

SCHOOL OF ARCHITECTURE:  
Reimagining a Home for Architecture at MIT

by

Stephen Form

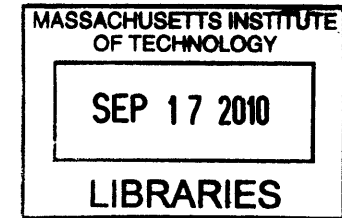
Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of

Bachelor of Science in Art and Design

June 2005

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ABSTRACT

The Massachusetts Institute of Technology is home to the oldest architecture school in the United States, yet curiously, this department has sat in the shadow of the other programs at MIT for much of its history. Today, however, the Department of Architecture is one in transition, between presidents, deans, and department heads. At this point it seems crucial to reevaluate the direction of this program.

This project is meant to address three problems regarding the identity of the Department of Architecture: a lack of identity as seen by our students, identity as seen by the Institute, and identity as seen by the world of architecture.

The goal of this thesis is to redesign the spaces which comprise our home at MIT. Specifically, the project seeks to house entire school together on MIT's main campus. Expanding and transforming the current structure of Bosworth's neoclassical buildings, this new School of Architecture provides for itself, the Institute, and the world, a visible new home for a neglected portion of MIT.

Thesis Supervisor: Jan Wampler  
Title: Professor of Architecture

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## THE PROBLEM OF THE DEPARTMENT

Why redesign? This thesis must first answer the question of why before it begins the assessment of how.

The stated goal of this thesis is to unite the Department of Architecture (“the Department”) of MIT. Specifically, the site of this project is the Department’s space in the main group buildings, the neoclassical buildings designed by William Bosworth when MIT first moved to Cambridge.

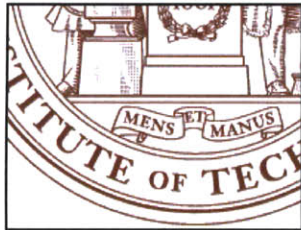
MIT’s Department of Architecture is the oldest dedicated architecture program in the United States. Founded on the beaux-arts tradition of education in 1861, the architecture program today does have the same excellent reputation that MIT’s engineering programs have in their respective communities.

There is a problem of Identity in the Department of Architecture and herein lies the basis of this thesis.

## The Pedagogy / Curriculum Problem

A school's identity is stated most clearly by a mission statement. For MIT as a whole, the mission statement begins as follows:

The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.



Although a mission statement is often an exhaustively researched and well thought out document, this thesis proposes a general set of guiding principles for the school to follow in its curriculum.

- The act of making is paramount in architecture. MIT's motto, Mens et Manus, "Mind and Hand" puts emphasis on both the knowledge and its application to the real world. Such a principle made MIT unique among schools at the time of its founding. As architecture is nothing without built work, stress must be placed on the construction of objects and the knowledge of building.

Although the workshop as teaching environment for the designer emerged most prominently in the Bauhaus model, this principle is not meant to be a yearning for past educational models. It is simply a statement that at a school of architecture, ideas are nothing without making. Whether it is through craftsmanship or digital fabrication, an intimate knowledge of how things are built is the most important aspect of architectural education.

- The design studio is the primary environment in which teaching occurs. Coupled with the workshop, professors will encourage production of architecture at scales including full-scale details and tectonic systems.

Care must be taken to ensure that the relationship between the professor and his or her students is not that of a master-apprentice. However, proximity between teachers and students is important to create an environment where learning takes place outside of class time. It is expected that students participate in the work of professors and also that they are properly credited and compensated.

- The discipline groups at MIT should be mixed wherever possible to promote the fluidity of research. The Department currently prides itself on projects that allow its students and faculty to work with other departments. Currently, the Department is fractured with

groups such as History, Theory, and Criticism isolated on the third floor and Computation in a separate building.

Bringing students from the various discipline groups together should be a goal of this project. While creating every combination of disciplines will not be possible, students at similar levels should be able to mingle in such a way as to create a sense of wholeness to the school. Rather than collaborative efforts being the exception, they should be commonplace.



### The Intra-University Identity Problem

At the level of the student at MIT, there is no home for the Department partially because it occupies space within buildings rather than buildings themselves. At MIT, each major tends to have a building at its core. For Civil Engineering, it is Building 1: The Henry L. Pierce Engineering Laboratory. For Earth, Atmospheric and Planetary Sciences, it is the Green Building. For Computer Science, it is the newly constructed Stata Center.

Increasingly, departments have made their presence known by constructing buildings that stand out. Pei's Green Building is the tallest in Cambridge. The Stata Center, by Frank Gehry, became an instant monument. Where they do not, in the case of Civil Engineering, the department inhabits an entire building itself.

Ironically, because of the remoteness of the upper floors from student traffic, the Department of Architecture has no architectural presence on campus. Although the building known as Building 7 was meant to be dedicated to the School of Architecture once it moved over from Boston to MIT's new Cambridge campus, the Department's students occupy space only on the 4th floor of this building. The main lobby, which is essentially the entrance lobby to all of MIT, is kept as a grand public space with little evidence of the academic activity taking place at the school.

