eLAD Platform Graphical User Interface

Preliminary conceptual designs of interface appearance and organization are included. LBNL intends to issue updated GUI concept designs when work on the project begins.

GUI Appearance

The eLAD interface is intended to immerse its users in the three-dimensional virtual space of its lessons as much as possible using a single-screen GUI. The interface also provides users with additional information about the objects in the virtual space, design and operational options of the systems under study, and simulation feedback.

A heads-up display over a window into the virtual lesson space is used to achieve these goals. The heads-up display uses the following interface elements:

- A left-side vertical menu bar, organized into:
  - Environmental variables
  - Building geometry
  - Fenestration details
  - Interior
  - Integration
- Icons showing text on mouse-over
- User text input area in the lower left corner of the screen
- Simple 3D navigation controls including panning, rotating, setting camera locations, and moving into views of space by selecting cameras or “hotspots.”
- Diagrammatic overlays providing information such as wiring layout and false-color simulation results.

The following gaming platforms incorporate approaches the eLAD platform might adopt:

Cities XL:

MechLab:

SimCity 4:

Lesson Structure

The table “eLAD Potential Audiences And Learning Needs” provided in the “OEC Overview” document relates user roles to project phases. Taking this information into account, the eLAD software provides guidance to users relevant to their professions or trades, learning needs, and learning levels. The practical matters of preferred units of measurement and languages must be addressed. The software must:

- Identify the user’s background
- Identify their learning interests
- Present relevant lesson scenarios
- Guide the user through scenarios, adapting to proficiency and offering additional help or direction when users struggle in accomplishing lesson objectives.
- User studies may be used to adapt the user experience to varying user needs and expectations. For example, designers might be offered design choices, while installers might be offered specific examples of installation and calibration.

In addition, a choice of International System or American Standard units must be offered. While the first version of the software is expected to use American English text and audio (if any), eventually versions in other languages will be needed, and the software should be written to accommodate other languages.

ENVIRONMENTAL VARIABLES

GEOMETRY

FENESTRATIONV

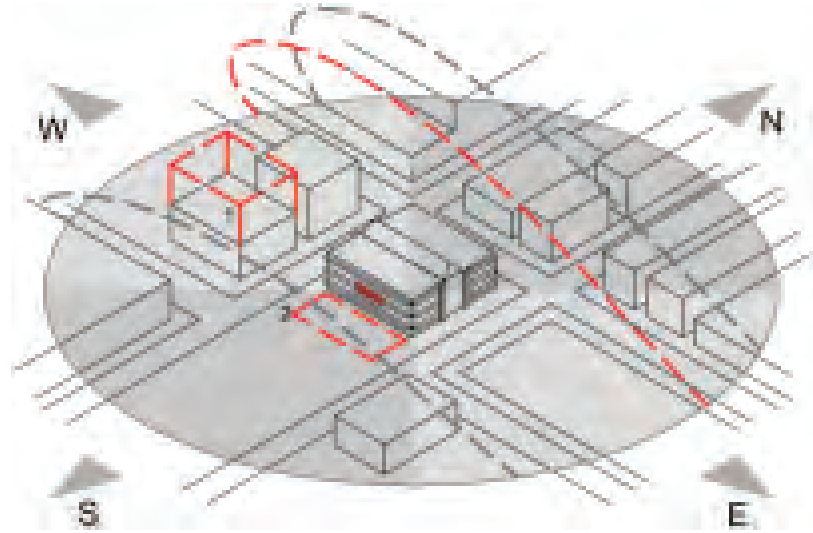
INTERIOR

INTEGRATION

User's background	Field of Interest:	Use Cases:	NEW	Analysis	Schemes
Designers Modelers Specifiers Commisioning Agents Manufacturers Installers Technicians	Daylighting Design Controls Design Controls Implemenatation	1_Troubleshoot a non functioning systems 2_Impact of Lighting control Retrofit 3_Rvesolve Glare Situation 4_... etc NEW Create a use case		Resolution Patterns of Use Units ..	A B C ...

