Expansion of the

Faculty of Aerospace Engineering at the Technion

Naming Opportunities in the Future Aerospace Engineering Building

Architect's rendering of the future Faculty of Aerospace Building

TECHNION
Israel Institute of Technology

Technion Mt. Carmel campus

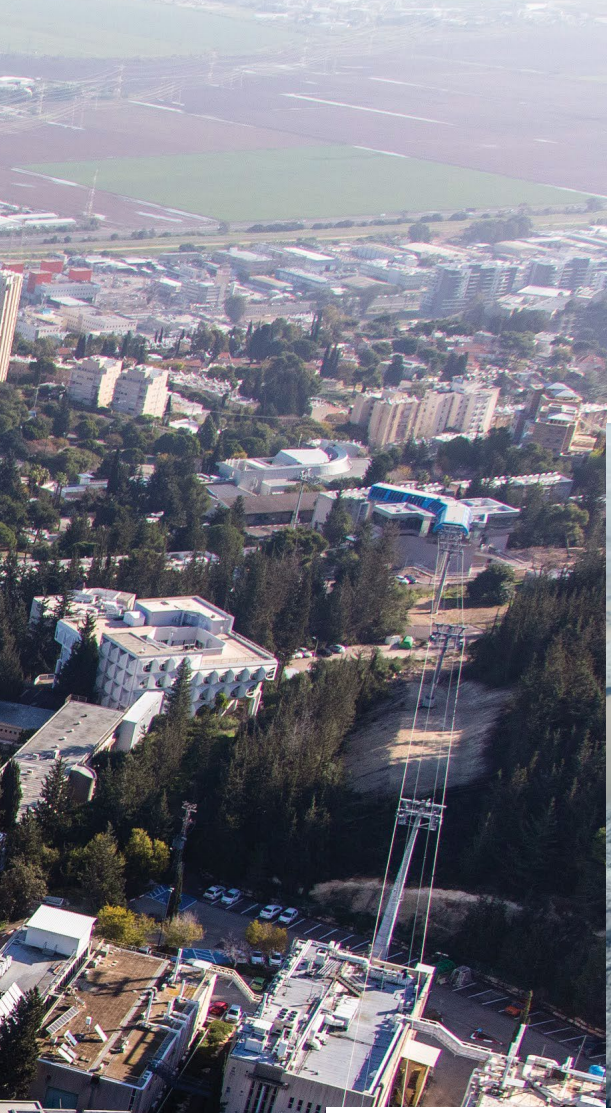


Photo courtesy NASA

The Faculty of Aerospace Engineering at the Technion is Israel's only school dedicated to research and education in aerospace sciences. Opened in 1954, the Faculty serves a strategic role, educating professionals in Israel's defense and commercial aviation industries, and developing technologies that maintain its position as a global aerospace market leader. Over the years, its graduates have contributed to Israel's defense programs (including Iron Dome), the national space program and more. As such, the Faculty is a national priority for Israel, and plays a critical and unmatched role in the country's long-term security and economic success.

The Faculty currently enrolls nearly 400 undergraduate and 150 graduate students (including 25 international graduate students), and employs 23 faculty members. Over the past five years, the Faculty's undergraduate student population has increased significantly, driven by the opportunities that an aerospace degree offers them, including a burgeoning aero and space-tech startup scene in Israel. At the graduate level, aerospace engineering students are studying applications of this discipline to medicine, biology and other fields.

Aerospace and related industries contribute at least $10 billion to Israel's GDP. For example, Israel Aerospace Industries (IAI) is a $4 billion company; the air and space businesses of Rafael Advanced Defense Systems and Elbit Systems are worth at least $2 billion each, as is El Al Airlines; additional players, including start-ups, comprise the remainder. The Israeli aerospace industry currently employs around 100,000 people—about three percent of the nation's workforce. Among the commercial industries it directly influences are commercial and aircraft manufacturing, UAVs, satellites, missiles and missile defense, and flight simulators; it also indirectly influences the advanced materials and alternative fuel industries, as well as safety systems, air traffic management, and digitization and 3D printing of components. International industry partners include GE, General Dynamics, Embraer, EADS, Boeing, BAE, Pratt & Whitney, Northrop Grumman, Lockheed Martin, Raytheon, NASA and the U.S. Department of Defense.

New Research Directions

Five emerging areas of application are projected to further increase demands on the Faculty of Aerospace Engineering: 1) autonomous aviation and future aircraft design; 2) microsatellites and nanosatellites; 3) high-speed, and in particular hypersonic, propulsion systems; 4) underwater vehicles and platforms; and 5) renewable and high-efficiency energy systems.

These emerging application domains are associated with Israel's industrial and defense needs in the coming decades. They encompass the fundamental research interests of the existing Faculty and branch out into a diverse range of cutting-edge applications. To contribute to these new technological developments, as well as to train and equip the next generation of students, the Faculty needs to undertake an extensive revitalization program, of which a significant component is additional infrastructure.

Infrastructure Requirements

Infrastructure poses the most significant challenge to the advancement of the Faculty of Aerospace Engineering. The Faculty's laboratories, workshops, offices and teaching facilities are outdated and deteriorating. They are unable to support its current research and teaching activities, let alone provide a foundation to implement the Faculty's vision for the emerging application domains that will propel the Faculty to an elite position within Israel and worldwide. The historic aerospace building has only four dedicated classrooms. Currently, classes are taught in these classrooms, in the auditorium and in the lower library level that was converted into a classroom. As space is insufficient to accommodate the nearly 400 undergraduate students, let alone projected increases in the student population, some classes are taught in the neighboring building (which is also in a run-down condition). The resulting travel between classrooms is far from ideal for both students and faculty members. Additionally, students lack appropriate study areas.

The Technion has implemented an ambitious strategic development plan to expand the Faculty of Aerospace Engineering from 23 to 32 faculty members. This growth of faculty will also require new infrastructure to accommodate the needs of current and new faculty and students.

The Future Aerospace Engineering Building

In response to the needs described above, the Technion is planning the construction of a new home for the Faculty of Aerospace Engineering. The new building will provide state-of-the-art facilities for faculty members and students, as well as all associated research, teaching and study activities. Designed by Tel Aviv-based Kimmel Eshkolot Architects, the impressive new building will be situated adjacent to the historical Aerospace Engineering building, the Aerospace Engineering laboratories and the Asher Space Research Institute on the Technion campus.

The new building will consist of five stories—a Lower Ground Floor (Research/Laboratory), Ground Floor (Student Learning), First Floor (Student Learning), Second Floor (Faculty/Research) and Third Floor (Faculty/Meeting)—that collectively contain a wide range of facilities, including offices, laboratories, conference rooms, classrooms, auditoriums, learning centers, faculty meeting room, Dean's office suite and more.

The striking visual appearance of the exterior and interior of the new building are evident in the images featured in this proposal.

