

Oral History Interview

with

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By Michael R. Adamson

Adamson: Let's start with your background, university training, work experience, starting your own firm. You can just give me the high level.

Nakaki: Okay. Decided when I was fourteen that I wanted to be a structural engineer. Always been my passion, still is. Went to UCLA because it was sunny here, and got a bachelor's and master's degree at UCLA. Actually, before I graduated, I went to work for what was at the time Ruthroff & Englekirk. They also had a firm Ruthroff & Englekirk & Hart, and Gary Hart was my advisor at UCLA. And Bob Englekirk also taught several of my classes. That was sort of classic for them to go into their classes and teach someone for three months and then say at the end of the three months, "Will you come work for me?"

So I did, and then I worked there until 1997, late 1997, when I left to basically do consulting and research at home for a couple of years, and then I started the Nakaki Bashaw Group with Dennis Bashaw, another structural engineer.

Adamson: And your first point of contact with the Pankow Companies or Charlie Pankow was?

Nakaki: It was with Pankow Companies, not Charlie at first. I was pretty low on the totem pole. My first job with Pankow was, I think, in 1981, which is when I started with Englekirk. Catalina Landing [Long Beach, California] was the first project I worked on. I'm pretty sure it was '81. It was very early in my career, very fun job. I remember working really hard, trying to learn all about precast, which I had no experience with at school, and just being really impressed by the people. People have always drawn me to the Pankow Companies, and I think Charlie was a *big* part of that in choosing the right kind of people.

Adamson: When you studied structural engineering then, was concrete taught?

Nakaki: Oh, absolutely. Actually, Bob Englekirk taught my graduate concrete class. Undergraduate was taught by a visiting professor from Canada. At the time, Bob was very, very interested in concrete. He does both steel and concrete, but that was his big thing then. He was a great mentor, both at school and particularly in the company. He gave me lots of opportunities to learn a lot about concrete, and I still do. In my third child's baby book it says "Mom's hobbies," and it says "Concrete."

Adamson: Is that right?

Nakaki: Yes. So I love concrete.

Adamson: Did Bob's firm do a lot of work with Pankow?

Nakaki: Yeah, we did. We were at the time, I believe, pretty much their engineer of choice. We would come in and help them come up with creative solutions to get the job. Almost everything they did at the time that I knew of was design/build. So we were a pretty critical part of making the job happen. Obviously, the financial side had to happen. A lot of the ideas came from them, but it was up to us to implement them. A lot of the ideas came from Bob, and in time I got to a place where I was creating some of those ideas as well.

Adamson: So using either you when you got to that point or Bob earlier—?

Nakaki: And Jim Elm. There was another gentleman. Jim Elm was my boss.

Adamson: Jim?

Nakaki: Jim Elmlinger was his name. Sorry. We called him Jim Elm. In fact, by the time I got there, I don't know that Bob was all that hands-on with Pankow. It was really more Jim, and then I came in working with Jim and pretty quickly took a pretty strong leadership role.

Adamson: So if you took Catalina Landing or a later project, for instance, what would you bring to the table in that early design/build process?

Nakaki: Probably my favorite part was working with Bob Law, really, really early on. Bob used to touch every single job that would come through this company. Maybe he still does, I don't know. We would sit down in a room over the period of a couple of hours and come up with different ideas for a building, how to frame a building and how to make it economical. They always required us to be thinking about how it was going to be built. I never was one of those engineers who could just go off in a corner and say, "I want it done my way." I've always been really intrigued by the design/build process where the contractor drives it, but yet you have to be safe. Pankow was never interested in being unsafe, but they always would push the limits of what I knew, and I always had to learn something new. I loved that.

Adamson: What's the planning process where you're involved to get to the point, I guess, where you can start construction? From start to finish is typically how long?

Nakaki: Oh, anywhere from six months to five years, depending on how fast the project goes, how quickly people can make decisions and how quickly financing gets in place, how many times the owner changes their mind about what they really want to build, what they can afford, what they can get financed, how many times the tenants sue the landlord before they actually can do a project.

Adamson: Now, in design/build, does mechanical, structural, all the people, they have to pretty much be in the room at the same time trying to work it out, or do they go off and come back? How does that process work?

Nakaki: No. Usually, in fact very often, it would just be us and Pankow in one room. I assume he was doing the same thing with MEP [Mechanical, Electrical, Plumbing]. I'm assuming they were doing the same thing with the architect. The architect, often they had less control over. Sometimes they'd have the architect in under their umbrella, sometimes they would not. At the times when they did have the architect under their control, then, yeah, we would sit in the room with the architect and us and Pankow. But quite often really early on, the architect would be working for the owner, and we would come in as a team with Pankow and have to make some architectural changes that they might not like to make it cost-effective and meet the owner's pro forma, because without that, you don't have a job. Nobody has a job.

Adamson: Using Catalina Landing or any of the other projects you have listed [on your CV] as an example, just in general, what stands out about Pankow's approach to construction and the people involved?

Nakaki: Catalina Landing was pretty early in my career. I wasn't exactly in the middle of everything then. Practically my first job. But on a job, say, my very last job at Englekirk was Third & Mission [San Francisco], which was a very tall concrete building. I think it might be the tallest on the West Coast, and it was built with an innovative

system that I worked with the research side of Pankow on for many years before it got to that stage. But even that building had gone through many cycles with the property. The owner had the property. They were looking at an office building for a while. They may have looked at condos, I don't know. By the time we got into it, it was a concrete apartment building. We put the system in it. We looked at lots of different solutions for the owner, though, long before we settled on this hybrid frame system. Pankow at that point really wanted to get the hybrid frame implemented in a building of that caliber. We had done it a couple times before, but they really wanted to do it in a high-profile building.

But we looked at all different kinds of options for that building, and we would do that very quickly. That was one of the things that was really important for Pankow in terms of what I brought to the table is I could very quickly hone in on what the structural quantities would need to be and stand behind those. So if I estimated ten tons of something, at the end of the day it would 9.95 tons. We've had that taken off on some jobs. I had one recently that was a design/build job where they had to come back after the fact and actually take off every piece of rebar, which I'm sure they do here at Pankow, too, but they never told me. But they kept coming back, and we would be right on. They needed us to be able to do that in very little time, because they were committing to the owner that this thing would cost X dollars. They had to be sure that at the end of the day that it would still cost that.

Adamson: You mentioned Bob Law. Does that mean that typically your interaction with Pankow people would be the estimator?

Nakaki: The most intense interaction was with the estimator. Yeah, I'd be working with the product sponsors always, but the place I brought the most value was in estimating, in getting Bob's numbers as tight as they could be. Bob's a pretty good guesser. He's a pretty darn good guesser, and he's got tons and tons of experience and very often could come up with, for example, the length of shear wall in a building before I could, because he just knows these numbers. But he also knew at the end of the day that he wasn't the one doing the calcs, and I have to stand behind that, because he might guess a number and if his engineer wouldn't substantiate that number, then he's in trouble.