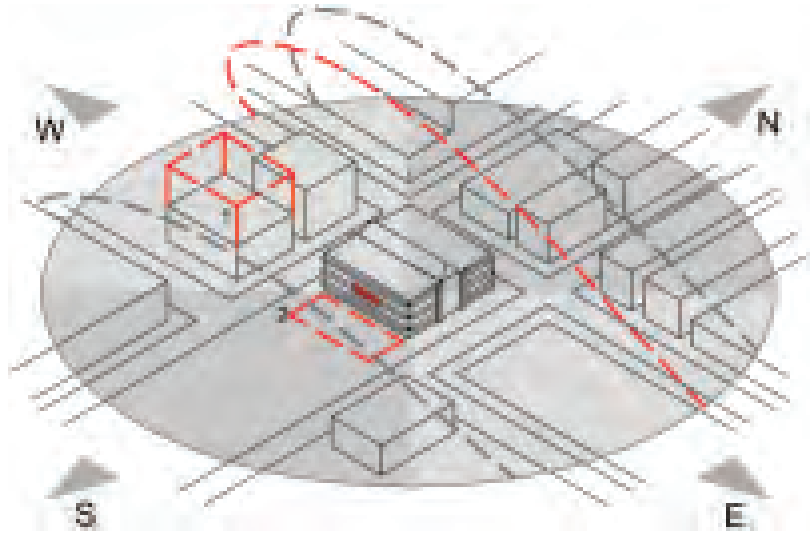
City San Francisco

Latitude 37 N Longitude 122 W



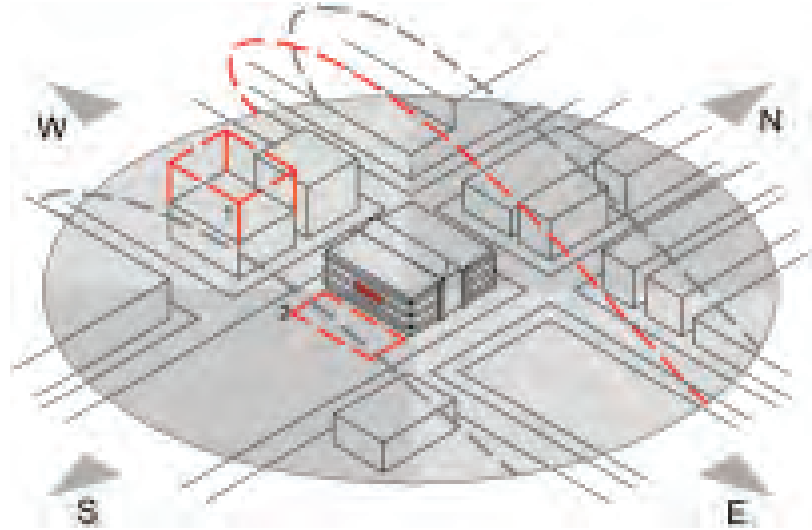
Date September 1

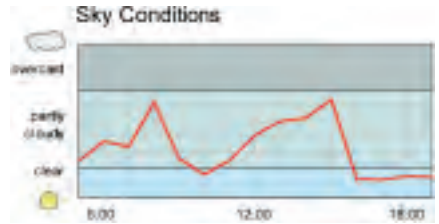
Time 37 N Patterns of Use



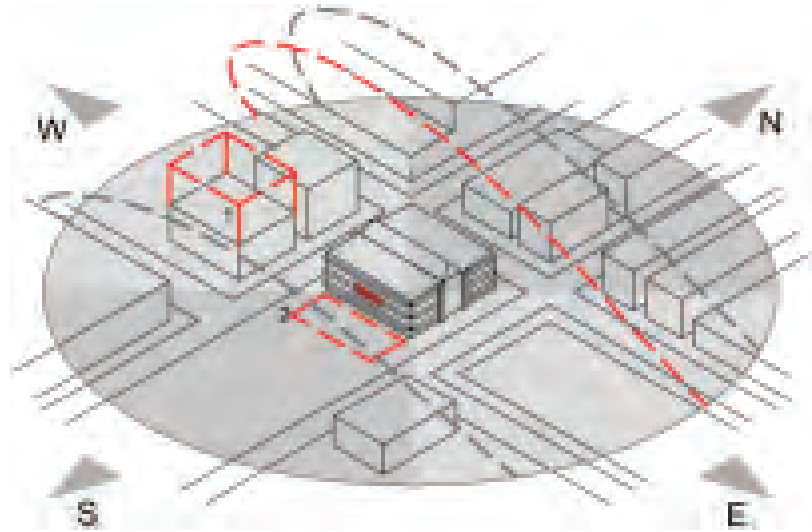
Climate Moderate Weather File (import)

Sky Conditions Overcast

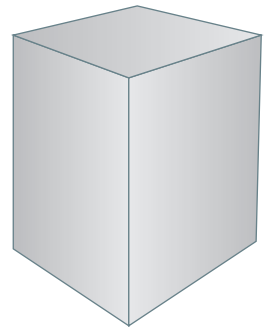
