



EPSS

GUIDEBOOK ON BCA ELECTRONIC PRODUCTIVITY SUBMISSION SYSTEM



We shape a **safe**, **high quality**, **sustainable** and **friendly** built environment.

The Guidebook on BCA Electronic Productivity Submission System (EPSS) is electronically published by the Building and Construction Authority, Singapore.



Building and Construction Authority

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PREFACE

The Guidebook on BCA Electronic Productivity Submission System (EPSS) aims to provide contractors with a better understanding on the following areas:

- 1) Importance of the productivity data for different stakeholders (i.e. contractor, developer and BCA).
- 2) Scope of the productivity data.
- 3) Terminologies used in the productivity data submission forms.
- 4) Submission of manpower data to the EPSS.
- 5) Step-by-step instruction on the use of the EPSS.

The screenshot shows the EPSS login interface. At the top left is the Building and Construction Authority logo. The top right features the Singapore Government logo and a search bar. The main content area is titled 'ePSS Electronic Productivity Submission System' and includes a 'Login with ePSS Account' section with input fields for '* Username' and '* Password', and a 'Login' button. To the right of the login form is a 'Share Box' containing 'Requirements for ePSS monthly submission' and 'How to submit manpower data to ePSS efficiently?'. The bottom left corner contains site information and a footer with links for 'Report Vulnerability', 'Terms of use', 'Privacy Policy', and 'Rate Our Website'.

A screenshot of the EPSS
(EPSS web address - <http://www.bca.gov.sg/epss>)

If you experience any technical difficulties using the EPSS, please contact BCA at:

Email: BCA_EPSS@bca.gov.sg

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1 INTRODUCTION

Project productivity is defined as the amount of square meter of floor area completed per manday. In order to calculate the project productivity, BCA collects productivity data of building projects on a monthly basis using the EPSS. The builders will monitor the manpower usage in their projects and submit the manpower usage data to BCA through the EPSS.

From the data collected, the project productivity for different building categories will be calculated. The industry overall productivity indicators are published on the BCA website yearly. In accordance to Regulation 10 of Building Control (Buildability) Regulations 2011, it is a mandatory requirement for builders to submit the monthly construction productivity data for their projects to BCA from 15 July 2011. This is applicable to projects with GFA of 5000m² or more.

1.1 Importance of Productivity Data

- Main Contractor**
 - Data can be used to assess project productivity performance and set improvement targets for future projects.
 - Data is one of the information required for contractors who intend to participate in BCA awards like the Construction Excellence Award or the Construction Productivity Award.
 - The recording of personnel entering or leaving the construction site at the guard house for security purposes can also be used as raw data for the manpower input.
 - The manpower data is also useful when preparing the safety report.
- Developer / Consultant**
 - Data can be a useful reference when inviting contractors to tender for future projects.
- BCA**
 - Data will be analysed and published on BCA's website for industry project productivity benchmarking.

1.2 Scope of Productivity Data

The table below identifies the types of project included in the EPSS.

Included	Not Included
1) New building project	1) Piling work
2) Re-construction project	2) Retrofitting or Renovation work
3) Upgrading project (such as HDB MUP and upgrading of existing school)	3) Minor A&A (within the building)
4) Major A & A projects (i.e outside existing building)	4) Civil engineering projects

1.3 Terminology

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:

- GFA**
 - “Gross floor area” has the same definition as “floor area” in the Planning (Development Charges) Rules (Cap.232, R5)
- Roof Area**
 - Refers to the plan area of the roof.
- Total Floor Area**
 - Total floor area includes GFA, environmental deck, basement carpark, roof area (including linkways) and other concrete area (including ancillary building).
- Total Constructed Area**
 - Total constructed area for a Rail project includes Station, Depot, Viaduct, Cut and Cover tunnel, Bored Tunnels and External Ancillary works area.
- Buildable Design Score**
 - The score computed in accordance with Buildable Design Appraisal System as set out in the Code of Practice.
- Constructability Score**
 - The score computed in accordance with Buildable Design Appraisal System as set out in the Code of Practice.
- Manday**
 - 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.
 - Working hours do not include time taken for meal breaks or hours clocked by the site management team. The indicator considers only site-work, such as in-situ structural work, plastering, etc.
- Productivity**
 - A measure of input to the production process, per unit of output.
- Project Productivity**
 - Project productivity is defined as the amount of floor area completed per manday. A project is deemed to be more productive if more square meters of floor area can be constructed with the same mandays. In other words, the higher the figure, the better is the project productivity.
- Biometric Authentication System (BAS)**
 - Biometric Authentication System (BAS) is a system that integrates time recording and bio-characteristics recognition function. The built-in biometric sensor is able to 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.

The project productivity is calculated as follows:

$$\text{Project Productivity} = \frac{\text{Total constructed floor area (m}^2\text{)}}{\text{Total number of site workers (mandays)}}$$

1.4 Submission of Manpower Section of the Productivity Data

A multi-skilled worker who spends more than 50% of his time on a particular trade shall be recorded under that trade even if the worker performs other trades on the same day.

