Massachusetts Institute of Technology
Department of Architecture

Architecture Program Report for 2015 NAAB Visit for Continuing Accreditation

Master of Architecture:
Admitted to Year 1 (3-1/2 year program): 112 credits
Admitted to Year 2 with advanced entry (2-1/2 year program): 77 credits

Year of the Previous Visit: 2009

Current Term of Accreditation:
"At the July 2009 meeting of the National Architectural Accrediting Board (NAAB), the board reviewed the *Visiting Team Report* for the Massachusetts Institute of Technology School of Architecture and Planning. The board took note of Section 1.5 of the report, Causes of Concern, and the observations of the visiting team regarding human behavior, building service systems, building systems integration, construction cost control and comprehensive design. As a result, the professional architecture program -- Master of Architecture -- was formally granted a six-year term of accreditation with the stipulation that a focused evaluation be scheduled in two years to look at the Causes of Concern identified in the *Visiting Team Report* and the progress that thas been made in those areas. The term of accreditation is effective January 1, 2009. The program is scheduled for its next full accreditation visit in 2015. The focused evaluation is scheduled for calendar year 2011."

Submitted to: The National Architectural Accrediting Board
Date: September 2014

Additional Notes

The following are commonly used abbreviations and acronyms, and some definitions particular to the MIT context.

ACT	Art, Culture, and Technology: one of five discipline groups in the Dept. of Architecture
AKPIA	Aga Khan Program for Islamic Architecture
AD	Architectural Design: one of five discipline groups within the Dept. of Architecture
BSA	Bachelor of Science in Architecture
BSAD	Bachelor of Science in Art and Design, former undergraduate degree replaced by BSA
BT	Building Technology: one of five discipline groups within the Dept. of Architecture
CAU	Center for Advanced Urbanism
COGS	Committee on Graduate Students
COMP	Design and Computation: one of five discipline groups within the Dept. of Architecture
Course	At MIT a course refers to a "course of study" and generally indicates a department. Architecture is referred to as course "4"; Civil and Environmental Engineering is course "1", Mechanical Engineering is course "2", etc. Classes offered within a course use the course number as the prefix for the subject number; i.e., all architecture subjects are listed as 4.xxx.
CRE	Center for Real Estate
CRON	computer resources serving both the departments of Architecture and Urban Studies and Planning (formerly CRO and CRN)
DUSP	Department of Urban Studies and Planning
GECDC	Global Education and Career Development Center
HTC	History, Theory, & Criticism: one of five discipline groups within the Dept of Architecture
IAP	Independent Activities Period: between the fall and spring terms in January
Level I	previous designation for students entering into the 3.5 year MArch program
Level II	previous designation for students entering into the 2.5 year MArch program
MAS	Program in Media Arts and Sciences
MITEI	MIT Energy Initiative
RVC	Rotch Visual Collection
SA+P	School of Architecture and Planning
SB	Bachelor of Science
SIGUS	Special Interest Group in Urban Settlements
SMACT	Master of Science in Art, Culture, and Technology (successor to SMVisS degree)
SMArchS	Master of Science in Architectural Studies
SMBT	Master of Science in Building Technology
SMVisS	Master of Science in Visual Studies, replaced by SMACT
URM	Underrepresented Minority Committee (Department of Architecture)
UROP	Undergraduate Research Opportunities Program

Program administrator:
J. Meejin Yoon, Head, Department of Architecture

Chief administrator for the academic unit in which the program is located:
Mark Jarzombek, Interim Dean, School of Architecture and Planning

Chief academic officer of the Institution:
Martin A. Schmidt, Provost

President of the Institution:
Rafael Reif, President

Individual submitting the Architecture Program Report:
Andrew Scott, Professor of Architecture

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Andrew Scott, Professor of Architecture

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I.1.1. History and Mission

HISTORY AND DESCRIPTION OF THE INSTITUTION

The Massachusetts Institute of Technology admitted its first class of 15 men on February 20, 1865, four years after approval of its founding charter. Six years later the first women students were enrolled. The existence and organization of the Institute was due to the vision and work of William Barton Rogers, MIT's founder and first president. Also, at the end of the 19th century it was clear to many in government and the academy that the US was in need of an educational institution that would contribute key scientific and technological breakthroughs and serve as the preeminent educational institute for engineers, scientists and architects. Rogers was himself a distinguished natural scientist who believed that professional competence and creativity were born of rigorous training in research and excellence in teaching that addressed the real-world issues of a growing nation. A key element of an MIT education has always been learning and research through experiment and application. Rogers believed that education should be both broad and useful, enabling students to participate in "the humane culture of the community" and to discover and apply knowledge for the benefit of society." [1] Mens and Manus[2], the MIT motto, clearly articulates this priority for both engaging the mind as well as the hand in the pursuit of learning and research in the sciences and technology.

Over the past 149 years, this priority has been achieved in many ways at the Institute. From its foundation, the classroom and laboratory have been two poles around which MIT undergraduate and graduate students have learned about and participated in research in fields as diverse as electromagnetism, metallurgy and materials science, mechanics, chemistry, and more recently, biology, electronics, computational science, biochemistry, cognitive sciences, nanotechnology and many other fields. Traditional lectures and recitations have always been augmented by laboratory experiments, engineering design classes, work in the field and many other activities meant to provide opportunities for the application of basic scientific and engineering principles. Today, all of these studies and many more are organized within an institutional structure of five academic schools: Architecture and Planning; Engineering; Humanities, Arts and Social Sciences; Management; and Science. Each school is itself organized into departments, divisions, and programs that are joined by laboratories and centers to form complex and multi-faceted academic research and educational homes for students, faculty, research personnel and others.

Enrollment during the two terms of the regular academic year 2013-2014 was 11,301 students total; 4,528 undergraduates and 6,773 graduate students[3]. During that academic year, and for many years now, MIT has drawn students from all fifty states, the District of Columbia, three territories and more than 114 countries. The percentage of women enrolled has steadily increased over the past several decades and stands now at 45 percent of the undergraduate population and 31 percent of graduate students. International students amount to 435 undergraduates (10 percent of the undergraduate population) and 2,746 graduate students (41 percent of the graduate student population). International

[1] Source: http://web.mit.edu/mission.html.
[2] *Mens and manus*: (Latin) mind and hand.
[3] During 2013-2014, student enrollment in the five schools was as follows: 46 undergrad, 586 grad, Architecture and Planning; 2311 undergrad, 3,324 grad, Engineering; 116 undergrad, 324 grad, Humanities, Arts and Social Sciences; 79 undergrad, 1432 grad, Management; 835 undergrad, 1,107 grad, Science.

students from Asia and Europe constitute approximately three-quarters (73%) of the international student population with the remaining from Canada (7%), Latin America and the Caribbean (10%), the Middle East (6%), Africa (3%), and Oceania (1%).

The faculty at MIT is composed of 1,030 assistant, associate and full professors of which 21.8 percent (225) are women. Minority group representation among faculty includes American Indian or Alaska Native, Black, Hispanic, and Asian. In addition, 779 senior lecturers, lecturers, professors emeriti, instructors (including technical instructors), professors of the practice and adjunct faculty round out the teaching staff of the five schools of MIT. Overall, MIT employs 11,380 individuals on campus[4].

The School of Architecture and Planning has been an integral part of the MIT community since the institute's founding and today actively participates in the changing nature of Mens and Manus around the world. Among the five schools at MIT, the School of Architecture and Planning is uniquely situated to provide students and faculty with the best opportunities to participate in the ongoing effort to address the most important contemporary cultural and social issues.

Architecture (course 4) was one of the four original departments of the Massachusetts Institute of Technology, along with Civil Engineering (course 1), Mechanical Engineering (course 2), and Metallurgy (course 3). The first professor of architecture was William R. Ware, appointed in the fall of 1865 when MIT first opened. Funds supplied by MIT and private sources enabled Ware to visit Europe to examine educational programs and purchase supplies. In his "An Outline of a Course of Architectural Instruction" Ware emphasized the central place of architecture at MIT and explained how the principles championed by the new Institute would be applied to "the most ancient of arts – the art of Building."

The course in architecture, the first in the United States, opened in October 1868, with four students enrolled as B.S. degree candidates. Classes were held in the Rogers Building on Boylston Street in Boston. In 1883 the department moved into a new building on the corner of Boylston and Clarendon Streets that it shared with the chemistry and physics departments. In 1892 the department moved again into the newly built Architectural Building, designed by department head Francis Ward Chandler, on the corner of Stuart and Clarendon Streets. The building included a laboratory for testing materials as well as a library. In 1898 the department moved again into the Pierce Building at Trinity Place. Crowding was alleviated in 1916 when most of MIT moved to the new campus in Cambridge, leaving the Rogers Building on Boylston Street to the Department of Architecture.

In 1932 the School of Architecture was established as part of the general academic reorganization of the Institute proposed by President Karl T. Compton and a course in city planning was added. In 1938 the School and Department of Architecture moved from Boston to Cambridge to rejoin the rest of the campus. In 1944 the school was renamed the School of Architecture and City Planning. In 1947 the Department of City and Regional Planning was established within the school. It was renamed the Department of Urban Studies and Planning in 1969. The Architecture Machine group formed within the Department of Architecture in 1966, eventually evolving into the present-day Media Lab, which includes the Program in Media Arts and Sciences[5].

The School of Architecture and Planning (SA+P), as it is now called, is distinguished by a special emphasis on education oriented to social and environmental concerns and for its graduate programs in specialized architecture and urban planning studies, computation in both planning and design, building technology, real estate, visual art, and history, theory and criticism of art and architecture. These areas have expanded the scope and diversity of the teaching and research of the school.

Lately, this expansion has also transformed the traditional space of the classroom and laboratory to include teaching and research situated in a variety of locations in the US and abroad. The MIT education, at both the undergraduate and graduate levels, now includes significant international

[4] MIT 2014. *MIT Facts 2014*. MIT Bulletin (MIT Reference Publications Office).
[5] Source: Institute Archives, MIT Libraries; Francesco Passanti.

opportunities for engaging diverse topics relevant to the evolving practice of architecture. Also, the MIT Open Courseware program has been offering free MIT course materials since its official launch in October 2003. The program has amassed and posted syllabi, lecture notes, assignments and other material for 1800 courses from every school and department at the Institute. The Department of Architecture currently has course materials for 95 subjects listed on the web site[6]. The program has been a resounding success with one million visits and 500,000 more for translated pages each month. The Department also contributes to global online education through edX: Mark Jarzombek's course 4.605x A Global History of Architecture - Part 1, with 22,000 registrants and 5,000 active participants.

On issues as diverse and critical as poverty, social injustice, resource scarcities, global climate change, and the evolution of institutional and political organizations in addressing the needs of the world's population, MIT has sent students and researchers where they are needed and in doing so enhanced the learning experience and research opportunities of the entire MIT community. Examples of this engagement in the larger world can be found in design studios, research workshops, regular classes and numerous research initiatives in the School of Architecture and Planning, including: 4.472/4.473 Design Workshop for a Sustainable Future—From Waste to Brick to House: Low-Cost Construction Materials in India; 4.154 Architecture Studio UnMaterial in Turkana, Kenya; 4.181 Architecture Design Workshop—Chongquing: Viable Design Innovation in the Context of China's Unprecedented Growth; 4.183 Architecture Design Workshop: Haiti Evacuation Systems; 4.001J/11.004J Architecture Workshop-- City Scope: Re-building New Orleans among many others (see Section 3.7). In recent years, faculty and students from the department have been working in New Orleans, Indonesia, China, Japan, Cambodia, Peru, Mexico, Kenya, Turkey, South Africa and other countries in the developing world.

INSTITUTIONAL MISSION

Mission Statement of the Massachusetts Institute of Technology:

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. The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world's great challenges. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind[7].

MIT's mission statement was most recently reviewed and adopted at the beginning of the tenure of President Susan Hockfield in 2004, and has remain unchanged since then.

PROGRAM HISTORY

The MIT "course" in architecture, known around the Institute as "Course 4," was the first in the United States. The Master of Architecture degree, as a post-professional degree, was first offered in 1921. In the two-year period of 1964-66, the Master of Architecture degree was established as a professional degree to replace the Bachelor of Architecture degree previously offered by the department. Today, two distinct entry points and residency requirements (2½ and 3½ years) define the professional degree. The Department conducts a general undergraduate degree program known as the Bachelor of Science in Architecture (BSA) and contributes to undergraduate education at MIT more generally. Among the 3500 graduates of the department are leaders in practice, education, research, and government in the United States and abroad. Today the Department of Architecture enrolls about 250 students each year.

[6] http://ocw.mit.edu
[7] http://web.mit.edu/mission.html

From its auspicious beginnings in 1868 under William R. Ware, the department has had the privilege of attracting many notable leaders in design and teachers including Eugène Létang, Désiré Despradelle, Jacque Carlu, Ralph Adams Cram, W.W. Wurster, Alvar Aalto, Pietro Belluschi, and Lawrence B. Anderson. Some notable dates:

1868 Department of Architecture opened
1870 Eugène Létang appointed teacher of design
1872 Louis Sullivan at MIT for a year
1876 Student and alumni work exhibited at International Exposition in Philadelphia
1880 Cass Gilbert graduated from MIT in Architecture
1881 Theodore Clark became Head of the Department of Architecture, succeeding Ware who had gone to Columbia to set up their architecture program
1893 Graduate year established. MS in Architecture offered. Désiré Despradelle becomes design teacher
1900 Student work exhibited at the Paris Exhibition
1903 Raymond Hood graduated from MIT Architecture
1914 Ralph Adam Cram joined the department. Stayed to 1922. Held leadership position.
1921 MArch (a post-professional degree) established
1921,23 John Merrill and Louis Skidmore (SOM) graduated from MIT Architecture, respectively
1931 Length of BS in Architecture degree lengthened from 4 to 5 years
1932 Department of Architecture became the School of Architecture with William Emerson as Dean; BArch in City Planning offered
1933 Gordon Bunshaft (SOM) graduated from MIT Architecture
1935 MCP degree established
1938 Harry Weese graduated from MIT Architecture (B.Arch)
1940-41 Alvar Aalto taught at MIT (in residence at MIT again in Nov. 1944-Feb. 1945)
1940 I.M. Pei graduated from MIT Architecture (B.Arch.)
1954 The School of Architecture assumed responsibility for teaching Art education at MIT
1964-66 Transition from BArch to MArch as the professional degree; masters degree becomes a second masters degree and is renamed Master of Architecture in Advanced Studies (MAAS); it is later renamed again Master of Science in Architecture Studies (SMArchS)
1967 Center for Advanced Visual Studies founded
1979 Master of Science in Visual Studies (SMVisS) offered
1988 Public Service Center established to provide centralized institutional support for community service
1991 Stanford Anderson appointed Head of the Department of Architecture
1996 MArch curriculum revised to require concentration
2004 Adèle Naudé Santos began tenure as Dean of the School of Architecture and Planning
2005 Yung Ho Chang appointed Head of the Department of Architecture
2010 Nader Tehrani appointed Head of the Department of Architecture
2014 J. Meejin Yoon appointed Head of the Department of Architecure; Santos steps down as dean; Mark Jarzombek appointed Interim Dean of the School of Architecture and Planning

The location of department offices and classrooms has occupied a central place under the dome at the entrance to MIT on Massachusetts Avenue since 1938, when it moved from Boston to Cambridge and rejoined the rest of the Institute. Competition for space in the main buildings is fierce and unavoidable. Some spaces, including headquarters, are shared with other programs in the school. To accommodate the increasing need for shop and research space, the department also occupies space in additional locations about a 10-minute walk from the main building north on Massachusetts Avenue. The architecture library, Rotch Library, is located on the floor below department headquarters in the main building. In 1991 Rotch Library completed a major renovation with an addition fitted into the fabric of the main complex. Today, space in Building 9 has been added to the usable classroom and offices for the department.

As one of only four original departments of MIT, architecture was necessarily a complete school and from the outset incorporated teaching in the areas that are still internal to the department: art,

building technology, and the history of art and architecture. Today the School of Architecture and Planning is virtually a miniature university that includes the Department of Architecture, the Department of Urban Studies and Planning, the Program in Media Arts and Sciences (within the Media Lab) and the Center for Real Estate.

PROGRAM MISSION

The Department of Architecture is dedicated to a socially responsible, technologically sophisticated, environmentally sensitive, and culturally engaging vision of architecture. It includes within one department the many disciplines required for an architecture curriculum and, more significantly, creates the opportunity for each discipline to have specialized advanced degree programs.The Department is organized into five discipline groups:

1. Architectural Design (AD)
2. Building Technology Program (BT)
3. History, Theory, and Criticism (HTC)
4. Art, Culture, and Technology (ACT)
5. Design and Computation (COMP)

Architectural Design incorporates research and advanced teaching programs in architectural and urban design. Building Technology addresses scientific and technological issues related to the making of a contemporary built environment. Of special concern within BT is the urgency and opportunity with which architectural design and building technologies must collaborate to address global climate change. The History, Theory and Criticism group has a broad range of interests including participation in the latest theoretical debates, historical inquiry of both western and nonwestern architecture and art, and high-level critical discourse regarding the very nature of the contemporary architectural project itself. The program in Art, Culture, and Technology hosts world-renowned artists who maintain and grow their artistic interests while advising a small but highly focused group of graduate students. The most recent addition to these disciplines groups is Design and Computation. Extending the reach of computers beyond their use as mere tools, the faculty of this group works in shape grammars, computational fabrication, visualization and digital controls and sensors. The faculty of these five discipline groups includes architects, landscape architects, urbanists, building technologists and engineers, historians of art and architecture, artists, and various specialists in areas of architectural research, including computation as it addresses design issues. It is an incredibly diverse group of people.

Yet, despite the distinctions made between the scopes of interest of each of the discipline groups, the department has articulated below the shared attributes of inquiry and key concerns that define us as a faculty. These shared concerns drive the continued stewardship of all aspects of the Master of Architecture degree program.

Environment: We are very much concerned with climate change, energy, and conservation of natural resources in general and believe it is possible to design buildings, urban spaces and cities that are sustainable and that foster healthier life styles. In addressing the environmental issues, we, architects and urban designers, strive to take interdisciplinary collaboration to a higher level.

Technology: The possibilities for architecture to engage digital technology and building technology are far beyond form making. Digital tools enabled us to think effectively about such complex problems as building systems, environmental impacts and strategies, climate change, program organization, parametric approaches to design, and city design. Technologies in other areas, especially in the material and construction industries, have been changing not only how we build but also how we design and how we live. The integration of technological components in architectural design is therefore of paramount importance.

Culture & Society: While the fundamental agenda of architecture continues to be centered on the organization and experience of space, material, tectonic assembly, and light, it is crucial to comprehend the cultural diversity and social responsibility created by different contexts and

constituencies across the world. We seek strategies that understand the legacy of the past while addressing the pressures and opportunities of the present to create human and enriching built environments

City: We are acutely aware of the fundamental capacity of architecture to contribute spatially, physically, and functionally to the shared but divergent social and economic life of communities and cities. With 50 percent of the global population now living in cities, urbanism or the architecture of the city has the responsibility to fulfill the need for humane spaces and infrastructure that promote positive social interaction and enhance the individual and collective identities of city residents, especially to improve their abilities to participate in the public realm. We understand the impact of buildings and cities as material and experiential extensions of the land. We thus pay particular attention to the impacts that designed environments have on natural systems and vice versa and, to serve these ends, we do not draw lines between the fields of architecture, urbanism, and landscape.

I.1.2. Learning Culture and Social Equity

This section offers a description in particular of the design studios where MArch students spend a majority of their time; how the community is involved in creating and maintaining a positive learning environment; and policies and practices related to social equity and diversity within the department.

The design studios of the Department of Architecture at MIT are the centerpiece of architectural culture for the MArch program. The primary goal of studio learning is to develop synthetic design thought set in motion by processes that integrate the vast range of issues relevant to the making of humane, enriching and culturally critical built environments. A balance between the engagement in specific concerns of design (for example, building performance, formal organization or the "making and materials") and integrating diverse and sometimes disparate strategies and tools (such as computation versus hand-based techniques) permeates studios at every level, where the learning objectives reflect this complex mix. Students are expected to wade into the complexity of formulating their own design strategies and positions in the context of a rapidly changing world while continuously and explicitly addressing the question of values.

The discourse of the design studios critically depends on a respectful environment that allows freedom of intellectual exploration and presentation. The culture of the design studios at MIT has a long history of cultivating a respectful and positive learning environment that is consistent with the description of an appropriate studio culture as stipulated by the NAAB. The design faculty works actively at every level to establish and maintain an environment that allows the free exchange of ideas with a high level of discourse and criticality. In doing so, a variety of worldviews, ideologies, cultural perspectives and even disparate political and economic positions are allowed to flourish. This has produced a learning environment that allows for collegial and positive discussions of the values that students and faculty bring to studio.

The department is committed to maintaining a pedagogically ethical framework, as defined by the NAAB. We are in agreement with the support of an environment that promotes the fundamental values of “optimism, respect, sharing, engagement, and innovation between and among the members of its faculty, student body, administration, and staff.” Students with concerns about their interactions with faculty have recourse to the Head and established Institute resources including ombudspersons and the Dean of Graduate Education.

Intellectual integrity is the hallmark of any investigative activity in science, engineering and design that seeks effective pathways when facing novel challenges. Honesty in sources and influences, effective and rigorous organization of ideas and use of tools, and consistency of purpose based on clear intentions form the basis for intellectual integrity as defined here. The department expects that students and faculty alike engage at the highest levels of design exploration within a robust framework of intellectual integrity. This attribute of studio culture is also particularly appropriate within the institutional setting of MIT. Architectural proposals – whether in studio or in the profession -- share key attributes with the work of scientists, engineers and others working in open-ended investigative projects. Producing work that is original, rigorously formulated, and relevant to contemporary society is an important value that Architecture shares with all departments at MIT. Therefore, our department asserts that intellectual integrity ranks among the most important attributes of the environment of the design studio.

Also, fundamental to the design studio environment is the active stewardship of *cultural literacy*. The origin of many of our students and their families, whether directly or indirectly, is the most immediate representation of the diversity of our academic community, both faculty and students. These students bring a diverse set of interests and perspectives that reflect emerging global debates regarding the built environment. The design studios actively engage this flux of diverse human interests and perspectives. The department has many examples of studios that venture far and wide, both geographically as well as intellectually, in considering the active role of global cultures in defining this evolving debate. Therefore, we believe it is essential to include cultural literacy as an explicit component of the studio culture policy.

Both intellectual integrity and cultural literacy are key aspects of professional practice as well. Studio instructors at MIT are keenly aware of the importance in transposing the positive academic context of respect, intellectual integrity and cultural literacy into professional careers. Through the IAP internship program, available to MArch students as well as undergraduate architecture majors, students are introduced to a diversity of professional contexts in which their own values are tested and often called upon. The design studios serve as a critical link between abstract discussions of a positive and respectful studio design environment and the working of architectural firms.

In elaborating upon the continual development of our learning culture, there are several elements that comprise our work in this area since the last NAAB visit in 2009:

1. The faculty has regular meetings at which many issues can be aired and the concerns for students' health and well-being are discussed. For example, department-wide meetings with all teaching faculty take place at the start of each semester and this is the venue for broad policy issues or changes to Institute policies to be brought to the faculty and discussed. Faculty that teach studios in the MArch program also meet monthly to discuss any and all issues pertaining to the operation of studios, including any particular issues related to student difficulties. This group also meets at the end of the semester to review studio performance and to flag learning issues that need to be addressed by the program. The Committee on Graduate Students (COGS), with representation from across the discipline groups and programs of the department, meets monthly and is the venue to review current procedures or draft policy or principles related to the educational environment for the MArch and other programs.

2. Each semester the department head meets with the student body. Such town hall meetings include a happy hour and are typically organized by the ASC (Architecture Student Council). They are an informative venue for all students to be acquainted with anything and everything related to the ongoing development of the department and enable students to raise issues of concern or need. The ASC is also involved with the Open Houses for our admissions calendar, organizing information events, hosting potential students, and organizing a Q&A session without the presence of faculty.

Other ASC events that support the learning and studio culture of the MArch program include: Jogging Tuesdays; Happy Hour including a Joint Happy Hour with DUSP three times each term; T-Shirt Competition; Welcome Back Boathouse BBQ with department head; Fall Formal; Mid-Terms Brunch; Massages Before Finals; Finals Brunch; End of Semester BBQ; Tips and Tricks Tutorials; V-Ray for Photoshop Rendering, CNC Milling and Photoshop Collaging.

3. The department encourages the ASC to be as pro-active as possible in developing a positive and supporting learning, studio, and cultural environment for the benefit of all students. Archkiosk.com is a blog created and managed by students that offers a gathering place for continual commentary and dialog about architecture and student life and studies, and a vehicle to express studio culture and resources. Please see: http://archkiosk.com/about/ The ASC is also considering how a poster in each studio can best be used to provide information about local and immediate resources.

4. The MIT Architecture Graduate Handbook is an online information guide developed and regularly updated by the Department of Architecture (http://architecture.mit.edu/handbook/graduate-students). A print version called the Graduate Orientation Handbook is handed out at graduate orientation prior to the start of the fall semester. The handbook is a comprehensive guide to the department organization, registration, financial aid and other useful information to enable students to navigate their way around MIT. In addition it describes includes the NAAB statement, MIT's Nondiscrimination Policy, MIT's Policy on Harassment, and a statement onAcademic Honesty.

5. Design studio culture policy. The following statement document has been posted in each of the spaces used to host all design studios, workshops and thesis work in the department. It is also posted in the online version of the Architecture Graduate handbook (above).

Design Studio Culture Policy

The Department of Architecture fosters an environment that is open to innovation and encourages students to pursue individual and collective initiatives. As the department is horizontally distributed in its organization, students feel empowered to engage faculty and resources across disciplines. This promotes a hands-on learning environment that allows for unmediated access to fabrication modes and critics. Through collective student participation – mediated by the Architecture Student Council – students are able to organize around shared interests, further discourse, host events, and promote intra- departmental exchange. The entrepreneurial culture of the department instills a spirit of self-discipline and prepares students for their futures.

Policies and Practices regarding social equity and diversity

The Department of Architecture is a deeply multi-cultural and ethnically diverse place. Achieving equity in learning, teaching and working for students, faculty and staff of every cultural and ethnic background is of the highest priority. Our efforts in this area are continually evolving to respond to changing national and international conditions and to remain effective toward achieving the goal of building a community that mirrors the US society's diversity in cultural and ethnic heritage.

