

Guidebook on  
**electronic Productivity Submission  
System (ePSS)**

Version 2.0

*Updated as of 24 October 2024*

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## Preface

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The Guidebook on electronic Productivity Submission System (ePSS) aims to provide users with a better understanding on the following areas:

- I. Importance of the productivity data for different stakeholders (i.e. contractors, developers, and BCA).
- II. Scope of the productivity data.
- III. Terminologies used in the productivity data submission forms.
- IV. Submission of manpower data to the ePSS.
- V. Step-by-step instruction on the use of the ePSS.

## 1. Introduction

Raising site productivity is critical for efficient and timely completion of projects. As part of this effort, a common methodology for measuring project and trade productivity, as well as benchmark indicators have been established. This enables builders to track their own productivity performance in an effective manner.

The electronic Productivity Submission System (ePSS) serves as the main platform for BCA to collect manpower data from the Builders. These data would then be used to calculate project productivity that would be used by the different stakeholders.

### 1.1. Requirements

#### 1.1.1. Submission of Productivity Data

In accordance with the [Building Control \(Buildability and Productivity\) Regulations 2011](#), it is mandatory for Builders to submit the monthly Construction Productivity Data for their projects to BCA from 15 July 2011. This requirement is applicable to all projects (except those highlighted below under (I) – (V)) that fulfils the following criteria:

- a. Gross floor area of a new building development is **5,000 m<sup>2</sup>** or more.
- b. Gross floor area of the existing floor to be reconstructed is **5,000 m<sup>2</sup>** or more.
- c. Increase in the gross floor area of the existing building that will result from the building works is **5,000 m<sup>2</sup>** or more.
- d. Sum of any combination of (a), (b) and/or (c) is **5,000 m<sup>2</sup>** or more.

The following building works are **exempted** from mandatory submission:

- I. any culvert, bridge, underpass, tunnel, earth retaining or stabilising structure, slipway, dock, wharf or jetty;
- II. any theme park;
- III. any place of worship;
- IV. any power station; or
- V. any waste processing or treatment plant.

For eligible projects (i.e., projects not exempted), it is important to note productivity data (e.g., mandays and unique worker count) for all building works including piling must be submitted.

#### 1.1.2. Timeframe of Submission

Projects must submit Construction Productivity Data from the [month in which the first permit to commence work \(Structural\) is issued](#) to the [month in which the final Temporary Occupation Permit or Certificate of Statutory Completion \(whichever earlier\)](#) is issued.

#### 1.1.3. Installing the Biometric Authentication System (BAS)

To facilitate the Builders in the collection of the construction productivity data for submission, it is required for the projects to **install and operate a BAS at the premises on which the building works are carried out.**

## 1.2. Importance of Submission

The productivity data collected and the insights derivable from it is valuable to the various stakeholders, including the Builders, Developers as well as BCA.

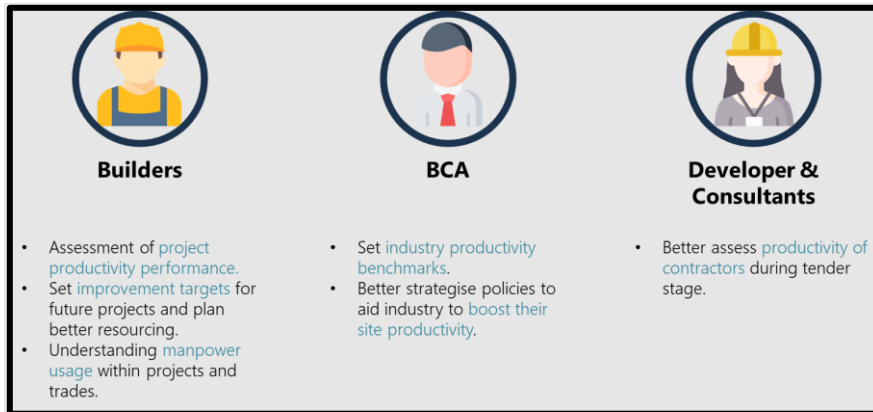


Figure 1-1 Using Productivity Data

### 1.3. Terminologies Used

It is important to understand the terminologies used in the productivity data submission forms before using the EPSS. This is to avoid misinterpretation which may affect the validity and reliability of the data collected. The common terms used in the submission forms are defined below:

Biometric Authentication System (BAS)	A system that integrates time recording and bio-characteristics recognition function. The built-in biometric sensor can recognize each personnel by his/her biometric characteristics (e.g. fingerprint, palm veins, facial feature, hand geometry etc.). BAS will facilitate the gathering of data on manday used on the project sites.
Buildable Design Score (B-Score)	The score computed for Buildability in accordance with Buildable Design Appraisal System as set out in the Code of Practice.
Constructability Score (C-Score)	The score computed for Constructability in accordance with Buildable Design Appraisal System as set out in the Code of Practice.
ePSS Portal	The main online platform for Builders to submit productivity data. The URL for the portal is: <a href="https://www.bca.gov.sg/ePSS">https://www.bca.gov.sg/ePSS</a> .
Gross Floor Area (in m <sup>2</sup> ) (GFA)	Same definition as "floor area" in the Planning (Development Charges) Rules (Cap.232, R5).
Manday <i>refer to Section 1.4.1 for more information</i>	One manday is taken as one worker working for 8 hours. Thus, if the worker works for 12 hours on a particular day, the actual mandays clocked by worker shall be calculated as 12/8 = 1.5 mandays.
Onsite Works	Works performed at the Project site
Offsite Works	Works performed for the Project at a premise not within the Project site (e.g., ICPH, prefabricated MEP module factory, etc.)
Productivity	A measure of input to the production process, per unit of output.



<b>Project Category</b>	The typology of the project being done. The categories are Private Residential (Landed), Private Residential (Non-Landed), HDB, Commercial, Industrial, Institutional (School), Institutional (Healthcare) and Institutional Others.
<b>Project Productivity</b>	Project productivity is defined as the amount of floor area completed per manday. A project is deemed to be more productive if more floor area can be constructed with the same mandays.
<b>Roof Area (in m<sup>2</sup>)</b>	Plan area of the roof.
<b>Total Floor Area (in m<sup>2</sup>)</b> <i>applicable to projects that do not involve rail, road, or tunnels</i>	Total floor area includes GFA, environmental deck, basement carpark, roof area (including linkways) and other concrete area (including ancillary building).
<b>Total Constructed Area (in m<sup>2</sup>)</b> <i>applicable to projects that involve rail, road, or tunnels</i>	Total constructed area includes Station, Depot, Viaduct, Cut and Cover tunnel, Bored Tunnels and External Ancillary works area.

## 1.4. Calculating Project Productivity

The project productivity is calculated as follows:

For projects that do not involve rail, road, or tunnels.

$$\text{Project Productivity (m}^2\text{/manday)} = \frac{\text{Total Floor Area (m}^2\text{)}}{\text{Total Mandays (mandays)}}$$

*Equation 1-1 Calculating Project Productivity (Projects that do not involve rail, road, or tunnels)*

For projects that involve rail, road, or tunnels.


$$\text{Project Productivity (m}^2\text{/manday)} = \frac{\text{Total Constructed Area (m}^2\text{)}}{\text{Total Mandays (mandays)}}$$

*Equation 1-2 Calculating Project Productivity (Projects that involve rail, road, or tunnels)*

### 1.4.1. Mandays

For multi-skilled workers who spends **more than 50% of their time on a particular trade** shall be recorded under that trade even if the worker performs other trades on the same day. This applies to any combinations of trades tracked under ePSS. For example:

**EXAMPLE**

 Worker A	Duration	Trade	➔	Trade	Mandays
	5 hours	Trade A		Trade A	5 + 3 = 8 hours = 1 manday
	3 hours	Trade B		Trade B	0
	1 hour	Meal-time			

As Worker A spends more than 50% of his duration in Trade A, his 8 hours of work shall be recorded as Trade A.

*Figure 1-2 Example of Mandays Calculation*

With reference to the above example, hours taken for meal breaks or non-trade related works (e.g., transportation to site) shall not be included in the mandays calculation.

## 2. Using the ePSS Portal

### 2.1. Obtaining an Account and Logging into ePSS Portal

In general, the workflow is as follows:

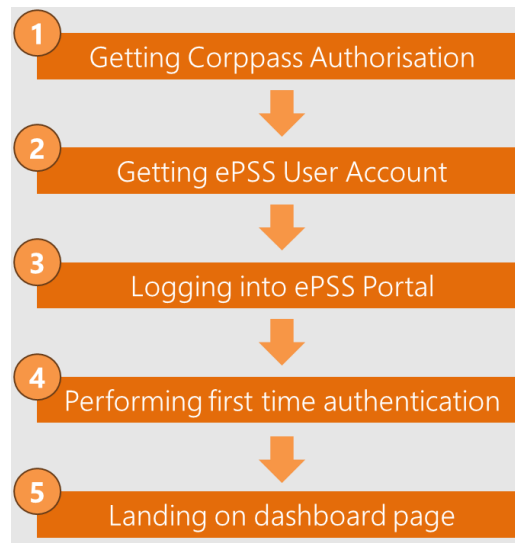


Figure 2-1 Workflow to Log into ePSS Portal

#### 2.1.1. Getting Corppass Authorisation

To log into ePSS Portal, the user must have:

- I. Singpass Account.
- II. Authorisation by Corppass Administrator for user access rights to BCA e-Services.
- III. ePSS User Account (covered in Section 2.1.2).

You may follow the steps below to check if you have authorisation by your company's Corppass Administrator:

- a. Log in to Corppass via <https://www.corppass.gov.sg> and to view your assigned e-services.

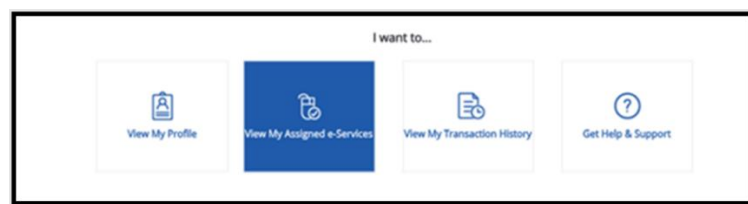


Figure 2-2 Landing Page to View Assigned Government e-Services for Corppass

- b. You should find BCA E-Services as one of the assigned e-Services. If BCA E-Services is missing, please approach your company assigned Corppass Administrator.



The screenshot shows a table titled 'Customised e-Service Access'. The table has the following columns: Govt. Agency, Assigned e-Services, Role, Parameters, Authorisation Effective Date, and Authorisation Expiry Date. The data row shows: BUILDING AND CONSTRUCTION AUTHORITY (BCA), BCA E-SERVICES, a blue square icon, -, 01/12/2023, and 31/12/2024.

Govt. Agency	Assigned e-Services	Role	Parameters	Authorisation Effective Date	Authorisation Expiry Date
BUILDING AND CONSTRUCTION AUTHORITY (BCA)	BCA E-SERVICES		-	01/12/2023	31/12/2024

Figure 2-3 List of Government e-Services Assigned to User

Please note that the BCA E-Services should be assigned for the UEN of the company in which the project is awarded to. For example,

**EXAMPLE**

Personnel A is a HR personnel that works under the entities:

- Company ABC: UEN 1234
- Joint Venture of Company ABC-DEF: UEN 5678
- Joint Venture of Company ABC-XYZ: UEN 0000

If he/she is assigned to submit data for Company ABC, the access to BCA E-Services should be assigned for UEN 1234. Gaining access to UEN 5678 and UEN 0000 will not allow Personnel A to submit data subsequently in the ePSS Portal for Company ABC.

### 2.1.2. Getting ePSS User Account

Once the user has obtained Corppass Authorisation to access BCA E-Services, the user would then need to obtain an ePSS user account.

- If there is **existing Company Administrators** on ePSS Portal, please approach them to create an account for you. For Company Administrators, please follow the steps below:
  - a. On the landing page, go to the "Admin" tab and access the "Users Admin" tab.

