



भारतीय प्रौद्योगिकी संस्थान इन्दौर
Indian Institute of Technology Indore

Minutes of joint 44th meeting of the Finance Committee and 48th Meeting of the Board of Governors held at 10.00 hrs (Monday) on January 23, 2023 in the Board Room, Abhinandan Bhavan.

Present:

1. Professor Deepak B. Phatak Chairperson, FC and BoG
Professor Emeritus, Department of CSE, IIT Bombay
(Through Online)
2. Professor Suhas S. Joshi Member (*ex-officio*) FC and BoG
Director, IIT Indore
3. Shri Sanjog Kapoor Member, FC
JSFA (IFD), MoE, New Delhi
(Comments received vide e-mail Dated: 20.01.2023
Appendix-I)
4. Professor Umakant Dash Member, FC
Director, Institute of Rural Management (IRMA), Anand
(Through Online)
5. Professor Neelesh Kumar Jain Member, FC
Department of Mechanical Engineering, IIT Indore
6. Shri. Manu Srivastava Member, BoG
Principle Secretary (TE), Bhopal
(Through: Online)
7. Prof. Yogesh M. Joshi Member, BoG
Department of Chemical Engineering, IIT Kanpur
(Through: Online)
8. Prof. Dhananjay V. Bhatt Member, BoG
Prof. (Retd.) & Chairman CCE,
S. V. National Institute of Technology, Surat
(Through: Online)
9. Prof. Manish Kumar Goyal Special Invitee (For FC and BoG)
Dean, Infrastructure Development, IIT Indore



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| 10. Prof. Devendra Deshmukh
Dean, Academic Affairs, IIT Indore
(Through Online) | Special Invitee (For FC and
BoG) |
| 11. Mr. Pradeep Agarwal
Joint Registrar (Finance and Accounts and
ACR), IIT Indore | Special Invitee (For FC and
BoG) |
| 12. Mr. Atul Kumar Pandey
Project In-charge, IIT Indore | Special Invitee for FC |
| 13. Mr. S. P. Hota
Registrar, IIT Indore | Secretary, FC and BoG |

Leave of absence:

- | | |
|---|--------------------|
| 1. Shri. Rakesh Ranjan
Additional Secretary (TE), MoE, New Delhi | Member, FC and BoG |
| 2. Mr. Manoj Kohli
Executive Chairman,
SB Energy (Soft Bank Group), New Delhi | Member, BoG |

Agenda items of 44th meeting of the Finance Committee

1	Welcome and opening remarks by the Chairman, Finance Committee and Board of Governors, IIT Indore.
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Chairperson welcomed all the members and permitted to initiate the meeting as per the agenda after verifying the required quorum.

44.1:	To consider Setup a Makerspace Laboratory at Central Workshop.
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Comments from MOE (IFD): "Institute is still in project mode, not yet furnished 'Project Completion Certificate'. May be considered after coming out of the project mode, as this was not part of the approved DPRs."



The Board of Governors considered the details presented before it during the meeting which covers the following facts:

1. Makerspace is a course that promotes synthesis and imparting interdisciplinary hands-on knowledge and experience to all students as per the mandate of NEP 2020.
2. It is set of laboratories, electronics, mechanical and integration that will be developed by creating partitions in the existing workshop space of the Institute.

Why makerspace course and laboratories:

- Present real-world problems are multi-disciplinary in nature and there is a need to prepare students with globally relevant training.
- The Alumni feedback of different IITs emphasizes the need of incorporating the hands-on approach to the main curriculum.
- Missing link between the current academic activities and Entrepreneurship
- The age-old course on *Engineering Drawing and Workshop* has become defunct and needs modernization.
- The Maker Space course could be the most suitable alternative.
- Allow the students to come up with a prototype or product at the end of the course.
- Promotes project-based learning and thus bring more seriousness to the learning process.
- A Makerspace is a collaborative workspace for promoting synthesis-based learning where the learners apply concepts, they learned in the class to create a prototype and product.

It was noted that no new building is to be constructed for this Maker space lab. Existing workshop building itself is proposed to be used with the necessary partitions, furniture and equipment. Thus, this activity is well within the current approved DPR.

Members suggested the followings:

- (i) The concept of Maker's Space imparting multidisciplinary hands-on training to the students is important and is the right approach.
- (ii) The equipment list should be extended by incorporating a few multiple machines of the basic category.
- (iii) The Robotic and Bio labs added in the layout should be separated from the existing layout.
- (iv) It was also advised that the newly developed Global Skill Park at Bhopal can be visited to get some inputs to make the Maker's Space more comprehensive and relevant.

Detailed presentation is placed as Appendix-II

The FC appreciated the proposal in its totality and recommended to the Board to consider for an amount of Rs. 5.30 Crores.

