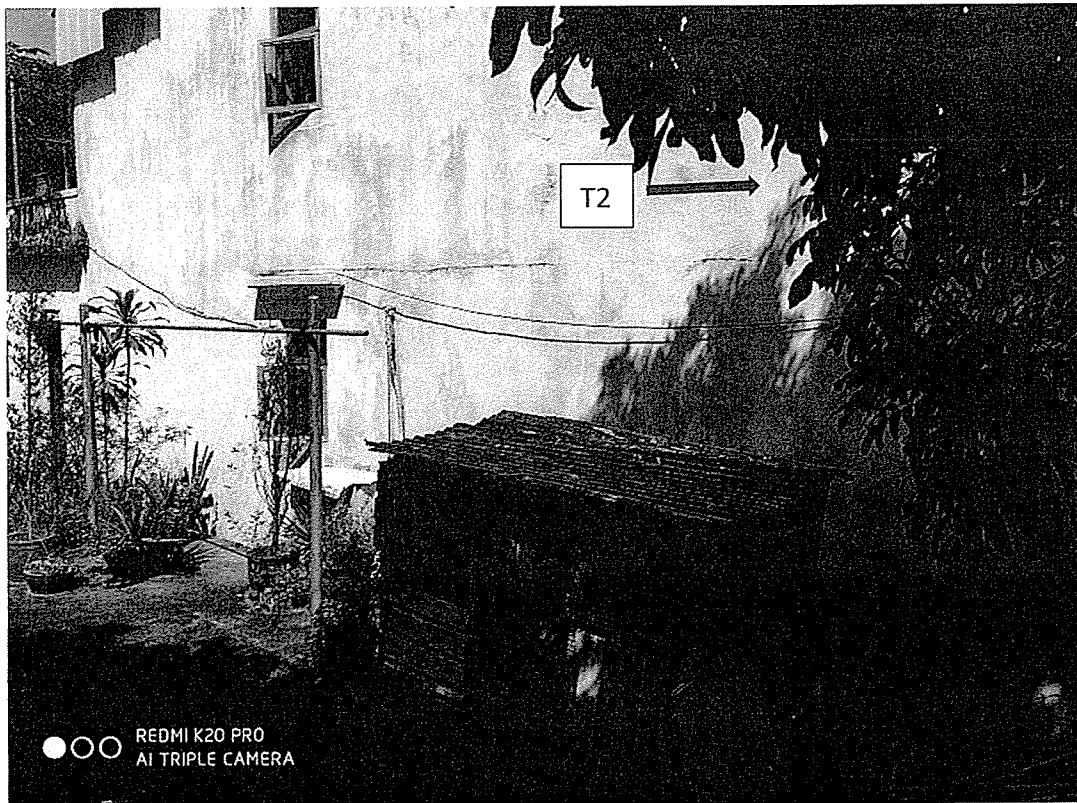
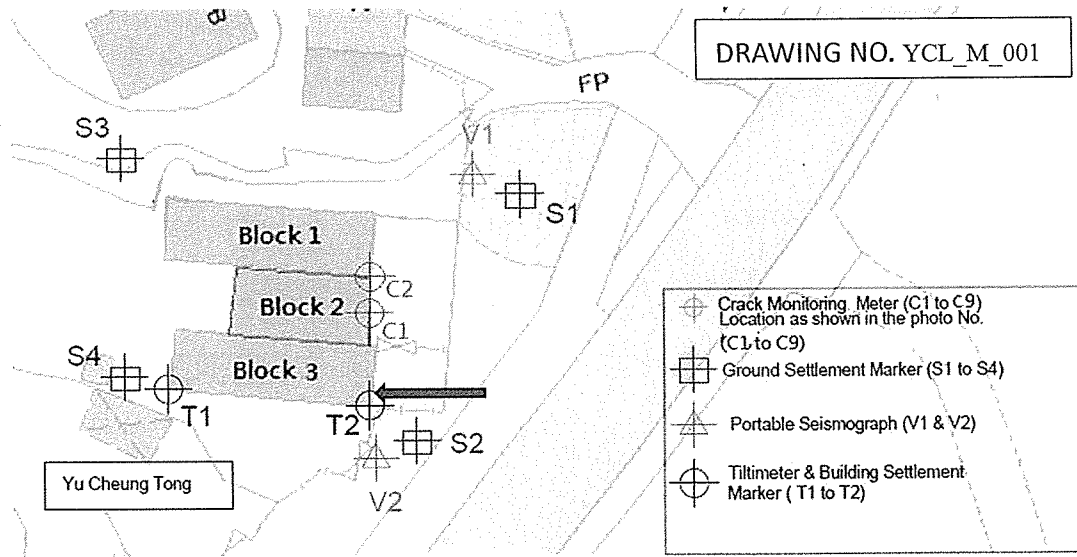
相片 004

傾斜監察點 T1



相片 005

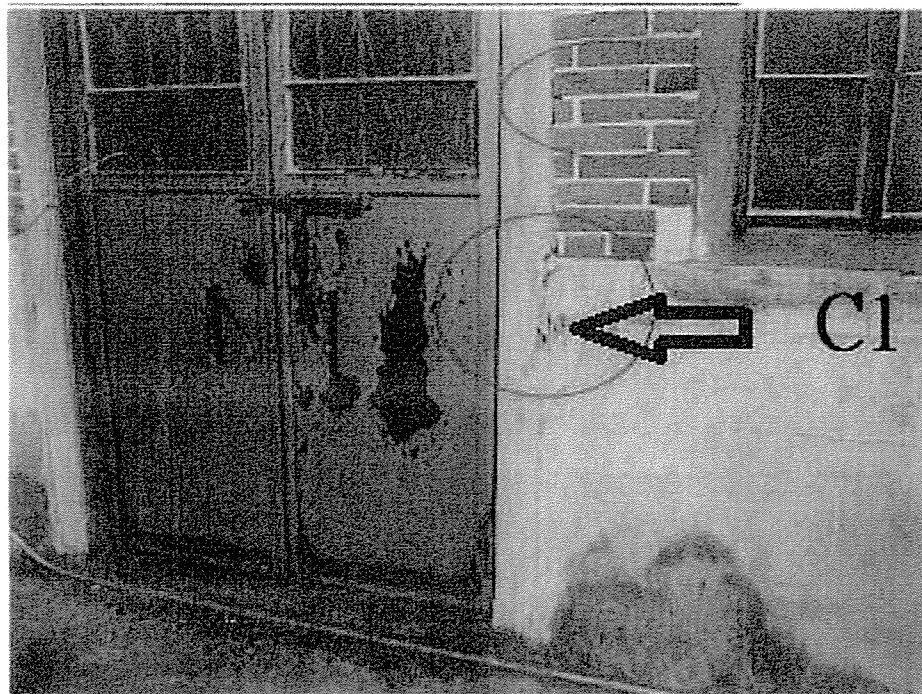
傾斜監察點 T2



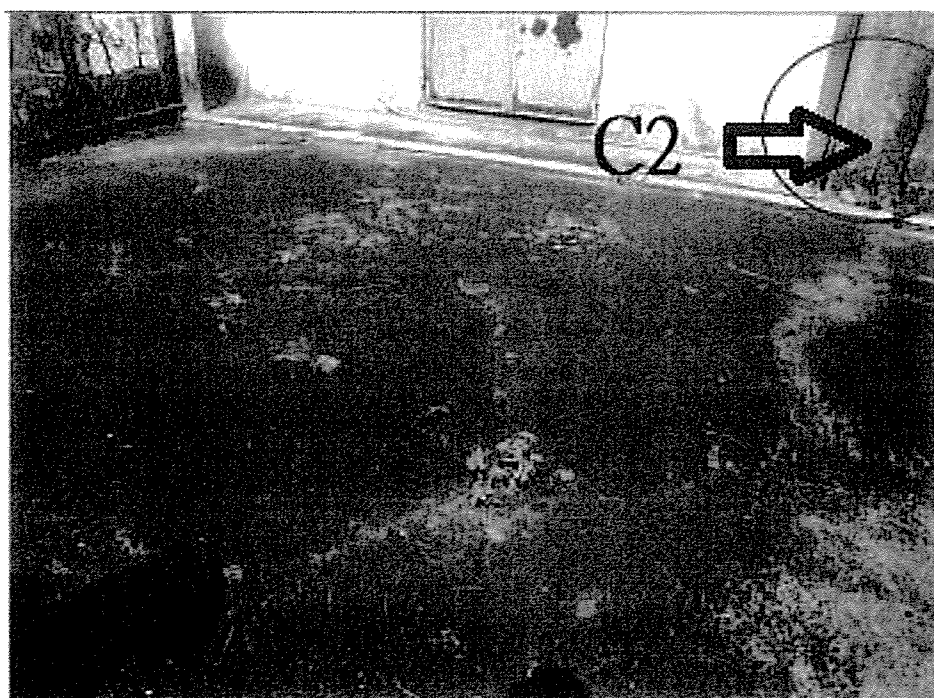
相片 006

豫章堂及羅家祠 2020 年 10 月 8 日會議記錄附件

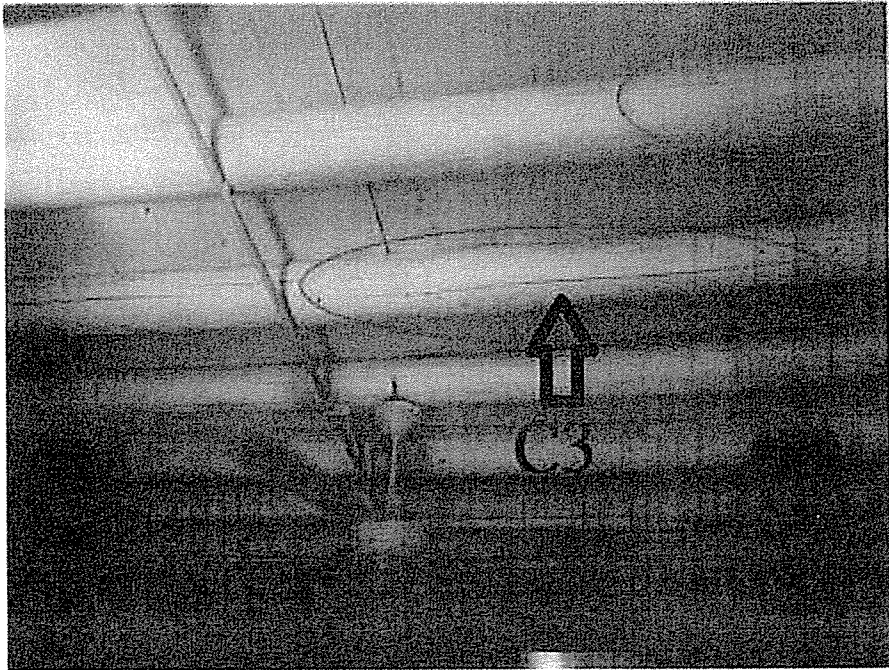
裂紋監察點



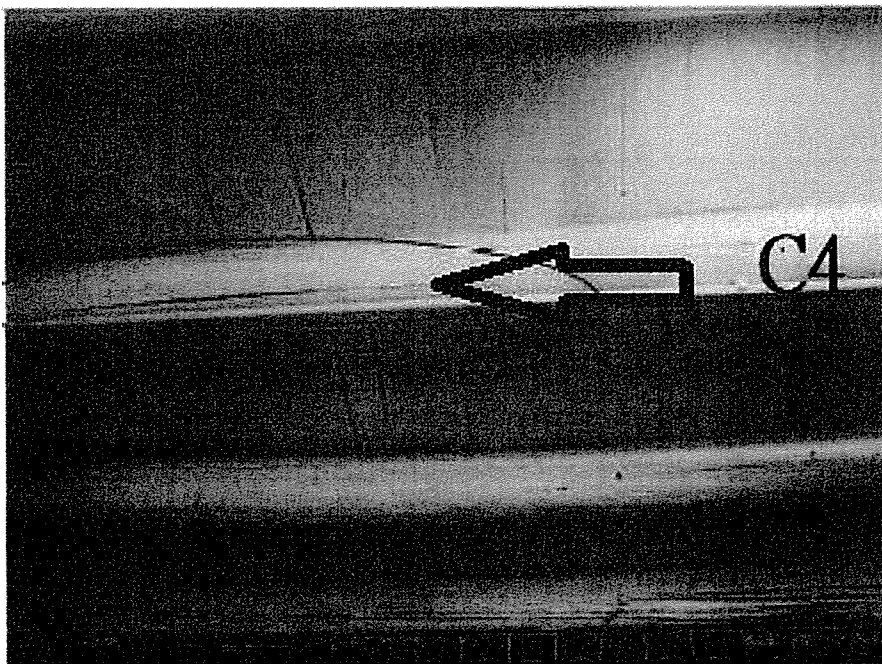
相片 C1 (豫章堂 2 號屋外)



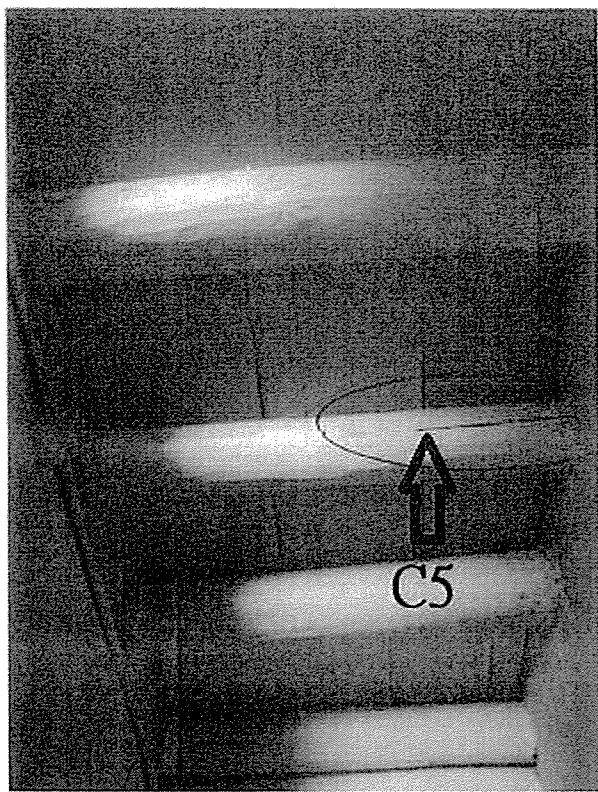
相片 C2 (豫章堂 2 號屋外)



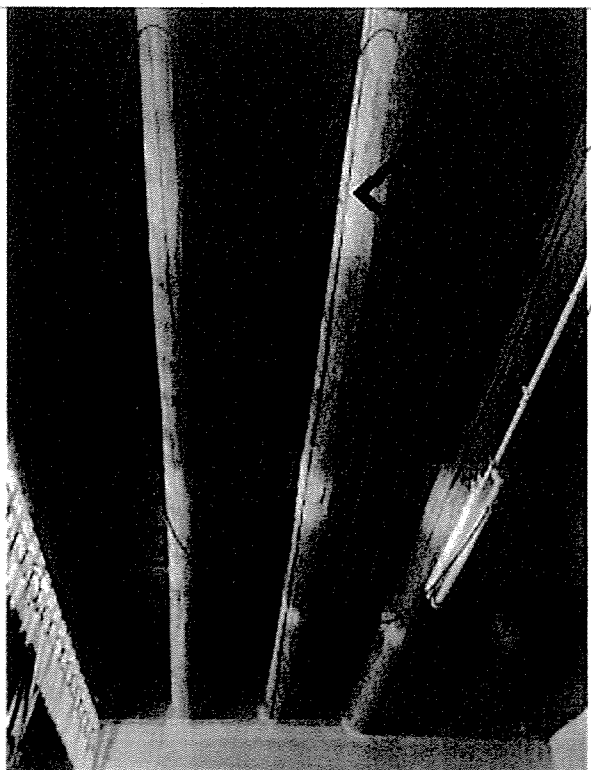
相片 C3 (豫章堂 1 號屋內)