To begin, MIT has a clear policy guiding equity and preventing discrimination in education and employment. A portion of that policy is excerpted here:

> The Massachusetts Institute of Technology is committed to the principle of equal opportunity in education and employment. The Institute does not discriminate against individuals on the basis of race, color, sex, sexual orientation, gender identity, religion, disability, age, genetic information, veteran status, ancestry, or national or ethnic origin in the administration of its educational policies, admissions policies, employment policies, scholarship and loan programs, and other Institute administered programs and activities, but may favor US citizens or residents in admissions and financial aid.[8]

Of the 72 incoming graduate students for the department in AY13, 44 students (61%) were classified as international students or not US permanent residents. Of the 28 domestic students, eight students (29%) were classified as underrepresented minority, or URM (defined as Hispanic/African American/Native). These percentages vary yearly depending on acceptance rates, though the data from the previous five years show a positive trend of increasing diversity among the domestic students from a low of 7% in AY10 to a high of 29% in AY13. The percentage of women graduate students has varied from a low of 42% to a high of 51%, which is higher than the MIT average of 32% (as of 2011) women among graduate students. As of Fall 2013, 41 percent of graduate students at MIT are international students and 11% of the domestic graduate students are under-represented minorities (URM). In recent years, graduate students in the Department of Architecture have been significantly more diverse than the wider Institute. The department is not complacent however, and continues to work to increase student and faculty diversity to be representative of US society at large.

[8] MIT Policy and Procedures: found at http://web.mit.edu/policies/index.html

Year	Domestic		International		Minority (URM)		Women		Total
	Number	% of total	Number	% of total	Number	% of domestic	Number	% of total	Number
AY13-14	28	39%	44	61%	8	29%	37	51%	72
AY12-13	47	62%	29	38%	11	23%	35	46%	76
AY11-12	66	73%	24	27%	13	14%	38	42%	90
AY10-11	44	63%	26	37%	3	7%	35	50%	70
AY09-10	46	58%	34	42%	5	11%	39	49%	80

Diversity of Incoming graduate student class in the Department of Architecture at MIT (2009-2014)

In contrast, of the 1,017 faculty at MIT as of 2011, approximately 22% are women and 12% belong to US minority groups. Of the 45 permanent members of the architecture faculty, 14 are women (31%) and 4 are under-represented minorities (9%). The Institute and the department are continually striving to achieve higher percentages that reflect US society as a whole. We are aided in this effort by strong policies and initiatives of the institute.

Professor of Practice Philip Freelon FAIA has taught the professional practice course required of MArch students over the last five years. Professor Renee Green joined the architecture faculty in 2011, bringing the total number of permanent African-American faculty to 3 (Freelon, Green, and Sass), or 7% of the faculty, which is substantially higher than the national average of 2% of architects but lower than the general population of 14% in the United States. All three are nationally leading designers and researchers, and a diverse faculty helps to promote graduate applications from URM candidates.

Currently the department makes an effort to identify minority architects to invite to reviews, especially final thesis reviews. The department also promotes diversity among visiting faculty at MIT, and created the Robert R. Taylor Visiting Professorship in 2011, when Walter Hood (UC-Berkeley) spent a semester as a teacher and researcher at MIT.

The department supports the National Association of Minority Architects (NOMA) by sending student and alumni representatives as well as sponsorship for the NOMA annual meetings that are attended by numerous minority students, including those from Syracuse, NJIT, NC State and several historically black colleges and universities (HBCUs). These efforts have helped to raise the visibility of MIT architecture for URM applicants and have helped to increase our graduate application pool.

Criteria and procedures for achieving equity and diversity in student admissions, advancement, retention, and graduation have been a high priority for our department. Equity and diversity in the MArch student population are achieved in the admissions process. From an almost equal number of male and female applicants at both levels, admissions committees are charged to achieve gender balance in their

choices of qualified applicants. Students accepting admission are equally men and women, with a small number of minority and international students each year. Minority candidates are few; each minority offered admission is given special consideration for tuition support throughout the program. Advancement and retention in the MArch program are race and gender blind.

Attracting and retaining minority applicants to the department has been a challenge. We do not perceive this as a reflection on the environment of the department but as a wider challenge for the academy and the profession. However, continual attention is necessary to ensure that we are doing everything possible to build and maintain a culturally and ethically diverse community.

A proactive approach is the most productive path and the department is taking steps in this area. First, the department's administrative officer compiles admissions statistics for all departmental degree programs annually. Importantly, this information is not sequestered in architecture headquarters but is clearly presented in tabular and graphical formats and shared with each member of the department's Committee on Graduate Students (COGS). The spreadsheet files prepared for this compilation will serve as a template for annual updates, which can be done by staff other than the administrative officer. The statistics are based on self-identification of ethnicity by applicants, a process that anecdotally underestimates minorities because some do not so identify themselves.

Second, the department recruits minority students and visiting faculty. The department's academic administrator for Master's degree programs (Cynthia Stewart) has been asked to track minority applicants and work with admissions committees to ensure those accepted are made to feel welcome in the department, school and Institute and are supported within currently available Institute resources. The School Diversity Coordinator is invited to participate in the spring open house for those offered admission to the MArch program and in the fall orientation for those who have accepted admission; and also arranges for interested minorities to meet the department head and the dean. Given the successful experience in DUSP as shared by Lawrence Vale, the department recognizes the importance of making a strong effort to improve the yield for minorities accepted into graduate programs.

The department has advancing the following actions in recent years[9]:

- The establishment of the Robert R. Taylor Fellowship[10]
- Attention to URM applicants during admissions and open houses
- Recruitment of minority visiting faculty
- Recruitment of minority applicants to the graduate programs
- Collaboration with Black Alumni at MIT (BAMIT)
- Collaboration with the Robert R. Taylor Network
- Identification of minority alumni and alumnae
- Department staffing to support diversity activities

The first Robert R. Taylor Fellow in architecture has recently graduated from MIT and has cited the fellowship as an essential reason for coming to MIT.[11]

Third, the department actively advertises its program through the NOMA website and sponsoring students who are presenting papers from MIT at the annual NOMA conference.

All of these efforts benefit greatly by the broadest possible knowledge of and participation from the department, school and institute community. There are diverse means by which faculty, students, and staff are given access to the formulation of policies and procedures, including curriculum review and program development. The department head consults regularly with the associate department head,

[9] Diversity Report: Submitted to Associate Dean Mark Jarzombek, School of Architecture and Planning and Nader Tehrani, Head, Department of Architecture, June 1, 2010
[10] This fellowship honors Robert R. Taylor, a department alumnus (class of 1892) and the first African-American to receive an architecture degree in the United States.
[11] http://video.mit.edu/watch/an-interview-with-philip-ewing-the-first-recipient-of-the-robert-r-taylor-fellowship-27124/

discipline group and program directors, department committee chairs, administrative staff, and Architecture Student Council members for their perspectives and recommendations. Likewise, faculty, students and the appropriate staff members comprise committees where many of the recommendations for policies and procedures originate: for example, curriculum reviews, long range planning, and computer resources. Student representatives routinely serve on admissions, search, and curriculum committees as well as special committees convened by the head and dean.

I.1.3. Responses to the Five Perspectives

Architectural Education and the Academic Community
That the faculty, staff, and students in the accredited degree program make unique contributions to the institution in the areas of scholarship, community engagement, service, and teaching. In addition, the program must describe its commitment to the holistic, practical and liberal arts-based education of architects and to providing opportunities for all members of the learning community to engage in the development of new knowledge.

MIT's Department of Architecture is deeply embedded in the physical and intellectual structure of MIT, and makes a lively contribution to the intellectual and creative life of the community well beyond its relatively small size. In addition, as a key academic component of the School of Architecture and Planning, the design work and cultural voice of students in the MArch program are amplified across the MIT student and faculty community.

Students throughout the Institute often take classes developed primarily for M.Arch students, especially as design plays an increasingly cross-disciplinary role in the Institute. In this regard the pedagogical structure of studio-based education is of interest to several other departments, including those in engineering and the Sloan Business School.

Many department faculty teach classes tailored for other architecture and student audiences and, as a form of community engagement and service, advise incoming undergraduates (who do not declare a major until the end of their first year) and supervise undergraduate and graduate research projects.

Strengthening the holistic design skills of M.Arch students, rather than force-feeding technical or even cultural facts and figures, guides teaching in courses that support our studio-based education, which as a rule include projects or writing assignments that require a synthetic application of existing and newly developed knowledge. The curriculum includes substantial input from historians of art and architecture.

Since the last NAAB team visit, MArch students and Department of Architecture faculty have made many contributions to the Institute life. Of particular note is the series of physical installation projects developed for the Festival of Art, Science & Technology (FAST), a prominent part of MIT's 150th anniversary celebration in 2013; many of the projects were developed with faculty colleagues in other disciplinary areas and fabricated by students. Also of note are the symposium developed by HTC faculty on the history of MIT in the post-war period that has culminated in a major book edited by Arindam Dutta; contributions made to MIT's online global learning in the form of MITx and edX through Mark Jarzombek's global history class; collaborative international project in Japan, Cambodia, Haiti and other parts of the world dealing with such issues as post-disaster reconstruction and climate change; and new innovative classes arising from cross-disciplinary design studies between architecture and the media lab working with such issues as fabrication, self assembly and embedded digital technologies.

Architectural Education and Students
That students enrolled in the accredited degree program are prepared: to live and work in a global world where diversity, distinctiveness, self-worth, and dignity are nurtured and respected; to emerge as leaders in the academic setting and the profession; to understand the breadth of professional opportunities; to make thoughtful, deliberate, informed choices; and to develop the habit of lifelong learning.

MIT and the greater Boston area are ethnically, culturally and intellectually diverse. It is the norm of the Institute and department to protect these and other dimensions of diversity, through policy and, as necessary, corrective measures. Student leadership skills are developed through opportunities to serve as teaching assistants and through participation in research projects that require individual initiative and responsibility. Through presentations in studio and other courses and opportunities to interact with faculty in discussions of their work, students learn to appreciate the value of developing a well-reasoned view of professional work and societal forces that shape that work.

The Department of Architecture has maintained a position that graduate education is preparing students to think and navigate their way through an increasingly complex world through the medium of design and architecture. Their education, while equipping them with an appropriate skill set, also enables them to position themselves in the world of design practice in a multitude of ways. In this sense we have always celebrated the diversity of intellectual positions and opinions, trajectories and career paths taken by our graduating students. Ultimately, we believe it is this capacity to think and navigate that enables MIT graduates to become leaders in a variety of different settings both within the architectural profession and in new professional territories beyond the conventions of traditional practice.

The extent of this preparedness for a global world is seen through the scope and diversity of work undertaken each year by the graduating thesis class in the MArch program. Here we find students reaching out to look at large, small, global or regional issues in different parts of the world through the lens of architecture as well as other aligned disciplines. In many cases this thesis work develops a career path or positions them for making contributions to established practices.

Most MArch students will also engage in some form of research during their residency in the program, either through design research workshops or working with faculty on research projects around the globe, such as the Venice Biennale or projects in Japan, China or Africa. Such projects typically address issues of urbanization, climate change, or cultural and social contexts.

Architectural Education and the Regulatory Environment
That students enrolled in the accredited degree program are provided with: a sound preparation for the transition to internship and licensure within the context of international, national, and state regulatory environments; an understanding of the role of the registration board for the jurisdiction in which it is located; and prior to the earliest point of eligibility, the information needed to enroll in the Intern Development Program (IDP).

The professional practice class (4.222) that has been organized and taught by Philip Freelon FAIA for five years focuses on the regulatory environment. The first lecture presents the context of practice in the United States. Students are introduced to the professional organizations and regulatory agencies that govern architectural practice, including: AIA, NCARB, NAAB, ACSA and individual state Licensing Boards. The class uses excerpts from Marvin Malecha's book *The Learning Organization and the Evolution of Practice Academy Concepts* to underscore the importance of connecting the academy with the profession.

The IDP program is given particular attention and students are encouraged to start their NCARB file if they haven't already. As MIT's IDP Coordinator, Freelon has offered advice and guidance to students throughout the Department of Architecture who may have questions about IDP and licensure.

Later in the semester in the class, there is a resume and portfolio review workshop where working professionals (including the instructors) offer advice and critique on individual student portfolios and resumes. Students are counseled who are about to enter the professional workforce as summer interns or fulltime employees - including advice on interviewing and the relative merits/drawbacks of various firm sizes.

Architectural education and the Profession
That students enrolled in the accredited degree program are prepared: to practice in a global economy; to recognize the positive impact of design on the environment; to understand the diverse and collaborative roles assumed by architects in practice; to understand the diverse and collaborative roles and responsibilities of related disciplines; to respect client expectations; to advocate for design-based solutions that respond to the multiple needs of a diversity of clients and diverse populations, as well as the needs of communities; and to contribute to the growth and development of the profession.

Students are given many opportunities to discern and respect the project-specific influences on architectural design exerted by culture, technology and existing development patterns and to make

design decisions that strengthen what is of value and lessen apparent burdens. In this way, design is more than an unconstrained exploration of form but a direct response to the human condition and an assertion of the role of the architect to advocate for the highest expression of this response by professionals in other disciplines. For example, architects more than engineers are trained to consider how the form and fabric of a building can augment and at times replace environmentally and financially costly mechanical services.

The professional practice class devotes a lecture and class assignment to understanding the alternatives to the LEED environmental rating system; where and how these rating systems are used; and the importance of addressing environmental issues globally as opposed to accumulating points in a rating system. It also covers practice management, project management, marketing, BIM, construction administration, and alternative careers- as well as consultant coordination and alternative careers related to architecture with a panel discussion featuring professionals trained as architects who chose other careers such as acoustic design/consulting, design build, product design, real estate development, campus planning, city planning.

The comprehensive design studio (core 3) has regularly engaged structural and environmental engineers, façade consultants, material specialists and landscape architects- both in reviews and consulting over design work with students in the studio.

With respect to client expectations a session in the professional practice class is devoted to ethics: readings are assigned, a lecture given and case studies on ethical dilemmas are presented and discussed at length. A portion of the ethics lecture focuses on the value of diversity in the profession and how architecture firms must reflect the communities that they serve. AIA national presidents have been guest lecturers in this class.

Architectural education and the Public Good
That students enrolled in the accredited degree program are prepared: to be active, engaged citizens; to be responsive to the needs of a changing world; to acquire the knowledge needed to address pressing environmental, social, and economic challenges through design, conservation and responsible professional practice; to understand the ethical implications of their decisions; to reconcile differences between the architect's obligation to his/her client and the public; and to nurture a climate of civic engagement, including a commitment to professional and public service and leadership.

Many option-level studios and courses required of all students make specific and detailed reference to the environment at a range of physical scales, including opportunities to improve the human condition with minimal adverse impact on natural resources. This knowledge and awareness are also developed through workshop projects and the variable content of required history, theory and criticism classes where debate is stimulated and encouraged. Students are encouraged to critically consider environmental data and projections in studios and classes - and are challenged to advocate for the integrity and improvement of the manmade and natural environment, rather than design without question to regulatory minimum-performance standards or the financial bottom line of clients.

The professional practice class (as mentioned above) considers ethics together with associated dilemmas and positions. The term project (assigned to teams of 4 or 5 students each) focuses on starting a small practice and includes crafting a Vision, Mission and a Strategic Plan. Students are encouraged to envision a practice concept that aspires to goals beyond monetary success and peer recognition.

I.1.4. Long Range Planning

Long-range planning for the MIT Department of Architecture, in great part, is being built on achievements of the last ten years. Under Dean Adele Santos and Department Heads Yung Ho Chang and Nader Tehrani, several key initiatives have been undertaken that can now set the stage for a broader transformation, growth and vision for the near future.

The critical changes that have taken place can be summed up in several points. First, the Department of Architecture has made great strides in the transformation of its design curriculum and now enjoys an excellent reputation among peer design programs, competing for the best candidates in the admissions process. Second, as part of a larger institute of technology, the department benefits from an enviable access to a strong research culture with the ability to tap into inter-disciplinary collaborations, shared coursework, and seminar-workshop courses that advance not only NAAB requirements, but more focused and varied branches of historical, technical, and speculative explorations with an eye on innovation, invention and the production of new forms of knowledge. Third, in support of the first two initiatives, the school has focused a great deal on expanding and consolidating its facilities, not only to provide its cohorts better spaces of learning, but also to bring together its five discipline groups on common ground. We see the expansion of these facilities as the beginning of an even larger enterprise. As a start, the creation of new spaces for the Fab Lab, the Keller Gallery, the Long Lounge, the Center for Advanced Urbanism, the Design and Computation discipline stream suite, and the SMArchS suite have all radically changed the ability of our department to work as a more coherent group, bringing everyone into closer proximity and giving them certain shared facilities for the advancement of dialogue and research. Fourth, we also have the benefit of having hired nearly a dozen new faculty members in the past five years, all of whom have already have made significant contributions to the department and have made the presence of MIT known to a larger world beyond our borders. With their input on curricular reform, the creation of new courses and the launching of new initiatives, MIT is thriving with a critical mass of vital protagonists now, with the potential of making significant contributions to architectural culture in the next ten years.

As we look to the future, we have developed several priorities to reinforce the existing strengths of the department, while also introducing some new elements. As an institute of technology, we are very conscious of the role technology can play within the architectural culture, not only in terms of technical disciplines, but also in the critical evaluation of how technology establishes a role in society. For example, while we have grown our fabrication facilities, we aim to build a large scale high-bay structure with the promise of offering shared research facilities for the design, computation, and building technology discipline streams, and to use the research of our academic community to impact the industry at large. In tandem with the Building Technology discipline stream, this would enable us to offer a space of innovation for full-scale mockups, exploratory structures, and material testing to become part of the critical and intellectual culture that characterizes our department.

After an evaluation of our admissions yields, we have also come to realize that our facilities, while in a central location at the front entry of the Institute, do not in themself have a center as a department. For this reason, the Department of Architecture still does not enjoy a physical identity nor does it have a central space that brings its cohorts together for events. In fact, our facilities are spread across three building wings, dispersing our faculty and students with a centrifugal force. As such, one of our priorities looking forward is to be able to bring our community together in a building that has the ability to catalyze more interaction between its players, while also leaving more room for inter-disciplinary collaborations.

After recent reviews with our visiting committee in 2013, we have also come to a consensus that our program may suffer from the lack of a critical mass. In response, we have developed a series of approaches towards growth that will enable a larger debate across our studios and discipline groups. However, this too would ultimately require larger facilities, since the

existing studio spaces are already programmed to the brim and cannot accept more students. A new building or the occupation of another building on campus may offer the possibility of both growth and centralization most effectively.

One of the key strengths of our program and motivations for growth centers on the cultural role that research plays at MIT. Perhaps no other school enjoys such an emphasis on research and exploration because few have such a well organized relationship between varied disciplinary streams from which to draw exemplary expertise. At MIT, research is a staple across Schools, but in the context of the Department of Architecture, we still lack key resources in comparison to areas of science and engineering. For this reason, much work will have to go into fund-raising opportunities for endowments that can reinforce research initiatives already underway and advance areas of potential in the future. Currently, the Institute has its focus of research centered on areas of sustainability, water, energy, and medicine, and innovation, many of which impact architectural studies.

THE PROCESS BY WHICH THE DEPARTMENT IDENTIFIES ITS LONG RANGE OBJECTIVES

Long-range planning in the Department of Architecture is calibrated each year in the of different committees: the cabinet composed of senior faculty in all discipline groups, core course coordinators, SMArchS committee members, the committee for graduate studies, as well as other meetings that directly engage the student body. Each of these groups is asked to identify both immediate and long-range goals pertinent to each cohort, and in response, we undertake changes to the program on a consistent basis for semesterly evaluation even as we have our eyes on larger transformations to the program. In part these meetings are used to identify opportunities emerging from intellectual changes in discipline areas, but they are also used to examine larger cultural changes that emerge from bottom up. At the same time, the head meets with the dean approximately once a week to discuss strategic opportunities from the perspective of the Institute and the Provost's key agendas. The head also meets weekly with the administrative staff in headquarters to monitor fiscal updates, spatial needs, course requirements and forecasting for the admissions season. Formal meetings are required to have meeting notes, which in turn are used as a basis for further discussions and feedback from each group.

Naturally, each department head has her or his own mission, and thus, the objectives of the department are also the result of the vision and bias that is brought from top down. In the context of Tehrani's leadership, much effort was brought into establishing more dialogue between discipline groups, to create both intellectual and physical platforms for this exchange to take place, and to make that exchange as public as possible in order to transmit MIT culture to the outside world.

As part of our identification of objectives, we reach out to different institutional bodies in order to examine our own criteria and vision. In particular, we meet biennially with an MIT Corporation Visiting Committee composed of scholars, administrators, and practicing architects. Committee members bring a variety of data from their own sources that is used to evaluate our position and ranking within the broader arena of other schools. At the same time, as part of our annual undertakings in Headquarters, we reach out to sister institutions to evaluate and compare the transformation of our program in relation to theirs; this is common in the area of admissions, core requirements, faculty evaluations, facilities and resources, intellectual directions, as well as tenure processes. We also gather information regarding the transformation of programmatic needs on an annual basis through the ACSA meetings, and in relation to the NAAB process, which remains dynamic and changing. MIT has an educational representative at the Boston Society of Architects, and this enables our faculty to reach out to a broader community, while also drawing them closer to our academic programs. Thus, the leadership responds to data and information from both above and below, while also thinking about strategic opportunities.

Our commitment to changes within the program is also channeled through a larger dialogue with the NAAB requirements; that is, the relationship between architectural education and the academic community, students, the regulatory environment, the profession and the public good at large. Beyond teaching and administrative service, we require our faculty to develop their own research programs and many do so in the form of community outreach, engaging the public in ways that promote better relationships between production and reception. The priorities of the department are further channeled through a dedicated commitment to the architectural discipline as a holistic practice, a practice where diversity and critical discernment are respected. Our structure as five discipline groups goes a long way to advance this notion, helping to foster a real sense of dialogue between varied priorities and ideological biases. It offers our faculty members and student body opportunities to focus on varied arenas of research, working to produce new forms of knowledge based on different methods, metrics and criteria. We try to create an environment for our students where diversity and cultural differences are celebrated; we do this not only in the admissions process, by ensuring a global outreach, but also in the coursework that they are encouraged to undertake. Beyond studio courses, we place significant importance on our courses in history, technology, computation, and humanities, acknowledging that great architects emerge from an educational experience that underlines both breadth and depth. Most of all, we try to produce students with a critical perception of their place in the world, such that their choices and directions lead to a meaningful role for the architectural discipline. Naturally, much architectural work happens in a productive dialogue with practice and the regulatory bodies that enhance it. Our program has a strong "professional practice" component to it, and we try to draw the professional and institutional frameworks of practice into all our courses, from design studio to HTC, where questions of practice take on a more historical resonance. While our program is detailed about the notion of practice in the North American realm, we take advantage of our globally oriented faculty to broaden the definition of profession to include and engage practice as an international challenge. With community outreach on an international scale, global research and field study, and a history program increasingly focused on physical and social phenomena of cultural difference, we are well poised to speak to architecture as a worldly enterprise. As a result, our program has a broad commitment to the ethical dimension of engagement that is central to an architect’s practices. The work of MIT, as channeled through it own motto, *Mens et Manus*, is dedicated to the translation of thinking to making in the context of society and its amelioration.

I.1.5. Program Self Assessment

The department's self-assessment is largely integral to and indistinguishable from its long-range planning, detailed in the previous section. Self-assessment of curricular offerings and their content begin with the discipline groups and lead to changes made collaboratively among groups under the guidance of the department head, particularly as needed to coordinate studios with other courses. Needs for such resources as space and equipment (notably fabrication facilities) are identified on the basis of the department's plans and the programs and the activities of peer institutions. Members of the department's Visiting Committee provide helpful criticisms and recommendations during their biennial review.

As required for the accreditation process, the department conducted surveys regarding the MArch program. Comprehensive surveys related to the Five Perspectives were completed by MArch alumni from the past ten years, current MArch students, and faculty who teach within the MArch program. An open-ended question section was also included to elicit descriptive feedback. Approximately 30% of alumni, 40% of current students, and 55% of faculty responded.

Overall, responses were extremely positive regarding the quality and worth of the program. The program was considered rigorous and demanding, covering the essentials needed for becoming a licensed architect. Opportunities for innovation, research, projects in other countries, exploration and conceptual thinking were among the greatest perceived strengths of the program. There was an interest in improving interdisciplinary study, and community and service projects. The great majority of respondents would study at MIT again (alumni and current students) or recommend the program to prospective students (all groups).

Results from the surveys will be carefully considered by department administration and faculty, and follow-up communication will be conducted with the many respondents who were interested in discussing their feedback.

I.2. Resources

I.2.1. Human Resources & Human Resource Development

Faculty and Staff

Please see Part I.3.3 for faculty matrix. An updated matrix for faculty currently teaching during the site visit will be placed in the team room. Faculty resumes are included in Part IV Supplemental Information.

The program's mission can be stated succinctly: to provide the highest quality programs of education and research in all areas of study and investigation where strength and competence have been developed, and to do so with a strong commitment to public service and to a diversity of backgrounds, interests, and points of view among faculty, students, and staff. Our human resource development efforts are focused on achieving this mission.

The Institute, including Architecture, hires faculty whose attributes are "creativity, professional competence and leadership, ability and desire to teach, and willingness to cooperate with other departments in promoting the work and welfare of the Institute as a whole.[12]" Reappointment, promotion and tenure reviews all have as their basis the reasonable belief that the candidate is the best available under the terms of the appointment. Review is expected to be sufficiently broad and objective to ensure the preservation of those standards of professional and academic attainment by which the rank is characterized both within MIT and at peer institutions.

Faculty positions are filled from affirmative action searches charged to thoroughly explore the relevant employment market. The search process is described in detail below in the section "EEO/AA." (See also I.1.2 Learning Culture and Social Equity for other initiatives related to diversity.) Terms of faculty contracts are set by the department head, in cooperation with senior faculty of the relevant discipline group. Senior faculty in each discipline area confer with the department head every spring about the progress and prospects for scholarly and professional work and MIT career development of the tenure track faculty with the ranks of assistant and associate professor without tenure. The department head then meets individually with tenure track faculty to outline expectations and advise them. A letter summarizing these meetings is sent to the faculty member in the spring. Tenure-track faculty members are mentored by senior faculty members. Beginning in 2014 each tenure track faculty member will have two mentors, one in his or her discipline group and one outside the discipline group but with allied interests. This is intended to help make their work better known and understood outside their immediate set of colleagues while also spreading the opportunity created by this role to a larger goup of senior faculty members. While tenure track faculty are encouraged to see all faculty members as resources for advice and feedback, the mentors take on additional special responsibility for helping the junior person prepare for promotion and tenure reviews.