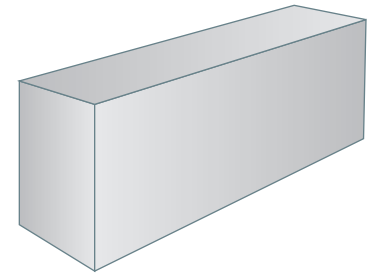
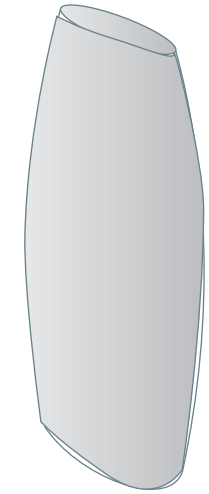
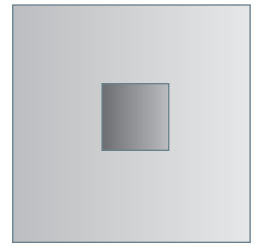
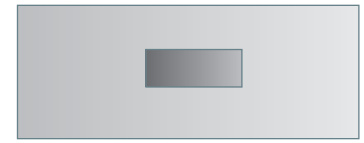
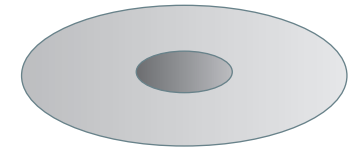




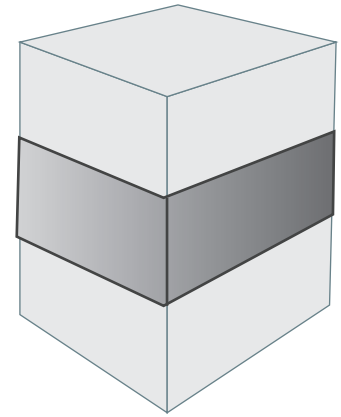
Orientation	Atrium East- West
Obstructions	SE Adjacent

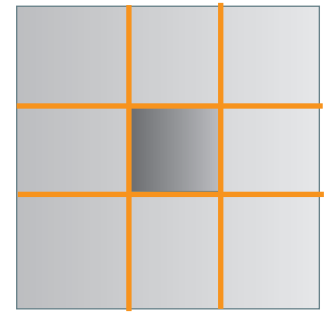


Massing (type)