So very often he would guess something and I would confirm it. Or other times, he would say, "How many frames do you have here," or, "How would should we frame this area? How should we lay it out?" It was very, very collaborative, and I just really enjoyed working with him. But that was true of lots of people at Pankow, all the way from the estimator to project sponsor, to the guys in the field. I love working in the field with Pankow guys.

Adamson: So once the construction starts, you're—

Nakaki: Still in the field.

Adamson: How much time do you spend on the project then?

Nakaki: You know, it would vary, and actually that's one of the reasons I left Englekirk is it varied to a point that I wasn't going to get to go in the field anymore. I love to be hands-on from the very beginning to the very end.

When we did Tyler Mall [Riverside, California], which is probably my favorite project—it's not concrete, but in the twenty-something years I've been practicing, it is my favorite project, and I was out there climbing all over that building during construction. It was an existing building. We put a second level on the top of it, kind of sandwiched in between, and I loved that. In fact, I was really disappointed. I was pregnant with my first child then, and I had to climb up on the roof and realized halfway through my pregnancy that this probably wasn't a good idea, so I had to delegate a little bit of that towards the end.

Adamson: Starting out at Catalina Landing then, what would you do on a project like that starting out?

Nakaki: In the very beginning, I was designing precast beams, designing precast spandrels. Like I said, I was learning a lot about precast that I didn't know at all from school, and the people I worked with at Englekirk were really helpful on that, just designing pieces of the building. At that point, Jim Elm was the guy who was putting everything together. I don't know who set up the concepts, either Jim or Bob, Bob Englekirk or Bob Law, I don't know. But it was pretty quickly after that, I think.

The next job I remember so clearly was Shoreline Square [Long Beach, California], and I played a stronger role in that in terms of laying things out and



implementing things. So I would do the design of either portions of it or a bigger portion of it. At Englekirk, I would then have staff working for me that then the next job maybe they would design the precast beams, and I would tell them where the precast beams need to be. I always really enjoyed seismic design, so I would very often do a lot of that myself.

Adamson: Assuming that not everything you've ever done was design/build, how could you say, just as a high level, how design/build approach shapes the type of work you would do on a project?

Nakaki: Well, it's much more collaborative, and I'm kind of a collaborative person. I'm not real good at telling people, "You have to do it my way because I said so." I'm much more interested in the collaboration of making construction cost-effective, and a lot of this comes from the engineering background I have personally. My father's an electrical engineer, and he always thought the construction industry was absolutely loony, because he would work in manufacturing plants where the engineer *had* to care about the manufacturing process, because you engineered it once and then you built it a million times. So if you engineered something that wasn't the most economical to build, then it wouldn't make any sense.

Our situation was a little bit different, because we pretty much design one, build one; design one, build one. So if it's not the most economical, well, you're only building it once. Sometimes the engineering costs cost more than the less economical design, so you let it go. But I wasn't raised that way. I was raised from this perspective of

manufacturing. So I actually believe in the manufacturing process where you interact a lot between the people building and the people designing, and I think it's fun.

Adamson: That's important to the design/build upfront?

Nakaki: It's critical for design/build, yeah. Yeah. Well, I shouldn't say that. It's critical for design/build the way that Pankow practices design/build, which is not the same as everybody practices design/build.

Adamson: For example?

Nakaki: I really believe that, particularly the estimators, but the estimators and the project sponsors, they would have those buildings built in their brains, totally in their brains. I worked on other design/build teams where really what they're looking for is me to make all the decisions and hand them a set of drawings that they can then take off and bid it as if it were a bid job. It's not nearly as fun. I'm a people person. I like interacting with people. So that part's really fun. I like having people question, "Well, why did you do that? Can't we do this instead?" and causing me to think and be creative.

Adamson: Many people, almost everyone I talked to who are Pankow people, say that Charlie Pankow liked to visit project sites. Is that where you met Charlie Pankow for the first time?

Nakaki: No.

Adamson: What were the circumstances?

Nakaki: I don't know exactly where I met him the first time. This isn't something that sticks in my brain. But the other role that I played with the Pankow Companies, in addition to my design projects with them, was on the research side. About probably the late eighties, they got involved in some structural research projects, particularly one at the National Institute of Standards and Technology [NIST], and I don't know exactly how they got involved and why they were involved, but we were also, and they came up with a precast moment frame that would work in high-seismic areas, and it was a creative collaboration between—actually sort of the key person was [University of Washington] Professor John Stanton, who you may or may not have talked to.

Adamson: I haven't talked to him.

Nakaki: He's on the research side. He's not in construction at all, but he was really the brains behind the hybrid frame. But Pankow, again, very collaborative in terms of a design/build process. Pankow was right there, and it was Dean Stephan, primarily, saying what they could and couldn't build. It was through that process of the creation of the hybrid frame, I ended up getting involved in that from the perspective of a designer trying to implement this and working with Charlie and Dean, and Charlie's excitement over the frame. I'd come up here, every job that he could even think of to put the hybrid

frame in, he would try. He would pull me in his office and say, “Can we do this here? Can we do this? Can we do this? Can we do this?” So it was mostly through the development of the hybrid frame that I had the close interaction with him. He’s a different generation than me.

Adamson: I’ve seen only one video where Charlie spoke, so I’m going to throw a couple quotes out. You can answer by giving examples or just speaking generally. One thing that he said in this video was that “Innovation is our main theme.”

Nakaki: Absolutely.

Adamson: So can you talk about just his idea of innovation and, by extension, how it was applied at Pankow? What stands out at Pankow?

Nakaki: What stands out more than anything else is that that value of innovation—I don’t know what the right word is—emanated?

Adamson: Disseminated?

Nakaki: Disseminated? Well, it’s not so much down as it is up. He valued innovation. So if you could come up with an interesting new idea, that was of value to him, and I think everybody in the company knew it, because they then—every time faced with something, you very rarely heard from Pankow people, “Well, this is how we did it on

the last job.” You hear some of that, because some of that is just practical. But they were always looking at a different way to do something to make it more cost-effective, and I loved that. It’s not always—in fact, very often it is not profitable for the person implementing something the first time. I get in trouble with that, because I love to do things for the first time. But it takes longer to learn. It’s a whole lot easier if someone else has done it first, and they can tell you exactly how to do it. It takes less time, and in a design profession, time is what—the idea is you get a fee, and the least amount of time that you can spend earning that fee, the more money you make. Well, that never worked very well for me. That’s why I’m not rich, because I love learning new things. I love to take the time to learn new things, and I love to implement new things.