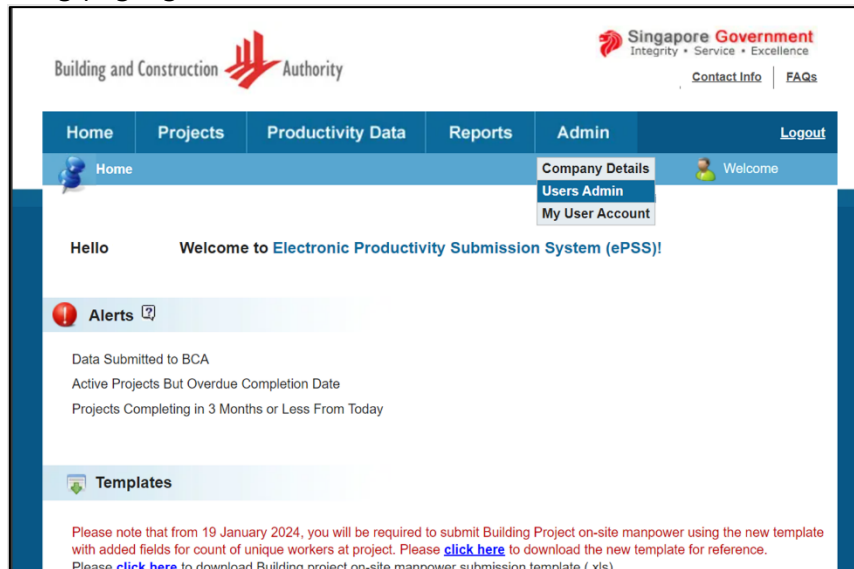


Figure 2-4 Accessing the "Users Admin" tab via the "Admin" tab

- b. After accessing the "Users Admin" tab, click on the "Add New User" link on the page.

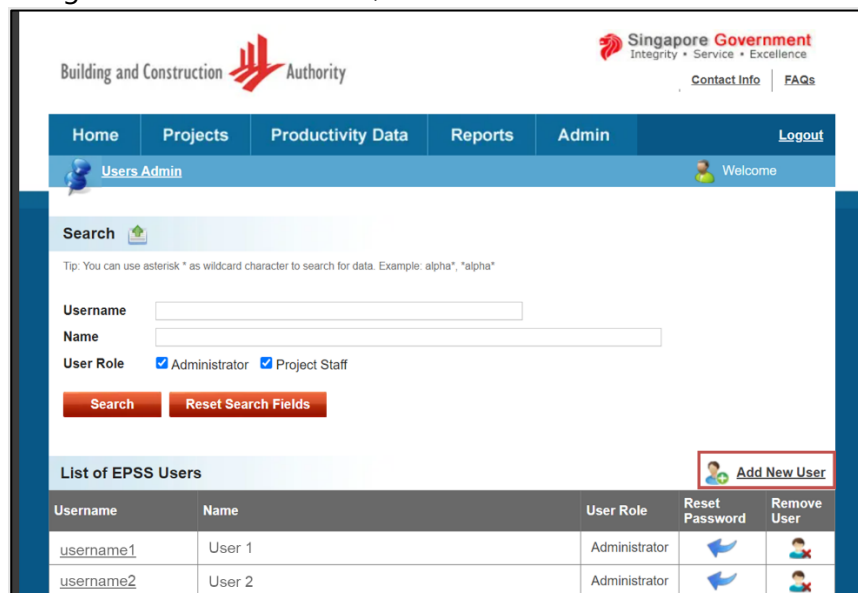


Figure 2-5 Adding New Users

c. You will be prompted to the next page where:

Figure 2-6 Entering Details for the New Users

1. Fill up the particulars of the new user (Name, Email, Username)
  2. Assign User Role for the user – either **Administrator** or **Project Staff**
    - **Administrator** – would be given access to all projects by the company.
    - **Project Staff** – would be given access to only selected projects by the company.
  3. Select projects for the new users to access (not applicable to Administrator).
    - If there are no projects, please ignore this part.
  4. Click “Add User” button.
- If there is **no existing Company Administrators** on ePSS Portal, please write into BCA enquiry for assistance via <https://www1.bca.gov.sg/contact-us>.

Once a new account is created, the new user would receive an email with the username and default password (see Figure 2-7).

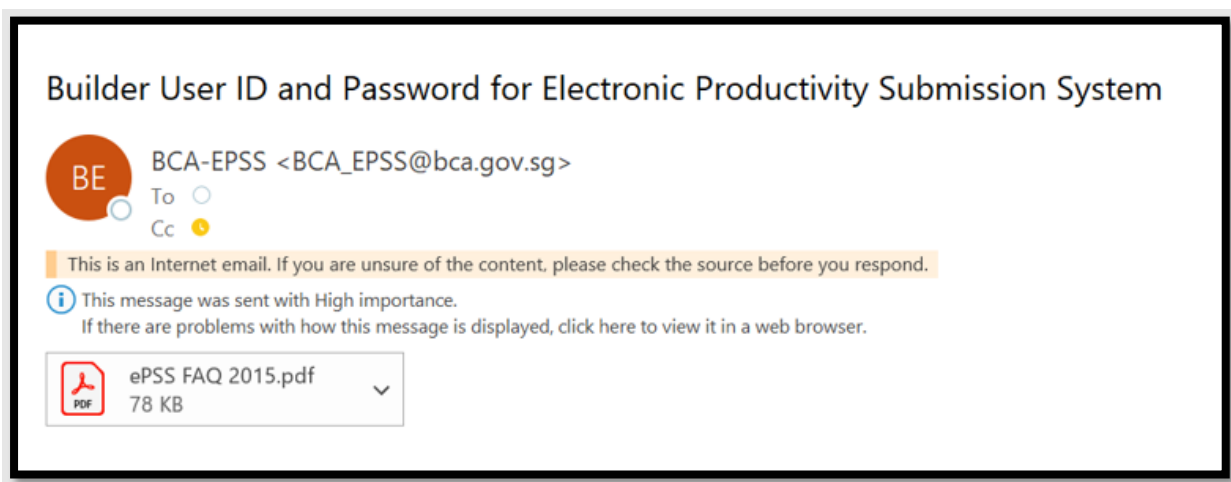


Figure 2-7 Email Screenshot

### 2.1.3. Logging into ePSS Portal

Once the user receives the new ePSS account detail, he/she would need to log into the Portal via <https://www.bca.gov.sg/ePSS> and click on the "Login with Singpass (for business users)".



Figure 2-8 Main Landing Page of ePSS Portal

After which, you will be prompted to log in using your Singpass, which you may do so either using QR code scanning via Singpass mobile app or manually key in your Login ID and password.

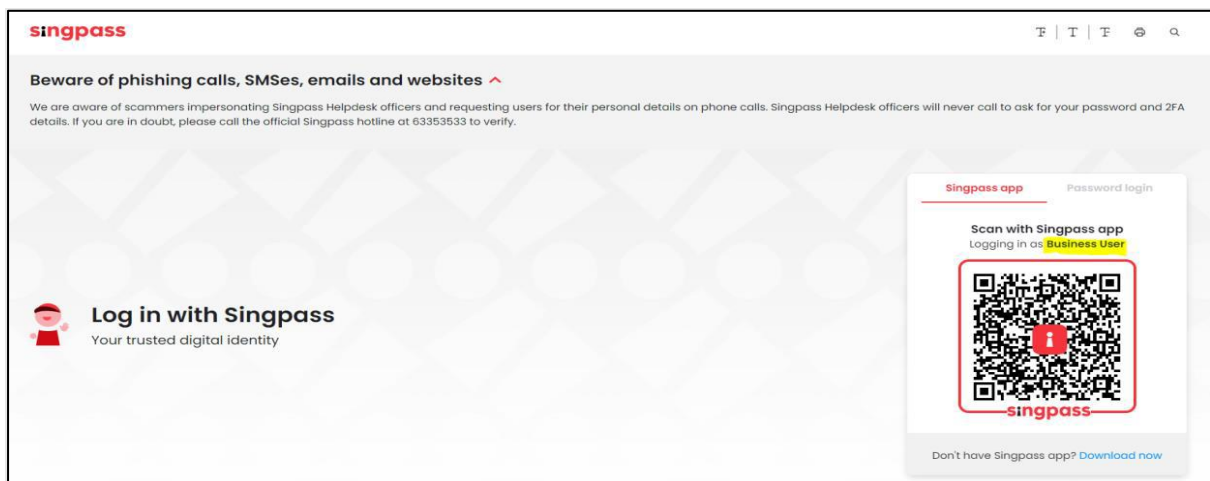


Figure 2-9 Singpass Login Page using QR Code

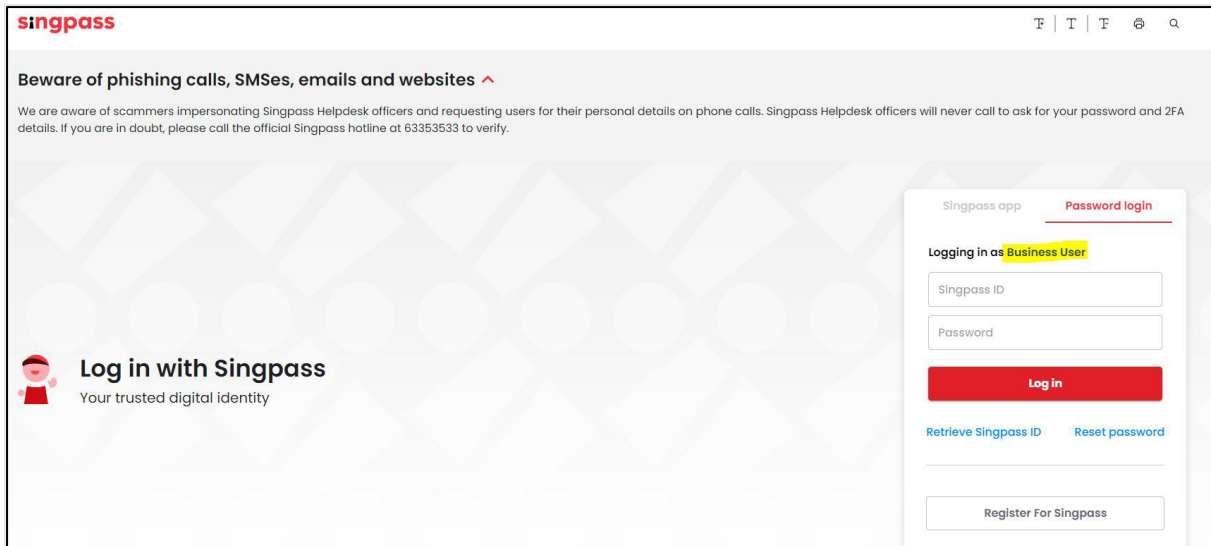


Figure 2-10 Singpass Login Page using Login ID and Password

#### 2.1.4. Performing First Time Authentication

Users are required, in their first log in, to match their Corppass/Singpass account to the new ePSS account. Do note that users registered to multiple UENs would need to perform this for each UEN (i.e., new account each). To do so, follow the following steps.

- a. After logging into the Portal using Singpass, users would be prompted perform Corppass One Time Authentication to key in their username and password as provided in the email shown in Figure 2-7. Once done, to click "Login" button.

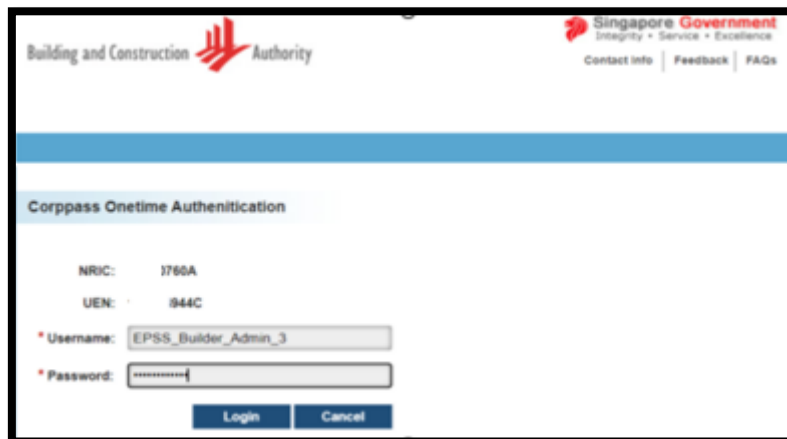


Figure 2-11 One-Time Authentication Screen



- b. User will be prompted to the main landing page of ePSS Portal. Subsequent log ins will be done via Singpass login only as shown in Section Figure 2-9 and Figure 2-10 (i.e., no need to key in ePSS account details).

