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I Want Candy

Public Expression, Media, and Space in Lobby 10

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This paper begins to address the media through which people express themselves in the New Century City by examining potential scenarios in MIT's Lobby 10. These scenarios suggest ways that MIT's mission and values could be put into tangible use either simultaneously or independently. The hope is that their greater accessibility and exposure will enhance people's living patterns and be easily replicable in other situations.

It is said that being at MIT is like being a kid in a candy shop. Every kind of sweet imaginable is available, waiting to be taken home or eaten there in the shop. A great metaphor, but there's a catch: you have to get the candy yourself, and although you think you know what's there, you're not exactly sure where to find it.

The “candy” alluded to here is innovation — in the function of ideas and form of gadgets. The currency exchanged to obtain the candy is collaboration. This sharing is most effectively done with proximity and serendipity. Much like Amazon.com revolutionized shopping, the physical design of public spaces in a New Century City, for example MIT and Lobby 10, could increase accessibility and promote innovation. This kind of increased interaction within public spaces will happen in the digitally mediated New Century City.

Mechanics Behind New Century Cities

New Century Cities will be highly modular, more “liveable” and flexible than traditional environments within 20th century paradigms. By virtue of expanding the use of a space, removing non-essential functions, and making information easily and constantly accessible, innovation and value could be continuously added.

New Century Cities increase the currency of collaboration. Firms and cities existing in service economies (which are increasingly IT based) need innovations in education and business idea generation and workflows in order to be nationally and globally competitive. The New Century City involves the development of a new layer of technology that connects with urban design and real estate development to add social, cultural, and financial value. This is primarily achieved through ubiquitous computing (“UbiComp”). UbiComp, unlike virtual reality, is an enhanced reality that makes spaces, objects, and human bodies “smarter” without losing the tactile essence of humanity. With the principles of UbiComp in place, technology can be highly visible or it can be completely invisible according to the wishes and needs of the provider and individual user(s). Fire, the wheel, and electricity are all examples of ubiquitous technologies without which modern life would be unimaginable. Storing data over a network, using mobile technology to provide online content and work with location-based awareness systems, are all examples of early ubiquitous computing. In time, ubiquitous computing will possess a necessity similar to earlier ubiquitous technologies.

In order to make potential for this new layer of technology more visible, MIT's Building 10 will be used in this essay as a case study and as a forum for proposing new mediums of technology to mediate the large world.

Identity and Values of MIT

People visiting MIT – tourists, prospectives, parents, potential employers, donors – are struck by the iconic physicality of the Infinite Corridor, Lobby 10, and Killian Court. This is where Commencement takes place every year, and it is the final image students take with them as they begin their professional lives. This is also the image of MIT seen in movies like *Good Will Hunting*, and the Infinite Corridor is that famed student street. Throughout the weekday, there is a sustained energy and excitement when walking through the space: this is where ideas are created; this is where a good idea is transformed into something magical that save lives and makes the people's lives better. Most visitors to MIT are aware of the values before they come. MIT is known as a source of innovation, a place of connection and community, and endless information.

Recently, the Stata Center was designed to “foster the kinds of creative collaboration that can hardly be planned seem to arise naturally when curious, talented individuals and teams are brought together in the right environment.¹” All spaces throughout MIT are designed to incorporate that vision with the MIT mission: “to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve that nation and the world in the 21st century.²”