But in a design/build arena, there’s an opportunity for that if you have a driving force like the Pankow Companies and Charlie. But you also have to be darn sure before you’ve done all the work that the answer will cost what you said it was going to cost at the beginning. So there’s a lot of pressure to innovate. There was a lot of pressure from Charlie to innovate, and then there was a lot of pressure on particularly Bob Law, the estimator, but also anybody else who was sticking their neck out and saying, “Okay, this is what it’s going to be at the end,” because you had to guess and you had to guess right. If you guess too conservatively, you lose the job.

Adamson: Okay. Now something popped into my head, and this might not be a fair question, being an outsider, but do you get the sense that this drive for innovation was the result of Charlie bringing in people that he identified as being likewise innovative, or did

you get the sense that this was learned, that people learned from Charlie how to be innovative and had that sort of—

Nakaki: My understanding is that almost all of Pankow's employees were brought in right out of school, so I'd have to say it was learned. Probably he and the people he then trained this way could identify what kind of people would be open to innovation. I mean, certainly there's a reason that they liked working with me. I didn't just show up on their doorstep, and I wasn't forced on them. They came to me and asked for me because I think like this. I was born this way. I didn't get trained this way by Pankow. But I was certainly encouraged by Pankow, and I guess the same thing is true for their employees.

Adamson: Right. Charlie also said that, quote, "We don't rest on our laurels. If you're good, you'll find solutions." Do you have an example of a project where you're on the job finding a solution or in the design phase coming up with something that maybe you didn't think of?

Nakaki: Oh, Tyler, Tyler Mall was a classic example of that. It must have been the early nineties. There were a lot of old shopping malls, all old one-story shopping malls all over California that had been built in the sixties and early seventies. My ex-boss did a lot of those, and here they were, thirty years, obsolete, basically, and something had to be done. But yet here's this huge property. You can't go out and buy that kind of property in the middle of the city anymore. So there was a lot of talk of putting new second stories on these one-story malls. The first one that my company did, Pankow wasn't involved with,

but the problem was the second floor would end up, if you built over the roof of the first building, it would end up twenty-six feet off the ground. From a merchandising perspective, that wasn't good, because if you're walking on the ground, you can't see up that high. So it was really hard to build completely over an existing building. But yet to tear down the building, that means you go out of business for two years. Then the next mall down the street's going to take all your customers.

So the solution on Tyler was absolutely fascinating. The roof of the building was up at about twenty-five, twenty-four feet off the ground, and Pankow and it was Larry McLean of McLean Steel, who, I think, gets the credit for most of this, came up with an idea to actually slide the second floor in between the roof, which was at twenty-four, twenty-five feet and the ceiling of the occupied space, which was down at twelve feet. There was this huge space in between. They figured out a way to slide the second floor in between there so that it would be at the traditional eighteen feet, which is where you'd want it if you were building a brand-new mall.

There's room to do it in there, but the logistics of getting in there while you had customers below was incredible. I should take that back. There weren't actually customers below during the time they were building, but during the day the customers would be there from ten until nine at night, and then the construction crews would come in at night and start working, I don't know, ten or eleven or twelve at night, work all night long, clean up every morning by nine o'clock or ten o'clock and the doors would open for the customers the next day. So at nighttime they were lifting pieces of steel over these shops and sliding them in between the roof and the ceiling below. It was the funnest job I ever worked on, fascinating people, really good people. Bill Hughes was

their superintendent. He was on that job, spectacular guy. The key part of that one was the owner. The owner was a wonderful, supportive, non-antagonistic person, Ernie Weber, who worked for [Costa Mesa, California-based] Donahue Schriber at the time.

Adamson: Did you have to become a night owl?

Nakaki: I am a night owl. It was perfect. [laughs] Yes, it was actually great. My favorite times to work are from ten at night until two in the morning, which was right in the middle of their workday, so it's fine.

Adamson: Now Tom Verti in this video talked about the Pankow Company's integrity and culture of respect. Can you comment on that?

Nakaki: Yes. Well, one of the greatest things about working with Pankow, I said, was the challenge, the innovation, all that, but the people are a key part of it. I always knew that if I did my best, which I always did for them, that I would have the repeat job. They would continue to come back to me. I wasn't the only consultant who felt that way. They used people over and over and over. There was a very cohesive team, all through MEP, structural. Again, like I said, the architect was usually different, because very often the architect would come with the job. The rest of the team was very cohesive and we would work with whatever architect came in with the project, with the exception of parking. Parking, Pankow would bring in their own parking architect, which is Scott Herman, HNA, specific.



Adamson: If structural MEP people are staying the same and different architects are coming in, do you have anything to say about how the architect worked within this design/build?

Nakaki: Sometimes it worked well. Other times it was harder. It just depended again on the personality. Were they more interested in seeing their vision, or were they more interested in seeing the project come in where the owner could afford to build it? And there are architects that are both ways on that, and I've worked with both of them, and I won't name names. I'm more comfortable with the collaborative ones. That's just where I've taken my business as well.

Adamson: Another shared observation among people I've interviewed is that Charlie asked really hard questions.

Nakaki: Yeah. He didn't like the answer, "No." He really didn't like the "I can't do it" answer.

Adamson: And in fact asked questions that no matter how much you prepared for it, he asked a question that wouldn't address everything you'd prepared for.

Nakaki: I'm sorry. Say that again?

Adamson: Even if you knew you were going to talk to Charlie about a project and you thought, “Well, what would he ask me,” he’d always ask you something else. I don’t know if you had that experience.

Nakaki: You know, I can’t say I’ve ever prepared to talk to Charlie. Most of the times that I talked to him were I was up here on a project, and he’d say, “Oh, Susie, come talk to me.” So I don’t think I was ever prepared to talk to him. I do know that every time I did, he would challenge me, “How can we do this? Can we do this? I have this idea here. How would you implement X, Y, Z?” And, yes, it was always hard, always hard, and you always had to be quick on your feet. “I’ll get back to you” wasn’t really an answer he wanted to hear. He wanted an answer now, and it had to be right.

Adamson: So most of what you dealt with Charlie was on technical engineering issues?

Nakaki: Yes, which is really interesting for a person—again, by the time I got to the place where I was sitting in his office, he was—in fact, most of that came during the time when Dean [Stephan] was president and even after so that the—usually people at that level are not quite so technically inclined. Dean was. I remember one time Dean and I flew across the country for something, and he, of course, always flew first class because he was a big guy, and I, of course, don’t because I can’t afford it. He had his secretary move me up to first class so that he could pick my brain for five hours. It was one of the most exhausting trips I’ve ever taken, but it was really fun. This was Dean, but Charlie would do the same thing, just question after question, wanting to know more or wanting

to understand more. I never felt like I was being tested per se; they just really wanted to learn everything that I knew about something.

