

## 2.5 CLASSROOMS OF THE FUTURE

### 2.5.1 SETTING FOR CLASSROOMS OF THE FUTURE

Coordination meeting with E-Learning and Educational Technology, Centre for Teaching and Learning Enhancement (CTLE) and Campus Development and Engineering Section (CDE) was held on 20 July 2010.

As per end-users' request, four (4) continuous Studio Classrooms for 50 to 60 students with size of 80 sq.m. shall be provided and furnished as a showcase.

**Model 1: Based on Lecture + Discussion Model (Learning by listening)**

- U-shaped arrangement with level difference i.e. horse-shoe layout
- Control room for translation, lighting and sound control

**Model 2: Based on Constructivist Collaborative Learning Model (Learning by doing/ workshop/ group work)**

- 10 numbers of movable stations, each station for 6 students

**Model 3: Based on Participatory Learning in Community Model (Inspiration to talk through presentation or TV talk show)**

- 10 sets of sofas, each sofa set for 5 to 6 students

**Model 4: Based on Evidence-based Educational Model (TV studio for documentary)**

- Oval production facilities (OPF) with three rooms including Studio Room, Inter-discussion Room and Control Room shall be provided, details are summarized as follows:
- Studio Room for 10 to 12 people
- Inter-discussion Room for 10 to 12 people
- Control/ Editing Room



Fig. 2.68



Fig. 2.69

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### 2.5.2 SPECIAL DESIGN REQUIREMENTS

- The state-of-the-art image with “Vibrant and Energetic” for Classrooms of the Future shall be maintained and enhanced.
- Well-furnished interior shall be adopted to decorate the interior space in order to create a cutting-edge, comfortable and energetic atmosphere.

#### EQUIPMENT AND REQUIREMENT FOR DIFFERENT MODELS

##### (A) Model 1:

###### Based on Lecture + Discussion Model

- Spacious headroom shall be provided.
- Interactive white board (IWB)/ Smart board shall be provided for lecture/discussion and group-based project development such as brainstorming and milestone review.
- The furniture setting e.g. chair shall be loose.

##### (B) Model 2:

###### Based on Constructivist Collaborative Learning Model

- The layout shall be designed in team format and with relax feeling.
- Raised platforms with 4 different levels and high headroom shall be provided.
- Interactive white board (IWB)/ Smart board shall be provided for lecture/discussion and group-based project development such as brainstorming and milestone review.
- Selected pin-up areas for presentaton and discussion should be specified.
- Flexible loose furniture shall be adopted.

##### (C) Model 3:

###### Based on Participatory Learning in Community Model

- Video record for documentary i.e. camera for High-definition video shall be provided.
- Interactive white board (IWB)/ Smart board shall be provided for lecture/discussion and group-based project development such as brainstorming and milestone review.
- Display unit i.e. showcase cabinet and bookshelves shall be provided.
- Selected pin-up areas for presentaton and discussion should be specified.

##### (D) Model 4:

###### Based on Evidence-based Educational Model

###### For Studio Room:

- Discussion table and chairs for 10 to 12 people shall be provided.
- Interactive white board (IWB)/ Smart board shall be provided for lecture/discussion and group-based project development such as brainstorming and milestone review.
- Noise absorption material shall be adopted at wall and floor i.e. carpet tiles for better acoustic purpose.
- For Inter-discussion Room:
  - Discussion table and chairs for 10 to 12 people shall be provided.
  - Inter-discussion Room shall be located next to the Studio Room and one-way mirror shall be installed in-between two rooms.

###### For Control/ Editing Room:

- Table and chairs with computer and control panel shall be provided.
- 1 number of white board shall be provided.

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### MATERIAL/ COLOR/ FINISHES/ FURNITURE

#### (A) Wall finishes

- Thematic color shall be adopted for different areas at Classroom of Future for characteristics and identities.
- Timber or fabric wall panels shall be applied in some areas for better acoustic purpose.
- Gypsum board, mirror or back-painted glass feature wall panels shall be applied in most of the areas for aesthetic.
- Plaster and emulsion paint shall be less applied.

#### (B) Floor finishes

- Heavy duty anti-static carpet tiles or wall-to-wall carpet shall be adopted.
- Timber or stainless steel skirting shall be adopted.

#### (C) Ceiling finishes

- Plaster and emulsion paint shall be adopted.
- Large quantity of gypsum or timber or metal ceiling with recessed or feature lighting shall be applied for aesthetic and acoustic purpose.
- Typical mineral wool ceiling shall be adopted for Control Rooms.

#### (D) Furniture

- Loose teaching console with control panel shall be provided for Model 1, 2 and 3.
- Different type of furniture with theme color, shape or material shall be provided for characteristics and identities.

#### (E) Others

- Curtain or blinds with heavy duty track shall be provided for all meeting rooms.

### E&M INSTALLATION REQUIREMENT

- The Classroom of Future shall be fully furnished with air-conditioning system.
- Lighting provisions for general purpose shall be provided. Various uses such as movie showing/ projection shall be furnished with suitable lighting provisions.
- Adequate numbers of 13A sockets shall be installed along the walls, student desks or workstations for different computer devices.
- Concealed floor-mounted sockets shall be installed for each room.
- Ethernet and wireless internet access shall be provided for the Classroom of Future.

#### (A) Model 1:

##### Based on Lecture + Discussion Model

- Wireless LAN or plug-in internet and sockets shall be provided for students' notebooks.

#### (B) Model 2:

##### Based on Constructivist Collaborative Learning Model

- 1 number of computer shall be provided for each movable station. Projection screens shall also review the works of computer at each station.

#### (C) Model 3:

##### Based on Participatory Learning in Community Model

- Light fitting with warm feeling shall be provided e.g. high temperature color light.

#### (D) Model 4:

##### Based on Evidence-based Educational Model

- Computer for real time comments to Studio Room shall be provided.

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### AUDIO AND VISUAL INSTALLATION REQUIREMENT

An integrated Audio and Visual System shall be provided to the Classroom of Future. The Audio and Visual System shall be on an integrated computerized monitoring and control system through the control panel in teaching console or Control Room. The design standard shall be allowed the entire system to support the venue to host lecture/ seminar for teaching purpose. The design, specification, operation and performance shall be up to relevant international standard and trade practice in the region.

#### (A) Model 1:

##### Based on Lecture + Discussion Model

The following equipment shall be provided for general uses.

- Wireless clip-microphone shall be provided for students.
- 3 numbers of cameras for real-time display shall be provided.
- 2 numbers of top-to-bottom large projection screens and projectors with non-blocking view angle shall be installed for High-definition video.
- Video record for documentary i.e. camera for High-definition video shall be provided.
- Blu-ray/ CD/ DVD player and speakers.

#### (B) Model 2:

##### Based on Constructivist Collaborative Learning Model

The following equipment shall be provided for general uses.

- 4 numbers of ceiling-mounted projectors and projection screens shall be installed around the room for High-definition video.
- Video record for documentary i.e. camera for High-definition video shall be provided.
- Blu-ray/ CD/ DVD player and speakers.

#### (C) Model 3:

##### Based on Participatory Learning in Community Model

The following equipment shall be provided for general uses.

- Ceiling-mounted large projection screen and projector with non-blocking view angle shall be installed for High-definition video.
- Blu-ray/ CD/ DVD player and speakers.

#### (D) Model 4:

##### Based on Evidence-based Educational Model

The following equipment shall be provided for general uses at Studio Room:

- 1 number of ceiling-mounted large projection screen and projector shall be installed for High-definition video.
- System for video-record and sound capturing for High-definition video shall be provided and also can be edited by the control panel at Control Room.
- Blu-ray/ CD/ DVD player and speakers
- The following equipment shall be provided for general uses at Inter-discussion Room:
  - System for video-record and sound capturing shall be provided and also can be edited by the control panel at Control Room.
  - Blu-ray/ CD/ DVD player and speakers.

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### INFORMATION TECHNOLOGY INSTALLATION REQUIREMENT

#### (A) Model 1:

##### Based on Lecture + Discussion Model

- Voting system shall be provided.

#### (B) Model 2:

##### Based on Constructivist Collaborative Learning Model

- Design requirement for the information technology installation to be further specified.

#### (C) Model 3:

##### Based on Participatory Learning in Community Model

- Computer software for tele-conversation and network connection with sufficient transmission capacity and speed e.g. SKYPE shall be provided for teaching console.

#### (D) Model 4:

##### Based on Evidence-based Educational Model

- Design requirement for the information technology installation to be further specified.

#### (E) Other expected equipment or facilities as per end-users' request

- Flexible control mechanism to direct different videos into different screens for concurrent viewing
- Multimedia recording and streaming devices to merge different information into our Intranet or Internet resources to be stewarded in the e-Learning platforms
- Electronic podiums for mobile and re-configurable multimedia settings to control the video/sound/lighting setting
- A net-meeting facilities among workgroup stations, such as the REACH or BridgIT solution from SMART Board
- Post-production facilities to produce evidence-based learning artifacts for documentary purpose, in the form of DVD-based multimedia files for Internet/Intranet-based download for student learning convenience, and faculty teaching evaluation.



Fig. 2.70

## 2.5 CLASSROOMS OF THE FUTURE

### PROPOSALS FOR CLASSROOMS OF THE FUTURE AT CENTRAL TEACHING BUILDING

The location for the Classrooms of the Future should be close to entrance of Central Teaching Building to act as a showcase for guests visit further to the discussions with end-users. It was agreed with CDE to allocate two (2) numbers of 25-Person Classrooms and two (2) numbers of 50-Person Classrooms at G/F and 1/F next to entrance of Block 1 as Classrooms of the Future.

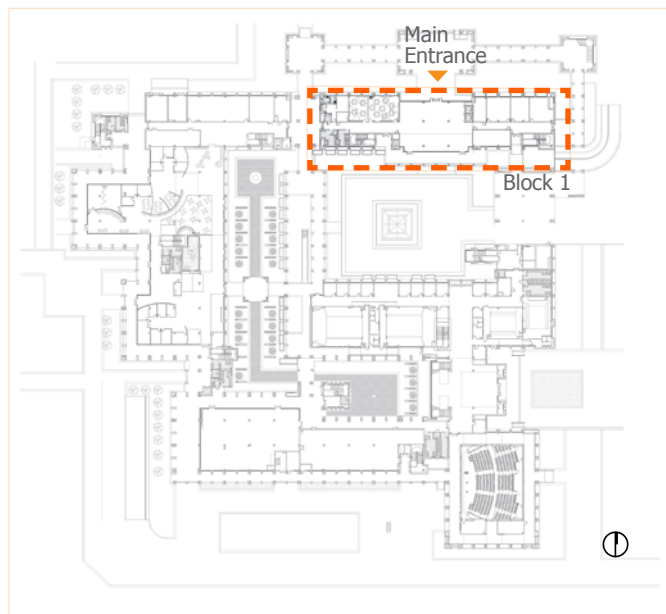


Fig. 2.71 Location Plan - Classrooms of the Future (G/F)

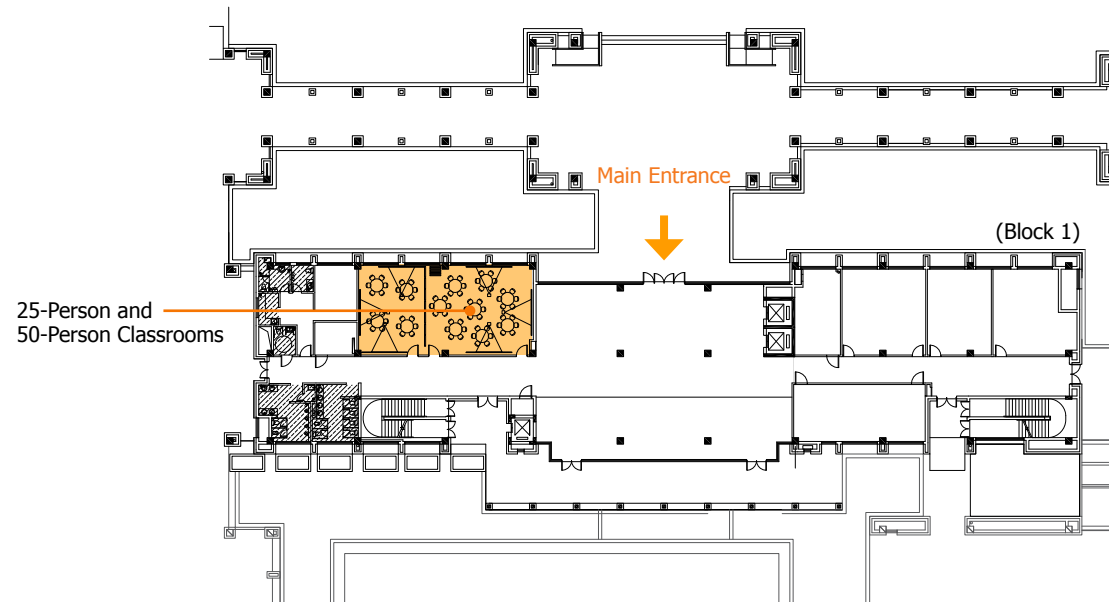


Fig. 2.72 Proposed location of Classrooms of the Future at G/F

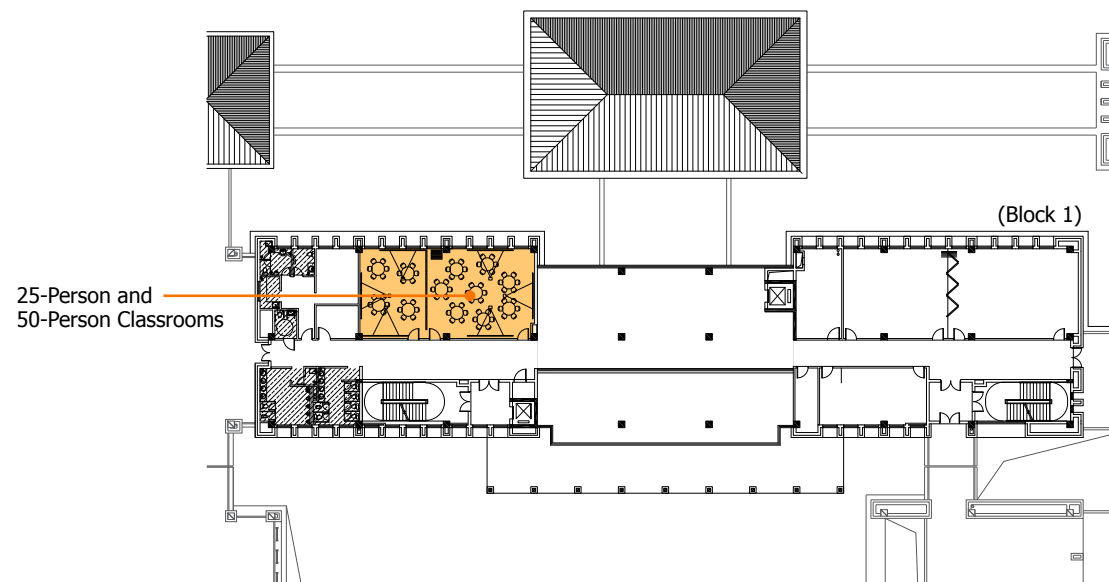


Fig. 2.73 Proposed location of Classrooms of the Future at 1/F

## 2.5 CLASSROOMS OF THE FUTURE

### CLASSROOMS OF THE FUTURE AT G/F

It was recommended to relocate the AV Plant Room and then combine the 25-Person Classroom with AV Plant Room and Rest Room as a 50-Person Classroom. The enlarged Classrooms can be furnished as Model 1: Based on Lecture + Discussion Model and Model 4: Based on Evidence-based Educational Model.