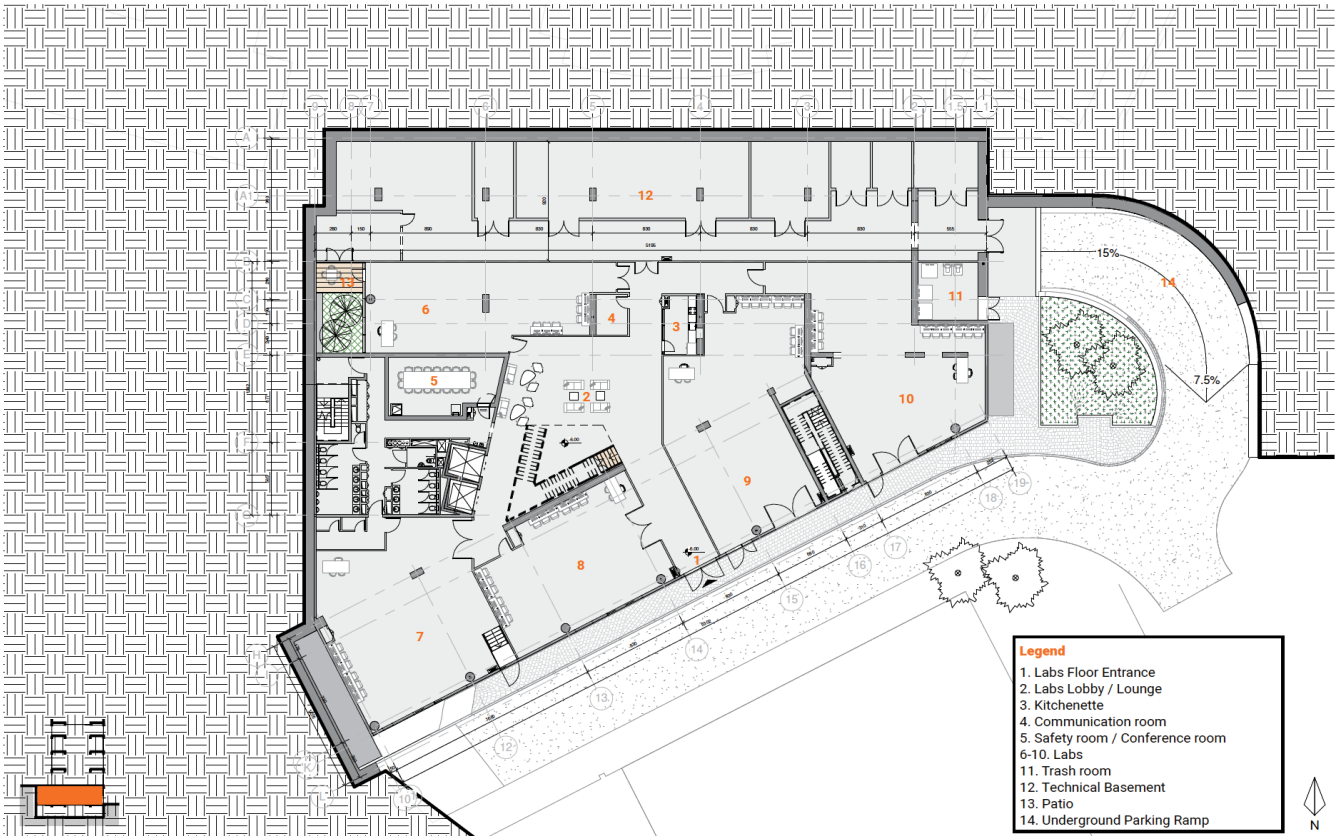
Naming Opportunities

The following naming opportunities are currently available for the new Aerospace Engineering building at the Technion. Floor plans for all of the floors appear after the list below.

Donor recognition will be in accordance with Technion standards.

Facility	Cost ($)	No.	Total ($)
The New Aerospace Engineering Building *(Gift to Name the Building)*	18,000,000	1	18,000,000
Lower Ground Floor *(Research/Laboratory)*	3,500,000	1	3,500,000
Laboratories	1,000,000	5	5,000,000
Lobby/Lounge	500,000	1	500,000
Conference Room	250,000	1	250,000
Ground Floor *(Student Learning)*	3,500,000	1	3,500,000
Main Entrance/Garden	1,000,000	1	1,000,000
Main Lobby/Lounge	1,000,000	1	1,000,000
Learning Centers	250,000	2	500,000
Conference Room	500,000	1	500,000
Auditorium Lounge	500,000	1	500,000
Auditorium/Classroom	500,000	1	500,000
Classrooms – large	500,000	3	1,500,000
Terrace	250,000	1	250,000
First Floor *(Student Learning)*	2,500,000	1	2,500,000
Faculty and Staff Offices	100,000	15	1,500,000
Conference Room	500,000	1	500,000
Learning Centers	500,000	2	1,000,000
Classrooms – small	250,000	3	750,000
Computer Class	500,000	1	500,000
Kitchenette	50,000	1	50,000
Open Terrace	250,000	1	250,000
Central *(Staircase)* Atrium	2,000,000	1	2,000,000

