i-Space: A Leap of Collaboration Space for Inspiration, Ideation and Implementation

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i-Space @ PolyU Library
Before Renovation

• Located on 4/F North Wing of PolyU Library
• Rows upon rows of book stacks housed 125,000 books
• Compact study carrels for self-study
Timeline

- 2016-09 : Planning phase to propose i-Space’s concept
- 2017-01 : Design phase & tendering
- 2017-05 : Construction phase to start renovation
- 2017.09 : Soft-launch the i-Space
About the i-Space

i-Space is a welcoming and inspiring collaboration space. It is also a technology-rich space furnished with a variety of digital fabrication equipment and facilities, including Digital Visualisation Room, Digital Makerspace, Digital Studio, VR Experience Zone, IoT Corner and Multimedia Workstations.

These facilities are conducive to digital literacy, research and learning for students from all disciplines to learn, evaluate and create digital content.
i-Space Zoning

- The i-Space represents a Design Roadmap.
- “i” stands for Inspiration, Ideation and Implementation.
Service Scopes & Facilities
Service Scopes

• Embracing Creativity

• Cross-disciplinary Collaboration

• Digital Participation

• Digital Literacy
Service Scope for Inspiration Zone

- Embracing Creativity

Create a welcoming and inspiring zone to stimulate their innovative and creative thinking.
Facilities in Inspiration Zone

- Housed 5,000 books of Fine Arts, Design & Illustration (LC call number: NC).
- Students can find inspiration for their projects.

Fine Arts, Design & Illustration

5,000 BOOKS
Facilities in Inspiration Zone

- Provided a designated Makerspace Book Display corner to *build a culture of creativity*.
Service Scope for Ideation Zone

• Cross-disciplinary Collaboration

Provide a group work space and facilities to foster multidisciplinary collaboration for students from all disciplines.
Facilities in Ideation Zone

• **Idea Pods**
  - high table and white board wall to exchange ideas.

• **Group Study Booths**
  - Furnished with LED screens to facilitate group discussion and collaboration.
Facilities in Ideation Zone

- **Group & Project Work Space**
  - Provide moveable furniture and white boards to foster multidisciplinary collaborative discussion.

272 seats for group & project work
Service Scope for Implementation Zone

• Digital Participation

Encourage students to use the self-served and self-managed digital fabrication equipment such as
• 3D & Large format printers, and Laser cutter
• Book / 3D scanning
• Virtual Reality experience zone
• Internet of Things (IoT) corner
Service Scope for Implementation Zone

- **Digital Literacy**

  Organize activities and workshops to foster students gain hands-on experience to learn, evaluate and create digital contents.
Facilities in Implementation Zone

Offer a one-stop shop digital facilities for students to learn, create, implement and present digital content.

- Digital Makerspace
  - Fabrication tools

- Digital Studio
  - Video Production

- Digital Visualisation Room
  - Presenting Ideas

- Multimedia Workstations
  - Post-editing video clips
  - Making 3D and VR content
Multimedia Workstations - post-editing of video

Digital Visualisation Room
Digital Makerspace
Technical Support Desk
Digital Studio

i-Space Floor Plan
Digital Services
Digital Makerspace

- **3D Printing and Laser Cutter**
  - Encourage self-served printing and cutting services
  - Partner with local makers to provide hands-on workshop to operate laser cutter

Sample – a mobile phone case

Laser Cutter

3D Printer
  - SLA technology
  - FDM technology

3D Printer

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Digital Makerspace

- **3D Scanner**
  - Scan and create 3D models of objects
  - Incorporate 3D images into VR contents for development
Digital Visualisation Room

- Support research related activities
  - Equipped with high resolution Video Wall to facilitate visualisation of data with images and videos for research seminar and academic discussion.
Digital Visualisation Room

- Internet of Things (IoT) corner
  - Borrow Arduino and Raspberry Pi at Help Desk
  - Free access to basic sensors and tools

This Room also serves as a working space to access IoT and VR facilities when it is not reserved for research seminar.
Digital Visualisation Room

• **Virtual Reality (VR) Experience Zone**
  - Equip with HTC Vive VR headset
  - Support VR content and game development e.g. Leap Motion (tracker for hands movement), 360 Camera & HTC VR tracker for students to borrow
Digital Studio

• Offer professional equipment for
  – Students to record their presentations for class projects or rehearsal.
  – Faculty to make class materials by blending their recorded presentations with multimedia contents.
  – Support MOOC project for video content creation.
Digital Studio

- Provide professional audio and video recording equipment
  - 4K video camcorder
  - Professional LED and fluorescent lighting system
  - Teleprompter for script display
  - Seamless chroma key green backdrop
  - Photography light box for still photography

Example: Visual effect of Chroma key technique to composite two images or video clips together.
Staff Redeployment & Reengineering
Staff Redeployment

• Involve existing staff of following sections
  – Systems & Digital Services
  – Media Services

• Redeployment
  – Take up new initiatives & services
  – Expand scope of their existing duties
Reengineering

• Centralise Library IT services in i-Space
• Relocate existing Technical Support Desk to i-Space
• Delegate responsibility and establish different domain experts to support the Makerspace
• Engage students in Makerspace’s peer-support
Domain experts in Makerspace support

i-Space

Systems & Digital Services team

Media Services team

Internet of Things (IoT)
Virtual Reality
3D Printing / Laser Cutting
Help Desk IT support
Maker Events
Digital Studio
Digital Visualisation Room
Video Wall
3D Scanning
Multimedia Workstations

Partners with departments and other makers.

Existing staff are retrained to take up new initiatives.

Delegate responsibilities to staff to build domain experts.
Maker Events @i-Space
Open House @ i-Space

• Experiment easy-to-use digital equipment.
• Organise insightful talks to showcase the possibilities brought by popular technology e.g. 3D FDM printing, IoT workshop, etc.

IoT workshop: Connect a network with physical sensors to build a smart electric fan.

(Photo of Open House, 2017.10.20)

Illustration of digital fabrication equipment in Digital Makerspace (Photo of Open House, 2017.10.21)
3D Food Printer Workshop @ i-Space

- Technological workshop to introduce latest technology
- Reinforce community services and knowledge transfer of STEM subjects with secondary schools.

Print PolyU logo on a bread with peanut butter. (Photo of Open House, 2017.10.20)
Thank you

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