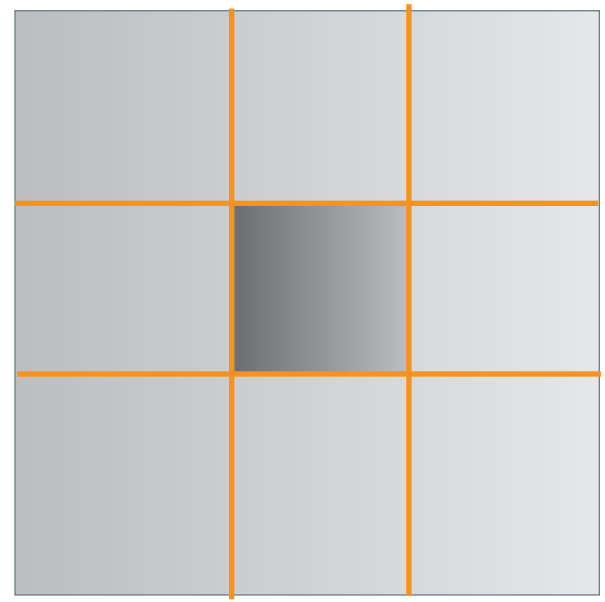







Zone: Floor Level

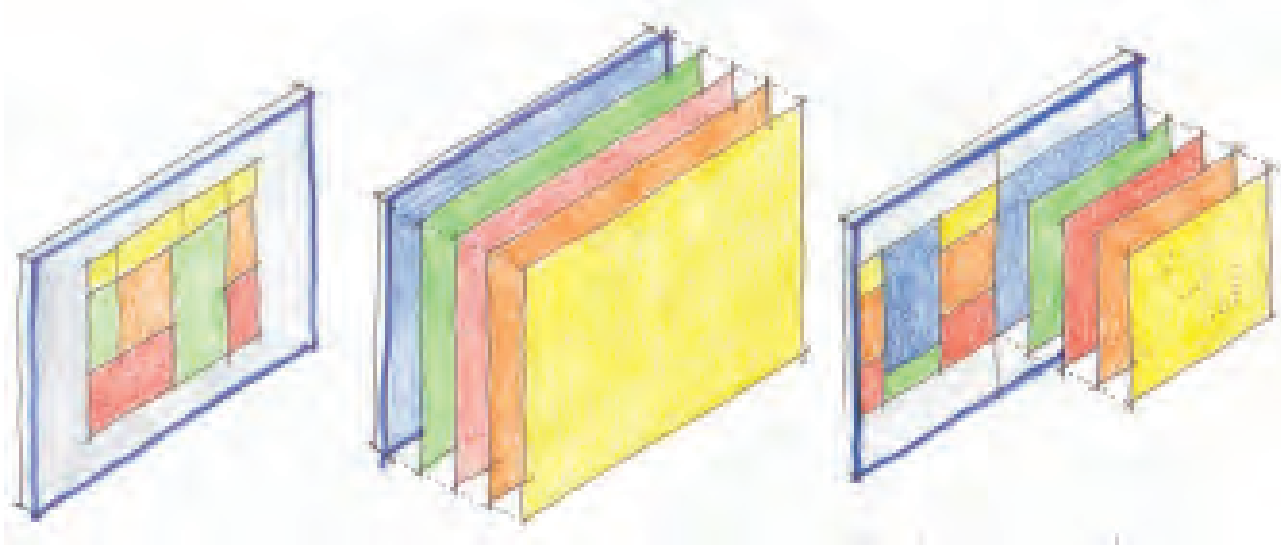




Zone: Room Level



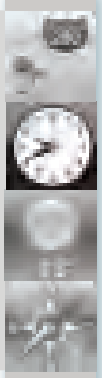
Facade (type)