Adamson: It wasn't just for the intellectual exercise.

Nakaki: I think it *was* for the intellectual. Well, for the intellectual exercise for them and for wherever they were taking their brain in terms of a new idea, as opposed to what—I guess all I'm saying is some people will test you like that to try to catch you, to try to prove that you're not as smart as you might think you are or something like that. I never got that sense from them.

Adamson: Right. I guess where I was going with that is after this five-hour flight, then six months later you saw something in a design and said, "Oh, that's kind of what we talked about and they're applying."

Nakaki: I can't say any of the stuff that we talked about was really that direct.

Adamson: Fair enough. Now, this abbreviated list of projects, just to button down, doesn't include anything in Hawaii?

Nakaki: No, I never did work in Hawaii.

Adamson: The timing of your involvement with Pankow, I believe, if I have the chronology right, is more or less, not completely, but after the first couple decades when Charlie would get involved as a developer on projects, were you ever involved on projects where Charlie, with either Russ Osterman or others, were actually the developer?

Nakaki: You know, I don't know. It's possible he was financially involved in some of the projects that I did, but I wouldn't have been involved in that aspect of it. A structural engineer is pretty low down on the totem pole. We like to talk to developers, and we do, but it's not—

Adamson: I'll ask a more general question. Do you get a sense of Charlie as a businessperson, not just as the—

Nakaki: Not too much. My interaction with him really wasn't about business. It was really much more about technical things, because that's my strength. I'm a businessperson, too, but my strength really is technical.

Adamson: You've been talking basically to my question, but there's a list of things other people have mentioned talking about Charlie, or just Pankow people in general. One is curiosity in learning how buildings get built.

Nakaki: Yes.

Adamson: I think you've spoken to that. In supporting new ideas, can you speak to receptivity of all Pankow people to ideas?

Nakaki: Yeah, they're extremely receptive, and I'm trying to think of an example. It doesn't really—

Adamson: We can come back.

Nakaki: Yeah, I'm drawing a blank, but they're always trying new things. They're always open to new things, and I don't feel like they always had to be their ideas. Very often they were. Very often they would come up with an idea. Well, the hybrid frame, which wasn't my idea, was someone else's, and they're very open to that.

Adamson: Did you get a view into meeting the owner's expectations on projects, delivering what the owner—

Nakaki: Yeah. I can't think of a Pankow project where the owner wasn't happy at the end. I can think of a couple where maybe the architect wasn't happy at the end.

Adamson: This process of compromise with the architect, you said it can go well, it might not go well? I mean, does the architect just have to accept it at some point, or is there a meeting of—

Nakaki: A traditional design/build/bid process where the owner goes to the architect and the architect defines for the owner the vision, they get to the end of that process, and I've been here many times where after the architect designs everything, things get stripped out, because the owner can't afford it. Now, very often also the architect will define his vision, and the owner can afford it, and the building gets built as the architect envisioned it and life is good. Frank Gehry jobs are always like that because you don't do what you call value engineering on a Frank Gehry job, I'm pretty sure. I haven't worked on those, but I'm sure that's the case.

So a lot of architects would want that. I think any designer would want that to be the case. They have a vision. They want to implement their vision. The practical reality is very often the rents you can get for a building don't support those visions. So the building has to make sense economically or it just doesn't get built at all. Or it gets stripped down after the fact. The thing about working with Pankow is because they are so involved and because of this design process where partway through, say, there's this 100 percent design process, at 20 percent or maybe 25 percent of the way through that design, Pankow says, "Okay, this is what it's going to cost." The architect has defined the vision, loosely, but defined it. We've defined it structurally. Pankow says, "Okay, this is how many dollars it is."

Well, from that point onward, everything that I as an engineer does, I have to implement that building for what I said it was going to be, the 25 percent date. Well, the architect has to also. And if they come up with new ideas or evolve those ideas in a way that are more expensive, they don't get to do it, and sometimes they don't like that. Other architects are very flexible and say, "Well, what is in the budget? How can we do this?"

What kind of a vision can I make out of the money that I have available?” I’ve seen that go really well, too.

Adamson: As a structural engineer, does it matter working on Pankow projects in what you do? Does it matter if it’s a parking garage or an office building or does the type of building matter in—

Nakaki: No, the process is the same. It’s a demand for high quality, a demand for creativity, and a demand that you make a promise and keep it, both financially in terms—well, obviously our fees. We don’t get to change those either. And we don’t deal so much in dollars. Structurally, we don’t deal with dollars. We deal with quantities, how many pounds of rebar are going to be in the building, what size are the beams and columns going to be. If I tell you that on Day 20, it better be that way at Day 100. So I have to stand behind my guesses. They’re educated guesses, but they’re guesses. I’ve over the years learned to do whatever calculations I need to be able to make those guesses, and then we do a lot more calculations afterwards. But my predictions are pretty good.

Adamson: I bring that up because one of the things that I guess Pankow doesn’t do is retain their own structural engineers and designers, and they want to be able to stay on the cutting edge.

Nakaki: Right.

Adamson: But at the same time, you've said that they—I know they retain the same heating, ventilation, air-conditioning guys for many years, and they retain the same structural engineers.

Nakaki: Well, they did, although they've switched. They would very often flip-flop. They'd work with us for a long time, and then for one reason or another, they'd find another firm that they wanted to work with instead, and I could guess, but I won't guess why that would happen, and they would work with that engineer for a while, and then they'd come back. So while I say they're loyal, they're not loyal in the sense that they're ignorant. They don't want to just blindly stick with someone, and they have lots of reasons, some which are technical and some which are business, that they choose whatever consultants they choose. But they're not flippant in the sense that they go out and get three proposals and pick the low bid no matter who proposes. They definitely have a group that they prefer to work with, or always did in the past.

I honestly haven't done a lot of Pankow jobs recently. I don't know. Part of that is the kind of work they're doing out of this office. It doesn't seem to be as much design/build work, which is where I bring the value to them. If it's not a design/build job, they already have an engineer on the job, they can't bring me in. Part of it could be my company's very small. The opportunity for me to bring them work is limited. We can introduce them sometimes but not always. The past few jobs I've worked on with them have been jobs where they've been positioned to be able to recommend an engineer, but they weren't design/build jobs.



Adamson: This is not Pankow-specific, but these mixed-use projects like Sunset + Vine and other projects that are infill projects or in keeping with the latest trends in urban planning, do those sort of land-use considerations and regulations affect what structural engineers like yourself would do?

Nakaki: Not directly. I mean, yes, totally it affects what we do in the end, and we play a role in terms of defining the structure that's needed to implement a vision, but that vision is first defined in terms of a pro forma, in terms of how much retail space, how many apartment units, how much parking is needed.

