



# BCA Green Mark Certification - Verification Workflow

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### BCA Green Mark Verification For New Buildings

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## 1. Certification Process

The Building and Construction Authority (BCA) Green Mark Certification Process is as follows:

The Verification is the last step of the BCA Green Mark Certification Process which is to be



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|--|--|---|---|
| <ul style="list-style-type: none"> <li>• Submittal of application with relevant supporting documents for certification upon finalisation of building design.</li> <li>• Upon acceptance of application and fee payable, a BCA Green Mark Assessor will be assigned for the duration of the project.</li> </ul> | <ul style="list-style-type: none"> <li>• A pre-assessment audit will be conducted to give the project team a better understanding of the criteria and evaluation of the certification level sought.</li> </ul> | <ul style="list-style-type: none"> <li>• Actual assessment to be conducted once the design and documentary evidences are ready.</li> <li>• Assessment process includes design and documentary reviews to verify if the building project meets (i) the intents of the criteria and certification level; and (ii) the prerequisite requirement for BCA Green Mark Gold<sup>Plus</sup> and Platinum rating where applicable.</li> <li>• Letter of award showing the BCA Green Mark rating will be issued at this stage.</li> </ul> | <ul style="list-style-type: none"> <li>• Site verification to be conducted upon project completion.</li> <li>• For projects with BCA Gold<sup>Plus</sup> and Platinum rating, energy modeling for reference model using actual data is to be carried out to ascertain the energy savings.</li> <li>• A certificate will be issued at this stage.</li> </ul> |
|--|--|---|---|

completed within the validity of the certification.

## 2. Objective

The intent of this BCA Green Mark Certification Process – Verification Document is to set out the verification workflow and requirements of the building owners and developers for BCA to conduct the site verification upon project completion.

The objective of the verification is for BCA to verify and for building developers/ owners to demonstrate compliance with the committed design specifications in terms of:

- 1) Implementation of the green features site installation and/or control strategies; operation functionalities and performance; and
- 2) Energy savings over the code-compliance buildings

which were committed during the Actual Assessment.

The Workflow below outlines the Verification Process.

