How Willie Vicens '70 and Jesse Heines '70 Inadvertently Almost Got Prof. Negroponte Fired

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Long before Prof. Nicholas Negroponte founded the MIT Media Lab and became famous, when he was a new assistant professor at MIT, he taught introductory architecture classes. In the Spring 1967 semester he taught 2.701 Architectural Geometry I, in which fellow Bakerites we were both enrolled.

> **2.701   *Architectural Geometry I***
> *Prereq.:* ——
> *Year:* U (1, 2)   0–4–2
> Systems of representation of objects. Orthographic, axonometric, and perspective pictorials. Brief introduction to dimensioning and standard drafting practices. Modern projective geometry with applications to perspective, generation of curves, ruled and doubly curved surfaces. Elementary introduction to descriptive geometry methods. Emphasis is on both theory and drafting technique. Specially designed for architecture and industrial design students.   *Coons, Negroponte*

In some ways, this course was more about spaces than about the walls that enclose them. So, for the final project in this class, Willie and Jesse proposed to work together to do a motion study of the pedestrian traffic inside the space of the 77 Mass. Ave. rotunda. The idea was to make a time-lapse movie of people walking into and out of the rotunda so that one could study how its geometry influenced people's interactions both with the space and with each other.

The previous semester Jesse had taken Doc Edgerton's freshman seminar in high-speed photography. Jesse arranged to borrow a movie camera from Doc that had a manual shutter. With this camera one could take a single film frame each time one pressed the shutter release. By pressing the shutter release once per second, we would be able to create a time-lapse movie that ran at 16 times normal speed. This solved the problem of how to film the traffic. We then had to figure out where to position the camera.

One possibility would be to position the camera on the upper (third) floor of the rotunda. There were several problems with this position.


- It didn't afford a complete view of the rotunda floor.
- We couldn't get all four entrance and exit points in the frame.
- There would be a great deal of extra background information in the video—the pillars, walls, etc.—that wasn't relevant to our project.
- Everything would be at an angle, distorting the image we were trying to capture.
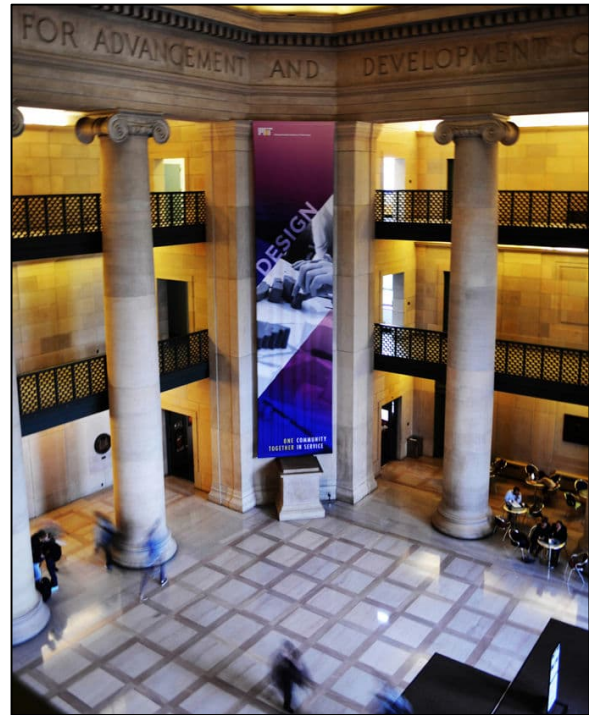
The optimum vantage point for the camera would be directly above the center of the rotunda. As it turns out, there is a skylight in the dome, four floors above the main thoroughfare. "If we could somehow get up there," we thought, "we could shoot straight down and get the exact angle we wanted."

As luck would have it, we discovered that the skylight is mounted in a crawlspace that is accessible from the top floor of the rotunda. That is, there is a space between the inner ceiling of the dome and the outside roof, a sort of dome attic.

