

Guidelines for Building Blocks in Blackboard

What is a building block?

- Mini-application that runs within Blackboard (usually third-party integration)
- Interface is designed to look like the rest of Blackboard
- Can be found in certain places in the UI – e.g. *course tool building blocks, group tool building block, system tool building block, content type building block, module building block*

Why use building blocks?

- To extend the functionality of Blackboard (LEARN@PolyU (理學網) at PolyU)
- To customize Blackboard to meet the different needs of departments

Examples of building blocks at PolyU:

- Bb extension (developed by Bb or Third Party and approved by Blackboard) – *SoftChalk* (used by ELC); *MathJax* (used by AMA); *TurningPoint* (used by the *Clickers* project)
- PolyU developed – *User Group* (developed by ITS and tested by EDC)
- PolyU redeveloped – *Primo* (developed and used by the Library). Originally developed by North Western University in USA.
- BeeNet developed – *ELC R&W module (Phase 1)*; *Library Resources Link*; *Outcomes Assessment (for Computer Science)*

Pros and Cons for each type of building block

	BB Extension	PolyU developed	PolyU re-developed	BeeNet
\$	Some free, some with annual fee	Human resources; software management; software development	Human resources; software management; software development	Initial Development cost; recurrent maintenance cost; extra cost for any further development
Maintained by	The developer	Developers in PolyU	Developers in PolyU with coordination with the original developer	BeeNet
Pros	Trustable; no development is needed; Guideline usually available	Customizable; self-controllable; feasible to integrate with other internal systems	Customizable; partially self-controllable; partially feasible to integrate with other internal systems	One-stop solution
Cons	Unable to further develop or	All troubleshooting and bugs should	No guarantee to version upgrade, e.g.	Maintenance requires cost even though no

	customize; unable to troubleshoot under unpredictable situation	be handled by the development team	upgrading SP may result in incompatibility; lengthy troubleshooting process	development work is done; user requirements have to be very clear and extremely details
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Building Block guidelines – for stakeholders. System administrators should follow the guidelines to handle requests.

- **Building Block guidelines**
 - Obtain approval from senior departmental management (ensure that it meets the university’s initiatives)
 - Identify the reliability of the source of the building block
 - Ensure the availability of the contact point of the developer of the building block
 - Define the testing plan for each building block deployment
 - Define the rollback plan
 - Ensure resources are available for maintaining the operation of the building block
 - Define the review period.
- **Process for deploying Building Blocks**
 - Workflow will be developed by ITS and EDC
 - It is important to follow the workflow to protect the production environment. Unreliable or “buggy” building blocks will be rejected during the system acceptance test.
 - Workflow:
 - *request >first system test>user acceptance test>system acceptance test*
 - Users (requesters) will need to provide their User Requirements when requesting installation of building block

Currently, the system can only handle one building block request at any time. Additional resources for building block development will enable more to be developed.

4-Stage Process for staff to seek building block development

4 stages:

1. Pre building block request
2. User requesting building block
 - Purpose/rationale
 - Feasibility study – e.g. who will do the work
 - Timescale

3. Criteria to judge requests
 - Impact – e.g. number of users; subject(s) or programme (Dept, Faculty or School)
 - Source – if Bb API; non-Bb API; or developed at PolyU
4. Testing
 - Development
 - Testing (UAT)
 - Need to pass test before going “live”

After successfully completing the 4 stages, details of the Building block will be made available to staff as a form (with notes) in the eTeaching section of Blackboard.

Note:

ITS/EDC can provide assistance before formal request is submitted to them. It is recommended that consultations take place before request is submitted. Consultations will focus on the 4 stages.

Stage 1 – Pre building block request

- It is the responsibility of the owner to ensure that the building block addresses the learning and teaching rational for the department and university in general. Approval needs to be sought from senior departmental management.

Stage 2 – User requesting building block

In most cases the “owner” of the building block will be the department. The LMS team (responsible for building blocks) will help each owner as much as it can in terms of providing the environment to build and test the building block; help with the testing plan; and with the programming if developed at PolyU. However, to ensure sustainability and a more effective process for updates each department will be encouraged to take responsibility for the programming (if developed in-house). This could involve training for technical staff within the departments. Key points to note are:

- It is the responsibility of the owner to identify the reliability of the source of the building block
- It is the responsibility of the owner to obtain contact details of the developer of the building block
- It is the responsibility of the owner to maintain and update their building blocks
- It is the responsibility of the owner to define the testing plan for each building block deployment (and rollback plan)
- It is the responsibility of the owner to ensure that the building block is compatible with different versions of Blackboard (i.e. in SP8, SP13 etc.)

Stage 3 – Criteria to judge requests

- The LMS team has the responsibility to safeguard the LMS in terms of security and compatibility issues
- The LMS team will look at the potential usefulness of the building block on the user
- The LMS team will look at the impact of the building block on the institution

Stage 4 – Testing:

- The LMS team will carry out comprehensive testing

Stage 5 – Maintenance including upgrades:

- The “owner” has the responsibility for ongoing maintenance of the building block (but with support from LMS team if required)
- The “owner” has the responsibility for developing, researching and testing the building block (but with support from LMS team if required) in new Blackboard upgrades

Additional Resources:

- EduGarage – edugarage.com
- OSCELOT - oscelot.org (Open Source Community for Educational Learning Objects and Tools)