If a worker performs work under 2 different sections (as listed in the data submission form), his man-hours shall be recorded in either of the sections only. For example, if a concrete pump was used for both basement and superstructure works on the same day, the concrete pump operator's manhours shall be recorded under either basement section or the superstructure section.

Manhours clocked for the erection/dismantling of scaffolding for a specific trade shall be recorded under that trade. For example, the manhours clocked in erecting the scaffolding for the installation of false ceiling or for supporting timber formwork shall be recorded under the false ceiling installation or carpentry trade respectively.

Manhours clocked for rectification works in the process of each individual trade shall be recorded under that trade. For example, resizing of a door opening in the brickwall shall be recorded under the brickwall trade.

Please refer to:

Annex A for Types of Manpower to be Included in Each Trade for a building project

Annex B for Types of Manpower to be Included in Each Trade for a rail project

2 GETTING STARTED

To get started, a username and password is required to access EPSS.

For builders new to EPSS, they will receive an email requesting them to provide BCA with information (i.e. username, email) of their designated EPSS administrator. BCA will then create and send the user account details to the designated EPSS administrator.

For other users, please coordinate with your company's EPSS administrator to acquire your EPSS user account.

2.1 Logging On

On the login page, key-in your username and password on the provided textboxes. Note that password is case-sensitive.



2.2 System Menu

Upon successful logon, the system menu below corresponding to your user account role will be available.

Administrator Role

Home	Projects	Productivity Data	Reports	Admin	Logout
------	----------	-------------------	---------	-------	------------------------

Project Staff Role

Home	Projects	Productivity Data	Admin	Logout
------	----------	-------------------	-------	------------------------

Sub-menus for the above menu are listed and described in the following sections.

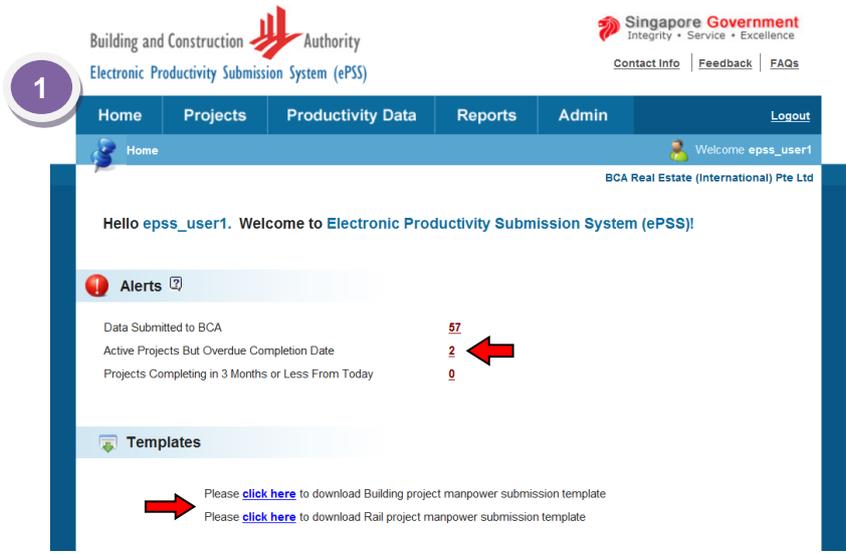
3 USING THE SYSTEM

The following sections define the functionalities of EPSS.

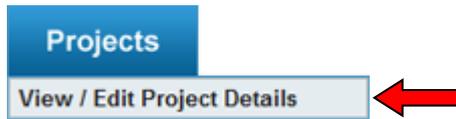
3.1 Home page

Upon successful logon, Home page will be shown. Please find the number of relevant data under **Alerts**. Mouse over to the  icon, a tooltip showing the **Alert Descriptions** will appear below the icon.

Click on **Click here** highlighted in blue to download Building/ Rail project manpower submission templates.



3.2 Projects > View / Edit Project Details



This function is available to both Administrator and Project Staff roles. Use this function to view or edit project details.

Upon clicking on **View / Edit Project Details** sub-menu, step 1 (Select Project) will be shown.

The step 1 for viewing / editing of project details is to first select a project you wish to view / edit.

To select a project, click on the **project name** from the given list of projects.

You may also search particular projects by keying-in keywords on Project Reference No or Project Name textboxes. Then, click on **Search** button. Projects that match your search will be listed in the data grid.