44.2:	Any other agenda with the permission of Chair.
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NIL



Taking up the agenda items for the 48th meeting of the Board of Governors

48.1	To consider the recommendations of the 44 th meeting of the Finance Committee to be held on January 23, 2023.
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1. FC/44.1: To consider Setup a Makerspace Laboratory at Central Workshop.

Based on the deliberations, the Board considered the recommendation of the FC and approved the proposal. It also advised that the Institute to send the project closure report to the Ministry as soon as possible.

48.2	Any other item with permission of the Chair.
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NIL

The meeting ended with a vote of thanks to the Chair.


30.01.2023.

(Professor Suhas S. Joshi)
Director, IIT Indore



(S. P. Hota)
Registrar and Secretary,
Finance Committee and
BoG of Governors IIT Indore

Deepak
Bhaskar
Phatak

Digitally signed by
Deepak Bhaskar Phatak
Date: 2023.01.31
23:24:10 +05'30'

(Professor Deepak B. Phatak)
Chairperson, Finance Committee and BoG of Governors
IIT Indore



The genesis for Makerspace Course

Genesis for Makerspace as a course

- NEP 2020 advocates offering interdisciplinary hands-on knowledge and experience to all students.
- A Makerspace is a collaborative work-space for promoting synthesis-based learning where the learners apply concepts, they learned in the class to create a prototype and product.

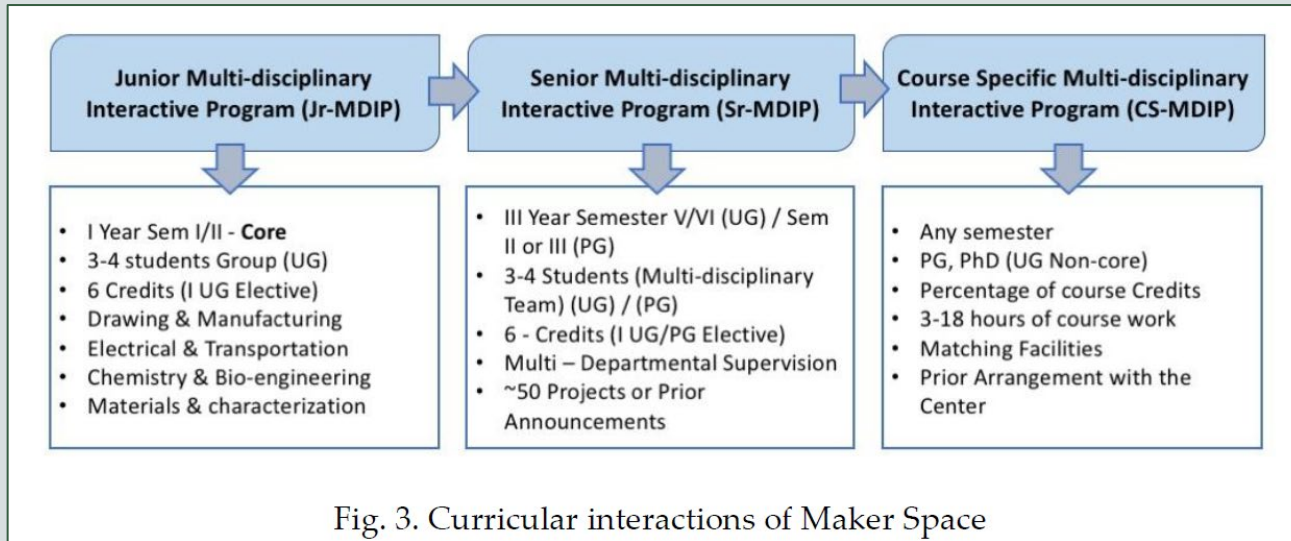
Genesis for Makerspace as a course

- **Makerspaces** foster innovation through **hands-on experimentation**
- Present real-world problems are **multi-disciplinary** in nature and there is a need to prepare students with **globally relevant training**
- The Alumni feedback of different IITs emphasizes the need of incorporating the **hands-on approach** to the main curriculum
- Missing link between the **current academic activities** and **Entrepreneurship**
- The age-old **course on *Engineering Drawing and Workshop*** has become defunct and needs modernization.
- The Maker Space course could be the most suitable alternative.