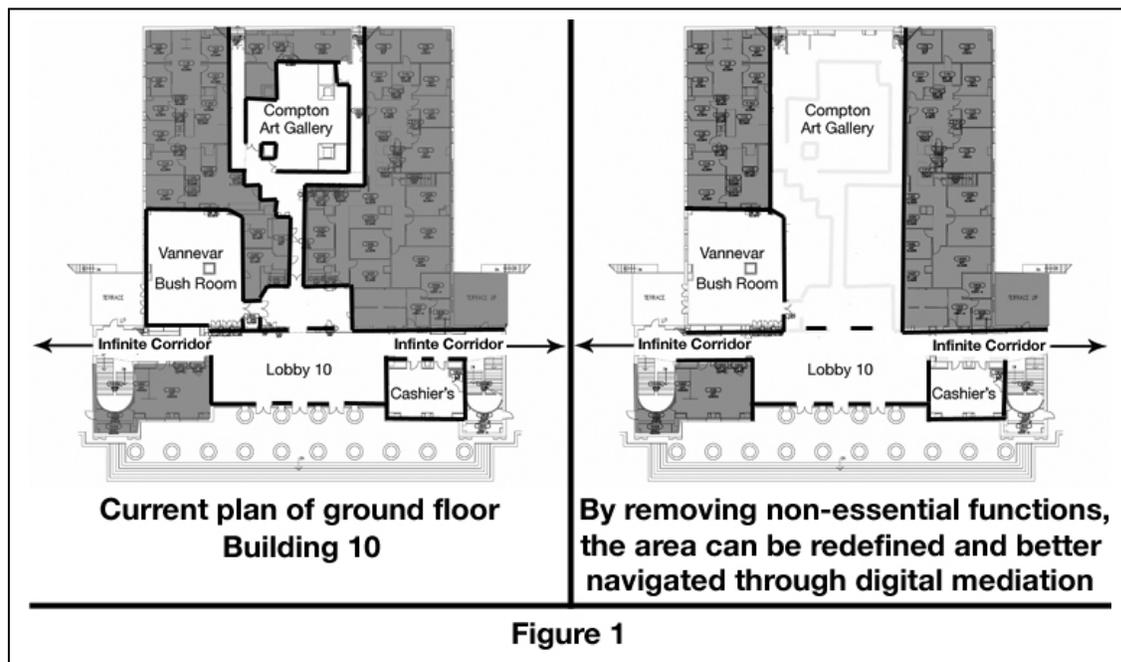
MIT is a market trading on the currency of ideas. Individual buildings on the MIT campus are unique “candy shops.” Each building on the MIT campus should physically embody the arching value of creative collaboration, and present those values uniquely, according to the offices, courses, and functions located within the building.

¹ From “MIT Facts 2004.” Page 5.

² From “MIT Facts 2004.” Page 6.

Current Design of Building 10 — Opportunities and Constraints

The space to be examined is the ground floor of Building 10 which includes Lobby 10, the Vannevar Bush Room, Compton Art Gallery, and the former Cashier's Office. These rooms on the ground floor of Building 10 are at the center of the "old" MIT as technology has shifted functions and people's movement patterns. The Cashier's Office is now obsolete through the use of direct deposits and ATMs. Through its obsolescence comes opportunity. More opportunities can be created by removing non-essential functions which will in turn redefine the area and better serve the community's needs (Figure 1).



Arguably, the current form of Compton Art Gallery limits it to a non-essential function. It is not easily visible from Lobby 10 because of the spatial and lighting design. Its hours are limited to weekdays. If the space that the Compton Art Gallery currently occupies could be physically and technologically opened and made more useable through variable programming, the value of displaying art could increase by making it more accessible to the public.

Lobby 10 is a vibrant public space. At the height of its weekday activity, lunchtime, an estimated 10,380 people pass through the space in the course of an hour³. Lobby 10

³ "The highest documented flow (combined east- and westbound flows) was 163 people per minute at 1:58pm in Lobby 10" (statistic culled from 1.102 Transportation Lab class in 1997, <http://web.mit.edu/newsoffice/tt/1997/aug27/corridor.html>). The total student

has a place-centered identity and highly ephemeral program. One daily function of the space is the undergraduate student group managed display tables which inform people about activities and encourage participation. The space also serves daily as a conduit through which people walk to go elsewhere on campus (be it Barker Library, class, or the student center, etc). A controlled chaos defines the space of Lobby 10 while people simultaneously meet, are informed of activities, study, hangout, take a break, and/or drink coffee.

Regrettably, one constraint working against the natural opportunities in Lobby 10 is the lack of a sense of place within the entire building. The Barker Engineering Library, Aga Khan Program for Islamic Architecture, Alunmi/ae Association, Chancellor, Venturing Mentoring Service, the City Design and Development Program and more are all located within Building 10. Is that apparent when walking through Lobby 10? No. Is there one place, one interface where you have all the information containing their supported events, missions and values? No. You would never know the offices, labs, and nodes of ideas located within Building 10 if you didn't actively seek them out. People need to be drawn into the entire building. New layers of space need to be created.

The disconnection of spaces within Building 10 was apparent this October during the 2004 Fifth Annual Regional Sustainable Development Forum that New Ecology Inc jointly held with MIT in Auditorium 10-250⁴. Although MIT values the best practices of sustainable development, the event could have been better publicized to the student body passing through Lobby 10. As it happened, participants and observers of the forum were already a part of the environmentally-dedicated community. Unless a person was involved with the conference, received a direct email, came across a flyer, or happened to be wandering around the second floor of Building 10 at that moment, that person might not have known of the forum's existence and of the socially valuable ideas and connections made possible through it. Some students, particularly those in the Environmental Policy Group program within the Department of Urban Studies and Planning, were disappointed about the forum's lack of exposure. Current thoughts to

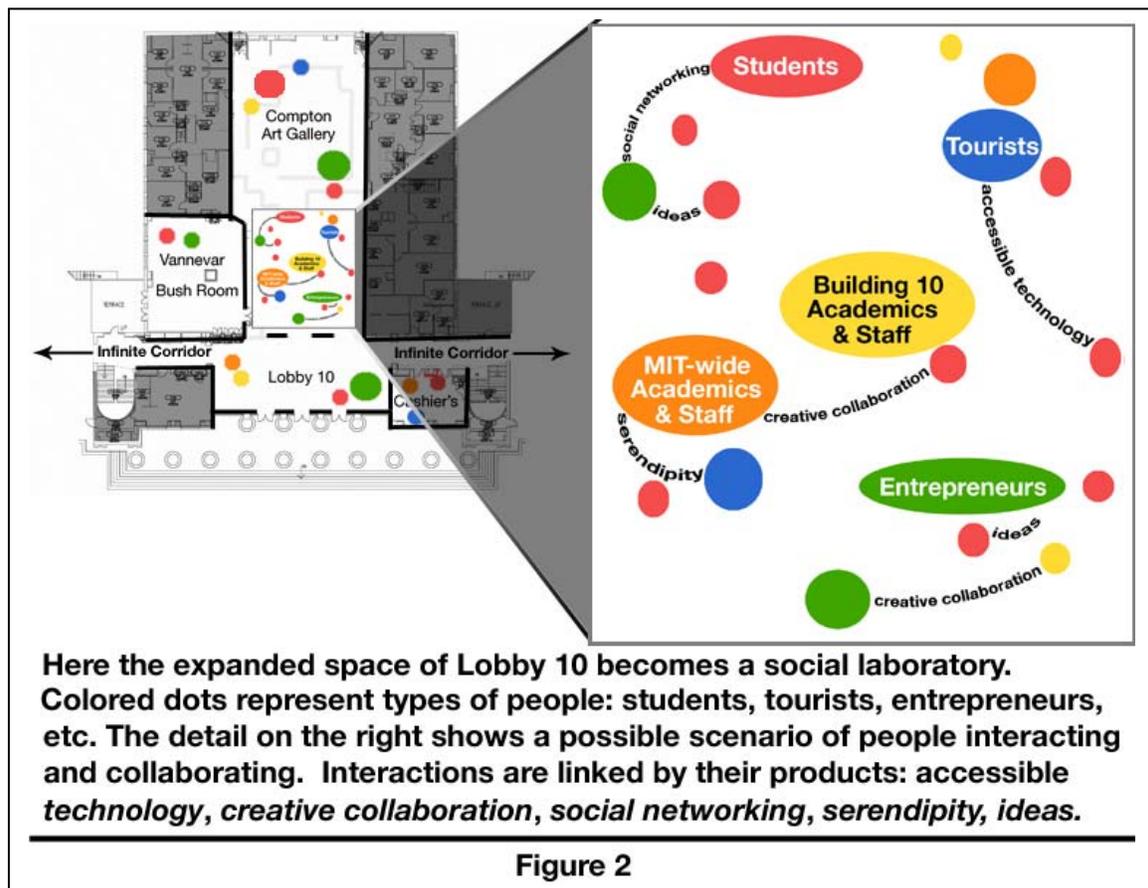
population in 1997 was 9732 (from the 1997 Town-Gown Report). The total student population in 2004 was 10,320 (from Grad Facts 2004-2005). If "163" is increased proportionately to "173" to reflect the number of students in 2004, and if 173 is the sustained number of students passing through Lobby 10 in one hour, then $173 \times 60 = 10,380$.

⁴ http://www.newecology.org/recent_events.html

increase awareness of future forums rely heavily on “word-of-mouth” and display exposure.

Finding Candy in Lobby 10

New layers of technology could increase the layers of developable public space and the natural advantage inherent in a highly trafficked space (ie. accessibility) (Figures 2 and 3). Laboratories do not have to be the traditionally sealed rooms, they can be rewired to support more social laboratory functions. There is a difference between wiring a room and wiring social spaces: you can sit and wait for something to happen, or you can make something happen. In order to foster the mediums of the New Century City with the values of MIT, the ground floor space should be reincorporated in a highly flexible program where the uses will be sociably responsible.



There is social value in increasing the layers of developable space. More connected space equals more opportunities for innovative and sustainable ideas to become part of the mainstream, sooner. Its application towards the Baby-Boomer generation is most critical. Currently there is a project, Placelab, which seeks to “explore technologies with

the potential to improve health, diet, disease management, indoor air quality, energy conservation, user interfaces, and injury prevention⁵.” Unless you read the October 4th edition of the Boston Globe, you might not know of this project’s existence. Placelab is experimenting with an innovation in mapping movement. This mapping will direct automation of functions in the home so that the Baby-Boomer generation has a viable alternative to assisted living (which due to sheer numbers would not be able to support the Baby-Boomers at its current size). Note that the innovation in this living research lab comes from computer-operated monitoring and surveillance. Some see the innovations of Placelab as an affront to privacy, security, and equity, but arguably the potential offender is not the technology, it is potentially the people who use the information. This is not to suggest that people should be complacent about information gathered from their daily lives. Nor is it to suggest that people should behave in the opposite manner — vigilant concern. New technologies should not be immediately disparaged because the negative use of location-based technologies can be mitigated by properly functioning democratic governments with clear policies protecting civil liberties and human dignity.

