Interview: Ralph B. Peck, D.C.E.

By: Geordie Compton

Ralph Peck was born on June 23, 1912 in Winnipeg, Manitoba, Canada to O.K. and Ethel Peck. The family later moved to the United States when young Peck was six years old. He received the degree of Civil Engineer from Rensselaer Polytechnic Institute in 1934, and was awarded a three-year fellowship for graduate work. Most of his graduate work was in structures, with minors in mathematics and geology. On June 14, 1937, Peck married Marjorie Truby. Also, that same day he completed his graduate work and obtained a Doctor of Civil Engineering degree.

Peck initially believed his field of study was in structures, but he later became focused on geotechnical engineering. Dr. Peck had the opportunity to work with Karl Terzaghi early on in his career. On several occasions Terzaghi gave Peck advice on soil mechanics and indeed influenced his career. Peck and Terzaghi have collaborated on several manuscripts and their work has been instrumental in soil mechanics.

Peck spent three decades at the University of Illinois. During that time he influenced an unimaginable amount of students. He was also very influential as a consulting engineer. There he helped pioneer practices in foundations, ore storage facilities, tunnel projects, dams, and dikes.

During his career Peck has authored over 200 publications and co-authored many more articles on geotechnical engineering. An acclaimed international expert in the field of soil mechanics, Ralph Peck has helped to change the face of the Earth through his discoveries of the way soils behave. Through his work on the Chicago subway in the early 1940s he emerged as one of the undisputed leaders in the development and practice of soil mechanics and foundation engineering. As a distinguished professor at the School of Engineering of the University of Illinois, he conducted field and laboratory research on stabilization of railroad beds and embankments, the mechanics of earth dams, the stability of retaining walls, and the settlement of foundations. Peck has served as a consultant for major foundation projects throughout the world, from the Trans-Alaska Pipeline, to rapid transit systems in Chicago, San Francisco, and Washington, to dams in Turkey and Greece, to the Dead Sea dikes in Israel. President Ford awarded Peck the National Medal of Science in 1974.

DFI awarded Dr. Peck the DFI Distinguished Service Award in 1984.

DF: What was your first car?
RP: 1919 Model T Ford.

DF: Did it run well?
RP: No. We took it apart. We all had them for entertainment and we would take them apart. Mine cost about $20 – in about 1929.

DF: Design-Build trends in the US. Good for the industry or bad for the industry?
RP: I think good. It makes the designers conscious of the construction aspects. Engineers got into the habit of designing and not concerning themselves with how it's going to be constructed.

My first real job was on the Chicago subway, and had very little contact with the designers. I was working with Terzaghi, who was working for the City of Chicago. I was his man on the job. We first made borings and soil tests and then began to measure what was going on in the field.

DF: The birth of the observational method?
RP: For me it was.

DF: At the first International Conference of ISSMFE (1936), Terzaghi said, "The Industry must move the testing process outside from indoor labs." How has this directive played out over the years?
RP: It has been the heart of the profession. The Chicago Subway was a perfect example. We had six or so guys in the field running soil tests for six months till we caught up with construction. Once that was accomplished, we were making field measurements almost exclusively. Another group was measuring settlement in the soils adjacent to the tunneling. We were getting large settlements in the streets. Terzaghi suggested the existing buildings were moving towards the tunnels and causing the settlement. We were interested in determining how much movement occurred around the tunnel that was ultimately transferred to the buildings alongside the tunnels.

DF: What did you do during the war?
RP: Which war?
DF: World War II
RP: After the subway project shut down, I worked as chief engineer of testing for Scioto Ordnance Plant in Marion, Ohio. At the same time Terzaghi and I consulted on the design of a special structure for ore storage along Lake Erie. We pushed the limits of the foundations without losing it into the drink. Then I went over to University of Illinois and taught Army and Navy Students for a number of years. I already had a family so I didn't get drafted.

DF: How do you do with computers?
RP: I'm not proud of being a computer illiterate.

DF: Are engineers better or worse for their existence?
RP: Better no doubt. We can do things that were unthinkable a few years ago, but the danger of misuse is not negligible.

DF: Do you have an e-mail address?
RP: No.

DF: Where did you go to High School?
RP: East Denver High School. I had a very good High School with some very good teachers.

DF: What was your class?
RP: 1930

DF: Tell me a memory of High School.
RP: I had a great time in high school. I was editor of my high school yearbook. Keeping that $20 Ford running was a nice memory.