### 3. 2-Stage Verification for Green Mark Certification

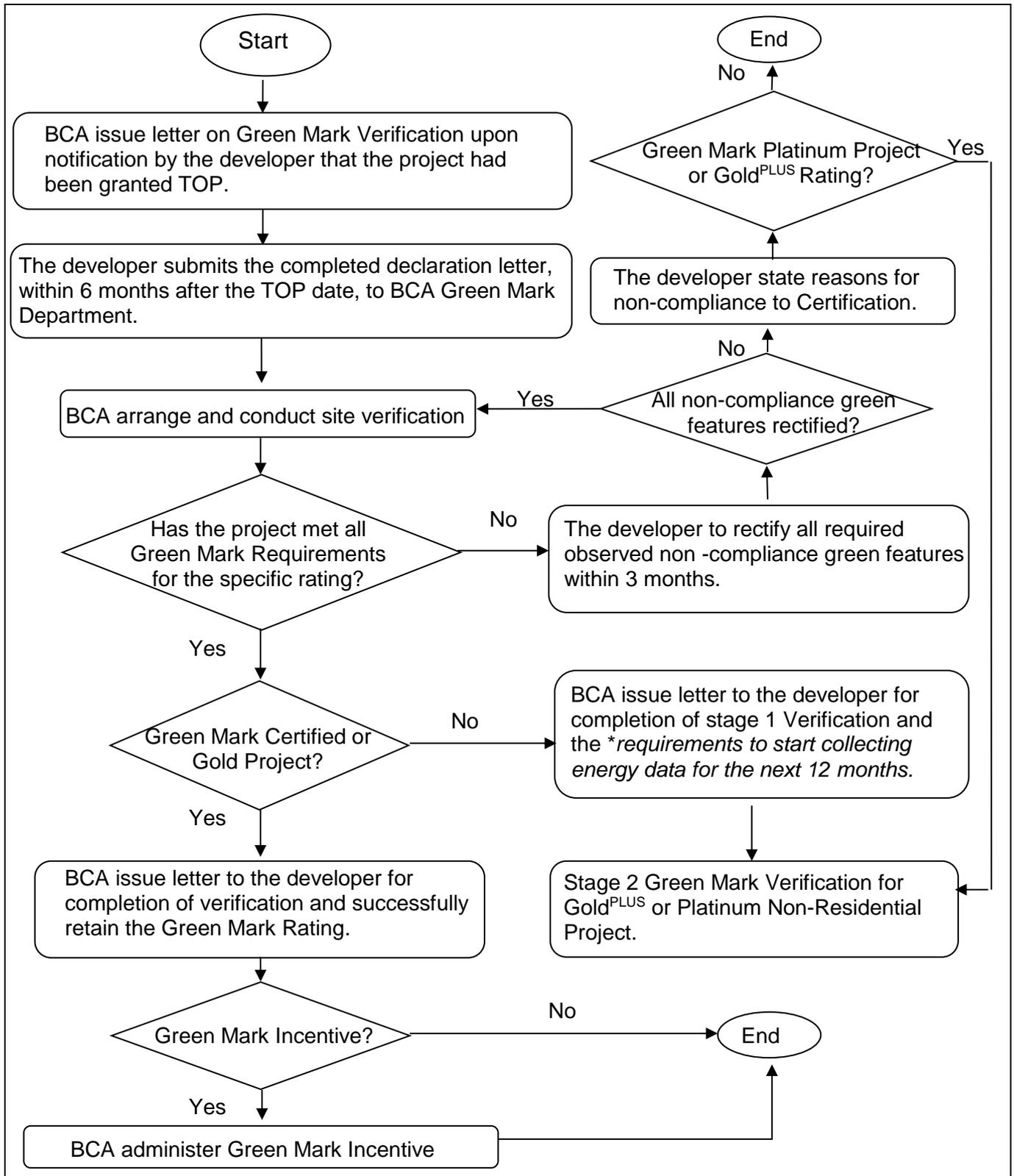
The 2-stage verification is as follows:

Stage 1: The building developer/ owner is to determine the functionality and performance of the green features which resulted in the certification and demonstrate compliance with to the committed design specification through documentary evidences and site verification.

During the course of site verification, key observations of the green features, photos will be taken for record purpose.