Being relegated to an area not visible from the most traffic in the school, it is no wonder that the rest of MIT often forgets about the Department of Architecture. A redesign of the school must provide a place, *identifiable and prominent*, for its students.

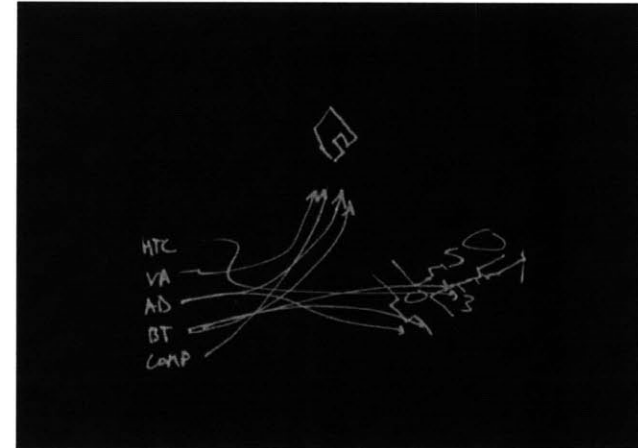


### The Inter-University Identity Problem

Among the community of architecture schools, MIT is not held in the same esteem as its engineering programs are in their respective fields. Due in part to a lack of clear pedagogy, MIT's architecture program has few outstanding qualities. Students complain that juries have few well-known architects and critics and that the school does little to promote itself in the worlds of architecture.

A question that is often asked of architecture students here from students and faculty of other schools is *Where is the architecture building?* At MIT, there is no clear answer. Architecture occupies space in several buildings including 3, 5, 7, 9, 10 and at a site four blocks north of the main campus in buildings N51 and N52. The same reasons that make the architecture program here a mystery to MIT students keeps it in the shadows of more well known schools such as the GSD.





## DEPARTMENT ORGANIZATION

The Department of Architecture has five discipline groups: Building Technology (BT), Visual Arts (VA), Architectural Design (Design), History, Theory and Criticism (HTC), and Computation.

There are also additional programs such as the Aga Khan Program in Islamic Architecture which works under the umbrella of HTC and the Digital Design and Fabrication Group in Computation.

Additionally, there are several degree programs including the Bachelor of Science in Art and Design, Master of Architecture, Master of Science in Architectural Studies, Master of Science in Building Technology, Master of Science in Visual Studies, and doctoral programs in HTC, BT, and Computation.

This creates a highly fractured organization for the department. For example, Computation faculty and doctoral students are located entirely in N51 while some SMArchS computation students are in Building 3. Building Technology has its faculty in Building 5 and its students in Building 3. Undergraduates are split between N52 and Building 7. HTC is located entirely on the 3rd floor of the main buildings.



## RENOVATION TRENDS

The most recent renovations of the School of Architecture place a focus on exposure. There exist no renovated teaching spaces that are hidden from the circulation spaces that run next to them. This planning seems to agree with MIT's initiatives to demonstrate that knowledge should be shared. These initiatives can be seen academically in the OpenCourseWare Project and architecturally in the opening up of other "fishbowl" labs on campus.

MIT is also struggling with the idea of creating communities of learning at the school. Plans from the original MIT buildings show the campus as a factory for learning. Clearly, efficiency was paramount. Enormous lecture halls, three hundred foot long rooms filled entirely with drafting tables, labs just as big: this was the MIT that was originally conceived.

Today, the newer architectural projects have a different focus. Simmons Hall focuses on community building through the sharing of lounge space between floors. The Stata Center, famously modeled on the social lives of chimpanzees has private workspaces above common areas like lounges.

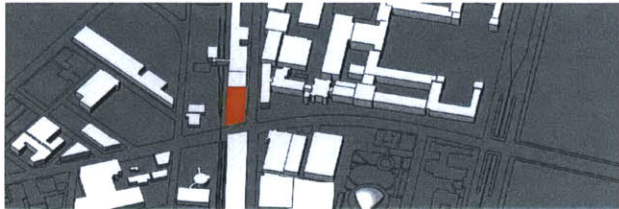
Still, though, MIT's main group buildings are architecturally limited by the double-loaded corridor. These corridors, which are usually eight to ten feet wide, run through the main buildings with limited interruption. Proprietary corridors not accessible to the general public are discouraged. Despite differing articulations of rooms along the corridors, there is a great deal of monotony as one walks through the school.

Although the "fishbowl" model does a great deal to break this down, it does not do enough about creating places. There are few public spaces in the main buildings. Lobby 7 has a café area with limited seating. Lobby 10 is used as kiosk space for student groups. The best public space the School of Architecture has is the Steam Café. This revitalized space has been a big attraction for students throughout MIT. This pull could generate a great deal of publicity for the Department within the school. However, there is little effort to take advantage of the Steam Café's popularity.