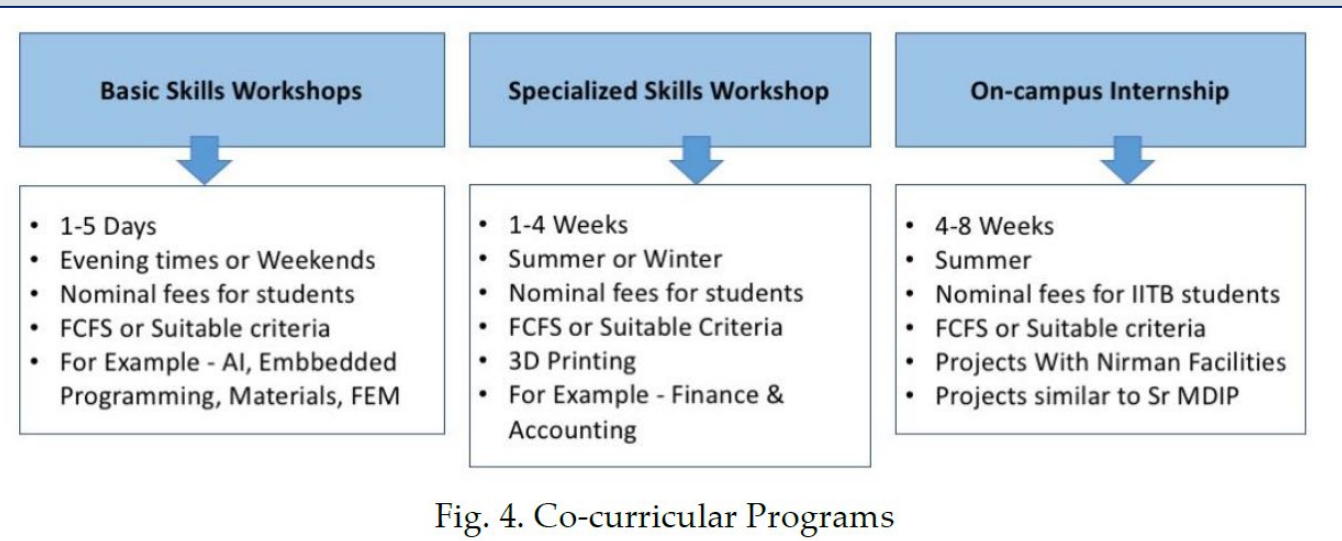
Genesis for Makerspace as a course

- Allow the students to come up with a **prototype or product** at the end of the course
- Promote **project-based** learning and thus bring more seriousness to the learning process

Overview of Makerspace activities



- Curricular
 - Mandatory 1st year UG course
 - Elective courses in the subsequent years for both UG and PG students
 - Offering multidisciplinary projects



- Co-Curricular
 - Organizing basic-skill development workshops for the UG and PG students of nearby colleges
 - Provide summer and winter internships to the students