Promotion and tenure cases are prepared by ad hoc Department faculty committees, usually in the fourth and seventh years of appointment respectively. Formal reviews are presented for advice and consent to the Department's tenured faculty, chaired by the department head. Positive recommendations must be ratified by the School of Architecture and Planning Council for tenured and tenure track ranks and by MIT's Academic Council for all ranks of associate professor and above. At all levels, criteria for appraisal are as above: creativity, professional accomplishment, and service to the Institute.

Tenure-track faculty members are regularly nominated for career development chairs and the department has succeeded in having a tenure-track faculty member named to a chair every year since 2001. Generally a faculty member holds a chair for three years and receives a generous annual discretionary fund. In addition, start-up funds for new tenure-track hires are provided to allow them to self-

[12] MIT Policies and Procedures: pg. 45.

fund research initiatives quickly and effectively. The department regularly nominates tenured faculty members for endowed chairs and other Institute awards and recognitions.

The Department of Architecture regularly solicits student letters of reference in promotion and tenure cases. Each semester students are asked to submit evaluations of the quality of that term's experience in studios and other subjects using the Institute's online subject evaluation site, which is accessible to all MIT students, faculty, and staff.

Faculty development opportunities supported by the Institute include: Humanities Arts and Social Sciences (HASS) grants, career development chairs, junior faculty research leaves, sabbaticals, and nomination for named professorships and Institute awards. Announcements of outside opportunities are regularly posted to faculty via email. The department maintains bulletin boards for the school where information may be found about competitions, calls for papers and proposals, and conferences.

Staff development opportunities include: training programs offered by the Human Resources Department, possibility of auditing subjects or enrolling as Special Students at the Institute, nomination for School and Institute Awards, and the Institute's Tuition Assistance Program. At the departmental level, the Administrative Officer advises staff members about training opportunities and conducts regular staff meetings with guest speakers that expand staff knowledge and professional skills.

For the faculty, the department employs a number of resources to assist each professor achieve his/her teaching and research goals. Sabbaticals and leaves are supported by the department and the institute. These periods of leave are meant to provide faculty members with the time to pursue research and design activities and augment their skills and knowledge for the eventual benefit of their teaching and long-term intellectual growth and production.

Tenured faculty are eligible for sabbatical following six years of full-time service and may propose either a one-half-year leave at full salary or a full-year leave at half salary, subject to final approval by the Provost. On occasion a faculty member's research or professional opportunities will lead to a request for an unpaid leave of absence. When commitments to teaching and other obligations are accounted for, the department head may recommend that such leaves be granted.

In addition the Junior Faculty Research Leave program was established in 2000 to provide tenure-track faculty with the opportunity to take a one-semester leave with pay to conduct concentrated research. Proposals are submitted to the department head and are subject to approval by the Dean of the School and the Provost. At least one junior faculty member per year has taken such a leave.

Many department faculty members conduct significant outside consulting and professional activities. *MIT Policies and Procedures* states: "The obligation inherent in full-time service is difficult to define since, in academic life, it means far more than a stated number of hours per week. In a context where faculty members have substantial freedom in arranging their professional lives, it implies a controlling interest, loyalty, and first responsibility to the Institute. This obligation, therefore, must remain loosely defined, depending upon principle rather than formula. When it has been necessary for practical reasons to be more specific, the Institute has generally granted full-time members of the Faculty the privilege of devoting an average of about one day per week to their outside professional activities during the academic year and when receiving summer compensation."

The Institute's parental leave policy states that faculty members, regardless of gender, who wish to spend the majority of their academic time on the care of and responsibility for a newborn child or a child newly placed with them for adoption or foster care will be released from teaching and administrative duties for one semester at full pay, but they will continue to be expected to fulfill their thesis-advising responsibilities and sustain their research program. Institute rules on outside professional activities for full-time faculty will remain in force for those on such release. Also, it is expected that, normally, they will not increase their usual outside professional activities. Faculty members can take advantage of this policy in any term they choose within one year after the arrival of a child. Those seeking such release should notify their department heads in writing that they will spend the majority of their academic time on

the care of the child over the period of the release. Such notification must be made as far in advance of the leave as possible (normally one semester's notification is required) so that steps can be taken to cover the faculty member's teaching obligations.

In recognition of the effects that pregnancy and childbirth can have on a woman's ability to perform all the tasks necessary and expected to achieve tenure, a woman who bears a child during her tenure probationary period will have that period automatically extended by one year. A second one-year extension for the birth of any additional child (or children) will be granted by the Provost upon request. As in all tenure cases, a tenure review can take place prior to the end of the probationary period and that possibility should be assessed annually.

Partners or adoptive parents who wish to request an extension of the tenure clock may submit a request in writing to the Provost, with copies to their department head and dean. These copies are for informational purpose only; only the provost can grant the request. In their requests, faculty members explain briefly their work and family situation, and describe how their involvement and responsibility for the care of a child during its first year with the family is sufficient to have a significant impact on their research. No request for extension of the tenure clock can be made during the year in which the tenure would normally be decided. Normally only one extension will be granted. However, in special circumstances a second extension may be requested. In all cases, two years is the maximum extension allowed by this policy.

The development of new skills is critical to an engaged and effective faculty. With particular reference to computer competencies, MIT runs quick-start and longer-term classes that are available to faculty and staff. Faculty may apply to the department head for permission and support to attend training not offered by MIT. The Institute offers opportunities for faculty to improve their teaching styles through program in which they are videotaped in class and receive feedback from personnel trainers.

The department pays for one conference/professional meeting per year. Faculty may submit proposals for additional or extraordinary opportunities beyond that. Faculty have recently attended or participated as speakers at meetings conducted by the AIA, ACSA, ASHRAE, AIChE and others. The department also endeavors to support proposals to host conferences within school, financially and administratively.

The department solicits applications to MIT's Humanities, Arts, and Social Sciences (HASS) internal grant program. Grantees represent all discipline groups.

MIT supports a minimum of $15,000 per year for five years in startup funds to attract women and underrepresented minorities to the faculty; for people outside of those categories, the department endeavors to find equitable startup funding from other sources. Not infrequently and often generously, the Provost provides funds.

As a result our faculty maintains significant positions in architectural firms and other consulting businesses. Many current architectural design faculty members maintain their own practices or consult as architects and urban designers for established firms: Anderson (retired 2014), Beinart (retired 2014), Chang, Clifford, Dennis, D'Hooghe, Freelon, Garcia-Abril, Fernandez, Kanda, Kennedy, Lamere, Nagakura, O'Brien, Tehrani, Santos, Scott, Wampler (retired 2011), Yoon. In addition to meeting the demands of their practices and clients, faculty members stay current in their field by attending, organizing, or presenting papers at professional conferences. Examples: Goulthorpe was co-chair of the 100th ACSA Annual Conference in 2012; Tehrani is co-chair of the 2014 Administrators Conference

<u>Equal Employment Opportunity/Affirmative Action (EEO/AA)</u>

Effective July 1, 2013, President Rafael Reif appointed Professor Edmund Bertschinger as the first Institute Community and Equity Officer (ICEO) at MIT.

In June 2010, MIT issued a sweeping report on faculty race and diversity.[13] The report provides detailed recommendations on how MIT can undertake a comprehensive, rigorous, and systematic study of these issues that can result in effective actions for the near, mid and long terms. As a result of the recommendations, the Dean of the School of Architecture and Planning, through the School-wide Diversity Committee (chaired by Professor John Ochsendorf of the Department of Architecture):

- Collects and reviews pre-search plans for all searches being conducted in the school, and then discusses them in Dean's Council, summarizing the specific recruiting efforts being used to identify underrepresented minority candidates.
- Tracks searches and URM faculty appointments and reviews the short-list of invited candidates to ensure a diverse pool of candidates prior to inviting candidates to campus to interview.
- Reviews and approves all faculty search reports to ensure that every effort was made to recruit and consider under-represented minority and women candidates to the MIT faculty.
- Alerts and informs Visiting Committees to ask about URM hiring and retention, including asking specific questions about the department's plan of action for recruiting URM faculty, to which they would be held accountable on the next visit.

The SA+P and the Department of Architecture have benefitted from the findings of this study both through Professor Leslie Norford's involvement as a member of the committee and as a result of concrete new policies and procedures put in place since the report was published in 2010. This initiative has augmented an already strong commitment to taking explicit actions to increase the opportunities for minorities and women as members of the department faculty. Diversity issues are actively addressed at the level of the School of Architecture and Planning and at the department level. The chair of the School diversity committee works closely with the Dean, the Associate Dean, the Head of Architecture, and the Director of Human Resources for SA+P to coordinate and monitor faculty recruitment and hiring practices.

In addition, the departmental Diversity Committee issued a report on the diversity of our department in June of 2010, which helped to inform the school-wide diversity report published in September 2010. In 2015, both of these reports will be updated and reissued to take stock of progress and continued challenges.

The work of the departmental and school diversity committees, the Director of Human Resources and the faculty has been keenly focused on the recruitment of minority faculty. To do so, the general conduct of a faculty search is as follows. Before a search is launched, the department submits to the Dean for approval a search plan that describes the position, outlines where the position will be advertised and other outreach efforts, who will serve on the committee, and who will serve as Affirmative Action Officer. As required by law, advertisements specify that "MIT is an Affirmative Action/Equal Opportunity Employer." Additional proactive language is used as determined by the search committee. The position is advertised in professional journals and/or newsletters appropriate for the discipline or as recommended by SA+P Diversity Committee which reviews all search plans. The review process includes reading applications and developing a short list of candidates who are invited to the school for personal interviews and who may give a public presentation as well as meet with the committee and other representatives of the department. A search report is prepared which documents the review process in compliance with the school's Affirmative Action guidelines.

Prior to creating a short-list of candidates to invite for an interview, the search committee must submit an interim search report to the School diversity committee for review. If the short-list does not contain URM candidates or women, the committee is asked to justify the omission and to describe the reasons that URM and female candidates were not selected. If the diversity committee judges the efforts of the search committee to be insufficient, then the search committee is required to make additional efforts before candidates are invited to campus for an interview.

At the conclusion of a search and before a proposed appointment is approved by the Dean, the department head submits to the Dean a detailed report on the results of the search. The report must

[13] See http://web.mit.edu/provost/raceinitiative/report.pdf

contain a description of the position and a reference to the approved search plan, including special steps taken to locate minorities and women. The selection process is described, including the number of applicants and the number of minorities and women and their ranking, if ranked. The report states the principal reasons for selection of the proposed candidate over other candidates and includes a résumé. The finalist women and minorities who were not chosen are identified by name and résumé with specific reasons for nonselection; or if any were selected and they declined, their reasons are given. A statement of the department's affirmative action progress is included. These procedures are followed regardless of the race or gender of the chosen candidate. Waivers of search in individual cases may be granted only by the Dean and only if unusual circumstances warrant such waivers.

Also, through support from the Office of the Provost, the department is enabled to support diversity on the faculty through "targets of opportunity." Faculty appointments in the past few years have yielded one woman and one African-American under these auspices.

Visiting Lecturers and Critics

The department is fortunate to attract a diversity of outstanding visiting faculty, lecturers and artists to teach for a semester or for an academic year. These individuals provide replacement teaching for faculty on leave or are invited to teach special topics or option studios.

2009-2010
AD: Hiroto Kobayashi, Cherie Abbanat, Stephen Cassell, Dan Chen, Bill Hubbard Jr., Nicholas Gelpi, Joel Lamere, Miho Mazereeuw (fall), Nondita Mehrotra, Paul Paturzo (IAP), Maia Small (spring), Corinne Ullmann (fall), Angela Watson (fall, IAP)
Visual Arts (now ACT): Muntadas (spring), Andrea Frank, Amber Frid-Jimenez, Wendy Jacob, Joe Gibbons, Oliver Lutz (spring), Joe Zane(fall)
BT: Bemjamin Markham (spring), Carl Rosenberg (spring), Samar Malek (spring)
HTC: Robin Greeley, Ole Fischer (spring)

2010-11
AD: Walter Hood (spring), Rodolphe El-Khoury (fall), Anton Garcia-Abril (spring), Ashley Schafer, Cherie Abbanat, Rients Dikstra (spring), Nicholas Gelpi, Rania Ghosn (sprig), Roisin Heneghan (fall), El Hadi Jazairy (spring), Joel Lamere, Debora Mesa (spring), Nashid Nabian (fall), Cirstina Parreno, Paul Paturzo (IAP), Shih-Fu Peng (fall), Gilles Saucier (spring), Andres Sevstuk (fall), Filip Tejchman, Skylar Tibbits, Marc Tsurumaki (fall), Corinne Ullman (fall)
COMP: Athanassios Economou (spring)
Visual Arts/ACT: Muntadas (spring), John Bell (spring) Mario Caro (spring), Andrea Frank, Oliver Lutz, Angel Nevarez, Nitin Sawhney
BT: Marilyne Andersen, Jaime Gagne (spring)
HTC: Yunxiang (Sam) Liang (spring)

2011-12
AD: Ann Pendleton-Jullian (spring), Cherie Abbanat, Douglas Dolezale (IAP), Makram el Kadi (spring), Nicholas Gelpi (fall, IAP), Ariane Lourie Harrison (fall), Ziad Jamaleddine (spring), Joel Lamere, Giuseppe Lignano (spring), Alistair McIntosh (fall), Cristina Parreno, Paul Paturzo (IAP), Joshua Prince-Ramus (fall), Pari Riahi (spring), Maria Alessandra Segantini (spring), Filip Tejchman, Skylar Tibbits, Ada Tolla (spring)
Visual Arts/ACT: Muntadas (spring), Andrea Frank, Florian Hecker (spring), Angel Nevarez, Jegan Vincent de Paul
BT: Paul Kassabian (fall), Benjamin Markham (spring)
HTC: Sibel Bozdogan, Jennifer Ferng (spring), Christian Hedrick (fall)

2012-13
AD: Cherie Abbanat, Lorena Bello Gomez (IAP, spring), Matthew Bunza (spring), Yolande Daniels (fall), Oscar Grauer (spring), Mark Hash (spring), Young Joon Kim (spring), Parker Lee (IAP), Miho

Mazereeuw (fall), Olga Mesa (spring, Franco Micucci (fall), Cristina Parreno, Skylar Tibbits, Victor "Trey" Trahan (spring
COMP: Mine Ozkar (spring)
Visual Arts/ACT: Muntadas, Howie Chen (spring), Florian Hecker (spring), Angel Nevarez, Jesal Kapadia
BT: Andrea Love (fall), Leonard Morse-Fortier (fall)
HTC: Drew Armstrong (fall), Kazys Varnelis (fall)

2013-14
AD: Cherie Abbanat, Lorena Bello Gomez, Vincent James, Yonatan Cohen, Cristina Parreno, Rafi Segal (fall), Jose Selgas, Bryan Young (spring)
COMP: Andrew Li (spring)
Visual Arts/ACT: Muntadas (spring), Gabriel Kahan (spring), Jesal Kapadia, Oliver Lutz (spring), Matthew Mazzotta (spring), Angel Nevarez (fall)
BT: Andrea Love (fall), Benjamin Markham (spring), Carl Solander (fall)
HTC: Martha Buskirk (fall), Emmanuel Petit (spring), John May (fall), Olga Touloumi fall), David Mather

Department of Architecture Lecture Series and Endowed Lectures 2009-2014

The Architecture Lecture Series brings established and rising architects, artists, engineers, and scholars to the campus for a lecture and often incorporates studio visits and informal faculty seminars as well. In addition, discipline groups regularly sponsor their own lecture series, to which all members of the school and often the public is invited.

Department of Architecture Lecture Series 2009-2014

Adamson, Glenn (w HTC)
Bates, Stephen
Bilbao, Tatiana
Blackwell, Marlon
Brillembourg, Alfredo (w Hubert Klumpner)
Burdett, Ricky
Campbell, Robert
Campbell, Robert (co-sponsored w Womens League)
Carpo, Mario (Keynote Under the Influence Symposium)
Cassell, Stephen
Chang, Yung Ho
Correa, Charles with Kenneth Frampton
D'Hooghe, Alexander
Daniels, Yolande
Dijkstra, Rients
Eberle, Dietmar
el-Dahdah, Fares
el-Kadi, Makram
el-Khoury, Rodolophe
Elam, Merrill
Esslinger, Hartmut (w Masaaki Kanai)- MUJI
Filler, Martin
Forster, Kurt
Frampton, Kenneth (solo)
Frampton, Kenneth with Charles Correa
Fretton, Tony
Garcia Abril, Anton (with Debora Mesa)
Garcia-Abril, Anton
Goldhagen, Sarah
Gramazio, Fabio and Matthias Kohler
Heneghan, Roison (with Shih-Fu Peng)
Hood, Jr., Walter
Irarrazaval, Sebastian
Ito, Toyo (Pritzker Prize Lecture)
Iwamoto, Lisa
Jamaleddine, Ziad
James, Vincent
Johnston, Sharon
Kanai, Masaaki (w Hartmut Esslinger) - MUJI
Kerez, Christian
Kim, Young Joon
Klumpner, Hubert (w Alfredo Brillembourg)
Kohler, Matthias and Fabio Gramazio
Lambert, Phyllis
Lampugnani, Vittorio
Lavin, Sylvia
Lignano, Giuseppe (with Ada Tolla)
Liu, Xiaodu
Lorch, Wolfgang
Love, Timothy
Ludin, Frank (in place of Kathrin Aste)
Mayer, Jurgen
Mehrotra, Rahul
Micucci, Franco
Mosco, Valerio
Ney, Laurent
Pasquarelli, Gregg
Peng, Shih-Fu (with Roison Heneghan)
Phifer, Thomas
Pope, Albert
Prince-Ramus, Joshua
Rahm, Philippe
Rawn, William
RCR Architects (Carme Pigem and Ramon Vilalta)
Saitowitz, Stanley
Saraceno, Tomas (sponsored by CAST)
Sarkis, Hashim (c-spons w MIT Lebanese Club)
Saucier, Gilles
Schlaich, Joerg (1st Allen Lecture)
Segal, Rafi

Segantini, Maria Alessandra
Selgas, Jose
Seraji, Nasrine
Silvetti, Jorge
Smets, Marcel
Snooks, Roland
Sorkin, Michael
Tehrani, Nader
Tolla, Ada (with Giuseppe Lignano)
Trahan, Victor "Trey"
Tusurmaki, Mark
Vale, Lawrence
West, Mark
Whiting, Sarah
Whittaker, Elizabeth
Woo, Kyu Sung
Yamamoto, Riken
Zaero-Polo, Alejandro

Endowed and Special Lectures 2009-2014

Ahmad Tehrani Lecture: John Wardle, Greg Lynn
Edward and Mary Allen Lecture in Structural Design: Jorge Schlaich, William Baker
Arthur H. Schein Memorial Lecture: Adele Naude Santos, Ryue Nishizawa, Manual Aires-Mateus, Patricia Patkau, Alberto Veiga
Belluschi Lecture: Rafael Moneo, Winy Maas, Alejandro Aravena, Benedetta Tagliabue, Enrique Sobejano
Goldstein Lecture in Architecture, Engineering and Science: Jamie Carpenter, David MacKay, Guy Nordenson, Janine Benyus, Matthias Kohler, Shigeru Ban
Special Lecture: Toyo Ito lectured at MIT on the occasion of receiving the 2013 Pritzker Prize

Invited Studio and Thesis Reviewers:

Distinguished external practitioners and academics from other institutions are invited to bring their insights and expertise to mid-term and final studio and thesis reviews. Recent critics include: Gabriel Feld, Mimi Hoang, Sean Lally, Lindy Roy, Jose Selgas, Lola Sheppard, Elizabeth Whittaker, Chris Grimley, Mark Wasiuta, Richard Sommer, Florien Idenberg, David Jameson, Michael Sorkin, Paul Steenhuisen, Michael Szivos, Belinda Tato, Matthew Trimble, Jose Luis Vallego, Geofrrey Von Oeyen, Enrique Walker, Peter Wideerspahn, Jennifer Yoos, Michael Young, Ronald Raell, Camilo Restrepo, Ingeborg Rocker, Ashley Schafer, Beat Schenk, Amanda Lawrence, Christopher Lee, Sergio Lopez Pineiro, Joyce Hwang, Keith Krumsiede, Marieke Kums, MaxKuo, Yen Shi Lai, Santiago Perez, Stephen Philips, Wes Rozen, Michael Zogran.

Public Exhibitions in the Department of Architecture AY2009-2014

Exhibitions in the Wolk Gallery augment the intellectual and social life of the institute. This gallery is located directly across the corridor from department headquarters. Programming of the gallery is organized by The MIT Museum in association with the School of Architecture and Planning. The Keller Gallery opened in the Department of Architecture in 2011 as a venue to showcase work by students, faculyt, alumni, and others. The School's plazma screens, located stratetically throughout the School, continually feature a revolving and ever-changing broadcast of individual and group student and faculty work, including research and thesis projects, studio programs, and professional practice.

The following is a list of Keller and Wolk exhibits since the previous NAAB visit:

2013-14
PosterFerguson: Personal Space (Sep), *Lim Friedman: Perverse Landscapes* (Oct), *Landing Studio: 99 Marginal* (Nov), *Jorge Otero-Pailos: Space-Time* (Feb), *Room Studio: Get to Work (A:Log)* (Mar), *VJAA: Surreptitious Urbanisms* (Apr), and *Millιøns: New Massings for New Masses* (May). The department supported exhibitions on architecture organized by The MIT Museum for the Wolk Gallery, often featuring faculty and alumni, by sharing publicity efforts or offering associated lectures. Exhibitions included *Solidarity Work: Politics of Culture Memory* by assistant professor Azra Aksamija, *Hans Scharoun: Architect and Visionary*, and *Sidewalk City: Mapping the Unmapped.*

2012-13
Objects by Architects (Sep), *Form Active Textiles— Felecia Davis* October), *Certain Aspects of Architectural Form— Liam O'Brien Jr* (Nov), and *DUSP Greenhouse* (Dec/Jan), *Fair Use* (Feb), *Feelings Contexts* (Ma), *Incremental Change* (Apr), and *Beginnings: Drawing Early Architecture* (May-Aug). Wolk Gallery hosted *Frames for Living: The Work of William Wurster* (MIT dean of architecture from 1945-1950), *Suspended City: L'Aquila After the Earthquake of 2009,* and *From Obsolescence to Sustainability:A Century of Architectural Change,* curated by alumnus Daniel Abramson.

2011-12
The Keller Gallery opened in the fall as a venue to showcase work by students, faculty, alumni, and others. Exhibitions were*Trans Trash* (Sep), *Research in Lightweight Concrete* (Oct), *RULE—Work by Khoury Levit Fong, Toronto* (Nov), *The Making of Things—Work* by Ali Tayar (Dec-Jan), *The New Normal*—Work from IAP Fab Lab Workshop (Feb), *Walsh Street House—Robin Boyd* (Mar), *Queer | Body | Architecture* (Apr), *Waterworks—Photographs by Carole Starr Schein* (May), and *Platforms for Exchange*—Core 2 MArch Student Work (Jun). Wolk Gallery hosted *The Ancestral Cemeteries of Kyrgyzstan: The Photographs by Margaret Norton* and *REACH: Architecture of the Freelon Group*, featuring the work of professor of the practice Philip Freelon FAIA.

2010-11
The Wolk Gallery showed the work of associate professor of art, culture, and technology Gediminas Urbonas, *Urbonas Studio: The Learning Machine,* and an exhibition featuring the winners of the Lobby 7 Competition that included several projects by architecture students.

2009-10
The Wolk Gallery featured faculty members Marilyne Andersen (*Delight in Greener Daylight*, Apr-Jul, sponsored by Swissnex Boston-Consulate of Switzerland) and Nader Tehrani/Office dA (*Where Practice Meets Pedagogy*, Feb-Apr). An exhibition of recent and current master of architecture theses was part of the celebration for the opening of the School's new Media Lab complex.

2008-09
The Wolk Gallery hosted *Fading Hutongs: Photographs by Julio de Matos*; *Working in Mumbai*, showing the architecture and design work of Rahul Mehrotra; *The Cities of Angkor*, organized by Mark Jarzombek. Student and faculty work was featured on the School's plazma screens and on dedicated plazma screens programmed by the department.

Students

Admissions/Degree Requirements

The Master of Architecture programs requires the following academic preparation:

1. A Bachelor's degree with high academic standing from a recognized institution, or in the judgment of the department, the equivalent of this degree.
2. Two semesters of satisfactory study in college-level mathematics (such as algebra, geometry, pre-calculus, calculus).
3. Two semesters of satisfactory study in college-level natural sciences (such as, physics, biology, chemistry).
4. Six semesters of satisfactory study in college-level humanities and/or social sciences.

Students may be admitted with limited deficiencies in 2, 3 or 4 above, but this deficiency must be removed prior to entry into the second year of graduate study in the department.

Applicants to the accredited Master of Architecture degree are required to submit a graduate application that includes a personal statement, three letters of recommendation, an original transcript from each of the previous colleges attended, Graduate Record Examination (GRE) scores, and a digital

portfolio that includes evidence of recent creative work, whether personal, academic or professional. Applicants whose first language is not English must submit either an International English Language Testing System (IELTS) score or a Test of English as a Foreign Language (TOEFL).

The MArch Admissions Committee, composed of architecture design faculty and instructors, ranks each application based upon overall academic record (personal statement, letters of recommendation, transcripts, test scores) and the portfolio. In addition to the academic ranking, the committee looks to form a balanced pool including students with architecture and non-architecture backgrounds, citizenship, gender, and ethnicity, amongst other considerations.

Size of Student Body

The Department continues to balance the population of its masters and PhD programs and has maintained a relatively consistent target goal within degree programs. We decreased our desired steady-state enrollment for the MArch program from 102 to 91.5 (FTE enrollment for the 2.5/3.5 year program; or from 117 to 105 quoted as Fall term enrollment), with a corresponding increase in the SMArchS population from 50 to 56. All other programs remain unchanged: 40 PhD students divided among three discipline streams, 6 SMBT, and 12 SMACT degree candidates. Please refer to section 1.1.4 Long Range Planning and 1.2.4 Financial Resources concerning on-going discussions about an increase in the size of the MArch program, as a result of the 2013 visit with MIT's Visiting Committee.

