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52 Broad Street, Boston, MA 02130
617.951.1433
bsa@architects.org
www.architectureboston.com

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Where the Girls Are

The event: “Introduce a Girl to Engineering,” hosted annually by Judith Nitsch Engineering, one of the country’s largest woman-owned civil engineering firms.

The setting: Harvard’s Maxwell Dworkin Building, donated by Microsoft’s Bill Gates and Steve Ballmer. “Maxwell” and “Dworkin” were their mothers’ maiden names — underscoring, as Judy Nitsch will good-humoredly tell the assembled girls and the (mostly female) adults who have accompanied them here, “the huge importance of the *mothers* of engineers.”

9:35 Fifty girls, ranging from sixth to twelfth graders, roam the lobby trying to fill bingo cards. The game requires them to quiz women engineers, who are wearing various emblematic stickers. Two girls charge up to an engineer whose emblem is an athletic shoe. “Do you coach and play soccer?”

The engineer smiles. “I don’t.”

The girls quickly identify the only other relevant possibility on their bingo cards. “Have you run nine half-marathons?”

The engineer nods and hands them stickers. One girl muses, “So how many full marathons would that be?” And immediately answers her own question: “Four and a half.”

9:42 Across the lobby, a young, pretty engineer is acknowledging to a girl that yes, she’s the one who was involved with beauty pageants.

“How?” the girl asks.

“I was a beauty queen,” the engineer says, matter-of-factly.

“Oh.” The girl doesn’t seem to know what to say next.

The engineer continues easily: “And I was at MIT. The guys there said, ‘Girls like you don’t even *talk* to guys like us.’ So I was

like, ‘Do you have a date Saturday night? Let me take you *shopping* first.’”

9:50 “I’ve written a book on mechanical vibrations,” another engineer is telling a girl. “For example, rotary imbalance. You know when the washing machine will suddenly shake the whole house?”

“And someone had to solve the problem of jogging with a CD player,” the girl’s mother puts in.

The engineer beams. “Exactly.”

10:07 From the podium of the lecture hall, Judy Nitsch explains that the bingo icebreaker was designed to demonstrate that engineers are inquisitive. “You had to ask questions to finish your bingo cards. And,” she adds, “I personally would like to thank the three people who asked me if I was involved with beauty pageants.”

10:15 Introducing today’s theme of the versatility of an engineering degree, Judy shows a series of slides of engineers who are famous — but not for being engineers. Jimmy Carter, who earned a degree in nuclear engineering. Herbert Hoover: mining engineering. Montel Williams: naval engineering.



An image of a smoldering hunk appears on the screen. “And who knows who this is?”

No hands go up: the girls either don’t know or won’t say. Nor do any of the mothers cop to recognizing the guy, who turns out to be a star on *All My Children*.

10:25 Judy cites some statistics on women in the profession. In the US, only 10 percent of the engineers and only 20 percent of the engineering students are female. (In her own firm, the figure is 42 percent.)

“You’ll be in the minority,” she tells the girls, “but you’ll be remembered. This is a profession that really welcomes women, smart women. You have to like math and science, and you have to like to figure things out.”

10:37 A panel discussion begins: five women who have used their engineering backgrounds in different ways. One is an expert in hydrology and storm-water management. Another got an undergraduate degree in electrical engineering, went into sales, and is working on a PhD in business administration at Harvard. The next is also pursuing a Harvard doctorate, and developing a way to deliver a new tuberculosis vaccine. The fourth specialized in superfund sites and hazardous

waste clean-up, and now helps Harvard to keep its various properties in compliance with environmental regulations.

“I went to MIT,” the fifth panelist says. “And part of the orientation was the women’s bathroom tour — back then, there were so few of them that they wanted to make sure you knew where they were.” She works now as an environmental lawyer.

10:44 “Why did you decide to study engineering?” the moderator asks the panel.

“Because I liked to take things apart.”

“Because my father was an engineer, and I knew he’d pay for me to study it. Once he brought home a non-working pinball machine, and said, ‘Figure it out and you’ll have a pinball machine.’ It was fun.”