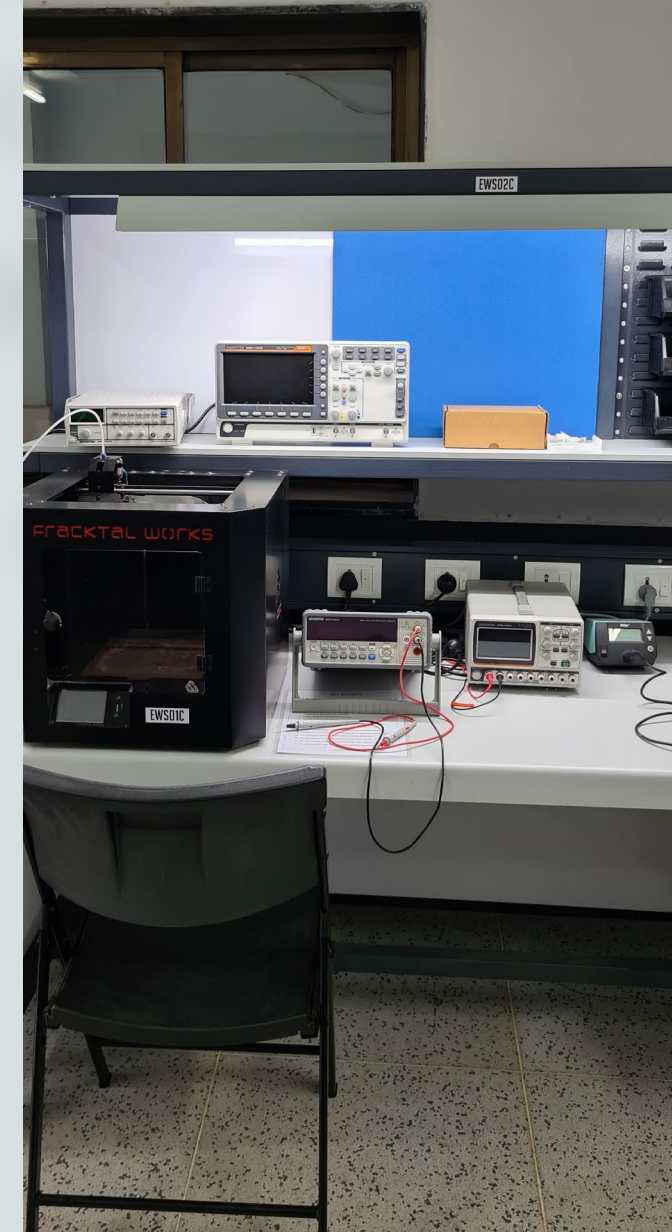
Proposed Makerspace facilities

Workbenches

Mechanical Work bench



Electronic work bench



Single jet 3D printer



Model printed from it



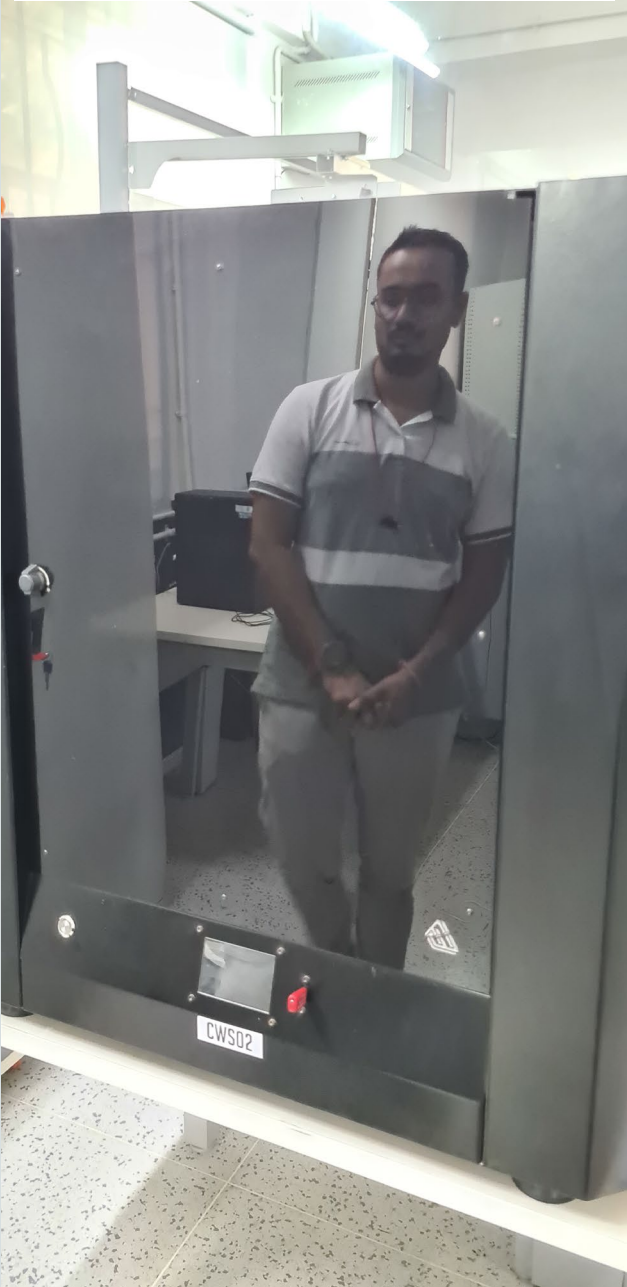
Vinyl printing machine



Models made of VPM



Dual jet nozzle 3D printer



Model printed from it



3D scanner



Sewing machine



Vacuum forming machine



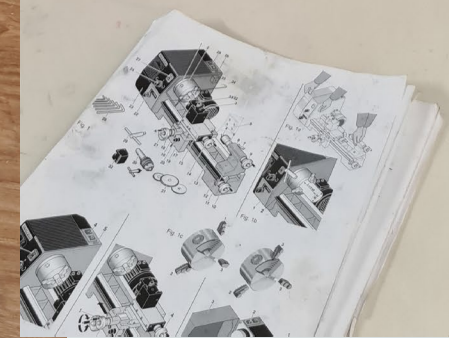
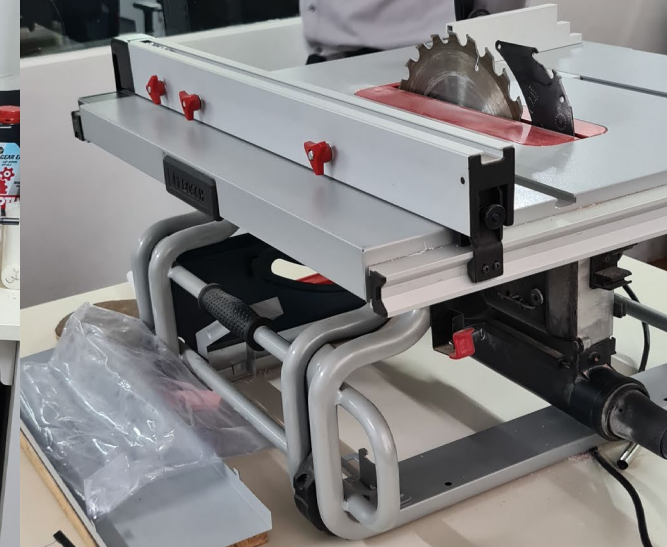
Storage set for pools