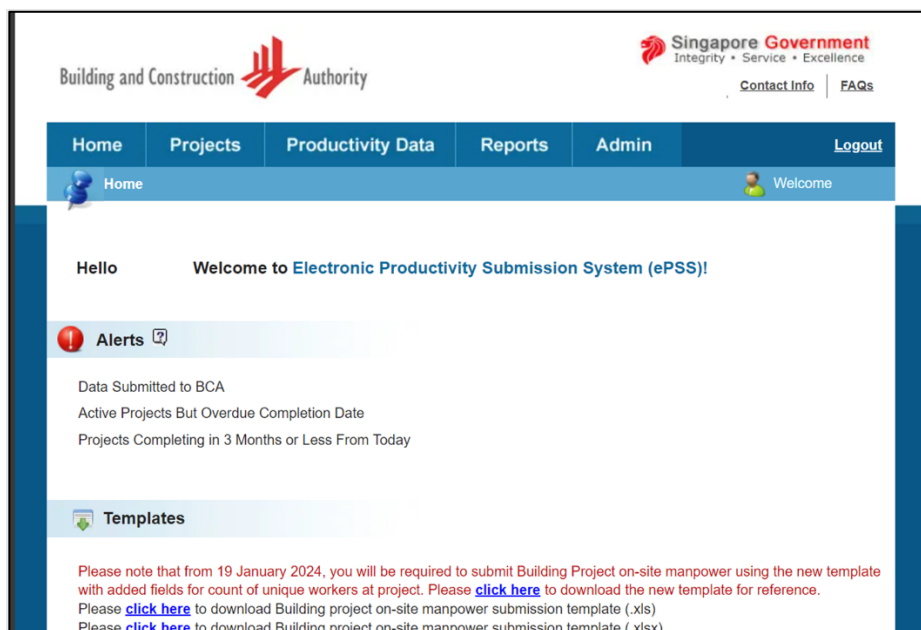


Figure 2-12 Main Landing Page of ePSS Portal

## 2.2. General Navigation of Portal Functionalities

Upon successful login, the system menu below corresponding to your user account role (i.e., Administrator or Project Staff) will be available.

### Administrator Role



Figure 2-13 System Menu for Administrators

### Project Staff Role



Figure 2-14 System Menu for Project Staff

### 2.2.1. Navigating Home Page

On the Home Page, the user can:

1. View **status of their projects** and click into it to view in details.
2. Download **templates** required for submission.
3. View **important announcement** pertaining to ePSS submission.

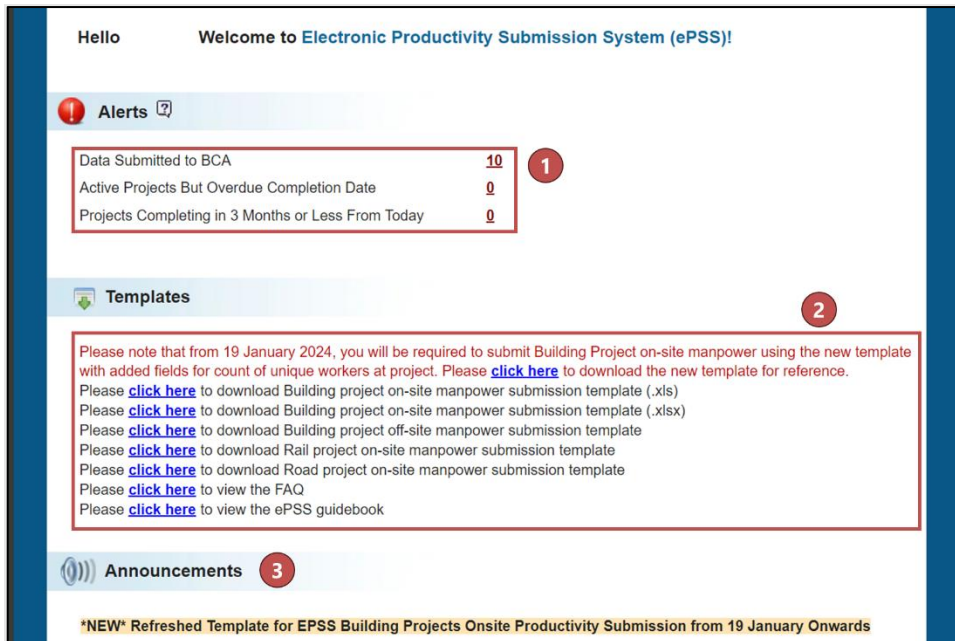


Figure 2-15 Navigating Home Page

### 2.2.2. Editing Project Details

Users can view or edit their project details. Do note that new projects are solely created by BCA ePSS Administrators based on the Permit to Commence Work submitted to BCA.

To view or edit the project details:

- Access the "Project" tab then "View/Edit Project Details".

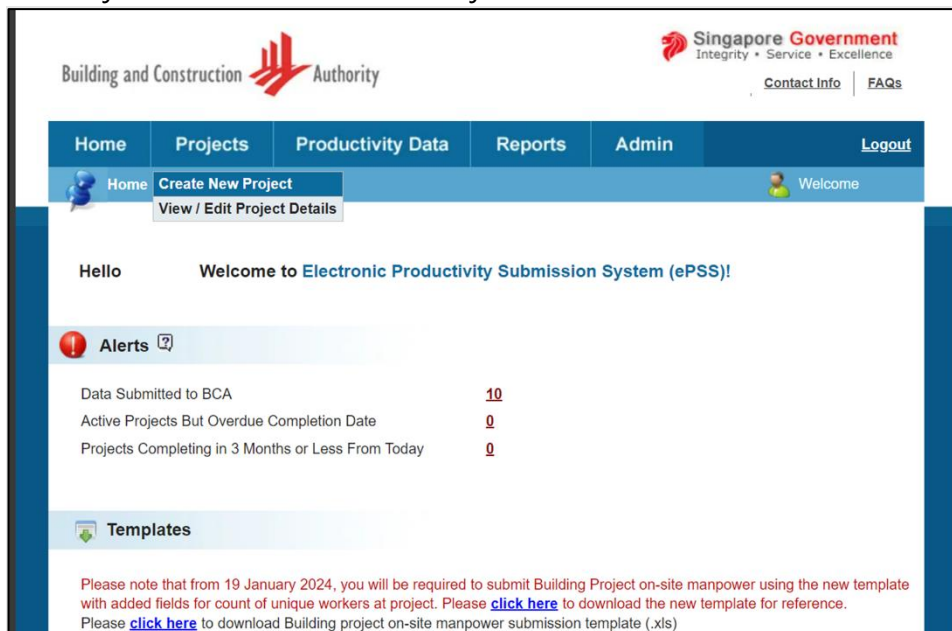


Figure 2-16 Access "View/Edit" Page

- b. User would be able to see the list of projects. Administrators would be able to see all the projects undertaken by the company while Project Staff will only be able to see projects assigned to them via Administrator in Section 2.1.2.

Figure 2-17 "View/Edit" Page

- c. When users clicked into the project, they will be prompted to the View/Edit Project Details page where users may amend the project details. *It is good practice for the users to update promptly the details, including the details of the constructed areas (e.g., Roof Area, Basement Carpark, Depot, Station, etc.).*

Users to click "Update" to confirm any changes to the details.

Figure 2-18 "View/Edit Project Details" Page

### 2.2.3. Finding Data Submitted to BCA

This function will allow users to view a list of projects by submission period with data submitted to BCA. To do so:

- a. Access the "Productivity Data" tab and hover over the "Data Submitted to BCA" option and click it.

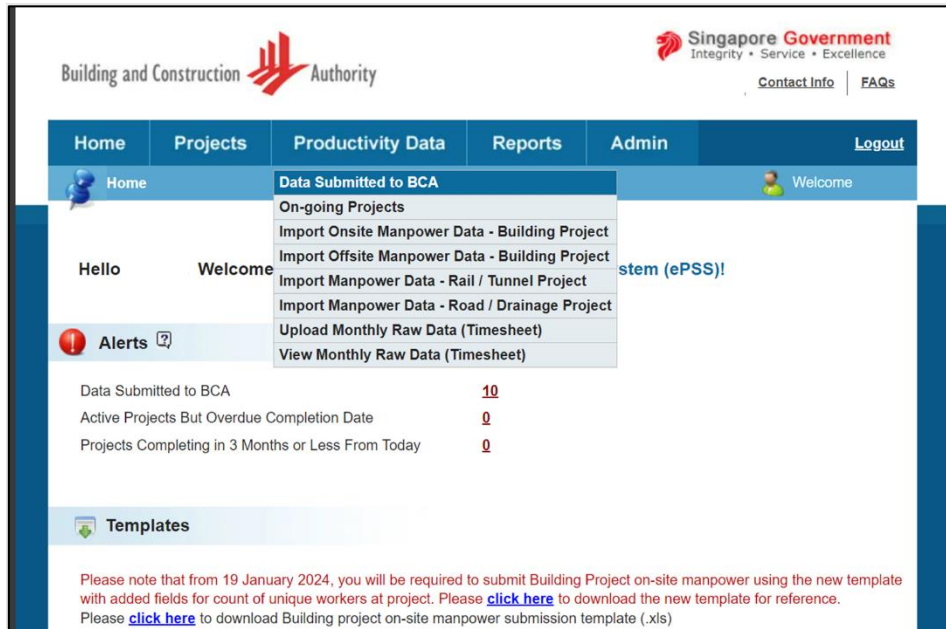


Figure 2-19 Finding "Data Submitted to BCA" Tab

- b. The page will then show the latest submission status for both onsite and offsite manpower, as well as its submission period. To look for specific projects, key in the details in the search bars to search.

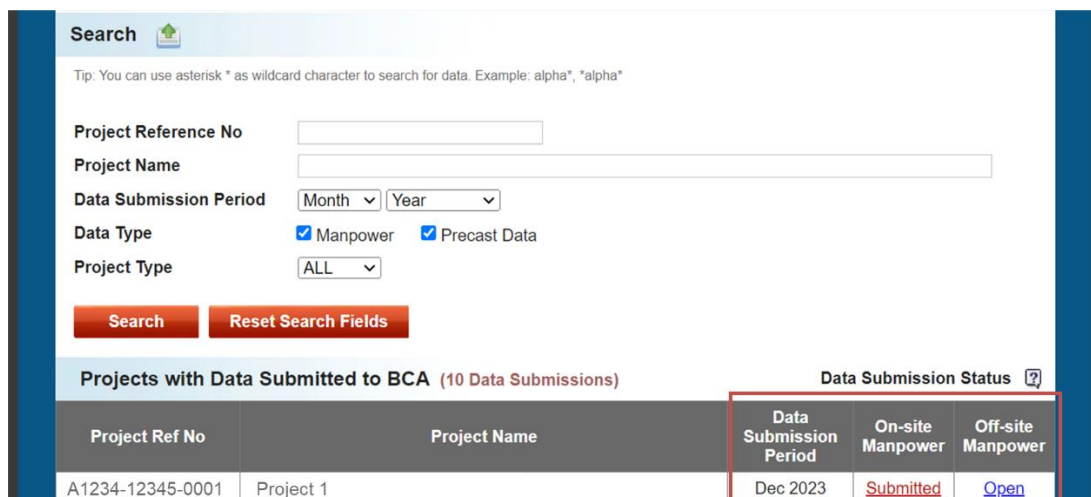


Figure 2-20 Finding "Data Submitted to BCA" Tab

## 2.2.4. Manpower Data Submission Form

There are two ways to submit manpower data, either via uploading of completed templates or manual key in.

### 2.2.4.1. Submitting by Uploading Completed Template

To upload the completed template.