The graduate student applicant pool for the department as a whole experienced a dramatic growth from 720 in AY09 to 1,011 in AY10 and has hovered slightly above that level since that time. Perhaps the two most pertinent statistics are the percentage of applicants who are offered admission and the percentage of those admitted who attend. Obviously a low value for the first statistic indicates that a program is perceived by applicants to be highly desirable and that a program's faculty can select the very best students. During the last five years, the percentage of offers vs. the applicant pool ranges from a high of 20% in AY09 to a low of 12% in AY12. A high value for the second statistic shows that those admitted value a program more highly than its peers and are financially able to attend. During the last five years the percentage of candidates who accepted the offer of admission has ranged from 52% in AY10 to 61% in AY11. Our yields are similar to those of our sister department Urban Studies and Planning (DUSP), as well as the Department of Civil and Environmental Engineering (CEE).

See Chart 1.2.1a for applicant pool versus yields for all degree programs. *(Figures in this chart are quoted as "calendar year" while figures above are quoted as "academic year". Note that calendar year 2008 is synonymous with academic year 2008-2009).*

See Charts 1.2.1b and 1.2.c, which refer to the MArch program only and are broken down by the 3.5 and 2.5 yr. entry pool.

Undergraduates are accepted first to MIT and then declare a major at the end of their freshmen year. Students can choose any major they please, so we have no direct control over the size of the undergraduate population. In AY03 it was 61, but declined approximately 25% by AY09. It has held steady state at about 45 since AY09, a period of larger fluctuations in DUSP and CEE. See Charts 1.2.1d and 1.2.1e for total undergraduate graduate and majors.

Gender and Ethnicity Summary

Our graduate programs are doing well in terms of gender diversity, with approximately 55% men and 45% women, a consistent average in the last five years. Diversity between United States and International citizens is strong, with roughly 40% of the graduate population being from international countries.

Students self-identify ethnicity and race as part of the admissions process. The category of underrepresented minority (URM) students *at MIT* includes those who have identified as American Indian

or Alaskan Native, Black or African American, Hispanic or Latino, and Native Hawaiian/Other Pacific Islander. The percentage of graduate students in these categories has grown steadily in the last five years, from 4% in AY08 to 11% in AY12.

Across all graduate degree programs the number of underrepresented minority (URM) applicants is lower than desired. The scarcity of URM students graduating from professional degree programs (BArch or MArch) means that the pipeline problem becomes even more acute at the SMArchS and PhD levels. Additionally, there is some evidence that there is not strong support within some URM communities to pursue advanced degrees that lead to teaching or practice positions that are low-paid in comparison with jobs in industry.

To address ethnicity balance, our graduate admissions committees are encouraged to be particularly alert to all URM applicants and not to disqualify them if they have atypical backgrounds or do not conform to faculty or discipline groups' specific or narrow agendas. We continue to work towards finding creative ways to reach out to students in the pipeline – such as a participation in the summer high-school offering through MITES (Minority Introduction to Engineering and Science).

As mentioned above, undergraduate students at MIT can choose any major and, as such, we have no direct influence on the total number of students, nor diversity in gender, citizenship, or race. We generally have a large percentage of women (70%) in our undergraduate program. MIT controls the percentage of admitted international undergraduates. The percentage of underrepresented minority students at the undergraduate level (26%) has been consistently higher than at the graduate level (6%).

See Chart 1.2.1f for percentage of women majors, and Chart 1.2.1g for underrepresented minority majors.

Charts referenced above are found at:
http://web.mit.edu/arch/NAAB-2015/I.2.1_Charts_Student_Info.pdf.

Support Services

Through the administration and faculty, the department manages and delivers a diverse range of student support services that includes academic and personal advising, career advice and placement, including internships and regular evaluation of their progress through the department. The degree administrators and their student services assistant manage the first and most substantial advising of incoming professional students. They prepare a comprehensive guide of Institute and Department information and schedule a week of orientation activities. The MIT Libraries and CRON offer their own orientations. Subsequently, students are assigned to faculty registration officers who approve their subject enrollments each semester and monitor progress in meeting curriculum requirements. Finally, the studio instructor has an important place in advising his/her students for any term and often develops continuing mentoring relations.

Each MArch student is assigned a Registration Officer who also serves as an academic advisor. The Registration Officer is a member of the architecture design faculty or is a faculty member with a professional architecture degree. The department's Administrator for Master's Degree Programs advises MArch students on the degree requirements, monitors each student's progress towards fulfilling the degree requirements, and also provides each student with a degree audit after every semester. The degree audit letter lists which subjects have been advance placed, which taken at MIT, and which remain to be taken to complete the MArch degree. In the audit letter, students also receive notice of their studio eligibility for the next semester and the number of semesters of financial aid eligibility remaining to them. Students must complete all degree requirements in order to graduate. Receiving audits each semester prevents surprises or misunderstandings at the anticipated time of graduation.

At the end of each semester, following studio reviews, the department head meets with the studio faculty to review students who have shown weakness in their studio work. It is the intention of these

meetings to advise students on ways to improve their skills and successfully complete the required studio sequence. Options include more directed attention to skill-building in subsequent studios, repeating a studio, or taking time off to strengthen skills by working in a professional office. The Committee on Graduate Students (COGS) reviews recommended actions.

The Office of the Dean for Graduate Education (ODGE) has a Senior Associate Dean and an Assistant Dean for Graduate Student Support and Advising, who can provide support for students with a variety of issues including faculty/student relationships, conflict negotiation, academic progress, interpersonal concerns, and a student's rights and responsibilities. The ODGE deans also refer students to Mental Health Services and coordinate the medical withdrawal process. Towards the end of every semester, the department sends an email reminding students of outreach, crisis and wellness resources available to them through the institute.

The MIT Global Education and Career Development Center (GECD) provides career counseling and guidance, internship and job postings, and can help students with job searches. The GECD has a designated career counselor to advise the Department of Architecture students and regularly advertises opportunities through email and their webpage.

Opportunities

Undergraduate and graduate degree candidates in the department have opportunities to participate in a wide variety of academic enrichment opportunities, including internships, course-related travel, conference participation, and research assistantships, to name a few.

Staff members organize and maintain department bulletin boards, where announcements for study abroad opportunities, competitions, travel grants, and jobs abound. The department supports an email "bulletin board" (arch-kiosk) for similar news, opportunities, and announcements including the Boston Society of Architects monthly newsletter and the Emerging Professionals Network newsletter. Whether or not off-campus activities are financially supported through the department, students are often nonetheless supported administratively; for instance, headquarters staff members may assist with visas and faculty write letters of introduction and recommendation.

MArch students have opportunities to pursue internships during the January Independent Activities Period (IAP). A department IAP Internship Coordinator places students in local architecture firms to intern full-time for the entire month of January, and earn academic credit. In addition, each summer one Department of Architecture graduate student is placed in a three-month internship in the Architectural Design Section of the Takenaka Corporation's Osaka office in Japan. MArch students may apply for this competitive department internship. Professor of the Practice Philip Freelon FAIA serves as the department's IDP liaison.

The MIT International Science and Technology Initiatives (MISTI) matches students with fully-funded internships abroad. In recent years, MArch students have participated in MISTI internships with architectural firms in France, Japan, and other countries both during the summer and upon graduation.

Our students participate in service learning opportunities sponsored by MIT's Public Service Center. Through service learning, MIT faculty and students partner with community clients to address real-world problems. For example, two MArch students recently worked with the Olive Branch for Children to design and provide construction instructions for a children's home in Tanzania. These students will travel to Tanzania for construction administration during the initial building phase. Also in summer 2014, three MArch students will travel to the remote Turkana region of Kenya to participate in building a pavilion to be used as a vaccination and educational clinic.

Each year we provide a scholarship for one graduate or undergraduate student to attend the Architecture Summer Session at the Chateau Fontainebleau in France. The scholarship is made possible by the support of A. Anthony Tappe, MArch and MCP '58. The 5-week program features workshops,

lectures, visits and studios in and around the Chateau Fontainebleau.

The Department regularly sponsors subject-related field trips, at relatively little expense to the students, based upon a competitive proposal process. Site visits vary from short visits to regional sites such as MASS MoCA, Zimmerman House, Gropius House, Philip Johnson's Glass House, and Dia Beacon, to week-long site visits to locations as far away as Kenya, South Korea, Indonesia, and India.

All graduate students are eligible for Department travel support to one professional conference per year, providing the student is taking an active part in the scholarly meeting (such as presenting a paper or chairing a panel). Examples of recent conference participation include Robots + Arch held at the University of Michigan, Bicycle Urbanism Symposium at the University of Washington, Association for Computer Aided Design in Architecture in Toronto, Kino-Integral held in Ljubljana, the annual ACADIA conference, and Earth Perfect held at the University of Delaware.

The Department of Architecture sponsors research grant opportunities, based upon a competitive application and selection process. Eligibility requirements vary; recent awards to MArch students include the Schlossman Research award, the Louis C. Rosenberg Travel Fellowship, and the Marvin E. Goody Award. All of these grants offer a modest funding opportunity for a student to pursue his or her research.

Faculty members regularly hire graduate students to participate on research projects. Opportunities vary from year to year, but recent examples have taken the form of students working on the US Pavilion project at the Venice Biennale; a research study focused on a project in Chongqing, China, funded by the Chinese Development company Verakin; and a project sponsored by the Sydney Frank Foundation to explore the development and methodology for basic research in prefabrication, to name just a few. The newly formed Center for Urbanism hosts a number of faculty led-projects that employ MArch and SMArchS degree candidates, ranging from projects that focus on autonomous urbanism, technology and urbanism, and health and urbanism.

Graduate students are notified about campus-wide activities primarily by email. All graduate students are automatically added to an Institute email list, and all graduate students receive a monthly Graduate Student Digest, which may be accessed online at http://resources.mit.edu/digest/graduate. In addition, MIT's Graduate Student Council has as announcement email that goes to the entire graduate student community on a weekly basis (http://gsc.mit.edu/resources/anno-submissions/). Announcements about campus-wide activities are also forwarded to the Architecture email list arch-kiosk.

Examples of campus-wide activities MArch students have participated in include:

- **MIT Legatum Center for Development and Entrepreneurship**. Bin Li, MArch '14 and Slobodan Radoman MArch'13 were Legatum Fellows http://legatum.mit.edu/fellows/bin-li and http://legatum.mit.edu/fellows/slobodan-radoman
- **MIT Graduate Student Council**. Rudy Dieudonne, MArch '14, was Editor-in Chief of the Graduate Student News. http://gsc.scripts.mit.edu/wptest/wp-content/uploads/Spring_Forward.pdf
- **MIT Ideas and Global Challenge**. Ogheneruno (Runo) Okiomah, MArch '11 and her team won the 2011 Yunus Challenge for their proposal, "Maa-Bara: Catalyzing Change" http://globalchallenge.mit.edu/teams/view/156 and http://web.mit.edu/mitpsc/whatwedo/ideas-competition/

I.2.2. Administrative Structure & Governance

MIT is accredited by the New England Association of Schools and Colleges, Inc., through its Commission on Institutions of Higher Learning (see II.2.1 Regional Accreditation).

The Institute's board of trustees, known as the Corporation, meets quarterly and consists of distinguished leaders in science, engineering, industry, education, and public service, and (as ex officio) the chairman, president, treasurer, and secretary of the Corporation. The Corporation appoints visiting committees for each academic department and other appropriate units within the institute; the visiting committees make recommendations to the institute administration and the Corporation concerning departmental activities and in turn provide counsel to the departments. The Institute's chief executive officer is the president. Senior academic and administrative officers of the Institute include the chancellor, provost, executive vice president, associate provosts, school deans, vice presidents, dean for graduate education, dean for undergraduate education, dean for student life, and director of libraries. Academic departments and divisions – each under the leadership of a head, director, or associate dean – are organized within five schools (Architecture and Planning; Engineering; Humanities, Arts, and Social Sciences; Management; and Science) and Whitaker College.

The School of Architecture and Planning has two departments: the Department of Architecture and the Department of Urban Studies and Planning. In addition the School hosts the Center for Real Estate; the MIT Program in Art, Culture, and Technology; the Center for Advanced Urbanism; and the Program in Media Arts and Sciences.

Coordinating the activities of the faculty and the resources of the Department of Architecture is the administration, led by the Department Head and Associate Department Head who have overall responsibility for the administrative life of the department. The department is organized into five discipline groups: Architectural Design; Building Technology; Design and Computation; History, Theory, and Criticism of Architecture and Art; and Art, Culture, and Technology. Each discipline group is coordinated by a tenured faculty member and is charged with its own governance on matters of teaching schedule and curriculum. Discipline groups form the core membership of search, promotion and tenure committees in their sections. Administrative entities also include the SMArchS and Undergraduate Programs. Discipline and/or program group directors together constitute a cabinet that serves the head in an advisory and coordinating capacity. The department's Committee on Graduate Students meets regularly to discuss curricula, student performance, and issues related to Institute policies. On matters of faculty appointment, reappointment and tenure including discussions regarding the nature of the five discipline groups and their coverage of the curriculum and research, the entire tenured faculty meets regularly with the Head and Associate Head. Assigned committees undertake specific administrative and academic tasks including admissions. In addition, faculty members regularly serve on Institute committees under the auspices of the faculty and the office of the president and teach Freshman Advisor Seminars.

Administrative staff includes the Administrative Officer (budget, personnel, space allocation), Fiscal Officer (accounting), Assistant to the Department Head, Administrator of Professional Programs (MArch, SMArchS, SMBT, and SMACT degree programs), and Administrator of Academic Programs (undergraduate and PhD programs). The department is well supported by the School's Manager of Computer Resources and Facilities Manager. Headquarters staff also includes a webmaster and admissions specialist and student services assistants and a manager of fabrication facilitiesEach discipline group has dedicated staff assistants whose duties vary slightly between sections but, in general, include preparation of faculty searches, promotion and tenure cases, course materials and schedules, monitoring of section and faculty research accounts, and providing general support to faculty and students.

More specifically:

The Department Head is the chief academic officer and senior faculty member responsible for all departmental administrative and academic business; overseeing Department budgets; making all

recommendations regarding appointments, promotion, and tenure to the Dean of the School and the MIT Academic Council; serving as chairman of the faculty for policy discussions, and representing the department at MIT functions. Ongoing management matters between the department and the school are handled in regular meetings of the Head and the Dean. Overall policy for the School of Architecture and Planning is the responsibility of the School Council, chaired by the Dean, and of which the Department Head is a voting member. J. Meejin Yoon was named Department Head effective 1 July 2014, following the four-year term of Nader Tehrani.

The Associate Head assists with all matters of department administration. Leslie Norford currently fills this position. In his role as Undergraduate Officer, he also advises the head on matters of the undergraduate degrees, as does John Ochsendorf who succeeded Yoon in the role of Director of the Undergraduate Program. Arindam Dutta is Director of the SMArchS program and coordinates the efforts of the various SMArchS degree programs, especially with regard to admissions, building community, final reviews and other administrative matters these students have in common. Anton Garcia-Abril is the current director of the MArch Program and the Architectural Design discipline group. Andrew Scott is the program's NAAB Coordinator. The principal advisory committee to the Head is the Cabinet, comprised of discipline and/or program group directors. The Committee on Graduate Students (COGS) meets regularly to discuss general and specific issues that cross graduate programs, including policy and discipline matters.

The Administrative Officer oversees the administrative operations of the Department including financial, personnel, space, financial aid, student-related, and other business matters. The department is currently seeking a replacement for long-time Administrative Officer Rebecca Chamberlain, who has moved to a new position within MIT.

The Fiscal Officer, Douglas Le Vie, reports to the Administrative Officer. He monitorsnon-personnel expenditures; processes payroll, scholarship payments, and student RA and TA appointments; processes academic appointments; and serves as liaison between faculty and central administrative offices when necessary.

The Assistant to the Department Head, Anne Simunovic, serves as the title suggests but has particular responsibility for management of the Head's calendar; coordination of search, promotion, and tenure cases; Department lecture series; mentoring information and junior faculty annual reviews; special events; and Institute reports.

The Administrator of Academic Programs, Renee Caso, manages all student-services areas, from admissions through graduation, for PhD and BSA/BSAS degree programs. In addition, the Administrator for Academic Programs oversees the preparation of the Department's information in the MIT Bulletin, and coordinates the Department's course schedule and submission of grades to the Registrar.

The Administrator for Masters Degree Programs, Cynthia Stewart, manages all student-services areas, from admissions through graduation, for the MArch, SMArchS, SMBT, SMVisS, and SM Undesignated degree programs. In addition, she serves as the Departmental contact for English as a Second Language (ESL), Special and Visiting Students questions and registration, and Departmental authority on cross-registration at Harvard's Graduate School of Design.

The Computer Resources Office Network (CRON) manager, Duncan Kincaid, serves as manager of the Department of Architecture and Department of Urban Studies and Planning computer resources that serve design studios and research facilities of the Department of Architecture with linkages to remote sites. The Network Manager works closely with faculty and students to meet the needs for acquiring and installing network, hardware, and software. The Facilites Manager, James Harrington, directs the maintenance and renovation of departmental spaces and serves as the School’s liaison to the Institute’s Office of Environmental Health and Safety. The deparment’s fabrication manager, Justin Lavallee, maintains fabrication equipment and trains students in its proper use.

Other Degree Progams Offered by the Department of Architecture

In addition to the Master of Architecture, the Department of Architecture also offers the following academic programs: Bachelor of Science in Architecture (BSA); Bachelor of Science in Architecture Studies (BSAS); Master of Science in Architecture Studies (SMArchS); Master of Science in Building Technology (SMBT); Master of Science in Art, Culture, and Technology (SMACT); and Doctor of Philosophy (PhD) programs in building technology, design and computation, or history, theory, and criticism of architecture and art.

I.2.3. Physical Resources

The MIT Department of Architecture is assigned roughly 40,000 square feet of space. Over 90 percent of the space is concentrated in five contiguous buildings of the Main Group at 77 Massachusetts Avenue. The remainder is located in two buildings within 10 minutes walking distance.

In the Main Group, the Architecture Department branches out on two levels from the rotunda at MIT's main entrance and stretches out linearly down MIT's signature academic avenue, the Infinite Corridor. Around the core on the 4th floor, we have a café (renovated summer 2014), design studios, and a classroom, which was converted into the "Long Lounge" in 2010 through the use of movable walls. The Long Lounge provides lecture seating for 100 persons and standing room for more.

The consolidation of both the graduate and undergraduate design studios into the Main Building Group as of fall 2008 is a major accomplishment of the last several years. This was made possible by the construction of a mezzanine in our largest studio and the space-saving re-design of individual student workstations. Our student desks are now all just steps from lectures, review spaces and fabrication shops.

The remaining satellite spaces in Buildings N10 and N51 hold shop and research facilities. Both N10 and N51 have fenced outdoor areas suitable for full-scale construction. N10 also has an interior high bay space and is currently being used for both studio teaching and research by the POPLab. Building Technology maintains test chambers in N51 for HVAC research.

The Department's support of digital fabrication was wholly transformed by renovation projects in 2010 and 2013. The space dedicated to the support of our CNC routers, waterjet, lasercutters, etc. has quadrupled. The Department maintains a traditional wood shop in Building N51 along with our largest CNC router, but all other digital fabrication gear plus a spray paint booth are located adjacent to the design studios in the Main Group. The fabrication shops are professionally managed and have state-of-the-art card access control, which is linked to the safety training of our student users.

Renovation projects in 2013 allowed the Department to achieve two long desired space objectives to support community identity. The SMArchS program now has its own, dedicated study room with adjacent conference room, lounge, and kitchen. The Computation faculty and PhD candidates now occupy adjacent office spaces along the Infinite Corridor. These recent fitouts leave less than 10 percent of the Department's space unrenovated in the past 20 years. Planning has already begun for an anticipated re-making of the History, Theory & Criticism faculty and student spaces during the next fiscal year.

Computational resources are provided by MIT's Office of Information Services and Technology (IS&T) as well as by the School-wide computing resources group, CRON. CRON provides a range of computer hardware and software and facilitates access to other computational resources on campus for both the Department of Architecture and the Department of Urban Studies and Planning; advises users on equipment to purchase, and manages the day-to-day operations of both departments' computing infrastructure. CRON maintains an environment in which information technology is available and easily accessible to serve required coursework, independent study and research. It manages a complex computer network supporting Windows, Macintosh and Linux operating systems.

Software provided includes office productivity suites, two- and three-dimensional computer-aided design (CAD), modeling, rendering, animation, video editing, multimedia, image processing, geographic information systems (GIS), and structural, heat and lighting analysis packages. Where software licenses allow, software is available for installation on student-owned computers without charge.

Hardware includes color and black-and-white laser printers, wide-format plotters, scanners (flatbed and slide), portable projectors and video equipment. Computers are located in studios, classrooms, labs and other areas. Many areas are equipped with plasma screens or overhead projectors.

During the academic term, computer facilities are available 24 hours a day to students enrolled in either department's academic programs. In addition to the departments' facilities, all MIT students have access to workstations in Athena clusters located throughout the MIT campus. All public cluster computers are 27" Apple iMacs. These Macintosh computers boot into both Windows 7 Professional (WinAthena) and OS X (MacAthena). There is also a Windows virtual machine (VM) available from the Mac side. We now have laptop workstations distributed across 9-524, 9-554, 9-556 and 10-485. Each workstation includes a keyboard (USB) and a 27" LCD display (VGA, DVI, HDMI, mini Display Prot). All students need do is provide the laptop.

CRON distributes VMware Virtual Machines (VMs) to those students with Macintoshes needing Windows-only applications AND runs a VMware VSphere cluster which hosts approximately 36 VMs providing essential services (web, database, licenses, etc.). All public cluster computers are available to all students across the School. This helps foster collaboration across the disciplines.

A campus map and plans of the physical plant for the department are found at: http://web.mit.edu/arch/NAAB-2015/I.2.3_Floorplans.pdf. An interactive campus map may be found at: http://whereis.mit.edu.

I.2.4. Financial Resources

Overview

The Department of Architecture has funding from three primary sources from which we manage our educational objectives: base General funds (an annual operating budget allocation from the Institute, ($10.8M); endowed funds ($8.3M in principal on which we earn an annual expendable income of $1.7M); and recurring financial aid contributions from other units at MIT (such as the SA+P Dean's Office, Office of the Provost, and Dean for Graduate Education, $1.5M). In addition, the Department has a few non-interest bearing funds, in which the FY14 available revenue was $670K, for a total department-controlled budget of $14.7M. The Aga Khan Program for Islamic Architecture (AKPIA) is funded by an endowment ($3.2M in principal on which we earn an annual income of $1M), which must be devoted specifically to AKPIA activities. In addition, faculty members support their research objectives from funds under their direct control. FY14 expenditures in this category totaled $1.3M. {It should be noted that while the Program in Art, Culture and Technology remains a part of the Department of Architecture in terms of academic matters (subjects, majors, faculty, etc.), it operates somewhat independently on a financial level. Thus, funding related to ACT is not included in this document.}

In light of changes in the national and global economy MIT instituted budget cuts in FY's 10 and 11, in the form of a 4% reduction in base General funds and an 18% reduction in annual income distributed on endowed funds. The budget decrease came with sufficient warning to plan how to maintain academic programs, make cuts where they would have the least impact, and be conservative about spending. In FY's 12 and beyond, base operating funds and annual income earned on endowed funds returned to a growth rate of approximately 3% per year, a rate we anticipate in the next few years.

Strategic use of reserves from endowed funds made it possible to fund pressing initiatives under Nader Tehrani's leadership as Department Head (FY's 11-14). These include, but are not limited to, expansion of our fabrication facilities in terms of space, staff, and equipment; an expanded lecture series; institution of an exhibition series, including construction of the Keller Gallery; completion of a new website; an expansion of our departmental publications, including the hire of a publications manager; and our prominent role in FAST, a part of MIT's 150th anniversary. Chart 1.24a reflects the FY14 operating budget by source. As mentioned above, we anticipate a growth rate of 3% per year in the coming years, sufficient to maintain our current activities. Chart 1.2.4b reflects FY14 expenditures by source (including AKPIA and faculty-controlled funds) and represents typical spending patterns. Approximately 77% was supported from sources directly under the Department's control and 7% was supported by the Aga Khan Program endowment. We regularly receive financial aid support from other units at MIT that accounts for an additional 9% of expenditures; the remaining 7% falls under the category of faculty-controlled funds. Chart 1.2.4c reflects FY14 expenditures by type. Faculty/staff salaries and wages are roughly equal to financial aid expenditures for graduate students (and together represent 85% of the total expenditures), with the balance devoted to all other expenses.

Financial Aid

{Financial aid to undergraduate majors is handled at Institute level and, therefore, all figures below refer to graduate students only.}

Adequate student financial aid to attract and support the best students is a high priority. At the master's degree level we aim to accept 75% of the population with half-tuition support, and 25% without financial aid. In addition, all continuing master's degree students may apply for one-year, merit-based, full-tuition fellowships. Master's degree students may compete for work opportunities throughout their degree program.

Our major competitors continue to be Columbia, Harvard, Princeton, and Yale. We have no definitive way of knowing why students choose to accept an offer from our competitors, but know that financial aid is only one of many reasons. Having said so, effective with the AY14 applicant pool we

offered full-tuition support to the premier candidates in the MArch and SMArchS Urbanism applicant pool. While we cannot be sure of the precise reasons students accepted our offer of admission, we did see increased success in attracting our top candidates for this coming academic year.

At the PhD level, we offer nine-month financial aid packages (full tuition, stipend, and medical insurance) for a period of five years, with the exception of the HTC PhD candidates for whom we now offer twelve- month funding. Of our target goal of 40 PhDs, 30 are funded from departmental sources, and the balance from faculty-controlled funds. Most of the BT candidates also secure summer Research Assistantships, but this is not true of those in Computation.

See Chart 1.2.4d for FY13 student financial aid expenditures by degree program. Chart 1.2.4e compares the distribution of funded students to the distribution of financial aid expenditures. FY13 represents a typical year. Of the 226 graduate students enrolled, 205 (91%) received tuition support. Of the $7.8M total expenditures, roughly $7M (90%) came from sources under the department's control, with the remaining $800K (10%) supported by faculty-controlled funds. In terms of distribution between degree programs, funded master's degree students (162) represent 79% of the population and received 67% of the total funds. Funded PhD students (43) represent 21% of the total population and received 33% of the total funds. Chart 1.2.4f displays the distribution by type of aid – tuition, fellowship stipend, Teaching Assistant (TA), and Research Assistant (RA) salaries. Graduate students may hold multiple types of awards. For instance, some hold tuition awards only, and some hold a paid position as a Teaching or Research Assistant with or without a corresponding tuition award. Three quarters of our financial aid pool was devoted to tuition support, 13% was devoted to students hired as TA's, 5% was devoted to students who held at least one RA position, and the remaining 7% to fellowship stipend payments held by first year PhD's, plus a small percentage of incoming master's degree students.