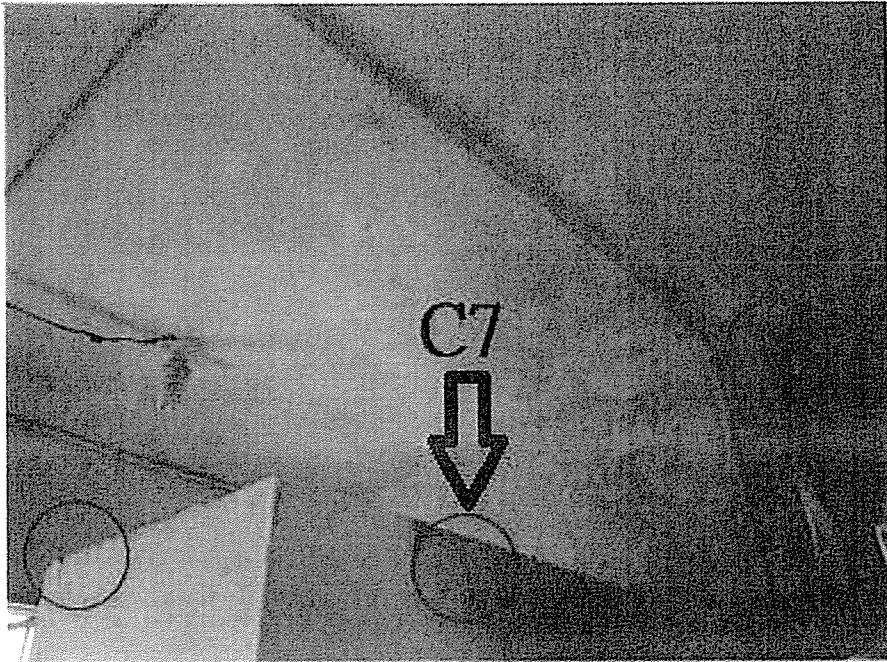
相片 C4 (豫章堂 1 號屋內)



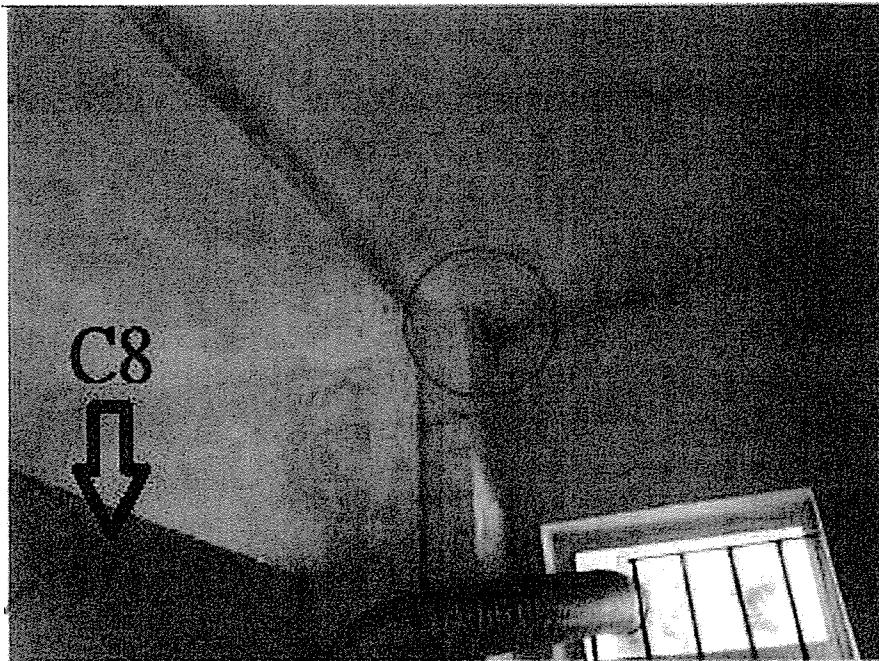
相片 C5 (豫章堂 1 號屋內)



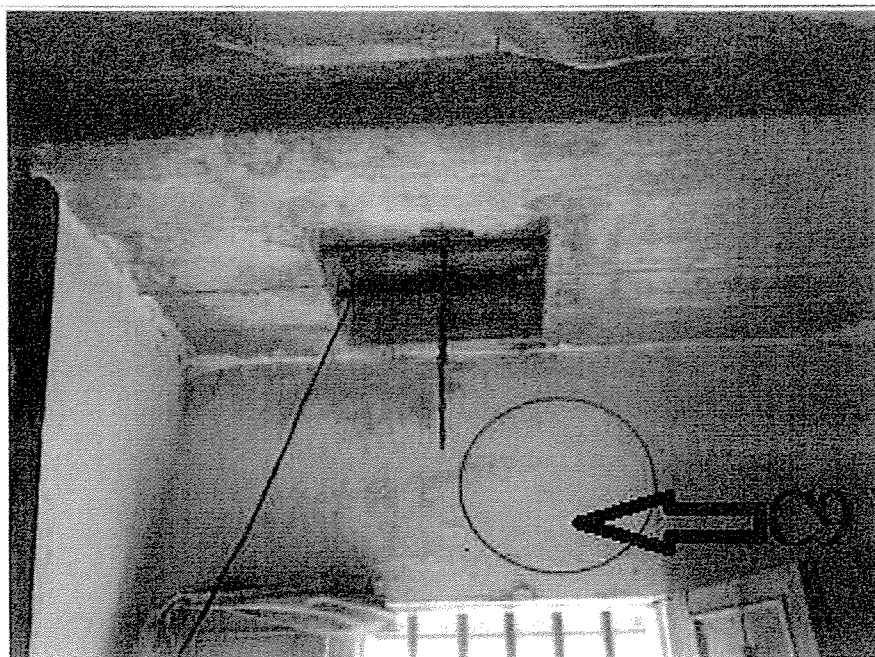
相片 C6 (豫章堂 1 號屋內)



相片 C7 (豫章堂 1 號屋內)

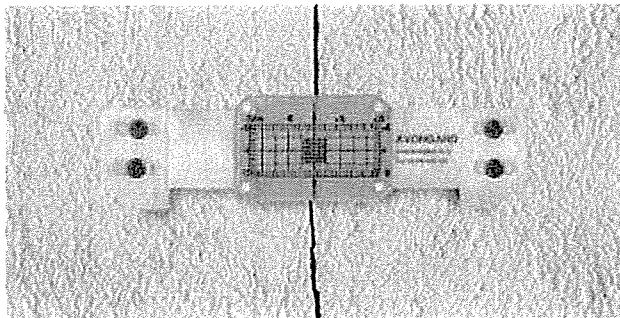
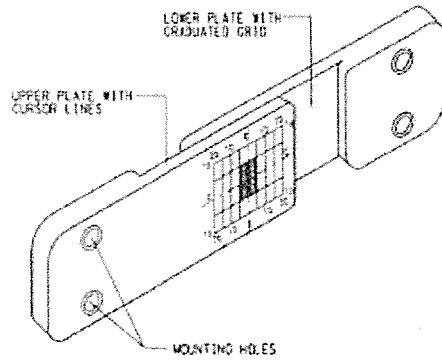


相片 C8 (豫章堂 1 號屋內)



相片 C9 (豫章堂 1 號屋內)

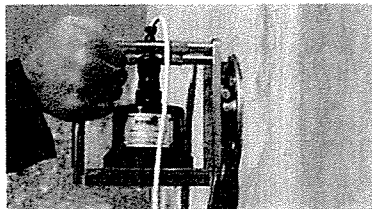
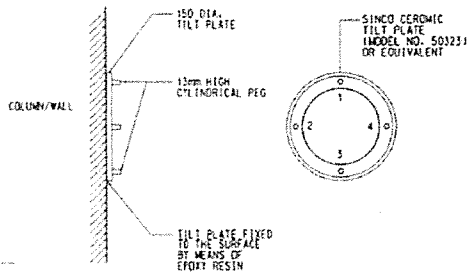
豫章堂及羅家祠 2020 年 10 月 8 日會議記錄附件
裂紋監察儀



相片 007

傾斜監察裝置

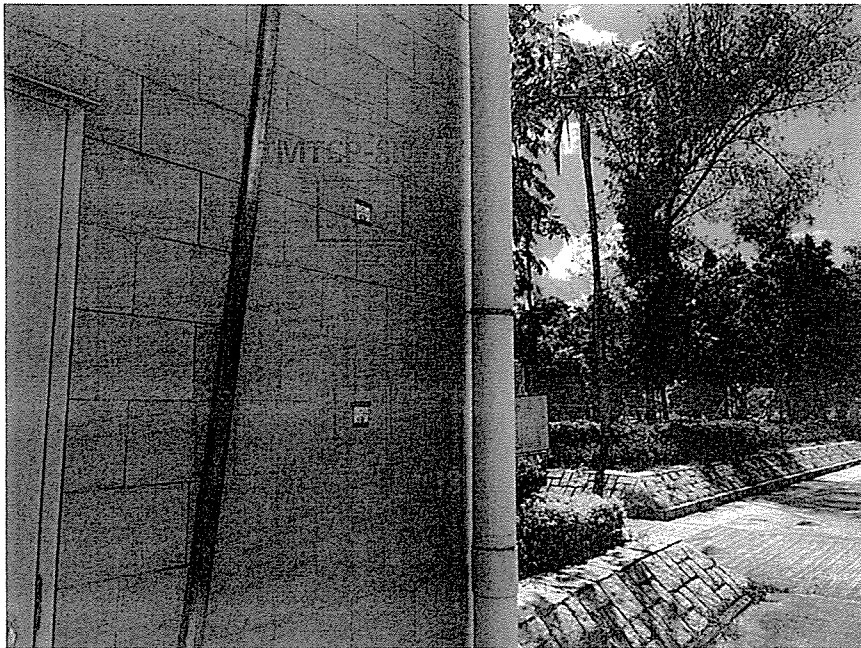
Tiltmeter



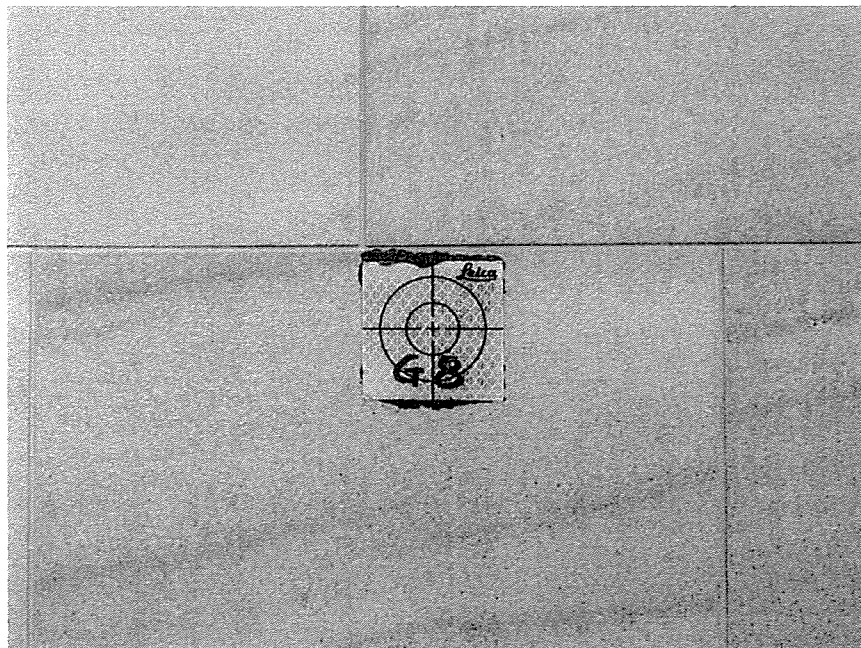
相片 007A

豫章堂及羅家祠 2020 年 10 月 8 日會議記錄附件

貼紙式測量標記



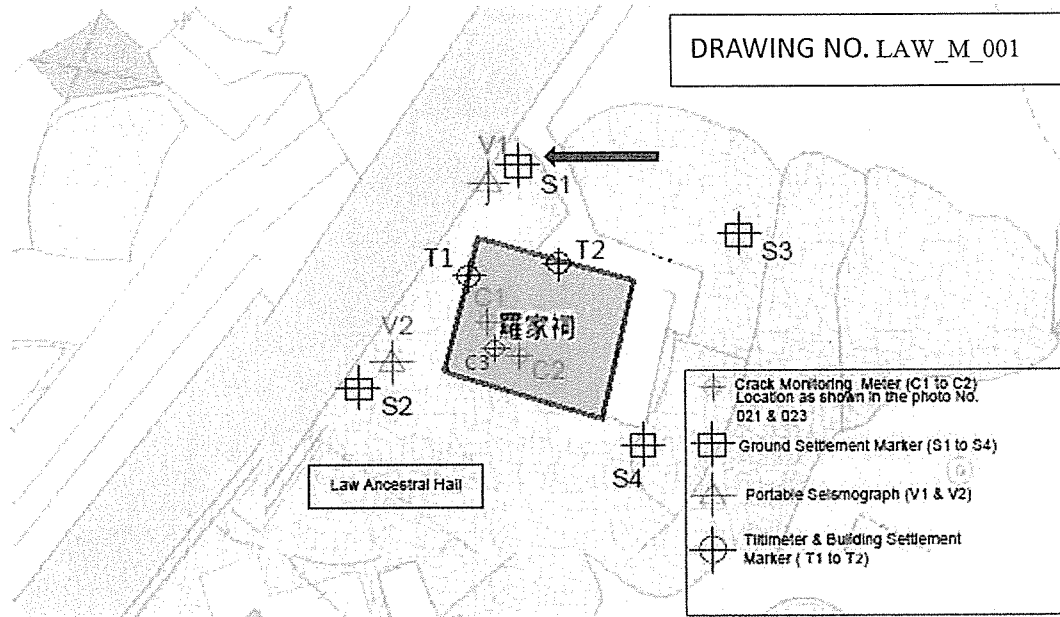
相片 007B



相片 007C

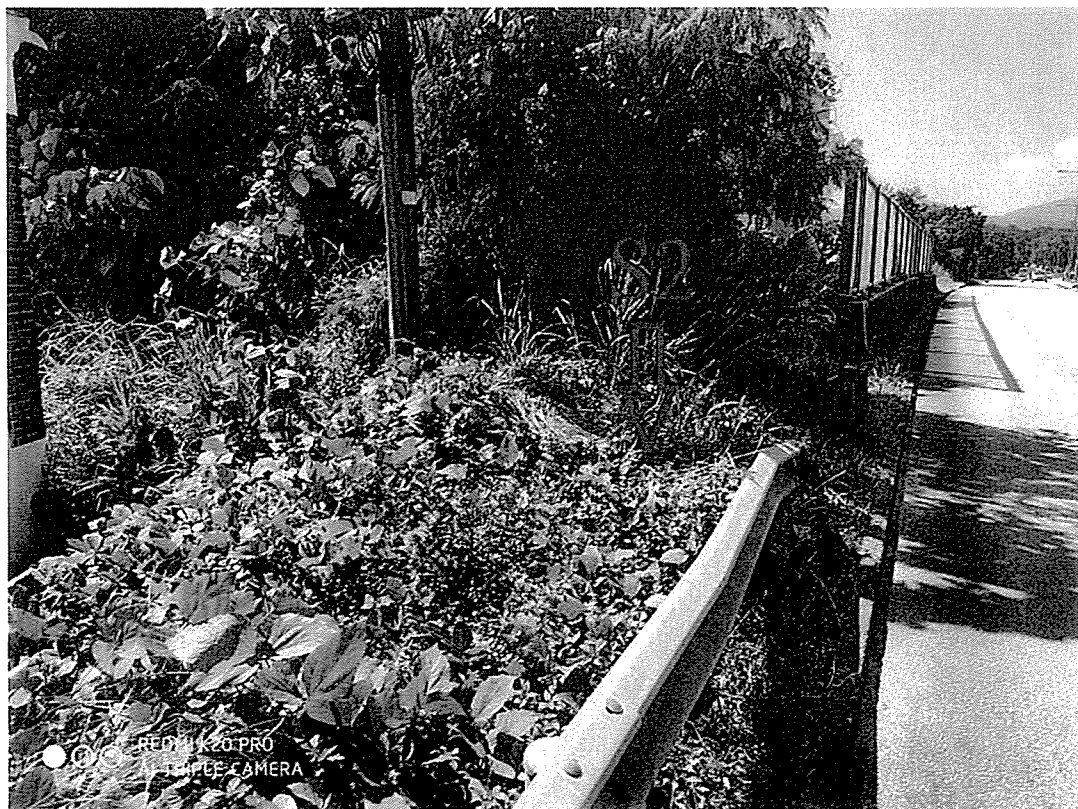
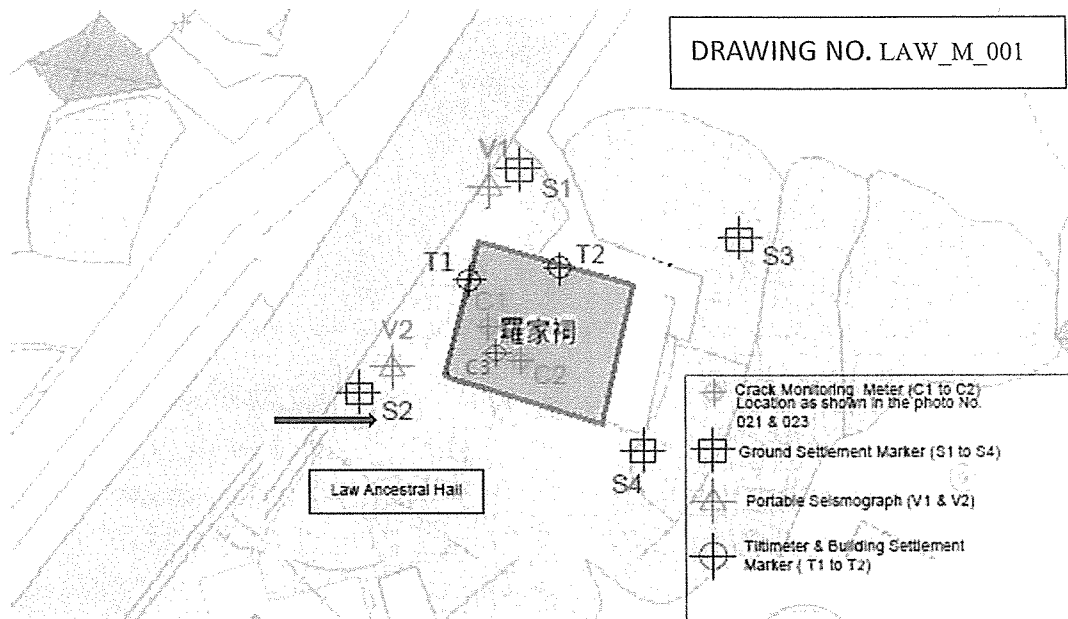
羅家祠