Lathe machine



Tabletop saw



Grinding machine



DREMEL



Milling machine



Manual Milling machine



Electronic work bench



Makerspace teaching laboratory @IITB



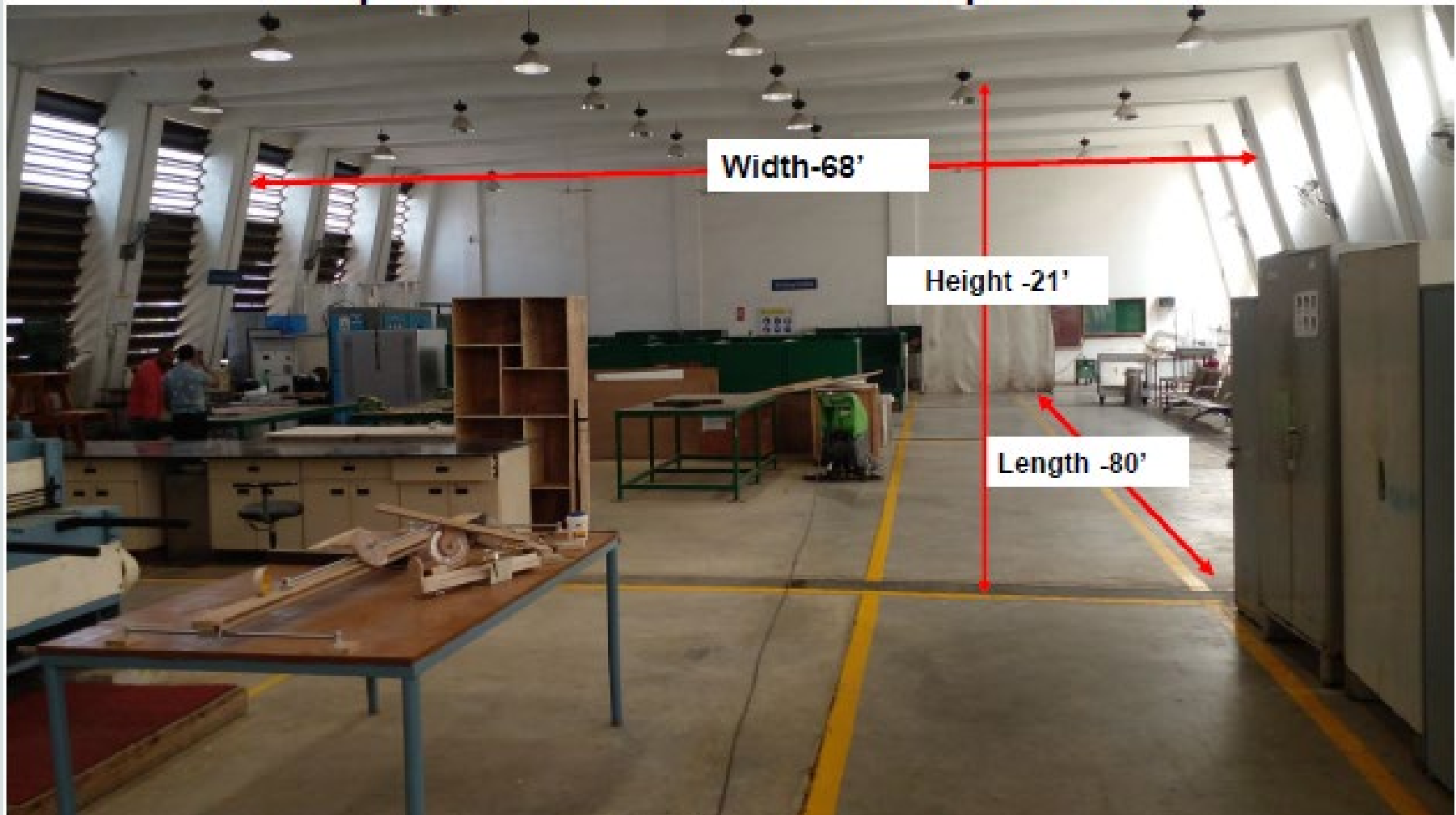
Makerspace team @ IIT Indore

Eswara Prasad Korimilli (MEMS), Dan Sathiaraj (ME), Vijay A S (EE), Gourab Sil (CE), Ayan Mondal (CSE), Onkar Game (Physics), Ashish Kumar Rajak (ME), Jayaprakash Murugesan (MEMS), Manoneeta Chakraborty (AASE), Pravarthana Dhanapal (Chemistry), Sumit Gautam (EE), Sunil Kumar Boda (BSBE), Anand Petare (Central Workshop)