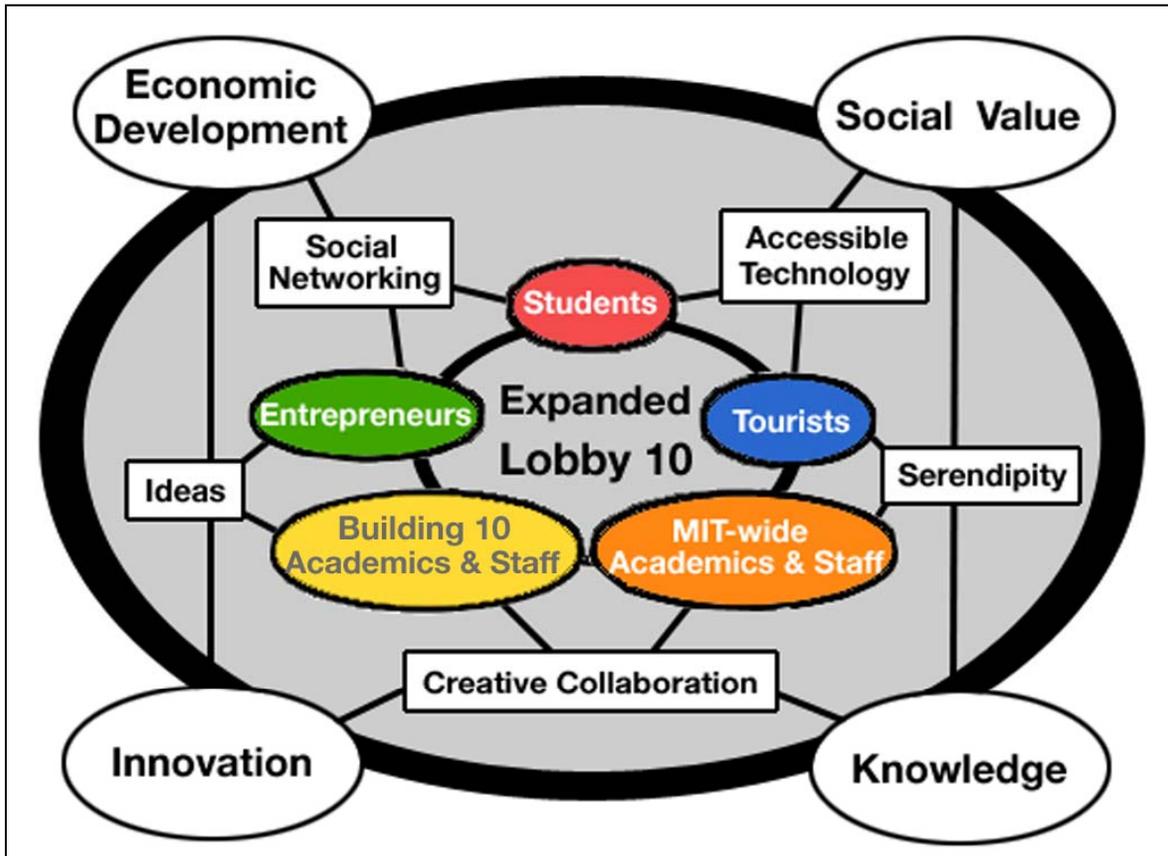
MIT is a place of technological revolutionaries who (hopefully) produce more positive social contributions than negative liabilities. People connected to MIT often create and use the “candy” which many teenagers, corporations, and departments of defense desire. Vannevar Bush was a visionary proponent of effective knowledge management⁶ and his projects (from radar to the Manhattan Project) were financed by the Department of Defense during World War II. Bush’s essay “As We May Think⁷” inspired development of hypertext and the internet when he wrote, “wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified⁸.” A person doesn’t have to be a genius to take an idea, an innovation, “candy” like this and put it to good use. If a visitor to Lobby 10 can absorb the mission and values of MIT, its departments, and its human capital, it is possible that the ideas and stimulation will encourage the technology to become be available cheaper, better, and faster.

⁵ Weisman, Robert. “Live-in Lab.” *Boston Globe*, October 4, 2004.

⁶ Rheingold, Howard. *Smart Mobs*, p 209.

⁷ Bush, Vannevar. “As We May Think.” *The Atlantic Monthly*. July, 1945.

⁸ http://en.wikipedia.org/wiki/Vannevar_Bush



The above is a potential interaction scenario in Lobby 10. Because of the expanded use of digital media in the built environment, any combination of actors can create products like *ideas*, *accessible technology*, *creative collaborations*, *social networking*, and *serendipity*. These products, in time and with cooperation, are steps towards the larger goals of *economic development*, *social value*, *innovation*, and *knowledge*.

Figure 3

Candy Buying Scenarios in an Expanded Lobby 10

Programming an expanded Lobby 10 to make smart and self-organizing activities physically available will be explained further in terms of display, content, and activities.