沉降監察點 S1



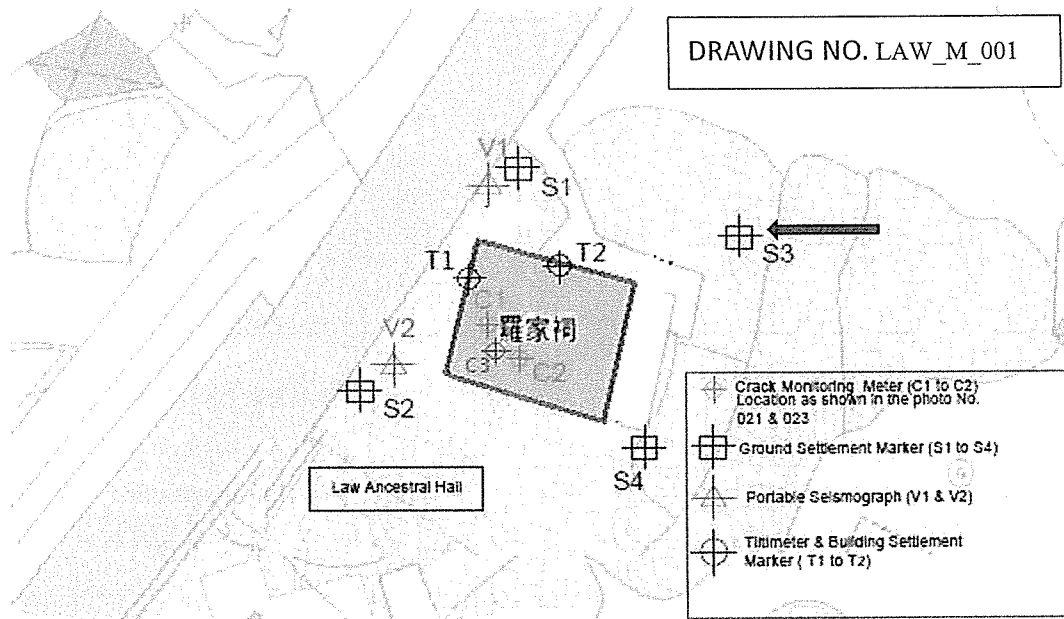
相片 008

沉降監察點 S2



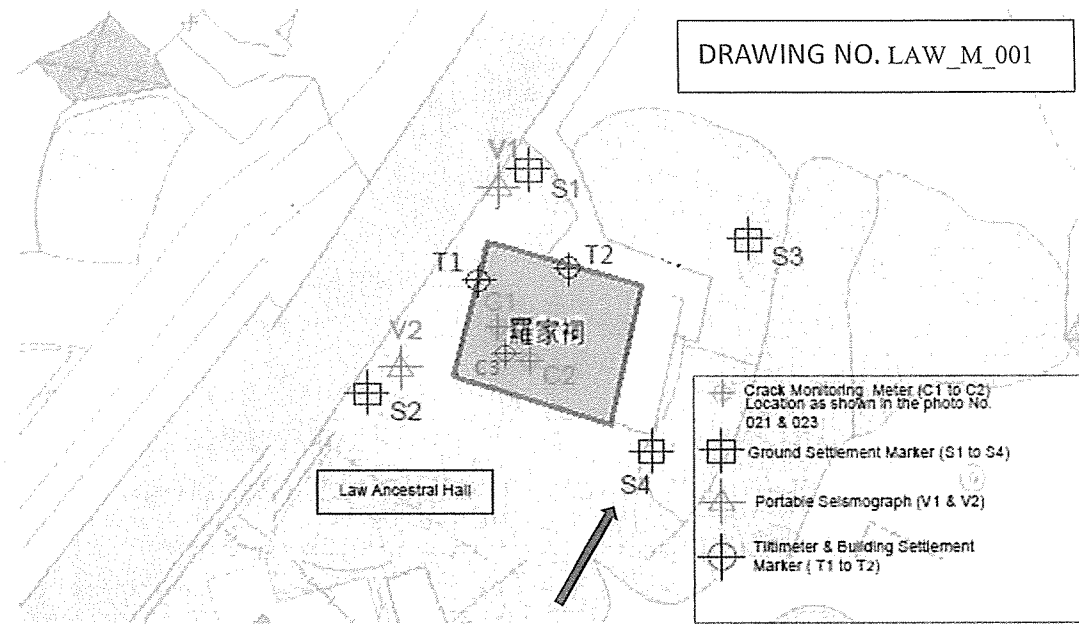
相片 009

沉降監察點 S3



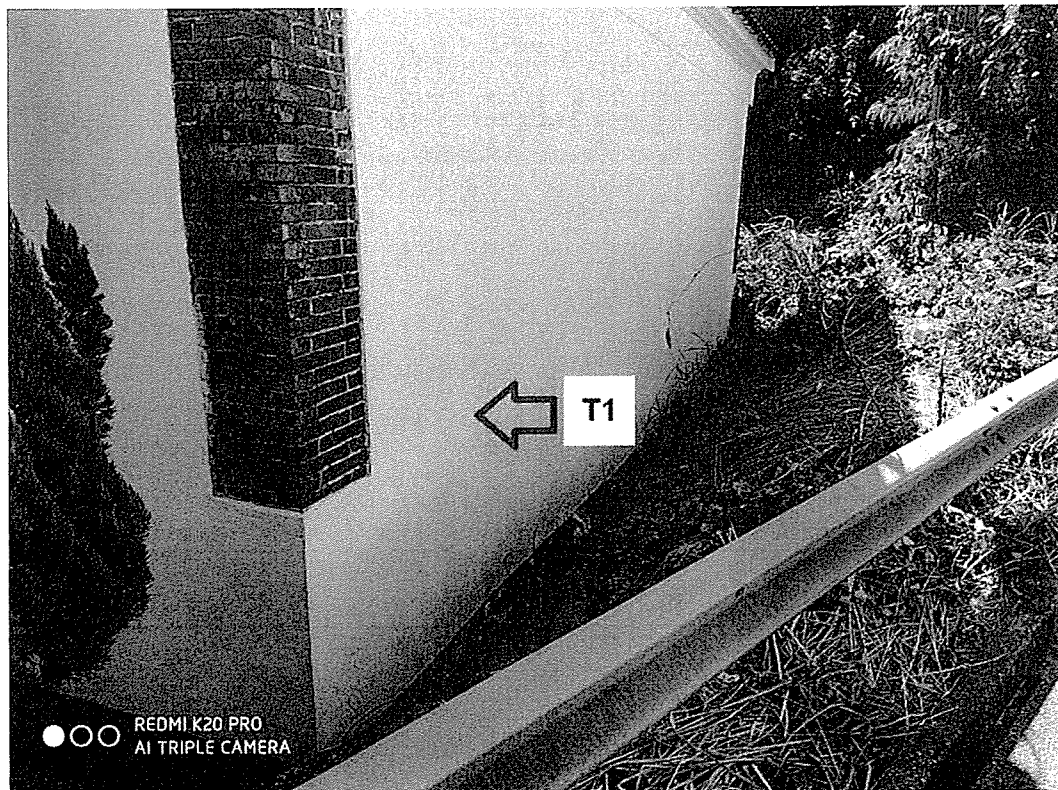
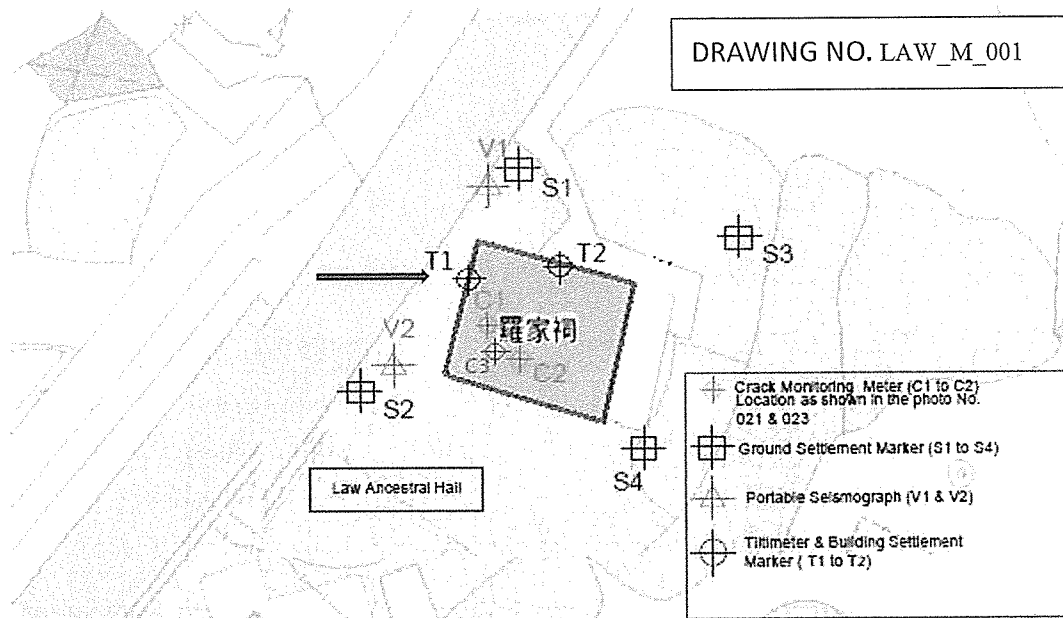
相片 010

沉降監察點 S4



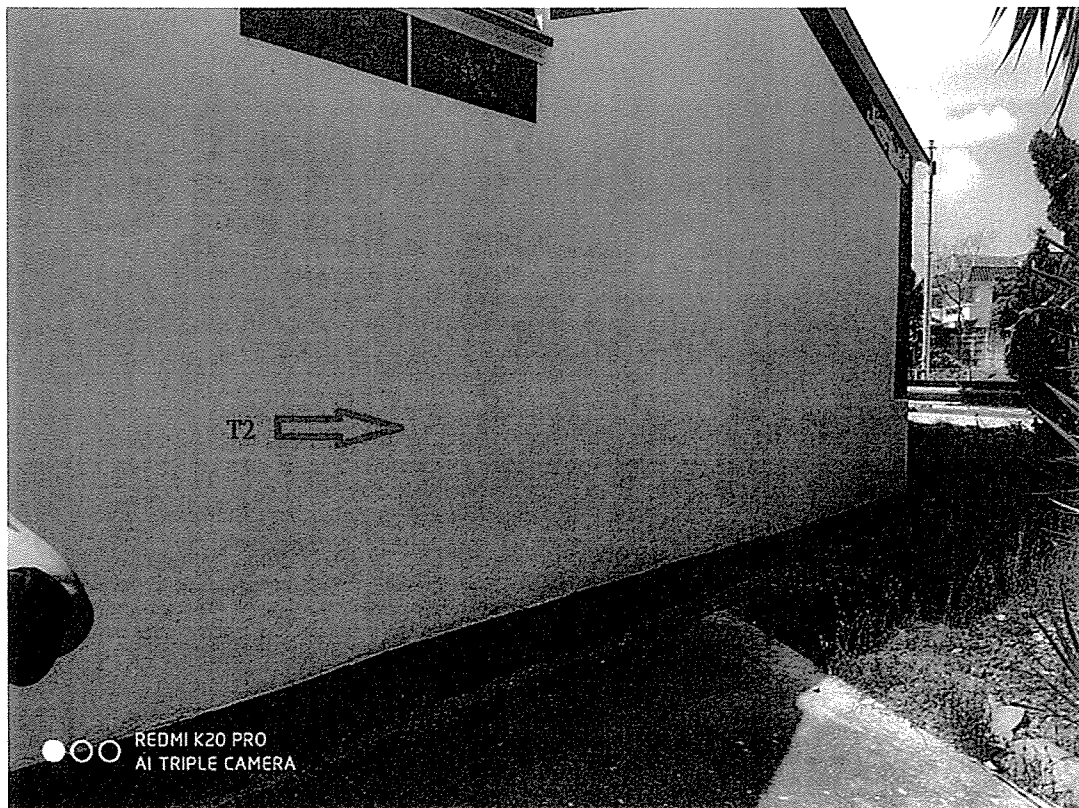
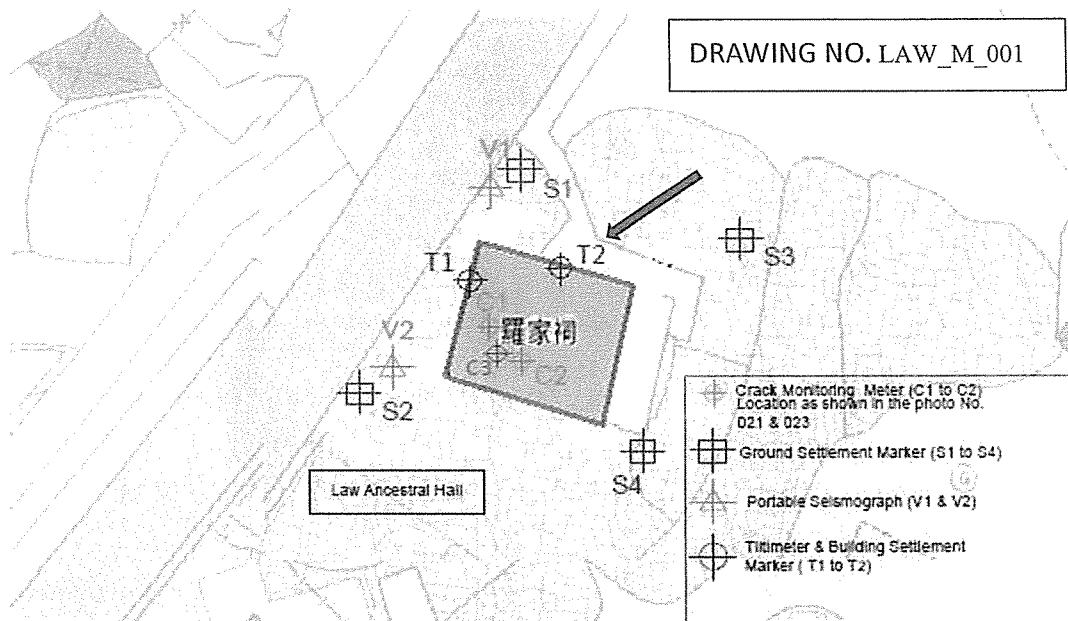
相片 011