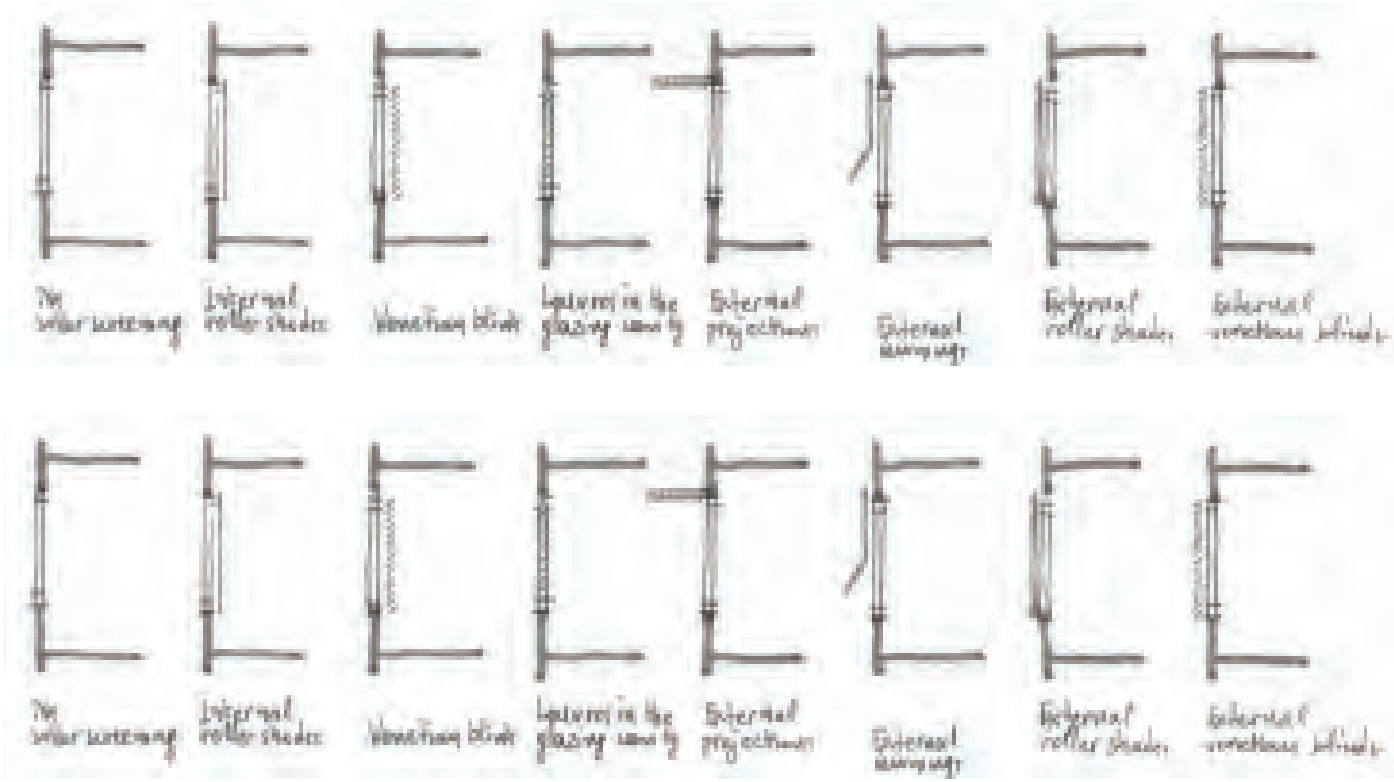
Single Skin

Double Skin

Combined Concept



Glazing (type)



Shading (type)