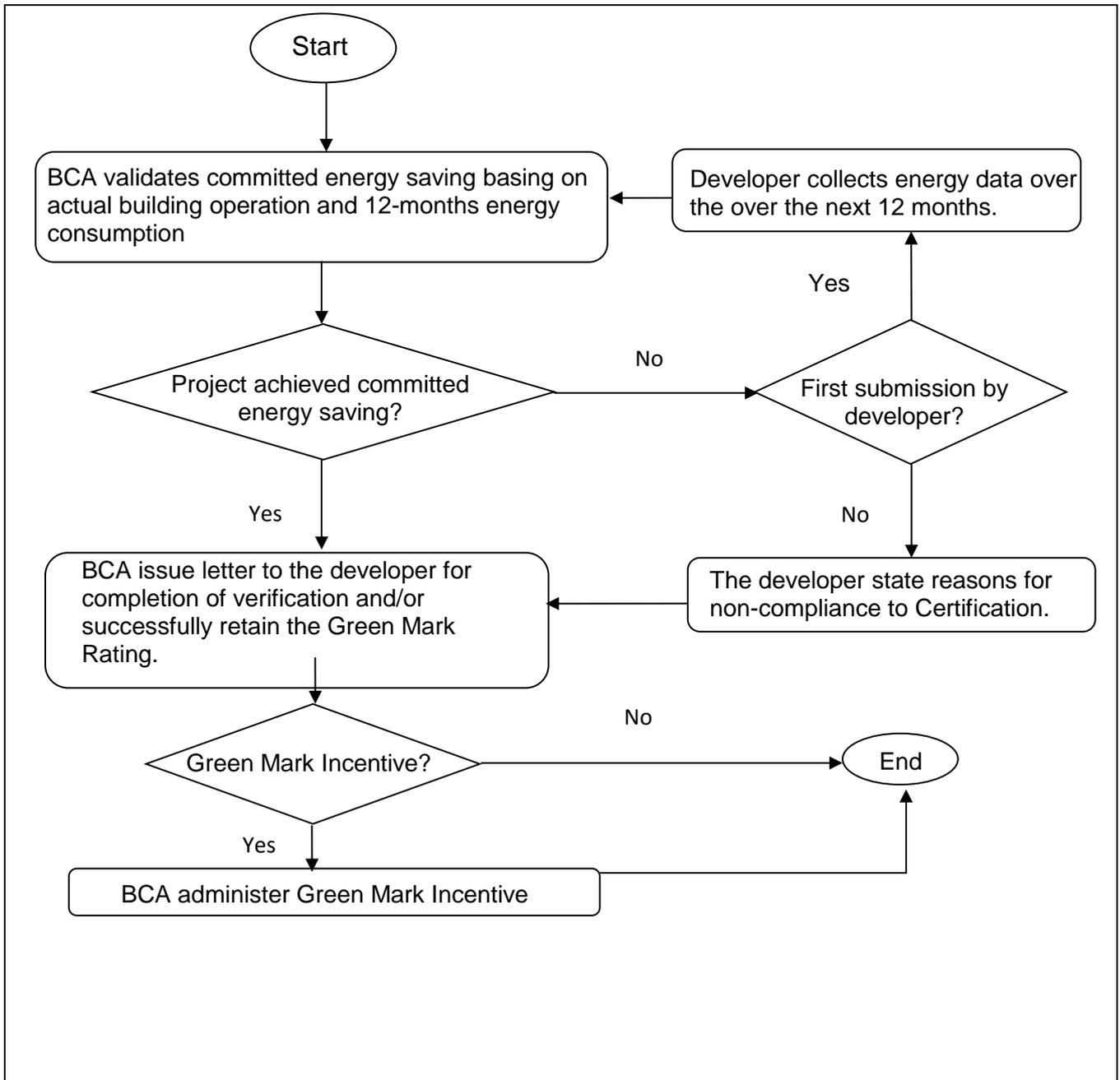
Stage 2: Applicable only for BCA Green Mark Gold<sup>PLUS</sup> and Platinum certified **Non-Residential** projects. The developer/ owner is to determine the energy savings for the building over its reference model using 12-month actual operation data and demonstrate compliance to the committed energy savings which resulted in the certification.

## 4. Verification Workflow for Green Mark Certification Projects – Stage 1 Verification Workflow



*\*Only applicable for Non-Residential projects.*

## 5. Verification Workflow for Green Mark Certification Projects – Stage 2 Verification Workflow



## **6. Verification Workflow for Green Mark Certification Projects – Stage 2 Verification Compliance Requirement**

### A) Validation of Committed Energy Savings

- When the building starts to operate in a steady state, the developer shall within 2 years after TOP, commence to gather data on actual site operation for the next 12 months period. Using the data on actual site operation, a revised energy modelling shall be performed to compare the annual energy consumption of the Reference Model with the actual consumption of the building.

### B) Documentary evidences

- The developer should submit Green Mark Certification – Stage 2 Verification Report of content in accordance to Appendix D shown on the website.