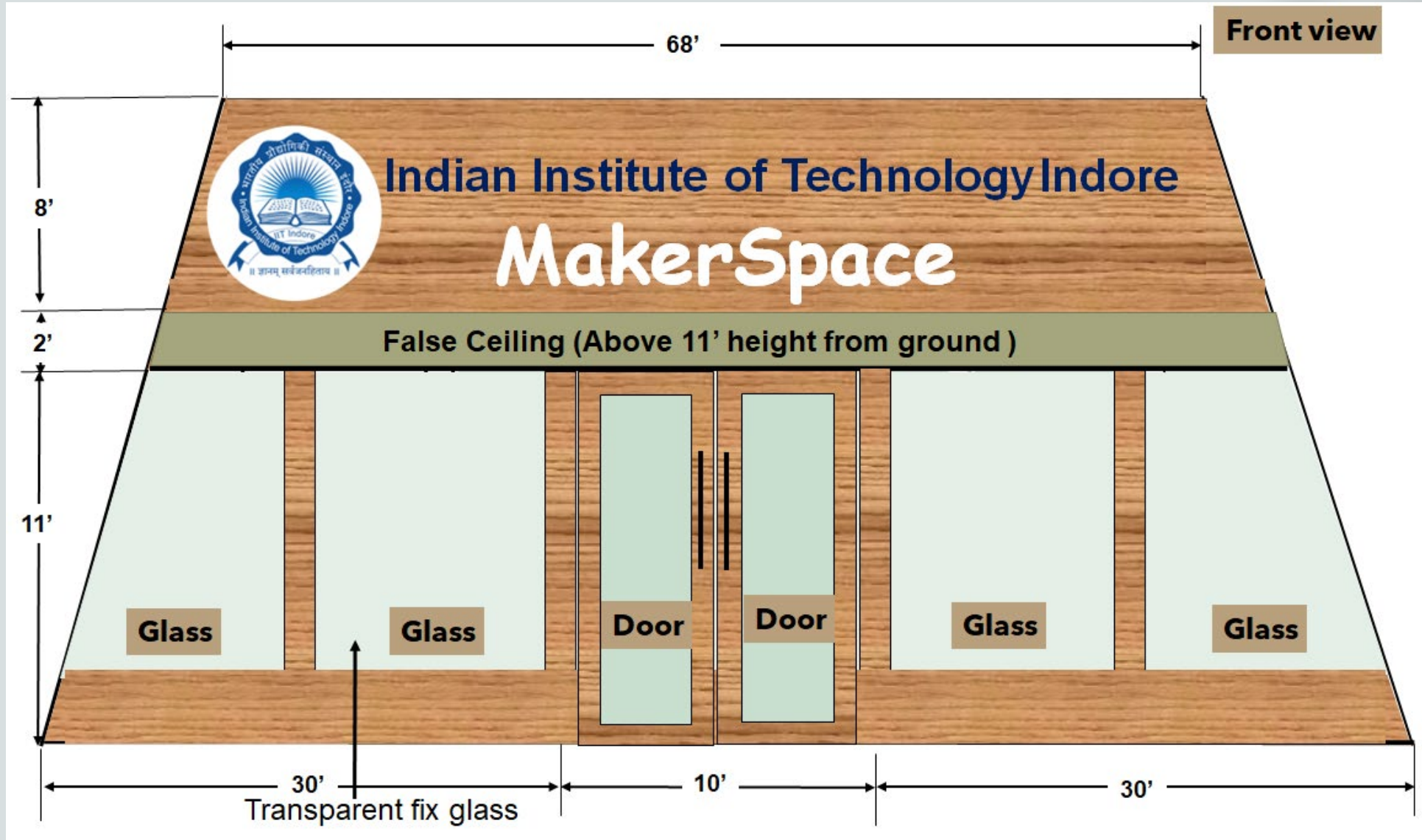
Thematic labs that students exposed to..