The screenshot shows the 'View / Edit Project Details' page. At the top, there is a navigation bar with 'Home', 'Projects', 'Productivity Data', 'Reports', and 'Admin'. The 'Projects' tab is active. Below the navigation bar, there is a breadcrumb trail: 'View / Edit Project Details' > 'Welcome eobuildadmin' > 'BCA ePSS Company'. A progress indicator shows four steps: '1. Select Project' (highlighted with a red arrow), '2. View/Edit Project Details', '3. Confirmation', and '4. Done'. The main content area is titled '1. Select Project' and includes a tip: 'Tip: You can use asterisk "*" as wildcard character to search for data. Example: alpha, *alpha*'. There are two textboxes: 'Project Reference No' and 'Project Name'. Below them are 'Search' and 'Reset Search Fields' buttons. A 'Project List' section shows 3 open projects in a table:

Project Reference No	Project Name
BCA300000	CONSTRUCTION OF 50 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 7 MAXWELL RD
BCA200000	CONSTRUCTION OF 80 STY CONDOMINIUM WITH FULL FACILITIES AND HELIPAD AT 9 MAXWELL RD
BCA100000	CONSTRUCTION OF NEW AIRPORT AT 5 MAXWELL RD

At the bottom of the table, there are navigation controls: '<< Prev 1 Next >>' and 'Page 1 Go'.

Upon selecting a project to view / edit, step 2 **View / Edit Project Details** will be shown. View / edit data where necessary.

Click on **Update** button to save changes. Click on **Cancel Changes** button to revert to the last saved data.

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Home
Projects
Productivity Data
Reports
Admin
Logout

View / Edit Project Details
Welcome eobuildadmin

BCA ePSS Company

1. Select Project
2. View/Edit Project Details
3. Confirmation
4. Done

2. View / Edit Project Details

*denotes required fields

Project Status	▶	OPEN		
Company Name	▶	BCA ePSS Company		
UEN	▶	0000000123		
* Project Name	▶	CONSTRUCTION OF 50 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 7 MAXWELL RD		
Architect Firm	▶	ARCHI PRO PTE LTD		
Structural Engineer Firm	▶	C&S PRO LTD		
Developer / Owner	▶	BCA		
Precast Concrete Supplier (if any)	▶			
Contract Period, From	▶	01 / 12 / 2010	To (Completion Date)	▶ 01 / 02 / 2017
* Project Reference No (BP No)	▶	BCA300000	Total Contract Sum (\$)	▶ 30000000
Gross Floor Area (m2) (exclude Basement Carpark, Multi-storey Carpark, and Roof Area)	▶	15000		
Basement Carpark (m2) (include environmental deck i.e. uncovered landscape for residential buildings)	▶			
* Roof Area (m2)	▶	100	Multi-storey Carpark Area (m2)	▶
Buildability Score	▶		Constructability Score	▶
Doing Precast On Site	▶	<input checked="" type="radio"/> Yes <input type="radio"/> No		

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UPDATE
CANCEL
CHANGES

3.3 Productivity Data > Data Submitted to BCA

Productivity Data	Reports
Data Submitted to BCA	
On-going Projects	
Import Manpower Data - Building Project	
Import Manpower Data - Rail Project	



This function is available to both Administrator and Project Staff roles. Use this function to view a list of projects by submission period with data for BCA's approval.

Upon clicking on **Data submitted to BCA** sub-menu, step 1 Projects with Data Submitted to BCA will be shown.

The projects list shows the latest status of **Manpower** and **Precast Data**. Click on the status to open the data.

To search for particular projects, key-in keywords or exact values you are searching for on the provided textboxes. Then, click on **Search** button.

To go to **data submission forms** (Trade, Manpower, or Precast Data), click on the corresponding data submission status found at the right side of project list (pointed by the red arrow).



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Home
Projects
Productivity Data
Reports
Admin
Logout

Data Submitted to BCA
Welcome epss_user2

Search 

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

Project Reference No

Project Name

Data Submission Period

Data Type Manpower Precast Data Trade

Projects with Data Submitted to BCA (57 Data Submissions) Data Submission Status

Project Ref No	Project Name	Data Submission Period	Trade	Manpower	Precast Data
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX		Open	Submitted	Closed
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX	Dec 2014	Open	Submitted	Open
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX	Nov 2014	Open	Submitted	Open
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX	Oct 2014	Open	Submitted	Open
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX	Sep 2014	Open	Submitted	Open

3.3.1 Manpower Data Submission Form

The Manpower Data Submission Form contains manpower-related data.

From the Manpower Data Submission Form, you may select which data submission period to display on screen by clicking on **Data Submission Status** button and selecting the period.

1

The screenshot shows the 'Manpower Data' section of the ePSS interface. The 'Project Info' section contains the following details:

- Project Name: ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX
- Project Ref No: EP800-000
- Company Name: BCA Real Estate (International) Pte Ltd
- Contract, From: 15/10/2012
- Contract, To: 30/10/2015
- Latest Reminder: 26/05/2015

The 'Manpower Data' section shows a table for 'May 2015 OPEN' with the following trades and manpower used (man-days):

Trades	Manpower Used (man-days)
1. Site Management Team	
2. Basement	
2.1 Site Clearance and Mobilisation	
2.2 Machine Operator	

Please refer to the **data submission period** pointed by the red arrow in the image below.