傾斜監察點 T1



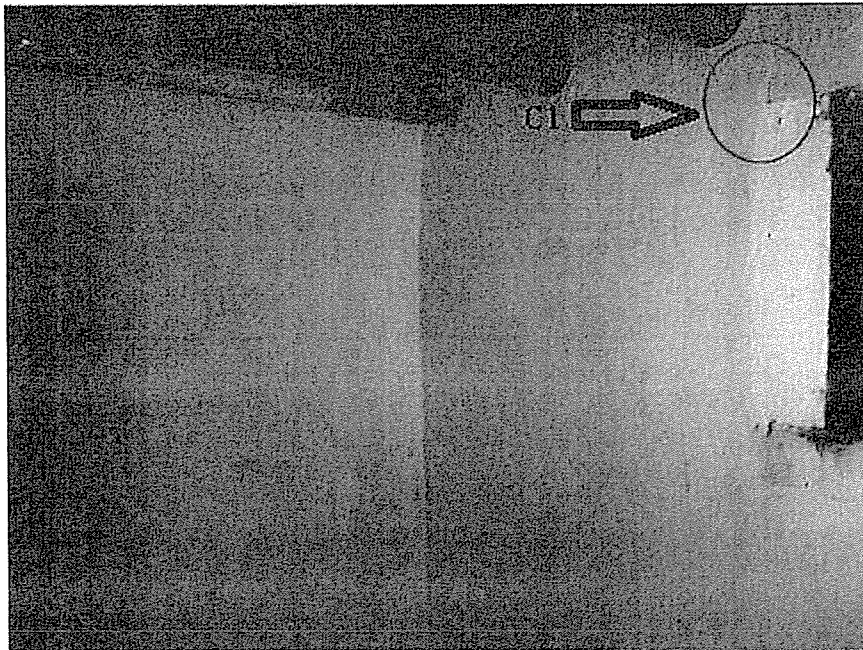
相片 012

傾斜監察點 T2

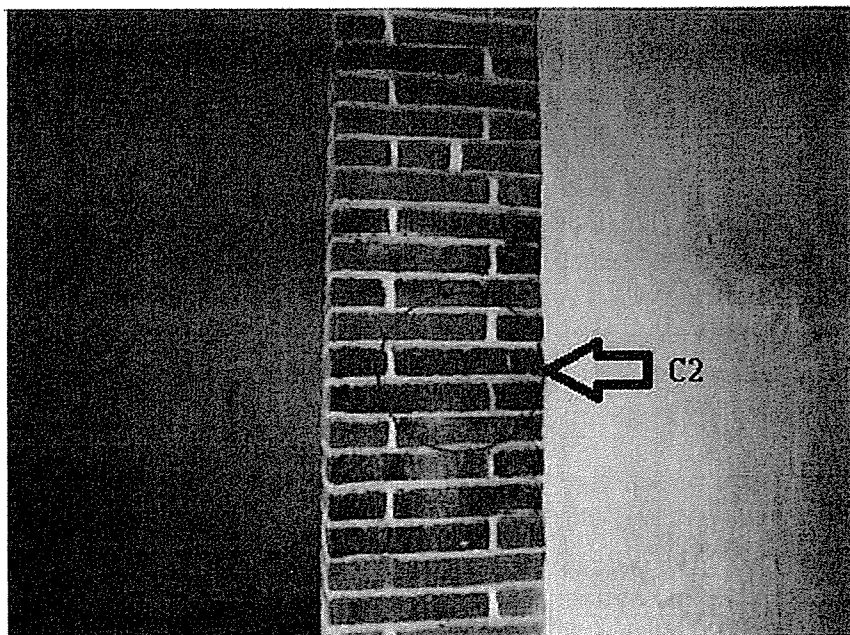


相片 013

裂紋監察點



相片 LC1



相片 LC2

渠務署合約 DC/2018/02
汀角路污水泵房及污水收集系統改善工程
工地聯絡會議記錄

日期：2021年02月25日（星期四）

時間：上午10時00分

地點：豫章堂及羅家祠

出席者	<p><u>豫章堂三號屋及羅家祠負責人</u> 羅煌生先生</p> <p><u>(渠務署顧問公司-AECOM Asia Co. Ltd.)(AECOM)</u> 林舉興先生(駐地盤工程督察 /AECOM)</p> <p><u>(渠務署承建商-上海建工海外工程有限公司)(上海建工)</u> 楊思勁先生 (副地盤代表/上海建工)</p>	<p>電話</p> <p>6440 9197</p> <p>9043 7804</p> <p>9047 9952</p>
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項目 **內容**
就汀角路污水收集系統改善工程在豫章堂及羅家祠內及附近
設置工程監察點與豫章堂三號屋及羅家祠負責人作出相討

1	地點：豫章堂		
1.1	上海建工表示，此次會議目的就跟據古物古蹟辦事處對工程期間的工程監察建議，與羅先生對監察裝置的位置及監察頻率再進行商討。		
1.2	沉降監察頻率		
1.2.1	上海建工提出沉降監察點 S4 (位置詳見圖則編號:YCL_M_001A 所示) 的監察頻率可否由一星期一次，增加為每天一次。		
1.2.2	羅先生指出沉降監察點 S4 位於豫章堂圍網內，工程人員進行監察需要家人開閘並陪同。考慮到提升監測頻率會為其家人帶來滋擾及影響，因此不同意增加監察頻率，維持一星期一次。		
1.3	增加樓宇沉降監察位置		
1.3.1	上海建工提出在豫章堂 1 號屋外加設樓宇沉降監察點 T3,T4 (位置詳見圖則編號:YCL_M_001A 所示) 進行樓宇沉降監察。樓宇沉降監察點將使用貼紙式測量標記 (詳見附件相片 007B 及 C) 進行監察。		
1.3.2	羅先生同意。		
1.4	樓宇沉降監察頻率		
1.4.1	上海建工提出可於豫章堂圍網外進行樓宇沉降監察，因此建議監察頻率為每天一次。		
1.4.2	羅先生同意上述安排。		
1.5	傾斜監察頻率		

1.5.1	因應古物古蹟辦事處的建議，上海建工詢問可否更改傾斜監察點 T1 及 T2 (位置詳見圖則編號: YCL_M_001A 所示) 的監察頻率，由一星期一次增加為每天一次。上海建工指出工程人員可於豫章堂圍網外進行監察。		
1.5.2	羅先生對上述建議沒有意見。		
1.6	裂紋監察		
1.6.1	承上次會議所述，上海建工希望羅先生能考慮讓工程團隊在附件相片 C1 至 C9 所示屋內外位置安裝裂紋監察儀，並現場展示裂紋監察儀樣板相片 (詳見附件相片 007)。		
1.6.2	經了解後，羅先生認同安裝裂紋監察儀較為穩妥，並同意在附件相片 C1 至 C9 所示位置安裝裂紋監察儀進行裂紋監察。		
1.6.3	上海建工提出在工程開展前需在各裂紋監察位置安裝裂紋監察儀及量度及記錄裂紋闊度和長度。		
1.6.4	由於需進入屋內範圍進行安裝，羅先生表示工程團隊需提早兩日通知安裝監察裝置以便作出安排。		
1.6.5	上海建工同意。		
1.7	裂紋監察頻率		
1.7.1	因應古物古蹟辦事處的建議，上海建工詢問可否增加屋內裂紋 (即附件相片 C3 至 C9 所示) 的監察頻率，由一個月一次增加為每日一次。		
1.7.2	羅先生提出因裂紋監察點需要進入豫章堂屋內進行監察，考慮到其母親年紀老邁，工程人員頻繁進入屋內進行監察將為其家人帶來滋擾及嚴重影響。基於上述原因，羅先生要求監察頻率維持一個月一次，建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
1.7.3	上海建工表示明白，並將如實向有關部門反映。		
1.8	總結		
1.8.1	AECOM 及上海建工明白羅先生的要求並表示工程團隊會進一步提交以上建議予有關部門再作審批。		
2	地點：羅家祠		
2.1	增加樓宇沉降監察位置		
2.1.1	上海建工提出在羅家祠更改樓宇沉降監察點 T1 及 T2 位置，並另外加設樓宇沉降監察點 T3 及 T4 (位置詳見圖則編號: LAW_M_001A 所示) 進行樓宇沉降監察。樓宇沉降監察點將使用貼紙式測量標記 (詳見附件相片 007B 及 C) 進行監察。		
2.1.2	羅先生同意。		
2.2	樓宇沉降監察頻率		
2.2.1	上海建工建議監察頻率為每天一次。		

2.2.2	羅先生同意。		
2.3	裂紋監察		
2.3.1	承上次會議所述，上海建工希望羅先生能考慮讓工程團隊在附件相片 LC1 至 LC3 所示屋內位置安裝裂紋監察儀，並現場展示裂紋監察儀樣板相片(詳見附件相片 007)。		
2.3.2	經了解後，羅先生認同安裝裂紋監察儀較為穩妥，並同意在附件相片 LC1 至 LC3 所示位置安裝裂紋監察儀進行裂紋監察。		
2.3.3	上海建工提出在工程開展前需在各裂紋監察位置安裝裂紋監察儀及量度及記錄裂紋闊度和長度。		
2.3.4	羅先生表示希望工程團隊安排與豫章堂同日安裝裂紋監察儀。		
2.3.5	上海建工同意。		
2.4	裂紋監察頻率		
2.4.1	因應古物古蹟辦事處的建議，上海建工詢問可否增加屋內裂紋 (即附件相片 LC1 至 LC3 所示)的監察頻率，一個月兩次增加為每日一次。羅先生提出因需要進入羅家祠內進行監察，其本人必須陪同工程人員入內，因此要求與豫章堂同日進行裂紋監察，頻率改為一個月一次。與豫章堂情況一樣，建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
2.4.2	建議如工程團隊發現裂紋監察點出現明顯變化，再與其相討增加監察頻率。		
2.5	總結		
2.5.1	AECOM 及上海建工明白羅先生的要求並表示工程團隊會進一步提交以上建議予有關部門再作審批。		
	會議結束		

會後備註

豫章堂

於 2021 年 3 月 15 日下午 2 時在豫章堂進行安裝裂紋監察儀(C1 至 C9 所示位置)，羅先生表示跟據現場所見裂紋監察儀 C6 及 C9 位置分別在睡房內及 1 樓位置。這兩個位置羅先生都不同意工程團隊進入，在以上位置安裝裂紋監察儀。而裂紋監察儀 C7 及 C8 位置現場所見為牆壁油漆剝落未發現裂縫，因此羅先生同意取消 C7 及 C8 位置安裝裂紋監察儀。

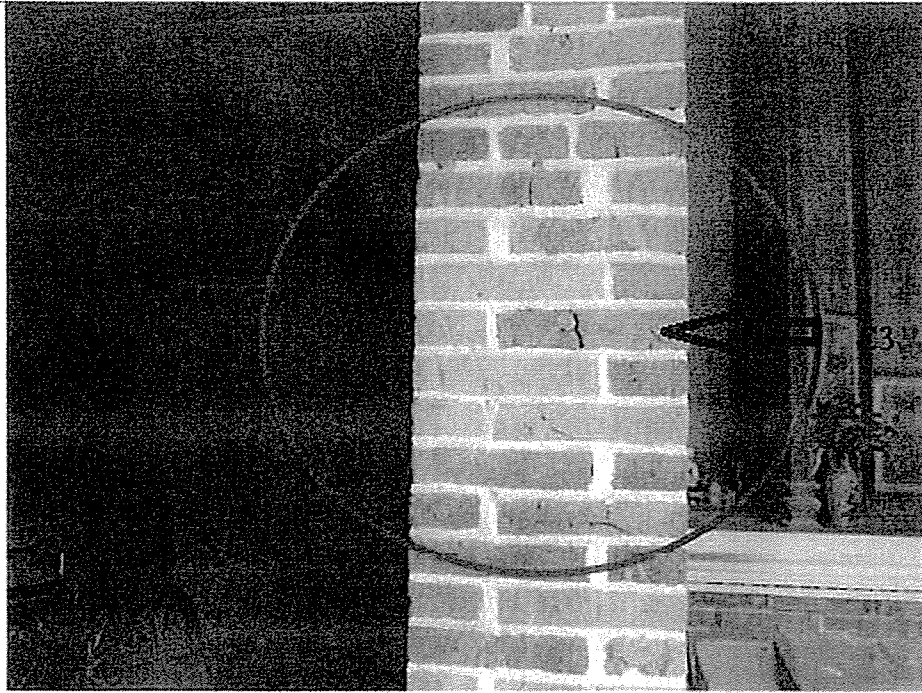
羅家祠

於 2021 年 3 月 15 日下午 2 時在羅家祠進行安裝裂紋監察儀(C1 至 C3 所示位置)，裂紋監察儀 C1 位置現場所見為牆壁油漆剝落未發現裂縫，因此羅先生同意取消 C1 位置安裝裂紋監察儀。

於 2021 年 4 月 14 日上午 10 時與羅先生相討在羅家祠外牆發現的新裂縫，需另行安裝裂紋監察儀 C4 及 C5。羅先生同意加裝 C4 及 C5 裂紋監察儀，並同意 C4 及 C5 裂紋監察儀在工程期間每日進行量度。

豫章堂

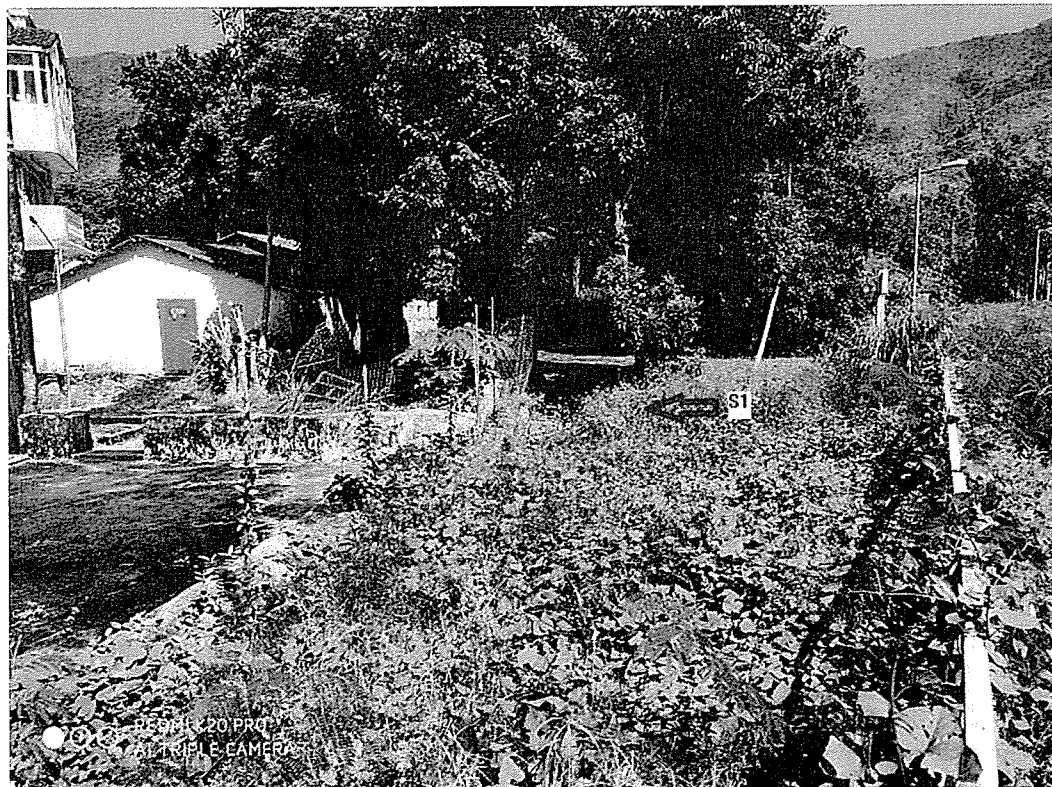
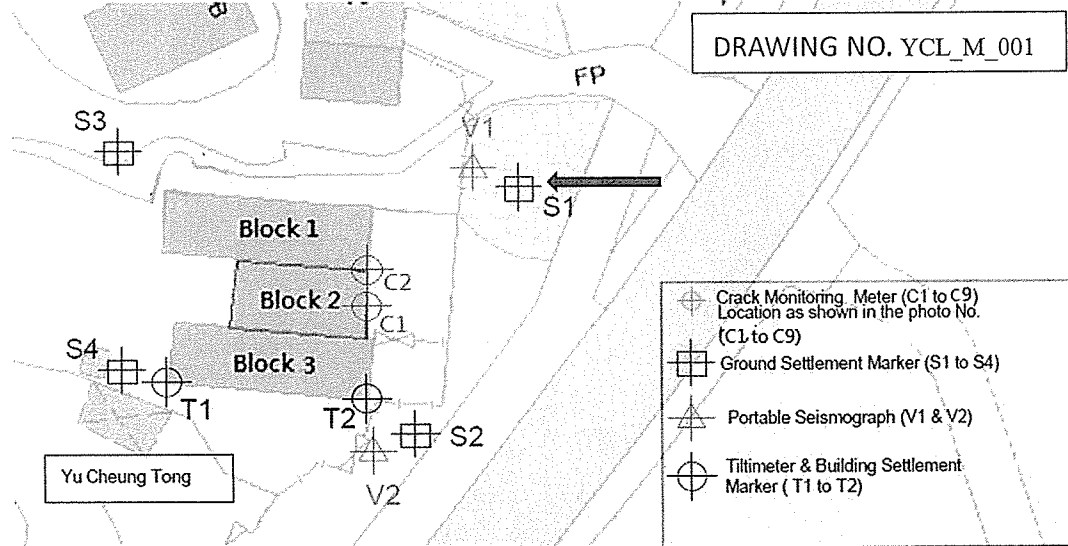
於 2021 年 4 月 16 日下午 3 時，豫章堂 1 及 2 號屋負責人羅先生致電，反對在豫章堂 1 及 2 號建築物上安裝任何方式的測量儀及標記。經現場相討後羅先生只容許進行地面沉降監察，其他一律不同意在豫章堂 1 及 2 號建築物上安裝任何方式的測量儀及標記。