Facility	Cost ($)	No.	Total ($)
Second Floor *(Faculty Research)*	2,500,000	1	2,500,000
Faculty and Staff Offices	100,000	12	1,200,000
Computation Manager Office	200,000	1	200,000
Lounge	500,000	1	500,000
Kitchenette	50,000	1	50,000
Laboratories	1,000,000	2	2,000,000
Faculty Meeting Room	1,000,000	1	1,000,000
Dean's Office Suite	1,000,000	1	1,000,000
Open Terrace	250,000	1	250,000
Third Floor (Faculty/Meeting)	2,500,000	1	2,500,000
Faculty and Staff Offices	100,000	32	3,200,000
Conference Room	250,000	1	250,000
Kitchenette	50,000	1	50,000
Faculty Lounge	1,000,000	1	1,000,000
Open Lounge	1,000,000	1	1,000,000
Open Terrace	250,000	1	250,000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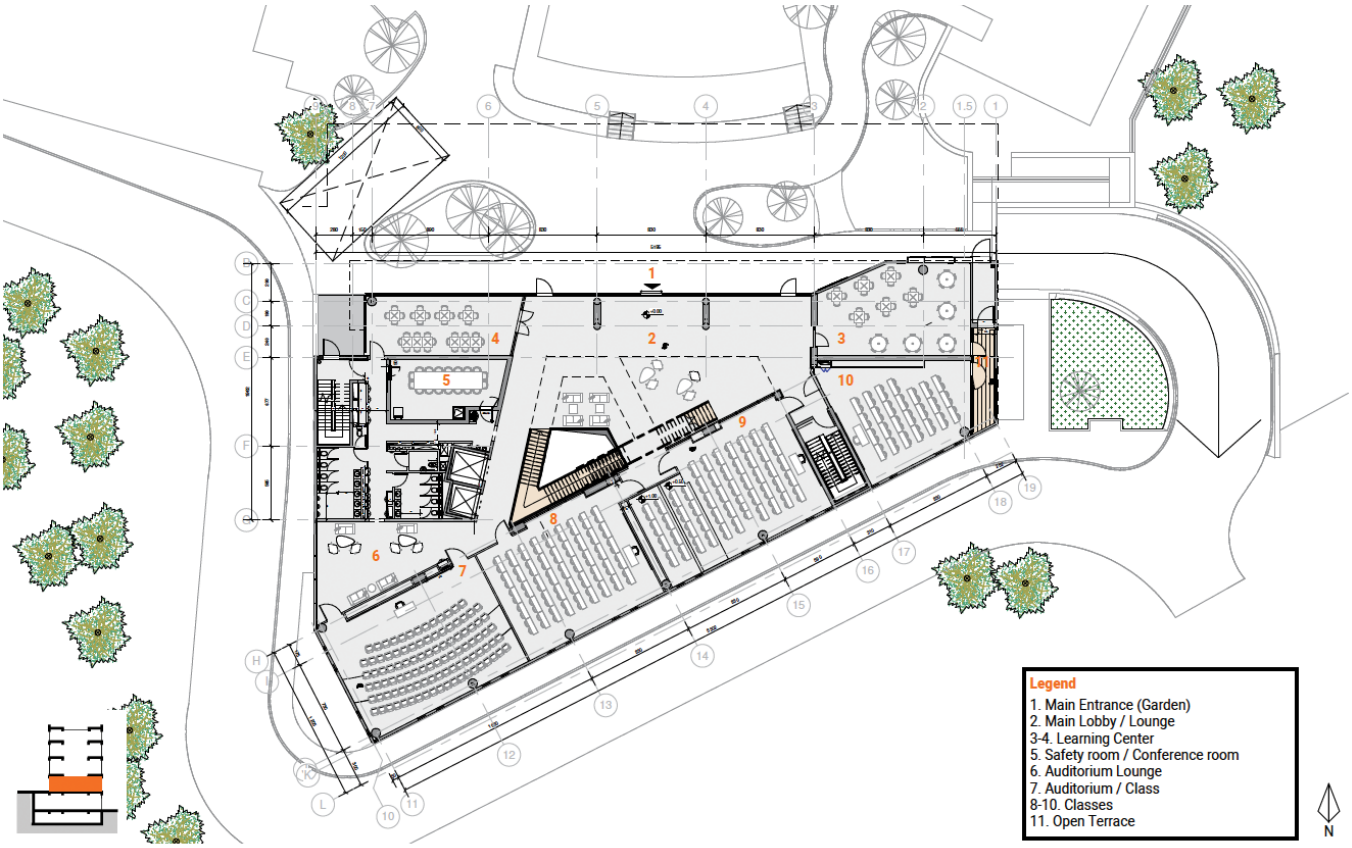
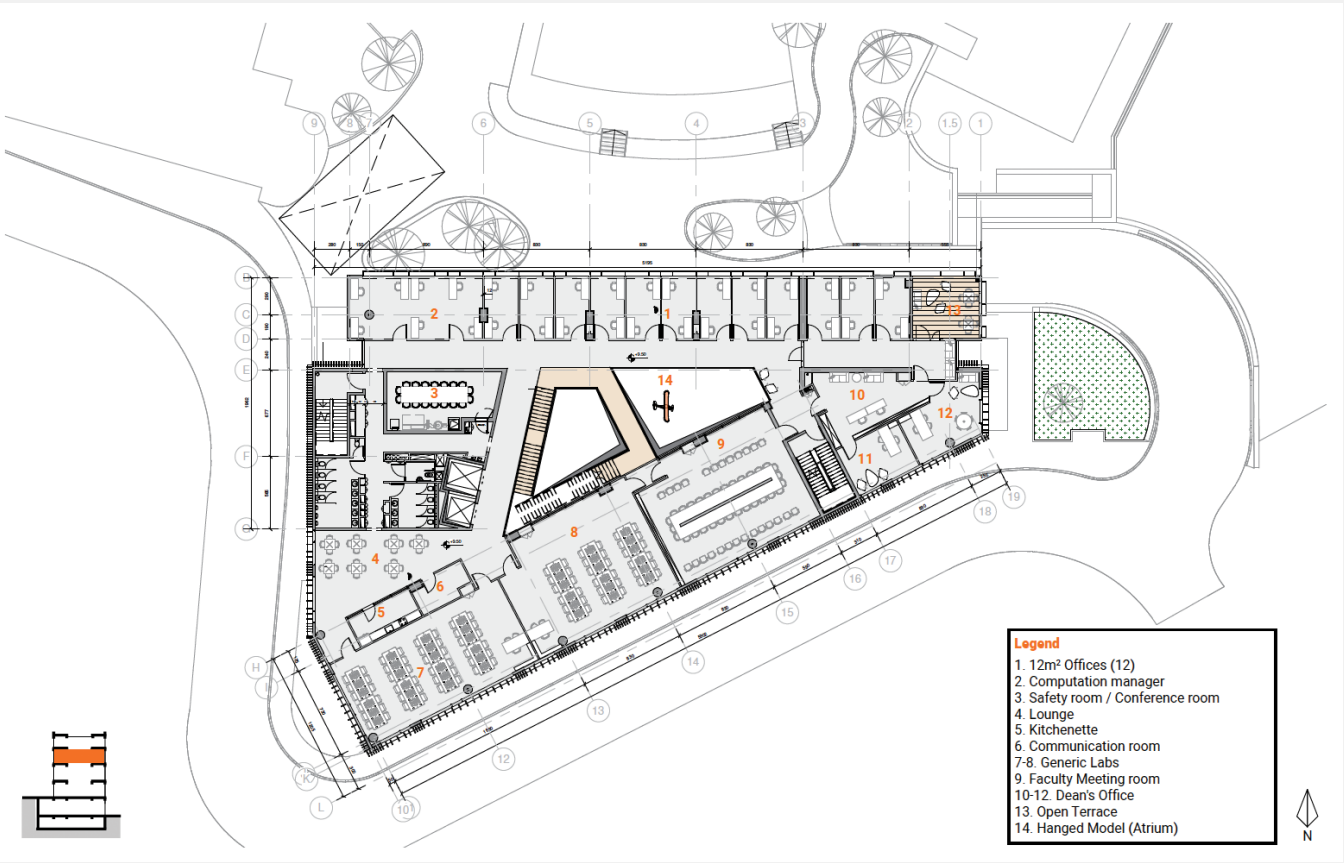
Legend
1. Labs Floor Entrance
2. Labs Lobby / Lounge
3. Kitchenette
4. Communication room
5. Safety room / Conference room
6-10. Labs
11. Trash room
12. Technical Basement
13. Patio
14. Underground Parking Ramp
N


