**ANNEX A**

**Notification to the Commissioner of Building Control**

**Adoption of Remote Supervision**

*(This form should be submitted at least 2 weeks before commencement of remote supervision.*

*Where a permit to carry out structural works has not been issued, this form should be submitted together with the application for a permit to carry out structural works.*

*Where a permit to carry out structural works has been issued, this form should be submitted via email to BCA’s processing officer for the project and via correspondence through Corenet.)*

|  |  |
| --- | --- |
| **Commissioner of Building Control** **Building and Construction Authority**52 Jurong Gateway Road, #12-01 Singapore 608550Fax: 63342561 | **Project ref no. & title (“Project”):** |
| **Address of** construction site **OR** fabrication yard where remote supervision will be adopted: | **Address (Fabrication yard/ Construction site):** |

This is to notify the Commissioner of Building Control (CBC) that remote supervision will be adopted for the Project for some of the building works as described in the remote supervision plan. Enclosed is the remote supervision plan prepared by me for implementation.

Yours faithfully


\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Qualified Person (Supervision) for Structural Works**

**Name**:

**Date**:

**ANNEX B**

Remote Supervision Plan

|  |
| --- |
| Project Reference No.:  |
| Project Description:  |
| Fabrication yard or Construction site:Address: |

Prepared by:

|  |  |
| --- | --- |
| Name of Qualified Person (Supervision)& PE Registration No.  |  |
| Company |  |
| Date  |  |

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**PROJECT BACKGROUND**

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| Brief description of project- site location- structural and foundation system- challenges to carry out remote supervision, if any. |

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| Overall site plan or location of construction site or fabrication yard. |
| Figure 1: Overall Site Plan or Location of Fabrication Yard |

**IMPLEMENTATION PLAN FOR REMOTE SUPERVISION**

**(Ensuring Only Up To 50% of Structural Works in Project are Supervised Using Remote Supervision)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| To include implementation plan for remote supervision which adopts progressive phased implementation of remote supervision in a project.Examples:1. **Construction Site**

**Example 1****Location of building works –** Superstructure, Tower “A” (10-storey)**Type of building works –** reinforced concrete beam (included the associated slab (cast together), applicable for beam-slab structural system)

|  |  |
| --- | --- |
| **Phase of Building Works** | **Permitted Extent of Building Works for Remote Supervision** |
| First 30% (up to 3rd storey) | up to a max. of 15% of beams |
| Subsequent 30% to 75% (4th to 7th storey) | up to a max. of 30% of beams |
| Subsequent 75% to 100% (8th to roof) | up to a max. of 50% of beams |

(measurement of beams: by volume of concrete or length of beams)**Example 2****Location of building works –** Superstructure, Tower “A” (10-storey)**Type of building works –** reinforced concrete slab (applicable for flat slab system)

|  |  |
| --- | --- |
| **Phase of Building Works** | **Permitted Extent of Building Works for Remote Supervision** |
| First 30% (up to 3rd storey) | up to a max. of 15% of slabs |
| Subsequent 30% to 75% (4th to 7th storey) | up to a max. of 30% of slabs |
| Subsequent 75% to 100% (8th to roof) | up to a max. of 50% of slabs |

(measurement of slabs: by surface area on plan)1. **Fabrication Yard**

**Example 3****Location of building works –** Precast yard, for structural works of Tower “A” (10-storey)**Type of building works –** precast beam

|  |  |
| --- | --- |
| **Phase of Building Works** | **Permitted Extent of Building Works for Remote Supervision** |
| First 30% (up to 3rd storey) | up to a max. of 15% of beams |
| Subsequent 30% to 75% (4th to 7th storey) | up to a max. of 30% of beams |
| Subsequent 75% to 100% (8th to roof) | up to a max. of 50% of beams |

(measurement of beams: by volume of concrete or length of beams)**Example 4****Location of building works –** PPVC precast yard, for structural works of Tower “A” (10-storey)**Type of building works –** PPVC module

|  |  |
| --- | --- |
| **Phase of Building Works** | **Permitted Extent of Building Works for Remote Supervision** |
| First 30% (up to 3rd storey) | up to a max. of 15% of PPVC modules |
| Subsequent 30% to 75% (4th to 7th storey) | up to a max. of 30% of PPVC modules |
| Subsequent 75% to 100% (8th to roof) | up to a max. of 50% of PPVC modules |

(measurement of PPVC modules: by volume of concrete for PPVC modules)Note: 1. The permitted extent (%) of building works can be measured by the volume of concrete (e.g RC beams), length of structural members (e.g RC beams or structural steel beams) or surface area on plan (e.g slab).
2. First 30% of building works (first phase) should be considered as learning stage, the supervision of structural works is encouraged to be carried out in both methods, physical presence at site and remotely. This serves as a learning curve for the site supervisors to familiarise with the use of digital tools for carrying out remote supervision.
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**TYPES OF STRUCTURAL WORKS, SUPERVISION AND RECORDING REQUIREMENTS FOR REMOTE SUPERVISION**