DF: Who are some of the biggest characters in the industry?
RP: Terzaghi was distinctly his own person. Casagrande inherited his mantle although there were some who disagreed and thought they did. Certainly Tschebotarioff was one of the most controversial. He was a white Russian who came to this country. He made an extensive study of the settlements of structures in Cairo, Egypt and of lateral earth pressures.

DF: Rumors of Terzaghi being quite the ladies man?
RP: Not rumor - particularly as a young man. In his younger days he was quite a man about town. His marriage to Ruth, a geologist, was a lasting success.

DF: So if you weren't an engineer, what would you be doing now?
RP: I have no idea. Unthinkable. I wanted to be a streetcar conductor when I was about 6. After that it was all engineering.

DF: Who influenced your career?
RP: My father primarily. He was The Engineer of Structures for the Denver and Rio Grande Western Railroad.

DF: What is it like being a geo-celebrity?
RP: It has pleasant aspects, but it can be embarrassing at times.

DF: Are there now too many conferences?
RP: I don't think so, as long as they're well attended. I think people; especially young people get a lot out of them. I wouldn't want to see the opportunity disappear.

DF: Where were you when Kennedy was shot?
RP: Teaching a class. My secretary came in and told us.

DF: Where were you when the twin towers collapsed?
RP: I was home. My son in law called and asked if I had the TV on. That hit hard because our group had worked with the Port Authority on the design, particularly the rock mechanics aspect. We spent a lot of time with the Port Authority group on a number of projects, including Newark Airport.

DF: And where were you when Pearl Harbor was attacked?
RP: Home working on the first chapter of Soil Mechanics in Engineering Practice.

DF: What about over-design, is that a current problem?
RP: Not seriously. It's better than under design. I think economic pressures keep engineers from over designing a great deal.

DF: What's your favorite movie?
RP: Haven't been to one in years. Last one I saw was Gettysburg. I'm not a big movie fan.

DF: What about a favorite book? Not yours.
RP: I'm not a big reader of novels. It is difficult for me to read. I like history of Engineering . . . D. B. Steinman's books on engineering. David McCullough. Henry Petroski.

DF: Dewey or Truman?
RP: I voted for Dewey, but in time I thought more and more of Truman.

DF: What do you consider to be today's problems?
RP: In engineering there is too much emphasis in engineering education on computer solutions. The Computer is a wonderful gadget – you can analyze things you couldn't before, but it's still a machine. It has to be operated and interpreted by something of intelligence.

DF: Do you consider yourself a Soils and Foundations Engineer or a Geotechnical Engineer?
RP: Both. Geotechnical is a newer word. We used to be called Soils Engineers but that got confused with agricultural people.

DF: How can we teach engineers to properly communicate?
RP: That's a tough one. We tend to be a bit introspective. I think by and large we're doers not talkers which isn't all that bad.

DF: What is your opinion of current ethical standards?
RP: I don't think they're much better or worse than they have been for a long time. I wouldn't say we're in any ethical crisis, mostly engineers are pretty straight. It stems from the idea that if the structure falls down you know who to look for. It's also good economics to do a good job and do the background work.

DF: Are you a baseball fan?
RP: No.

DF: What's your favorite sport?
RP: If I do anything sporting it's walking, I like to walk. Other than that I've climbed up and down a lot of ladders.

DF: What do you do to relax?
RP: I have a seven pound jet black poodle, Tami, that my wife picked out of a litter - the third in a line of poodles. I'm not a big fan of poodles, but I get a kick out of watching my daughter's border collie and Tami. They are fun to watch, given their different sizes. Tami thinks she is the boss.

DF: What can we do to attract more young people to the civil engineering profession?
RP: I wish I knew. I can't imagine not being a civil engineer so I can't imagine knowing what it would take to attract others to the profession.

DF: What are the good trends of the past 50 years outside of Engineering?
RP: That's a very broad question and it seems that for every good trend there seems to be a contravening bad one. For example Wendell Wilke's One World Philosophy... parallels today's situation. We have the communications to be more aware of the problems in Asia and Africa.

DF: What do you want to be remembered for?
RP: I like being remembered as a good teacher. I always thought it important to teach. Almost all my teaching was graduate, and I sought most to teach engineering practice. I was best known in Illinois for a case histories class, and the famous or infamous one page report. It had to be good English and it had to be typed.

DF: If you could deliver a message to young engineers, what would it be?
RP: If you like it – really stick to it. It's a really satisfying profession.

P.S. As quickly as possible – get out into practice.