## New Building

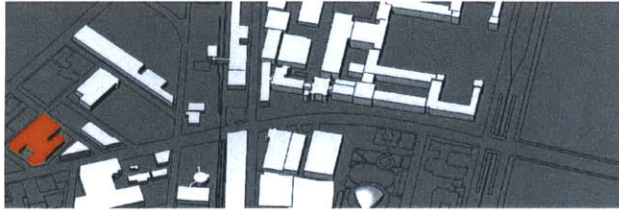
The scheme of moving the entire Department to a new building is an appealing one. For one, it creates an extremely obvious home for architecture at MIT. It can perhaps be linked into a new arts community to link MIT and the surrounding community which would have benefits for both the city and the university.



However, in addition to relocating every facility in the Department, this scheme removes the Department entirely from the main campus. Moving further away from the rest of MIT's academic community will hurt any efforts to bring awareness of the work the Department of Architecture does.

### Move to N51/N52

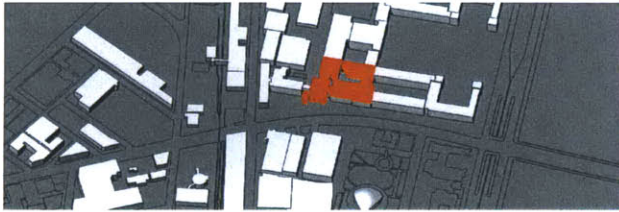
Like the new building scheme, this would create an identifiable home for MIT architecture. However, structural problems with the buildings as well as make it an unappealing site for placing the new Department.



Furthermore, it creates an even more remote place for architecture students to isolate themselves from the rest of MIT. The building is not much different organizationally from the main campus site and adding new infrastructure to support a full academic department there would be very difficult.

### Courtyard School

By closing the gap between buildings 11 and 13, a courtyard can be created between buildings 3, 7, 7A, 9, 11, and 13. Relocating all Department program to this area is possible by asking other departments to reposition their facilities in the vacated space left by architecture.

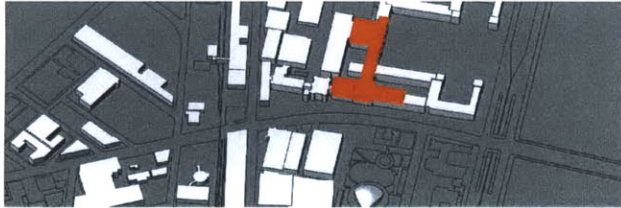


This would not only put a tremendous stamp on MIT, it would also create a presence along the ground level of campus. This strategy is key to making the Department well known amongst MIT's other academic programs.

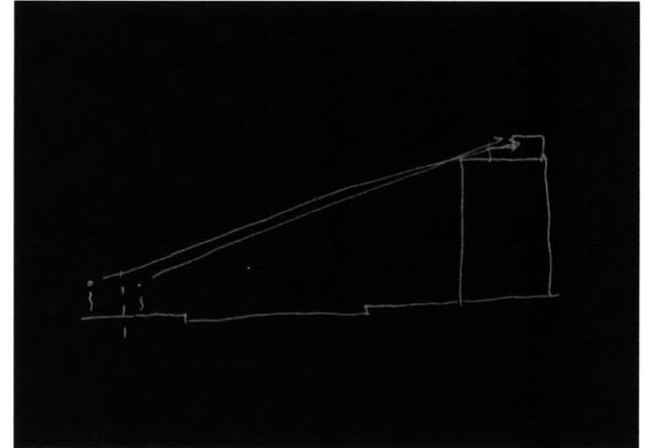
However, this supposes a great amount of politicking in addition to the architectural project of creating the school. A great amount of space would need to be negotiated away from other departments which is highly unlikely.

### Expanded School

The chosen scheme keeps the prominent space the Department already has and enhances it by expanding upwards and outwards. It has the benefit of keeping many programs in their current spaces. Strategies to improve the space are discussed in the next section.



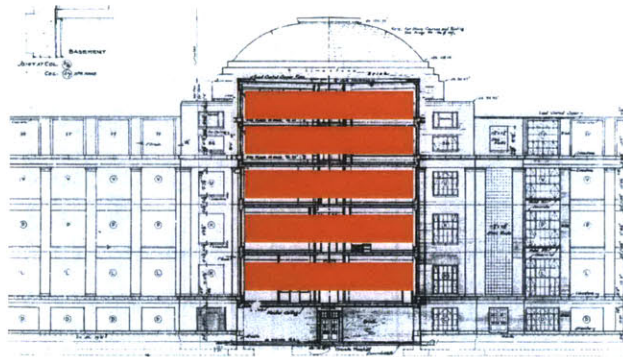




## STRATEGIES

Several strategies can be employed to achieve the goals of the thesis. In the case of this project, the goals include housing the entire Department in the main building group, increased exposure of the Department to the rest of MIT and a more pronounced center for the Department. In addition, efforts should be made to not only organize the program in such a way as to achieve these goals, but to do it in a way that forms a new identity for the Department.