- a. Hover to "Productivity Data" tab and choose for one of the following options:
  - "Import Onsite Manpower Data – Building Project" – applicable for projects that do not involve Rail, Road or Tunnel works.
  - "Import Offsite Manpower Data – Building Project" – applicable for all projects including Rail, Road or Tunnel works.
  - "Import Manpower Data – Rail / Tunnel Project" – applicable for Rail or Tunnel works.
  - "Import Manpower Data – Road / Drainage Project" – applicable for Road or Drainage works.

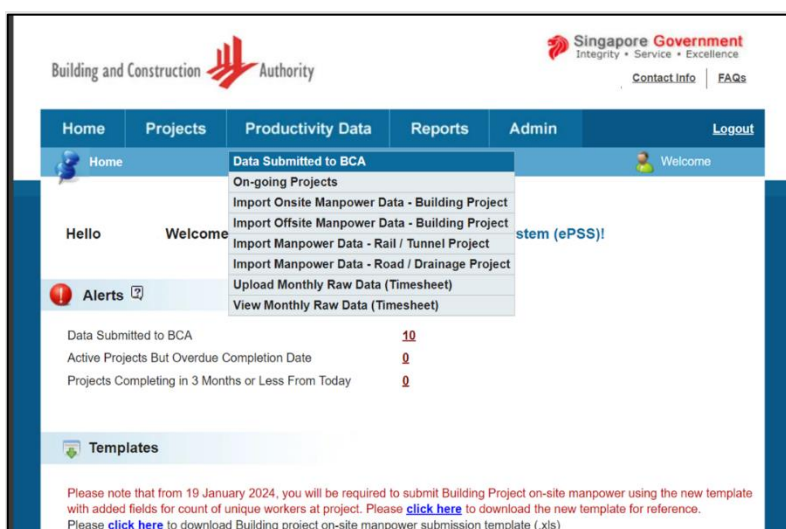


Figure 2-21 Finding Import Functions

- b. Once you click onto the any of the appropriate options, you will be prompted to the following page where you would need to upload the files (i.e., completed template) for submission.

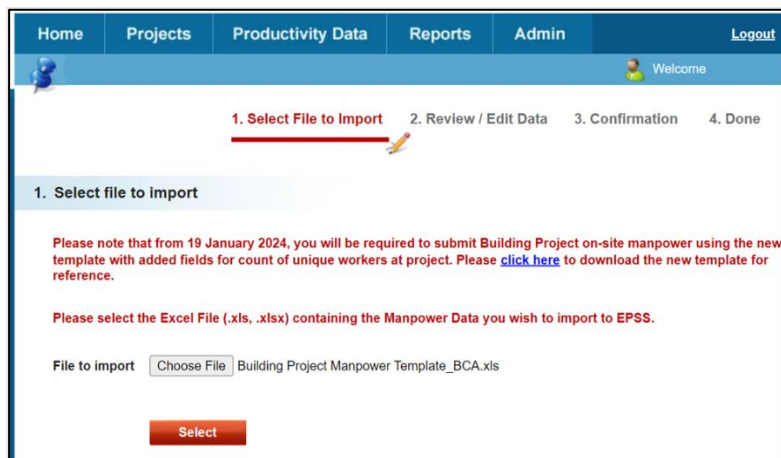


Figure 2-22 Importing Items

- c. The user will then be prompted to review the data to be imported. Once reviewed, the user can click Submit.

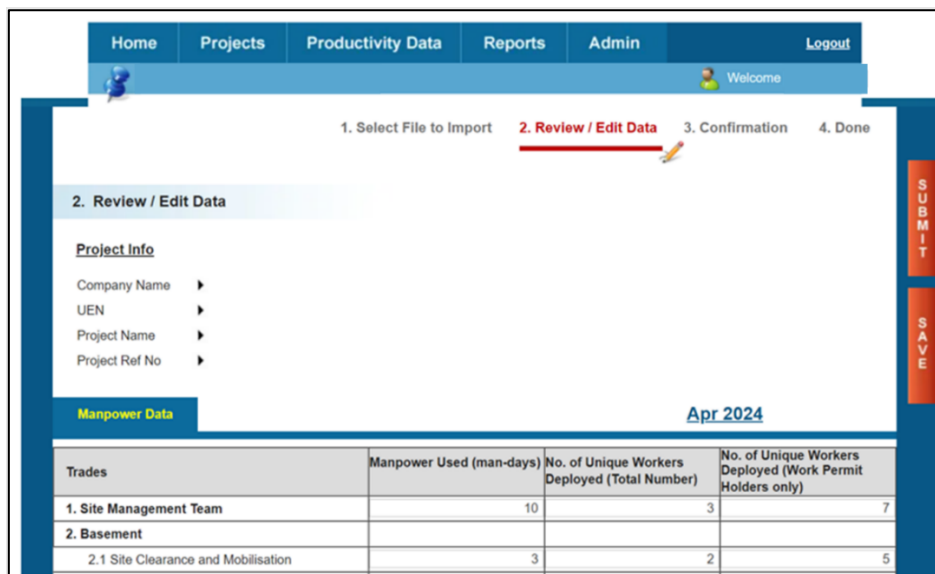


Figure 2-23 Reviewing and Submitting Data

- d. A pop-out screen will appear as shown. Click "Yes" to confirm.

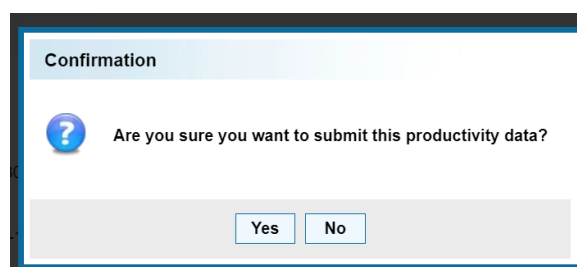


Figure 2-24 Confirming Submission 1

e. User will be prompted to perform final confirmation. Click "Confirm" to proceed.

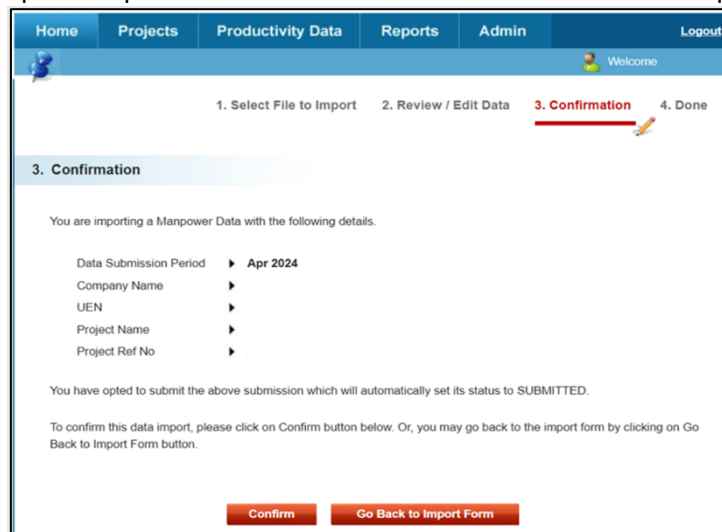


Figure 2-25 Confirming Submission 2

f. An acknowledgement page will be shown to confirm submission.

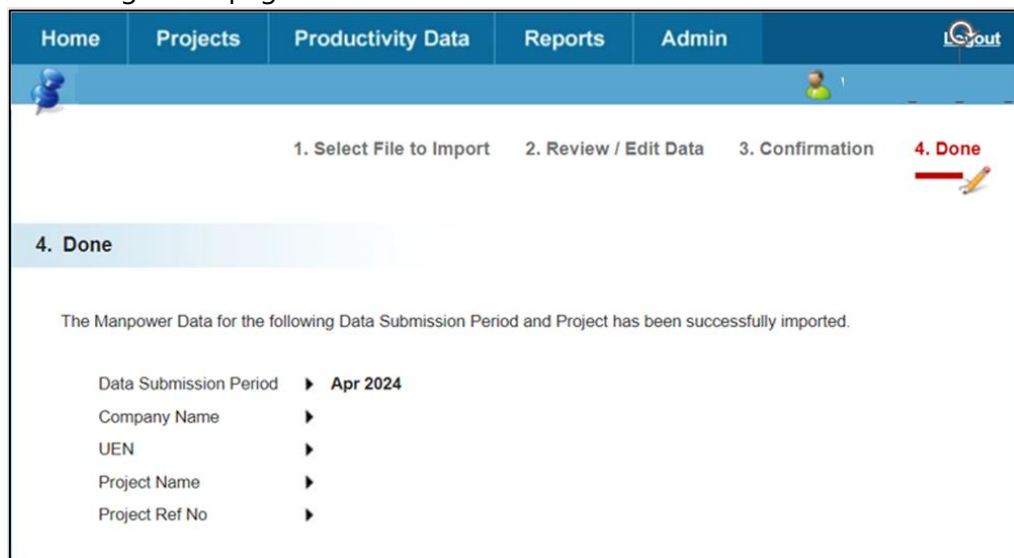


Figure 2-26 Acknowledgement Page

#### 2.2.4.2. Submitting by Manual Key In – Except Offsite Submission

To upload using manual entry:

a. User to select "On-going Projects" on the Productivity Data.

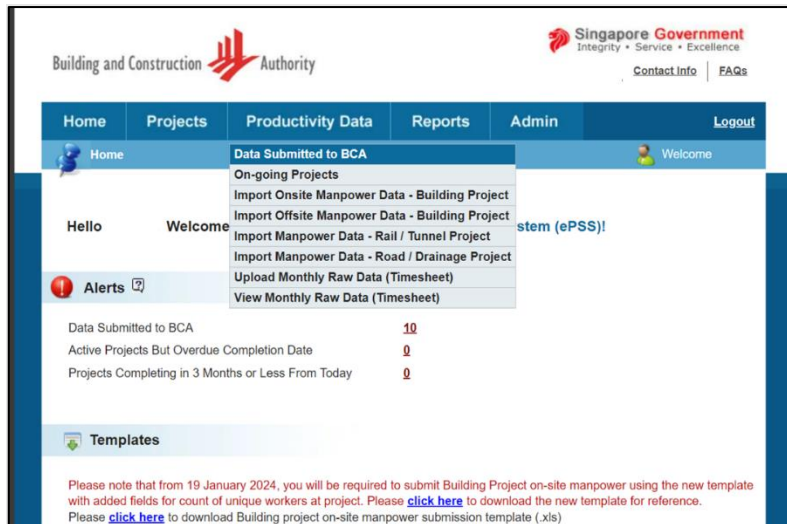


Figure 2-27 Finding "On-going Projects" Tab

- b. User to select the Project which he/she would like to submit data for. Please select "On-site Manpower".

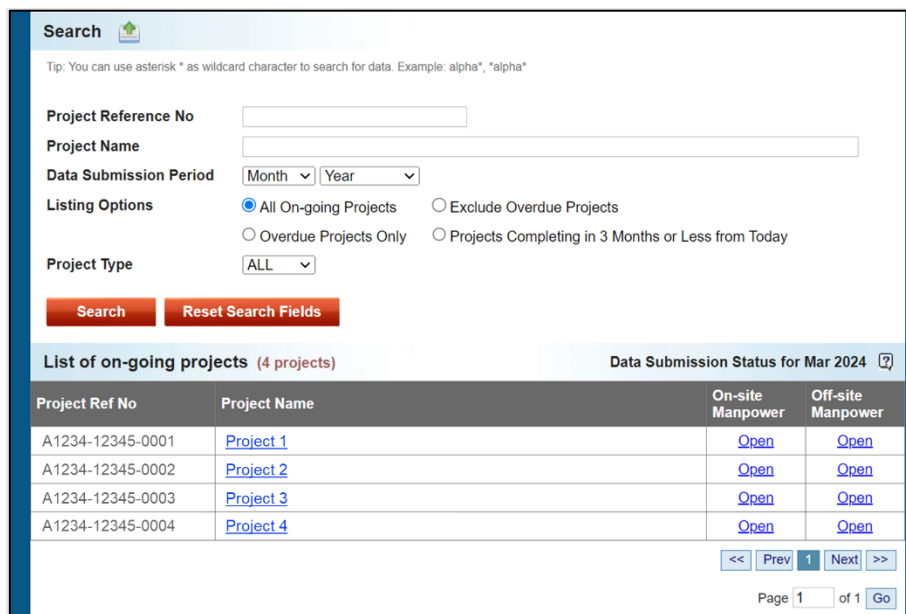


Figure 2-28 Selecting Project

- c. On the Project Page,
  1. Select the month for submission.
  2. Key in the necessary manpower data.
  3. Submit the data accordingly. Save the inputs if user is not done with the updates.