2

The screenshot shows the 'Data Submission Status' dropdown menu, which is open and displays the following options:

Period	Status
Jun 2015	Open
May 2015	Open
Apr 2015	Open
Mar 2015	Closed
Feb 2015	Closed
Jan 2015	Submitted
Dec 2014	Submitted

A red arrow points to the 'Mar 2015' option. Another red arrow points to the 'Manpower Classification' link in the 'Manpower Data' section.

Please refer to **Manpower Classification** pointed by the red arrow or **Annex A** for types of manpower to be included in each trade.

3.3.2 Precast Data Submission Form

The Precast Data Submission Form contains only 1 data field (i.e. volume of concrete) to fill-in.

Similar to the Manpower Data Submission Form, you may select which data submission period to display on screen by clicking on **Data Submission Status** button and selecting the period. Please click on **Save** button to save changes and **Submit** button to submit.

The screenshot shows the 'Electronic Productivity Submission System (ePSS)' interface. At the top, it identifies the user as 'devan123' and the company as 'BCA ePSS Company'. The main section is titled 'Project Info' and lists details for the 'CONSTRUCTION OF NEW AIRPORT AT 5 MAXWELL RD' project. Below this, the 'Site Precast' section is active, showing a text input field for 'Volume of Concrete Used for Site Precast (m3)'. A 'Data Submission Status' dropdown menu is set to 'Nov 2011 OPEN'. On the right-hand side, there are two prominent buttons: 'SAVE' and 'SUBMIT'.

3.3.3 Data Submissions

Trade, Manpower, and Site Precast data submissions can be submitted by clicking on the Submit button found at the right side of the data submission forms. Upon submission, the data submission status will be set to Submitted and will require an approval from BCA before its status is set to Close.

3.4 Productivity Data > On-going Projects

Productivity Data	Admin
Data Submitted to BCA	
On-going Projects	
Import Manpower Data - Building Project	
Import Manpower Data - Rail Project	



This function is available to both Company Administrator and Project Staff roles. Use this function to view the list of on-going projects.

1

Upon clicking on **On-going Projects** sub-menu, step 1 List of on-going projects will be shown.

The projects list shows the latest status of **Manpower** and **Precast Data**. Click on the status to open the data.

To search for particular projects, key-in keywords or exact values you are searching for on the provided textboxes. Then, click on **Search** button.

To go to **data submission forms** (Trade, Manpower, or Precast Data), click on the corresponding data submission status found at the right side of project list. Please refer to section 3.2 for details.

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Home | **Projects** | Productivity Data | Reports | Admin | Logout

On-going Projects | Welcome eobuildadmin | BCA ePSS Company

Search

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

Project Reference No: _____
Project Name: _____
Data Submission Period: Month: _____ Year: _____

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

Search | Reset Search Fields

List of on-going projects (3 projects) | Data Submission Status for Nov 2011

Project Ref No	Project Name	Trade	Manpower	Site Precast
BCA300000	CONSTRUCTION OF 50 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 7 MAXWELL RD	For BCA's Approval	For BCA's Approval	N/A
BCA200000	CONSTRUCTION OF 80 STY CONDOMINIUM WITH FULL FACILITIES AND HELI PAD AT 9 MAXWELL RD	Open	Open	N/A
BCA100000	CONSTRUCTION OF NEW AIRPORT AT 5 MAXWELL RD	For BCA's Approval	Open	Open

<< | Prev | Next | >>
Page 1 | Go

Search

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

Project Reference No:

Project Name:

Data Submission Period: Month Year

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

[Search](#) [Reset Search Fields](#)

List of on-going projects (9 projects) Data Submission Status for May 2015

Project Ref No	Project Name	Data Submission Status Definition
EP800-000	ADDN OF A BUTADIENE PLANT (2BD), ELECTRICAL SUBSTATION, OTHER ANCILLARIES TO EXTG PETROCHEMICAL COMPLEX	Open An "Open" status requires builders' attention. Builders must complete the forms and submit their data.
EP300-000	D&B - 33 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 10 ORCHARD ROAD	Submitted A "Submitted" status shows that the data for the month has been submitted to BCA.
EP100-000	D&B - A BLK OF 20-STY CONDOMINIUM (200 UNITS) WITH FULL FACILITIES AT SHENTON WAY	Closed A "Closed" status shows that the data for the month has been received by BCA.
LTA 222_Ph2	D&B Rail Depot at Tampines UAT session - Tampines st 21	
EP900-000	ERECTN OF 27 UNITS OF 3-STY STRATA TERRACE HSES WITH BASEMT & POOL ON LOT 1811M/5547K/5546A PT MK22 - SURIN AVENUE	Open Open Open



Mouse over to the icon (pointed by the red arrow), a tooltip showing the **Data Submission Status Definition** will appear below the icon.

3.5 Productivity Data > Import Manpower Report (building project)

Productivity Data	Reports
Data Submitted to BCA	
On-going Projects	
Import Manpower Data - Building Project	
Import Manpower Data - Rail Project	
Upload Monthly Raw Data (Timesheet)	
View Monthly Raw Data (Timesheet)	

Admin/Project staffs are able to import Excel Biometric manpower report for the project manpower submission. System will retrieve the figures from Excel Biometric manpower report and fill in manpower data submission form.