ENVIRONMENTAL VARIABLES

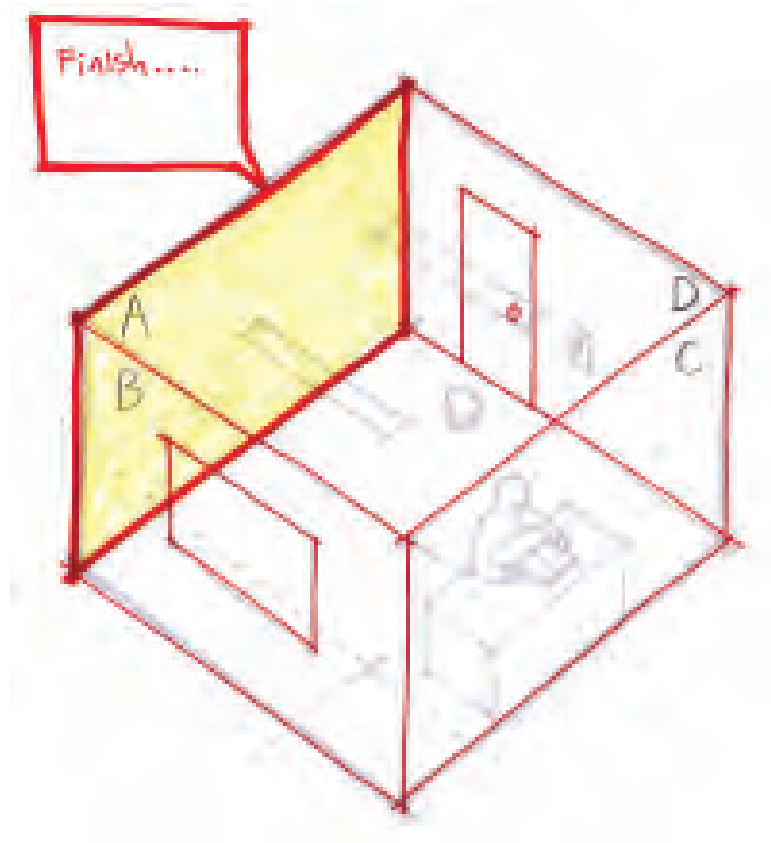
GEOMETRY

FENESTRATIONV

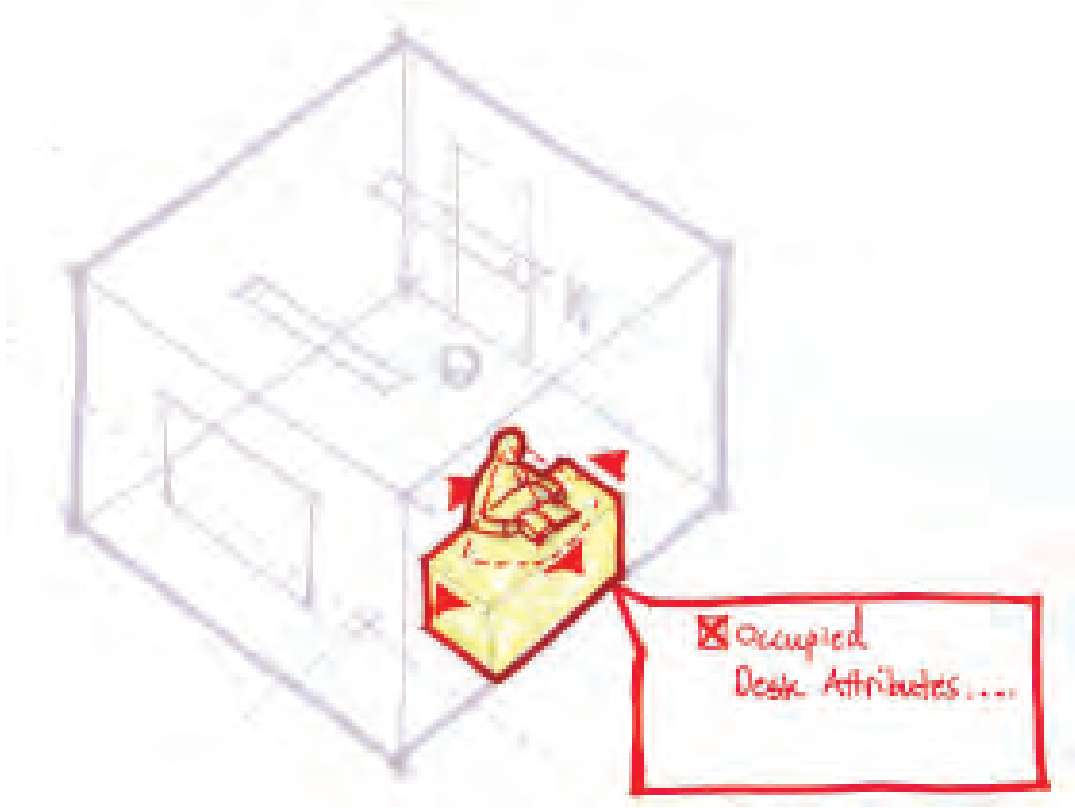