- Design and Manufacturing
- Systems & Circuits
- Robotics and Drones
- Materials & Chemistry
- Biosystems lab
- Safety & Risk assessment
- Product integration and Assembly lab

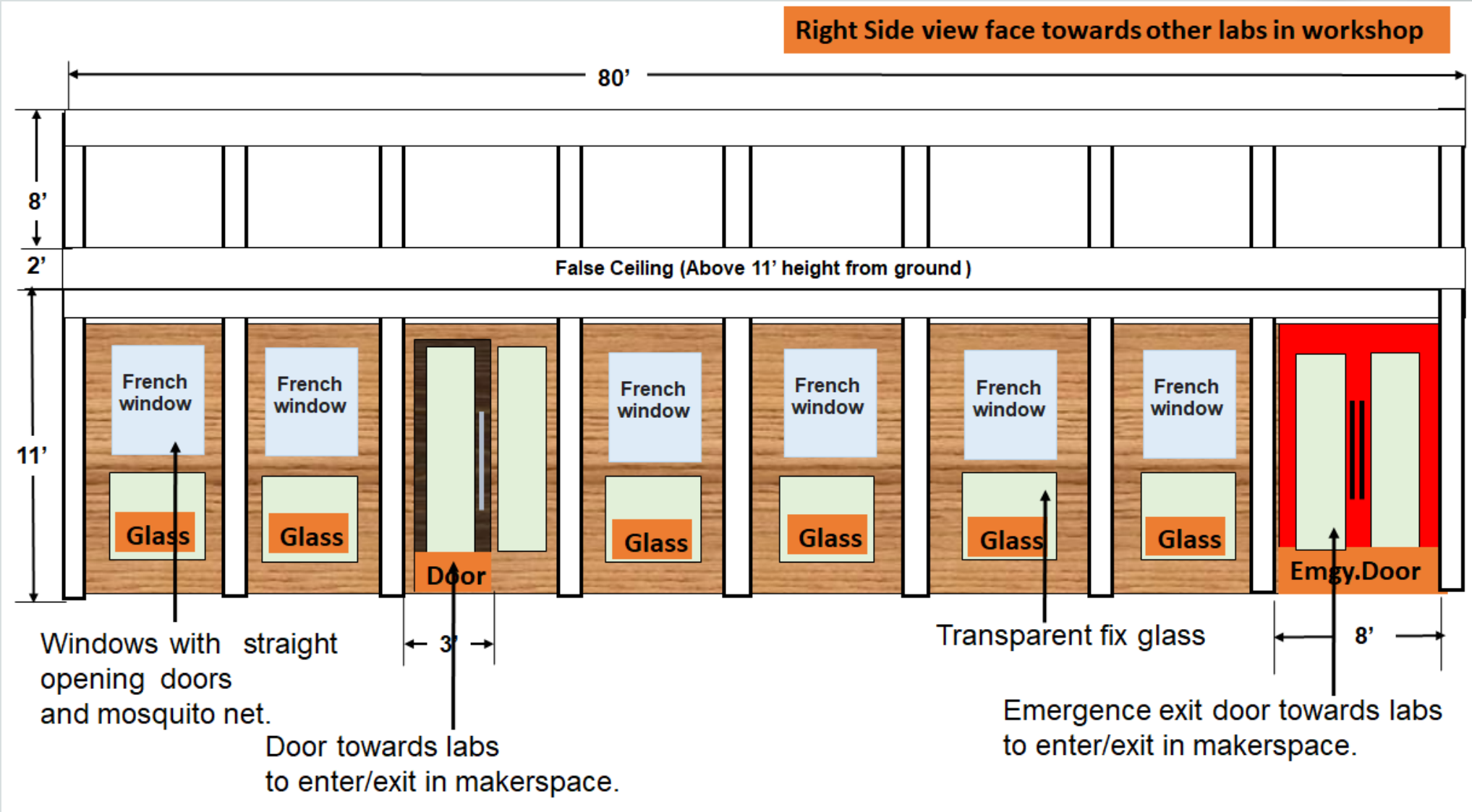
Proposed site for the lab



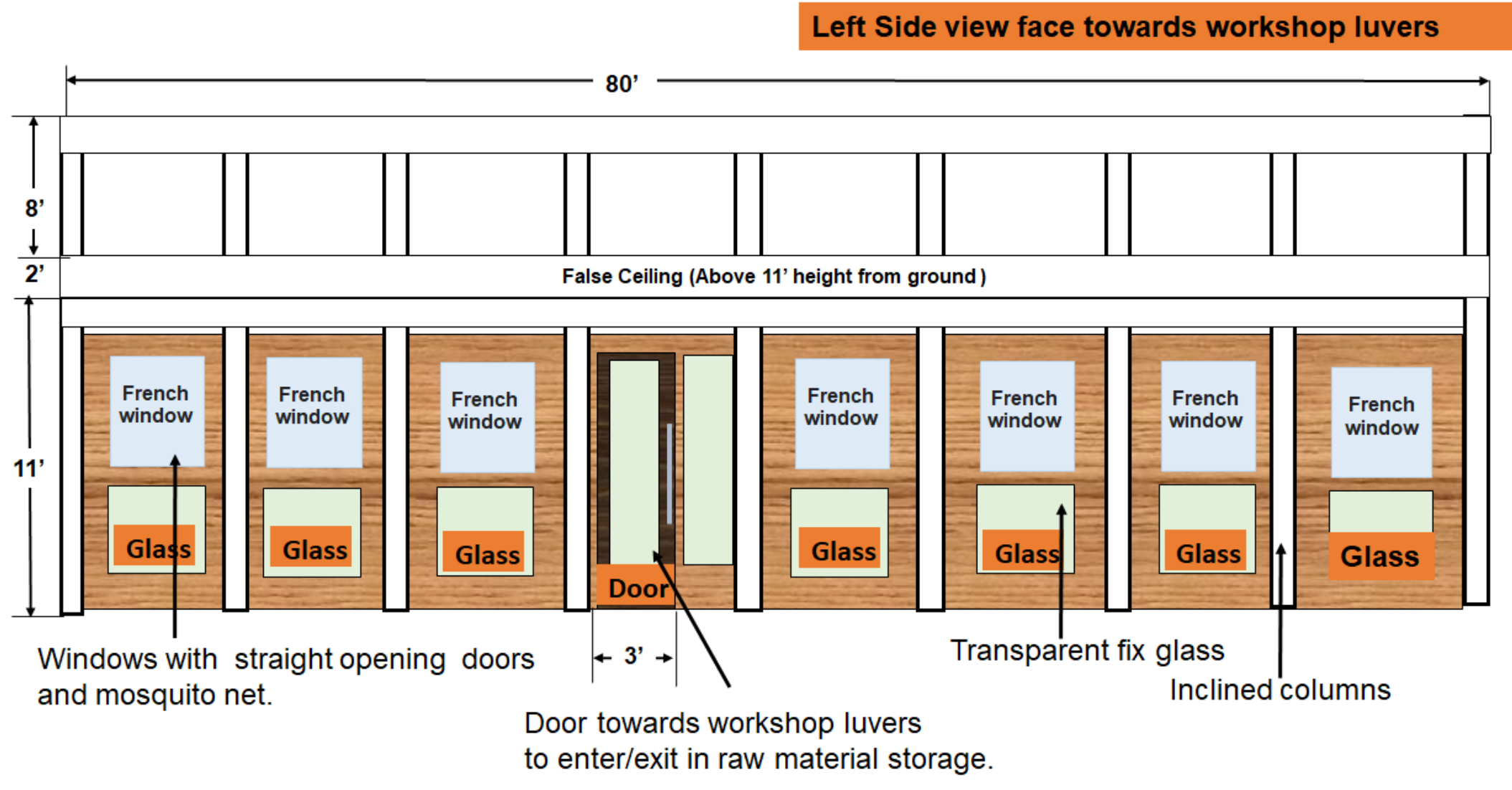
Proposed outlook from workshop entry: Front view



Proposed outlook: Right side-view from the entrance

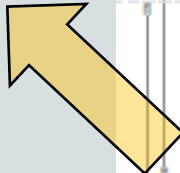
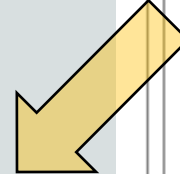


Proposed outlook: Left side-view from the entrance

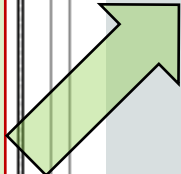
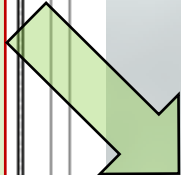


Internal Layout

Mechanical



Electrical + Electronics



Cost summary (Revised)

S. No	Domain	Details	Tentative cost
Equipment			
1	Electrical	Desktop Milling Machine, PCB Printing Machine, Single Nozzle 3D Printer, Soldering Station, Soldering Station, Table Top Multimeter, Digital Oscilloscope 100mhz, Power supply, Desktop i7 computers, Computerised Sewing Machine etc.,	1,86,73,471
	Mechanical	Dual nozzle 3D Printer, Laser cutting machine, Vinyl Printing & Cutting Machine, Desktop Milling Machine, 3D Scanner, Vacuum forming Machine, Lathe Machine – CNC, Milling Machine – CNC, CNC Router, Band Saw, Scroll Saw, Angle Grinder, Bench Grinder, Table saw, Hand drill, Cordless drill etc.,	
Internal infrastructure for labs + Human resource			
2	Electrical	Internal Infrastructure for the labs (Storage units, Workbenches, AV systems, Computer tables, furniture, etc.) + Human resource	1,76,09,848
	Mechanical	Internal Infrastructure for the labs (Storage units, Workbenches, AV systems,, Assembly and Disassembly tables etc., + Human resource	
3	Partition and other connections		1,67,25,700
	Final Total (INR)	Equipment + Internal Infrastructure + Human resource + Partition and other connections	5,30,09,019

Thank you