Sunset + Vine was a great job. That was one where it had been designed architecturally along down a path, and it had been there for quite some time. And we sat down in a room, the architect, myself, and the parking architect, along with several Pankow people, and I feel like they locked us in a room for eight hours. They didn't quite, but—I think they fed us. And we completely redid that building, that team, to make it meet the pro forma that the owner had to spend, and it was a really successful job for the owner.

Adamson: Again, from your abbreviated list, and you mentioned Catalina Landing and Shoreline Square and Tyler Mall, Sunset + Vine now, what other Pankow projects stand out in terms of the significance of the overall building's innovation and function?

Nakaki: Third & Mission was really key. In fact, Third & Mission was a really interesting job. I worked on that job for several years, two or three years before I left Englekirk, and, like I said, we'd gone through lots of different options. We had slab and cast in place. We probably even looked at the steel version. We were dealing with a developer who was used to back East, so the whole seismic thing had to be explained in detail with them, and I remember going to lots of meetings, going over how things were different here than they are back in New York.

I ended up leaving Englekirk for lots and lots of reasons, but the timing was just right. The job had sort of stalled at that point when I left, but then it started back up, and because of my relationship with Bill Hughes, who was the superintendent on Tyler and then also the superintendent on Third & Mission, and because of my intimate knowledge of the hybrid frame which they were implementing on Third & Mission, I'd already done this concept design. They knew what they were going to do. I did that before I left Englekirk, but I obviously couldn't take the job with me. But I spent a lot of time on that building as it was under construction, just because when I do a design, my heart and soul goes into it.

I was explaining how Bob Law and the project sponsors have a building built in their minds, well, I do the same things for the structural part of it. I don't always get all the architectural details in my brain, but structurally I know that building, how it is, how it's going to work, how it behaves, and I couldn't bear to not watch it go up. So I made many trips to San Francisco during the construction of the job, even though it was no longer my responsibility.

Adamson: You indicated in your e-mail (or letter) that you interacted with Charlie Pankow primarily on the development of this hybrid moment frame and that you discussed with him how to make it better, get it codified, and accepted into practice.

Nakaki: Yes.

Adamson: Can you elaborate for me that process progression?

Nakaki: Yeah. It's something that I've done a lot over my career. The academic world is a fascinating world. Those guys and gals are really smart. They come up with really interesting ideas of how to make things behave better, in an earthquake or under gravity loads or whatever it is, but they're all about performance. The economics of the constructed building is very little about performance, a little bit about day-to-day performance. You know, you don't want a bouncy floor, you don't want your windows to leak, that kind of stuff matters, and the people are willing to pay money for that. But seismic performance is really not something that is typically perceived as of value.

I'll never forget, I had a job down in San Diego, and it was during the time where we were developing the hybrid frame, and there was also another competing system that my old boss had developed as well, and I'd worked on both of these. And I was talking to our owner about possibly changing what we were planning to do in this building, which was a cast-in-place frame, changing it over to one of these two precast systems. He looked at me, he said, "Well, that's all fine, but I don't really care about better performance. That's why I have insurance." Honestly.

I remember another meeting. Dean Stephan put something together with insurance underwriters, and we presented the hybrid frame to them, and they looked at us blankly, and they said, “But what box do we check?” They didn’t know how to categorize it on their forms, and they said, “Whatever you do, don’t check that box called ‘Other,’ because that sends up red flags and blinking lights and the whole thing.”

So the innovation that Charlie pushed for so hard had to be tempered by the acceptance of the real world. Insurance is a huge part of getting a building built. It has to be insurable at the end of the day. So that whole transition between somebody comes up with a bright new idea in the academic world and getting it acceptable to both the practicing engineer and the insurance agents and the constructors or whoever’s going to build it, that gap there is something that I love more than anything to do. I envision myself with a foot in each side and pulling information from the academic world and putting it into the practicing world, and vice versa. I work a lot on advisory boards for research projects where my role is just to explain to them, “Yeah, that behaves great, but you can’t build it.” Or, “If you tweak it like this, more productively. If you tweak it like this, it will be buildable and it will perform well.” So much more of a middleman.

Adamson: So championing this hybrid moment frame as a research project, going in, was that something Charlie could appreciate the difficulty of getting it accepted, or is that something Dean and him wanted to do, or what was the—

Nakaki: You know, it’s hard to say if he appreciated it or how much it would take to get it accepted. I’m sure Dean did. Dean was involved in ACI. Dean understands the whole

process through ACI and every other consensus group. Basically the way ACI works is you can come up with an idea, but to get it from an idea into the actual codes is a consensus process. What that means is everyone has to agree 100 percent, not 90 percent, not 99 percent, but 100 percent. So that process of convincing everyone—and imagine yourself in a roomful of engineers all with very strong opinions, all of whom are volunteering their time, so they're giving because they care, and you have to get them all to agree, that takes a really long time. It's extremely valuable for our constructed product, but it takes a long time, and I'm sure Dean knew that. I don't know if Charlie knew it or not.

Adamson: So now this research into this frame was under way before the Northridge earthquake?

Nakaki: Oh, yeah. Yeah. My first part of the NIST work was actually in 1987, which was before the hybrid frame. NIST came up with several other precast options even before John Stanton was involved and they came up with the hybrid frame. There was another research project called PRESSS that was funded mostly by the National Science Foundation, but also PCI.

Adamson: That stands for what?

Nakaki: Precast Seismic Structural Systems, so PRESSS with three S's. Those two research projects were started in the late eighties. Northridge Earthquake was in '94. But

the nice thing that was before that time everyone thought that steel frames were the Mercedes-Benz of all seismic systems, and it was discovered in Northridge and also shown in Kobe [Japan] and the San Francisco earthquake, Esquale [phonetic] earthquake, that steel frames the way they had been built weren't necessarily the Mercedes-Benz. So there became a lot more willingness only because they had to, there was no choice, willingness to consider alternative seismic systems. And cast-in-place frames were a great alternative and still are. But at that point, you've got now seven years' worth of research on this hybrid frame. That's pretty substantial research with big dollars behind it, and so it was much, much—there was a lot more openness in terms of the design profession, design community, particularly the precasters. They saw that as an opportunity to get into places where steel frames had been, had things locked. But it's still taking some time. There's still very few precasters who will implement the hybrid frame. Change is hard in this business.

Adamson: Right. One of the other buildings I know where this was implemented was Westside Media Project [Los Angeles]. Were you on that as well?

Nakaki: No. That was actually—well, yes and no. That job was done my old firm, Englekirk, right about the time I had left, so I was just gone. I did come in and do a peer review on it, but the guys who were still at Englekirk did the actual design. But I do remember I had to go into L.A. City. There were a couple things that came up on the project where the people doing the design were very competent people, but they couldn't answer all of the—I had ten years of intimate knowledge with the hybrid frame, that they

had me come in and sort of work with the City and get them comfortable. I did that on that job. I also did that on a couple of jobs up in San Francisco that Pankow built up in San Francisco.

Adamson: So the idea is that the frame is not just for high-rise buildings, it's for all buildings?

Nakaki: Yeah. In fact, the first one we built with the frame was up in Oregon. It was a three-level parking garage.

Adamson: In recent years, Pankow's established, I'm told, the position of research director, and I think Joe Sanders may have that role at this moment.

Nakaki: Oh, okay.

Adamson: I'm just wondering if you formally consulted with the research director at Pankow, whoever he may have been, at any point.

Nakaki: Well, names change and organizational charts change, and I don't keep up with those, so I'm not quite sure what titles are titles. But the first time a role like that was used was actually a gentleman named Dave Seagren, and that was during the hybrid frame development, the early development, probably before Northridge. I would guess it was early nineties, maybe mid nineties. He had a lot of good field knowledge, but

preferred to be in the office. They created this role, I think because they wanted to have somebody in-house who would coordinate with people like me and the researchers outside and could understand all of this. Unfortunately, Dave passed away really young, thirty-five-ish, and then Joe stepped into that role after Dave passed away, and I believe he's still in that role.

They now have the Pankow Foundation, which makes it much more—I don't want to say "recognized." It was sort of ad hoc before. When I was involved in it here, it was sort of ad hoc. Now they've got a lot more direct contact with universities through the Pankow Foundation. They have a gentleman who runs that, so that's outside of Pankow Companies.

Within Pankow Companies, I would have to say there's a lot of people who just are interested in new ideas. Jim Dick up in Oakland is one of those guys. He's always looking to tweak some idea, but I don't think he really gets involved in raw academic research the way that Joe does.

Adamson: Help me understand a little bit. You're coming up with new solutions on, you know, practical solutions for the site and the building you want to build, and then you have research that's sort of modifying or changing what's accepted in a code, so innovation sort of at the job level working within the code. How far can you innovate?

Nakaki: Well, you can actually innovate very far within the code. There's some language in the code that basically says—I'm going to not quote directly, because I don't quote codes. You can do anything you want if you can prove that it makes sense, and the



challenge becomes—and again back to this Pankow risk-taking, at 25 percent of the way through the project, I’ve got to be able to say, “I can not only do the right thing, but I can convince the person reviewing it at the end that I did do the right thing.”

The first hybrid frame job we did was, I believe, in 1995. It was Pearl Street Garage up in Oregon. It wasn’t in the codes. It’s just now in the codes in 2000 and probably—the document that actually codifies it per se was published in 2007. So twelve years before that, we did the first hybrid frame job. Third & Mission, it wasn’t codified by then. But we had all our ducks in order and, again, getting it through. Getting Third & Mission all the way through the Building Department, primarily Englekirk did that job. There were a couple of times where I came in and talked to them kind of behind the scenes. Actually, one of the peer reviewers for Third & Mission is somebody that I worked with on a committee, and he would come to me and say, “Does what they’re saying make sense?” And we would go back and forth on that, too, so did a lot of behind-the-scenes work.

With Englekirk, once you leave, you’re gone. So you can’t really come back in and assist. But I did a lot of that with KPFF up in San Francisco who is their Pankow’s engineer of choice up there. Marc Press and I went to college together and are very close friends, and he’s one of the engineers who will implement a hybrid frame, and I basically walked him through all that. I would go to any city meetings they needed. They’re much more of a collaborative company.

Adamson: That brings to mind one of the characteristics of the Pankow firm, loyalty. I was told that there’s only been one case where someone left and they brought them back,

and someone else had to make the case to Charlie that, you know, “We need this person on this job.”

Nakaki: Right, right, because once you leave, you’re gone. You know, there were a lot of similarities between the company I used to work for and Pankow in that way. In my old firm, when people would leave, they were just gone. That’s all there was to it. Now, it’s interesting, because in my company that I have now, that’s not my approach at all. If someone leaves, we actually still will work with them. We’ve had people leave, and we collaborate with them still two, three, four, five years later.

Adamson: So Bob’s relationship with Charlie—

Nakaki: Bob Englekirk?

Adamson: Yes. Do you know the origins of that?

Nakaki: I don’t know the origins. I’m guessing it was Kiewit. Was it?

Adamson: Charlie was at Kiewit.

Nakaki: Yes, Charlie came from Kiewit, and Bob, I’m pretty sure, did a lot of Kiewit’s work.

Adamson: Oh, I didn't know that.

Nakaki: I'm pretty sure. That would have been kind of before my time, too. By the time I started with Englekirk in the early eighties, the Pankow contact was really Jim Elm. Bob had stuff to do with them, and he would come in. When we worked on Third & Mission, that one, he wanted that to be his building, not mine. So that's fine. It is. It's his. It's in my soul, but it's his building. [laughs]

Adamson: This is more focused on your work generally, and you indicated that you were involved in other structural research and you've been affiliated with organizations having to do with concrete, and I see from your CV that you've received awards in the areas of precast and prestressed concrete. Were these interests and achievements the result of your work with Pankow, inspired by or come out of that work, or did it predate?

Nakaki: Well, I say to a great extent it was the work with Pankow, that this was encouraged, and also very much Bob Englekirk. He was very, very interested in doing new things and trying new ideas. When I was first working for Englekirk, he would walk into the back room and find a young junior engineer like me or a handful of other people and pull them into his office and say, "Okay. Go run numbers on this idea I had." I think to this day I think the reason he did it is we were too dumb to say no to him, so we would run the numbers. We would try the things, and that way he could get the calculations done without having to do them himself. But it was a great training ground because it bred in me—I think it's a trait I always had, but it was encouraged, both at Englekirk and

then in my work with Pankow, it's the same thing. It was always encouraged to think "What more can you do?" I found myself just two days ago at a parking structure to build it the same-old same-old way, and I'm sitting there looking at it thinking, "Well, what if we did this instead?" I just can't help myself. Now, whether we do it or not, I don't know. But it's something that was definitely in me and encouraged both through my work with Pankow and my work with Englekirk.

Adamson: So, for example, it says you hold a patent on a spancrete high seismic wall panel.

Nakaki: Right, right.

Adamson: What is that and where did that come from?

Nakaki: That came from a client. It's a fascinating story. My client wanted to sell more machines to build precast planks or wall panels, an eight-foot-wide hollow-core wall panel. My client was actually the manufacturer of the machines. When they would go out and sell the machines, people would say, "Yes, but how do you use these in a high-seismic zone?" They didn't have an answer, because there was no traditional codified way to make these panels resist seismic loads. There were all kinds of reasons why you couldn't do that.

So that client came to me and said, "Here's my problem. I need a solution." So I came up with an idea that was completely different than anything else that had been built.