We further discovered that there is a door leading to that crawlspace. Neither of us can remember whether we somehow got someone to open that door for us or if it simply wasn't locked, but on the other side we found a curving ladder to the top of the inner dome.
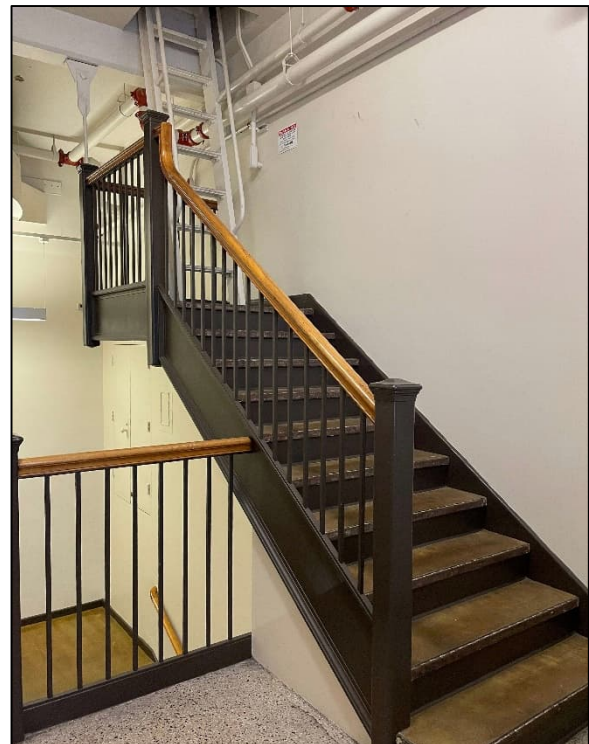
Once inside we had direct access to the skylight's glass panels. The first picture at the right shows how these panels were oriented. This shot is from below, not above.

The panels simply sat in metal frames in the manner shown in the second picture at the right. They were, of course, much bigger than the one in the second picture, and much, much heavier, too. But they could be lifted out just as you see in the second picture.

We lifted out one of the rectangular panels along the outer edge of the skylight. The camera was mounted on a tripod, so we were able to lean it out over the exposed hole in the manner shown in the picture below. Like the glass panels, however, the camera was much bigger and much heavier than the one shown in this picture.

With this setup we were able to shoot straight down, just as we wanted. We completed our shooting, replaced the glass, and climbed back down. We got the film developed, submitted our project, and earned good grades.

The resultant video can be viewed at: https://youtu.be/Cw4hZRx0514. From our perspective, that was that.