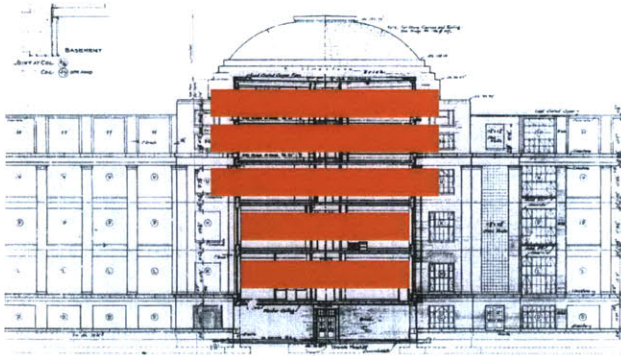
## New Floor

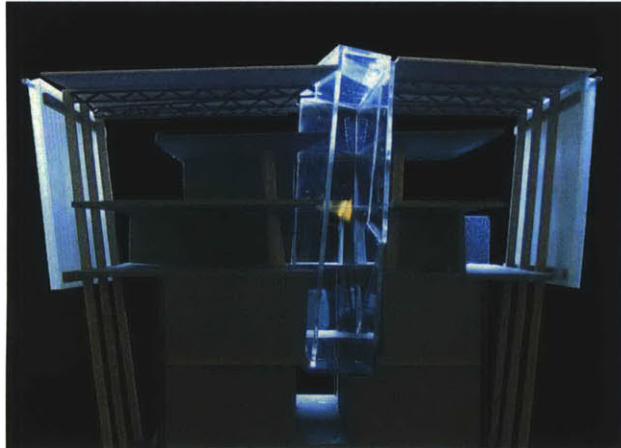
In order to accommodate the entire architecture program in the main buildings, new floor area is required. One way of adding new floor area is to create a fifth floor. There exist many requirements for preserving historic facades that this thesis will avoid. In order to do so, any vertical expansion must not be above a height where the new construction can be visible from a public street.

In order to do this, all vertical expansions are set back from the neo-classical facades of MIT. The floors will be below the current ceiling height of the fourth floor so that the expansion need not be so great. For example, in order to fit an additional floor, only five additional feet are required above the current roof height.

## Widened Corridor

To help break up the double-loaded corridor scheme in the Department, it helps to provide additional floor area for circulation. Widening the floors where possible gives more floor area over to program, but can also allow for certain spaces to become double height spaces, connecting floors in new ways. Mostly, however, the widened buildings create areas that are part circulation, part program.





### Atria

One of the advantages of MIT's original, sixty foot wide buildings was their thinness. With a widened hallway and an additional floor, light and air have a harder time penetrating the inside of the expanded building.

By slicing through the floor plates to make room for large atria, not only can light and air reach deeper into the buildings than ever before, but visual connections between floors from the first to the fifth can be made. Furthermore, these atria can provide sight lines from the upper floors to the two domes, allowing students to locate themselves on campus.

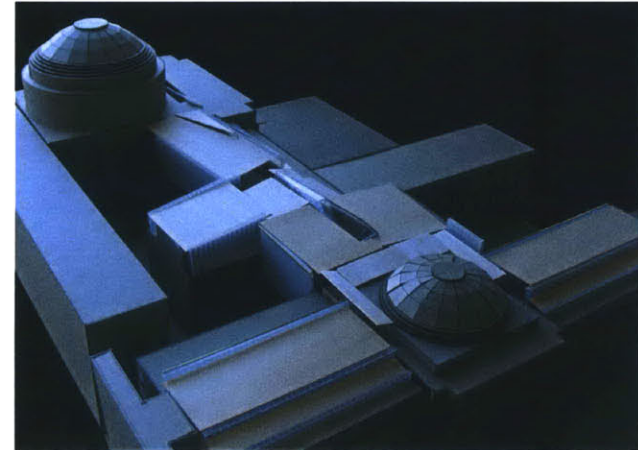


### Community Organization

By programming the Department into communities, new interactions between architecture students are encouraged. Rather than the current organization, in which students are grouped by discipline, the new scheme uses degree level to place students in self-contained blocks.

The block scheme allows students to form communities based not solely on the area they study. Desks within the community can be arranged however the occupants see fit. However, they all share common areas such as lounge space, conference rooms, and a small dining area.

The following are organized into community blocks: graduate students including PhD, Master of Science in Building Technology and Master of Science in Visual Studies candidates, Master of Science in Architectural Studies candidates, non-design faculty, and administrators.



## PROPOSAL

At the center of the design is the workshop and exhibition space. The exhibition space is adjacent to the Steam Cafe where many members of the MIT community gather daily for lunch. The exhibition area can be reconfigured by students or faculty throughout the year. An auditorium is located next to the exhibition area for lectures and highly formal pinups.