“Because I won a prize at a science fair in eighth grade. The guy who was judging was a professor in Boston, and he was interested in what I’d done. He said, ‘Did you measure this?’ And I said, ‘No. I’m just trying to graduate from eighth grade.’”

“Such interesting stories,” another panelist says. She shakes her head. “I got into it for the boys.”

10:49 Various answers when the moderator asks what characteristics make a successful engineering candidate: curiosity; practicality; persistence; being meticulous. One panelist says, “Laziness.” The others look at her, startled. She laughs. “Well, in a weird way, yeah. You don’t want to do things the way they’ve always been done — you want to find something easier.”

10:53 The moderator’s final question: How has engineering helped you succeed in your subsequent career?

The sales and business expert: “It gave me a voice at the table. A lot of the coolest companies out there are cool because they’re full of engineers. I speak their language.”

The environmental lawyer: “I went to a meeting as a lawyer, and the engineers told me that no, their plant couldn’t possibly generate less pollution. So I went to the

next meeting wearing my brass rat. MIT’s symbol is a beaver — but shrunk down to the size of a ring it looks like a rat, so they call it the brass rat. And once those engineers saw the brass rat, they took me seriously, and we negotiated a successful conclusion.”

11:00 “Any questions for the panel?” the moderator asks.

The girls don’t have any. The mothers have a lot. What should you do to get into a good college? Are there extracurricular activities that might be useful? Summer camps? Judy rattles off information; the mothers write it all down.

Finally one girl raises her hand. “When you’re an engineer, do you still have time to hang out with your friends?”

11:17 Judy introduces the next activity, a treasure hunt. The girls are divided into teams — half with maps and half with handheld GPS devices — and sent out into the nearby quads of Harvard Law School to track down clues.



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Most of the parents stay in the lecture hall, where they ask Judy and the other engineers about challenges facing girls in math and science.

11:45 Outside in the wind and heavy rain, a little GPS group is struggling to get the device to work. One girl holds it in the air above her head, then checks to see if the coordinates have appeared. Nothing. She holds it up again. “You are here,” a professorial-looking man tells the girls as he walks by.

11:50 Still no GPS signal. “Maybe we need a more open space,” one girl suggests.

“There’s a volleyball court over there,” another notices.

On their way to the volleyball court, the group passes a bench that’s surrounded by other girls, who either have maps or luckier GPS devices. Clearly they have zeroed in on a clue, but the dud-GPS group trudges honorably by without looking.

11:51 On the volleyball court, one girl

reads aloud from the plastic-covered sheet of GPS directions: “Needs clear view of sky.”

“Sky,” the girl holding the device echoes solemnly, shooting her arm above her head again. She checks the device. “Ah. Here we go.”

11:53 The device leads them back to the bench, now deserted. They find the clue taped to the back. “Organizing and making processes work better is the focus of _____ engineers.”

12:25 The treasure hunt has led the girls to envelopes taped to the undersides of seats in the lecture hall. They contain numbers and a cryptogram which, when deciphered, calls for ordering the numbers from smallest to biggest. The girls quickly do this — 1, 2, 4, 6, 8, 9 — but the combination fails to unlock the briefcase in which the treasure is stored.

“Engineers love to figure things out,” Judy reminds them. And in just a minute they do: the numbers need to be ordered

not by value, but visually, according to the size of the printed numerals.

A girl attacks the briefcase, fingers busy with the combination. Click. “Got it.”

1:45 After a pizza lunch, the group reconvenes in the lecture hall for prizes. Every team is singled out for having demonstrated one of the characteristics of successful engineers: resourcefulness, ingenuity, enthusiasm.

1:55 After a warm round of applause, the event breaks up — a day of crisp black-and-white enlivened by some strategic shots of giddy pink.

As people begin to leave, a shimmery tiny girl confidently introduces herself to Judy, adding that she goes to a science-and-math charter school. And then comes a string of mothers, who all want to thank Judy for the event, and who all say, “I wish there’d been something like this when I was that age.” ■

Joan Wickersham is a writer in Cambridge, Massachusetts.

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