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| Please indicate the type of structural works, supervision (continuous or periodic) and recording requirements.Notes: **Continuous Supervision** is the full-time observation of works by SS who is continuously present in the area where the structural works are being carried out (e.g. concreting, pre-stressing of PT works). For remote supervision, the SS must be able to observe the structural works clearly, intervene and instruct the contractor at site instantaneously. **Periodic Supervision** is the full-time intermittent observation of structural works by SS who is present in the area where the structural works have been or are being performed and at the completion of the structural works (e.g. laying rebar). For remote supervision, the SS must be able to observe the structural works clearly using digital tools, and instruct the contractor at site instantaneously.  |
|

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| --- | --- | --- | --- | --- |
| S/N | List of Structural/ Geotechnical works (e.g. Concreting works, reinforcement) | Periodic/ Continuous | Minimum duration of video recordings to be saved for each remote supervision session (e.g xx% of total duration of RSS) | Minimum number of photos to be taken for each remote supervision session  |
| 1 | Reinforcement inspection | Periodic | 30% | 3 |
| 2 | Concreting of beam/slab | Continuous | 50%(3min of video recording for every 15mins interval) | 5(1 photo for every 15 mins interval) |
| 3 | Pull out test (post installed anchor, reinforcement) | Continuous | 100% | 5 |
| 4 | Pre-stressing works | Continuous | 100% | 5 |
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**DEVICES FOR REMOTE SUPERVISION**

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| Examples of the items to be specified in this section (not exhaustive):* Name the devices used for image capturing, video recording, live streaming
* Number of device(s) to be used
* Indicate whether a back-up device will be provided (this is recommended in case of device malfunction during continuous supervision e.g concreting)
* Indicate all the relevant devices to be used for remote supervision such as digital Vernier calliper for rebar size measurement
* Indicate whether torch light is required
* Indicate whether back-up battery is required
 |

**Infrastructure REQUIREMENTS**

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| Examples of the items to be specified in this section (not exhaustive):* To specify the internet connection, requirement, specifications which will be used to ensure effective remote supervision
* To state the method or infrastructures used for storage of photos/videos – cloud base/server space
* To provide the details of remote supervision platform/software
* To specify the requirement or specification of video during live streaming and recording - resolution
 |

**Method statement for execution of remote supervision**

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| **Before Remote Supervision (Preparation Works)*** To provide checklist on the works to be done before the carrying out of the remote supervision such as labelling of site

**During Remote Supervision*** To provide detailed method statements for carrying out remote supervision.
* To include the good practices such as self-introduction before the commencement of remote supervision.
* To refer to the Guide on Remote Supervision.

**After Remote Supervision** * To provide follow up action by SS after the carrying out of remote supervision such as preparing of remote supervision report (Annex C)
 |

**ANNEX C**

**Remote Supervision Report**

*(This form shall be prepared by Site Supervisor who conducted the remote supervision)*

|  |  |
| --- | --- |
| Project Ref No. (“**Project**”) |  |
| Location of Remote Supervision(Fabrication yard or construction site) | Insert address |
| ST No. |  |
| Type of structural works  | Beam 2HB2 at level 2 (block A) |
| Scope of supervision | Reinforcement inspection  |
| Type of supervision | Periodic or continuous supervision |
| Date of remote supervision  |  |
| Duration of remote supervision  | 30 mins (from 1400H to 1430H) |
| Outcome of remote supervision(approved, rejected, approved with minor comments) | approved  |
| Parties involved in the remote supervisionScreenshot of parties involved (with name, company and designation) in remote supervisionNote:The operator must turn on his video camera throughout each remote supervision session. All other involved parties (especially the site supervisor) should turn on their video cameras throughout each remote supervision session. | ExampleInline image |
| Photos of structural works (to capture/screenshot from site supervisor’s device) | ExampleInline image |
| File name and duration of video recording  |  |
| Storage of video (cloud/server): |  |
| Attachment of Inspection Checklist (yes/no) |  |
| Builder’s Signature Name:Designation:Date: |  |

I confirm that I have conducted remote supervision for the structural works recorded in this report in accordance with the remote supervision plan prepared in respect of the Project. I am satisfied with the process of remote supervision and confirm that the structural works were carried out in accordance with the plans approved by the Commissioner of Building Control under Section 5 of the Building Control Act, the Building Control Act and the Building Control Regulations 2003.

Yours faithfully

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**Site Supervisor**

**Name**:

**Designation (RE/RTO)**:

**Date**: