BCNET 2019

Campus-Wide Guidelines for Learning Space Planning and Design

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Facilities Planning Learning Spaces Team

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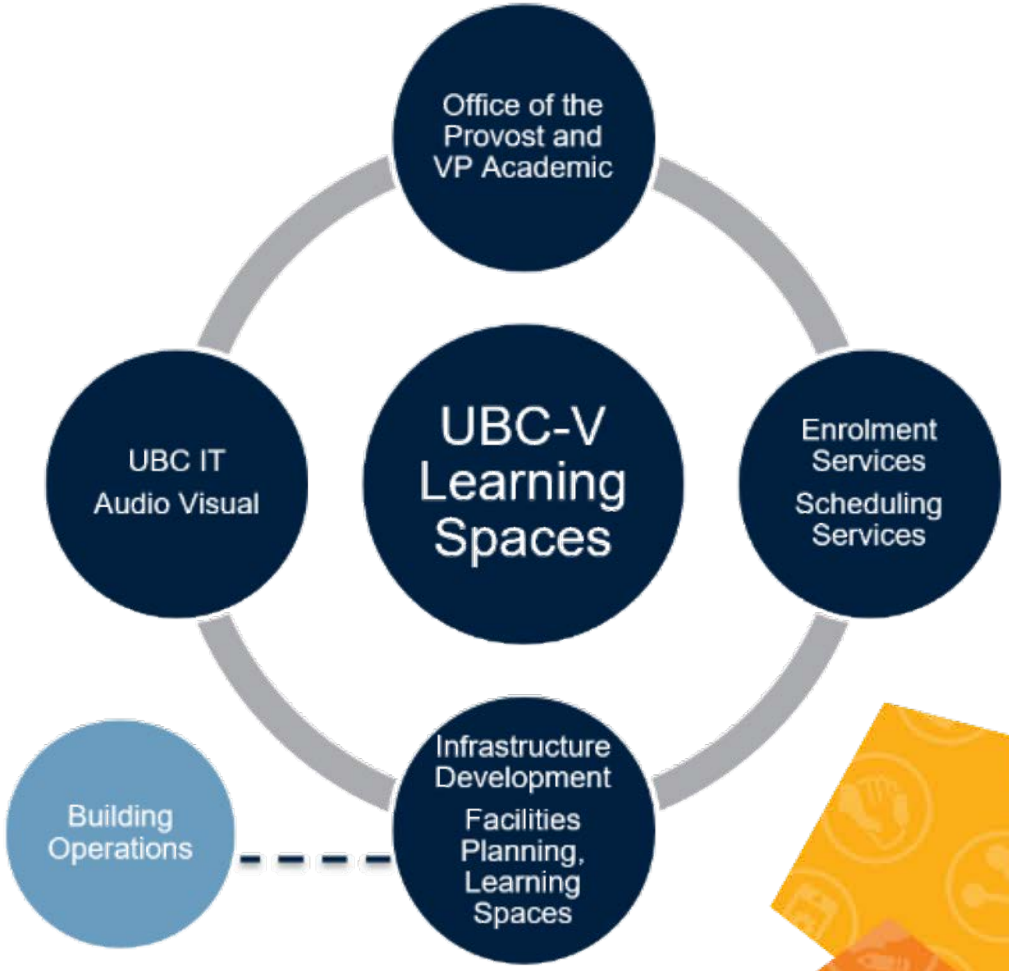
341 Classrooms

$4.5M Annual Budget

30+ rooms per year



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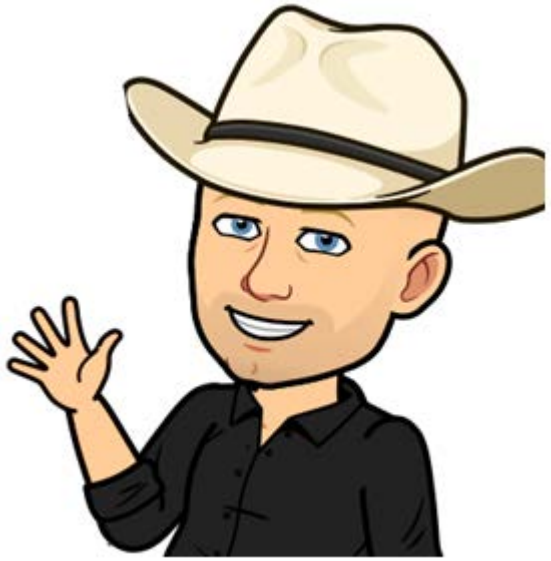
UBC IT Audio Visual Projects Team



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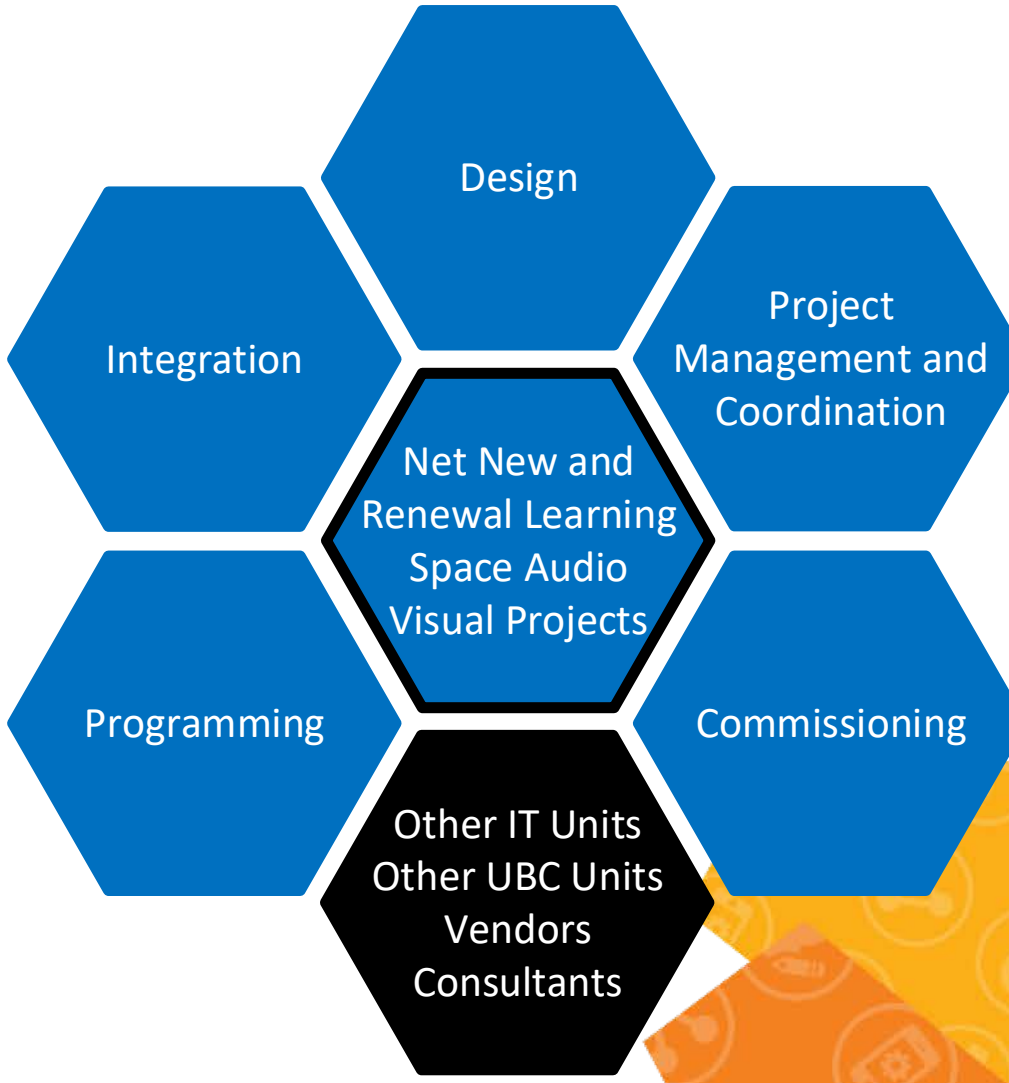
Projects Team Established in 2013

200 AV Projects Completed in 2018

6 Pre-Qualified Vendors



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Session Outline and Who Are You?

Outline

- Types of Guidelines
  - History
  - Content
  - Authority/Owner
- How the guidelines work together
- Open Discussion

Learning Space Design Guidelines

2011	2014	2018
• Guidelines Developed	• Revision published	• Version 2 completed

- Document for construction design teams but used in many learning space discussions throughout the campus
- Provide guidelines rather than specifications

https://learningspaces.ubc.ca/sites/learningspaces.ubc.ca/files/ubc_learning_space_design_guidelines_2018_v2.pdf

UBC Learning Space Design Principles

- Interaction
- Technology
- Environment
- Flexibility
- Accessibility
- Location

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Learning Space Types

Type 2: Classroom

Most common learning space type at UBC. Most effective for 40 to 120 people, with variations that include front of room scheduled instruction, lectures, media viewing and small group work, scheduled and/or drop-in small group active learning, student use of technology, and student and instructor interaction.

1. Flat floor, for 40 to 120 people.
2. Fixed or movable layout and furniture depending on instructor activities
3. Multiple lighting zones as defined in Section 5.5.2.
4. Ceiling height to suit room size and required video display sizes, as outlined in Section 5 AV Considerations.
5. Power outlets in floor or, preferably, power to desks where requested. Minimum of 50% of seats provided with power if movable tables and 100% of seats if fixed tables.
7. Area per seat: 2.8 to 2.3nsm (30 to 25 nsf).
8. Moveable chairs and fixed or movable tables, or moveable tablet chairs. Moveable tables must be easily and quickly moveable so they can be easily clustered in groups or oriented to front of room instructor area.
9. Multiple marker boards. Surrounding marker boards may act as public thinking spaces.
10. Variations may have no front of room instructor area. Typically, instructor station can be located anywhere in room but if it has AV equipment or computers it will have a fixed location. Additional instructor station capabilities may include ability to view the laptop material at any table and project that material to the whole class.
11. Student tables are in small groups of 4 to 9 seats. Each group may have access to its own marker board.
12. Special acoustic design requirements including wall and ceiling treatments and sound reinforcement for instructors (if applicable).
13. In high-tech rooms, every table is provided with AV/IT attributes. Depending on the design, these may include marker board, projector and projection surface, large wall monitor, power at each seat, and may require fixed furniture or additional conduit infrastructure.

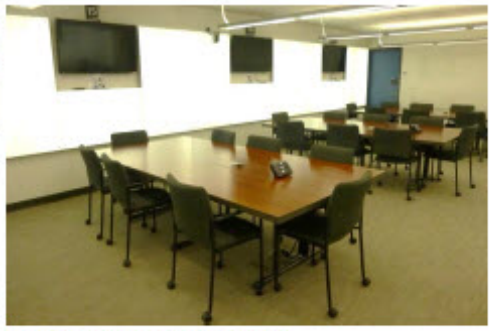
Example: UBC UCLL 107, 48 Seats

Example: UBC ORCH 3018, 48 Seats

Example: UBC UCLL 101,30 Seats

Example: UBC UCLL 109, 30 Seats

Example: UBC LSK 462, 42 Seats



Example: UBC DLAM 009, 66 seats

General Guidelines… Include

Clocks

Furniture

Signage

Finishes

Access (lock/unlock)

Learning Space Guideline Authority

- Input from UBC academic community and many different stakeholder groups
- Updated as required, after review with relevant stakeholders
- Embedded in UBC Technical Guidelines
- Endorsed by Learning Space Advisory Committee
- Aligned with UBC Strategic Plan

UBC Technical Guidelines

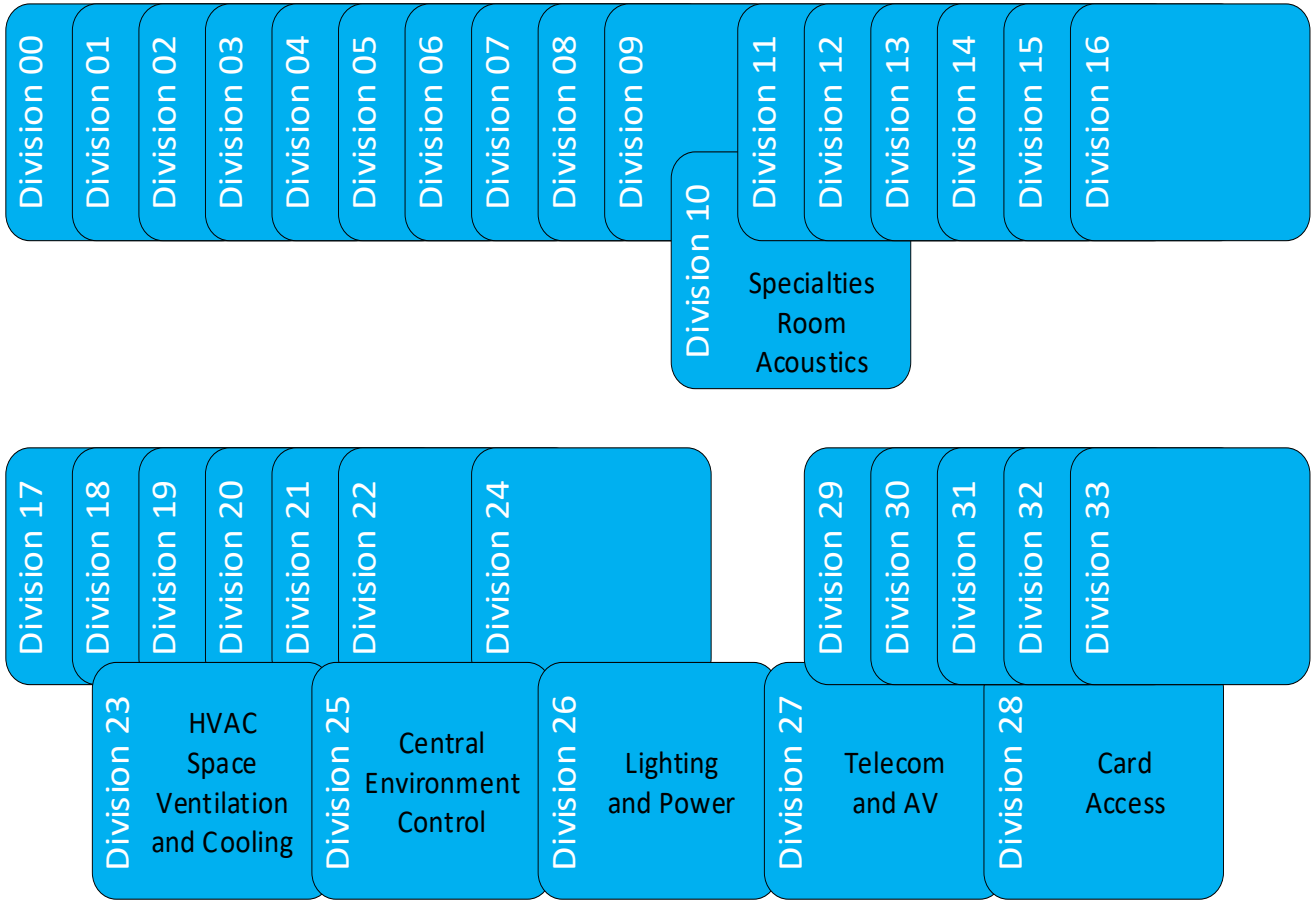
Early 1990s	Early 2000s	2013
• Guidelines Created	• Masterformat Construction Divisions	• Audio-Visual Added

- The UBC Technical Guidelines serve as the code of quality and performance for the design, construction and renovation of University-owned institutional buildings
- Living documents that are revised annually
- Target audience are architects and engineers

http://www.technicalguidelines.ubc.ca/

UBC Technical Guidelines & Masterformat

- Organized in Masterformat Divisions 00 to 33. The following are related to learning spaces and AV
- Performance objectives, technical requirements, recommended practices, documentation requirements



UBC Technical Guidelines - Examples

end of the space. Classroom and lecture theatre lighting control shall include at minimum 4 dimmable zones. Zone 1 comprises the white board area lighting; zone 2 comprises the front of room area lighting; zone 3 comprises the front seating area lighting; and zone 4 comprises the back seating area lighting. The extent of zoning will vary depending upon the size of the teaching space.

.10 For all other audio/video enabled spaces, the lighting zones shall be designed to meet the application of the space and shall take into account audio/video technology being used. The design shall be approved by UBC IT Audio Visual in writing.

.11 Where applicable, all classrooms, lecture theatres, offices, corridors, stairways and other public spaces shall incorporate daylight harvesting via use of interior mounted photocells and arranged to take advantage of free illumination while maintaining acceptable minimum illumination levels within the space.

.12 LED dimmers shall be compatible with the LED lamps used and their drivers.

2.5 Exit Signage

.1 Exit lighting shall be provided in accordance with the BC Building Code and the Canadian Electrical Code as amended by BC Electrical Safety regulations.

.5 Audio-visual outlet boxes shall be masonry back box with minimum depth of 90mm. Outlet box shall be recessed if wall mounted below finished ceiling. All outlet boxes shall havecover plates installed and colour coordinated with other outlets and services.

.6 Floor boxes with audio-visual requirements shall be able to accept Extron AAP or MAAP plates. Floor box lid shall allow cable egress while in the closed position. Floor box shall be intended for AV cabling and termination use, and allow sufficient room for all required cabling without cable strain at the connectors.

.7 The bend radius shall be at least six (6) times the internal diameter for conduit that has an internal diameter of 50mm or less. The bend radius shall be at least ten (10) times the internal diameter for conduit that has an internal diameter more than 50mm.

.8 The maximum number of bends between cable pull boxes in a conduit run shall be two (2) 90 degree bends.

.9 Conduit runs shall have no continuous sections longer than 30m between pull boxes.

.10 If a conduit run requires a reverse bend between 100 degree and 180 degree then a pull box shall be inserted into the bend but shall not be used as the bend.

UBC Technical Guidelines Authority

- The Steering Committee is made up of administrators at a high level
- The Committee meets annually to review proposed changes
- The Committee ensures that the Technical Guideline revisions consider maintenance, cost competitiveness and sustainability

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Graphical User Interface (GUI) Guidelines

2012	2013	Annually
• Guidelines Created	• DVP Added	• GUI Lessons Learned Edits Incorporated

- The GUI Guidelines serve as the code of quality and performance for the GUI layout, graphics, functions, behaviors, etc.
- Living document that are revised annually.
- Target audience are integrators and programmers

*GUI Guidelines Available Upon Request

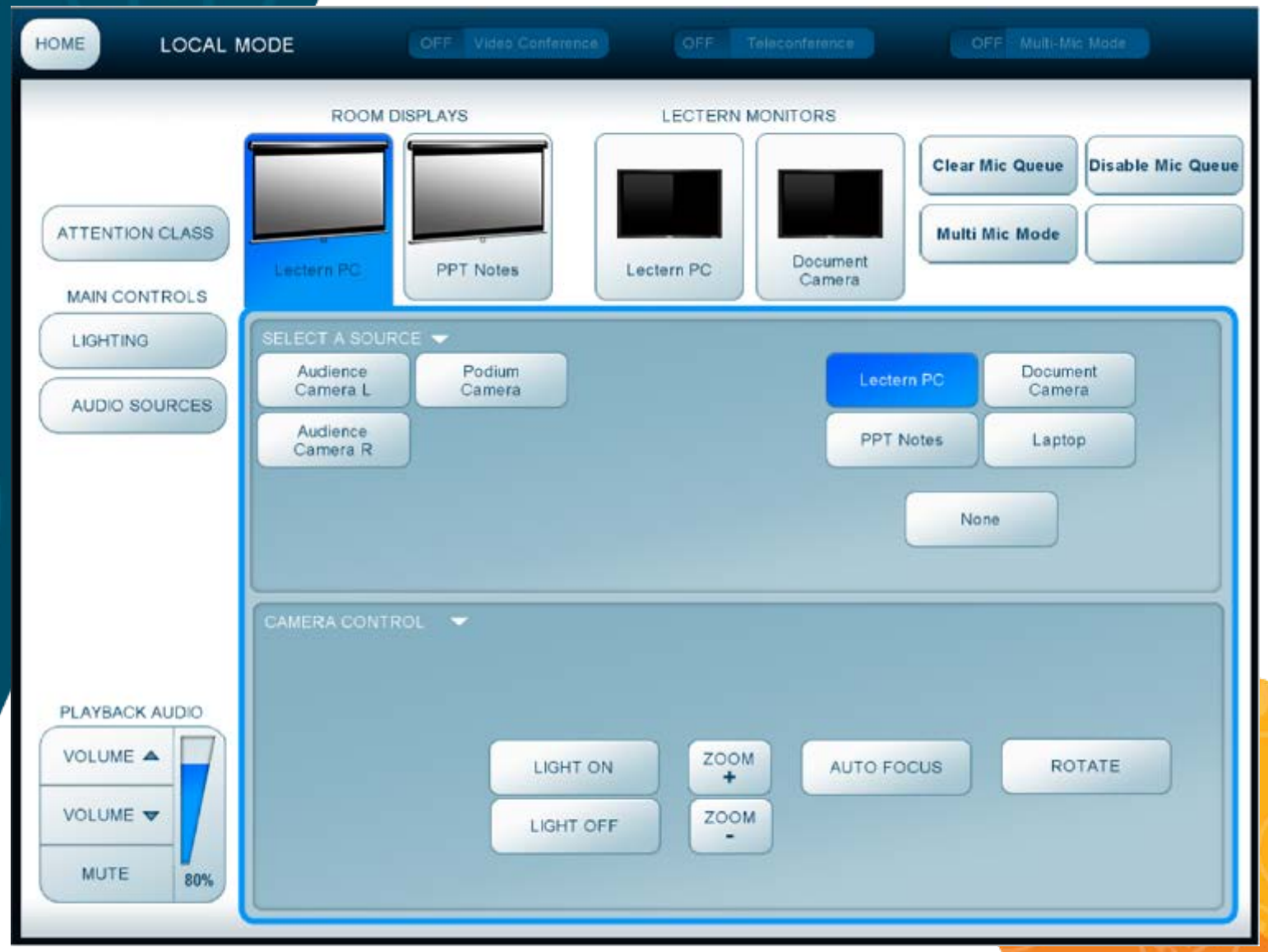
GUI Guidelines Purpose

The GUI is implemented as the primary control screen for complex integrated AV systems.

The guidelines should define:

- Nomenclature
- Controlled Devices
- All button behaviors
- Page flips
- Special Features and Functions
- Room modes
- Guiding principles (typically ease of use / intuitiveness) - Hicks law, Fitts law, Gestalts law, Figure-Ground Relationship, etc.

GUI Design Reference/Standard – Infocomm Dashboard for controls (now AVIXA)