The above illustration shows the introduction of display into Lobby 10. The rightmost image is Lobby 10 without any visible digital mediation. The leftmost image is Lobby 10 with a live-feed video display of an event concurrently in the auditorium directly above on the second floor (10-250).

Figure 4: Display

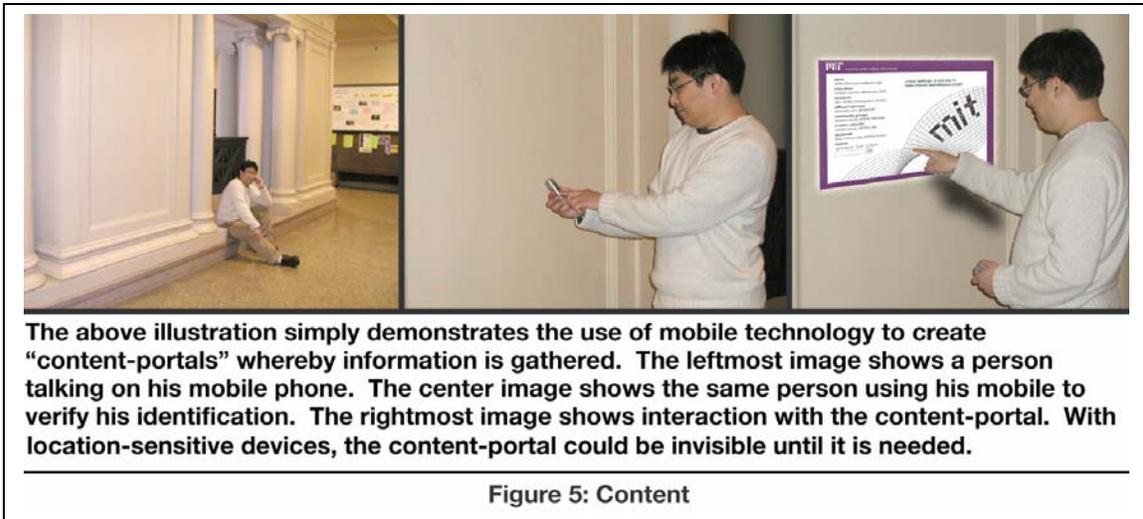
Display

Standing-Room Only Lecture in 10-250

An improvement upon the aforementioned 2004 Fifth Annual Regional Sustainable Development Forum would be to expand Auditorium 10-250 into the enlarged Lobby 10 (Figure 4). On the ground floor of Building 10, people could watch and participate in the lecture. For example, during the question and answer period, the people sitting outside the lecture hall and in Lobby 10 would not be excluded from the event as the screen that transmits the image of the speaker to Lobby 10 could also transmit the listener's image and question to the speaker. This idea could go beyond the campus through use of the internet.

Speaker's Corner

The area could also support an open source discussion forum, perhaps in the form of internet/PDA/mobile-based collaboration. This discussion could be projected onto a surface in Lobby 10. Short messages could be transmitted into the room by an unedited display panel.



Content

“Content Portals”

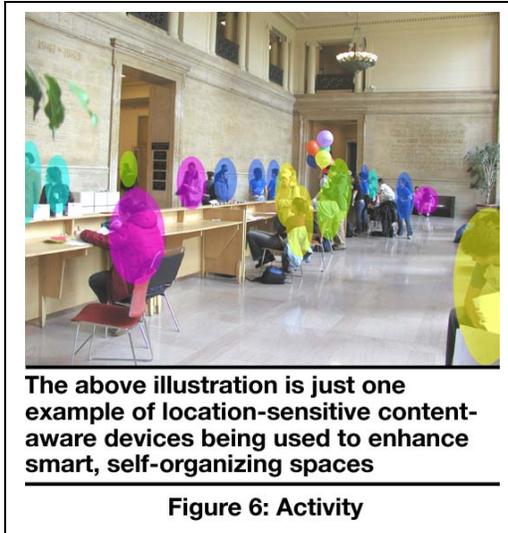
Gathering information could be made easier if the walls themselves were wired with hard drives. Touch-sensitive and light-transmitting glass would be — to some degree — “invisible” until activated for use. In this way, spaces could retain their historic characters and new technology can become an content aid, not a visual distraction.