Please find **Import Manpower Data – Building Project** under the “Productivity Data” tab.

Upon clicking on “Import Manpower Data- Building Project” a new page will appear for user to select Excel Biometric manpower report.

The screenshot shows the web application interface for the Electronic Productivity Submission System (ePSS). At the top, there is a navigation bar with tabs for Home, Projects, Productivity Data, Reports, and Admin. The 'Productivity Data' tab is selected. Below the navigation bar, the user is logged in as 'epss_user1'. The main content area displays a progress indicator with four steps: 1. Select File to Import (highlighted), 2. Review / Edit Data, 3. Confirmation, and 4. Done. The first step, '1. Select file to import', is active. It contains a red instruction: 'Please select the Excel File (.xls) containing the Manpower Data you wish to import to EPSS.' Below this, there is a 'File to import' field with a 'Browse...' button. A red arrow points to the 'Browse...' button. At the bottom of the form, there is a 'Select' button.

3.6 Productivity Data > Import Manpower Report (rail project)

Import Manpower Data Report (rail project) is similar to Import Manpower Data Report (building project). Please see to section 3.4 for reference.

3.7 Productivity Data > Upload Monthly Raw Data (Timesheet)

Productivity Data	Reports
Data Submitted to BCA	
On-going Projects	
Import Manpower Data - Building Project	
Import Manpower Data - Rail Project	
Upload Monthly Raw Data (Timesheet)	
View Monthly Raw Data (Timesheet)	

Admin/Project staffs are able to upload Monthly Raw Data (Timesheet) to the system. Unlike the “Import Manpower Data”, the uploaded monthly raw data file will serve as a reference for monthly manday calculation and will not be processed by the system.

Please find **Upload Monthly Raw Data (Timesheet)** under the “Productivity Data” tab.

Upon clicking on “Upload Monthly Raw Data (Timesheet)”, a new page will appear for user to select and upload timesheet file containing the raw data.

The screenshot shows the EPSS (Electronic Productivity Submission System) interface. At the top, there is a navigation bar with tabs for Home, Projects, Productivity Data, Reports, Admin, and Logout. The 'Productivity Data' tab is selected. Below the navigation bar, the user is logged in as 'epss_user1' for 'BCA Real Estate (International) Pte Ltd'. The main content area is titled 'Select Timesheet File to Upload' and contains a red instruction: 'Please select the Monthly Timesheet File containing the Raw Data for upload to EPSS.' There are three required fields: '* Project Ref No.' with a dropdown menu showing 'Choose Project', '* Period' with 'Month' and 'Year' dropdowns, and '* File to upload' with a 'Browse...' button. An 'Upload' button is located at the bottom of the form.

3.8 Productivity Data > View Monthly Raw Data (Timesheet)

Productivity Data	Reports
Data Submitted to BCA	
On-going Projects	
Import Manpower Data - Building Project	
Import Manpower Data - Rail Project	
Upload Monthly Raw Data (Timesheet)	
View Monthly Raw Data (Timesheet)	

This function is available to both Administrator and Project Staff roles. Use this function to view a list of uploaded timesheet files.

Please find **View Monthly Raw Data** under the Productivity Data tab. Upon clicking on “View Monthly Raw Data (Timesheet)” sub-menu, a new page will appear.

To select a file, click on the file name from the given list of files.

You may also search particular projects by keying in keywords in the textboxes provided. Then click on **Search** button. Project that match your search will be listed in the data grid.

2

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Home Projects Productivity Data Reports Admin Logout

BCA Real Estate (International) Pte Ltd Welcome eps_user1

Search

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

Project Reference No:

Project Name:

Data Submission Period: Month Year

Search Reset Search Fields

List of uploaded Timesheet files (2 files)

Project Ref No	File Name	Period	Delete
EP800-000	EP800-000_01-2015.xls	Jan 2015	Delete
EP900-000	EP900-000_01-2015.xls	Jan 2015	Delete

<< Prev 1 Next >>
Page 1 of 1 Go

3.9 Admin > Company Details



This functionality is available only to users with Administrator role. Use this function to update company details.

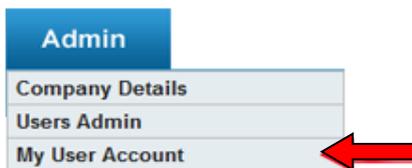
View/edit company details where necessary. Click on **Submit Changes** button to update company details.

Or, click on **Cancel Changes** button to revert to the last saved company details data.