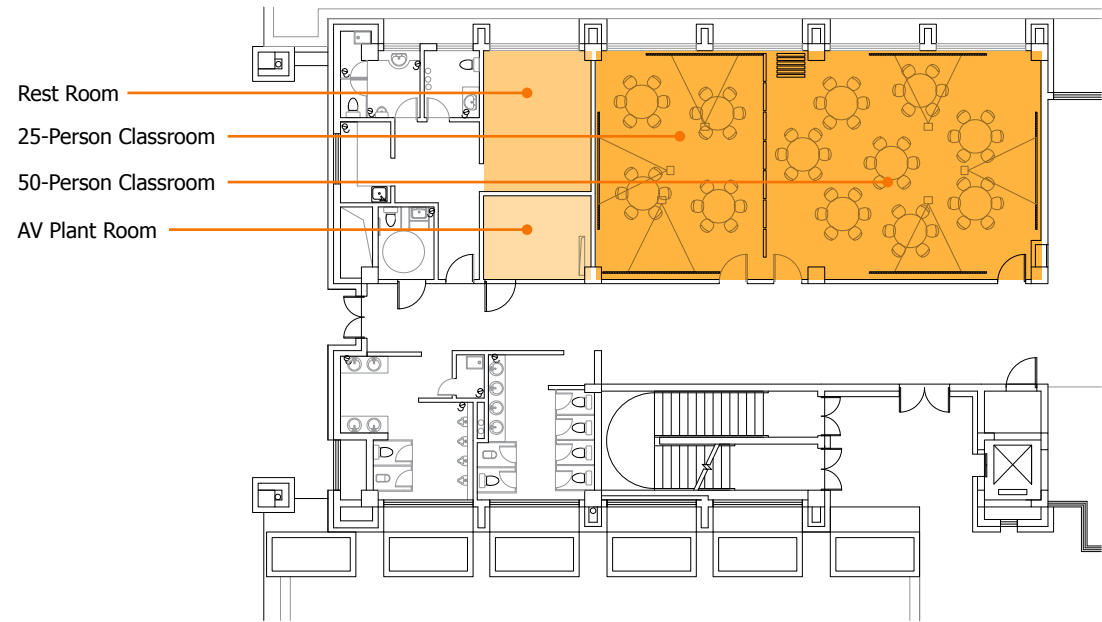


Fig. 4.74 Original layout plan of Classrooms of the Future (G/F)

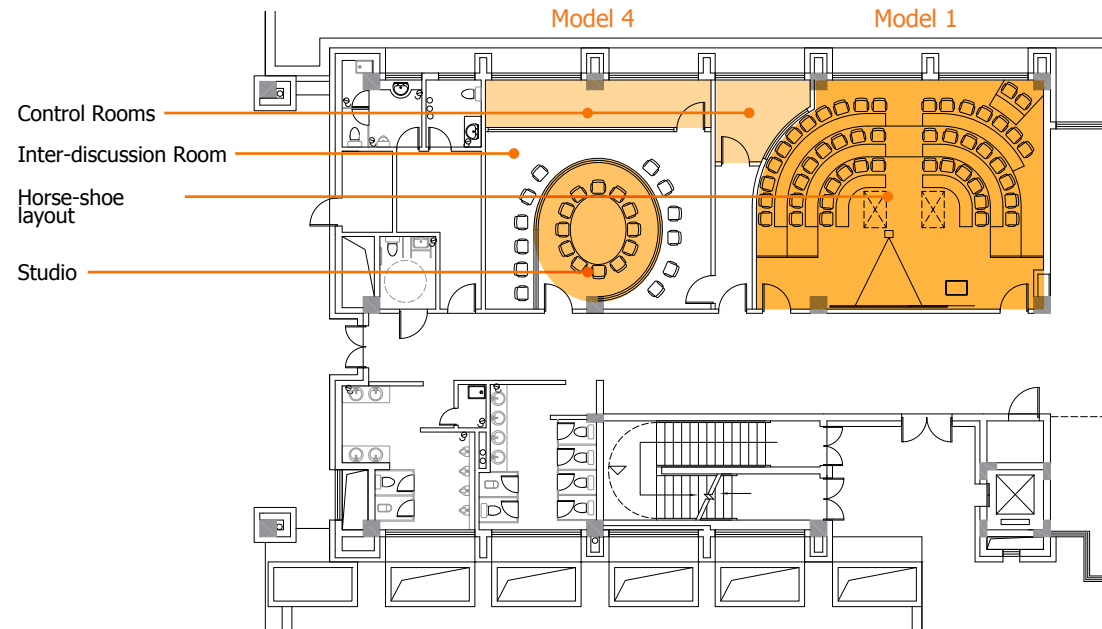


Fig. 4.75 Proposed layout plan of Classrooms of the Future (G/F)

## 2.5 CLASSROOMS OF THE FUTURE

### CLASSROOMS OF THE FUTURE AT 1/F

Same design principle can be adopted for 1/F, to relocate the AV Plant Room and then combine the 25-Person Classroom with AV Plant Room and Rest Room as a 50-Person Classroom. The enlarged classrooms can be furnished as Model 2: Based on Constructivist Collaborative Learning Model and Model 3: Based on Participatory Learning in Community Model.