## 7. Verification Requirement for Projects that are subject to Mandatory Higher Green Mark Standards under **Government Land Sales (GLS) Programme** in Selected Strategic Areas

Building projects that are developed on land sold under the GLS Programme sites in selected strategic areas and are subject to higher Green Mark Standards under the Building Control (Environmental Sustainability) Regulations 2008 are required to be designed and certified to meet the prescribed Green Mark rating. Please refer to [Mandatory Higher Green Mark Standard for Government Land Sales Sites](#) for the latest list of selected strategic areas <[www.bca.gov.sg/EnvSusLegislation/Environmental\\_Sustainability\\_Legislation.html](http://www.bca.gov.sg/EnvSusLegislation/Environmental_Sustainability_Legislation.html)>.

| <b>Selected Strategic Areas</b><br><i>Exact Location to refer to the Building Control (Environmental Sustainability) Regulations 2008</i> | <b>Requirements for building wholly or partly within area that is on land sold on or after 5th May 2010 under the Government Land Sales Programme</b> |
|---|---|
| Marina Bay  | Green Mark Platinum Rating  |
| Downtown Core – including areas within the CBD located next to Marina Bay   | Green Mark Gold <sup>Plus</sup> Rating  |
| Jurong Lake District  | Green Mark Gold <sup>Plus</sup> Rating  |
| Kallang Riverside   | Green Mark Gold <sup>Plus</sup> Rating  |
| Paya Lebar Central  | Green Mark Gold <sup>Plus</sup> Rating  |

| <b>Selected Strategic Areas</b><br><i>Exact Location to refer to the Building Control (Environmental Sustainability) Regulations 2008</i> | <b>Requirements for building wholly or partly within area that is on land sold on or after 20th July 2012 under the Government Land Sales Programme</b> |
|---|---|
| Jurong Lake District  | Green Mark Gold <sup>Plus</sup> Rating  |

| <b>Selected Strategic Areas</b><br><i>Exact Location to refer to the Building Control (Environmental Sustainability) Regulations 2008</i> | <b>Requirements for building wholly or partly within area that is on land sold on or after 1st September 2014 under the Government Land Sales Programme</b> |
|---|---|
| Woodlands Regional Centre   | Green Mark Gold <sup>Plus</sup> Rating  |
| Punggol Eco-Town  | Green Mark Gold <sup>Plus</sup> Rating  |

Upon completion of building works and commissioning of building system, the Applicant or the Qualified Person (QP) must notify the BCA Green Mark Department / Lead Assessor of the

project to initiate the commencement of the verification before Temporary Occupation Permit (TOP) or Certificate of Statutory Completion (CSC) application whichever earlier. As the prescribed Green Mark Certification for the projects must be validated through site verification before clearance, it is important to give at least three (3) months' notice so as to facilitate the TOP and CSC clearance at later stage. The declaration letter in Appendix A shown on the website must be submitted to the BCA Green Mark Department along with the notice.

In the case of project requiring TOP in phases, the details of the phasing must be spelled out and submitted to the assessor for consideration first so that the necessary verification can be scheduled and completed for the critical and relevant works for clearance.

### **Verification for Residential Building Developments**

The verification will cover the following (refer to submission requirements on website):

- Site inspection of green features
- Review of documentary evidences and records
- Site measurements

### **Verification for Non-Residential Building Developments**

The verification will comprise two stages.

#### **Stage 1 – Site Verification**

The site verification will cover the following (refer to submission requirements on website):

- Site inspection of green features
- Review of documentary evidences and records
- Site measurements which include verification of permanent measuring instruments installed and building cooling system efficiency.