1

The screenshot shows the 'Company Details' page in the Electronic Productivity Submission System (ePSS). The page header includes the Building and Construction Authority logo and the Singapore Government logo. The navigation menu has 'Admin' selected. The page title is 'Company Details' and the user is identified as 'Welcome epss_user1'. The company name is 'BCA Real Estate (International) Pte Ltd'. The 'Company Info' section contains fields for UEN (100000), Register Grade (A1), Company Name, Address 1-4, Telephone (8325 5054), and Fax (8325 4800). The 'Contact Person' section contains fields for Contact Person (Mr Albert Tang), Designation (CEO), Telephone (8325 5054), Fax, Primary Email (albert_tang@bca.gov.sg), and Secondary Email. At the bottom, there are 'Submit Changes' and 'Cancel Changes' buttons. The footer includes links for Privacy Statement, Terms of Use, Rate this e-Service, and Copyright © 2011, Government of Singapore.

3.10 Admin > Updating Own User Account Details and Password



This function is available to both Administrator and Project Staff roles.

Upon clicking on Admin > My User Account sub-menu, a page similar to the image to the right will be shown. This page contains the current user's information.

To update user account, make necessary changes and click on **Update Account** button. To revert to the last saved data, click on **Cancel Changes** button.

1

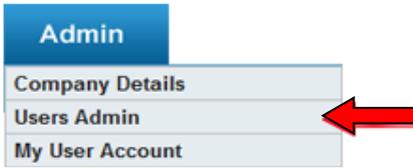
The screenshot shows the 'My User Account Details' page. At the top, it displays the Building and Construction Authority logo and the Singapore Government logo. The page title is 'Electronic Productivity Submission System (ePSS)'. The navigation menu includes Home, Projects, Productivity Data, Reports, Admin, and Logout. The user is logged in as 'devan123' and is viewing the 'My User Account Details' page for 'BCA ePSS Company'. The form contains the following fields:

- * Name: EPSS Admin02
- Contact No: [Empty]
- * Primary Email: bca_eps s @bca.gov.sg
- Alternative Email: [Empty]
- Username: devan123
- Current Password: [Empty]
- New Password: [Empty]
- Confirm New Password: [Empty]

At the bottom of the form, there are two buttons: 'Update Account' and 'Cancel Changes'.

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3.10.1 Create / Update User Account Details



This function is available only to users with Administrator role. Use this function to create new EPSS users for your company.

Upon clicking on **Admin > Users Admin** sub-menu, List of EPSS Users will be shown.

To create a new user account, click on **Add New User** button pointed by red arrow.

1

The screenshot shows the EPSS interface. At the top, it says 'Building and Construction Authority Electronic Productivity Submission System (ePSS)'. The navigation bar includes Home, Projects, Productivity Data, Reports, Admin, and Logout. The user is logged in as 'Users Admin' for 'BCA Real Estate (International) Pte Ltd'. Below the search bar, there is a table titled 'List of EPSS Users' with columns for Username, Name, User Role, Reset Password, and Remove User. A red arrow points to the 'Add New User' button in the top right corner of the table area.

Username	Name	User Role	Reset Password	Remove User
epss_user4	epss_user4	Administrator		
epss_user5	epss_user5	Administrator		
epss_user6	epss_user6	Administrator		
epss_user7	epss_user7	Administrator		
epss_user8	epss_user8	Administrator		
epss_user9	epss_user9	Project Staff		
justin7	Justin Lim	Project Staff		

Upon clicking on **Add User** button, Create User form will appear. Note that the default User Role selected is **Administrator**. A user with Administrator role has access all projects of the company.

2

The screenshot shows the 'Add New User' form. The user is logged in as 'Users Admin > Add User' for 'BCA ePSS Company'. The form has several fields: Name (EPSS Admin), Contact No, Primary Email (BCA_EPSS@bca.gov.sg), Alternative Email, Username (EPSS Admin), and User Role (Administrator). A vertical sidebar on the right contains 'ADD', 'SUMIT', and 'CANCEL' buttons. Below the form, there is a section for 'PROJECTS ACCESSIBLE TO THIS USER' with columns for Project Name and Remove Access. A note at the bottom states: 'The current selected role is Administrator. Users with this role have access on all projects.'

3

Upon selecting **Project Staff** as the user role, you will be provided with the function to select which project/projects the user account being created can access.

Click on **Add Project** button to select the project/projects that will be accessible to the new user.

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Electronic Productivity Submission System (ePSS)

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Home Projects Productivity Data Reports Admin Logout

Users Admin > Add User Welcome devan123
BCA ePSS Company

Add New User
* denotes required fields

* Name EPSS Project Staff
Contact No
* Primary Email bca_eps_s@bca.gov.sg
Alternative Email
* Username EPSS Project Staff
Username must be 6 to 20 characters in length.
* User Role Project Staff

PROJECTS ACCESSIBLE TO THIS USER

Add Project

Project Name	Remove Access
--------------	---------------

4

To add user-accessible projects, click on **Add** icon found at the right side of the corresponding projects to add.