One of the challenges we continue to face is how to best support our master's degree students. The cost of education is rising steadily, and even with half-tuition awards many students may be faced with potential loan debts higher than they can reasonably repay while working in the profession. As noted above, we are offering full-tuition awards to our top picks in the MArch and Urbansim stream of the SMArchS program. However, a higher than anticipated yield of the premier master's degree students, while desirable programmatically, will not be financially sustainable in the long-term. We will monitor our progress and develop an action plan for raising additional funds if necessary.

Growth in the MArch program

See section I.1.4 Long Range Planning for information concerning potential growth in the MArch program.

At the request of the chair of the Visiting Committee we developed a matrix as a way to help structure a conversation about expansion in the MArch program in incremental terms. While conversations are ongoing, no business plan has been developed as yet. Any expansion would require a balance between student numbers, space, faculty slots, student financial aid, and of course, the academic development resources. If this becomes a larger discussion, it must include department faculty and senior leadership at the Institute.

For the purpose of the APR, however, we include the initial spreadsheet developed to highlight resources necessary to increase the MArch population. See Chart 1.2.4g. The MArch program is built on students proceeding through levels of "design studios" (in this context, a subject), for the first three years of the 3.5 yr. program. Our current plan is based upon three studios per level. Scenario A projects a very minor increase in enrollment, but keeps the same number of studios, and requires a minor increase in design studio space, plus additional tuition support. Scenarios B and C project an increase to 4 and 5 studios per level, respectively, and begin to require more significant additional resources. The spreadsheet shows the need for additional square footage for "design studios" (in this context, a physical location).

A brief summary of each scenario:

Scenario A (a small increase in enrollment):

- Minor increase of 795 sq. ft. in design studio space, plus an additional $262K in tuition support.

Scenario B (increase from 3 to 4 studios per level):

- Faculty or visitors to cover 6 additional studios, to be met by 3 new faculty lines (or 2 TBA's, plus 2 visitors at $40K each).
- Second section of 10 required classes, to be met by visitors at $20K each.
- TA support for additional studios and sections of required classes: $148K (stipend only).
- Additional tuition support: $1.1M.
- Design studio space: 3,180 sq. ft.

Scenario C (increase from 4 to 5 studios per level):

- Faculty or visitors to cover 12 additional studios, to be met by 6 new faculty lines (or 4 TBA's, plus 4 visitors at $40K each).
- Second section of 10 required classes, to be met by visitors at $20K each (same as Scenario B).
- TA support required for additional studios and sections of required classes: $296K (stipend only).
- Additional tuition support: $1.9M.
- Design studio space: 5,565 sq. ft.

It should be noted again, that the chart was a basis for forming a discussion on expansion, and would require fine-tuning. None of this includes the necessary strategic steps to distinguish ourselves from other programs: namely, to be a leader in the area of technologies by creating a dedicated high-bay space that brings together our faculty in Design, BT and Computation to work on a collaborative platform to challenge and lead the building industry. Further to this, we would need the right level of financial support to advance to the proper lab time and teaching support for workshops in this area.

Comparison of Annual Expenditures with Other Professional Degree Programs

Perhaps the most prominent professional degree program at MIT is the MBA Program in the Sloan School of Management, a degree program that does not offer valid comparison of expenditures. We understand that, relatively speaking, the Sloan School offers very little financial aid support to these degree candidates, and their earning power of upon graduation is considerably higher than graduates in the field of architecture. Therefore, the best degree programs with which to compare our professional degree are that of the accredited Bachelor's degree in Civil and Environmental Engineering or the Master of City Planning from our sister department Urban Studies and Planning.

The following offers some basic information about department profiles.

Academic Degree Population. Each of the three departments offers undergraduate, Master's and PhD programs. In AY2013 Architecture had 37 undergraduate candidates, 179 master's degree candidates, and 41 PhD students in residence (total 257). Civil and Environmental Engineering (CEE) had 72 undergraduate, 130 Master's, and 93 PhD candidates (total 295). Urban Studies and Planning (DUSP) had 15 undergraduate candidates, 129 Master's, and 52 PhD candidates in residence (total 196).

Expenditures by Various Sources. Charts 1.2.4h-j reflect expenditures in actual and constant dollars for the three departments broken down by MIT Department General funds, department–controlled funds, and research dollars. Using constant dollars as a measure, over the last ten years Architecture has experienced a 14% increase. CEE and DUSP experienced a growth of 20% and

48%, respectively. In both CEE and DUSP the increase is due largely to sponsored research funds, an area in which Architecture has a more difficult time obtaining support.

Scholarship and Tuition Expenditures. Valid comparisons with CEE are harder to draw because undergraduate financial aid is handled by the central administration at MIT. Their accredited degree is an undergraduate degree, for which we do not have access to financial aid information. Charts 1.2.4k-m reflect a comparison of scholarship and tuition expenditures, by source, for all graduate students enrolled in the three departments. Over the last ten years, in constant dollars, Architecture, CEE, and DUSP have experienced growth of 40%, 13%, and 16%, respectively. Growth in Architecture is largely due to the increased availability of interest income from its endowed fellowship funds, and incremental infusions of General base funds in AY's 07-10, for an expansion in the MArch program.

Student Stipends and Salaries. Charts 1.2.4n-p compare student stipends and salaries by source for all graduate students. Over the last ten years, in constant dollars, Architecture experienced a slight decrease of 2%; CEE and DUSP an increase of 10% and 67% respectively. The slight decrease in Architecture corresponds with the changes made in AY06 when we reduced the number of department-funded PhD students. In addition, we converted a number of administrative TA positions into hourly paid positions. As mentioned in the previous section, it appears that the increase in CEE and DUSP is likely due to their increased research volume and the corresponding increase in the number of research assistants.

Because all three academic departments offer a number of degree programs it is difficult to provide statistics at the level of the comparable degree programs listed above. See Chart 1.2.4q for expenditures per student using total number of degree candidates and total department expenditures as the basis for comparison.

Summary

The Department Head continues an active role in raising additional financial support, and has made in-roads into securing contributions. These have taken the form of contributions for an endowed lecture or annual symposium, funds from international collaborators to support curricular offerings such as design studios, and gifts-in-kind such as the design/construction of the Keller Gallery.

While we have been able to undertake a number of initiatives, in order to move the department into another sphere we must secure a significant infusion of new funds. Our top priorities include two endowed chairs for faculty, fellowship support such that we can offer an increased number of full-tuition awards to master's degree candidates, and programmatic support for such activities as student travel, publications, and additional endowed lectures. A major infusion of funds would be required for a significant expansion of the MArch program. The Department Head continues to work within the Institute structure to seek donors for all major needs.

Charts referenced above are found at: http://web.mit.edu/arch/NAAB-2015/I.2.4_Charts_Financial.pdf

I.2.5. Information Resources

Overview

The mission of the MIT Libraries is to create and sustain an evolving information environment that advances learning, research, and innovation at MIT. The Libraries have both streamlined and enhanced services in recent years in an effort to leverage an increasingly networked landscape to provide core academic support and to improve the productivity of the MIT community. The Libraries house over five million items in print and digital formats, including electronic journals and books, images, maps, and video recordings. There are five libraries in the system – each with dedicated spaces for collaborative work and quiet study. Partnerships outside the Libraries allow students, faculty, and researchers to visit or request materials from more than 25 academic libraries in the northeast and to borrow articles and other materials from libraries worldwide – thereby expanding available resources and collaborative opportunities.

The Rotch Library of Architecture and Planning (the Library) is a specialized unit of the MIT Libraries with collections centered on architecture, including building technology, design technology, design and computation, and visual studies. Related subjects covered by the print, digital, and visual collections are the history, theory, and criticism of art and architecture; urban design and development; housing and community development; real estate; geographic information systems (GIS); film; and media arts. Rotch Library offers the services of 18 staff – including librarians, professional staff, and support staff. A re-organization in 2009 eliminated the Head Librarian position (at Rotch and all libraries in the system) in favor of capitalizing on centralized services and to build a collaborative and interdisciplinary collecting and research environment. There is now a dedicated Architecture and Art Librarian who serves as the Libraries' expert on the research, learning culture, and information practices of the Department of Architecture (the Department) and who selects and advocates for the acquisition and discovery of research within the disciplines of Architecture and Art. The Architecture and Art Librarian reports to the Head of Liaisons for Departments, Labs, and Centers, and is a participating member of the Arts and Humanities Community of Practice with fellow liaison librarians. The Librarian also collaborates with the School of Architecture and Planning (the School) and outside contributors to develop a robust and engaging exhibition program within Rotch Library.

Facilities

The Library is located in the same building as the Departments of Architecture, Urban Studies and Planning, and the Center for Real Estate – which allows for easy access to resources, services, and staff. Located within Rotch are collections and services that support the Department including a physical map collection, Image and Visual Collections, a GIS Lab, a Limited Access collection, and the Aga Khan Documentation Center, part of the Aga Khan Program for Islamic Architecture at MIT and Harvard.

The environment of Rotch Library is well maintained. There is adequate shelving for printed materials because the Library continues to store some materials off site, where it is easily accessible upon request. Public equipment is adequate with one photocopier and a scanner service in the reading room and two flat bed scanners, a slide scanner, a microform reader/printer, three microfiche readers, and one microfilm reader. There are also public computers and wireless connectivity throughout the space.

The Libraries are currently in the midst of a space planning and revitalization initiative that will begin to address particular space needs within the Rotch Library space – including some acoustic issues, staff office spaces, and the lack of both group study spaces and rest room facilities within the space. There are restrooms available outside the library. Although the library lacks dedicated group study space or library instruction space, there is a conference room available for both. The overall library space is heavily used and adequate for individual study. There is a large, well-lit reading room that is heavily used throughout the year. The space includes areas for lounging near the periodicals, new books, and videos and DVDs. There is also an exhibition space that is utilized by the MIT community that provides both visual interest and community connections.

Library and Information Resources Collection

Rotch Library collection funding supports multiple formats for resources (including books, journals, films, videos, digital images, and networked electronic resources) to meet the curricular and research needs of the School. As a component of the MIT Libraries system, Rotch Library is one part of a network of library resources with shared collection development policies that support interdisciplinary research and learning.

Rotch collections (in print and digital formats) focus on the teaching, learning, research, and discovery in the Department of Architecture. Collections support the highest level of teaching and research done in each area of concentration. All periods and regions of the world are collected with areas of special emphasis based on faculty research and curriculum. The collection has strengths in global architectural history, computation and design, urban history and geography, American architecture (especially housing), and Boston and the New England region.

The collections of the Aga Khan Program for Islamic Architecture (AKPIA) are located in Rotch and its staff, although focused on this particular program, is integrated into MIT Libraries. AKPIA library collections concentrate on architecture and urban development in contemporary Islamic cultures. In support of the development of digital platforms, the recently revamped ArchNet (http://archnet.org/) "is a globally-accessible, intellectual resource focused on architecture, urbanism, environmental and landscape design, visual culture, and conservation issues related to the Muslim world."

The Architecture and Art Librarian has the primary responsibility of overseeing collection decisions. Building the collection is a collective effort with both faculty and students assisting in selecting materials (through an online suggested purchase system, via email, through observation, and otherwise) that are relevant, forward thinking, and multi-modal (in print, visual, and electronic formats). The Libraries are committed to making collections and services digitally available 24 hours per day – as much as possible given budgetary and format limitations. While our journals, serials, and images are moving toward increased digital connectivity, we continue to build a strong print collection of journals and monographs that meets the needs of the School. Additionally, increased collaboration with local and regional libraries supports consortium collecting and archiving projects.

A large number of early donations by faculty, alumni/ae, and private collectors form a rare books (Limited Access) collection of some importance. Included are European publications dating from the sixteenth to the nineteenth century, as well as the professional library of Charles Bulfinch. Ongoing donations and active collecting continue to augment this collection of rare books with a current emphasis placed upon the acquisition of artists' books and other engineered books.

The Digital Image Services and Visual Collections unit is located within Rotch and works to identify, collect, process, share, and troubleshoot visual and image based resources for the MIT community and beyond. The Architecture and Art Librarian works with a Digital Strategist and an Image Cataloger to develop and manage visual collections and inquiries related to it. We continue to work with faculty and students to understand their visual resource needs and to improve both the resources available and to increase visual literacy in support of the use of those resources. Visual content (images, maps, and media) is cataloged in DOME, the MIT Libraries' online digital library (https://dome.mit.edu/).

Collections funding comes primarily through Institute funds with some funds coming from endowment and gift funds. The funds are adequate to support collection needs.

Rotch Library Collection

Holdings	Number in Collection	$ Expended FY13	$ Expended FY14
Books/periodical volumes/serials	185,059	$299,136.00	$300,126.00
Microforms	148,875		
Slides	100,000		
Digital Images	147,790	$47,400.00	$50,421.00
Videos/DVDs	2,580		
Drawings	2,100		
Photographs	29,287		
Computer files	99,946		
Maps and Plans	13,753		

1. Numbers are taken from FY13 (most recent available). Numbers include onsite collections only and do not include books in storage or government documents.
2. Expenditures are for all monographs in various formats: print, microfilm, etc

Services

Centralized services within the MIT Libraries means that Rotch Library benefits from shared services within the library system such as licensing and management of electronic journals and databases, automated acquisitions, preservation and binding services, and facilities administration.

The Library continues to refine reference services, offering email, chat, and on-call services in support of user needs in person and online. New models of reference provide opportunities for in-depth assistance from subject specialists as needed as well as online tutorials and subject guides to help library users learn how to find, organize, and use information on specific topics.

Library staff coordinates orientation sessions for all incoming students at the beginning of the academic year. We offer instruction in information skills and research methods on a regular basis. Staff works with faculty to meet their information and research needs as well as those of their students.

I.3 Institutional Characteristics

Program student characteristics

Comparison of demographics (race/ethnicity & gender) of all students enrolled in the accredited degree program and the institution overall and those recorded at the time of the previous visit. Please see:

http://web.mit.edu/arch/NAAB-2015/I.3_Enrollment.pdf

Comparison of qualifications of students admitted in the fiscal year prior to the visit and at the time of the last visit. Please see:

http://web.mit.edu/arch/NAAB-2015/I.3_Test_Scores.pdf

Time to graduation

Percentage of matriculating students who complete the accredited degree program within the "normal time to completion" for each academic year since the previous visit:

	MArch Pre-professional	MArch Non-Pre-professional
2009	67%	69%
2010	100%	96%
2011	100%	75%
2012	71%	84%
2013	100%	85%

Percentage that complete the accredited degree program within 150% of the normal time to completion for each academic year since the previous visit.

2009	tbc
2010	tbc
2011	tbc
2012	tbc
2013	3%

Program faculty characteristics

Comparison of demographics (race/ethnicity & gender) for all full-time instructional faculty, those recorded at the time of previous visit, and at the institution overall. Please see:

http://web.mit.edu/arch/NAAB-2015/I.3_Faculty_Demographics.pdf

Number of faculty promoted or tenured since the last visit.
Note: Effective 7/1/2014 (academic year 2014-15), two faculty members were promoted from Assistant Professor to Associate Professor without Tenure (including one woman) and three were promoted from Associate Professor with Tenure to Full Professor (including one woman and one URM).

Institute	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Number of faculty promoted from Assistant to Associate without Tenure	37	25	25	23	28	23
Number of faculty promoted from Associate without Tenure to Associate with Tenure	19	31	18	22	20	18
Number of faculty promoted from Associate with Tenure to Full Professor	20	21	16	22	30	23
Number of other faculty promotions	2	4	0	4	2	0
Total Number of faculty promoted	***78***	***81***	***59***	***71***	***80***	***64***
Number of faculty receiving tenure*	41	56	34	48	52	41

Department of Architecture	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Number of faculty promoted from Assistant to Associate without Tenure	2	1				
Number of faculty promoted from Associate without Tenure to Associate with Tenure	1	2	2		2	
Number of faculty promoted from Associate with Tenure to Full Professor		2				
Number of other faculty promotions						
Total Number of faculty promoted	***3***	***5***	***2***	***0***	***2***	***0***
Number of faculty receiving tenure*	1	4	2		2	

Data calculated based on status on
October 31st.

*Number of faculty receiving tenure is included in Total Number of faculty promoted. It does not include faculty that were hired with tenure.

Number of faculty maintaining licenses from U.S. jurisdictions each year since the last visit, and where they are licensed:

Faculty maintaining US licenses:	
Anderson (retired 2014)	ME
Chang (moved to Professor of the Practice in 2013)	IN
Dennis	MA
Fernandez	NY
Santos	MA, PA
Wampler (retired 2011)	MA
Yoon	NY
In addition, Professors of the Practice typically maintain US licenses:	
Chang (Professor of the Practice since 2013)	IN
Freelon (Professor of the Practice)	NCARB
Kennedy (Professor of the Practice)	MA, NY
Shelden (Associate Professor of the Practice)	CA
In addition, the following faculty maintain licenses outside the US:	
Chang (moved to Professor of the Practice in 2013)	China
D'Hooghe	Belgium/Europe
Garcia-Abril	Spain/Europe
Goulthorpe	UK
Rabbat	Syria
Scott	UK
In addition, often our short-term visitors are licensed in US. In fall 2014, for example, there are five:	
Anmahian	MA, MN, NH, NY, RI, CT
Chan	NCARB
Love	IL
Solander	MA, ME
Zarzycki	NY

I.3.2. Annual Reports

Letter from MIT Director of Institutional Research:

Lydia S. Snover
Director of Institutional Research
Office of the Provost
Institutional Research

Massachusetts Institute of Technology
77 Massachusetts Avenue, Building 11-268
Cambridge, Massachusetts 02139-4307

Phone 617.253.5838
Fax 617.253.1986

Email lsnover@mit.edu
http://web.mit.edu/ir

August 11, 2014

National Architectural Accrediting Board
1101 Connecticut Avenue, Suite 410
Washington, DC 20036

Re: Statistical Reports

All information provided by the Massachusetts Institute of Technology's Institutional Research in the Office of the Provost for use in the NAAB Report Submission is accurate and consistent with reports submitted to other national and regional agencies, including the Department of Education, National Center for Educational Statistics.

Lydia S Snover
Director of Institutional Research

I.3.3. Faculty Credentials

A faculty matrix for Spring 2013, Fall 2013, and Spring 2014 may be found at: http://web.mit.edu/arch/NAAB-2015/I.3.3_Faculty_Matrix and on the following pages.

The faculty matrix for Fall 2014 and Spring 2015 will be available in the Team Room.

Faculty Matrix for Core Subjects and Option Design Studios

Spring 2013

Faculty Member	Summary of expertise, recent research, or experience	4.107	4.152	4.154	4.163J	4.189	4.462	4.464	4.645	4.646	4.THG	11.338
Stanford Anderson	Scholar of history and theory of modern architecture and urbanism. AIA/ACSA Topaz Medallion Laureate 2004.									X		
Matthew Bunza	Designer and educator with research interests focused on relationships between human development and natural systems.			X								
Yung Ho Chang	Interest in architecture and design focuses on the notion of craft and also covers fundamental issues such as material, structure, and technology.			X								
Michael Dennis	In private practice in Boston since 1981 and prior to that in Ithaca, New York from 1970. His experience extends over 30 years and includes projects of various types and scales.				X							
Arindam Dutta	Director of the History, Theory, Criticism Program in Art and Architecture, and the MIT SMArchS Program; teaches surveys and advanced graduate research courses.								X			
Anton Garcia-Abril	Research focuses on new approaches to architectonical space, building technologies and urban strategies. Licensed architect in Europe.			X								
Leon Glicksman	Research and consulting related to energy-efficient building components and design, natural ventilation, sustainable design for developing countries, and design tools. Member of the MIT Energy Council and co-chair of the campus energy initiative.							X				
Shun Kanda	Architect/urban designer teaching architectural design studios program; director of annual summer Japan Design Workshop, a program of design fieldwork.			X								
Young Joon Kim	Principal, Yo2 Architects, Seoul; Coordinator, Paju Book City Cooperative.			X								
Joel Lamere	Recent research on geometries of building materials, including sheet folding, cured-surface inflatable structures and flexible formwork for concrete.	X		X								
Miho Mazereeuw	Recognized scholar in design for seismic resilience and working in pre and post disaster contexts. Recent on-going research on earthquake resilient housing in India and hurricane evacuation systems in Haiti.			X								
Ana Miljacki	A recognized critic of contemporary architecture, a principal of the award wining curatorial and research practice Project, and a historian of postwar Eastern European Architecture.					X						
Les Norford	Research focuses on energy and environmental performance of individual buildings and urban areas. Recent work studies advanced building cooling systems, interactions of buildings with electricity grids, and the urban heat island effect.							X				
John Ochsendorf	A structural engineer and educator whose research, practice, and teaching focus on the history and technology of structural design, with primary focus on dynamics of masonry structures.						X					
Cristina Parreno	Licensed architect in Spain and UK, with ten years of professional experience working in Madrid and London. Has taught design studio at University of Western Australia and at State University of New York at Buffalo.		X									
Brent Ryan	Associate Professor of Urban Design and Public Policy. Research focuses on the aesthetics and policies of contemporary urban design, particularly in postindustrial cities and neighborhoods.											X
Andrew Scott	Research and teaching focuses on broad interpretations of sustainability in design education, research, and practice in relation to the design for buildings, urban housing and communities, and urban systems within the context of the contemporary and future city.			X								
Skylar Tibbits	Research focuses on self-assembly and programmable material technologies for industrial applications in the built environment.		X									
Victor Trahan	Located in southern Louisiana, Trahan leads a progressive design practice that interrogates man's relationship with water.			X								
Meejin Yoon	Architect, designer, educator. Winner of MIT Sizer Award for Most Significant Improvement to MIT Education. Co-founder of multi-disciplinary practices Howeler + Yoon Architecture and MY Studio.		X								X	

Faculty Matrix for Core Subjects and Option Design Studios

Fall 2013

Faculty Member	Summary of expertise, recent research, or experience	4.105	4.151	4.153	4.154	4.210	4.222	4.461	4.463	4.607	4.647
John Fernandez	Director of the Building Technology Program, teaching subjects in architectural materials, urban systems and ecological design, and a practicing architect and Principal in two design firms.							X			
Philip Freelon FAIA	Founder of The Freelon Group in 1990 with a staff of 45, winner of 65 AIA design awards, Obama appointee on National Commission of Fine Arts.						X				
Anton Garcia-Abril	Research focuses on new approaches to architectonical space, building technologies and urban strategies. Licensed architect in Europe.			X							
Mark Goulthorpe	Engages design and theory in architecture, specializing in changes that digital technologies suggest for design methods, fabrication and material processes, and aesthetics.				X						
Mark Jarzombek	Has worked extensively on nineteenth and twentieth century aesthetics, and the history and theory of architecture.									X	
Sheila Kennedy	Architect, innovator and founding Principal of KVA Matx, an internationally recognized design practice that explores material fabrication, architecture, digital technology and emerging public needs.			X							
Joel Lamere	Recent research on geometries of building materials, including sheet folding, cured-surface inflatable structures and flexible formwork for concrete.	X									
Andrea Love	Expertise in sustainable design knowledge and energy with a background in both architecture and building science. In practice with award-winning firm of Payette in Boston.								X		
John May	Assistant Professor at University of Toronto; partner, MILLIONS, LA-based design practice and founding co-director of The Instruments Project that studies contemporary design technologies.										X
Ana Miljacki	A recognized critic of contemporary architecture, a principal of the award winning curatorial and research practice Project, and a historian of postwar Eastern European Architecture.					X					
William O'Brien	Principal of a premiated independent design practice in Cambridge and founding member of Collective-LOK; recent Rome Prize Fellowship in Architecture		X								
John Ochsendorf	Structural engineer and educator whose research, practice, and teaching focus on the history and technology of structural design, with primary focus on dynamics of masonry structures.								X		
Cristina Parreno	Licensed architect in Spain and UK, with ten years of professional experience working in Madrid and London. Has taught design studio at University of Western Australia and at State University of New York at Buffalo.		X								
Andrew Scott	Research and teaching focuses on broad interpretations of sustainability in design education, research, and practice in relation to the design for buildings, urban housing and communities, and urban systems within the context of the contemporary and future city			X							
Rafael Segal	Recent work studies the cultural, environmental, social-political and architectural aspects of emerging 'forms of urbanity,' outside the traditional compact city.				X						
Jose Selgas	Co-founder of SelgasCano in Madrid. Practice takes construction process from design to manufacture and installation; research focuses on integration of technologies from fields that are rarely mixed with architecture.				X						
Carl Solander	Practicing architect whose design research focuses on transformation of traditional methods of building through emerging techniques of digital design and fabrication.							X			

Faculty Matrix for Core Subjects and Option Design Studios

Spring 2014

Faculty Member	Summary of expertise, recent research, or experience	4.107	4.109	4.152	4.154	4.163J	4.181	4.182	4.183	4.184	4.189	4.462	4.464	4.645	4.646
Alan Berger	MIT Professor of Landscape Architecture and Urban Design; Founding Director, P-REX Lab; research focuses on environmental problems caused by urbanization, including design, remediation, and reuse of waste landscapes worldwide.				X										
Yung Ho Chang	Interest in architecture and design focuses on the notion of craft and also covers fundamental issues such as material, structure, and technology.				X										
Brandon Clifford	Design and research interests dedicated to reciprocity between drawing and making; his work on 'volume' is acclaimed for its translation of past techniques into digital methods.	X			X										
Alexander D'Hooghe	Founding partner of the Organization for Permanent Modernit', a professional firm and think tank for urbanism and architecture in Boston and Brussels. Director of MIT Center for Advanced Urbanism, focused on large-scale contemporary design problems.				X										
Arindam Dutta	Director of the History, Theory, Criticism Program in Art and Architecture, and the MIT SMArchS Program; teaches surveys and advanced graduate research courses.													X	
Anton Garcia-Abril	Research focuses on new approaches to architectonical space, building technologies and urban strategies. Licensed architect in Europe.				X										
Mark Goulthorpe	Engages design and theory in architecture, specializing in changes that digital technologies suggest for design methods, fabrication and material processes, and aesthetics.										X				
Vincent James	Founding principal of VJAA, and Professor-in-Practice at the University of Minnesota School of Architecture.				X										
Mark Jarzombek	Has worked extensively on nineteenth and twentieth century aesthetics, and the history and theory of architecture.									X					
Shun Kanda	Architect/urban designer teaching architectural design studios program; director of annual summer Japan Design Workshop, a program of design fieldwork.							X							
Joel Lamere	Recent research on geometries of building materials, including sheet folding, cured-surface inflatable structures and flexible formwork for concrete.			X			X								
Justin Lavallee	Recent work involves design of furniture pieces that take advantage of opportunities inherent in CNC processes, while using traditional materials and joinery.		X												
Miho Mazereeuw	Recognized scholar in design for seismic resilience and working in pre and post disaster contexts. Recent on-going research on earthquake resilient housing in India and hurricane evacuation systems in Haiti.				X										

Faculty Matrix for Core Subjects and Option Design Studios

Alejandra Menchaca	Building Scientist, Payette Associates, Boston. Specialty in heat and airflow bukiding dynamics with a focus on natural ventilation design.												X		
Ana Miljacki	A recognized critic of contemporary architecture, a principal of the award wining curatorial and research practice Project, and a historian of postwar Eastern European Architecture.			X											
Les Norford	Research focuses on energy and environmental performance of individual buildings and urban areas. Recent work studies advanced building cooling systems, interactions of buildings with electricity grids, and the urban heat island effect.												X		
William O'Brien	Principal of a premiated independent design practice in Cambridge and founding member of Collective-LOK; recent Rome Prize Fellowship in Architecture.								X						
John Ochsendorf	Structural engineer and educator whose research, practice, and teaching focus on the history and technology of structural design, with primary focus on dynamics of masonry structures.											X			
Emmanuel Petit	Architect, writer, and teacher, and recently an Associate Professor at Yale School of Architecture.														X
Jose Selgas	Co-founder of SelgasCano in Madrid. Practice takes construction process from design to manufacture and installation; research focuses on integration of technologies from fields that are rarely mixed with architecture.				X										
Andres Sevtsuk	Assistant Professor, Singapore University of Technology and Design; research interests in urban design development, environmental policy and planning, computation in architecture and urban environments				X										
Bryan Young	Founder and Principal Young Projects in New York City, a design studio producing multidisciplinary work that ranges from architecture and art to furniture and objects.				X										

I.4. Policy Review

Information on policies and procedures, as established by the institute and by the department, will be available in the team room or can be accessed online.