相片 LC3

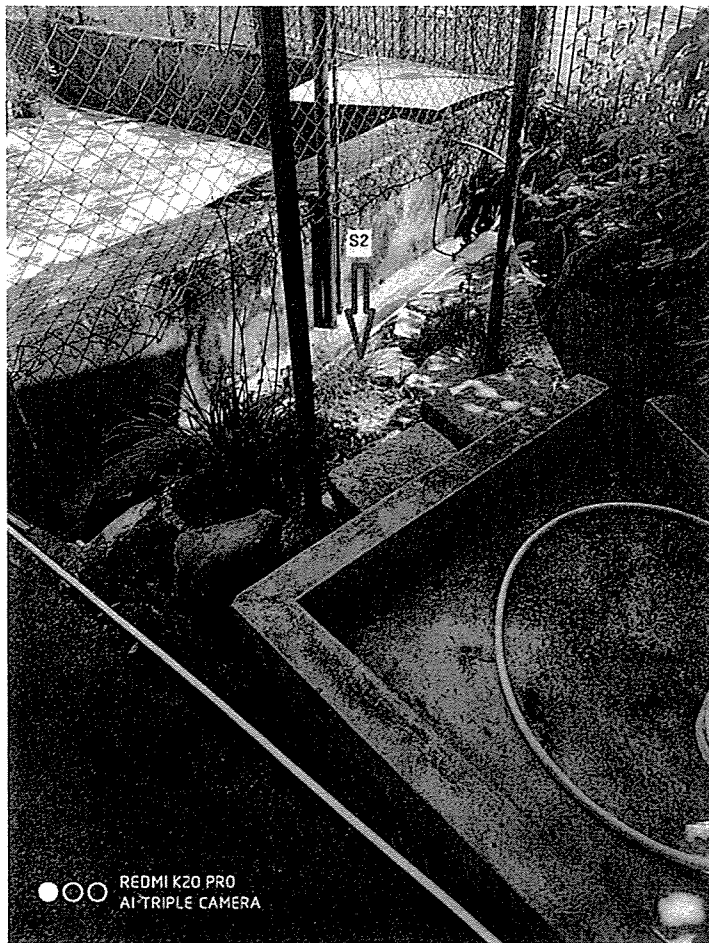
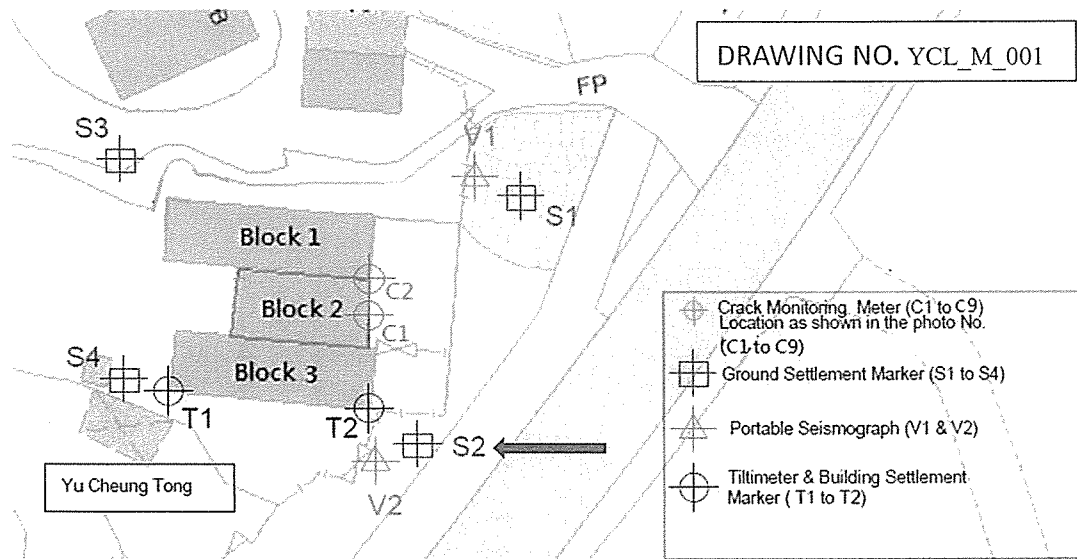
豫章堂

沉降監察點 S1



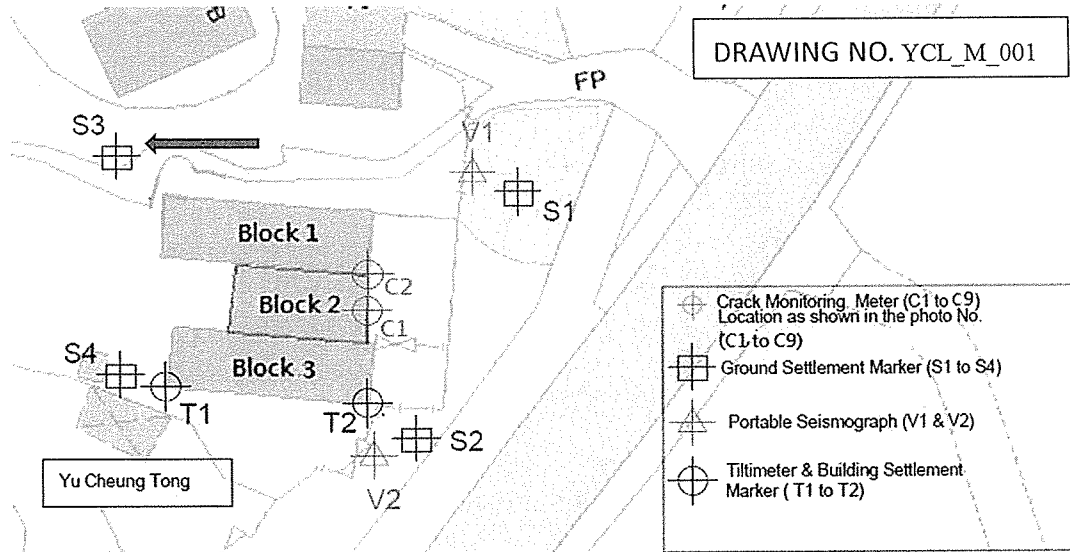
相片 001

沉降監察點 S2



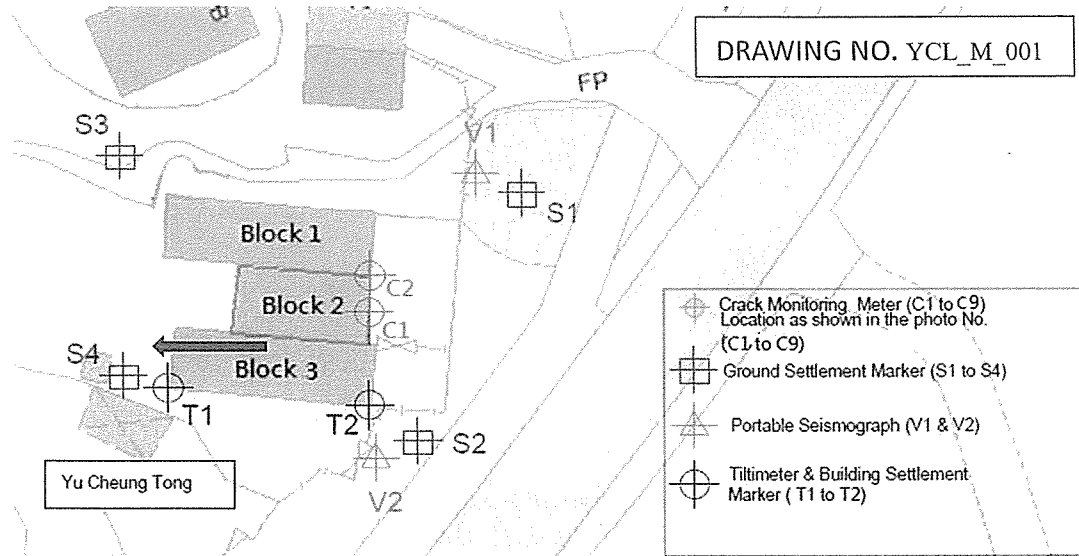
相片 002

沉降監察點 S3



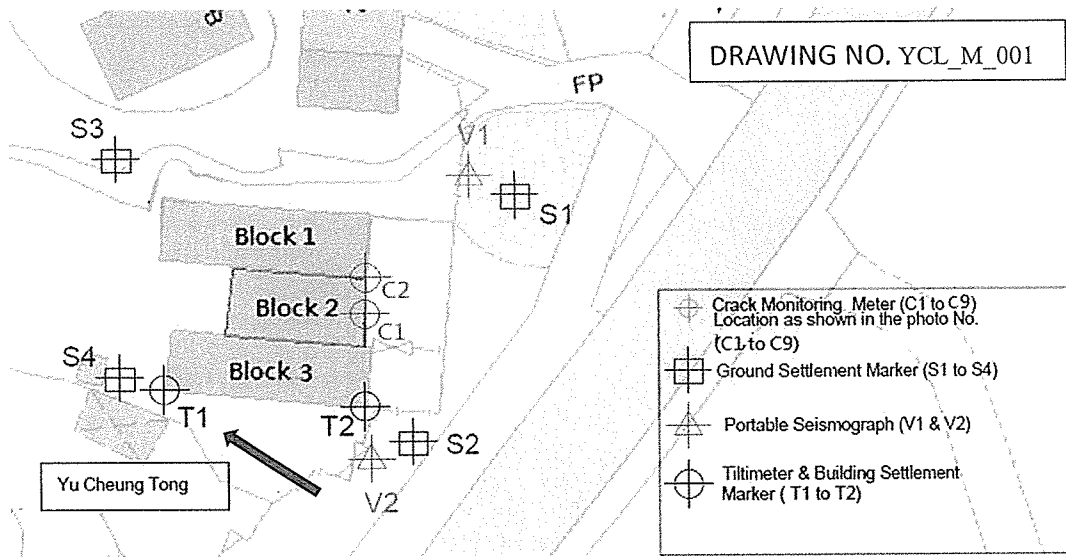
相片 003

沉降監察點 S4



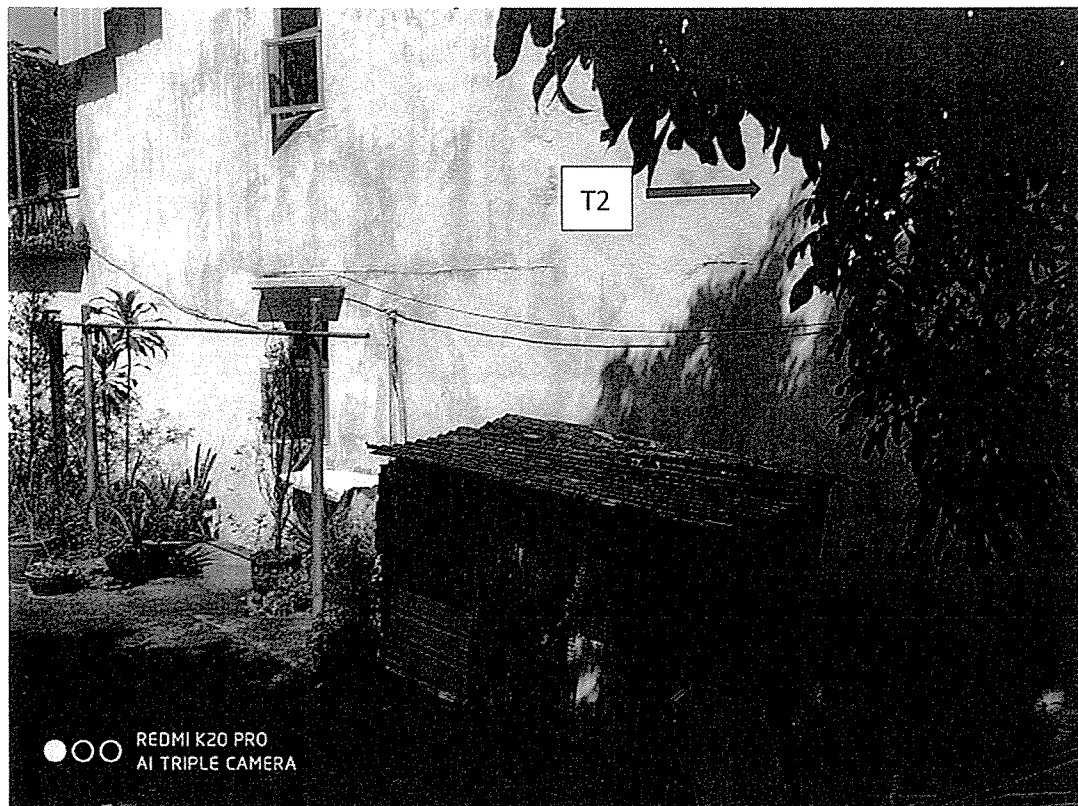
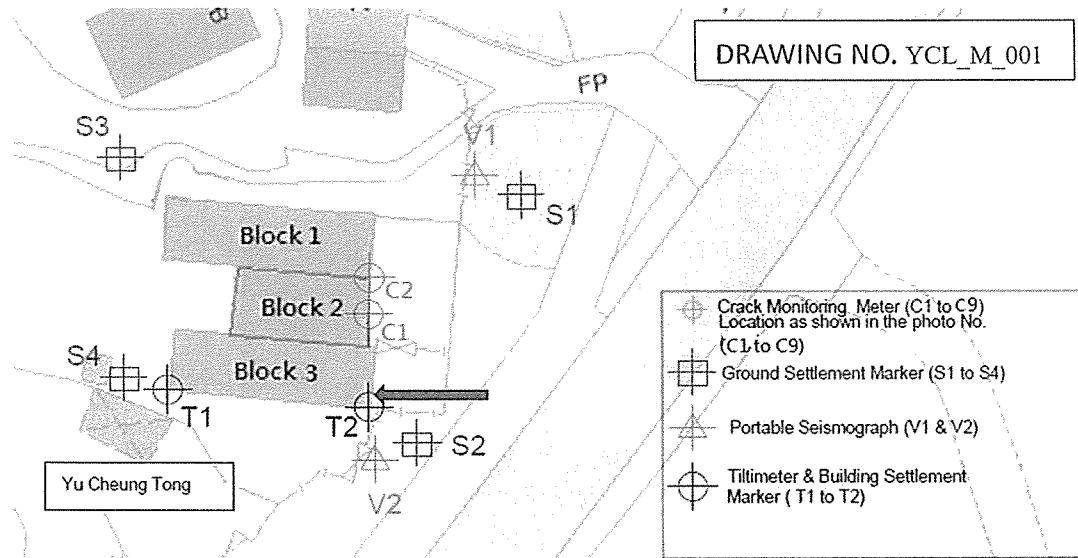
相片 004