Legend
1. Main Entrance (Garden)
2. Main Lobby / Lounge
3-4. Learning Center
5. Safety room / Conference room
6. Auditorium Lounge
7. Auditorium / Class
8-10. Classes
11. Open Terrace
N


Legend
1. 12m² Offices (12)
2. Computation manager
3. Safety room / Conference room
4. Lounge
5. Kitchenette
6. Communication room
7-8. Generic Labs
9. Faculty Meeting room
10-12. Dean's Office
13. Open Terrace
14. Hanged Model (Atrium)
N

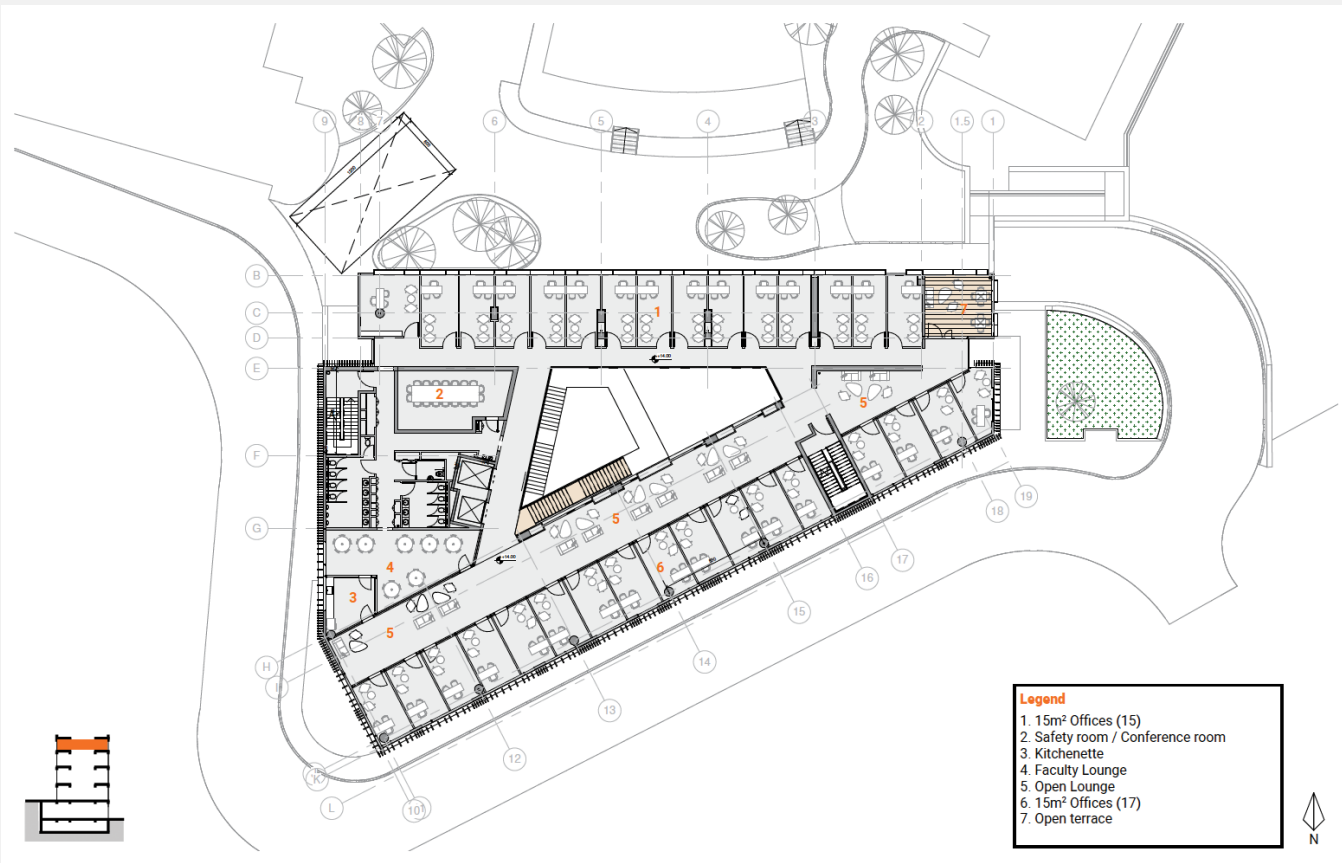

Legend
1. 15m² Offices (15)
2. Safety room / Conference room
3. Kitchenette
4. Faculty Lounge
5. Open Lounge
6. 15m² Offices (17)
7. Open terrace
N

Photo: Tal Rappoport

Student in the UAV lab

Students in the Philadelphia Flight Control lab

Photo: Mostafa Kadah

Photo: Tal Rappoport

Students present their thesis projects at the Faculty of Aerospace Engineering