An important resource provided by the department is the *Handbook for Graduate Students*, an on-line guide that includes, among other information, policies governing studio placement, internships, thesis, grading, financial aid, student employment, graduate academic review, withdrawal and readmission. The *Handbook* is found at: http://architecture.mit.edu/handbook/graduate-students

Additional information is accessible on the department's website at: http://architecture.mit.edu/handbook/resources.

- Studio Culture Policy
- Self-Assessment Policies and Objectives
- Personnel Policies including:
  - Position descriptions for all faculty and staff
  - Rank, Tenure, & Promotion or Reappointment
  - EEO/AA
  - Diversity (including special hiring initiatives)
  - Faculty Development, including but not limited to; research, scholarship, creative activity, or sabbatical.
- Student-to-Faculty ratios for all components of the curriculum (i.e., studio, classroom/lecture, seminar)
- Square feet per student for space designated for studio-based learning
- Square feet per faculty member for space designated for support of all faculty activities and responsibilities
- Admissions Requirements
- Advising Policies; including policies for evaluation of students admitted from preparatory or pre-professional programs where SPC are expected to have been met in educational experiences in non-accredited programs
- Policies on use and integration of digital media in architecture curriculum
- Policies on academic integrity for students (e.g., cheating and plagiarism)
- Policies on library and information resources collection development
- A description of the information literacy program and how it is integrated with the curriculum

Part II. Educational Outcomes and Curriculum

II.1 Student Performance Criteria and Educational Realms

As stated in the NAAB 2009 Conditions for Accreditation, accredited degree programs must demonstrate that each graduate possesses the knowledge and skills defined by the 32 criteria set out in Realms A, B and C.

The criteria for the 2009 Conditions encompass two levels of accomplishment:

1. **Understanding**—The capacity to classify, compare, summarize, explain and/or interpret information.

2. **Ability—**Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

As a school must provide evidence that its graduates have satisfied each criterion through required coursework, in demonstrating and providing evidence we have only used subjects (classes) that are a part of our Core curriculum for our MArch students, in addition to Thesis. The Core part of the MArch curriculum is, in effect, the first 3 (of 7) semesters of study (in addition to a 'restricted HTC elective' in semester 4).

The courses listed under each of the various SPCs, are taken by ALL of our MArch student population – as REQUIRED classes. As such, we have excluded any elective subjects taken by the MArch students at MIT, although these obviously contribute to the advanced and option level parts of their professional architectural education.

Please refer to the following three items for further explanation of the MArch curriculum. The MArch curriculum course map and the Student Performance Criteria matrix may be found on the following pages and also using the links below.

1. The MArch Curriculum course map at:
http://web.mit.edu/arch/NAAB-2015/II.1_MArch_Curriculum.pdf

2. The Student Performance Criteria Matrix at:
http://web.mit.edu/arch/NAAB-2015/II.1_SPC_Matrix.pdf.

3. Charts for the total classes list taken by MArch students (including core and electives) In semesters Spring 2013, Fall 2013, and Spring 2014.

The evidence has been presented to highlight those required core courses that can be shown to provide "primary evidence" for the fulfillment of the criteria as a first and substantial point of reference for evidence. The 'secondary' listing of courses also demonstrate evidence but may not occupy a central place in the content of the subject. This has been done to simplify the search process for evidence of compliance for 'ability' or 'understanding' as needed.

* The classes demonstrating "primary evidence" are highlighted in **BOLD** in the 11.1.1 Student Performance Criteria section.

MIT DEPARTMENT OF ARCHITECTURE

COURSE 4

M.ARCH CURRICULUM 2014-2015

01 Term	01 IAP	02 Term	03 Term	04 Term	05 Term	06 Term	07 Term
4 Classes 48 Units	1 Classes 9 Units	5 Classes 57 Units	4 Classes 48 Units	4 Classes 48 Units	5 Classes 54 Units	4 Classes 48 Units	2 Classes 33 Units

Architecture Core → Advanced Entry

Architecture Option → Concentration Declared

Thesis

AD Architectural Design	Design Studio	**4.151 (21)** Core Studio 1		**4.152 (21)** Core Studio 2	**4.153 (21)** Core Studio 3	**4.154 (21)** Option Studio 1	**4.154 (21)** Option Studio 2	**4.154 (21)** Option Studio 3	
	Thesis							**4.189 (9)** Prep for M. Arch Thesis	**4.THG (24)** Design Thesis
	Geometric/ Skills	**4.105 (9)** Geometric Disciplines and Skills	**4.109 (9)** Proto-Architecture	**4.107 (9)** Geometric Disciplines and Skills 2					
	Prof. Practice						**4.222 (6)** Professional Practice →		Option 4.222
BT Building Technology		**4.461 (9)** BT 1 Arch. Buildng Systems		**4.462 (9)** BT 2 Structural Systems 1	**4.463 (9)** BT 3 Structural Systems 2	**4.464 (9)** BT 4 Energy in Design	E	E	E
HTC History, Theory and Criticism		**4.210 (9)** Precedents in Critical Practice		**4.645 (9)** Arch from 1750 to Present	Take one class in either 3rd or 4th term	**4.607 or 4.647 or 4.646 (9)** HTC Elective	**4.6xx (9)** HTC Open Elective	E	E
COMP Computation					**4.562 (9)** Advanced Visualization For advanced entry	E	E	E	E
E 8 Electives			1 URB + 1 COMP + 1 ACT / Visual Arts + 3 Concentration Subjects + 2 Open Electives		**11.xxx (9)** Urban Studies	**4.5xx or MAS.xxx (9)** Comp./ Media Lab **X.xxx (9)** Concentration Elective	**4.3xx (9)** ACT/ Visual Arts **X.xxx (9)** Concentration Elective	**X.xxx (9)** Open Elective **X.xxx (9)** Concentration Elective	**X.xxx (9)** Open Elective No specific order for this track

SUBJECT & STUDENT PERFORMANCE CRITERIA MATRIX

STUDENT PERFORMANCE CRITERIA

ubject	Subject Title	Term	Instructor(s)	Disc.Group			A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11		B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12		C1	C2	C3	C4	C5	C6	C7	C8	C9
	AD: ARCHITECTURAL DESIGN BT: BUILDING TECHNOLOGY HTC: HISTORY, THEORY, CRITICISM				CRITICAL THINKING	MArch enrollment	Communication skills	Design thinking skills	Visual communication skills	Technical documentation	Investigative skills	Fundamental design skills	Use of Precedents	*Ordering systems skills*	*Historical trad + Global culture*	*Cultural diversity*	*Applied research*	INTEGRATED PRACTICES	Pre design	Accessibility	Sustainability	Site Design	Life safety	Comprehensive design	*Financial considerations*	*Environmental systems*	*Structural systems*	*Building envelope systems*	*Building service systems*	*Building materials and assemblies*	LEADERSHIP + PRACTICE	Collaboration	*Human behavior*	*Client role in architecture*	*Project management*	*Practice management*	*Leadership*	*Legal responsibilities*	*Ethics and Prof judgement*	*Community + social responsibility*
	Spring 2013 semester	***Sp 2013***																																					
4.107	Geometric Disciplines + Arch Skills 2	Sp 2013	Lamere	AD		29	X	X	X			X		X																									
4.152	Core Studio II	Sp 2013	Yoon, coord.	AD		9	X	X	X			X	X	X			X		X	X							X				X	X						
4.152	Core Studio II	Sp 2013	Tibbits	AD		10																																	
4.152	Core Studio II	Sp 2013	Parreno	AD		10																																	
4.189	Prep for MArch Thesis	Sp 2013	Miljacki	AD		34	X				X		X		X	X	X																				X	
4.462	BT 2 Structural Systems 1	Sp 2013	Ochsendorf	BT		21		X		X			X								X						X			X							X	
4.464	BT 4 Energy in Design	Sp 2013	Glicksman/Norford	BT		14	X		X		X										X				X	X												
4.645	Arch 1750 to Present	Sp 2013	Dutta	HTC		33	X	X	X		X		X		X	X	X														X	X					X	X
4.646	Research Progams in Modern Arch	Sp 2013	Anderson	HTC		1	X	X	X		X		X	X	X	X															X	X					X	X
	Fall 2013 semester	***FA 2013***																																					
4.105	Geometric Disciplines and Architectu	FA 2013	Lamere	AD		17	X	X	X			X		X																									
4.151	Architecture Design Core Studio I	FA 2013	O'Brien	AD		9	X	X	X		X	X	X	X	X		X			X							X			X		X						
4.151	Architecture Design Core Studio I	FA 2013	Parreño	AD		9																																	
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril	AD		9	X	X	X		X	X	X				X		X	X	X	X	X	X		X	X	X		X		X						
4.153	Architecture Design Core Studio III	FA 2013	Kennedy	AD		10																																	
4.153	Architecture Design Core Studio III	FA 2013	Scott	AD		10																																	
4.210	Precedents in Critical Practice	FA 2013	Miljacki	HTC		18	X				X		X		X						X				X												X	
4.222	Professional Practice	FA 2013	Freelon	AD		22	X				X		X			X					X				X						X		X	X	X	X	X	X
4.461	BT 1 Architectural Building Systems	FA 2013	Solander/Fernandez	BT		17				X		X	X							X	X		X		X	X		X	X	X								
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love	BT		27		X		X		X	X								X		X				X	X		X							X	
4.THG	THESIS	FA 2013	Various	AD		32	X	X	X		X	X					X																					
4.607	Thinking About Architecture	FA 2013	Jarzombek	HTC		22	X	X			X				X	X	X														X						X	X
4.647	Technopolitics, Culture, Intervention	FA 2013	May	HTC		17	X	X	X		X	X	X		X	X	X														X	X	X					X
	Spring 2014 semester	***SP 2014***																																					
4.107	Geometric Disciplines and Architectu	SP 2014	Clifford	AD		16	X	X	X			X		X																									
4.152	Architecture Design Core Studio II	SP 2014	Lamere	AD		8	X	X	X			X	X	X		X	X		X	X		X					X					X	X						X
4.152	Architecture Design Core Studio II	SP 2014	Miljacki	AD		8																																	
4.189	Preparation for MArch Thesis	FA/SP	Goulthorpe	AD		23	X	X	X		X		X		X	X	X																						
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf	BT		16		X		X			X								X						X			X							X	
4.464	BT 4 Energy in Building Design	SP 2014	Norford / Menchand	BT		19	X		X		X										X				X	X												
4.645	Selected Topics in Architecture - 175(	SP 2014	Dutta	HTC		19	X	X	X		X		X		X	X	X														X	X					X	X
4.646	Research Programs in Modern Archit	SP 2014	Petit	HTC		10	X	X			X		X		X	X																X						
4.109	ProtoArchitecture	IAP 2014	Lavallee	AD							X						X														X							
	Fall 2014 semester	***FA 2014***																																					
4.151	Architecture Design Core Studio I	FA 2014		AD			X	X	X		X	X	X	X	X		X			X							X			X		X						
4.153	Architecture Design Core Studio III	FA 2014		AD			X	X	X	X	X	X	X				X		X	X	X	X	X	X		X	X	X		X		X						
4.210	Precedents in Critical Practice	FA 2014	Miljacki	HTC			X				X		X		X						X				X												X	
4.222	Professional Practice	FA 2014	Freelon	AD			X				X		X			X									X						X	X	X	X	X	X	X	X
4.461	BT 1 Architectural Building Systems	FA 2014	Solander/Fernandez	BT						X		X	X							X	X		X		X	X		X	X	X								
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love	BT				X		X		X	X								X		X				X	X		X							X	
4.THG	THESIS	FA 2014	Various	AD			X	X	X		X	X					X																					
4.607	Thinking About Architecture	FA 2014	Varnelis	HTC			X	X			X				X	X	X														X	X					X	X
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta	HTC			X	X	X		X	X	X		X	X	X														X	X	X					X
4.109	ProtoArchitecture	IAP 2015	Lavallee	AD							X						X														X							

revised 08/27/2014

CLASSES TAKEN BY M.ARCH STUDENTS SPRING 2013 MINOR FORMAT PROBLEMS

Subject #	Subject Title	Instructor(s)	Disc. Group	MArch enrollment
	Core Subjects			
4.THG	Design Thesis - Fall or Spring	Advisors	AD	3
4.107	Geometric Disciplines + Arch Skills 2	Lamere	AD	29
4.152	Architecture Design Core Studio II	Tibbits	AD	9
4.152	Architecture Design Core Studio II	Yoon, coord.	AD	10
4.152	Architecture Design Core Studio II	Parreno	AD	10
4.189	Prep for MArch Thesis	Miljacki	AD	34
4.462	BT 2 Structural Systems 1	Ochsendorf	BT	21
4.464	BT 4 Energy in Design	Glicksman/Norford	BT	14
4.645	Arch 1750 to Present	Dutta	HTC	33
4.646	Research Programs in Modern Arch	Anderson	HTC Elective	1
	Other Required/Selective/Elective			
4.154	Option Studios - Spring	Mazereeuw	AD	7
4.154	Option Studios - Spring	Scott	AD	7
4.154	Option Studios - Spring	Chang/Lamere	AD	9
4.154	Option Studios - Spring	Garcia-Abril/Kim	AD	10
4.154	Option Studios - Spring	Kanda/Bunza	AD	10
4.154	Option Studios - Spring	Trahan	AD	10
11.338	Urban Design Studio	Ryan	AD/Urb option	2
4.163J	Urban Design Studio	Dennis	AD/Urb option	1
	Electives			
4.183	AD-Haiti Evacuation Systems	Mazereeuw	AD	2
4.212J	Engaging Community	Spirn	AD	2
4.216	Landscape/Urban Heritage	Wescoat	AD	4
4.241J	Theory of City Form	Beinart	AD	4
4.244J	Urban Design Seminar	Frenchman	AD	10
4.253J	Urban Design Politics	Vale	AD	1
4.S27	SS: Urban Design: Bogota	Grauer/Samper	AD	3
4.315	AdvWorkshop: Cinematic Migration	Green	ACT	2
4.321	Intro to Sound Creations	Hecker	ACT	1
4.333	Adv Sem: Sustainable Communities	Urbonas	ACT	3
4.343	Adv Photography/Related Media	Kapadia	ACT	1
4.350	Intro Video/Related Media	Nevarez	ACT	3
4.423J	Arch Thermal/Fluid Dynamics	Glicksman/Norford	BT	1
4.433	Modeling Urban Energy Flows	Reinhart	BT	4
4.445	Analysis of Historic Structures	Ochsendorf	BT	1
4.552	Wkshp in Comp: Synthetic Exoskel	Stiny/Zolotovsky	COMP	10
4.557J	New Urban Village: Mobility	Larson/Chin	COMP	3
4.564	Design Scripting	Nagakura	COMP	4
4.566	Adv Projects in Digital Media	Nagakura	COMP	1
4.s52	SS: Arch Comp: Shape and Material	Ozkar	COMP	2
5.s53	SS: Arch Comp: Design Lab Palladio	Nagakura	COMP	2
4.611	Civic Arch in Islamic History	Rabbat	HTC	1
4.675	Collect, Classify, Consume	Smentek	HTC	1
4.677	Adv Study in Art: Color	Jones	HTC	2
4.S68	SS: Colonialism: A Global History	Jarzombek	HTC	1

CLASSES TAKEN BY M.ARCH STUDENTS FALL 2013

Subject #	Subject Title	Instructor(s)	Disc. Group	MArch enrollment
	Core Subjects			
4.THG	Design Thesis - Fall or Spring	Advisors	AD	32
4.105	Geometric Disciplines & Architecture Skills	Lamere	AD	17
4.151	Architecture Design Core Studio I	O'Brien	AD	9
4.151	Architecture Design Core Studio I	Parreño	AD	9
4.153	Architecture Design Core Studio III	Garcia-Abril	AD	9
4.153	Architecture Design Core Studio III	Kennedy	AD	10
4.153	Architecture Design Core Studio III	Scott	AD	10
4.189	Preparation for MArch Thesis	Goulthorpe	AD	1
4.210	Precedents in Critical Practice	Miljacki	HTC	18
4.222	Professional Practice	Freelon	AD	22
4.461	Architectural Building Systems	Solander/Fernandez	BT	17
4.463	Building Structural Systems II	Ochsendorf/Love	BT	27
4.607	Thinking About Architecture: In History & At Present	Jarzombek	HTC	22
4.647	Technopolitics, Culture, Intervention	May	HTC	17
	Other Required/Selective/Elective			
4.154	Architecture Design Option Studio	Goulthorpe	AD	5
4.154	Architecture Design Option Studio	Segal	AD	12
4.154	Architecture Design Option Studio	Selgas	AD	11
	Electives			
4.121	Workshop in Making and Designing Space	Wampler	AD	4
4.130	Arch. Design Theory and Methodologies	Miljacki	AD	1
4.140J	How to Make (almost) Anything	Gershenfeld/Tibbits	AD	2
4.182	Architectural Design Workshop — MIT & SEU in Nanjing, China (Summer)	Chang/Lamere/Santos	AD	9
4.183	Architectural Design Workshop - Japan Workshop (Summer)	Kanda	AD	1
4.184	Architectural Design Workshop — Volumetric Robotics	Clifford	AD	7
4.190	Practical Experience in Architecture	Advisor	AD	5
4.s12	SS: Arch. Design – Original Room Wkshp	Garcia-Abril	AD	3
4.213J	Advanced Seminar: Urban Nature and City Design	Spirn	AD	4
4.215J	Sensing Place: Photography as Inquiry	Spirn	AD	6
4.225	Urban Design Theory	Dennis	AD	3
4.217J	Disaster Resilient Design	Wescoat	AD	2
4.252J	Intro to Urban Design and Development	Samper Escobar	AD	6
4.s23	SS: Architecture Studies — Second Nature: Design of Low Power Environmental Sensor and Networks	Kennedy	AD	1
4.308	Art, Architecture and Urbanism in Dialogue	Urbonas	ACT	7
4.331	Intro to Networked Cultures & Participatory Media	Urbonas	ACT	4
4.342	Introduction to Photography and Related Media	Kapadia	ACT	3
4.345	Advanced Photography and Related Media	Kapadia	ACT	3
4.355	Introduction to Video and Related Media	Nevarez	ACT	1
4.357	Cinematic Migrations	Green	ACT	6
4.447J	Design for Sustainability	Ochsendorf/Adams/Connor	BT	2
4.473	Design Workshop for a Sustainable Future	Mazereeuw/Ochsendorf	BT	2
4.540	Introduction to Shape Grammars I	Stiny	COMP	7

4.552	Workshop in Architectural Computation — Rule-Based 3D Modeling: Learning Through Play	Stiny/Ham	COMP	3
4.557J	City Science	Larson	COMP	1
4.562	Adv. Visualization: Arch/ in Motion Graphics	Nagakura	COMP	5
4.566	Advanced Projects in Digital Media	Nagakura	COMP	1
4.580	Inquiry into Computation & Design	Knight	COMP	1
4.s52	SS: Architectural Comp – Architecture and the Internet of Things	Shelden	COMP	2
4.604	Analysis of Contemporary Architecture	Anderson	HTC	5
4.640	Advanced Study in Critical Theory of Architecture	Dutta	HTC	2
4.s63	SS: History, Theory & Criticism of Architecture & Art—Traumatic Urbanism	Jarzombek	HTC	6

CLASSES TAKEN BY M.ARCH STUDENTS SPRING 2014

Subject #	Subject Title	Instructor(s)	Disc. Group	MArch enrollment
	Core Subjects			
4.THG	Design Thesis - Fall or Spring	Advisors	AD	6
4.107	Geometric Disciplines & Architecture Skills 2	Clifford	AD	16
4.152	Architecture Design Core Studio II	Lamere	AD	8
4.152	Architecture Design Core Studio II	Miljacki	AD	8
4.189	Preparation for MArch Thesis	Goulthorpe	AD	23
4.462	Building Structural Systems I	Ochsendorf	BT	16
4.464	Energy in Building Design	Norford / Menchanca	BT	19
4.645	Selected Topics in Architecture - 1750 to Present	Dutta	HTC	19
4.646	Research Programs in Modern Architecture	Petit	HTC	10
4.109	ProtoArchitecture (14IAP)	Lavallee	AD	17
	Other Required/Selective/Elective			
4.154	Architecture Design Option Studio	Chang / Clifford	AD	7
4.154	Architecture Design Option Studio	Garcia-Abril	AD	5
4.154	Architecture Design Option Studio	James	AD	9
4.154	Architecture Design Option Studio	Mazereeuw/Sevtsuk	AD	9
4.154	Architecture Design Option Studio	Selgas	AD	10
4.154	Architecture Design Option Studio	Young	AD	10
4.163J	Urban Design Studio	D'Hooghe / Berger	AD	1
4.183	Arch Design Workshop: PS1 MoMA Young Architects Program	O'Brien, Kubo, Lott	AD	2
	Electives			
4.181	Architectural Design Workshop — Chongqing: Viable Design Innovation in the Context of China's Unprecedented Growth	Lamere	AD	4
4.182	Architectural Design Workshop — Design Research on Transformative Continuities: Rialto Mercato, Venice	Kanda	AD	3
4.184	Architectural Design Workshop — Material Project	Jarzombek	AD	6
4.s13	SS: Arch Design: Craft & Digital Manufacturing	Dewart/Lavallee	AD	6
4.216J	Landscape and Urban Heritage Conservation	Wescoat	AD/DUSP	1
4.241J	Theory of City Form	Jacobi / Friedman	HTC/DUSP	1
4.244J	Urban Design Seminar: New Century Cities	Ryan	AD/DUSP	2
4.247J	Urban Design Policy Ideals and Action	Ryan	AD/DUSP	4
4.345	Advanced Photography and Related Media	Kapadia	ACT	2
4.353	Advanced Video and Related Media	Kahan - Nevarez	ACT	2
4.357	Cinematic Migrations	Green	ACT	1
4.369	Studio Seminar in Public Art/Public Sphere	Muntadas/Urbonas	ACT	1
4.374	Advanced Projects in Visual Arts: Sound Installations and Sonic Interventions	Urbonas	ACT	1
4.431	Architectural Acoustics	Markham	BT	1
4.475	Design for Sustainable Urban Futures	Fernandez	BT	4
4.477	Emergent Materials	Fernandez	BT	4
4.541	Introduction to Shape Grammars 2	Stiny	COMP	4
4.557J	City Science	Larson	COMP/MAS	5
4.564	Design Scripting	Nagakura	COMP	12
4.570	Computation Design Lab	Nagakura/Knight/Burns/Tsai	COMP	1
4.640	Advanced Study in Critical Theory of Architecture	Dutta	HTC	2
4.663	History of Urban Form	Jacobi	HTC	2
4.s65	SS: Islamic & Non-Western Architecture - Contemporary Islamic Architecture	Rabbat	HTC	1
4.287	Graduate Architecture Internship	Yoon	AD	

2.1.1 Student Performance Criteria

Realm A: Critical Thinking and Representation:
Architects must have the ability to build abstract relationships and understand the impact of ideas based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. This includes facility with the wider range of media used to think about architecture including writing, investigative skills, speaking, drawing and model making. Students' learning aspirations include:

Being broadly educated
Valuing lifelong inquisitiveness
Communicating graphically in a range of media
Recognizing the assessment of evidence
Comprehending people, place, and context
Recognizing the disparate needs of client, community, and society

A.1. Communication Skills: Ability to read, write, speak and listen effectively.

Many, if not all, classes call for the development of communication skills in various formats. The design studios are at the forefront of communication on a regular basis, at personal, group and class scales, and in multiple formats from pinned up work to digital presentations. Thesis preparation and thesis itself are major areas of students developing presentation and writing skills to explain research and an intellectual discourse. Other classes such as those HTC develop skills in writing, as well as debate formats where arguments are presented to an audience. The Building Technology classes involve communication of technical information, often through collaborative teamwork.