Select a project to add

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

Project Name
Project Ref No
Search

Project Ref No	Project Name	Add
BCA100000	CONSTRUCTION OF NEW AIRPORT AT 5 MAXWELL RD	
BCA300000	CONSTRUCTION OF 50 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 7 MAXWELL RD	
BCA200000	CONSTRUCTION OF 80 STY CONDOMINIUM WITH FULL FACILITIES AND HELI PAD AT 9 MAXWELL RD	

Upon completion of adding projects to the new user account, click on **Add User** button found at the right side as pointed by the arrow in the image.

5

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Home Projects Productivity Data Reports Admin Logout

Users Admin > Add User Welcome devan123

BCA ePSS Company

Add New User

* denotes required fields

* Name EPSS Project Staff

Contact No

* Primary Email bca_eps_s@bca.gov.sg

Alternative Email

* Username EPSS Project Staff
Username must be 6 to 20 characters in length.

* UserRole Project Staff

PROJECTS ACCESSIBLE TO THIS USER Add Project

Project Name	Remove Access
CONSTRUCTION OF 60 STY MIXED COMMERCIAL & RESIDENTIAL BUILDING AT 7 MAXWELL RD	

3.10.2 Exit the System

To quit from the system, click on the Logout button.

Home Projects Productivity Data Reports Admin Logout

4 ANNEX

4.1 Annex A. Types of Manpower to be Included in Each Trade for a building project

Item	Trades	Types of Manpower to be Included
1	Site Management Team	
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.
2	Basement	
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 structures (TERS)	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 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.
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.

3	Structure Works	
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 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.
3.7	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.
4	Architectural Works	
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 wardrobe	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.
5	Building Services or M&E Works	
5.1	Plumbing / sanitary / gas system	Workers who install plumbing, sanitary or gas systems.
5.2	Fire prevention and protection system	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.
6	General	
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 signaler, 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.
7	External Works	
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 for landscaping work shall be recorded under this category.

4.2 Annex B. Types of Manpower to be Included in Each Trade for a rail project

Item	Trades	Types of Manpower to be Included
1	Site Management Team	
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.
2	ERSS/Excavation (Station/Viaduct/Cut and cover tunnels/Depot)	
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	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, cassions, 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.
3	Permanent Structure Works (Station/Viaduct/Cut and cover tunnels/Depot)	
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 Furnitures	Workers who are involved in the installation of deck furnitures on the viaduct.

4	Bored Tunnelling Works	
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 wokers, etc.
5	Architectural Works	
	General Work	
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.
	Structural Carcass Work	
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.
	Enclosure Work	
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.
	Finishing Work	
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.
	Commissioning Work	
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.

6	Building Service and M&E Works (For Civil Contracts only)	
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, hosereel, 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.
7	General	
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.
8	External Works	
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 category.
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.

4.3 Annex C. Types of Manpower to be Included in Each Trade for a road project

Item	Trades	Types of Manpower to be Included
1	Site Management Team	
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.
2	General Works	
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 signaler, 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.
3	Tunnel/Underpass/Culverts (>5m internal span)	
	Temporary Works	
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.
	Permanent Works	
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.
	Road Works	
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.
	Electrical and Mechanical Works	
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, hosereel, 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.
4	At-grade Road Widening / Construction	
	Temporary Works (Retaining Wall/Drain/Culvert < 5m internal span)	
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.
	Permanent Works (Retaining Wall/Drain/Culvert < 5m internal span)	
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.
5	Elevated Structures such as Flyovers & Viaducts (Including POB)	
	Temporary Works	
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.

Permanent Works		
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.
Road Works		
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.
Ancillary Works		
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.

5 FREQUENTLY ASKED QUESTIONS

Q1. What is the aim of the ePSS?

The aim of the ePSS is to help builders monitor their projects' manpower usage and allow them to submit the manpower usage and productivity data to BCA on a monthly basis. From the data collected, BCA can calculate the industry average project productivity for the different building categories, which will be published on BCA's website annually.

Q2. Is the submission of the manpower data compulsory?

In conjunction with the Buildability framework [Refer to Regulation 10 of Building Control (Buildability and Productivity) Regulations 2011], it is a mandatory requirement for builders to submit construction productivity data to BCA from 15 July 2011. This requirement is applicable to all projects with Gross Floor Area (GFA) of 5,000m² or more, including new building projects, and upgrading and A&A projects with new constructed floor areas.

Q3. Why do I receive a reminder email for not submitting productivity data?

For construction projects with GFA of 5,000m² or more, ePSS requires builders to submit the manpower data on monthly basis. ePSS checks the status of the monthly manpower data submission and a reminder email will be send to the builders' company administrator for the months where the manpower data was not submitted.

For projects not subjected to the mandatory requirement, we would also like to encourage builders to submit the manpower data through the ePSS so that builders can monitor their project manpower usage.

Q4. How is the industry average project productivity beneficial to the builder?

The industry average project productivity can be used to assess a project's productivity performance and the builder can use this data to set improvement targets for future projects. In addition, the manpower data is one of the submission requirements when a builder applies for the BCA's Construction Excellence Awards and Construction Productivity Awards.