INTERIOR

INTEGRATION

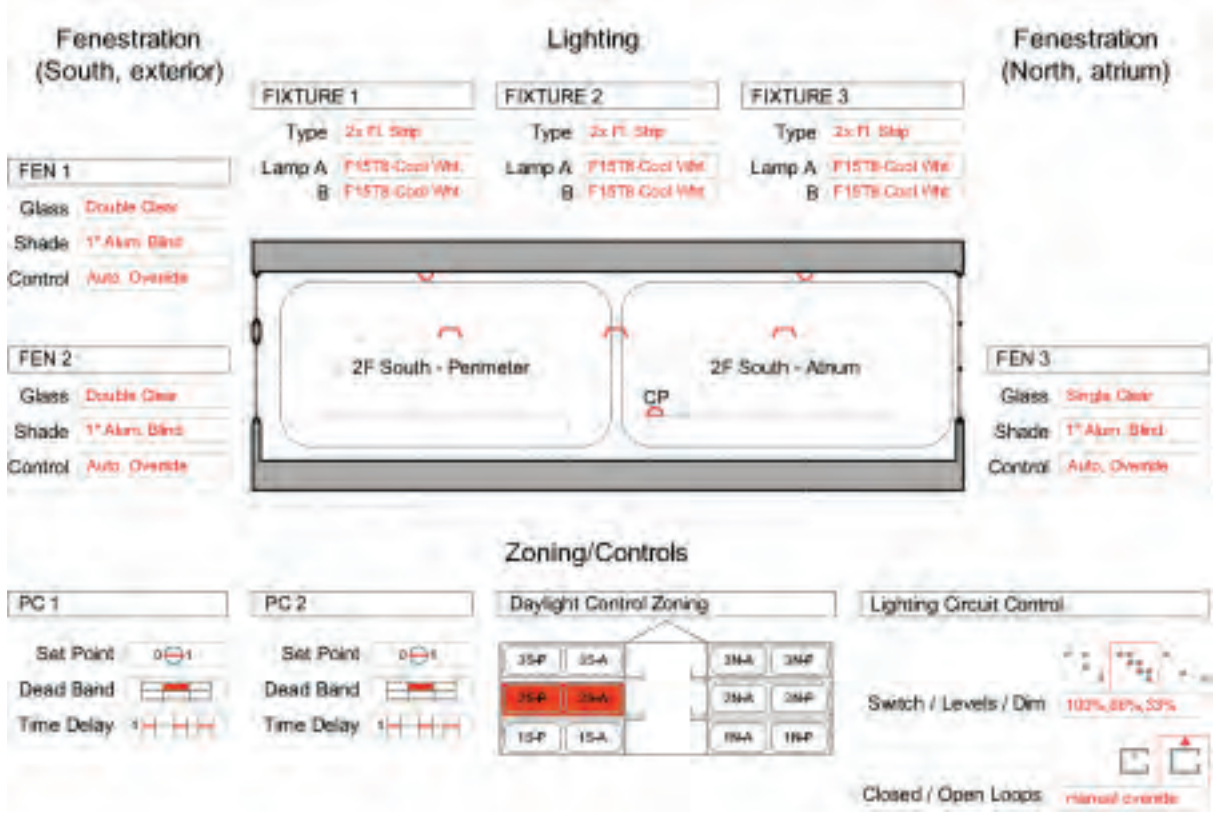
Walls / Partitions

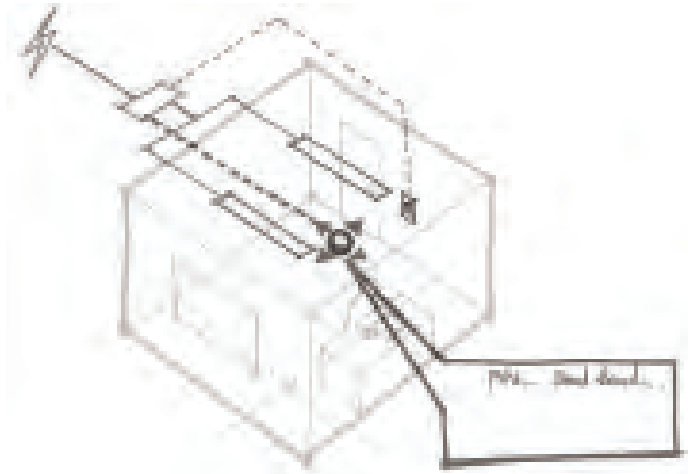