They funded the research to both analyze it, the analytical research that we did in my firm, and then they had a testing program that was done in Wisconsin. They also went through the ICBO [International Council of Building Officials] approval process just like the hybrid frame did, and we carry them through that. Then they decided to file for a patent so that some other hollow-core producer couldn't take the same connection piece. The piece that we invented was this connection piece. So they filed for the patent on that.

But, again, I'm a support person. I am the person who comes up with the idea, who solves the problem. Somebody else has a problem. My job is to solve it in an innovative way. We didn't solve the problem with the objective of having a patentable item. It just kind of turned out that way. So that was their choice to pursue that.

Adamson: You stated upfront that—I guess this is about ten years ago now—that you started your own firm.

Nakaki: Yes. Eight years ago. Two years I was doing—actually during those two years from 1998 to 2000, I spent probably 70 percent of my time working on the PRESSS building. This research project that started in 1988, this PRESSS program, NSF-funded, ended up ten years later with a five-story building that was designed two-thirds scale, so you could go in and walk around, and it was tested down at the University of California, San Diego.

It was really fun for me not to have a real job during that time, because I spent just a ton of time and energy on that project. We designed it. I worked with the professor, John Stanton, in designing that building to be tested. It had in it five different

innovative systems, four different frames, and one shear wall system, all in one building. The researchers at [UC] San Diego pushed it through a bunch of earthquakes and it did really well. Then I spent a lot of time after that going out and communicating that positive research out into design engineers all over because it was fun. [laughs] Fortunately, I didn't have to work during that time.

Adamson: That's great.

Nakaki: Yeah, it was nice.

Adamson: What you're doing now is an extension of what you did with Bob Englekirk, or have you branched out in new directions or new types of projects?

Nakaki: Not really an extension. No, I mean, it's still kind of the same thing in that I'm a structural engineer of record, I do engineer-of-record work, but one of the benefits of being more collaborative than we ever were at Englekirk is that I can work for other engineers. I can do a job with KPFF. Sunset + Vine we did. We were the engineer of record. KPFF did the apartment units above. That could have never happened when I was at Englekirk. I couldn't collaborate like that with another engineer.

In fact, the day I left Englekirk, I called Marc Press and I said, "Okay, Marc, we can finally work together," because it had been twenty years since we were in college together, working together in college. We both worked for Pankow. He worked for Pankow up in San Francisco, and I worked for Pankow down here, but we could never

collaborate because of the firm I worked for. So for me, the freedom to be able to collaborate with other engineers has been really fun. So in that way, it's different, but it's doing the same sorts of work. But I have a lot more freedom to work on these research projects as well, and that professors over the years will collaborate. We have a three-dimensional shear wall system that was cast-in-place concrete. I worked a little bit with a steel frame solution. Just anything different and interesting.

Adamson: Now, you've already talked about this just generally, but maybe you have specifically, but I'll be redundant and ask you. The idea of Charlie picking your brain about structural topics, do you have a specific example that illustrates that, calling you into the room?

Nakaki: You know, I remember one time sitting in his office. I'd been pulled into the room. I was there for another project, can't remember the project. I don't even remember what he was asking me about. But I remember sitting there in his office, and I'm pretty darn sure Bob Law was there, and I'm not sure who else, but some other Pankow people. And he was grilling me. He was just totally grilling me. I came back with the answers, yes, no. I remember a couple of the times when I would say, "No, you can't do that," the Pankow guys around me kind of jumped a little, like, "You don't say that to Charlie." Well, I didn't know any better, and he didn't seem to mind. I've always been pretty much of a straight shooter, so if I think something can't be done some way, I'm going to say so. I almost always come up with another way, but I think it's the word "no" wasn't something that was said to him too often.

Adamson: Okay. I can see that. You also said in your letter, e-mail, that he didn't like to be told no, but respected those who said no and why and how to make something work.

Nakaki: Yeah. I never felt like he was angry with me for telling him no. I never felt like I was banished, or it didn't seem to change the fact that he would continue to call me in there and ask me these questions. So that's what I meant by he seemed to respect me still, even though I would say no. I didn't say no very often, because to figure out how to make it be yes was valued.

Adamson: For instance, Dean wouldn't buttonhole you and pull you into the room in the same way?

Nakaki: I don't remember being grilled, other than that one cross-country airplane trip. I'm trying to remember how we got back. I think we got back at different times, I'm pretty sure. But other than that time, I don't remember being totally grilled by Dean. But I spent a lot more time with Dean, too, so I would have gotten things a little more piecemeal.

Adamson: Just to sort of back up generally, since I haven't talked to any of these guys, but I'm supposed to, the project superintendent at Pankow especially is some of the guys—



Nakaki: Very important job.

Adamson: They're some guys who've been project superintendents for—so there's people like Kevin Smith. Can you talk about the Pankow superintendent and his job, his job site, how he operates?

Nakaki: Yes. The Pankow superintendent, with the exception of Bill Hughes on Tyler Mall, and that may have been the fact that it was being done at night, and it may have been the fact that I was available at night, I had a lot of communication with Bill directly on that job. Or maybe it was just very complex in how structurally it was going together.

On a typical Pankow job, the superintendent's role is a lot more than just structure, and they tend to delegate the interaction on the structure to a level down, a project engineer. So my intense interaction would be with that project engineer.

Adamson: For instance?

Nakaki: You're going to make me remember names, aren't you?

Adamson: Or a project, just to illustrate. What did you actually do with the project engineer?

Nakaki: Anytime there's any kind of problem, they call us, and "How do we solve this?" or, "This wasn't drawn exactly but it comes together like this. Give me a detail," or, "We don't see a detail for this. This is how we want to solve it. Is that okay?"

We just finished a job out in Claremont [California] that had a lot of challenges because it was a steel frame building, and we made a lot of it out of wood and paralams, and there was a lot of detail in having to do with that that was just out of the ordinary, and just that detailed interaction is more what I would do typically with a project engineer. On that case, it was a project superintendent also. And on Tyler it was a project superintendent. Just keep their job moving. My job, my role, as I saw it, see it in the field, is to not hold them up. Things happen in the field that are either changes or need to be changed or the sequence by which they want to build it makes something different, and my job is to keep them moving, answer quickly.

I very often would get questions. They have all day to think about it. They send me a question at four in the afternoon, which, again, is this benefit of my night-ownness. They'd have the answer when they came in at eight in the morning, because I don't go home at five. I do. I go home at five, but then I start up again at ten.

Adamson: Okay. That's something I can't do.

Nakaki: There are a lot of people who can't. But you get me working at six in the morning, I'm barely awake. If I don't have my five cups of coffee before six, it's trouble.