#### **Stage 2 – Verification of Building System Performance and Energy Savings**

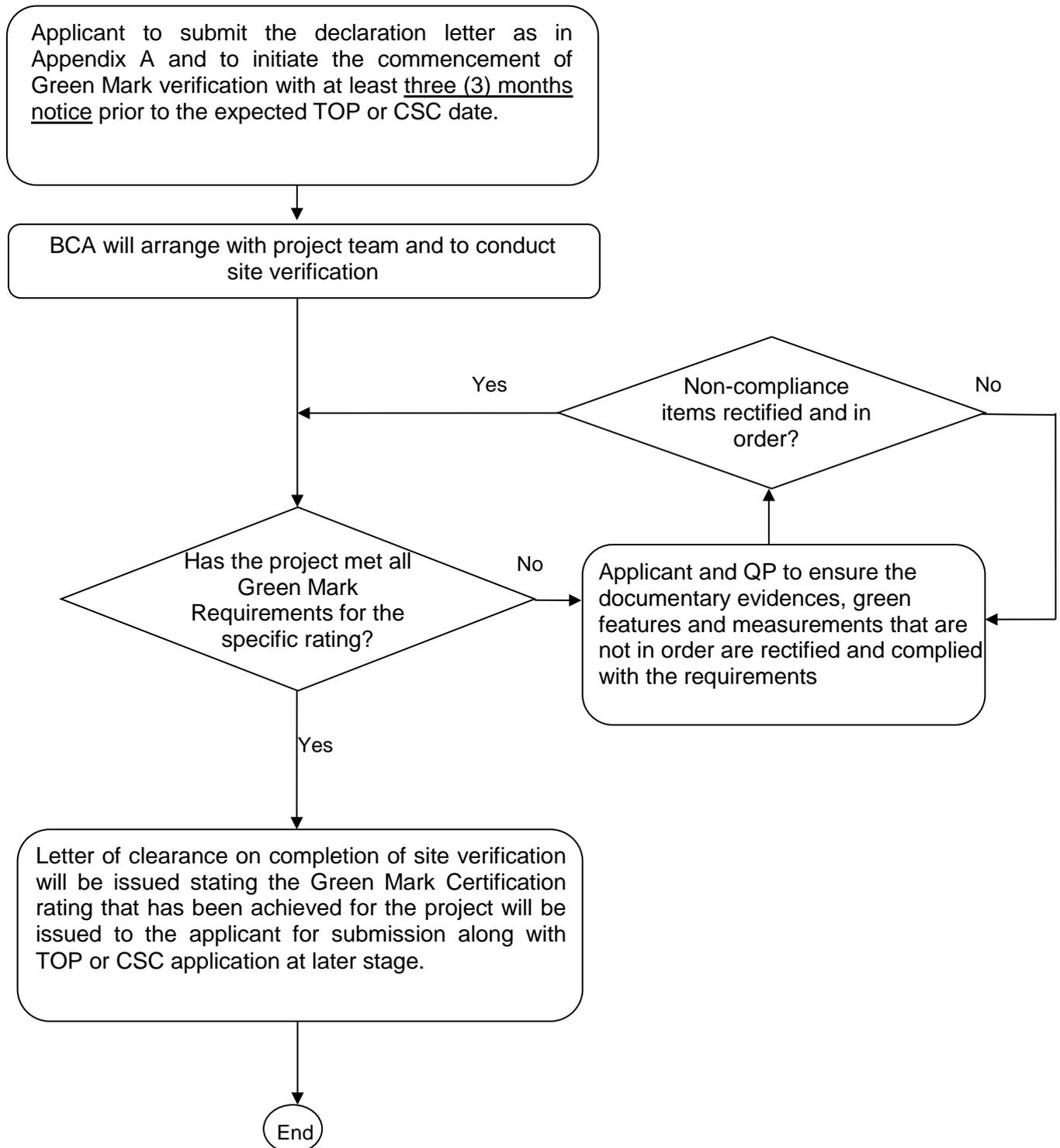
Once the building operation is in a steady state, the data on actual building operation must be collated for a period of 12 months. These data are to be used in the revised energy modelling simulation to demonstrate compliance with the energy savings committed over its reference model using the energy modelling framework as per design.

The details of documentary evidences and site requirements can be found in Appendix D shown on the website for compliance.