Q5. What is the definition of project productivity?

The project productivity is defined as the floor area (in square meters) completed per manday. The project productivity is calculated as follows:

$$\text{Project Productivity} = \frac{\text{Total constructed floor area (m}^2\text{)}}{\text{Total number of site workers (mandays)}}$$

A project is deemed to be more productive if a larger floor area can be constructed with the same mandays. In other words, the higher the figure, the better is the project productivity.

Q6. What is the definition of total floor area?

Total floor area will include the GFA, as well as other constructed areas such as roof area, environmental deck, multi-storey carpark and/or basement carpark area, if any.

Q7. What is the definition of one manday?

One manday is taken as one worker working for 8 hours. For example, if the worker works for 12 hours on a particular day, the actual manday clocked by worker shall be calculated as $12/8 = 1.5$ mandays.

Q8. For a worker doing multiple trades, which trade do I include the manpower under?

A multi-skilled worker who spends more than 50% of his time on a particular trade in one day shall be recorded under that trade even if he performs other trades on the same day.

Q9. Can a builder have more than one user account in the ePSS?

Yes. Each builder should designate an ePSS administrator from his/her company. BCA will issue a Username and Password to the ePSS administrator. The administrator can log into the ePSS and issue multiple accounts to other users in the company, e.g. one account for each project site.

Q10. How do I register "new projects" for monthly productivity data submission?

New projects are created by BCA while users are only able to view or edit project details. However, if you wish to create your building projects in ePSS where those projects are not subjected to Buildability framework, you may send your request to BCA_EPSS@bca.gov.sg. ePSS admin will create the project profile in the system for your subsequent submissions of monthly productivity data.

Q11. How do I change the completion date of the project if there is an extension to the project duration?

You may login to the ePSS and change the completion date under the tab "View/edit project" for each respective project. This step also applies for editing of other project details such as the Gross Floor Area, Roof Area, Buildable Design Score and Constructability Score etc.

Q12. How to submit the Productivity Data? Are there any forms or templates to follow?

The manpower report template can be found on the home page once you have login to the ePSS. You may inform your biometric system supplier to customize the manpower report according to the manpower report template, so that ePSS can recognize and retrieve the relevant information from your report.

Q13. How do I amend the submitted data?

Once you have submitted the monthly productivity data, the submission status for the month which you submitted for will be marked as "SUBMITTED". You are still allowed to make changes under this status.

Once the submission is confirmed by the BCA, the submission status will be changed to "CLOSED" and no changes are allowed. You may contact BCA if you would like to make further changes to a "CLOSED" submission.

Q13. Who is the qualified person for ePSS update, the appointed technical personnel or the approved personnel?

The submission of manpower data to ePSS does not require a specific qualified person, as long as the person (employed by the builder or main contractor of the project) is granted access and deemed responsible for the safeguarding of the company's manpower data.

Q14. I am unable to recall the previous Username and Password. Can I request for a new Username and Password?

Yes, if you have forgotten the Password or would like to request for a new Username and Password, please email us at BCA_EPSS@bca.gov.sg. ePSS admin will reset the password or create a new account for you once your identity is verified.

Biometric Authentication System (BAS)

Q1. What are the hardware requirements for BAS?

The hardware requirements shall include the following:

- a) Biometric readers that has the following features:
 - a. Located at all worksite entrance and exit for the purpose of electronically monitoring and tracking the manpower usage throughout the contract duration.
 - b. Robust and durable design that is suitable for rugged construction environment
 - c. Fast and secure sensor that accurately captures and authenticates distinguishing physiological traits. At each controlled access location, the system shall be able to achieve a maximum clearance time of 1 minute for every 10 persons.
- b) Provision to guide the flow of workers (e.g. turnstiles and railings)
- c) A real time monitoring and recording device installed at each controlled access point to prevent any fraudulent attempt by the site personnel.
- d) Suitable measure(s) (e.g. backup battery supply etc.) such that the integrity of the manpower monitoring data is not affected during power outage.

Q2. What are the software requirements for BAS?

The software requirements shall include the following:

- a) Accurately monitor and track the manpower under their respective trade.
- b) Generate raw data or output in the required format which shall include employee name, date, clock in time, clock out time, tabulation on the number of hours at site.
- c) Generate the manpower report according to BCA's current EPSS in Microsoft Excel format (please refer to Annex 4 for building project, rail project and road project templates respectively). The Contractor shall also refer to BCA's website for the latest requirements on manpower submission to ePSS.

Q3. Is the installation and operation of the BAS compulsory?

To enhance the reliability and efficiency in the collection of Construction Productivity Data, builders are required to install and operate the BAS for building works with Gross Floor Area (GFA) of 5,000 m² or more submitted if the project submitted for Planning Permission on or after 1 November 2014. This is mandated under Regulation 10(a) of the Building Control (Buildability and Productivity) Regulations 2011. Builders will submit the Construction Productivity Data obtained from the BAS via the ePSS.