Surfaces / Materials



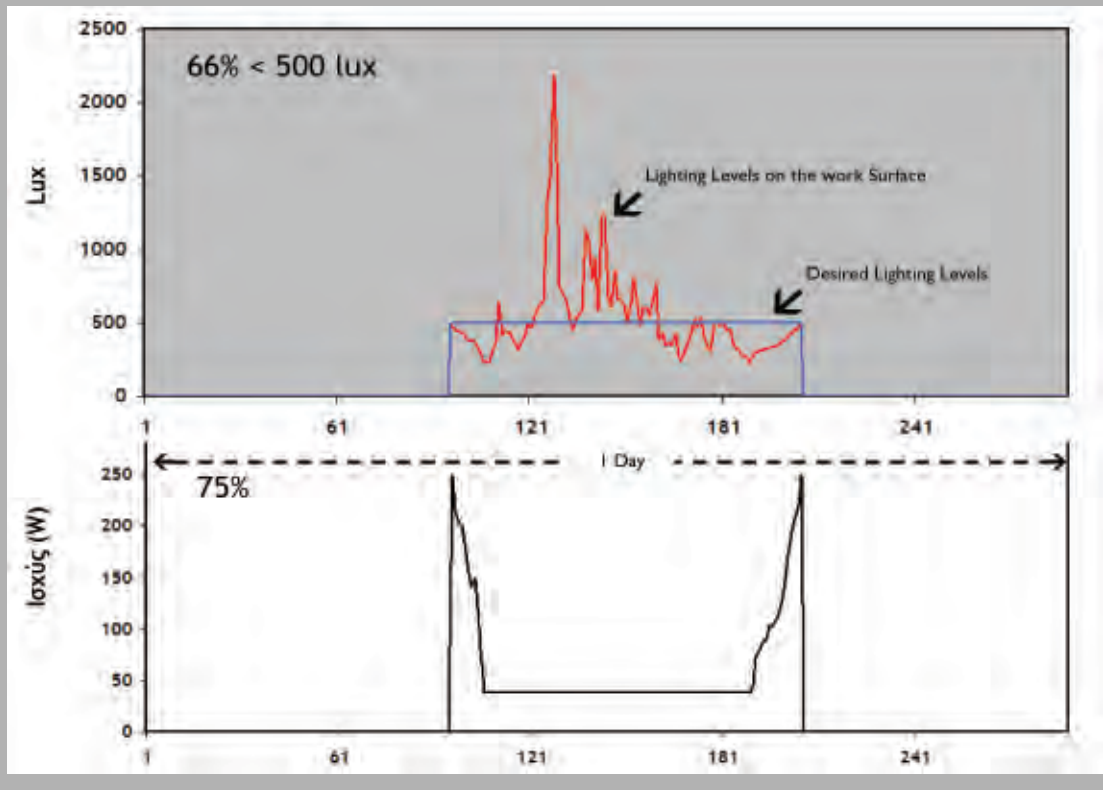
Furniture (type)





Sensors & Lights

OUTPUTS



Related Systems & Controls