4.107	Geometric Disciplines + Arch Skills 2	Sp 2013	Lamere
4.152	**Architectural Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.189	**Prep for MArch Thesis**	**Sp 2013**	**Miljacki**
4.464	BT 4 Energy in Design	Sp 2013	Glicksman/Norford
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.105	Geometric Disciplines and Architecture Skills	FA 2013	Lamere
4.151	**Architecture Design Core Studio I**	**FA 2013**	**O'Brien**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.210	Precedents in Critical Practice	FA 2013	Miljacki
4.222	Professional Practice	FA 2013	Freelon
4.THG	**THESIS**	**FA 2013**	**Various**
4.607	**Thinking About Architecture: In History and At Present**	**FA 2013**	**Jarzombek**
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.107	Geometric Disciplines and Architecture Skills 2	SP 2014	Clifford
4.152	**Architectural Design Core II**	**Sp 2014**	**Lamere et al**
4.189	**Preparation for MArch Thesis**	**SP 2014**	**Goulthorpe**
4.464	BT 4 Energy in Building Design	SP 2014	Norford / Menchanca
4.645	**Topics in Architecture - 1750 to the Present**	**SP 2014**	**Dutta**
4.646	Research Programs in Modern Architecture	SP 2014	Petit
4.151	**Architecture Design Core Studio I**	**FA 2014**	
4.153	**Architecture Design Core Studio III**	**FA 2014**	
4.210	Precedents in Critical Practice	FA 2014	Miljacki
4.222	Professional Practice	FA 2014	Chan
4.THG	**THESIS FA 2014 Various**		
4.607	**Thinking About Architecture: In History and At Present**	**FA 2014**	**Varnelis**
4.647	**Technopolitics, Culture, Intervention**	**FA 2014**	**Dutta**

A. 2. Design Thinking Skills: Ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.

The development of the ability to use design as medium to think through issues and problems- as well as the development of design skills as an agent to rationalizing and considering questions and criteria in the application of architecture is fundamental to the MArch program. Such activity manifests itself through different forms of classes within the core studios of the program: in the assignments and discourse of the Core I, II and III studios; in the geometric disciplines classes where the connection between drawing and its investigation is made; building structural systems II where testing is against performative standards is paramount; and prep for MArch thesis where design is the medium between a variety of hypotheses and their manifestation through architecture.

4.107	**Geometric Disciplines + Arch Skills 2**	**Sp 2013**	**Lamere**
4.152	**Architecture Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.462	BT 2 Structural Systems 1	Sp 2013	Ochsendorf
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.105	**Geometric Disciplines and Architecture Skills**	**FA 2013**	**Lamere**
4.151	**Architecture Design Core Studio I**	**FA 2013**	**O'Brien**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.463	**BT 3 Building Structural Systems II**	**FA 2013**	**Ochsendorf**
4.THG	THESIS	FA 2013	Various
4.607	Thinking About Architecture: In History and At Present	FA 2013	Jarzombek
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.107	**Geometric Disciplines and Architecture Skills 2**	**SP 2014**	**Clifford**
4.189	**Preparation for MArch Thesis**	**SP 2014**	**Goulthorpe**
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf
4.645	Selected Topics in Architecture - 1750 to the Present	SP 2014	Duttta
4.646	Research Programs in Modern Architecture	SP 2014	Petit
4.151	**Architecture Design Core Studio I**	**FA 2014**	**Garcia- Abril et al**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love
4.THG	THESIS	FA 2014	Various
4.607	Thinking About Architecture: In History and At Present	FA 2014	Varnelis
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta

A.3. Visual Communication Skills: *Ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.*

Primary evidence for this criterion can be found in all core design studios and the geometric disciplines classes where all forms of technological skills, tools and media are explored and integrated into the design process. Many other classes also uses a variety of communication skills, including the thesis class where the full range and scope of methods is displayed, both at the final thesis review and in the subsequent 'book' required for recording and archiving of each thesis.

4.107	**Geometric Disciplines + Arch Skills 2**	**Sp 2013**	**Lamere**
4.152	**Architecture Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.464	BT 4 Energy in Design	Sp 2013	Glicksman/Norford
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.105	**Geometric Disciplines and Architecture Skills**	**FA 2013**	**Lamere**
4.151	**Architecture Design Core Studio I**	**FA 2013**	**O'Brien et al**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.THG	**THESIS**	**FA 2013**	**Various**
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.107	Geometric Disciplines and Architecture Skills 2	SP 2014	Clifford
4.152	**Architecture Design Core Studio I**	**SP 2014**	**Lamere et al**
4.189	Preparation for MArch Thesis	FA/SP	Goulthorpe
4.464	BT 4 Energy in Building Design	SP 2014	Norford/Menchanca
4.645	Architecture 1750 to the Present SP 2014	SP 2014	Dutta
4.151	**Architecture Design Core Studio I**	**FA 2014**	**Abril et al**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.THG	**THESIS**	**FA 2014**	**Various**
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta

A.4. Technical Documentation: *Ability to make technically clear drawings, write outline specifications, and prepare models illustrating and identifying the assembly of materials, systems, and components appropriate for a building.*

The building technology classes 4.461 and 4.462 develop differing degrees of technical documentation relative to their stage in the development of the MArch curriculum. 4.462 culminates in an extensive team based presentation of a technical development of a building envelope, together with associated energy and environmental testing / modeling. 4.153, the Core III studio also prepares models, material studies, and associated environmental and constructional systems drawings, and fabrication assemblies.

4.462	BT 2 Structural Systems I	Sp 2013	Ochsendorf
4.461	BT 1 Architectural Building Systems	FA 2013	Solander/Fernandez
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	**Building Structural Systems II**	**FA 2014**	**Mueller /Love**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**

A.5. Investigative Skills: *Ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.*

Many classes have a research component that places an emphasis upon investigating of information in order to develop a form of rigorous methodology. Specific reference is made to the 4.189 thesis preparation classes where research gathering is fundamental to the process of the thesis investigation – and to the sequence of 'limited electives' in the HTC sequence of classes, namely 4.607, 4.646, and 4.647 all of which call upon research investigation as fundamental to the discourse of the class. It should also be pointed out that MIT is an institution where research is fundamental to the investigative ethos of the university.

4.189	**Prep for MArch Thesis**	**Sp 2013**	**Miljacki**
4.464	BT 4 Energy in Design	Sp 2013	Glicksman/Norford
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	**Research Programs in Modern Arch**	**Sp 2013**	**Anderson**
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril
4.210	Precedents in Critical Practice	FA 2013	Miljacki
4.222	Professional Practice	FA 2013	Freelon
4.THG	THESIS	FA 2013	Various
4.607	**Thinking About Architecture**	**FA 2013**	**Jarzombek**
4.647	**Technopolitics, Culture, Intervention**	**FA 2013**	**May**
4.189	**Preparation for MArch Thesis**	**FA**	**Goulthorpe**
4.464	BT 4 Energy in Building Design	SP 2014	Norford / Menchanca
4.645	Selected Topics in Architecture: 1750 to the Present	SP 2014	Dutta
4.646	Research Programs in Modern Architecture	SP 2014	Petit
4.109	ProtoArchitecture	IAP 2014	Lavallee
4.151	Architecture Design Core Studio I	FA 2014	Abril et al
4.153	Architecture Design Core Studio III	FA 2014	Kennedy et al
4.210	Precedents in Critical Practice	FA 2014	Miljacki
4.222	Professional Practice	FA 2014	Chan
4.THG	THESIS	FA 2014	Various
4.607	**Thinking About Architecture**	**FA 2014**	**Varnelis**
4.647	**Technopolitics, Culture, Intervention**	**FA 2014**	**Dutta**
4.109	ProtoArchitecture	IAP 2015	Lavallee

A. 6. Fundamental Design Skills: *Ability to effectively use basic architectural and environmental principles in design.*

Studio and design classes in the first year of the Core class sequence introduce the student to many differing context of design principles and culture, including those of geometry, composition, ordering, 3 dimensional perception, aggregation, design complexity, formal manipulations, circulation, modeling and fabrication. Environmental principles as an agency to design thinking is interwoven through design studios as well as the related building technology classes 4.461.

4.107	**Geometric Disciplines + Arch Skills 2**	**Sp 2013**	**Lamere**
4.152	**Core Studio 2**	**Sp 2013**	**Tibbits**
4.105	Geometric Disciplines and Architecture Skills	FA 2013	Lamere
4.151	**Architecture Design Core Studio I**	**FA 2013**	**O'Brien**
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril

4.463	**BT 3 Building Structural Systems II**	**FA 2013**	**Ochsendorf/Love**
4.THG	**THESIS**	**FA 2013**	**Various**
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.107	**Geometric Disciplines & Architecture Skills 2**	**SP 2014**	**Clifford**
4.152	Architecture Design Core Studio I	SP 2014	Lamere
4.151	**Architecture Design Core Studio I**	**FA 2014**	**Abril et al**
4.153	Architecture Design Core Studio III	FA 2014	Kennedy et al
4.461	**Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love
4.THG	THESIS	FA 2014	Various
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta

A. 7. Use of Precedents: *<u>Ability</u> to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects.*

The use of different scales and context of precedents is fundamental to most design studios in Core and Option studios – and will also feature in other classes such as the history and their sequence and the thesis prep class. However 4.210 Precedents in Critical Practice is a first semester class that provides students with a grasp of contemporary and recent architectural thought as well as developing a discursive platform for students in support of their design studio projects.

4.152	Core Studio 2	Sp 2013	Tibbits
4.189	Prep for MArch Thesis	Sp 2013	Miljacki
4.462	BT 2 Structural Systems 1	Sp 2013	Ochsendorf
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril
4.222	Professional Practice	FA 2013	Freelon
4.461	BT 1 Architectural Building Systems	FA 2013	Solander/Fernandez
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.210	**Precedents in Critical Practice**	**FA 2013**	**Miljacki**
4.152	Architecture Design Core Studio I	SP 2014	Lamere
4.189	Preparation for MArch Thesis	FA/SP	Goulthorpe
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf
4.645	Selected Topics in Architecture - 1750 to the Present	SP 2014	Dutta
4.646	Research Programs in Modern Architecture	SP 2014	Petit
4.151	Architecture Design Core Studio I	FA 2014	Abril et al
4.153	Architecture Design Core Studio III	FA 2014	Kennedy et al
4.222	Professional Practice	FA 2014	Chan
4.461	BT 1 Architectural Building Systems	FA 2014	Solander/Fernandez
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta
4.210	**Precedents in Critical Practice**	**FA 2014**	**Miljacki**

***A. 8. Ordering Systems Skills**: Understanding of the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.*

Core I and Core II studios (4.151 and 4.152) specifically address 'ordering systems' as a design methodology towards coherent and articulate architectural proposals through the deployment of formal organizations, programmatic needs, 3D geometric ordering, aggregation and composition, circulation and narrative, site parameters, environmental logics, and material language. These are explored through different 'exercises' and design assignments of increasing complexity.

4.107	Geometric Disciplines + Arch Skills 2	Sp 2013	Lamere
4.152	**Architecture Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.646	Research Progams in Modern Arch	Sp 2013	Anderson
4.105	Geometric Disciplines and Architecture Skills	FA 2013	Lamere
4.151	**Architecture Design Core Studio I**	**FA 2013**	**O'Brien et al**
4.107	Geometric Disciplines and Architecture Skills 2	SP 2014	Clifford
4.152	**Architecture Design Core Studio II**	**SP 2013**	**Lamere et al**
4.151	**Architecture Design Core Studio I**	**FA 2014**	**Abril et al**

***A. 9. Historical Traditions and Global Culture:** Understanding of parallel and divergent canons and traditions of architecture, landscape and urban design including examples of indigenous, vernacular, local, regional, national settings from the Eastern, Western, Northern, and Southern hemispheres in terms of their climatic, ecological, technological, socioeconomic, public health, and cultural factors.*

Four classes in the History, Theory and Criticism requirements generously fulfill this requirement through the discourse of contextual-ism, regional and national identity, technological narratives, socioeconomic factors and perspectives from around the world, including western and non- western traditions. 4.645 Architecture from 1750- Present sets the stage initial understanding, followed by the 'limited elective' sequence of 4.607, 4.646 and 4.647 where every student has to engage one of these subjects within core and can take others as a further HTC elective. Global culture and traditions are further explored through 4.189 the thesis prep class where extensive research and discourse foregrounds thesis proposal that are typically international, multicultural and developed from a discourse of local, regional and national settings.

4.189	**Prep for MArch Thesis Sp 2013 Miljacki**		
4.645	**Arch 1750 to Present**	**Sp 2013**	**Dutta**
4.646	**Research Programs in Modern Arch**	**Sp 2013**	**Anderson**
4.151	Architecture Design Core Studio I	FA 2013	O'Brien et al
4.210	Precedents in Critical Practice	FA 2013	Miljacki
4.607	**Thinking About Architecture:**	**FA 2013**	**Jarzombek**
4.189	**Preparation for MArch Thesis**	**FA**	**Goulthorpe**
4.645	**Selected Topics in Architecture:1750 to the Present SP 2014**		**Dutta**
4.646	**Research Programs in Modern Architecture**	**SP 2014**	**Petit**
4.151	Architecture Design Core Studio I	FA 2014	Abril et al
4.210	Precedents in Critical Practice	FA 2014	Miljacki
4.647	**Technopolitics, Culture, Intervention**	**FA 2014**	**Dutta**
4.607	**Thinking About Architecture**	**FA 2014**	**Varnelis**

A. 10. Cultural Diversity: *Understanding of the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects.*

All of the classes listed below provide primary evidence in the understanding of cultural diversity: The HTC classes (4.645, 4.646, 4.607 and 4.647) all speak to the context of culture in a global society and associated values; 4.222 speaks to the importance of working with and to different cultural norms in practice and the responsibilities therein; 4.189 thesis prep develops a discourse that all the class participates in relative to many different cultural contexts for thesis proposals and associated research.

4.189	**Prep for MArch Thesis**	**Sp 2013**	**Miljacki**
4.645	**Arch 1750 to Present**	**Sp 2013**	**Dutta**
4.646	**Research Programs in Modern Arch**	**Sp 2013**	**Anderson**
4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.607	**Thinking About Architecture**	**FA 2013**	**Jarzombek**
4.189	**Preparation for MArch Thesis**	**FA 2013**	**Goulthorpe**
4.645	**Selected Topics in Architecture - 1750 to the Present**	**SP 2014**	**Dutta**
4.152	**Architecture Design Core Studio II**	**SP 2013**	**Lamere et al**
4.222	**Professional Practice**	**FA 2014**	**Freelon**
4.607	**Thinking About Architecture**	**FA 2014**	**Varnelis**
4.647	**Technopolitics, Culture, Intervention**	**FA 2014**	**Dutta**

A.11. Applied Research: *<u>Understanding</u> the role of applied research in determining function, form, and systems and their impact on human conditions and behavior.*

Research is a core value and activity across MIT and, as such, it permeates the teaching of the faculty as well as their research. In the context of the studio pedagogy of Core studios, the methodology to develop a foundation of research is fundamental to design exploration and speculation. This can be characterized as being a formal research in Core 1, a programmatic and behavioral research in Core II, and a technological and environmental research in Core III. In addition research inquiry and application from 4.189 thesis prep is also a fundamental determinant to the context and quality of the thesis design work.

4.152	**Architecture Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.189	**Prep for MArch Thesis**	**Sp 2013**	**Miljacki**
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.THG	THESIS	FA 2013	Various
4.607	Thinking About Architecture	FA 2013	Jarzombek
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.152	Architecture Design Core Studio II	SP 2014	Lamere et al
4.189	**Preparation for MArch Thesis**	**SP 2014**	**Goulthorpe**
4.645	Selected Topics in Architecture - 1750 to the Present	SP 2014	Dutta
4.109	ProtoArchitecture	IAP 2014	Lavallee
4.151	Architecture Design Core Studio I	FA 2014	Abril et al
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.THG	THESIS	FA 2014	Various
4.607	Thinking About Architecture	FA 2014	Varnelis

4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta
4.109	ProtoArchitecture	IAP 2015	Lavallee

Realm B: Integrated Building Practices, Technical Skills and Knowledge: *Architects are called upon to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to their services. Additionally they must appreciate their role in the implementation of design decisions, and the impact of such decisions on the environment. Students learning aspirations include:*

Creating building designs with well-integrated systems
Comprehending constructability
Incorporating life safety systems
Integrating accessibility
Applying principles of sustainable design

B. 1. Pre-Design: *Ability to prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.*

In each of the Core II and Core III studios, students develop and understanding and interpretation of program and user needs, space requirements and analysis, understanding of site conditions and means to interpret these into design strategies, and the relevant laws and code issues that bear on and impact the design concept and development. This program preparation is typically interwoven into the early exercises / assignments of each studio.

4.152	**Architecture Design Core II**	**Sp 2013**	**Yoon et al**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.152	**Architecture Design Core Studio II**	**SP 2014**	**Lamere et al**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**

B. 2. Accessibility: *Ability to design sites, facilities, and systems to provide independent and integrated use by individuals with physical (including mobility), sensory, and cognitive disabilities.*

Accessibility issues are a parameter for the project work of all Core studios, but are particularly highlighted in the 4.153 Core III studio as a component element of the comprehensive studio and where design work has to be in compliance with building codes and demonstrate an ability to perform to the needs of those users with physical disabilities. 4.461 Architectural Building systems also incorporates the need for accessibility into the class lectures.

4.152	Architecture Design Core II	Sp 2013	Yoon et al
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.152	Architecture Design Core Studio II	SP 2014	Lamere
4.151	Architecture Design Core Studio I	FA 2014	Garcia-Abril et al

4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander / Fernandez**

B. 3. Sustainability: *Ability to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations through means such as carbon-neutral design, bioclimatic design, and energy efficiency.*

Sustainability, in its multiple interpretations, has been interwoven into many classes at both the Core and Option (elective) level. Issues pertaining to sustainability are central to both MIT in general and to the Department in particular. As evidence, all of the classes listed below demonstrate an ability for each MArch student to comprehend sustainability and sustainable design: Core III studio is predicated upon carbon related design, climate factors, and material and resource sustainability; The Building Technology classes emphasize performative aspects relative to energy, health, air quality, envelopes, climatic control and design, and materials; the professional practice class (4.222) speaks to the importance of sustainable strategies as an ethical basis to practice.

4.462	**BT 2 Structural Systems 1**	**Sp 2013**	**Ochsendorf**
4.464	**BT 4 Energy in Design**	**Sp 2013**	**Glicksman/Norford**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril**
4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.463	**BT 3 Building Structural Systems II**	**FA 2013**	**Ochsendorf/Love**
4.462	**BT 2 Building Structural Systems I**	**SP 2014**	**Ochsendorf**
4.464	**BT 4 Energy in Building Design**	**SP 2014**	**Norford / Menchanca**
4.153	**Architecture Design Core Studio III**	**FA 2014**	
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	**BT 3 Building Structural Systems II**	**FA 2014**	**Mueller /Love**

B. 4. Site Design: *Ability to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of a project design.*

Core II and Core III design studios each teach strategies for the understanding of sites and their impacts upon the design process. Exercises are established that ask students to research and interpret the primary forces and systems that go into the 'reading' of site conditions, including the surrounding urban or rural fabric that feeds into the site in terms of local natural ecologies. Water, topography, vegetation and soil conditions would be recognized and be part of a set of systems that are essential information for the design development process.

4.152	**Architecture Design Core II**	**Sp 2013**	**Yoon et al**
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.152	**Architecture Design Core Studio II**	**SP 2014**	**Lamere et al**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy and Scott**

B. 5. Life Safety: *Ability to apply the basic principles of life-safety systems with an emphasis on egress.*

The principles of life safety are reviewed in 4.461 Architectural Building systems- and then demonstrated in studio design projects through many studios, but particularly in the 4.153 Core II 'comprehensive' design studio' in which an ability to integrate egress is a part of the design requirements.

4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love

B. 6. Comprehensive Design*: Ability to produce a comprehensive architectural project that demonstrates each student's capacity to make design decisions across scales while integrating the following SPC:*

A.2. Design Thinking Skills
A.4. Technical Documentation
A.5. Investigative Skills
A.8. Ordering Systems
A.9. Historical Traditions and Global Culture
B.2. Accessibility
B.3. Sustainability
B.4. Site Design
B.5. Life Safety
B.8. Environmental Systems
B.9. Structural Systems

Since the last NAAB team visit, the MArch curriculum has developed a strategic approach to the development of a 'comprehensive design' with the 4.153 Core III studio. Now in its 4th semester of iteration (Fall 2014) the studio has expanded and developed its understanding and experience of comprehensive design. The studio is also closely integrated and aligned with the Building technology class 4.463 where structural and envelope studies are complimentary to the studio, with parallel assignments that use the studio project as the basis for the development of technological systems with the accompanying technical documentation (see condition A4)

4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril et al**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy and Scott**

B. 7 Financial Considerations*: Understanding of the fundamentals of building costs, such as acquisition costs, project financing and funding, financial feasibility, operational costs, and construction estimating with an emphasis on life-cycle cost accounting.*

The professional practice class 4.222 addresses the fiscal, legal and ethical responsibilities of contemporary practice while introducing the full scope of the conventions under which the delivery of services is regulated. The class also undertakes research into different forms and sizes of practice including their financial models – and ask student teams to address a theoretical RFQ including budgeting. The building technology classes 4.646 and 4.461 develop and understanding of the principles of life cycle costing as well as energy auditing.

4.464	BT 4 Energy in Design	Sp 2013	Glicksman/Norford
4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.461	BT 1 Architectural Building Systems	FA 2013	Solander/Fernandez
4.464	**BT 4 Energy in Building Design**	**SP 2014**	**Norford / Menchanca**
4.222	**Professional Practice**	**FA 2014**	**Chan**
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**

B. 8 Environmental Systems: *Understanding the principles of environmental systems' design such as embodied energy, active and passive heating and cooling, indoor air quality, solar orientation, daylighting and artificial illumination, and acoustics; including the use of appropriate performance assessment tools.*

Both 4.461 and 4.464 address the basic principles and applications of environmental systems. Students are also introduced to various tools to evaluate and assess performance – and 4.464 develops the design application and testing of the exterior envelope. The Core III design studio also integrates these environmental systems into the comprehensive design project.

4.464	**BT 4 Energy in Design**	**Sp 2013**	**Glicksman/Norford**
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.464	**BT 4 Energy in Building Design**	**SP 2014**	**Norford / Menchanca**
4.153	Architecture Design Core Studio III	FA 2014	
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**

B. 9. Structural Systems: *Understanding of the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural* systems.

In the building technology core sequence of classes 4.462 and 4.463 address introductory and advanced studies in structural systems. All core studios also address an requirement for structural integration into the design development. However, 4.153 Core II design studio uses a structural assignment to study structural form and morphology- and collaborates with students in civil engineering to develop a cross disciplinary culture in design.

4.152	Architecture Design Core Studio II	Sp 2013	Yoon et al
4.462	**BT 2 Structural Systems 1**	**Sp 2013**	**Ochsendorf**
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril et al
4.463	**BT 3 Building Structural Systems II**	**FA 2013**	**Ochsendorf/Love**
4.152	Architecture Design Core Studio II	SP 2014	Lamere et al
4.462	**BT 2 Building Structural Systems I**	**SP 2014**	**Ochsendorf**
4.151	Architecture Design Core Studio I	FA 2014	Garcia- Abril et al
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.463	**BT 3 Building Structural Systems II**	**FA 2014**	**Mueller /Love**

B. 10. Building Envelope Systems: *Understanding of the basic principles involved in the appropriate application of building envelope systems and associated assemblies relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources.*

Introduction to the building envelope system is developed in 4.461 Architectural building systems. 4.463 dedicates half of the semester to the design, analysis, and testing of an envelope design as it also integrates with the structure of a building. The studio project in Core studio III is also used as the context for the envelope study thereby creating a system of integration.

4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril et al
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.463	**BT 3 Building Structural Systems II**	**FA 2013**	**Ochsendorf/Love**
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	**BT 3 Building Structural Systems II**	**FA 2014**	**Mueller /Love**

B. 11. Building Service Systems: *Understanding of the basic principles and appropriate application and performance of building service systems such as plumbing, electrical, vertical transportation, security, and fire protection systems.*

The introduction and understanding of building servicing systems is accomplished in the building technology class 4.461.

4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**

B. 12. Building Materials and Assemblies: *Understanding of the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse.*

Since the last NAAB team visit, the MArch program has developed a broad interest in the 'material culture' as an agent to architectural production. This interest is developed through both core and option level studios as well as outside lectures. A component of this is an investment in material and digital fabrication through both class development, and through shop and lab facilities. BT class 4.461 introduces students to materials and tectonic assemblies through course content on major building materials and systems. Core III studio also focuses upon the design and fabrication of prototype wall assembles in the design of the comprehensive studio project. In addition the class 4.109 ProtoArchitecture in between Core I and Core II studios introduces students to techniques of digital fabrication and prototyping as a means to test material form and component assembly.

4.462 BT 2 Structural Systems 1 Sp 2013 Ochsendorf

4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	**Architecture Design Core Studio III**	**FA 2013**	**Garcia-Abril**
4.461	**BT 1 Architectural Building Systems**	**FA 2013**	**Solander/Fernandez**
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf
4.151	Architecture Design Core Studio I	FA 2014	Garcia Abril et al
4.153	**Architecture Design Core Studio III**	**FA 2014**	**Kennedy et al**

4.461	**BT 1 Architectural Building Systems**	**FA 2014**	**Solander/Fernandez**
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love
4.109	**ProtoArchitecture**	**IAP 2015**	

Realm C: Leadership and Practice:

Architects need to manage, advocate, and act legally, ethically and critically for the good of the client, society and the public. This includes collaboration, business, and leadership skills. Student learning aspirations include:

Knowing societal and professional responsibilities
Comprehending the business of building
Collaborating and negotiating with clients and consultants in the design process
Discerning the diverse roles of architects and those in related disciplines
Integrating community service into the practice of architecture

C. 1. Collaboration: *Ability to work in collaboration with others and in multi- disciplinary teams to successfully complete design projects.*

Many classes (see list below) in the core of the MArch program have assignments and events where the ability to collaborate is a key component of the learning environment. HTC classes debate issues in a collaborative setting, the professional practice class (4.222) works on a team basis for assignments, and the design studios frequently collaborate on both research studies and exercises, as well as some design tasks that require the shared input of colleagues or aligned disciplines such as the engineer, urban planner or landscape architect.