**Project Info**

Project Name ▶  
 Project Ref No ▶  
 Company Name ▶  
 Site Commencement Date ▶  
 Site Completion Date ▶  
 Latest Reminder ▶ none

Photograph of project signboard  
 Please upload photograph of project signboard  
 No file chosen  
 (.jpg/.gif/.png format with file size less than 4 MB)

Photograph of Biometric Authentication System installed on site  
 Please upload photograph of Biometric authentication system installed on the site  
 No file chosen  
 (.jpg/.gif/.png format with file size less than 4 MB)

**Data Submission Status**

Period	Status	Mode
Apr 2024	Open	NA
Mar 2024	Open	NA
Feb 2024	Open	NA
Jan 2024	Open	NA
Dec 2023	Submitted	Biometric Input
Nov 2023	Open	NA
Oct 2023	Open	NA
Sep 2023	Open	NA
Aug 2023	Open	NA
Jul 2023	Open	NA
Jun 2023	Open	NA

**Manpower Classification**

Trades	Manpower Used (man-days)	No. of Unique Workers Deployed (Total Number)	No. of Unique Workers Deployed (Work Permit Holders only)
1. Site Management Team			
2. Basement			
2.1 Site Clearance and Mobilisation			

Figure 2-29 Submitting Data

### 2.2.4.3. Submitting by Manual Key In – Offsite Submission

To upload using manual entry:

- a. User to select “On-going Projects” on the Productivity Data.

**Building and Construction Authority**

Singapore Government  
Integrity • Service • Excellence

Contact Info | FAQs

Home Projects Productivity Data Reports Admin Logout

Home Data Submitted to BCA Welcome

Hello Welcome

Alerts 2

- On-going Projects
- Import Onsite Manpower Data - Building Project
- Import Offsite Manpower Data - Building Project
- Import Manpower Data - Rail / Tunnel Project
- Import Manpower Data - Road / Drainage Project
- Upload Monthly Raw Data (Timesheet)
- View Monthly Raw Data (Timesheet)


Data Submitted to BCA	10
Active Projects But Overdue Completion Date	0
Projects Completing in 3 Months or Less From Today	0

Templates

Please note that from 19 January 2024, you will be required to submit Building Project on-site manpower using the new template with added fields for count of unique workers at project. Please [click here](#) to download the new template for reference. Please [click here](#) to download Building project on-site manpower submission template (.xls)

Figure 2-30 Finding “On-going Projects” Tab

- b. User to select the Project which he/she would like to submit data for. Please select “Off-site Manpower”.

**Search** 

Tip: You can use asterisk \* as wildcard character to search for data. Example: alpha\*, \*alpha


Project Reference No

Project Name

Data Submission Period

Listing Options  All On-going Projects  Exclude Overdue Projects  
 Overdue Projects Only  Projects Completing in 3 Months or Less from Today

Project Type

**List of on-going projects (4 projects)** Data Submission Status for Mar 2024 

Project Ref No	Project Name	On-site Manpower	Off-site Manpower
A1234-12345-0001	<a href="#">Project 1</a>	<a href="#">Open</a>	<a href="#">Open</a>
A1234-12345-0002	<a href="#">Project 2</a>	<a href="#">Open</a>	<a href="#">Open</a>
A1234-12345-0003	<a href="#">Project 3</a>	<a href="#">Open</a>	<a href="#">Open</a>
A1234-12345-0004	<a href="#">Project 4</a>	<a href="#">Open</a>	<a href="#">Open</a>

<< Prev 1 Next >>  
Page 1 of 1

Figure 2-30 Selecting Project

- c. On the **Project Page**,
  1. Select the **month for submission**.
  2. Create the subcompany, click: 'Add New Sub Company'
  3. Select Subcompany
  4. Key in the **necessary manpower data**.
  5. **Submit the data** accordingly. **Save the inputs** if user is not done with the updates.
  6. **Data submission status** will indicate as 'submitted'

Building and Construction Authority

**Project Info**

Project Name ▶ **Test 2**

Project Ref No ▶ A1234-12345-2023

Company Name ▶ Building and Construction Authority

Site Commencement Date ▶ 01/01/2023

Site Completion Date ▶ 28/02/2025

Latest Reminder ▶ none


Photograph of project signboard Please upload photograph of project signboard  
 No file chosen   
(.jpg/.gif/.png format with file size less than 4 MB)

Photograph of Biometric Authentication System installed on site Please upload photograph of Biometric authentication system installed on the site  
 No file chosen   
(.jpg/.gif/.png format with file size less than 4 MB)

**Off-site Manpower Data**

Period	Status
<a href="#">Apr 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Mar 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Feb 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Jan 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Dec 2023</a>	<a href="#">Click here for more details</a>

**Data Submission Status** ▼

**Apr 2024 OPEN** 

Select sub company

Figure 2-31 Submitting Data

Building and Construction Authority

**Project Info**

Project Name ▶ **Test 2**

Project Ref No ▶ A1234-12345-2023

Company Name ▶ Building and Construction Authority

Site Commencement Date ▶ 01/01/2023

Site Completion Date ▶ 28/02/2025

Latest Reminder ▶ none

Photograph of project signboard ▶ Choose File No file chosen Upload  
(.jpg/.gif/.png format with file size less than 4 MB)

Photograph of Biometric Authentication System installed on site ▶ Choose File No file chosen Upload  
Please upload photograph of Biometric authentication system installed on the site (.jpg/.gif/.png format with file size less than 4 MB)

**Off-site Manpower Data**

Period	Status
<a href="#">Apr 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Mar 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Feb 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Jan 2024</a>	<a href="#">Click here for more details</a>
<a href="#">Dec 2023</a>	<a href="#">Click here for more details</a>

**Data Submission Status** ▼

**Apr 2024 OPEN** ?

Sub Company Name

Sub Company UEN  2

Save Cancel

**Success!**

i **New Sub Company added successfully**

OK

Figure 2-32 Create Sub Company

**Apr 2024 OPEN** ?

Select sub company BCA ▼ Add New Sub Company 3

Figure 2-33 Select Sub Company

Apr 2024 OPEN ?

Select sub company

Trades	Manpower Used (man-days)
<b>1. Structure Works</b>	
1.1 Mould setting-up / preparation (exclude mould fabrication)	4 11
1.2 Steel Reinforcement Fixing (exclude rebar production)	
1.3 Concrete placement	
1.4 Pre-stressing work	
1.5 Stitching precast components into 3D module	
1.6 Structural steel work	
1.7 Others, pls specify <input type="text"/>	
<b>2. Architectural Works</b>	
2.1 Precast concrete panel installation	
2.2 Plaster	
2.3 Skim-coat	
2.4 Dry partition wall	
2.5 Glass partition	
2.6 Cladding/Curtain wall,Aircon Ledges/Railings	
2.7 Waterproofing	
2.8 Floor Screed & hardener	
2.9 Tiling / Marble / Stone	
2.10 Wood flooring	
2.11 Resilient flooring (vinyl)	

Figure 2-345 Update manpower data in EPSS portal

Apr 2024 OPEN ?

Select sub company

Trades	Manpower Used (man-days)
<b>1. Structure Works</b>	
1.1 Mould setting-up / preparation (exclude mould fabrication)	11
1.2 Steel Reinforcement Fixing (exclude rebar production)	
1.3 Concrete placement	
1.4 Pre-stressing work	
1.5 Stitching precast components into 3D module	
1.6 Structural steel work	
1.7 Others, pls specify <input type="text"/>	
<b>2. Architectural Works</b>	
2.1 Precast concrete panel installation	
2.2 Plaster	

SAVE

SUBMIT

5

Figure 2-356 Submit monthly manpower data

Project Info		Period	Status
Project Name	► Building in May 2024	<a href="#">May 2024</a>	<a href="#">Click here for more details</a>
Project Ref No	► May 2024		
Company Name	► Building and Construction Authority	<a href="#">Apr 2024</a>	<a href="#">Hide details</a>
Site Commencement Date	► 01/04/2024		
Site Completion Date	► 01/01/2027		
Latest Reminder	►  Send a Reminder Email		

Sub Company	Status	Mode
12345-BCA	Submitted	Manual

Figure 2-367 Manpower data submitted will updated in 'Data Submission Status'

### 2.2.5. Logging Out

Users may log out by click on the "Logout" button on the page.

The screenshot shows the user interface of the Electronic Productivity Submission System (ePSS). At the top, there are logos for the Building and Construction Authority and the Singapore Government. A navigation bar contains links for Home, Projects, Productivity Data, Reports, Admin, and a highlighted Logout button. Below the navigation bar, a welcome message reads "Hello Welcome to Electronic Productivity Submission System (ePSS)!". There is an Alerts section with a notification icon and a list of alerts: "Data Submitted to BCA", "Active Projects But Overdue Completion Date", and "Projects Completing in 3 Months or Less From Today". A Templates section follows, with a note about a new submission template for on-site manpower starting from 19 January 2024, and links to download the new template and existing templates.

Figure 2-378 Logging Out

## 2.3.Admin Functions – Applicable to Both Administrators and Project Staff

The following functions described is applicable to both Administrator and Project Staff users.

### 2.3.1. Amending User Details

User details are first keyed in by the Administrators. To amend it:

- a. Hover to “Admin” tab and click on “My User Account”.



Figure 2-389 Finding “Company Details” Tab

- b. User will be prompted to amend the details of the account. Do note that the NRIC, UEN of Company as well as Username are not amendable. **As a good practice, please amend your contact details as and when necessary.**

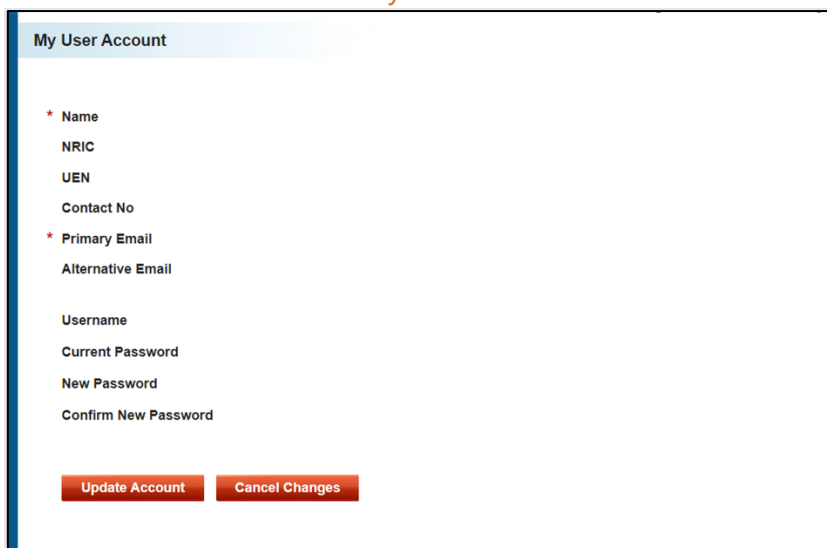
The screenshot shows the 'My User Account' form. It has a title bar 'My User Account'. The form contains several fields: 'Name' (marked with an asterisk), 'NRIC', 'UEN', 'Contact No', 'Primary Email' (marked with an asterisk), 'Alternative Email', 'Username', 'Current Password', 'New Password', and 'Confirm New Password'. At the bottom of the form, there are two buttons: 'Update Account' and 'Cancel Changes'.

Figure 2-40 Amending User Details

## 2.4.Admin Functions – Applicable to Administrators Only

The following functions described is applicable only to Administrator users.

### 2.4.1. Amending Company Details

Company details are by default extracted from the details submitted to BCA via Permit to Commence Work. To amend the data:

- a. Hover to “Admin” tab and click on “Company Details”.



