Building Sciences (and Digital Printing) Lab

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Date 25 February 2024

Introduction

Design process is the outcome a process of learning starting from theory then experiment and finally design. The experiment includes both testing and measuring physical parameters and model making model at different scale and level of details.

Striving to improve the quality of education by including experimental dimension to our courses, labs facility helps to put into experiment some the theoretical knowledge into practical experience.

The Department of Architecture and Urban Planning is fully facilitated with all required space and equipment to support the students during their five years of study with knowledge and skill to meet professional standards. DAUP has five design studios, building sciences Lab, Model making workshop and one library. All these facilities are located in section B of Engineering College, H07 except the CADD lab which is in section C

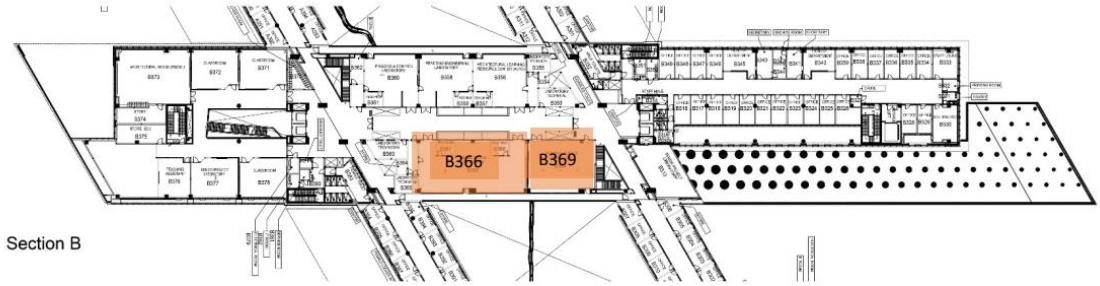
BUILDING SCIENCES AND DIGITAL PRINTING LAB

The first steps towards a reduction in a building's energy consumption lie in the architectural design. Energy efficient building designers combine time tested passive solar, or artificial conditioning, principles that work with the onsite assets. Sunlight and solar heat, prevailing breezes, and the cool of the earth below a building, can provide daylighting and stable indoor temperatures with minimum mechanical means.

Building Science and Digital Printing Lab This lab is equipped with digital printers on one side and environmental equipment and tools on the other side. The Digital Printing Laboratory contains A3 printers, A1 plotters, and A0 Plotters. DAUP students can print the assignments and design projects using different paper sizes, free of charge. The building science lab is to support the teaching in design studios of climatic design, environmental control, climatic adaptation, and technology intergradation. Sophisticated 3D computer simulation tools are available to model how a building will perform for a range of design variables such as building orientation, wall, window and door type/placement, overhang depth, insulation type and values of the building elements, air tightness, and local climate