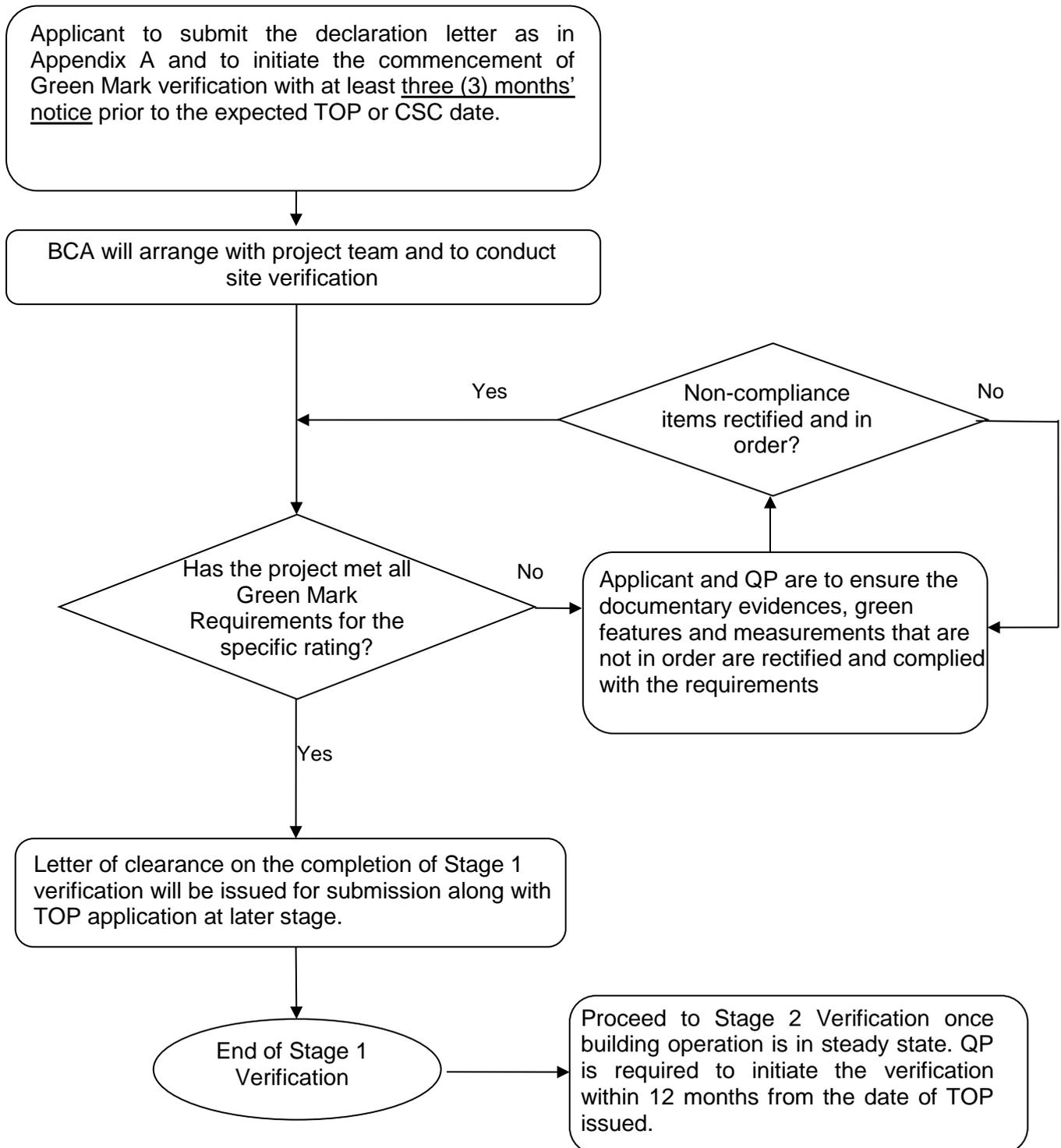
### **Verification Work Flow**

The flowcharts of the verification processes can be found in the following pages of this document for clarity.

## 8. Verification Workflow – Residential Building Developments under GLS Programme in Selected Strategic Areas



## 9. Stage 1 Verification Workflow - Non-Residential Building Developments under GLS Programme in Selected Strategic Areas



## 10. Stage 2 Verification Workflow - Non-Residential Building Developments under GLS Programme in Selected Strategic Areas