Fast forward to 1978 when Jesse was working for Digital Equipment Corporation as a training course developer and attended a conference of the Association for Computing Machinery Special Interest Group on Computer Science Education Research (ACM/CSC-ER). As he walked from one conference session to another, Jesse noticed Prof. Negroponte sitting by himself engrossed in something he was doing on
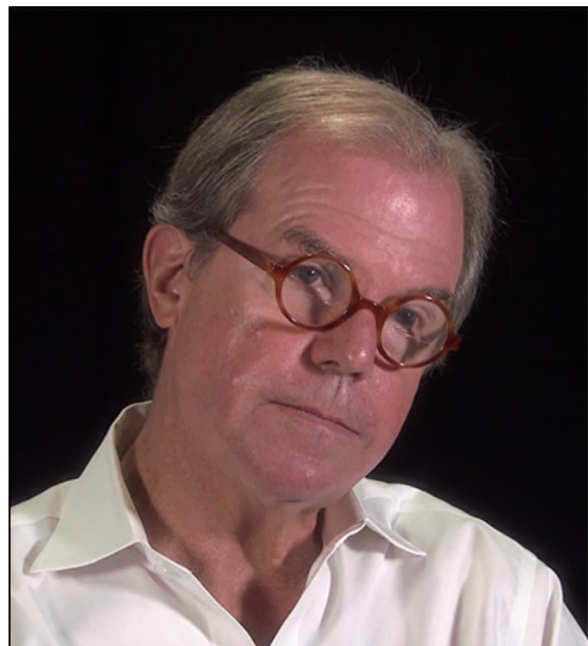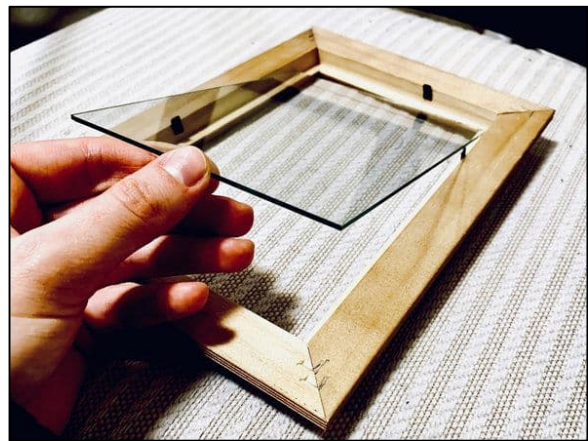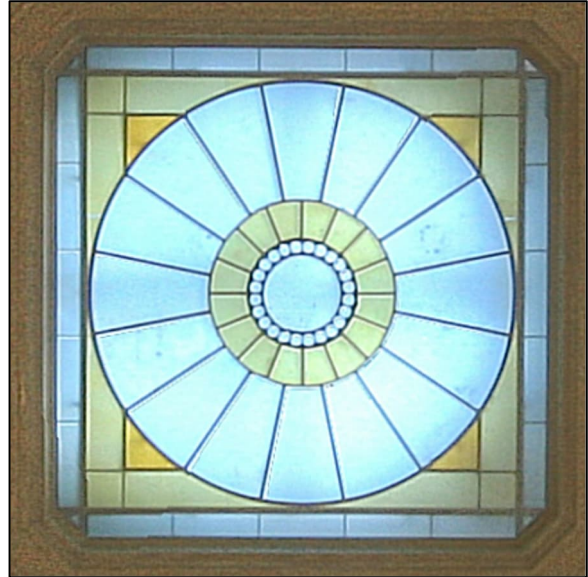
an early portable device. He walked up to Negroponte and introduced himself as a former student. Negroponte was polite but terse. This was understandable, because of course he didn't remember Jesse, and he was indeed busy with whatever he was doing.

Jesse was about to move on, but he said offhandedly, "I'm not surprised that you don't remember me from 12 years ago, but I know you liked the project that a fellow student and I did in your class and that we heard you used in some of your presentations: the time-lapse film of pedestrian traffic in the Building 7 lobby." Negroponte practically jumped out of his chair. "You did that project?" he asked. "Did you know that you almost got me fired?!?" Of course, Jesse had no idea what he was talking about, so Negroponte related the following anecdote.

He said that he did indeed use clips from our film in some of his presentations, including one before the MIT Corporation or some other group of high-ranking administrators. Those in the audience were fascinated by the clip, and one asked him how it had been created. He explained that two of his freshmen had climbed up into the dome, removed one of the glass panels, and hung a camera over the rotunda four stories above the floor.

Those in attendance reacted quickly with horror, pointing out the extreme danger in what we had done. Consider the height of the skylight above the rotunda floor as shown in the picture below, which is a shot of the entrance to Building 7 from Kresge Plaza across Mass. Ave.

If we had dropped that panel and it had hit someone, it probably would have killed them. Luckily, we didn't, but the administrators were angry enough that they almost fired Prof. Negroponte for allowing us to do what we did. As we all know, they didn't fire Negroponte, and of course he went on to found the Media Lab, foster incredible creativity involving computer systems, and make amazing strides in providing computer science education among the disadvantaged populations. But how close things came to being so very different!