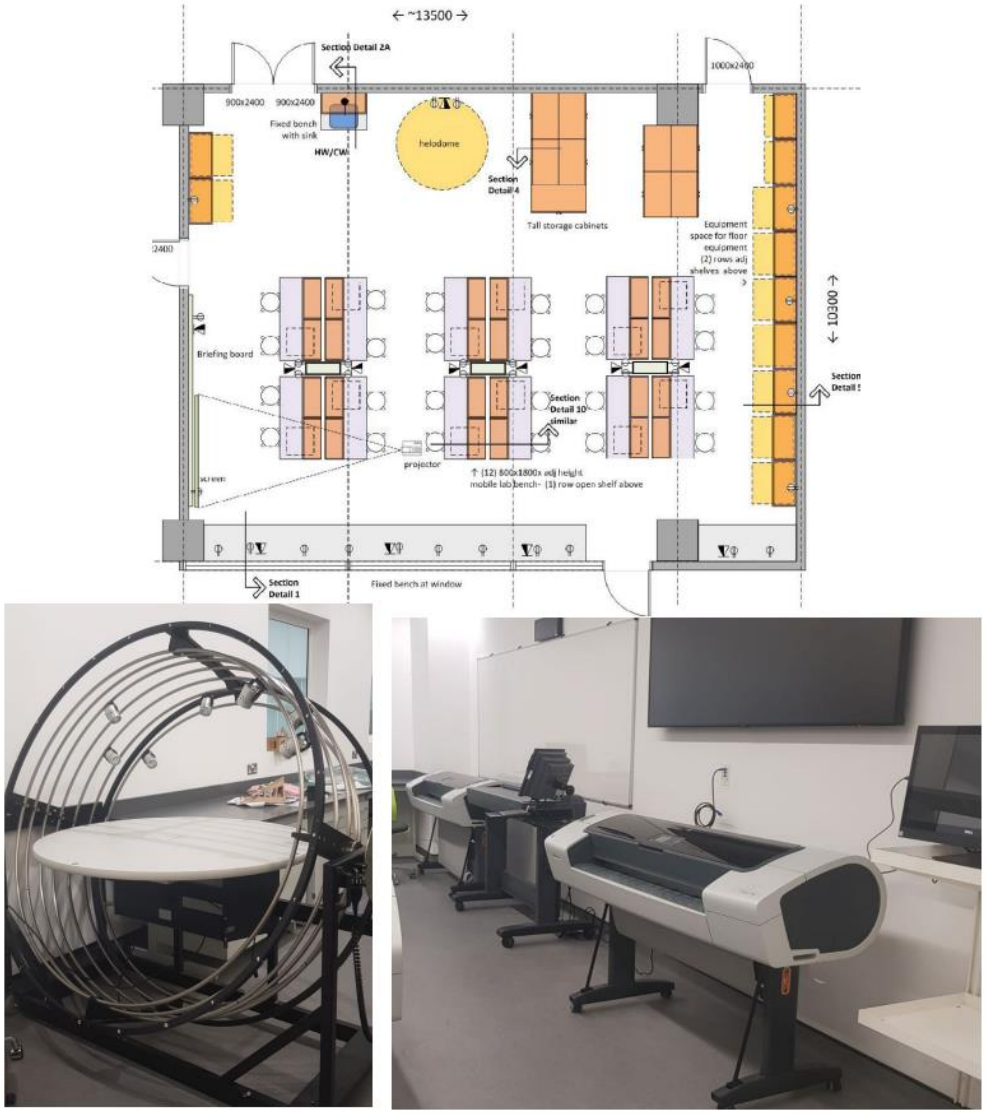
1.2 BUILDING SCIENCES LAB'S LOCATION AND EQUIPMENT

The location of the labs are as shown in the floor plan, H07



Second Floor, H07-Section B

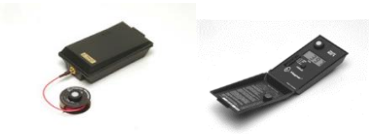
1. Model-making Workshop (B369) 2. Building Science Lab (B369)



Building Science an digital printing lab (H07-B369)

Table 1: Equipments of the Building Sciences lab.

1. Heliodon: Heliodon is a device used to simulate the sun and shadow patterns that occur at various locations and times across the surface of the earth. Scale models of objects or environments placed on the Heliodon devices will experience the same sun and shadow patterns as their full scale counterparts.	
2. Foldio 360: Foldio360 is a smart turntable that allows you to create high-quality 360° photos easily.	
3. Kestrel 4200 Pocket Air Flow Tracker: The Kestrel 4200 is a comprehensive HVAC-specific instrument. It measures EVERY major environmental condition easily, accurately and right in the palm of your hand, but also automatically calculates Volume Air Flow (CFM) and Humidity Ratio (grains).	
4. The Kestrel 4500 Pocket Weather Tracker is Kestrel's flagship meter Capable of monitoring and reporting an exhaustive list of environmental parameters – from temperature to barometric pressure, dewpoint, wind chill.	
5. The Hagner S4 Universal Photometer is a precision instrument for measuring luminance (measuring angle 1°)and illuminance, in the field as well as in the laboratory, over a range of 0.01 - 199,900 cd/m² and lux, respectively. It can also be used for the determination of a number of photometric quantities. The full range of Hagner Special Detectors as well as several accessories can be used with the S4. When measuring luminance, the area measured is seen through an optical viewing system. Illuminance is measured by means of a cable connected detector	

6. The Hagner Digital Luxmeter is a small, handy and extremely easy-to-use instrument for accurate measurement of illuminance over a range of 0.1-200,000 lux. With both automatic zeroing and on/off switch, the only controls needed are a four-position range selection switch and a hold button for retaining the display value.	
7. Infrared IR thermography is to detect moisture, and energy waste in building. A Thermal imager shows precisely the problem locations are allowing to diagnose energy loss areas. Insufficient or poor insulation, building envelope leaks, moisture, and substandard building practices. An IR camera can allow to quickly find out where your building's energy efficiency is in need if improvement.	

1.3 DIGITAL PRINTING LAB'S LOCATION AND EQUIPMENT

The location of the labs are as shown in the floor plan as above i.e. H07-B369. Students take an appointment with the technician prior to printing the work.

Table 2: Equipment's of the digital printing lab.

1. HP DesignJet T120 (3units) The HP DesignJet T120 is a wide-format color printer that can print diagrams and photos at up to D size (24 inches wide), and supports printing from rolls or cut sheets. The printer can either sit on a table, or with an optional stand	
2. HP DesignJet 4520 Scanner (1 unit). The HP Designjet 4520 Scanner to create scans that have a level of detail that is comparable to the originals. With a resolution of **508 dpi optical and up to 9600 dpi** enhanced from three CCD cameras, and a 0.1 percent line accuracy, your scanned files are indistinguishable from new output, and reproduce the original documents precisely	

3. HP DesignJet T1120 (2 units)
4. HP DesignJet T1200 (1 unit)

The **HP Designjet** is a printer series designed for professional CAD printing in demanding workgroups The HP Designjet T1200 and T1120 printers' series **produces exacting detail with 0.0008 inch (0.02 mm) minimum line width, and highly accurate drawings with 0.1% line accuracy**. This printer provides secure connectivity with built-in Gigabit Ethernet networking and secure IPsec and IPv6.

- **Paper Sizes**:
  - Roll Width: up to 1118 mm and Roll Length: Up to 91.4 m.