The workshop is a two story space at this central area which is left exposed to the exhibition space on the fourth floor. The workshop is roughly twice the size of the current woodshop and contains wood- and metal-working facilities as well as the Department's CNC's machines.

Design students are located in expanded studio spaces in Buildings 5 and 7. By increasing the studio space, all design students can be located in these areas with faculty offices nearby. Shared facilities such as computer labs, printers, scanners, and wet work areas, are located in the studio space as well.

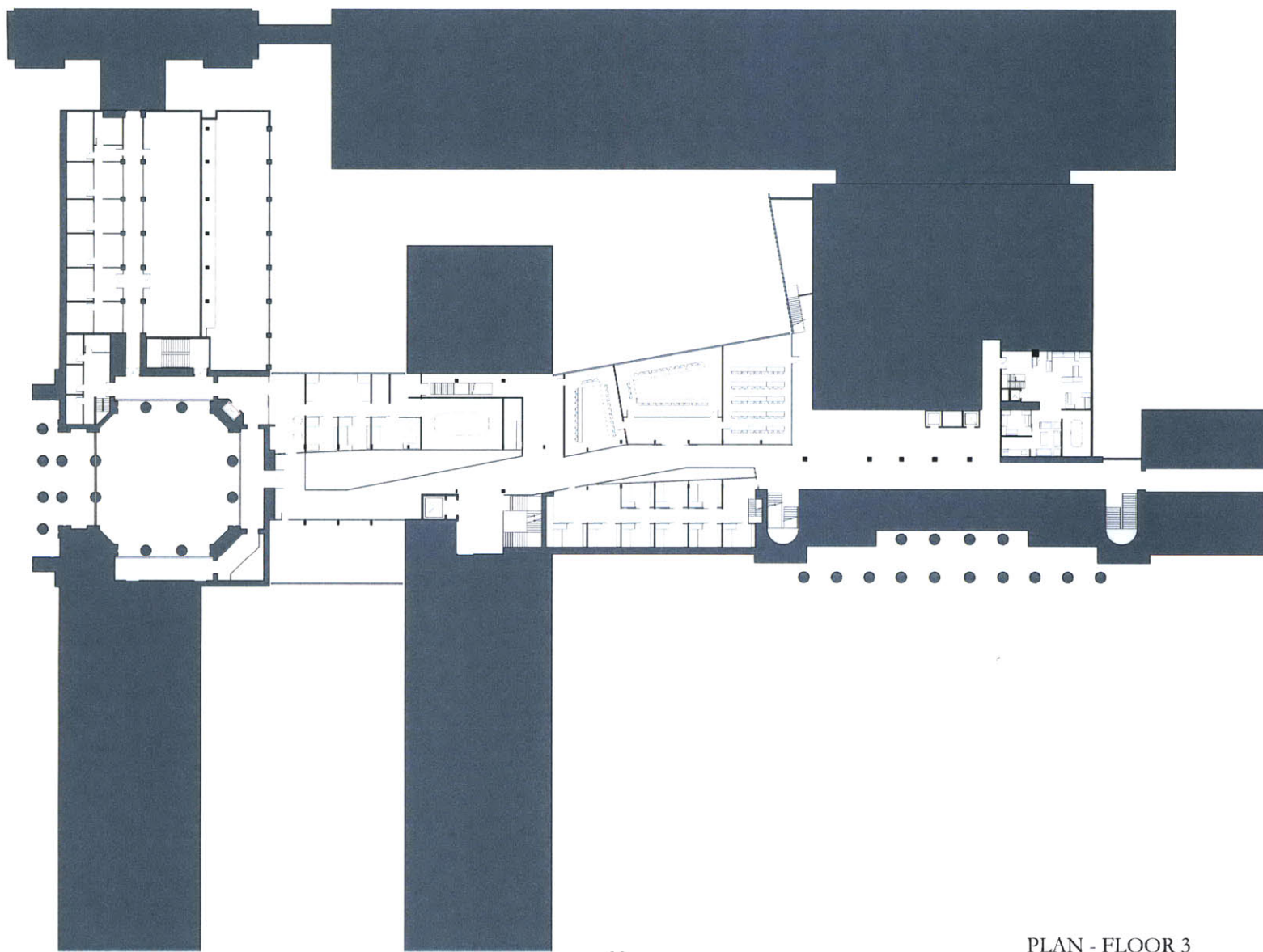
Department headquarters are located on the third floor off the atrium under the workshop and exhibition space. This keeps the administration close to the rest of the Department and within sight of the centerpiece of the design: the workshop.