4.152	Architecture Design Core Studio II	Sp 2013	Yoon et al
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.151	Architecture Design Core Studio I	FA 2013	O'Brien
4.153	Architecture Design Core Studio III	FA 2013	Garcia-Abril et al
4.222	Professional Practice	FA 2013	Freelon
4.607	Thinking About Architecture	FA 2013	Jarzombek
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.152	Architecture Design Core Studio II	SP 2014	Lamere
4.645	Selected Topics in Architecture - 1750 to the Present	SP 2014	Dutta
4.109	ProtoArchitecture	IAP 2014	Lavallee
4.151	Architecture Design Core Studio I	FA 2014	Abril et al
4.153	Architecture Design Core Studio III	FA 2014	Kennedy et al
4.222	Professional Practice	FA 2014	Freelon
4.607	Thinking About Architecture	FA 2014	Varnelis
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta
4.109	ProtoArchitecture	IAP 2015	Lavallee

C. 2. Human Behavior: *Understanding of the relationship between human behavior, the natural environment and the design of the built environment.*

The department of architecture at MIT does not currently teach mandatory core classes in behavioral psychology that might establish links and causal effects between the attributes of physical space,

perception and patterns of individual or collective behavior. However, the topic of human behavior as it relates to the discourses on building typology, variable forms of inhabitable environments, urban place, cities and their environments, environmental design (sustainability), art and architecture, and the deployment of technologies (built and digital) is central to the content of many classes in the core and elective parts of the MArch curriculum- and permeates design discourse in most if not all studios. As various interpretations of human behavior would seem to be a central connecting theme, there are several mandatory classes that express an interest in the questions of human behavior and its relationship to environments. Core II studios focus on developing attitudes and strategies to program content through mapping patterns of activity and behavior; the HTC classes intervene issues of the human cause into the dialogue; and professional practice sees the understanding of human characteristics as a condition for effective practice.

4.152	**Architecture Design Core Studio II**	**Sp 2013**	**Yoon et al**
4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.152	**Architecture Design Core Studio II**	**SP 2014**	**Lamere et al**
4.645	**Topics in Architecture: 1750 to the Present**	**SP 2014**	**Dutta**
4.646	**Research Programs in Modern Architecture**	**SP 2014**	**Petit**
4.647	**Technopolitics, Culture, Intervention**	**FA 2014**	**Dutta**
4.607	**Thinking About Architecture**	**FA 2014**	**Varnelis**
4.222	Professional Practice	FA 2014	Chan

***C. 3 Client Role in Architecture**: Understanding of the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.*

The primary evidence of the understanding of the broad role of the client in terms of the architect's responsibilities is through 4.222 Professional Practice. In the class the context of 'who is the client' is also explored as it relates to societal and community responsibilities. The HTC class 4.647 broadens a discourse on the societal responsibility of architecture and therein the role and contribution of the architect to history.

4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.222	**Professional Practice**	**FA 2014**	**Chan**
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta

***C. 4. Project Management:** Understanding of the methods for competing for commissions, selecting consultants and assembling teams, and recommending project delivery methods.*

An understanding of project management is developed through the course material and collaborative assignments of 4.222.

4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.222	**Professional Practice**	**FA 2014**	**Chan**

***C. 5. Practice Management:** Understanding of the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.*

An understanding of practice management is wholly addressed through the course material and exercises of 4.222.

4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.222	**Professional Practice**	**FA 2014**	**Chan**

***C. 6. Leadership**: Understanding of the techniques and skills architects use to work collaboratively in the building design and construction process and on environmental, social, and aesthetic issues in their communities.*

MIT is a leading research institution and prides itself on developing a future generation of leaders in many different societal, technological, design, scientific, and economic contexts. Through the research model it develops leadership and entrepreneurial characteristics in students, especially at a graduate level and supports this through a variety of funded initiatives. Many students choose to study at MIT because of the cross disciplinary nature of education which confronts many of the challenges in the world, as well as being a place for discovery and innovation. Therefore the MArch program also operates within this educational and research setting where there is an expectation that, as future architects and designers, they are positioned for a future that will be as challenging as the past. At a more fundamental level, leadership as an architect, business owner, and community leader is also a component part of 4.222 professional practice.

4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.222	**Professional Practice**	**FA 2014**	**Chan**

***C. 7. Legal Responsibilities:** Understanding of the architect's responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and accessibility laws.*

An understanding of legal responsibilities of the architect is fully developed through the course material and collaborative assignments of 4.222.

4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.222	**Professional Practice**	**FA 2014**	**Chan**

***C. 8. Ethics and Professional Judgment:** Understanding of the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.*

Ethics and issues pertaining to professional judgment are taught and discussed in 4.222 Professional Practice. However questions of ethics in relationship to the role of architecture are also debated in the HTC classes in the context of history, culture and current topical issues that affect practice, buildings, communities and urban form. Professional judgment is raised in the context of building technology and performance and the commitment to larger environmental concerns.

4.462	BT 2 Structural Systems 1	Sp 2013	Ochsendorf
4.645	**Arch 1750 to Present**	**Sp 2013**	**Dutta**
4.646	**Research Programs in Modern Arch**	**Sp 2013**	**Anderson**
4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.463	BT 3 Building Structural Systems II	FA 2013	Ochsendorf/Love

4.607	**Thinking About Architecture**	**FA 2013**	**Jarzombek**
4.462	BT 2 Building Structural Systems I	SP 2014	Ochsendorf
4.645	Selected Topics in Architecture: 1750 to the Present	SP 2014	Dutta
4.222	**Professional Practice**	**FA 2014**	**Chan**
4.463	BT 3 Building Structural Systems II	FA 2014	Mueller /Love
4.607	**Thinking About Architecture**	**FA 2014**	**Varnelis**

C.9. Community and Social Responsibility: *Understanding of the architect's responsibility to work in the public interest, to respect historic resources, and to improve the quality of life for local and global neighbors*

The architect's responsibility in relation to the public interest – and the fundamental responsibility to improve the human and community condition is fundamental to the core values of the MArch program. As such it permeates discourse through core and option levels studios- and is investigated through visiting open lectures, exhibitions etc.. At a more specific level, the understanding of the architect's responsibility is a component of 4.222 Professional Practice.

4.645	Arch 1750 to Present	Sp 2013	Dutta
4.646	Research Programs in Modern Arch	Sp 2013	Anderson
4.222	**Professional Practice**	**FA 2013**	**Freelon**
4.607	Thinking About Architecture	FA 2013	Jarzombek
4.647	Technopolitics, Culture, Intervention	FA 2013	May
4.152	Architecture Design Core Studio II	SP 2014	Lamere et al
4.645	Selected Topics in Architecture - 1750 to the Present	SP 2014	Dutta
4.222	**Professional Practice**	**FA 2014**	**Chan**
4.607	Thinking About Architecture	FA 2014	Varnelis
4.647	Technopolitics, Culture, Intervention	FA 2014	Dutta

II.2. Curricular Framework

II.2.1. Regional Accreditation

The New England Association of Schools and Colleges, Inc., Commission on Institutions of Higher Education, confirmed in its letter of 7 May 2010 to MIT President Susan Hockfield that accreditation for the Massachusetts Institute of Technology is continued. The next comprehensive evaluation is scheduled for Fall 2019.

See letter at: http://web.mit.edu/arch/NAAB-2015/II.2.1_NEASC_Letter.pdf

II.2.2. Professional Degrees and Curriculum

The title of MIT's professional degree is Master of Architecture (M.Arch). The program requires the following academic preparation: A Bachelor's degree with high academic standing from a recognized institution or the equivalent; two semesters of satisfactory study in college-level mathematics; two semesters of satisfactory study in college-level natural sciences; six semesters of satisfactory study in college-level humanities and/or social sciences.

The M.Arch degree is awarded upon satisfactory completion of an approved program of 312 graduate subject units and an acceptable 24-unit thesis. The following outline of the M.Arch curriculum shows the distribution of general studies, required professional courses (including prerequisites), required courses, professional courses, and other electives. See also M.Arch Curriculum Chart above.

General Education Courses
4.151, Architecture Design Core Studio I, 21 units (prereq: permission of instructor)
4.105, Geometric Disciplines and Architecture, 9 units (prereq: permission of instructor)
4.461, Architecture Building Systems, 9 units
4.210, Precedents in Critical Practice, 9 units
4.109, ProtoArchitecture, 9 units
4.152, Architecture Design Core Studio II, 21 units (prereq: 4.151)
4.107, Geometric Disciplines and Architecture Skills II, 9 units (prereq: 4.105)
4.462, Building Structural Systems I, 9 units (prereq: 4.461 or permission of instructor)
4.645, Selected Topics in Architecture: 1750 to the Present, 9 units (prereq: 4.210 or permission of instructor)

Professional Courses
4.153, Architecture Design Studio Core III, 21 units (prereq: 4.152)
4.463, Building Structural Systems II, 9 units (prereq: 4.462 or permission of instructor)
HTC Restricted Elective (choose one of three): 4.607, Thinking About Architecture: In History and At Present, 9 units (prereq: 4.645 or permission of instructor); 4.647, Technopolitics, Culture, Intervention, 9 units (prereq: 4.645 or permission of instructor); or 4.646, Research Program in Modern Architecture, 9 units (prereq: 4.645 or permission of instructor)
4.154, Architecture Design Studio Option Studio, 21 units (prereq: 4.153)
4.464, Energy in Building Design, 9 units (prereq: 4.463 or permission of instructor)
4.154, Architecture Design Studio Option Studio, 21 units (prereq: 4.153)
4.222, Professional Practice, 6 units (prereq: permission of instructor)
HTC Open Elective, for example, 4.661 Theory and Method in the Study of Art and Architecture, 9 units, (prereq: permission of instructor) or 4.621 Orientalism and Representation, 9 units, (prereq: permission of instructor)
4.154, Architecture Design Studio Option Studio, 21 units (prereq: 4.153)
4.189, Preparation for MArch Thesis, 9 units (prereq: permission of instructor)

Elective Courses
Computation or Media Lab elective, 9 units
Urban Design elective, 9 units
Art, Culture Technology elective, 9 units
Concentration elective, 9 units
Concentration elective, 9 units
Concentration elective, 9 units
Open elective, 9 units
Open elective, 9 units

The concentration required within the MArch curriculum is a sequence of at least three elective subjects that cohere around a defined set of educational goals. The intent of the concentration requirement is to provide structure for a student's own exploration of MIT's resources.

The following are three examples of M.Arch concentrations.

Concentration #1: Student was interested in examining multi-family urban housing as a typological agent for positive societal change.
11.320 Digital City Design Workshop, 12 units (prereq: permission of instructor)
11.404 Housing Policy and Planning in the US, 12 units
4.253J, Urban Design Politics, 12 units (prereq: permission of instructor)

Concentration #2: Student was interested in the way of representation, which means drawing, animation or programming.
4.553 Workshop in Architectural Computation, 9 units (prereq: permission of instructor)
4.562 Advanced Visualization: Architecture in Motion Graphics, 9 units (prereq: permission of instructor)
4.566, Advanced Topics in Digital Media, 9 units (prereq: 4.562, 4.564 or permission of instructor)

Concentration #3: Student was interested in designing for a sustainable future on a finite planet.
4.475 Design for Sustainable Urban Futures, 9 units (prereq: 4.151; 4.461 or permission of instructor)
4552, Workshop in Architectural Computation, 9 units (prereq: permission of instructor)
4.493, Independent Study in Building Technology, 9 units (prereq: permission of instructor)

M.Arch students register for a minimum of 48 semester credit hours per term.

The list of courses and their credit hours required for professional content and general education are listed above as part of the outline of the M.Arch degree.

[NOTE: This section is accompanied by an Excel spreadsheet that clearly shows the breakdown of courses for both the 3.5 and 2.5-year M.Arch degrees.]

II.2.3 Curriculum Review and Development

The Department's M.Arch Curriculum Committee has developed and periodically reviews and refines the M.Arch curriculum, in terms of structure, sequence and content. Committee membership, as appointed by the Department Head, consists of faculty from different discipline groups of the department; Architectural Design, Building Technology, Design and Computation, Art, Culture and Technology, and History, Theory and Criticism of Architecture and Art. Members during the 2013-2104 academic year included Azra Aksamija, Stanford Anderson, John Fernandez, Anton Garcia-Abril (Chair), Mark Jarzombek, Terry Knight, Andrew Scott, Nader Tehrani, J. Meejin Yoon, and Cynthia Stewart (ex officio).

The MArch Curriculum Committee typically meets twice per academic year, and more frequently to address to develop strategic changes to the program. It often engages faculty from different disciplinary areas, particularly when those groups are revising the content and sequence of courses offered to M.Arch students. This coordination is intended to ensure that SPCs continue to be covered in classes taken by all M.Arch students and to identify productive interactions of many of these courses with core studios. Curricular issues pertaining to the content and sequence of design studios for the M.Arch program are also considered in design faculty meetings, which typically take place once per month.

The Committee on Graduate Students (COGS) meets monthly to review policy, curricular, scheduling and related issues across all graduate degree programs and in particular to discuss proposals generated within the department that may require review and approval at higher levels within the Institute such as degree names or creation of defined discipline groups. Members are senior faculty in the discipline and program groups: in 2013-14 members were Arindam Dutta, John Fernandez, Anton Garcia-Abril, Renee Green, Takehiko Nagakura (Chair), Leslie Norford, Nasser Rabbat, Nader Tehrani, and administrators Renee Caso and Cynthia Stewart (ex officio).

II.3. Evaluation of Preparatory/Pre-professional Education

MArch students who have successfully completed the equivalent of one or more required architecture subjects outside MIT (or within MIT as undergraduates) may be given advanced credit for those subjects by submitting a petition for curriculum adjustment with all relevant material including a transcript, syllabi, reading lists, problem sets, paper assignments, and portfolios of work for ACT/Visual Arts electives. Students are requested to submit petitions to the Administrator for Master's Degree Programs by the end of the first week of the term; petitions are then reviewed by the MArch Program Committee, composed of one faculty member from each of the four discipline groups, and acted on in the first month of the semester. Depending on the subject for which MIT credit is requested, students may substitute an elective in the discipline group or a free elective. Students and faculty advisors are notified of curriculum adjustments and recommendations before the following Registration Day by an updated copy of the M.Arch degree audit. All requests for advanced credit must be resolved by the beginning of the penultimate semester.

Students admitted to Year 2 with advanced entry receive two semesters of studio credit with the letter of admission. It is assumed these students will have completed a curriculum roughly equivalent to the MIT Year 1 at their previous universities. The Program Committee reviews transcripts for these students in the summer before they enter and make recommendations for any necessary curriculum adjustments. Students and faculty advisors are notified of these recommendations before Registration Day by an updated copy of the M.Arch degree audit.

II.4. Public Information:

II.4.1. Statement on NAAB-Accredited Degrees:

http://architecture.mit.edu/department/information

II.4.2. Access to NAAB Conditions and Procedures

Link to NAAB website at: http://architecture.mit.edu/department/information

II.4.3. Access to Career Development Information

Links to several career information resources including NCARB, AIA, ACSA, and ARCHCareers at: http://architecture.mit.edu/department/information

II.4.4. Public Access to APRs and VTRs

These documents are available in the Rotch Library of Architecture and Planning and in the Department of Architecture headquarters.

II.4.5. ARE Pass Rates

Link to NCARB ARE Pass Rates webpage: http://architecture.mit.edu/department/information

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Part III. Progress Since Last Site Visit

1. Summary of Responses to the Team Findings [2009]

A. Responses to Conditions Not Met

NAAB Perspective 5. Studio Culture
The school is expected to demonstrate a positive and respectful learning enviornment through the encouragement of the fundamental values of optimisim, respect, sharing, engagement, and innovation between and among the members of its faculty student body, administration, and staff. The school should encourage sudents and faculty to appreciate these values as guiding principles of professional conduct throughout their careers.

Comment: Although the program has a written studio culture policy posted in the studio spaces, the statement is generic and was developed without the involvement of the students. As written, the studio culture policy is a document that lacks ownership. The program appears to have a studio culture with several unique and positive aspects that are not articulated in the policy statement.

Student records show a high number of "incomplete" grades received for some non-studio courseowrk. Ths appears to be an arrangement mutually agreed to by faculty and students as a way to manage student workloads and avoid conflicts between end-of-term studio reviews, course due dates, and final examinations. The team is concerned that the use of incompletes as a time management tool combined and the unfinished quality of some of the studio work indicates some problems with workload that may have a negative impact on studio culture.

Response from Program [Year of APR 2014]:
Please refer to the progress report outlined in the Annual Report (AY 2011-12): Part II Narrative Report; and Section I.1.2 of this report on Learning Culture and Social Equity

Section I.1.2 articulates a series of initatives that the department leadership, the faculty, and the student body have taken in recent years to engender an active and supportive studio and learning culture in the department. These include enhancing the existing culture of MIT through many informal forums (lectures, exhibitions, *ad hoc* activities and events) as well as prepared materials such as the student produced culture guide and many other online materials. In summary, the faculty is confident that the department has a supportive and engaging culture that in many respects speaks to the uniqueness of an MIT education. However, we were grateful for the comment made in the last VTR as it has made us continually diligent in support of this NAAB perspective.

13.12 Human Behavior
Understanding of *the theories and methods of inquiry that seek to clarify the relationship between human behavior and the physical environment.*

Comment: Some, but not all, of the Level II and III choice studios address this subject area through student field observations and structured dialog with prospective users. The team room did not contain sufficient evidence that all students attain this SPC.

Response from Program [Year of APR 2014]:

Please refer to the progress report outlined in the Annual Report (AY 2011-12)- Part II Narrative Report; and Section II.1.1 of this report on SPC # C2

Since the last VTR, the faculty has regularly discussed this SPC relating to Human Behavior as we believe it is not without controversary and interpretation in relation to contemporary

professional architectural education. Interestingly, many of our disciplinary areas of teaching believed human behavior was taught and thereby 'understood' in their classwork. This included studio (especially Core 2), building technology (impacts of environmental performance on spatial behavior), history theory and culture (through a cultural dialogue on the role and meaning of architecture), and professional practice (through a dialogue on the role of client and architect in the delivery of architecture).

To quote from Section II.1.1:

"The topic of human behavior as it relates to the discourses on building typology, variable forms of inhabitable environments, urban place, cities and their environments, environmental design (sustainability), art and architecture, and the deployment of technologies (built and digital) is central to the content of many classes in the core and elective parts of the MArch curriculum -- and permeates design discourse in most if not all studios. As various interpretations of human behavior would seem to be a central connecting theme, there are several mandatory classes that express an interest in the questions of human behavior and its relationship to environments."

To quote from the Part II Narrative report (AY 2011-12):

"The relationship between architecture and human behavior is always mediated by cultural rituals, political and economic differences and functional concerns... We believe that cultivating architects who are sensitive to the fact that they are almost never designing for themselves and who are capable of observing both human behavior and human needs – and systematizing their observations into useful guidelines – is important enough for us to require that every one of our students engages these topics in their second semester."

13.22 Building Service Systems
Understanding of *the basic principles and appropriate application and performance of plumbing, electrical, vertical transportation, communication, security, and fire protection systems.*

Comment: There are limited introductions to plumbing and electrical systems in Building Technology I (4.461). There is no evidence that vertical transportation, communication, security, and fire protection systems are explicitly addressed in the curriculum.

Response from Program [Year of APR 2014]:
Please refer to the progress report outlined in the Annual Report (AY 2011-12)- Part II Narrative Report; and Section II.1.1 of this report on SPC # B11

The building technology class 4.461 now addresses all of the principles in Building Service Systems, such that all students develop an understanding of conveyance systems, egress, and power and water systems for buildings. This material in 4.461 is taught by means of a slide set that includes all of the required topics.

13.23 Building Systems Integration
Ability to *assess, select, and conceptually integrate structural systems, building envelope systems, environmental systems, life-safety systems, and building service systems into building design*

Comment: The design studio work demonstrated attention to structural and envelope systems but there was little indication of life safety systems or building service systems.

Response from Program [Year of APR 2014]:
Please refer to the progress report outlined in the Annual Report (AY 2011-12)- Part II Narrative Report.

The recent revisions to the MArch core program since the last VTR have addressed the need to construct bridges between the various discipline groups in the department, with an emphasis on design, computation and building technologies. These component parts are now seamlessly integrated into studio design pedagogy. Within this context the Core 3 studio is demanding in its expectation of design integration between structure, envelope design and environmental systems (both passive and active) and climate design. In addition this comprehensive studio has an expectation that life safety issues are fully understood and worked into the project -- and that the servicing systems are understood relative to the overall need for plumbing, electrical, vertical transportation, security, and fire protection systems (all of which are also engaged in the BT class 4.461)

13.25 Construction Cost Control
Understanding of *the fundamentals of building cost, life-cycle cost, and construction estimating.*

Comment: Some evidence of basic building cost projections were found in Professional Practice (4.222). However, no substantial evidence of life-cycle costing or construction estimating was found in the coursework reviewed.

Response from Program [Year of APR 2014]:
Please refer to the progress report outlined in the Annual Report (AY 2011-12)- Part II Narrative Report.

An understanding of life cycle costing and construction estimating is integrated into 4.222 Professional Practice. Since the last VTR Philip Freelon FAIA taught this course over five years and continually upgraded its content; in the Fall 2014 semester it will be taught by Lawrence Chan FAIA. Both are highly experienced architect practitioners who bring a wealth of experience to our students.

13.28 Comprehensive Design
Ability to *produce a comprehensive architectural project based on a building program and site that includes development of programmed spaces demonstrating an understanding of structural and environmental systems, building envelope systems, life-safety provisions, wall sections and building assemblies, and the principles of sustainability.*

Comment: The team was impressed by the diversity in scope and size of the various assignments offered in the vertical studios, as well as the students' opportunities to experience that diversity. Projects exhibited integration with basic structural systems, and building envelopes. Some projects incorporated one or more aspects of sustainable architectural systems. However, while many of the elements required in this criterion were found, the team found a general lack of inclusion of normal building support systems, such as HVAC, plumbing systems, and in the case of larger projects, vertical transportation. Of particular concern was the lack of documentation confirming that the students analyzed and consistently incorporated issues of accessibility and life-safety.

Response from Program [Year of APR]:
Please refer to the progress report outlined in the Annual Report (AY 2011-12)- Part II Narrative Report; and Section II.1.1 of this report on SPC # B6

The development of a comprehensive design studio in the 3rd semester of the MArch program (Core 3) has been a major initiative since the last VTR. The Fall 2014 semester sees the 4th edition of this studio, albeit with different project types, scales and site locations. We have found that it takes several iterations of the comprehensive studio to attain the correct balance of issues and design content, as well as faculty instructors and visiting engineers. MIT has also been interested to develop leadership in terms of what a comprehensive studio with notions of integrated design, sustainability and environmental stewardship can mean to integrative design thinking, studio pedagogy and architectural design within the context of the studio -- while also teaching and integrating the pragmatics of HVAC, servicing systems, accessibility and life safety issues, and the infrastructures required in building design to accomodate these systems.

As an example, the current Core 3 comprehensive design studio will incorporate:

1. Structural engineering consultants -- as well as a joint exercise with civil engineering students
2. A climate design consultant to advise on strategies for climate engineering, environmental design, and sustainability.
3. Integration with the BT 3 class 4.463 where the design and analysis of structure and envelope design is based upon studio projects.
4. Two young architects as studio teaching fellows who provide expert knowledge on building systems integration and 3d digital and physical modeling and assembly.
5. An overarching understanding of carbon metrics as a means to deliver low carbon and potentially zero energy building design
6. Building material assembly based upon sourcing of regional materials and industries
7. A requirement for final projects to demonstrate compliance with applicable accessibility and life safety codes- and an understanding of the building infrastructure required to service the project design.

B. Responses to Causes of Concern

5. Causes of Concern

1. Unfinished Quality: In thesis projects completed in the final semester of study and in choice studio projects which comprise the second half of the required design studio sequence there was a tentative, unfinished quality to some of the work that failed to convey a material sense of place. Student work did not consistently meet professional standards for rcompleted schematic design.

2. Learning Objectives: The department has not articulated consistent learning objectives for the required three semesters of choice stuido. Most of the studio descriptions availabile to students prior to the studio selection process do not clearly explain the learning objectives or pedagogical approach.

Comment: These concerns surfaced in the team's discussion of NAAB criteria that require programs to demonstrate student ability to simultaneously ingegrate design decisions at various scales using multiple systems. After reviewing the student work produced in the choice studios and thesis projects, the team concluded that some, but not all, students developed the ability to manage the synthetic aspects of comprehensive design and systems integration.

Response from Program [Year of APR 2014]:
In June 2011, the department submitted a *Focused Evaluation Program Report*, which was reviewed by a team appointed by NAAB. The program was released from further reporting by the NAAB Board in November 2011. From the letter to MIT President Susan Hockfield from NAAB President Cornelius "Kin" DuBois:

"After reviewing the *Focused Evaluation Program Report* submitted by Massachusetts Institute of Technology Department of Architecture as part of the focused evaluation of its Master of Architecture program, in conjunction with the *Focused Evaluation Team Report*, the National Architectural Accrediting Board (NAAB) has found that the changes made or planned by the program to remove the identified deficiencies are satisfactory. The program is released from reporting on these deficiencies as part of its annual reporting to the NAAB through the Annual Report Submission (ARS) system."

Please refer to Focused Evaluation at http://web.mit.edu/arch/NAAB-2015/IV.3_FE_2011.

2. Summary of Responses to Changes in the NAAB Conditions

The Department of Architecture at MIT welcomes the continual changes and refinements to the NAAB 2009 Conditions, upon which this report is based. We fully supported the changes from the 2004 Conditions to the 2009 Conditions which enabled a more explicit organization of SPCs into Realms 1, 2 and 3. The change and introduction of condition B6 Comprehensive Design has probably had the most profound impact upon our design studio sequence as we have continued to refine our pedagogy in this area.

In the future we look forward to working with the new 2014 Conditions and the faculty will be interested in discussing these changes and responding accordingly through the MArch curriculum. We also note, with enthusiasm, that we have been asked to participate in the Beta version of the 2015 Procedures for our upcoming NAAB Team visit in March 2015, and that MIT looks forward to being able to assist the NAAB with the testing of these important upcoming procedures.

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Part IV: Supplemental Information

1. Course Descriptions

Course Descriptions are found at: http://web.mit.edu/arch/NAAB-2015/IV.1_Course_Descriptions.

2. Faculty Resumes (see 2009 Conditions, Appendix 2 for format)

Faculty Resumes are found at: http://web.mit.edu/arch/NAAB-2015/IV.2_Faculty_Resumes.

3. Visiting Team Report (VTR) from the previous visit and Focused Evaluation Team Reports from any subsequent Focused Evaluations

The 2009 Visiting Team Report may be found at:
http://web.mit.edu/arch/NAAB-2015/IV.3_VTR_2009.

The 2011 Focused Evaluation Program Report, FE Team Report, and NAAB Letter to MIT President Susan Hockfield may be found at: http://web.mit.edu/arch/NAAB-2015/IV.3_FE_2011.

4. Catalog (or URL for retrieving online catalogs and related materials)

Current MIT Bulletin is found at: http://web.mit.edu/catalog

Previous MIT Bulletins are found at: http://web.mit.edu/catalog/archive.html

5. Response to the Offsite Program Questionnaire (See 2010 Procedures, Section 8):]

Not Applicable.

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