Figure 2-39 Finding “Company Details” Tab

- b. User will be prompted to amend the data. Please note that UEN of the company is not amendable. As a good practice, users should update the Company details as and when there are changes to the Contact Person of the Company (e.g., name, contact details).

**Company Info** \* denotes required fields

UEN ▶

Register Grade ▶

\* Company Name ▶

\* Address 1 ▶

Address 2 ▶

Address 3 ▶

Address 4 ▶

\* Telephone ▶

Fax ▶

**Contact Person** \* denotes required fields

\* Contact Person ▶

Designation ▶

\* Telephone ▶

Fax ▶

\* Primary Email ▶

Secondary Email ▶

Figure 2-40 Amending Company Details

Queries

Should you have further questions, please write to BCA via <https://www1.bca.gov.sg/contact-us>.



### 3 ANNEX

#### 3.1 Annex A. Types of Manpower (Onsite) to be included in Each Trade for a building project

Item	Trades	Types of Manpower to be Included
<b>1</b>	<b>Site Management Team</b>	
1.0	Site Management Team	Site Management Team refers to the members of the project team such as project manager, site engineer, project supervisor, WSH officers, WSH coordinators etc who main role is to manage the construction site and daily activities.
<b>2</b>	<b>Basement</b>	
2.1	Site clearance and mobilisation	Workers who are involved at the beginning of the new project where existing structures or articles are cleared before commencement of the excavation work. Includes preliminaries, site preparation, setting up of site office, signboard & hoarding, etc)
2.2	Machine operator	Workers who operate excavators, cranes, etc. during the basement construction stage.
2.3	Excavation work	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore but excluding the excavator operators.
2.4	Temporary earth retaining	Workers who are involved in the erection, maintenance and dismantling of any temporary structure. (i.e: strutting, sheet piling)
2.5	Carpentry	Workers who are involved in woodwork such as the erection and dismantling of timber formwork.
2.6	System formwork installation	Workers who are involved in the erection and dismantling of any system or metal formwork.
2.7	Steel reinforcement fixing	Includes on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh.
2.8	Concrete placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
2.9	Pre-stressing work	Workers who perform pre-tensioning/post-tensioning work.
2.10	Precast structural concrete component	Workers who are involved in the assembling of the precast structural components such as RC column, beam or slab on-site but excluding the lifting machine operator.
2.11	Waterproofing	Workers who are involved in the waterproofing system for the basement concrete structure.
2.12	Architectural Works	Worker who are involved in architectural works in the basement such as installation of railing, signages, etc.

2.13	M&E works	Workers who are involved in the M&E works in the basement such as installation of lighting, etc.
<b>3</b>	<b>Structure Works</b>	
3.1	Carpentry	Workers who are involved in woodwork such as the erection and dismantling of traditional timber formwork.
3.2	System formwork installation	Workers who are involved in the erection and dismantling of any system formwork or metal formwork.
3.3	Steel reinforcement fixing	Includes on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh.
3.4	Concrete placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excluding the crane or hoisting operator.
3.5	Pre-stressing work	Workers who perform pre-tensioning / post-tensioning work.
3.6	Precast structural concrete component	Workers who are involved in the assembling of the precast structural components such as RC column, beam or slab on-site but excluding the lifting machine operator.
3.7	Structural steel work	Workers who are involved in structural steel installation and assembly (i.e U-beam, I-beam, RHS, SHS, etc) including bolting and welding of the steel members.
<b>4</b>	<b>Architectural Works</b>	
4.1	Brick/Blockwall	Workers who are involved in the erection of the brickwall or blockwall including the mixing of cement mortar.
4.2	Precast concrete wall panel installation	Workers who are involved in the installing of precast concrete wall panels including the sealing up of the joint between panels. Workers who are involved in the assembling of the precast components on-site but excluding the lifting machine operator.
4.3	Plaster	Workers who are involved in the plastering process including transporting and mixing of the materials. (eg cement, sand and water)
4.4	Skim-coat	Workers who are involved in the application of skim coat to concrete, brickwall or blockwall.
4.5	Dry partition wall	Workers who are involved in the installing of dry partition wall (e.g. gypsum board, calcium silicate board) including skimming of the joints between panels.
4.6	Glass partition	Workers who are involved in the installation of glass partitions, including shower screens and other forms of glass screens.
4.7	Cladding/Curtain wall	Workers who are involved in the installation of the cladding or curtain wall including sealing of joints.
4.8	Waterproofing	Workers who prepare and apply waterproofing to wet areas such as kitchen, bathroom, toilet, balcony, swimming pool, etc.
4.9	Floor screeds / protecting screed / hardeners	Workers who are involved in the screeding or hardener application process.

4.10	Tiling / marble / stone	Workers who lay any type of tiles / marble / stone on wall and/or floor.
4.11	Wood flooring	Workers who prepare and lay wood flooring.
4.12	Resilient flooring (carpet, vinyl)	Workers who prepare and lay carpet, vinyl or similar floor finishes.
4.13	Resilient flooring (laminated)	Workers who prepare and lay laminated flooring.
4.14	Raised floor	Workers who are involved in the construction of any raised floor system
4.15	False ceiling	Workers who are involved in the installation of any form of false ceiling.
4.16	Door	Workers who install doors including door frames and all the necessary ironmongeries.
4.17	Window	Workers who install windows including window frames and all necessary functional parts.
4.18	Cabinets and wardrob	Workers who install built-in cabinets or wardrobe.
4.19	Painting	Workers who prepare and perform painting work.
4.20	Roofing system	Workers who are involved in roofing system over the roof structure, such as: 1. Waterproofing the RC flat roof and the laying of the secondary slab. 2. Installation of insulation forms, laying of metal roofing sheet or roof tiles. 3. Installation of skylight including sealing around the edge.
<b>5</b>	<b>Building Services or M&amp;E Works</b>	
5.1	Plumbing / sanitary / gas system	Workers who install plumbing, sanitary or gas systems.
5.2	Fire prevention and	Workers who install fires prevention and protection systems such as alarm, sprinkler, hosereel, fire hydrant, emergency light, dry/wet riser, etc.
5.3	Electrical system	Workers who install electrical systems.
5.4	ACMV/HVAC system	Workers who install air-conditioning and/or mechanical ventilation systems.
5.5	Lift / escalator	Workers who install lifts and / or escalators.
5.6	Other M&E systems	Workers who install swimming pool equipment, building automation system, security systems, and boilers, etc.
<b>6</b>	<b>General</b>	
6.1	Machine operator	Operators of on-site machinery or equipment including temporary hoists (eg: passenger/material hoists), transportation equipment (eg: dumper, telescopic handler, forklift), lifting equipment (eg: tower/mobile crane) and excavator for external work but exclude excavator for basement

6.2	Quality assurance	Workers who perform quality control and rectification works before handover of project to owner (eg: quality mark and rectification of defects after final inspection)
6.3	Scaffold	Workers who erect or dismantle external scaffolding including safety screen and working platform
6.4	Safety and health	Workers who are appointed to ensure on-site safety and health such as signaller, rigger and workers (eg: erecting hoarding, housekeeping, safety barricade, etc.) which include security, cleaning and maintenance of site but exclude external scaffold, safety screen and platform.
<b>7</b>	<b>External Works</b>	
7.1	Estate roads, driveways, road ancillaries, footways	Workers who are involved in the construction/paving of roads, driveways, footways and covered link-ways including road ancillaries such as signages and lamp-posts within the project site. The various trades involved such as concreting for external work shall be recorded under this category.
7.2	Landscape	Workers who are involved in landscaping works such as tree planting, turfing, water feature, pavilion, benches and tables, etc which also involve concreting for external work. The various trades involved such as concreting or carpentry got landscaping work shall be recorded under this category.

### 3.2 Annex B. Types of Manpower to be included in each trade for a rail project

Item	Trades	Types of Manpower to be Included
<b>1</b>	<b>Site Management Team</b>	
1.0	Site Management Team	Site Management Team refers to the members of the project team such as project manager, site engineer, project supervisor, WSH officers, WSH coordinators etc who main role is to manage the construction site and daily activities.
<b>2</b>	<b>ERSS/Excavation (Station/Viaduct/Cut and cover tunnels/Depot)</b>	
2.1	Site Clearance & Mobilisation	Workers who are involved at the beginning of the new project where existing structures or articles are cleared before commencement of the excavation work. Includes preliminaries, site preparation, setting up ofsite office, signboard & hoarding, etc)
2.2	Machine Operator	Workers who operate excavators, cranes, etc. during the ERSS/Excavation stage.
2.3	Demolition Works	Workers who are involved in demolition works.
2.4	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.
2.5	Ground Freezing	Workers who are involved in specialised ground freezing techniques.

2.6	Retaining Structures	Workers who are involved in the construction of cofferdams and retaining structures , such as Dwall, SBP,CBP, caissons, etc.
2.7	Vertical Elements (e.g. King Posts, Deck Posts, etc.)	Workers who are involved in the construction of vertical elements, such as King Posts and Deck Posts, etc.
2.8	Under-pinning Works	Workers who are involved in under-pinning works to existing buildings and structures.
2.9	Formwork Installation	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
2.10	Steel Reinforcement Fixing	Works include on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh. Drilling works for planting of anchors/bolts for skin wall reinforcement shall be recorded under this category.
2.11	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
2.12	Waterproofing	Workers who are involved in the waterproofing system during the ERSS/Excavation stage.
2.13	Temporary Strutting/Sheet piling/Propping Works	Workers who are involved in the erection, maintenance and dismantling of any temporary retaining structure. (i.e: strutting, sheet piling)
2.14	Shotcreting Works	Workers who are involved in shotcreting works to support open excavations and for shotcreting to provide face/ tunnel roof support for mined tunnel
2.15	Mining Works	Workers who are involved in mined tunnel excavation, rock bolting, grouting for rock support, reinforcement for SCL and ground stability works in shafts and mined tunnel works
2.16	Micro-tunnelling	Workers who are involved in micro-tunnelling for pipe roof support.
2.17	Recharge Well/Passive Relief Well	Workers who are involved in the erection, maintenance and dismantling of recharge wells or passive relief wells for ground water control.
2.18	Rock Blasting	Workers who are involved in blasting techniques with the use of special chemicals or explosives for rock blasting.
2.19	Excavation Work	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore and backfilling, but excluding the excavator operators.
<b>3</b>	<b>Permanent Structure Works (Station/Viaduct/Cut and cover tunnels/Depot)</b>	
3.1	Machine Operator	Workers who operate excavators, cranes, etc. during the Permanent Structure Works stage.
3.2	Piling Works	Workers who are involved in piling works during the permanent stage.

3.3	Formwork Installation	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
3.4	Steel Reinforcement Fixing	Works include on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh.
3.5	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
3.6	Pre-stressing work	Workers who perform pre-tensioning / post-tensioning work.
3.7	Precast structural concrete component installation	Workers who are involved in the assembling of the precast structural components such as RC column, beam or slab on-site but excluding the lifting machine operator.
3.8	Structural Steel Work	Workers who are involved in structural steel installation and assembly (i.e U-beam, I-beam, RHS, SHS, etc) including bolting and welding of the steel members.
3.9	Waterproofing	Workers who are involved in the waterproofing system during the Permanent Structure Works stage.
3.10	Viaduct Segment Casting	Workers who are involved in the casting of viaduct segments on site.
3.11	Viaduct Segment Handling	Workers who are involved in the handling of viaduct segments on site.
3.12	Viaduct Segment Launching	Workers who are involved in the launching of viaduct segments on site.
3.13	Viaduct Deck Furniture	Workers who are involved in the installation of deck furniture on the viaduct.
<b>4</b>	<b>Bored Tunnelling Works</b>	
4.1	TBM Operator	Workers who operate the tunnel boring machines.
4.2	Ring Builder/grouter (including surface ops.)	Workers who are involved in Ring Building/grouting (including surface ops.).
4.3	Segment and service handling	Workers who are involved in Segment and service handling .
4.4	Locomotive driver	Workers who operate the locomotives.
4.5	Bridge/Mobile crane operator	Workers who operate the Bridge/Mobile crane for the tunnelling operations.
4.6	Rigger/signal worker	Riggers/signalling workers for the tunnelling operations.
4.7	Segment gasket installer	Workers who install gaskets for the segments.
4.8	Mechanical and electrical workers	Workers who are involved in electrical and mechanical installation and maintenance for the tunnelling operations.