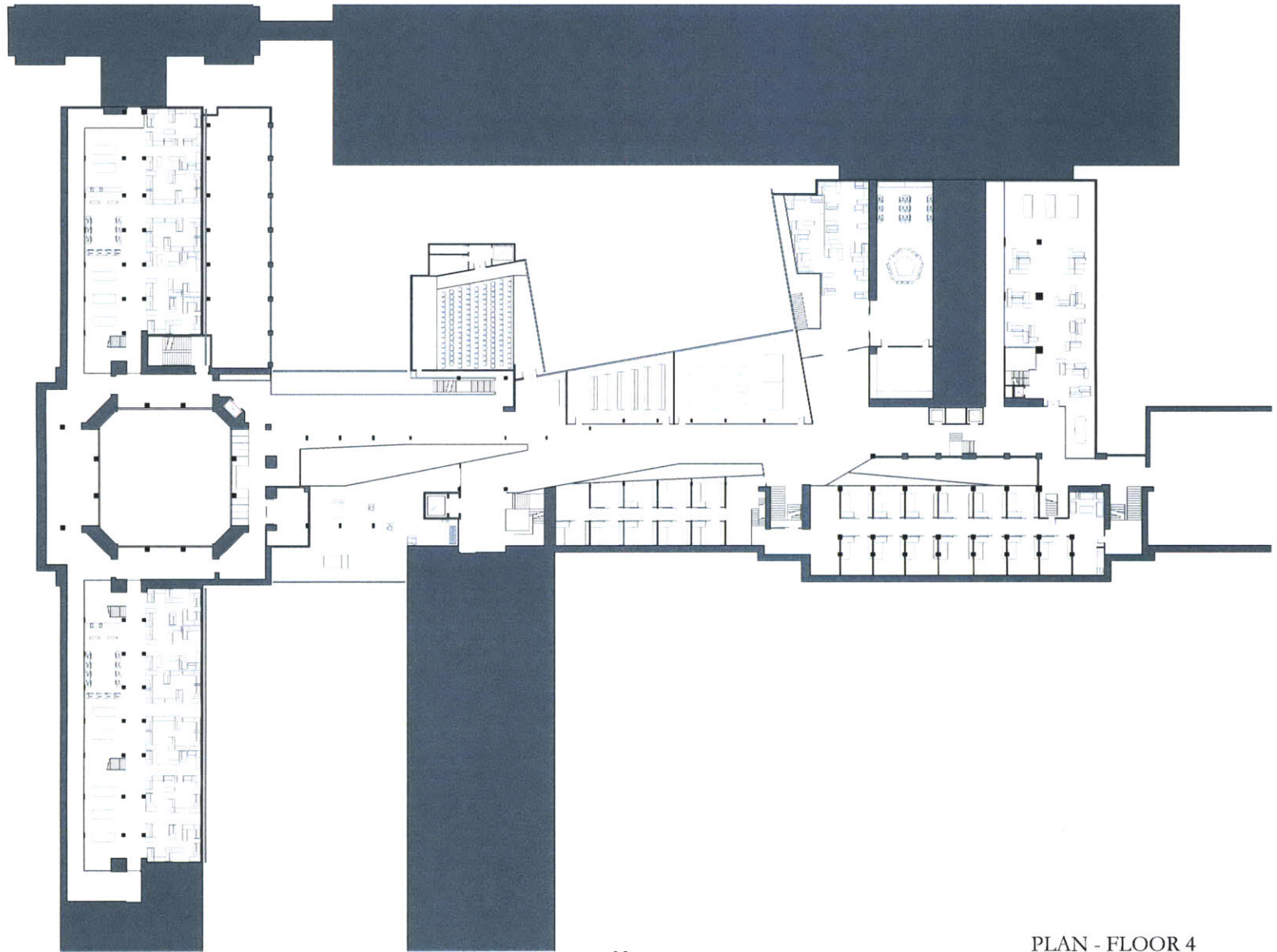
Non design faculty offices are located along the front of MIT's main buildings on the side of Killian Court. All offices are along one of two additional atria, one of which dips into the current light well in front of the large dome. This outdoor space is converted into a garden area for students and faculty to enjoy.