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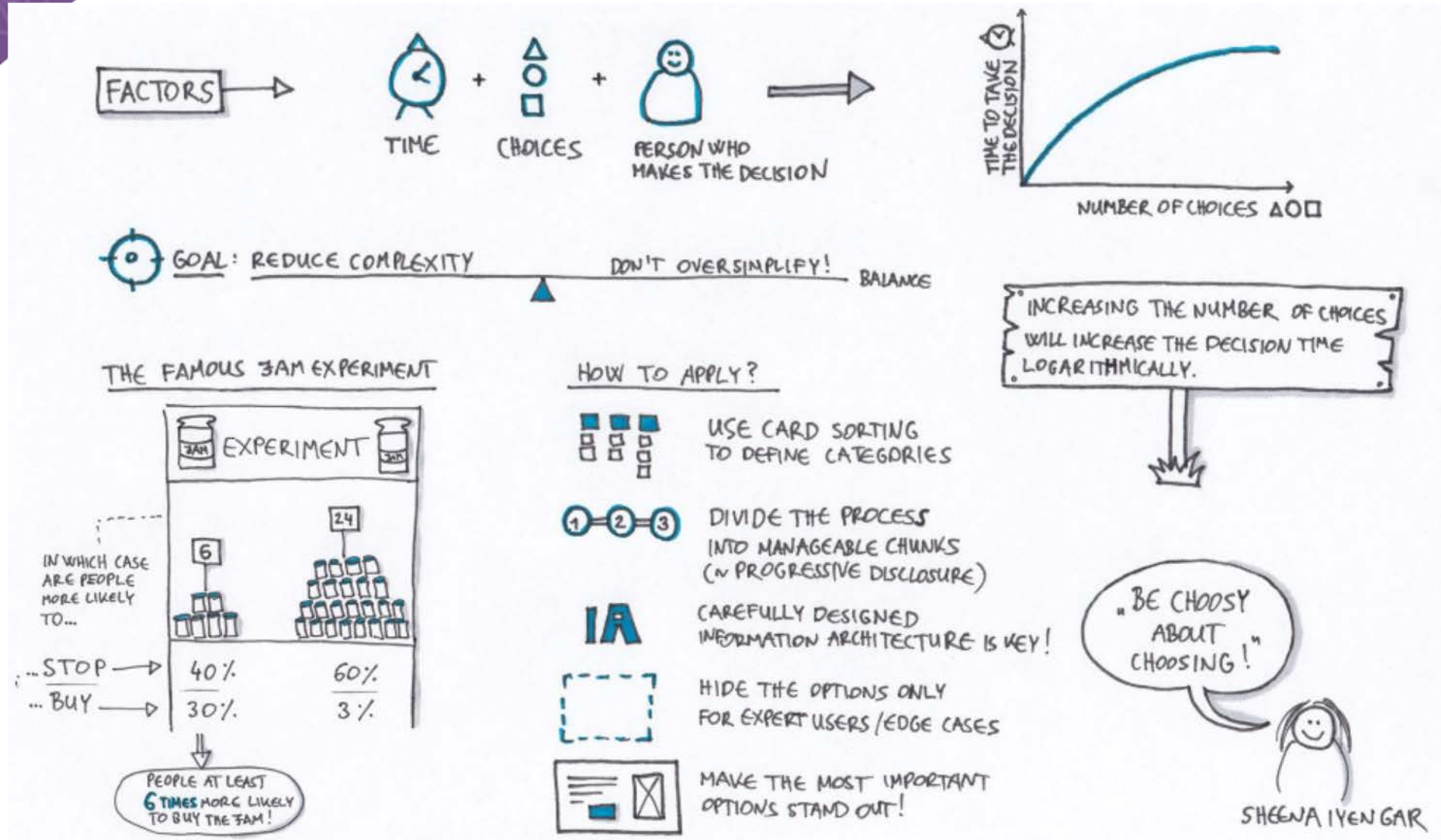
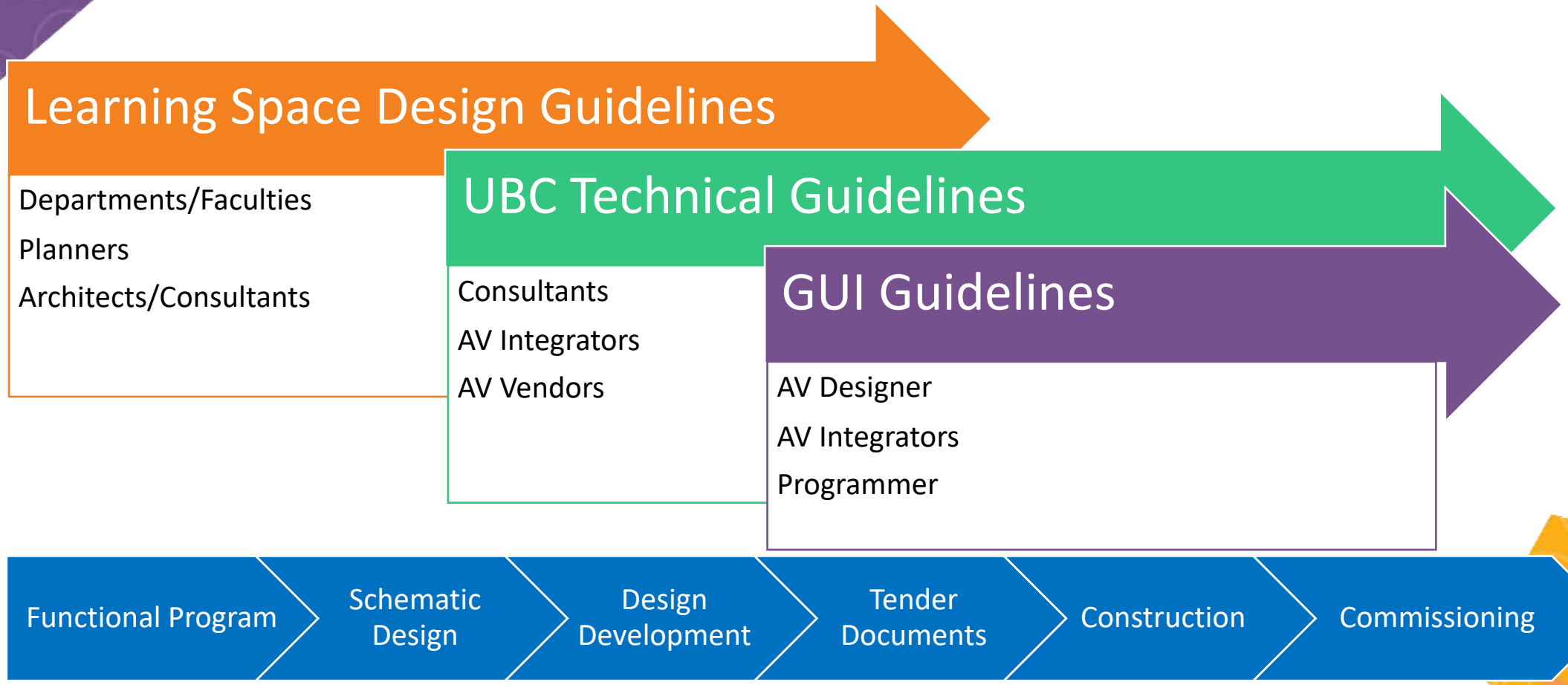
Hick's Law