Joining Mission and Values of Building 10 in Lobby 10

Presentation of the offices and values of Building 10 could be clearly articulated through displays or by creating an available architectural space (for more information, see “Activities” below). Providing an omnipresent portal to the Chancellor’s office, the Alumni/ae Association, or Venture Mentoring Services (just for example), would educate as well as provide a forum for connection, and eventually innovation.

The Coffee Question

Serving coffee is more complicated but important in a place where people are known to exist between a constant balance of stress and coffee. A barista in Lobby 10 would be like many other baristas found anywhere, but if this barista serves coffee and social value, people might pay more for the service. One way to serve social value would be a commitment to reduce waste by custom ordering of drinks (while in Lobby 10) to be delivered in reusable containers.



Activities

Location-Sensitive Content-Aware Devices to Enhance Smart Self-Organizing Spaces

The illustration shows people colored with purple, blue, yellow, and teal. In a version of Diller + Scofidio's *Blur*, the colored people share similar interests which they have programmed into their location-sensitive content-aware devices. Due to the nature of the program, their devices alert their owners when these people are within close proximity of each other. For example, the three people colored with purple share interest in Mozambique's water conservation. One person worked in the Peace Corps in Mozambique, another person fabricates inexpensive and reusable water purifiers, the final person is an urban planning student taking a class on Mozambique's water conservation efforts. Smart mobile devices assist cooperation.

Conference / Meeting Space

Shilpa Mehta's *Smart Places* essay suggests creating conference / meeting spaces with a "minimal system of moveable panels that operate on a modular grid embedded in the floor and ceiling that are intelligent and programmable⁹." These responsive spaces could be further enhanced with a device that transmits images and sound and has an open source function. This device could be used by the students to practice presentations with new media, to interview for employment, and to converse with anyone over VoIP. Virtual visitors (from internet/PDA/mobile devices) could also interact with those in Lobby 10.

⁹ Mehta, Shilpa. *Smart Places: Digitally Mediated Architectural Spaces*. p5

Reserving Conference / Meeting Space

Given the wide range of uses and needs for Lobby 10, the above-mentioned conference spaces could exist only when called for or at certain times of the day. Reservation of the conference spaces could be made over the internet/PDA/mobile device. Alternatively, since appointments are not always kept even by the most organized person, making a list of reservation times obsolete. A possible solution to this problem would be a combination of reservation times and tracking/view of the 'footprints' would give the person reserving the space a more accurate description of availability of space.

Chaotic and Unprogrammed Use of Lobby 10

Anyone can use or walk through Lobby 10 at any time. Programmed use of the conference rooms and sliding panels will be limited, but all other devices are available for use by visitor, alums, prospectives, employers, etc.

Conclusion

With this open design, it is possible to have well-organized and compartmentalized use within a seemingly chaotic, random, and exciting environment. The scenarios shown here in this paper are just possible iterations of the New Century model. As time progresses and the value created in Lobby 10 spreads, the accessibility of innovation will increase for the public. What is most important is to get the information and knowledge out in the best way so that all people benefit and that it is a positive experience. Increasing the developable public space through these New Century layers of technology mean that everyone can take some candy home with them.

TEXT SOURCES

Bush, Vannevar. "As We May Think." *The Atlantic Monthly*. July, 1945.

Gallop, Sarah. "1997 Town-Gown Report." Cambridge, MA: Office of Government and Community Relations, MIT. May 29, 1998.

MIT Grad Facts 2004-2005

Mehta, Shilpa. *Smart Places: Digitally Mediated Architectural Spaces*. Paper written for New Century Cities Seminar, MIT. Fall semester, 2004.

Rheingold, Howard. Smart Mobs. Cambridge, MA: Perseus Publishing, 2002.

