

Frequently Asked Questions (V2016-2)

Having problem uploading your manpower report to ePSS?

Your monthly submission can be done by **uploading the manpower report to ePSS**. For ePSS to recognize your submission, the manpower report should comply with the following:

1. The report must follow the excel template which can be **downloaded at the home page**, after you login to ePSS.
2. The excel report must be **saved in Excel 97-2003 Workbook (*.xls) format**.
3. The excel report header must **contain the correct project information** for ePSS to recognize your submission.

Example of acceptable inputs for the manpower report

Builder UEN No.	201600123H
Project BP No.	A1122-00001-2016
Project Name	building project at xxx
Builder	xxx building pte ltd.
Month that Data is submitted for	3
Year that Data is submitted for	2014

Only numerical values accepted

Electronic Productivity Submission System (ePSS)

Q1. What is the aim of the ePSS?

The aim of the ePSS is to help builders monitor their projects' manpower usage and allows 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.

Q2. Is the submission of the manpower data compulsory?

In conjunction with the enhanced 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 GFA of more than 5000m², including new building projects, and upgrading and A&A projects.

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

For construction projects with GFA of more than 5000m², ePSS requires builders to submit the manpower data on a monthly basis. For projects not subjected to the mandatory requirement, we are encouraging builders to submit the manpower data through the ePSS so that builders can monitor their project manpower usage.

ePSS checks the status of the monthly manpower data submission and a reminder email will be sent to the builders' company administrator for the months where the manpower data was not submitted.

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 Gross Floor Area (GFA), roof area, environmental deck and basement carpark area, if any.

Q7. What is the definition of one 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 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 1 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. More details can be found in the User Guide.

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

There are two methods to submit monthly productivity data. One method is to key in the data manually by following the steps on page 8 and 11 of the User Manual ‘ePSS Guidebook on BCA Electronic Productivity’. Another method is to import a manpower report which is generated by the biometric system. The steps are shown on page 5 and 15 under Section 3.1 and 3.5 respectively.

For the latter, 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.

Please refer to the User Manual for more details.

Q12. 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 to the productivity data if the status is ‘SUBMITTED’. Please click the orange rectangular button labelled as ‘EDIT DATA’ found on the right of the form.***

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 is granted access and 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.

Q15. How do I change the user account details if our administrator has left the company?

You may login to the ePSS and change the user account details under the “Admin” tab.

Q16. 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 applies for editing of other project details*** such as the Gross Floor Area, Roof Area, Buildable Design Score and Constructability Score etc.

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:

- Located at all worksite entrance and exit for the purpose of electronically monitoring and tracking the manpower usage throughout the contract duration.
 - Robust and durable design that is suitable for rugged construction environment
 - 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:

Appendix A for building project template

Appendix B for rail project template

Appendix C for road project template)

The Contractor shall refer to BCA's website (<https://www.bca.gov.sg/EPSS/>) for the latest requirements on manpower submission to ePSS.

Q3. What is the cost of setting up the BAS system together with all the hardware and software including operation and maintenance cost?

Generally, the cost of setting up a BAS system that includes the software, hardware, turnstile and railings for 2 access points on site about \$30k to \$40k. Nevertheless, the price of BAS varies according to site condition and system requirement. The user should consult BAS vendors and select a system which suits the project site. Some examples of such BAS vendors are listed in Table A below.

For BAS that will be adopted in construction projects to monitor the manpower usage and linked to the submission of manpower data through the ePSS, builders can seek

financial support to defray the cost of adoption from the Mechanisation Credit (MechC) Scheme under the Construction Productivity and Capability Fund (CPCF).

For more information on the MechC scheme, please refer to <http://www.bca.gov.sg/MechC/mechc.html>.

Table A: List of some vendors who have supplied and installed BAS to past local construction projects for the purpose of submitting monthly productivity data via the ePSS

S/N	Vendors
1.	ADEMCO (Far East) Pte Ltd
2.	Auto System Pte Ltd
3.	Bartronics Asia Pte Ltd
4.	Elid Technology International Pte Ltd
5.	Flick Solutions Pte Ltd
6.	Future Net Technologies Pte Ltd
7.	Intercorp Solutions Pte Ltd
8.	IqDynamics Pte Ltd
9.	Malifax Technologies (S) Pte Ltd
10.	Oneberry Technologies Pte Ltd
11.	Professional Software Systems Pte Ltd
12.	Securcomm Solution Pte Ltd
13.	Smart Touch Technology Pte Ltd
14.	Synergix Technologies
15.	VHSoft Technologies Co Ltd
16.	XID Technologies Pte Ltd
17.	Elixir Technology
18.	Magicsoft Asia Pte Ltd
19.	NEC Corporation
20.	Info Tech, Inc
21.	Echol Tech Pte Ltd

NOTE: The above publishing of BAS vendors is solely for the purpose of sharing of information to facilitate the industry users to source for such products. They ***do NOT represent any form of endorsement, approval or accreditation by BCA for their purchase, lease or use.*** Please note that this list is not exhaustive.