4.9	Storemen and general workers	Other workers involved in the tunnelling operations, including watchman, storeman, general workers, etc.
<b>5</b>	<b>Architectural Works</b>	
	<b>General Work</b>	
5.1	Waterproofing	Workers who prepare and apply waterproofing to all wet areas.
5.2	Fire Stopping	Workers who prepare and lay fire stopping materials on site.
5.3	Sprayed mineral fire protection	Workers who prepare and spray mineral fire protection for fire protection.
	<b>Structural Carcass Work</b>	
5.4	Concrete Finishes and precast concrete panels	Workers who are involved in the installing of concrete finishes products and precast concrete wall panels including the sealing up of the joint between panels. Workers who are involved in the assembling of the precast components on-site but excluding the lifting machine operator.
5.5	Brick and Block Construction	Workers who are involved in the erection of the brickwall or blockwall including the mixing of cement mortar.
5.6	Stone Masonry	Workers who prepare and lay stone masonry on site.
	<b>Enclosure Work</b>	
5.7	Roofing	Workers who are involved in roofing system over the roof structure, such as: 1. Waterproofing the RC flat roof and the laying of the secondary slab. 2. Installation of insulation forms, laying of metal roofing sheet or roof tiles. 3. Installation of skylight including sealing around the edge.
5.8	External Cladding	Workers who are involved in the installation of the external cladding including sealing of joints.
5.9	Stone Cladding	Workers who are involved in the installation of stone cladding.
5.10	Glazing	Workers who are involved in the installation of glass and glazing works.
5.11	Doors and Hatches	Workers who are involved in the installation of all doors, including access hatches.
5.12	Roller Shutters and Grilles	Workers who are involved in the installation of all proprietary and non- proprietary roller shutters and grilles.
5.13	Door and Window Hardware	Workers who are involved in the installation of all door and window hardware including, hinges, locksets, latches, door controllers and other associated hardware.
5.14	Louvres	Workers who are involved in the installation of all louvres and screens, including performance louvres for ventilation shafts and buildings.
5.15	Internal Cladding	Workers who are involved in the installation of internal cladding, including subframes, channels and panneling for the cladding.

5.16	Vitreous Enamel Panels	Workers who are involved in the installation of Vitreous Enamel Panels.
5.17	Partitions	Workers who are involved in the installing of partition walls (e.g. gypsum board, calcium silicate board) including skimming of the joints between panels.
	<b>Finishing Work</b>	
5.18	Suspended Ceiling	Workers who are involved in the installation of suspended false ceiling.
5.19	Cementitious Toppings	Workers who are involved in the construction of cementitious toppings.
5.20	Granite Flooring	Workers who lay granite floor tiles.
5.21	Tactile Paving	Workers who are involved in the construction of tactile paving.
5.22	Access Floor	Workers who are involved in the construction of any access or raised floor system.
5.23	Plastering	Workers who are involved in the plastering process including transporting and mixing of the materials. (eg cement, sand and water)
5.24	Tiling	Workers who lay any type of tiles on wall and/or floor.
5.25	Resilient Finishes	Workers who prepare and lay resilient floor finishes.
5.26	Gratings	Workers who prepare and lay gratings on site.
5.27	Painting	Workers who prepare and perform painting work.
5.28	Metal Fixtures	Workers who are involved in the installation of metal fixtures such as Handrails & Balustrades. Service Gates. Stairs and Ladders. etc.
	<b>Commissioning Work</b>	
5.29	Furniture and Fittings	Workers who install furniture and fittings including all accessories and ironmongery items.
5.30	Signs, advertising and displays	Workers who install Signs, advertising and displays panels.
<b>6</b>	<b>Building Service and M&amp;E Works (For Civil Contracts only)</b>	
6.1	Plumbing and Sanitary	Workers who install plumbing, and sanitary systems.
6.2	Fire Prevention and Protection System	Workers who install fires prevention and protection systems such as alarm, sprinkler, hose reel, fire hydrant, emergency light, dry/wet riser, etc.
6.3	Electrical system	Workers who install electrical systems.
6.4	ACMV/HVAC system	Workers who install air-conditioning and/or mechanical ventilation systems.



6.5	Lift /Escalator	Workers who install lifts and / or escalators.
6.6	Earth Mat/ Touch Voltage Protection	Workers who install Earth Mat/ Touch Voltage Protection systems.
6.7	Cable ducts/pits	Workers who install cable ducts, cable pits and cable bridge, etc.
6.8	Waste water treatment	Workers who install waste water treatment plants at the Depot.
<b>7</b>	<b>General</b>	
7.1	Machine Operator	Operators of on-site machinery or equipment including temporary hoists (eg: passenger/material hoists), transportation equipment (eg: dumper, telescopic handler, forklift), lifting equipment (eg: tower/mobile crane) and excavator for external work but exclude excavator for ERSS/Excavation stage.
7.2	Quality Assurance	Workers who perform quality control and rectification works before handover of project to operator (eg: quality mark and rectification of defects after final inspection)
7.3	Scaffold	Workers who erect or dismantle external scaffolding including safety screen and working platform
7.4	Safety and Health	Workers who are appointed to ensure on-site safety and health such as signaller, rigger and workers (eg: erecting hoarding, housekeeping, safety barricade, etc.) which include security, cleaning and maintenance of site but exclude external scaffold, safety screen and platform.
<b>8</b>	<b>External Works</b>	
8.1	Trial Trench/Utility Detection	Workers who are involved in carrying out Trial Trench/Utility Detection Works
8.2	Underground Obstruction	Workers who are involved in underground obstruction investigation and detection, including pile detection, pile extraction and subsequent pile removal.
8.3	Utilities Diversion	Workers who are involved in carrying out work for the diversion of utilities.
8.4	Drain Diversion/Drainage Works	Workers who are involved in carrying out diversion and reinstatement of drainage and the construction of new drains on site, including the construction of sub-ballast and sub-soil drains at the Depot.
8.5	Traffic Diversion	Workers who are involved in carrying out traffic diversion works.
8.6	External Paving	Workers who are involved in external paving works.
8.7	Roads and Driveways	Workers who are involved in the construction/paving of roads, driveways. The various trades involved such as concreting for such external works shall be recorded under this category.

8.8	Bus Shelters, Linkways, Taxi Stands, Drop-off Bays, Road Ancillaries	Workers who are involved in the construction of Bus Shelters, Covered Linkways, Taxi Stands, Drop-off Bays, including road ancillaries within the project site. The various trades involved such as concreting for such external works shall be recorded under this
8.9	Fencing	Workers who are involved in the construction of fencing on site.
8.10	Landscape	Workers who are involved in landscaping works such as tree planting, landscaping and turfing.

### 3.3 Annex C. Types of Manpower to be included in each trade for a road project

Item	Trades	Types of Manpower to be Included
<b>1</b>	<b>Site Management Team</b>	
1.0	Site Management Team	Site Management Team refers to the members of the project team such as project manager, site engineer, project supervisor, WSH officers, WSH coordinators etc who main role is to manage the construction site and daily activities.
<b>2</b>	<b>General Works</b>	
2.1	Site Clearance & Mobilisation	Workers who are involved at the beginning of the new project where existing structures or articles are cleared before commencement of the excavation work. Includes preliminaries, site preparation, setting up of site office, signboard & hoarding, etc)
2.2	Surveying	Workers who are involved in carrying out Trial Trench/Utility Detection Works
2.3	Soil Investigations	Workers who are involved in carrying out Soil Investigation Works
2.4	Instrumentations	Workers who are involved in carrying out Instrumentation Works
2.5	Health & Safety & General Maintenance	Workers who are appointed to ensure on-site safety and health such as signaller, rigger, and workers (eg: erecting hoarding, safety barricade, etc.) which include security, cleaning and maintenance of site
2.6	Housekeeping	Workers who carry out housekeeping works on site.
2.7	Utilities Diversion / Support	Workers who are involved in carrying out work for the diversion of utilities.
2.8	Demolition Work	Workers who are involved in demolition works.
<b>3</b>	<b>Tunnel/Underpass/Culverts (&gt;5m internal span)</b>	
	<b>Temporary Works</b>	
3.1	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Temporary Works stage.
3.2	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.

3.3	Excavation Work	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore and backfilling, but excluding the excavator operators.
3.4	Structural Steel Work (e.g. struts, king post, decking)	Workers who are involved in the construction of vertical elements, such as King Posts and Deck Posts, etc.
3.5	Falsework	Workers who are involved in the construction of falsework.
3.6	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork.
3.7	System formwork	Workers who are involved in the erection and dismantling of any traditional system formwork or metal formwork.
3.8	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
3.9	Traffic Diversion	Workers who are involved in carrying out traffic diversion works.
<b>Permanent Works</b>		
3.10	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Permanent Works stage.
3.11	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.
3.12	Excavation (D-wall trenching)	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore, but excluding backfilling.
3.13	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
3.14	Steel Reinforcement Fixing	Works include on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh. Drilling works for planting of anchors/bolts for skin wall reinforcement shall be recorded under this category.
3.15	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
3.16	Structural Steel Work	Workers who are involved in structural steel installation and assembly (i.e U-beam, I-beam, RHS, SHS, etc) including bolting and welding of the steel members.
3.17	Waterproofing	Workers who are involved in the waterproofing system during the Permanent Structure Works stage.
3.18	Backfill of earth	Workers who are involved in the backfilling work.
<b>Road Works</b>		

3.19	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. for Road Works.
3.20	Premixing	Workers who are involved in pre-mixing works.
3.21	kerb, grating, EM trench	Workers who are involved in external paving, kerbs or EM trench works.
3.22	Precast concrete component	Workers who are involved in the construction/paving of roads using precast concrete. The various trades involved shall be recorded under this category.
<b>Electrical and Mechanical Works</b>		
3.23	Machine operator	Workers who operate machinery such as excavators, cranes, etc. for E&M Works.
3.24	Plumbing/ Sanitary/ Gas System	Workers who install plumbing, and sanitary systems.
3.25	Fire Prevention and Protection System	Workers who install fires prevention and protection systems such as alarm, sprinkler, hose reel, fire hydrant, emergency light, dry/wet riser, etc.
3.26	Electrical System	Workers who install electrical systems.
3.27	ACMV System	Workers who install air-conditioning and/or mechanical ventilation systems.
3.28	Lift/ Escalator	Workers who install lifts and / or escalators.
3.29	Earth Mat/Touch Voltage Protection	Workers who install Earth Mat/ Touch Voltage Protection systems.
3.30	Cable ducts/pits	Workers who install cable ducts, cable pits and cable bridge, etc.
<b>4</b>	<b>At-grade Road Widening / Construction</b>	
	<b>Temporary Works (Retaining Wall/Drain/Culvert &lt; 5m internal span)</b>	
4.1	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Temporary Works stage.
4.2	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.
4.3	Excavation Work	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore and backfilling, but excluding the excavator operators.
4.4	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
4.5	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.

4.6	Earth retaining structures	Workers who are involved in the erection, maintenance and dismantling of any temporary structure. (i.e: strutting, sheet piling)
4.7	Traffic diversion	Workers who are involved in carrying out traffic diversion works.
<b>Permanent Works (Retaining Wall/Drain/Culvert &lt; 5m internal span)</b>		
4.8	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Permanent Works stage.
4.9	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.
4.10	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
4.11	Steel Reinforcement Fixing	Works include on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh. Drilling works for planting of anchors/bolts for skin wall reinforcement shall be recorded under this category.
4.12	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
4.13	Premixing including sub-base, base and road base	Workers who are involved in pre-mixing works.
4.14	Grating and Railing	Workers who prepare and lay gratings and install railings on site.
4.15	Planting/turfing	Workers who are involved in landscaping works such as tree planting, landscaping and turfing.
4.16	Bus stops and Linkways	Workers who are involved in the construction of Bus Shelters, Covered Linkways, within the project site. The various trades involved such as concreting for such external works shall be recorded under this category.
4.17	Precast concrete component	Workers who are involved in the construction/paving of roads using precast concrete. The various trades involved shall be recorded under this category.
4.18	Ancillary Works	Workers who are involved in the construction of road ancillaries within the project site. The various trades involved such as concreting for such external works shall be recorded under this category.
4.19	Backfill of Earth	Workers who are involved in the backfilling work.
<b>5</b>	<b>Elevated Structures such as Flyovers &amp; Viaducts (Including POB)</b>	
<b>Temporary Works</b>		
5.1	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Temporary Works stage for flyovers and viaducts.