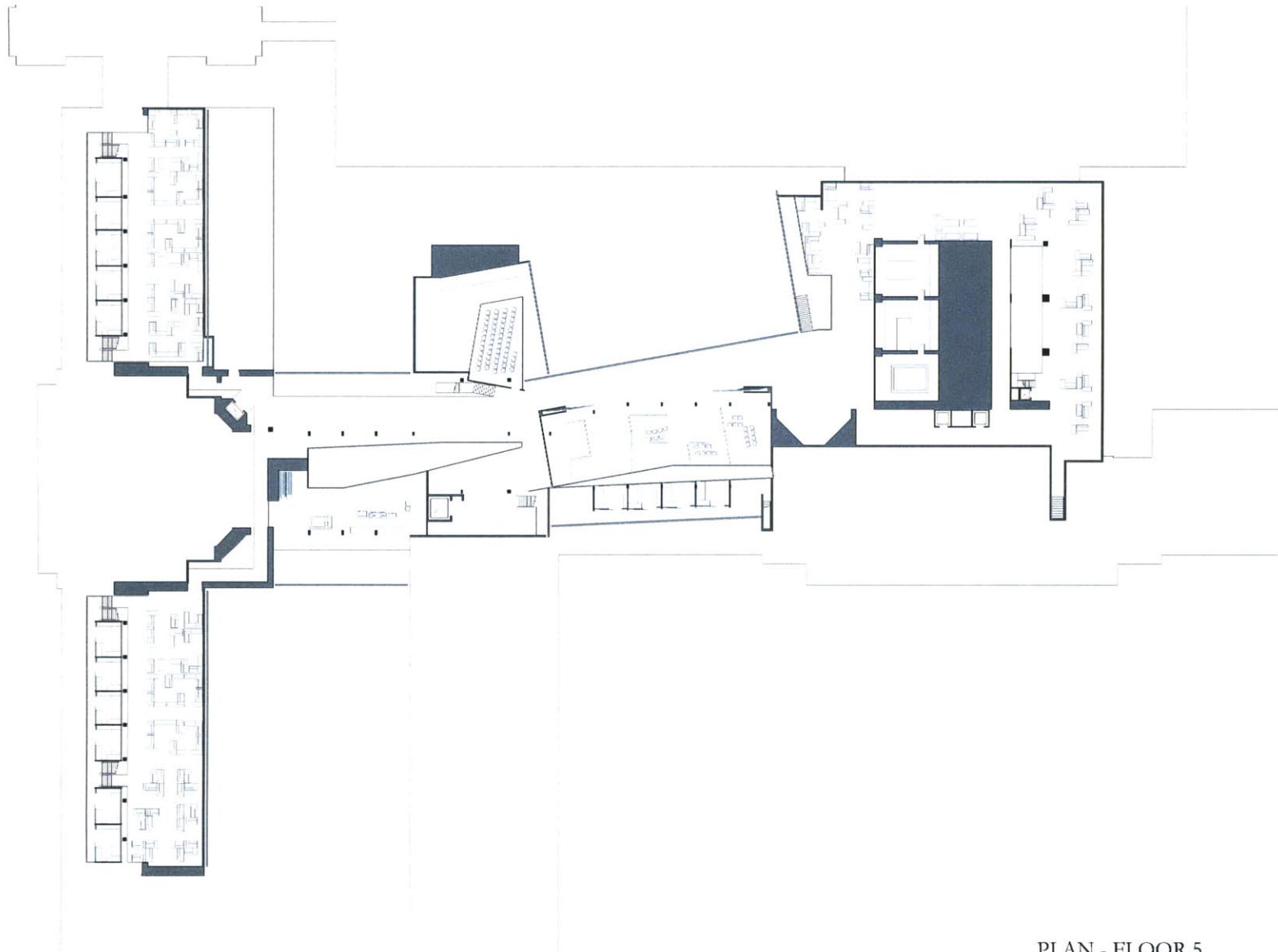
In Building 10, two community blocks are located for non-MArch Masters and Doctoral candidates. The visual arts program, building technology, HTC, and SMArchS are located here. These spaces are close to the faculty area due to the many collaborations between these students and faculty.

The following pages show the floor plans and some sections of the presented scheme.