Q4. Is the installation and operation of the BAS compulsory?

To enhance the reliability and efficiency in the collection of Construction Productivity Data, builders need to install and operate the BAS for building works with Gross Floor Area (GFA) of 5000 m² or more 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.

Appendix A: Sample Report Format for EPSS Submission (For Reference Only)**-Building project**

Submission of Monthly Manpower Usage	
Builder UEN No.	
Project BP No.	
Project Name	
Builder	
Month that data is submitted for	
Year that data is submitted for	
Trades	Manpower Used (mandays)
Site Management Team	
Site Management Team	
Basement	
Site Clearance & Mobilisation	
Machine Operator	
Excavation Work	
Temporary Retaining Structure	
Carpentry	
System Formwork Installation	
Steel Reinforcement Fixing	
Concrete Placement	
Pre-stressing Work	
Precast Concrete Installation	
Waterproofing	
Architectural Works	
M&E Works	
Others	
Sub-Total (Basement)	

Structure Works	
Carpentry	
System Formwork Installation	
Steel Reinforcement Fixing	
Concrete Placement	
Pre-stressing Work	
Precast Concrete Installation	
Structural Steel Work	
Others	
Sub-Total (Structure Works)	
Architectural Works	
Brick/ Blockwall	
Precast Concrete Installation	
Plaster	
Skim-coat	
Dry Partition Wall	
Glass Partition	
Cladding/ Curtain Wall	
Waterproofing	
Floor Screeds & hardeners	
Tiling/ Marble/ Stone	
Wood Flooring	
Resilient Flooring (Carpet, Vinyl)	
Resilient Flooring (Laminate)	
Raised Floor	
False Ceiling	
Door	
Window	
Cabinets & Wardrobe	
Painting	
Roofing System	
Others	
Sub-Total (Architectural Works)	

Building Services and M&E Works	
Plumbing/ Sanitary/ Gas System	
Fire Prevention and Protection System	
Electrical System	
ACMV System	
Lift/ Escalator	
Others	
Sub Total (Building Services and M&E Works)	
General	
Machine Operator	
Quality Assurance	
Scaffold	
Safety and Health	
Sub-Total (General)	
External Works	
Estates Roads, Driveways, Road Ancillaries, Footways	
Landscape	
Sub-Total (External Works)	

Appendix B: Sample Report Format for EPSS Submission (For Reference Only)**-Rail Project**

Submission Of Monthly Manpower Usage	
Builder UEN No.	
Project BP No.	
Project Name	
Builder	
Month that Data is submitted for	
Year that Data is submitted for	
Trades	Manpower Used (mandays)
Site Management Team	
Site Management Team	
ERSS/Excavation (Station/Viaduct/Cut and cover tunnels/Depot)	
Site Clearance & Mobilisation	
Machine Operator	
Demolition Works	
Soil Improvement Works (e.g. JGP, WSM, etc.)	
Ground Freezing	
Retaining Structures (e.g. Dwall)	
Vertical Elements (e.g. King Posts, Deck Posts, etc.)	
Under-pinning Works	
Formwork Installation	
Steel Reinforcement Fixing	
Concrete Placement	
Waterproofing	
Temporary Strutting/Sheet piling/Propping Works	
Shortcreting Works	
Rock Mining	
Micro-tunnelling	
Recharge Well/Passive Relief Well	
Blasting	
Excavation Work	
Others	

Sub-Total (ERSS/Excavation)	
Permanent Structure Works (Station/Viaduct/Cut and cover tunnels/Depot)	
Machine Operator	
Piling Works	
Formwork Installation	
Steel Reinforcement Fixing	
Concrete Placement	
Pre-stressing work	
Precast structural concrete component installation	
Structural Steel Work	
Waterproofing	
Viaduct Segment Casting	
Viaduct Segment Handling	
Viaduct Segment Launching	
Viaduct Deck Furnitures	
Others	
Sub-Total (Permanent Structure Works)	
Bored Tunnelling Works	
TBM Operator	
Ring Builder/grouter (including surface ops.)	
Segment and service handling	
Locomotive driver	
Bridge/Mobile crane operator	
Rigger/signal worker	
Segment gasket installer	
Mechanical and electrical workers	
Storemen and general workers	
Others	
Sub-Total (Bored Tunnelling Works)	
Architectural Works	
General Work	
Waterproofing	
Fire Stopping	