樓宇沉降及傾斜監察點 T1



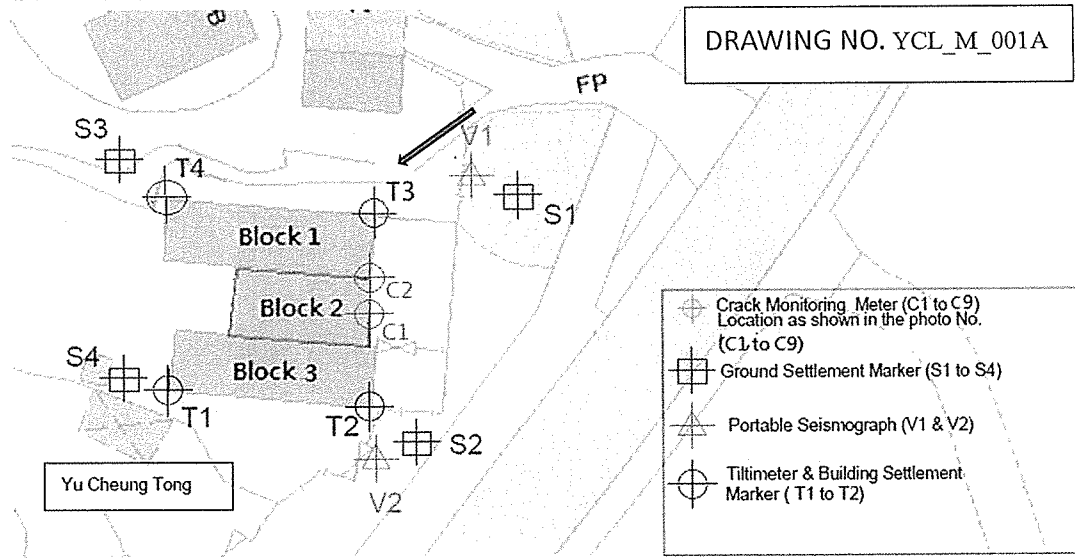
相片 005

樓宇沉降及傾斜監察點 T2



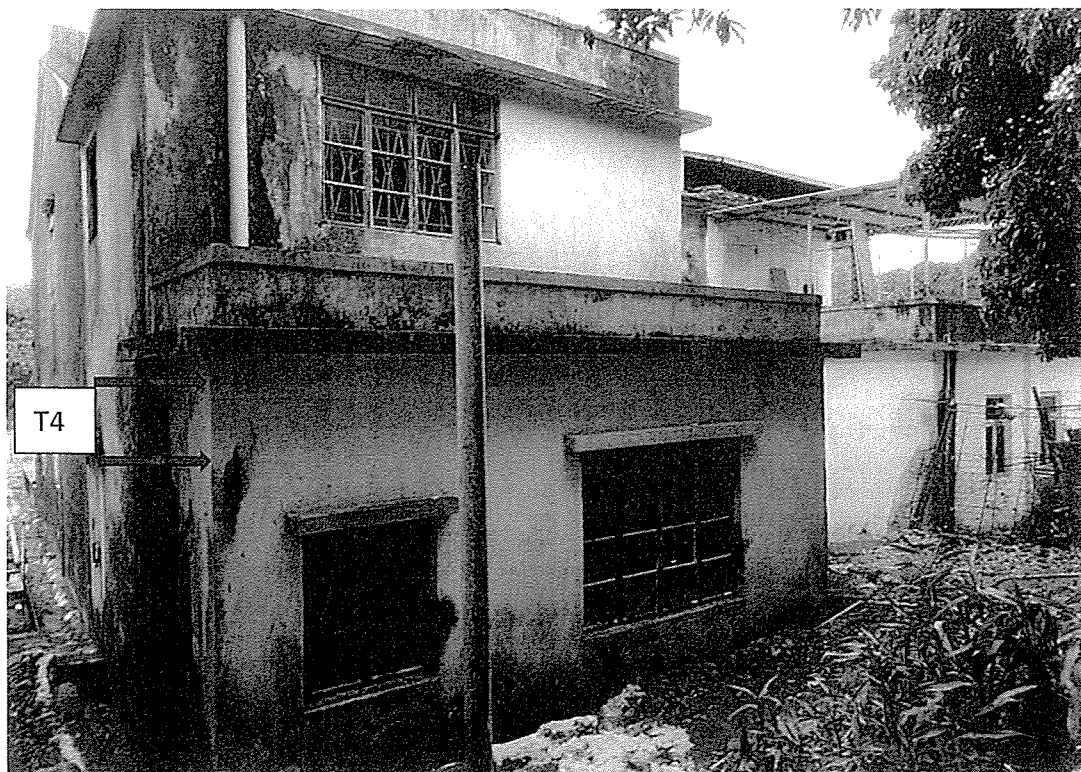
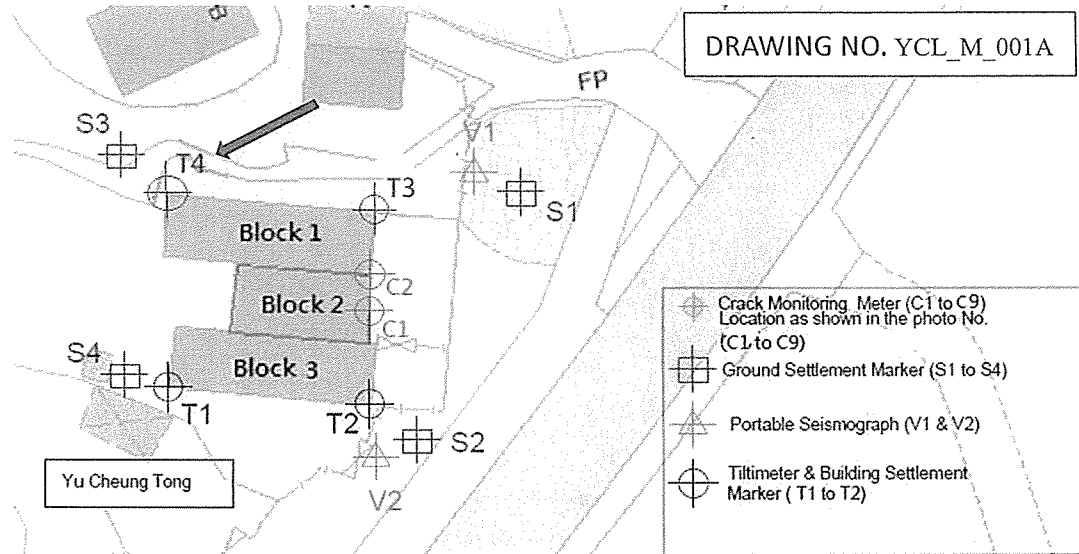
相片 006

樓宇沉降及傾斜監察點 T3



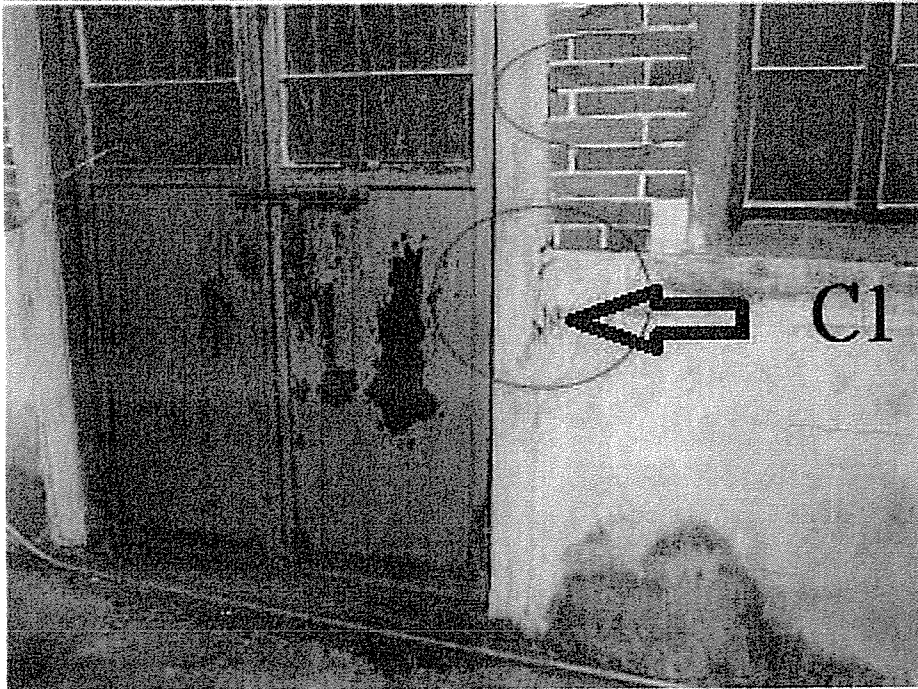
相片 005

樓宇沉降及傾斜監察點 T4

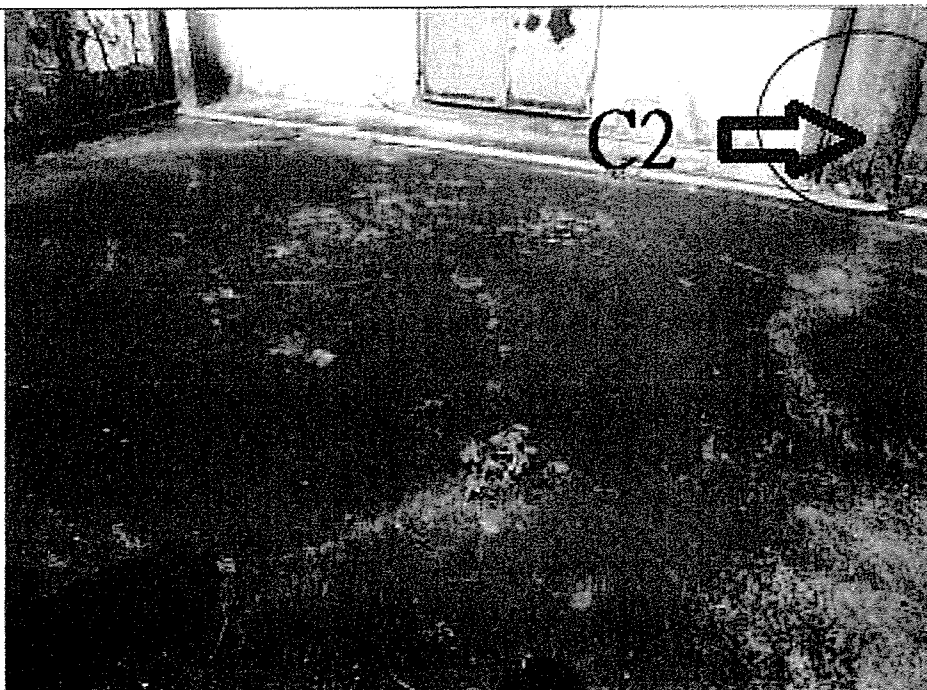


相片 006

裂紋監察點



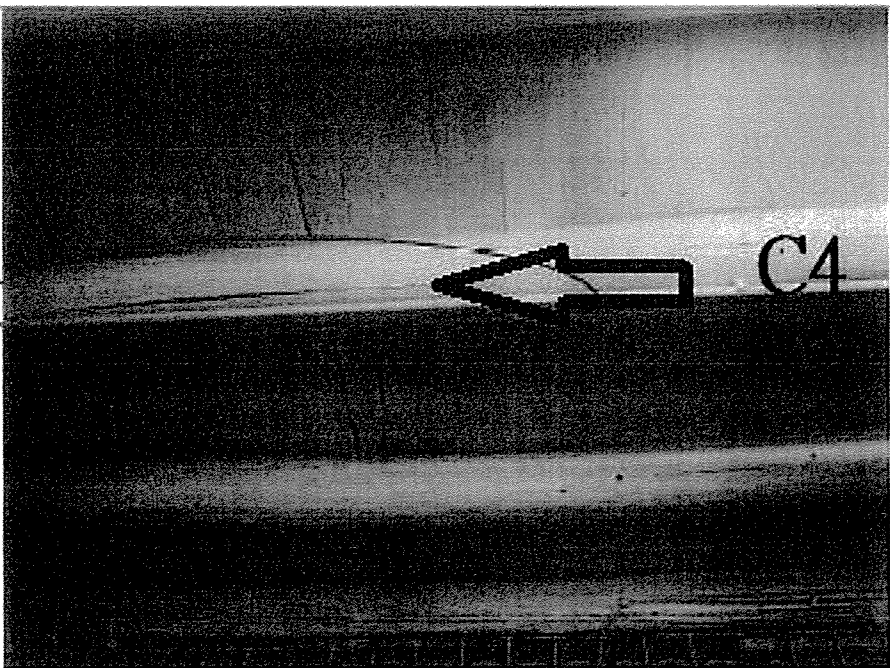
相片 C1(豫章堂 2 號屋外)



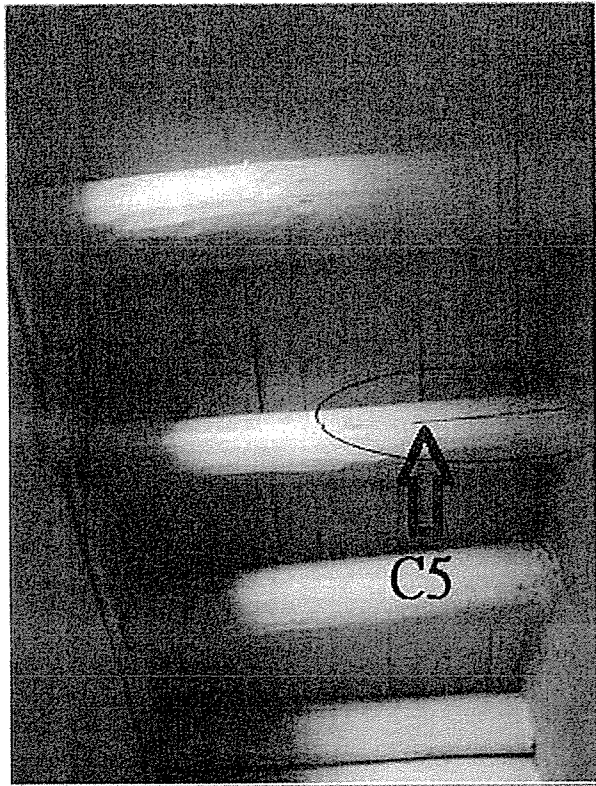
相片 C2(豫章堂 2 號屋外)



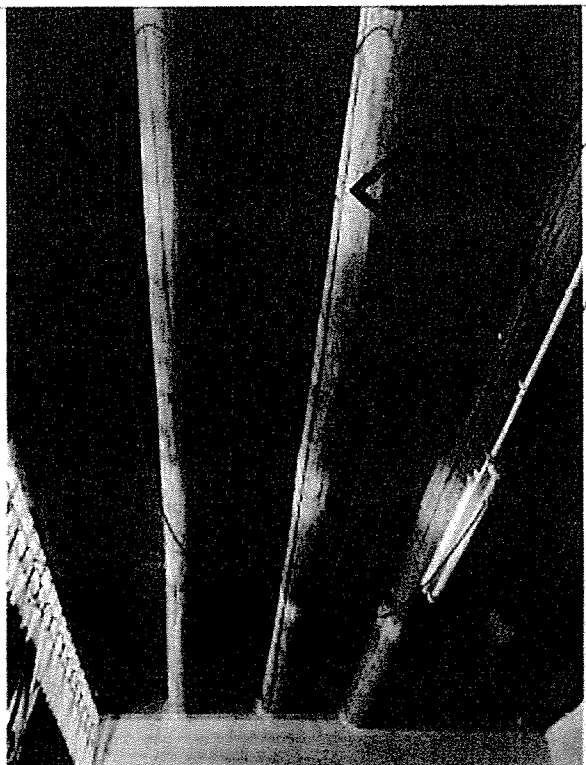
相片 C3(豫章堂 1 號屋內)