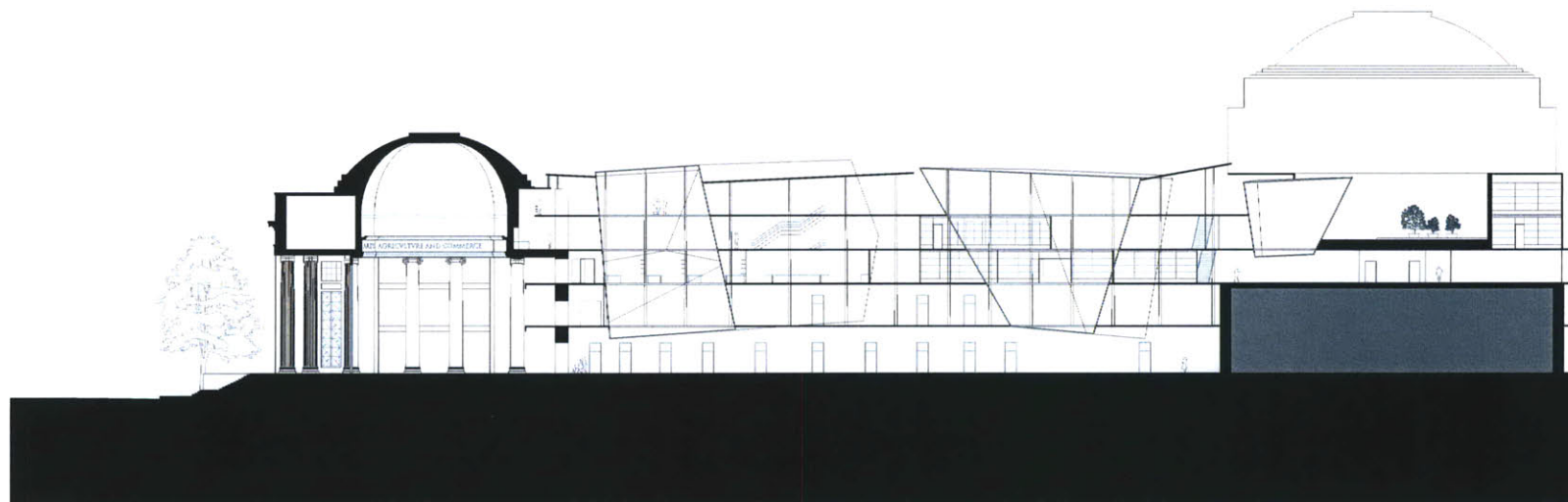


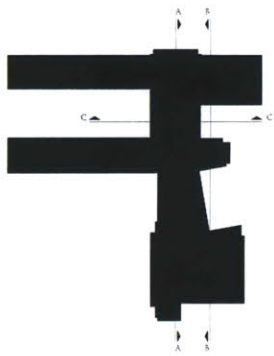
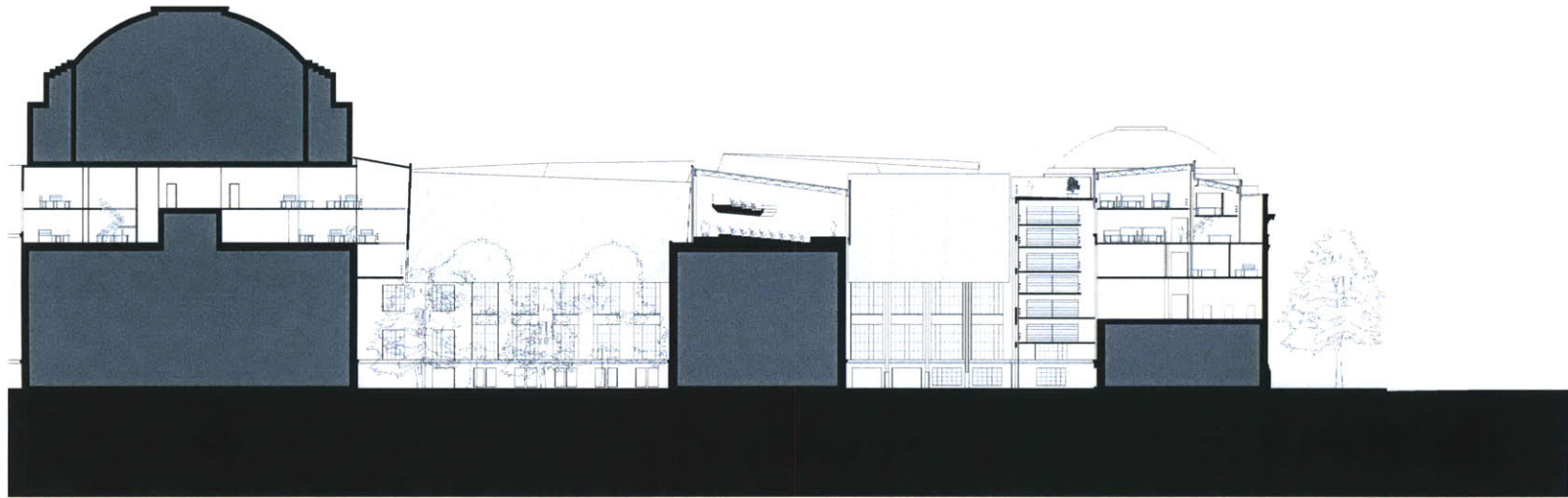


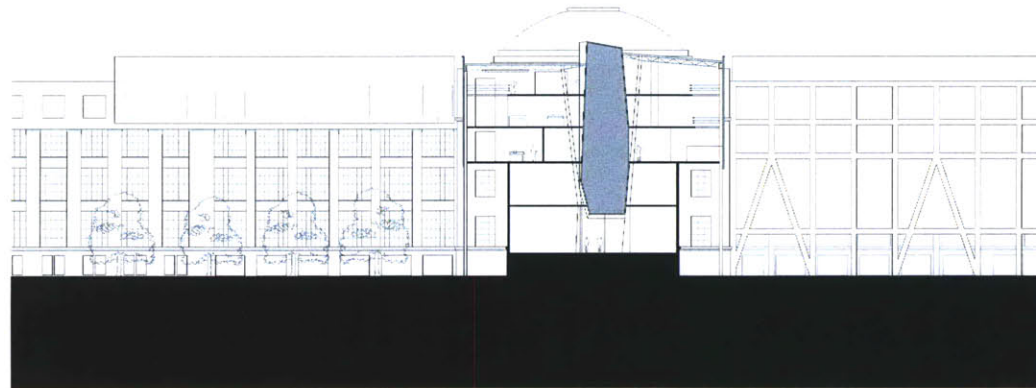












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