Weisman, Robert. "Live-in Lab." *Boston Globe*, October 4, 2004

"Mission and Origins." *MIT Facts 2004*. Cambridge, MA: MIT Reference Publications Office, Public Relations Services. 2004

http://www.newecology.org/recent_events.html

http://en.wikipedia.org/wiki/Vannevar_Bush

<http://web.mit.edu/newsoffice/tt/1997/aug27/corridor.html>

IMAGE SOURCES

Figure 1: Manipulated images of Ground floor Building 10. Original floor plan jpegs from <http://web.mit.edu/facilities/maps>.

Figure 2: Manipulated image of Ground floor Building 10 and author's own embellishment. Original floor plan jpeg from <http://web.mit.edu/facilities/maps>.

Figure 3: Author's own. Idea stemmed from a Gateway: Planning Action diagram which author collaborated on and designed.

Figure 4: Author's own base image of Lobby 10 with manipulated image of Douglas Foy from http://www.clf.org/gifs/Staff_pics/doug_at_podium.jpg.

Figure 5: Author's own base images with image of MIT website in rightmost image. MIT website from <https://web.mit.edu/site/gallery/index.html>.

Figure 6: Author's own manipulated image of Lobby 10.

UNSOURCED (BUT INFLUENTIAL):

WRITING

Baker, Linda. "Urban Renewal, the Wireless Way." Salon.com. 11/29/2004

Gelernter, David. Mirror Worlds. NY: Oxford University Press. 1992.

Harvey, "Experience of Space and Time."

Larson, Intille, McLeish, Beaudin, Williams, "Open Source Building"

Source: Larson, Kent and TJ McLeish, J. Beaudin and RE Williams. "Open source building - reinventing places of living." BT Technology Journal. Vol. 22, No. 4 (October 2004): 187-200.

Mitchell, William. Me++. Cambridge: MIT Press. 2003.

WEBSITES AND IMAGES

Diller + Scofidio:

Blur Building

http://www.arcspace.com/architects/DillerScofidio/blur_building/

Live web cam

<http://www.diacenter.org/dillerscofidio/intro.html>

Brasserie – exterior and interior cameras

http://www.metropolismag.com/html/content_0500/review.htm

<http://www.arcspace.com/architects/DillerScofidio/Brasserie/>

Travelogues lentular screens

<http://wired.com/wired/archive/8.02/diller.html>

TU Delft – Hyperbody Research Group, Director Prof. It Kas Oosterhuis

<http://130.161.126.123/index.php?id=5>

PDA information

<http://www.pdareviewspot.com>

http://gpspassion.com/fr/default.asp?_SetCurrentVersion=EN

Nintendo – touchscreens, voice-based gaming, etc.

<http://www.wired.com/news/gizmos/0,1452,65816,00.html>

<http://www.nintendods.com/index.jsp>

Wireless devices

<http://www.wired.com/news/wireless/0,1382,65540,00.html>

NYC Wireless node database map

<http://nycwireless.net>

Mambo – Open source content management system.

<http://www.mamboserver.com/>

Open source pictures

<http://www.happysnapper.net> -- travel
<http://www.yellowarrow.org> -- memory

Yale Sustainable Food Project
<http://www.yale.edu/sustainablefood/>

BUILDING 10 SPACE USAGE

10-250 Auditorium

Aga Khan Program for Islamic Architecture

Alumni/ae Association

Barker Library

Building Services

Vannevar Bush Room

Chancellor, Office of the – Responsible for strategic planning and oversight and partnerships.

Compton Gallery

Giving to MIT

History, Theory and Criticism of Architecture and Art

Lab for Electromagnetic and Electronic Systems

Lobby 10

Ombuds Office – Facilitators of communication, dispute resolution.

SPURS – Special Program for Urban and Regional Studies

Venture Mentoring Service – Supports innovation and entrepreneurial activity which helps student's start-ups succeed.

Women's League, MIT