Sprayed mineral fire protection	
Structural Carcass Work	
Concrete Finishes and precast concrete panels	
Brick and Block Construction	
Stone Masonry	
Enclosure Work	
Roofing	
External Cladding	
Stone Cladding	
Glazing	
Doors and Hatches	
Roller Shutters and Grilles	
Door and Window Hardware	
Louvres	
Internal Cladding	
Vitreous Enamel Panels	
Partitions	
Finishing Work	
Suspended Ceiling	
Cementitious Toppings	
Granite Flooring	
Tactile Paving	
Access Floor	
Plastering	
Tiling	
Resilient Finishes	
Gratings	
Painting	
Metal Fixtures	
Commissioning Work	
Furniture and Fittings	
Signs, advertising and displays	
Others	
Sub-Total (Architectural Works)	
Building Service and E&M Works (Exclude System-Wide Contracts)	

Plumbing and Sanitary	
Fire Prevention and Protection System	
Electrical system	
ACMV/HVAC system	
Lift /Escalator	
Earth Mat/ Touch Voltage Protection	
Cable ducts/pits	
Waste water treatment	
Others	
Sub-Total (Building Service and M&E Works)	
General	
Machine Operator	
Quality Assurance	
Scaffold	
Safety and Health	
Others	
Sub-Total (General)	
External Works	
Trial Trench/Utility Detection	
Underground Obstruction	
Utilities Diversion	
Drain Diversion/Drainage works	
Traffic Diversion	
External Paving	
Roads and Driveways	
Bus Shelters, Linkways, Taxi Stands, Drop-off Bays, Road Ancillaries	
Fencing	
Landscape	
Others	
Sub-Total (External Works)	

Appendix C: Sample Report Format for EPSS Submission (For Reference Only)**-Road Project**

Builder UEN No.	
Project BP No.	
Project Name	
Builder	
Month that Data is submitted for	
Year that Data is submitted for	
Trades	ManPowerUsed(mandays)
Site Management Team	
Site Management Team	
General Works	
Site Clearance & Mob-in	
Surveying	
Soil Investigations	
Instrumentations	
Health & Safety & General Maintenance	
HouseKeeping	
Utilities Diversion/Support	
Demolition Work	
Others	
SubTotal(General Works)	
Tunnel/Underpass/Culverts (>5m internal span)	
Temporary Works	
Machiner Operator	
Ground Improvement Works	
Excavation Work	
Structural Steel Works(e.g. struts, king post, decking)	
Falsework	
Formwork	
System formwork	
Concrete Placement	

Traffic Diversion	
Others	
Permanent Works	
Machine operator	
Ground Improvement Works	
Excavation (D-wall trenching)	
Formwork	
Steel Reinforcement Fixing	
Concrete Placement	
Structural Steel Work	
Waterproofing	
Backfill of Earth	
Others	
Road Works	
Machine operator	
Premixing	
kerb, grating, EM trench	
Precast concrete component	
Others (e.g. painting, erection of signage)	
Electrical and Mechanical Works	
Machine operator	
Plumbing/ Sanitary/ Gas System	
Fire Prevention and Protection System	
Electrical System	
ACMV System	
Lift/ Escalator	
Earth Mat/Touch Voltage Protection	
Cable ducts/pits	
Others	
SubTotal(Tunnel/Underpass/Culverts (>5m internal span)	
At-grade Road Widening / Construction	
Temporary Works (Retaining Wall/Drain/Culvert < 5m internal span)	
Machine operator	
Ground Improvement Works	

Excavation Work	
Formwork	
Concrete Placement	
Earth retaining structures	
Traffic diversion	
Others	
Permanent Works (Retaining Wall/Drain/Culvert < 5m internal span)	
Machine operator	
Ground Improvement Works	
Formwork	
Steel Reinforcement Fixing	
Concrete Placement	
Premixing including sub-base, base and road base	
Grating and Railing	
Planting/turfing	
Bus stops and Linkways	
Precast concrete component	
Ancillary Works	
Backfill of Earth	
Others (e.g. painting, erection of signage)	
SubTotal(At-grade Road Widening / Construction)	
Elevated Structures such as Flyovers & Viaducts (Including POB)	
Temporary Works	
Machine operator	
Ground Improvement Works	
Earth Retaining Structures	
Excavation Work	
Formwork	
System formwork	
Falsework	
Steel work such as fabrication of launching girder	
Traffic Diversion	
Others	
Permanent Works	

Machine operator	
Formwork	
Steel Reinforcement Fixing	
Pre-stressing/post-tensioning	
Launching of precast segment	
Concrete Placement	
Waterproofing	
Backfill of Earth	
Others	
Road Works	
Machine operator	
Premixing	
Grating and Railing	
Planting / Turfing	
Precast concrete component	
Others (e.g. painting, erection of signage)	
Ancilliary Works	
Machine operator	
Irrigation System	
Cable ducts/pits	
Others	
SubTotal(Elevated Structures)	