FACTORS
TIME
CHOICES
PERSON WHO MAKES THE DECISION
TIME TO TAKE THE DECISION
NUMBER OF CHOICES
GOAL: REDUCE COMPLEXITY
DON'T OVERSIMPLIFY!
BALANCE
INCREASING THE NUMBER OF CHOICES WILL INCREASE THE DECISION TIME LOGARITHMICALLY.
THE FAMOUS JAM EXPERIMENT
EXPERIMENT
6
24
IN WHICH CASE ARE PEOPLE MORE LIKELY TO...
...STOP
... BUY
40%
30%
60%
3%
PEOPLE AT LEAST 6 TIMES MORE LIKELY TO BUY THE JAM!
HOW TO APPLY?
USE CARD SORTING TO DEFINE CATEGORIES
DIVIDE THE PROCESS INTO MANAGEABLE CHUNKS (= PROGRESSIVE DISCLOSURE)
IA
CAREFULLY DESIGNED INFORMATION ARCHITECTURE IS KEY!
HIDE THE OPTIONS ONLY FOR EXPERT USERS / EDGE CASES
MAKE THE MOST IMPORTANT OPTIONS STAND OUT!
"BE CHOOSY ABOUT CHOOSING!"
SHEENA IYENGAR

GUI Guidelines Authority

- Owned and maintained by Operations
- Operations representation within project team - take away GUI related LL
- Updates typically made annually
- Becomes part of systems ‘Functional Requirements’ (informs design)
- Addendums added for room specific requirements
- Issued as part of tender packages (scope costed by bidders)
- Formal testing during commissioning

How the Guidelines Work Together



Open
Discussion

Closing Remarks