5.2	Ground Improvement Works	Workers who are involved in ground improvement works such as JGP, WSM, TAM, etc.
5.3	Earth Retaining Structures	Workers who are involved in the erection, maintenance and dismantling of any temporary structure. (i.e: strutting, sheet piling)
5.4	Excavation Work	Workers who are involved in the excavation work, including the breaking of hard surface as well as removing the excavated earth or hardcore and backfilling, but excluding the excavator operators.
5.5	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork.
5.6	System formwork	Workers who are involved in the erection and dismantling of any traditional system formwork or metal formwork.
5.7	Falsework	Workers who are involved in the construction of falsework.
5.8	Steel work such as fabrication of launching girder	Workers who are involved in structural steel installation and assembly including bolting and welding of the steel members.
5.9	Traffic diversion	Workers who are involved in carrying out traffic diversion works.
<b>Permanent Works</b>		
5.10	Machine Operator	Workers who operate machinery such as excavators, cranes, etc. during the Permanent Works stage for flyovers and viaducts.
5.11	Formwork	Workers who are involved in the erection and dismantling of any traditional timber formwork, system formwork or metal formwork.
5.12	Steel Reinforcement Fixing	Works include on-site re-bar benders/cutters and any workers who are involved in the placing of the re-bars or welded mesh. Drilling works for planting of anchors/bolts for skin wall reinforcement shall be recorded under this category.
5.13	Pre-stressing/post-tensioning	Workers who perform pre-tensioning/post-tensioning work.
5.14	Launching of precast segment	Workers who are involved in the launching of precast segments on site.
5.15	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
5.16	Waterproofing	Workers who are involved in the waterproofing system for the concrete structure.
5.17	Backfill of Earth	Workers who are involved in the backfilling work.
<b>Road Works</b>		
5.18	Machine operator	Workers who operate machinery such as excavators, cranes, etc. for Road Works for flyovers and viaducts.
5.19	Premixing	Workers who are involved in pre-mixing works.

5.20	Grating and Railing	Workers who prepare and lay gratings and install railings on site.
5.21	Planting / Turfing	Workers who are involved in landscaping works such as tree planting, landscaping and turfing.
5.22	Precast concrete component	Workers who are involved in the construction/paving of roads using precast concrete. The various trades involved shall be recorded under this category.
	<b>Ancillary Works</b>	
5.23	Machine operator	Workers who operate machinery such as excavators, cranes, etc. for Ancillary Works for flyovers and viaducts.
5.24	Irrigation System	Workers who are involved in the construction of road irrigation.
5.25	Cable ducts/pits	Workers who install cable ducts, cable pits and cable bridge, etc.

### 3.4 Annex D. Types of Manpower (Offsite) to be included in each trade for all projects

Item	Trades	Types of Manpower to be Included
<b>1</b>	<b>Structural Works</b>	
1.1	Mould setting-up /preparation (exclude mould fabrication)	Workers who are involved in pre and post works in mould setting.
1.2	Steel Reinforcement Fixing (exclude rebar production)	Includes rebar benders/cutters and any workers who are involved in the placing of the rebars or welded mesh.
1.3	Concrete Placement	Workers who are involved in the concreting process including the helper, vibrator, concrete pump operator, concrete truck operator but excludes the crane or hoisting operator.
1.4	Pre-stressing Work	Workers who perform pre-tensioning/post-tensioning work.
1.5	Stitching precast components into 3D module	Workers who are involved in the assembling of the precast structural components such as RC column, beam or slab off-site including the lifting machine operator.
1.6	Structural Steel Work	Workers who are involved in structural steel installation and assembly (i.e U-beam, I-beam, RHS, SHS, etc) including bolting and welding of the steel members.

<b>2</b>	<b>Architectural Works</b>	
2.1	Precast Concrete Panel Installation	Workers who are involved in the installation of the precast non-structural components.
2.2	Plaster	Workers who are involved in the plastering process including transporting and mixing of the materials. (eg cement, sand and water)
2.3	Skim-coat	Workers who are involved in the application of skim coat to concrete, brickwall or blockwall.
2.4	Dry Partition Wall	Workers who are involved in the installing of dry partition wall (e.g. gypsum board, calcium silicate board) including skimming of the joints between panels.
2.5	Glass Partition	Workers who are involved in the installation of glass partitions, including shower screens and other forms of glass screens.
2.6	Cladding/Curtain Wall, Aircon Ledges/Railings	Workers who are involved in the fabrication/installation of the cladding or curtain wall including sealing of joints.
2.7	Waterproofing	Workers who prepare and apply waterproofing to wet areas such as kitchen, bathroom, toilet, balcony, etc.
2.8	Floor Screed & hardener	Workers who are involved in the screeding or hardener application process.
2.9	Tiling/Marble/Stone	Workers who lay any type of tiles / marble / stone on wall and/or floor.
2.10	Wood Flooring	Workers who prepare and lay wood flooring.
2.11	Resilient Flooring (Vinyl)	Workers who prepare and lay carpet, vinyl or similar floor finishes.
2.12	Laminate Floor	Workers who prepare and lay laminated flooring.
2.13	Raised Floor	Workers who are involved in the construction of any raised floor system
2.14	False Ceiling	Workers who are involved in the installation of any form of false ceiling.
2.15	Door	Workers who install doors including door frames and all the necessary ironmongeries.
2.16	Window	Workers who install windows including window frames and all necessary functional parts.
2.17	Cabinets & Wardrobe (incl. bathroom components)	Workers who install built-in cabinets or wardrobe.
2.18	Painting	Workers who prepare and perform painting work.
<b>3</b>	<b>Building Service and M&amp;E Works</b>	
3.1	Plumbing/ Sanitary/ Gas System	Workers who install plumbing, sanitary or gas systems.



3.2	Fire Prevention and Protection System	Workers who install fires prevention and protection systems such as alarm, sprinkler, hose reel, fire hydrant, emergency light, dry/wet riser, etc
3.3	Electrical System	Workers who install electrical systems.
3.4	ACMV System	Workers who install air-conditioning and/or mechanical ventilation systems.
3.5	Prefab MEP module frame assembly	Workers who fabricate and install integrated mechanical, electrical and/or plumbing module frame.
<b>4</b>	<b>2D Precast Works</b>	
4.1	From On-site production	Workers who are involved in the assembling of 2D precast components such as RC column, beam or slab on-site at On-site.
4.2	From TOL Land production	Workers who are involved in the assembling of 2D precast components such as RC column, beam or slab at TOL land.
4.3	From Local Open Precast Yard	Workers who are involved in the assembling of 2D precast components such as RC column, beam or slab at local open precast yard
4.4	From Overseas Open Precast Yard	Workers who are involved in the assembling of 2D precast components such as RC column, beam or slab at overseas open precast yard.
4.5	From ICPH (conventional line production)	Workers who are involved in the assembling of 2D precast components such as RC column, beam or slab at ICPH (conventional line production).
4.6	From ICPH (automated line production)	Workers who are involved in the assembling of 2D precast structural components such as RC column, beam or slab at ICPH (automated line production).
<b>5</b>	<b>PBU Shells Works</b>	
5.1	From On-site production	Workers who are involved in the production of PBU shells works at On-site production.

5.2	From TOL Land production	Workers who are involved in the production of PBU shells works at TOL land production.
5.3	From Local Open Precast Yard	Workers who are involved in the production of PBU shells works at Local Open Precast Yard.
5.4	From Overseas Open Precast Yard	Workers who are involved in the production of PBU shells works at Overseas Open Precast Yard.
5.5	From ICPH (non-automated line production)	Workers who are involved in the production of PBU shells works at ICPH (non-automated line production).
5.6	From ICPH (automated line production)	Workers who are involved in the production of PBU shells works at ICPH (automated line production).
<b>6</b>	<b>PPVC Shells Works</b>	
6.1	From On-site production	Workers who are involved in the production of PPVC shells works at On-site production.
6.2	From TOL Land production	Workers who are involved in the production of PPVC shells works at TOL land production.
6.3	From Local Open Precast Yard	Workers who are involved in the production of PPVC shells works at Local Open Precast Yard.
6.4	From Overseas Open Precast Yard	Workers who are involved in the production of PPVC shells works at Overseas Open Precast Yard.
6.5	From ICPH (non-automated line production)	Workers who are involved in the production of PPVC shells works at ICPH (non-automated line production).
6.6	From ICPH (automated line production)	Workers who are involved in the production of PPVC shells works at ICPH (automated line production).
<b>7</b>	<b>Fitted-out PBUs Works</b>	
7.1	From On-site	Workers who are involved in the fit-out works for PBU at On-site production.

7.2	From TOL Land	Workers who are involved in the fit-out works for PBU at TOL Land.
7.3	From Local Open Precast Yard	Workers who are involved in the fit-out works for PBU at Local Open Precast Yard.
7.4	From Overseas Open Precast Yard	Workers who are involved in the fit-out works for PBU at Overseas Open Precast Yard.
7.5	From Local Fitout Yard	Workers who are involved in the fit-out works for PBU at Local Fitout Yard.
7.6	From Overseas Fitout Yard	Workers who are involved in the fit-out works for PBU at Overseas Fitout Yard.
7.7	From ICPH (non-automated line)	Workers who are involved in the fit-out works for PBU at ICPH (non-automated line).
7.8	From ICPH (automated line)	Workers who are involved in the fit-out works for PBU at ICPH (automated line).
<b>8</b>	<b>Fitted-out PPVC modules Works</b>	
8.1	From On-site	Workers who are involved in the fit-out works for PPVC at On-site production.
8.2	From TOL Land	Workers who are involved in the fit-out works for PPVC at TOL Land.
8.3	From Local Open Precast Yard	Workers who are involved in the fit-out works for PPVC at Local Open Precast Yard.
8.4	From Overseas Open Precast Yard	Workers who are involved in the fit-out works for PPVC at Overseas Open Precast Yard.

8.5	From Local Fitout Yard	Workers who are involved in the fit-out works for PPVC at Local Fitout Yard.
8.6	From Overseas Fitout Yard	Workers who are involved in the fit-out works for PPVC at Overseas Fitout Yard.
8.7	From ICPH (non-automated line)	Workers who are involved in the fit-out works for PPVC at ICPH (non-automated line).
8.8	From ICPH (automated line)	Workers who are involved in the fit-out works for PPVC at ICPH (automated line).
<b>9</b>	<b>Ceiling / Horizontal Prefab MEP Modules Works</b>	
9.1	From Local Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Ceiling/ Horizontal Prefab MEP modules at local Prefab MEP facility.
9.2	From Overseas Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Ceiling/ Horizontal Prefab MEP modules at Overseas Prefab MEP facility.
<b>10</b>	<b>Riser / Vertical Prefab MEP Modules Works</b>	
10.1	From Local Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Riser / Vertical Prefab MEP modules at local Prefab MEP facility.
10.2	From Overseas Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Riser / Vertical Prefab MEP modules at Overseas Prefab MEP facility.
<b>11</b>	<b>Plant Skid Prefab MEP Modules Works</b>	
11.1	From Local Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Plant Skid Prefab MEP modules at local Prefab MEP facility.
11.2	From Overseas Prefab MEP facility	Workers who are involved in the fabrication and/or assembly of Plant Skid Prefab MEP modules at Overseas Prefab MEP facility.
<b>12</b>	<b>Structural Steel components (tons)</b>	

12.1	From Local Steel Fabricator	Workers who are involved in the fabrication of Structural Steel components at local steel fabricator.
12.2	From Overseas Steel Fabricator	Workers who are involved in the fabrication of Structural Steel components at overseas steel fabricator.