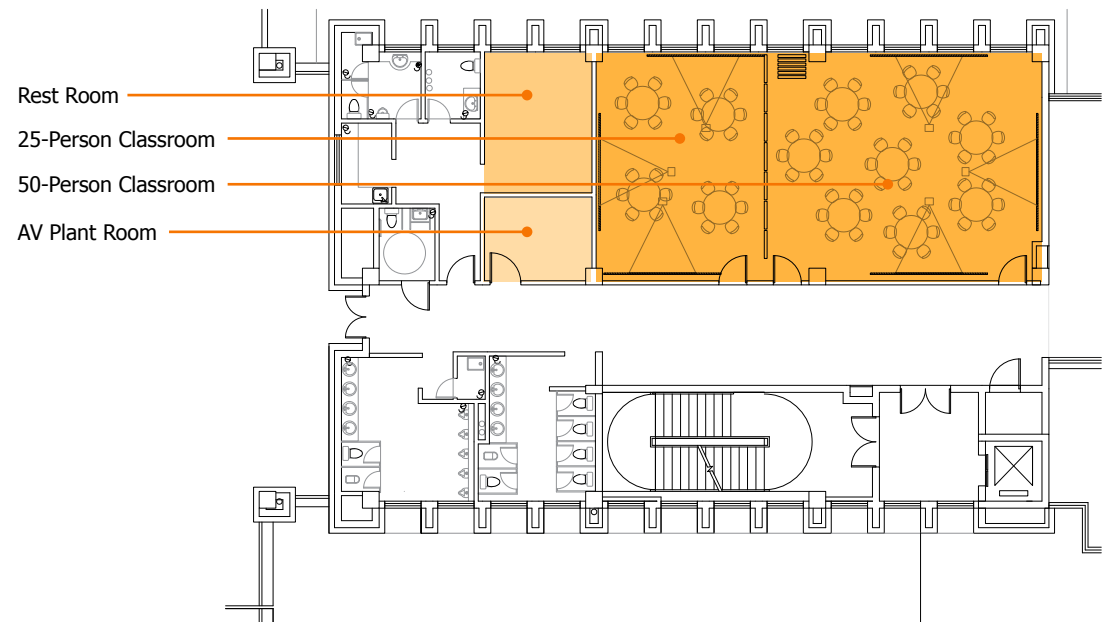


Fig. 4.76 Original layout plan

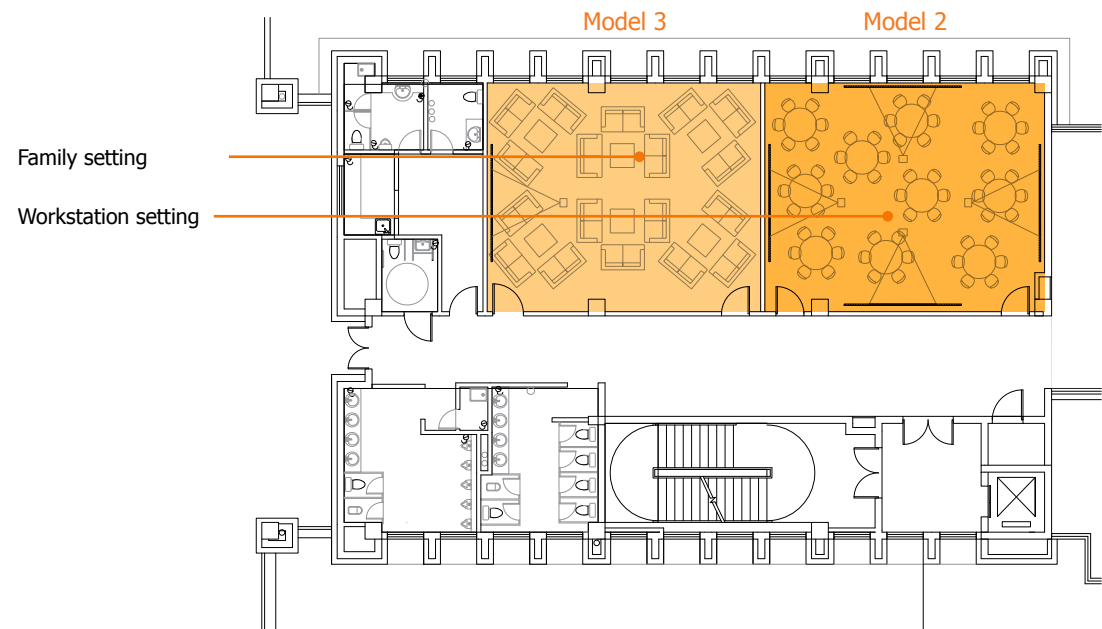


Fig. 4.77 Proposed layout plan