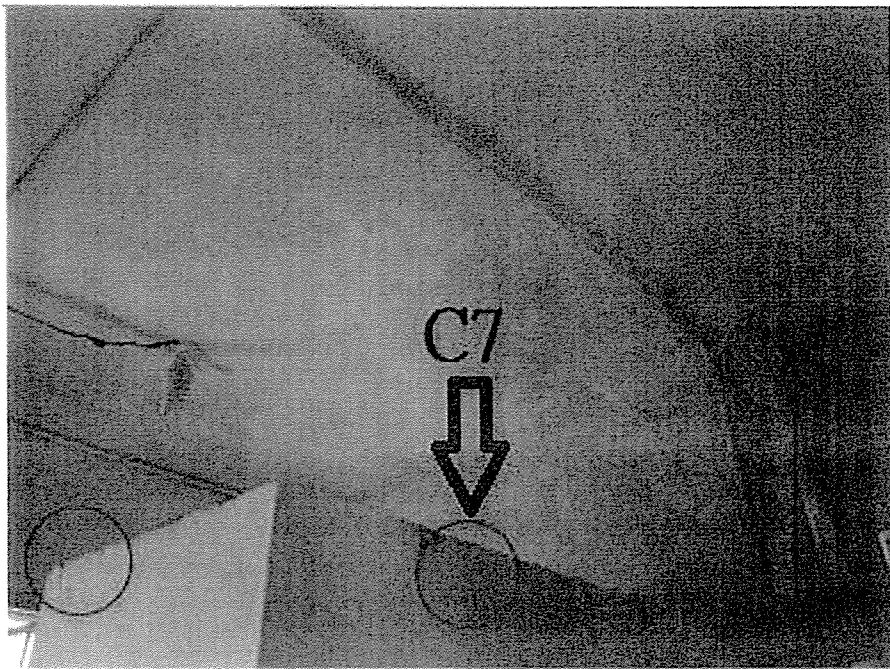
相片 C4(豫章堂 1 號屋內)



相片 C5(豫章堂 1 號屋內)



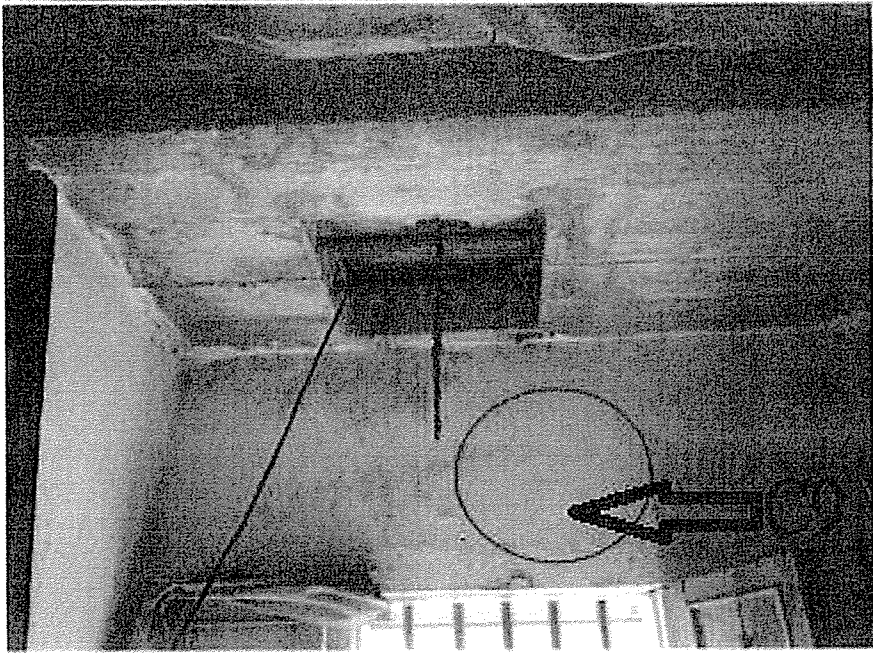
相片 C6(豫章堂 1 號屋內)



相片 C7(豫章堂 1 號屋內)

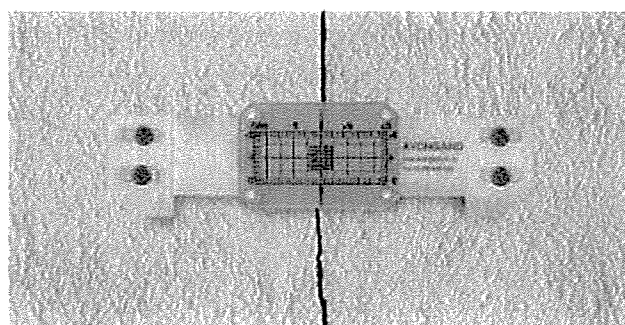
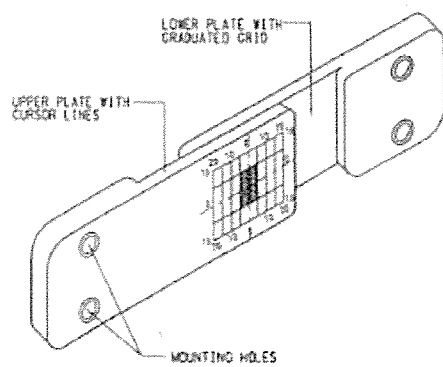


相片 C8(豫章堂 1 號屋內)



相片 C9(豫章堂 1 號屋內)

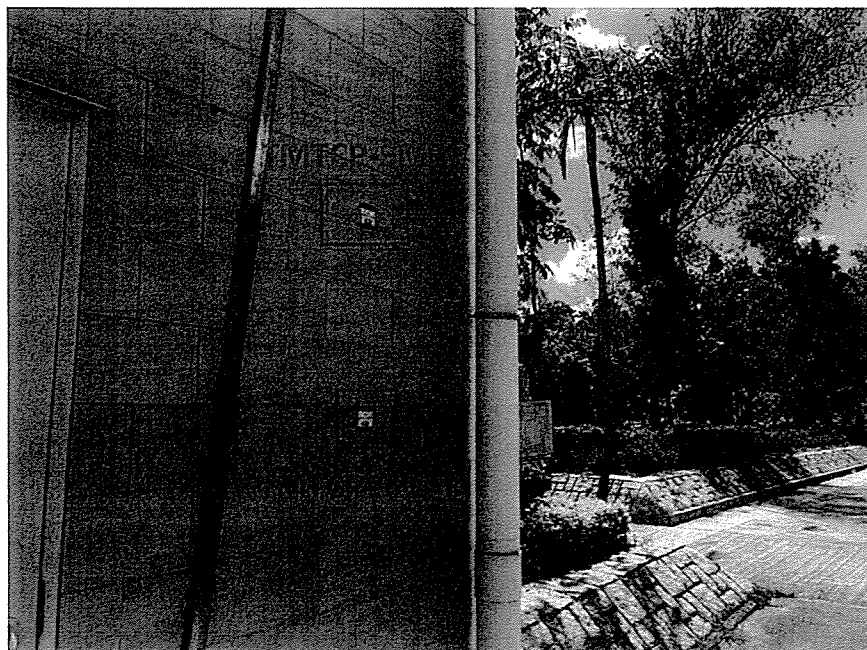
裂紋監察儀



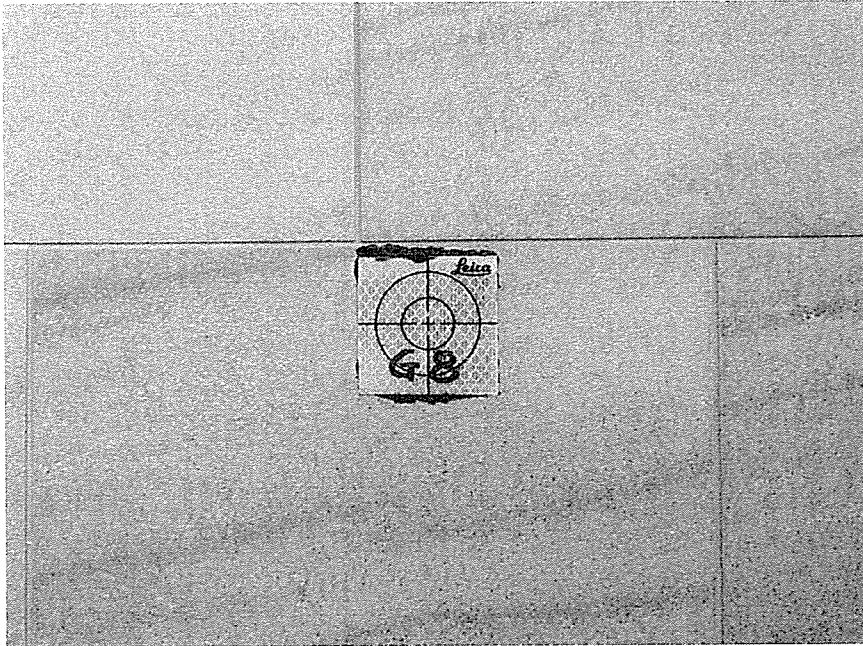
相片 007

樓宇沉降及傾斜監察裝置

(貼紙式測量標記)



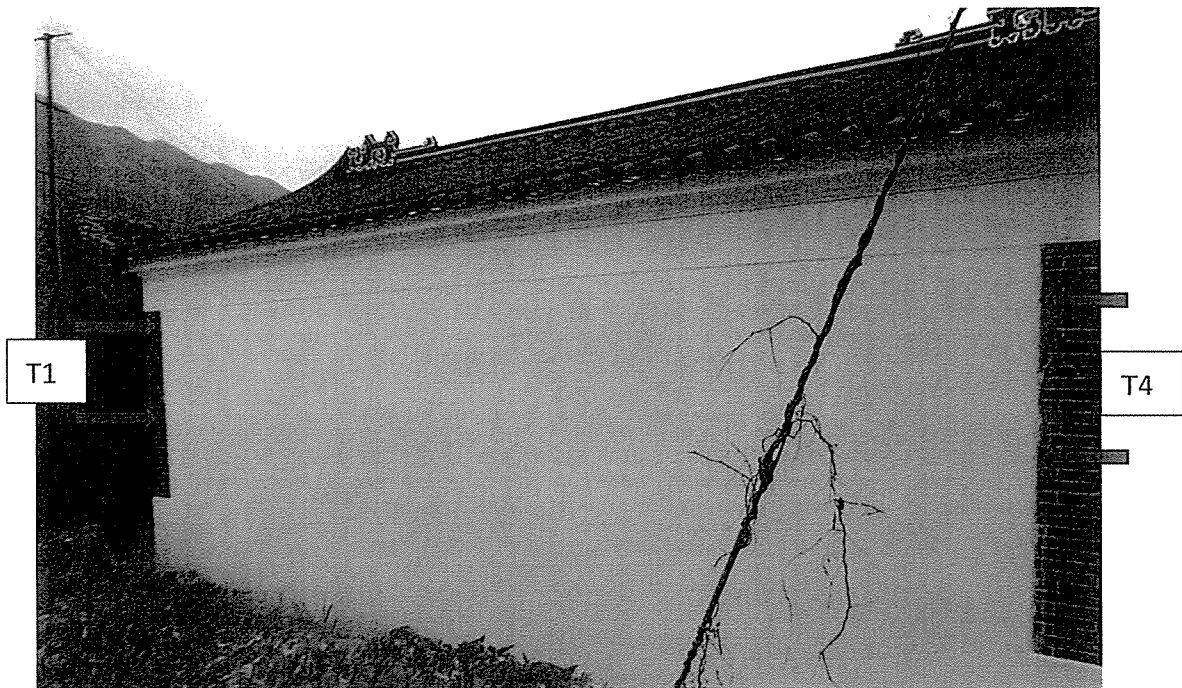
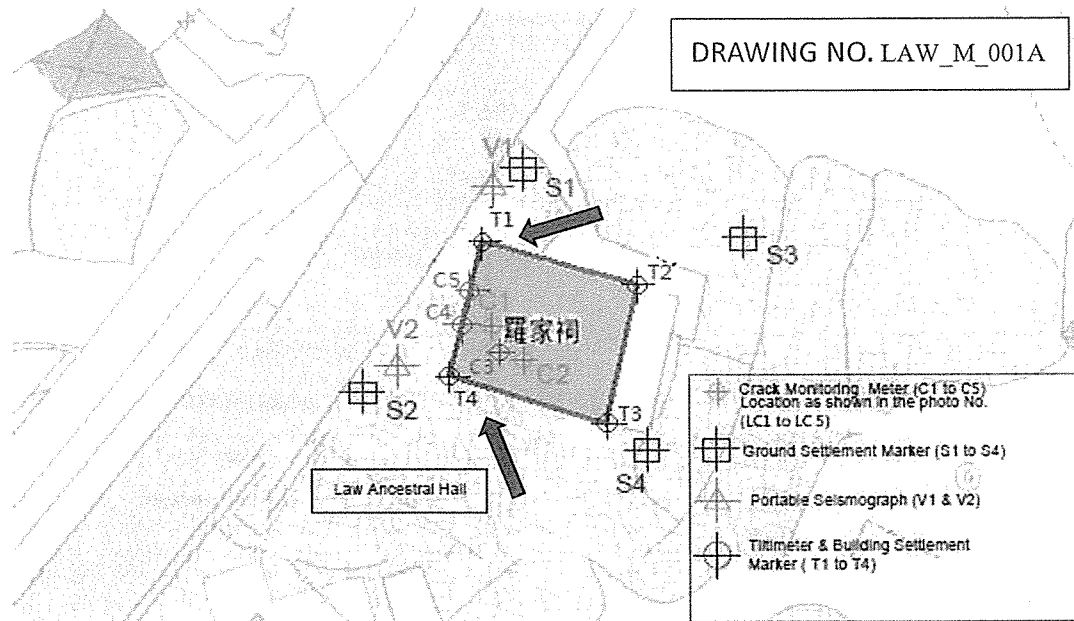
相片 007B



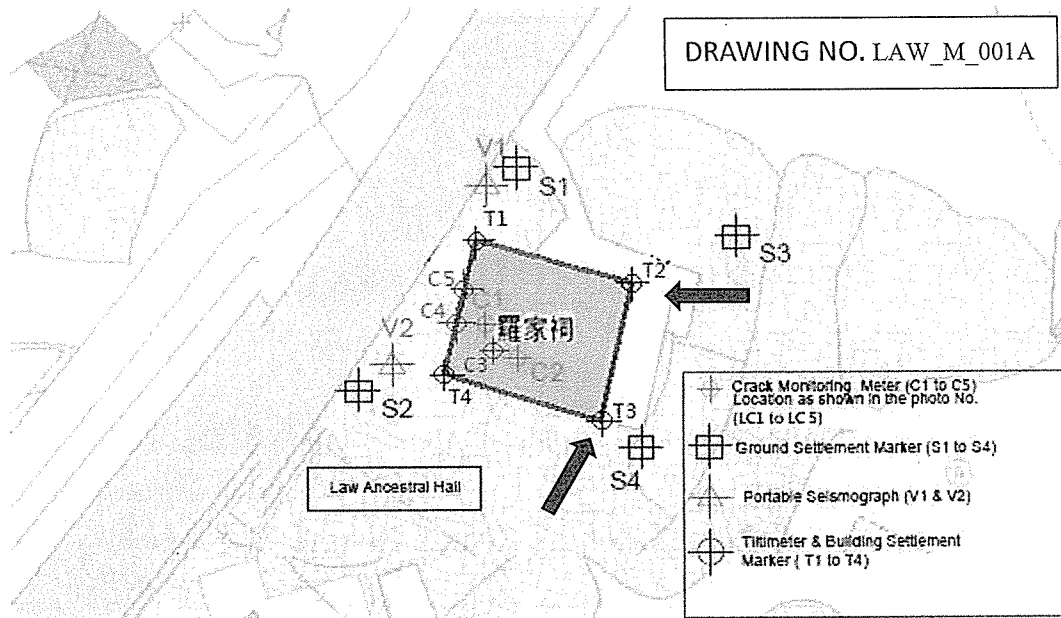
相片 007C

羅家祠

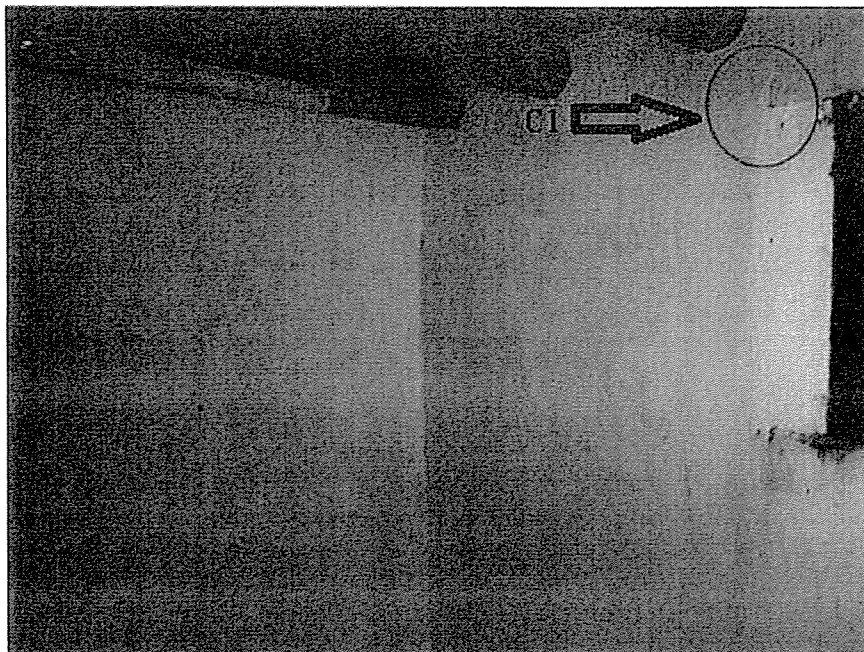
樓宇沉降監察點 T1 及 T4



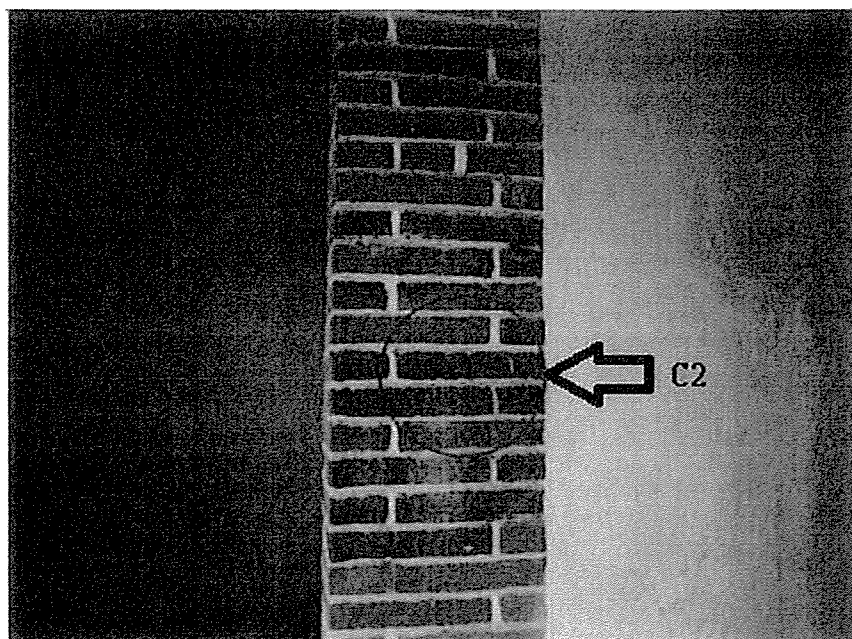
樓宇沉降監察點 T2 及 T3



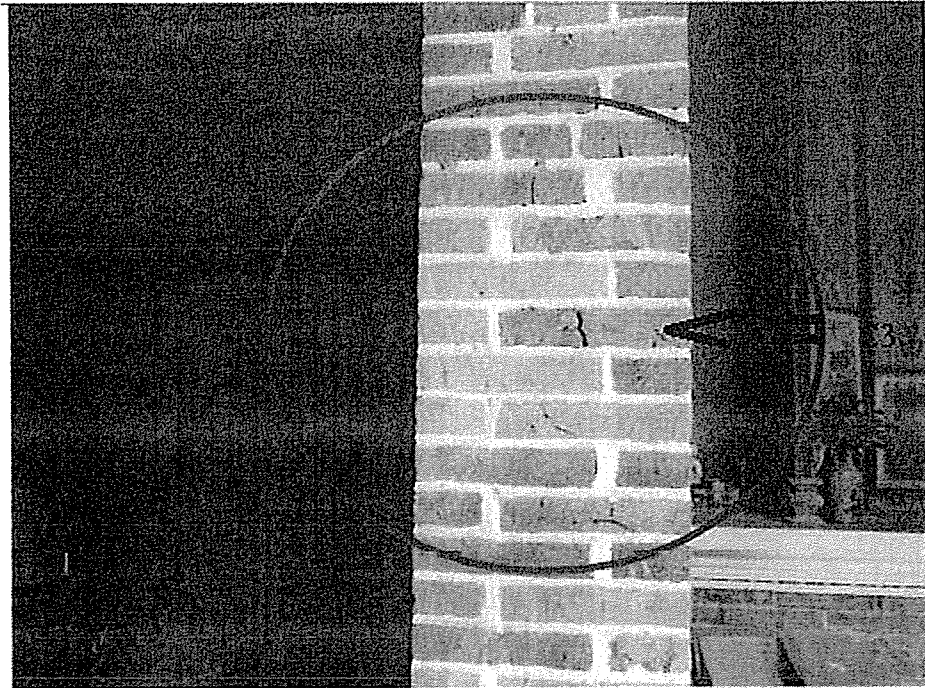
裂紋監察點



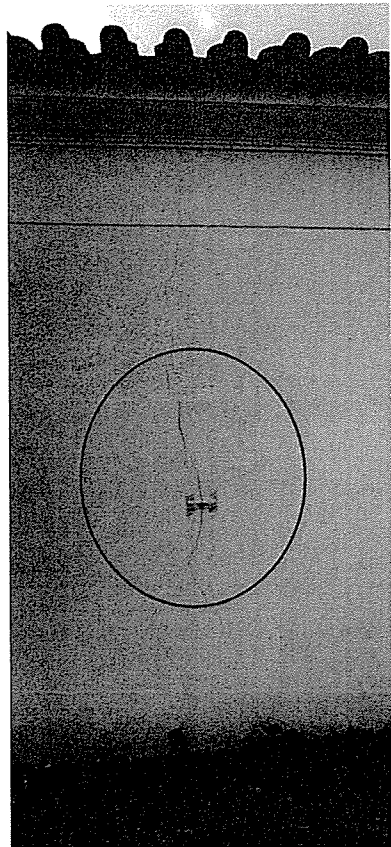
相片 LC1



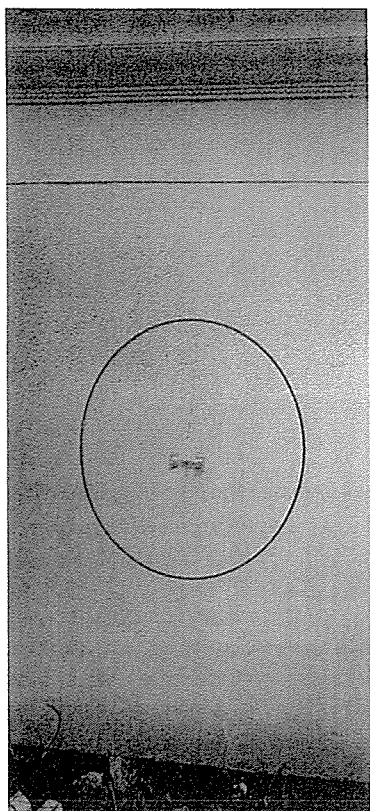
相片 LC2



相片 LC3

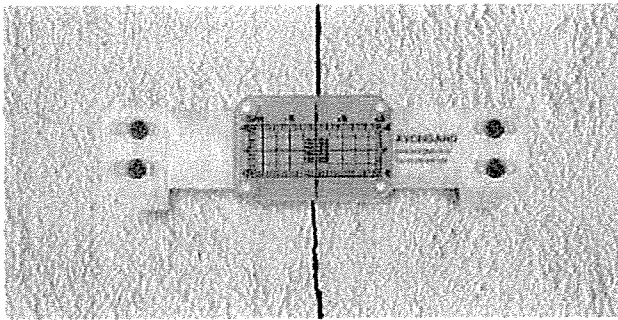
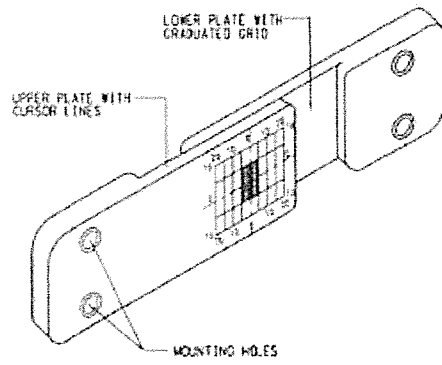


相片 LC4



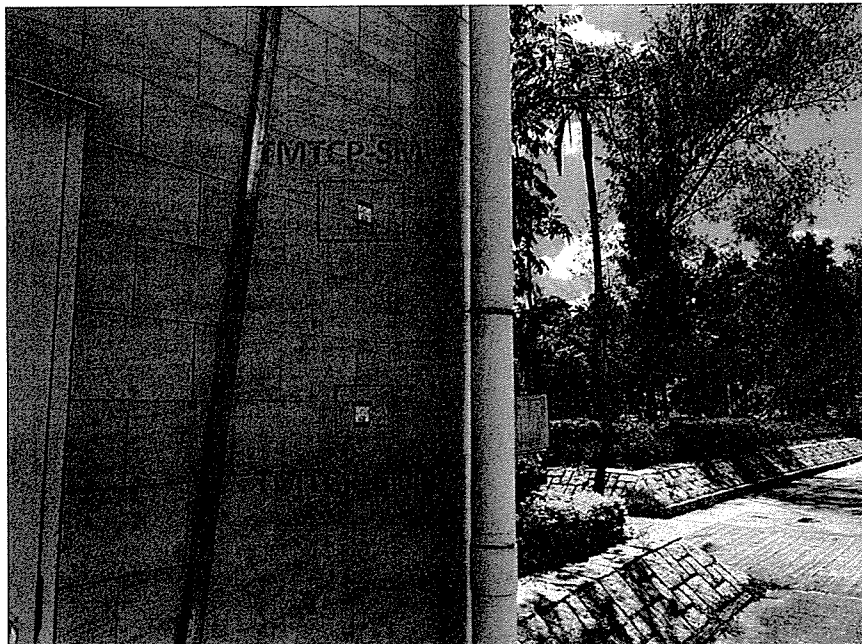
相片 LC5

裂紋監察儀

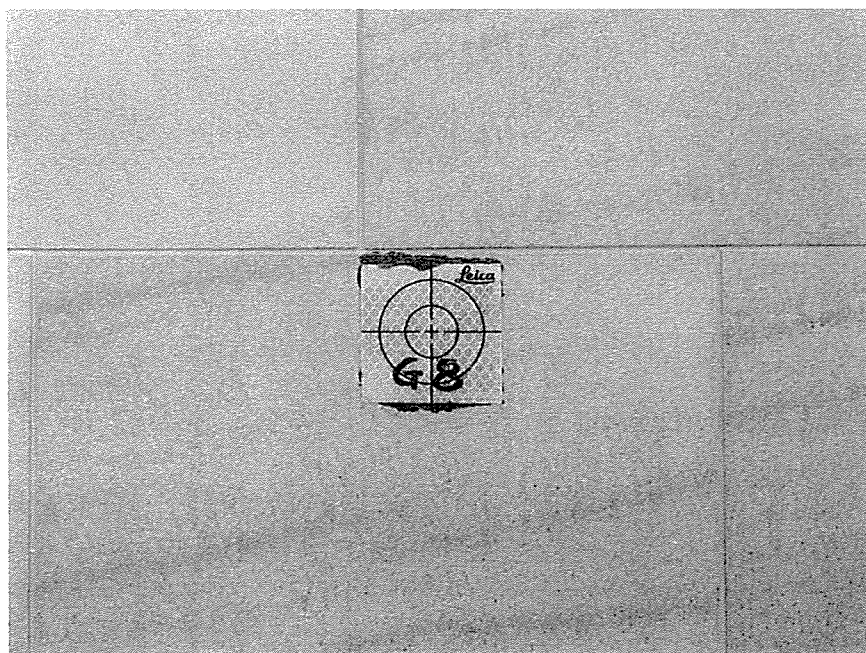


相片 007

傾斜監察裝置
貼紙式測量標記



相片 007B



相片 007C

工程名稱	合約編號DC/2018/02 – 汀角路污水泵房及污水收集系統改善工程
會議	汀角路污水收集系統改善工程聯絡會議 – 商討於施工期間監察汀角路豫章堂三號屋及羅家祠結構安排
地點	大埔汀角路豫章堂三號屋外
時間	二零二一年六月九日 上午十時正

出席人士	<u>豫章堂三號屋及羅家祠：</u>	
	羅焯生 先生	豫章堂三號屋業主代表及羅家祠負責人
	仇麗敏 女士	豫章堂三號屋業主代表及羅家祠負責人
	<u>渠務署 – Drainage Services Department：</u>	
	趙詩慧 小姐	工程師
	<u>渠務署顧問公司 – AECOM Asia Co. Ltd. (AECOM)：</u>	
	劉達明 先生	駐地盤高級工程師
	傅奕輝 先生	駐地盤高級工程督察
	李采穎 小姐	社區聯絡主任
	<u>渠務署承建商 – 上海建工海外工程有限公司 (上海建工)：</u>	
	楊思勁 先生	助理地盤代表

	內容	資料/執行
1	<u>介紹</u>	
1.1	上海建工表示是次會議的目的是向豫章堂三號屋業主代表及羅家祠負責人羅焯生先生及仇麗敏女士商討於工程期間量度安裝在豫章堂三號屋內及羅家祠建築物內的測量及裂縫監測儀器之安排。	資料
2	<u>討論事項</u>	
2.1	上海建工表示，就本年二月二十五日與羅先生商討於工程期間量度豫章堂三號屋及羅家祠的測量及裂縫監察儀器之安排後，已將羅先生的意見（即同意容許工程人員每月進入上址進行監測工作一次），提交古物古蹟辦事處審視，並於本月二日收到古物古蹟辦事處就上述安排的回覆。古物古蹟辦事處建議工程團隊再與羅先生商討增加進入豫章堂三號屋內及羅家祠建築物內進行監測次數至每日一次，以確保工程期間豫章堂三號屋及羅家祠的結構安全。	資料
2.2	仇女士表示若工程人員需每天進入上址進行監測工作，必定對居住於豫章堂三號屋內的家人，特別是對患有腦退化症的家人構成嚴重滋擾及影響。此外，羅先生亦難以安排每日陪同工程團隊進入羅家祠內進行監測。因此，羅先生及仇女士表示強烈反對增加量度次數的要求。仇女士指出，工程團隊已於豫章堂三號屋及羅家祠外牆安裝移動及沉降監測儀器，並可於不進入上址的情況下每天進行監測工作，沒有必要增加進入上址進行監測的次數。	資料

內容	資料/執行
2.3 AECOM表示明白羅先生及仇女士的憂慮，但解釋增加進入上址進行監測次數之目的，是在上址50米範圍內進行工程期間對上址進行狀況監察，以減低工程可能對上址構成的影響。若工程人員未能每天監察上址屋內情況，將可能增加工程對上址構成不良影響的風險。	資料
2.4 羅先生及仇女士表示明白工程團隊的用意，但認為按照早前會議商討的安排（即在不進入上址的情況下每天監察屋外各項測量指標的情況，並每月進入屋內一次進行監測工作），足以了解工程對上址結構的影響。因此，反對增加進入上址進行監測的次數。	資料
2.5 AECOM表示明白羅先生及仇女士的意見，並會再與古物古蹟辦事處商討有關安排。儘管如此，為把工程對上址可能構成之風險減低，工程團隊將於工程期間密切留意上址屋外的狀況。如發現監測數據有異常情況，工程團隊將即時與羅先生及仇女士聯絡商討增加進入上址屋內進行監測工作之次數。	資料
2.6 AECOM及上海建工表示感謝羅先生及仇女士抽空出席會議，並歡迎他們隨時與工程團隊聯絡。	資料
2.7 會議約於上午十時三十分結束。	資料

-會議記錄完畢-

APPENDIX I –

**Notice for Installation of Monitoring
Instrument at Yu Cheung Tong Block
1 and 2**