Adamson: I had a question there, and I just lost it by saying that. This direction of Pankow in recent years to what they call Special Projects, tenant build-outs, if I get what you said earlier correct, typically there's no need for a structural engineer on those sorts of projects?

Nakaki: I think that's typically true. Now, the last, this wood frame job I was telling you about, happened to be a Special Projects job, but it was really a building job. It wasn't a tenant build-out. There were five buildings that were built from scratch, but it was Special Projects. I don't know too much about what Special Projects group does and how they do it, but my guess is there's not a lot of structure involved and certainly we're not involved in them.

Adamson: Overall, whatever comes to mind, what do you think stands out in terms of what you have taught Pankow people working over the years? What benefits have you conferred on Pankow people by working with them?

Nakaki: Well, it's hard to say. You should probably ask them more than me.

Adamson: Yes, probably.

Nakaki: What I think I've brought is an ability to guess and guess right, and, again, I use the word kind of loosely, because I'm not really guessing. But it's so important, when you do design/build work, you're competing. You're competing for a low—your price

has to be low or you don't get hired. So you have to design things tight. But if you design things under where they need to be and then you get to the end of the design and they come out over, then your client's lost money, because your client has committed upfront that this is what it's going to cost. So it's a very narrow bound of where your acceptable answer has to be. It can't be too heavy and it can't be too light. Conversely, I've seen—again, I'm sort of a design/build person, so this is how I think on all my jobs. I can't think another way. But I have seen projects that have come through, and I'm surprised that they can get this far, but where someone will say, "Well, you know, let's go ahead and put beams here because we might need them someday," and then they never come out. "Well, I know this will work for sure, so let's just throw them in." "Well, I think a ten-inch slab might work, let's make it twelve." "I think we need fours at twelve, let's put them at eight."

That's continues to surprise me when I see jobs like that, and they actually, some of them, get built. I was trained by Pankow to not think that way. My expectation is they do run into engineers that are like that, and it's probably hard on them. So if I could bring something, I hope a legacy that I would have for the Pankow group is it doesn't have to be like that. Now I'm not the only engineer who thinks like this. Like I said, Marc Press definitely is the same way. He can tell them what it's going to be and stand behind it all day long, and I'm sure there are others. I don't think I'm totally unique.

Adamson: In addition to everything you've said, is there some favorite anecdote you can have about Charlie that might not even relate to a project or anything but illustrates the type of person he was?

Nakaki: Yeah. You know, it's funny, one of my favorite times with the Pankow Company was Charlie's party. I'm sure you've had other people talk about this. He would have this Christmas party between Christmas and New Year's, and I guess I knew I had arrived when I got invited to that party. Like I said, when I first met them and started working here, I was really young, right out of school. It wouldn't have been appropriate for me to be there. But there came a point where they decided, and this had nothing to do with titles or positions or anything like that, they decided that I could come to that party. Whether that was Charlie or someone else, I will not know.

But one of the really nice things about what I would see at those parties is it wasn't just developers. It wasn't just their clients. It wasn't people—I mean, I'm sure there were people doing business and interacting and all that, but they were people that were not necessarily bringing them work directly. I was always the one who provided value to their project. I wasn't the one to bring them the new project. My role as a structural engineer—there are some structural engineers out there that can do that, but most of us get pulled in too late. We just don't learn about the jobs early enough. And they still valued what I would bring to the table.

Adamson: What year was your first?

Nakaki: I don't remember. I'm not really good with timelines. Sorry.

Adamson: That's all right. I just wanted five, ten, twenty, if you started in '81?

Nakaki: Fifteen years ago? Fifteen, maybe, twenty years ago. Certainly mid-nineties.

Adamson: Just throw this out as not necessarily a Pankow project, but over time can you speak to any how the economics of just office buildings and commercial buildings have changed and how that has affected your work in the last couple decades?

Nakaki: Yeah. The interesting thing to me has more to do with not so much the economics of buildings but the economics of money. I remember clearly in the—again, I can't remember what time it was, but the time of the inflation, so when inflation was so bad and money cost so much money, you know, interest rates were so high, getting things done fast was really important. In recent years, money's been really cheap, so squeezing every nickel out of a project in terms of construction material, construction materials have been expensive and money's been cheap, so you could take a lot more time to squeeze every nickel out of a project. Does that make sense?

Adamson: Yes.

Nakaki: So that evolution of just the time value of money versus the cost of materials has been an interesting thing for me to watch as a design engineer.

Adamson: It affects your design.

Nakaki: No, I don't—maybe it should more than it does. I've always done things from a contractor's perspective. I've always tried to be most economical. So I don't think even in the time when material prices weren't as high as they are now, I think I still had that mentality of you don't put extra in if you don't need it. But the whole sequencing of construction, you used to be able to do some things sequence-wise that might cost you some more materials, but would save you time. I don't think that happens as much anymore, because money just doesn't cost as much. Now, that may change in the near future, I don't know. Not near future—it's going to get worst—but in the foreseeable future because of all the economic people who are in power now, they weren't working back when inflation was rampant.

Adamson: One of the competitive advantages of Charlie and the Pankow firm is working in an environment, many people have commented how badly managed construction is, and design/build is one way to be efficient. But still today people still talk about how badly managed construction is. I guess my overall question is, from your perspective, what is the overall impact of Charlie and his company industry-wide?

Nakaki: Well, design/build is slowly gaining acceptance in public works. That was hard to imagine twenty years ago. Just no way. So did Charlie directly play a role? I would say yeah. Yeah, I think so. I know his guys are very involved in the Design/Build Institute of America, and I know they play a leadership role there. I'm not involved in that group, so I can't tell you exactly how they play a leadership role, but I'm sure they do. And it's groups like that that encourage what I call quality design/build.

There's poor design/build, too. I remember a job where we did our typical, you know, here's a typical beam and here's a typical column and here's a typical wall, and here, Mr. Design/Build Contractor, you come up with how much this building costs. And that design/build contractor priced what we showed and nothing else. That gives design/build a really bad name, because then when you get into the actual design and you implement the design, there are things that weren't shown then that people like Bob Law, like I say, he builds the building in his brain, so he's got all that stuff on his master spreadsheet that probably takes pages and pages.

Somebody who doesn't know design/build and is used to seeing biddable documents, they only bid what they see, they don't bid anything else. If they're pretending they do design/build, they do a very poor job at it. So I think it's the quality design/build that Charlie really played a leadership role in.

Adamson: I've reached the end of my list of questions, but I'm sure from your perspective I may have missed something. So if you want to bring anything up that I didn't speak to or if you just want to sum up your relationship with the Pankow firm, you have the floor.

Nakaki: Well, I have to say at the time that I did so much work for Pankow, which was, I would say, probably from the beginning from '80 until probably mid-2003, 2004, it hasn't been a lot lately, but we still do some work with them. I've always loved every Pankow job I've worked on. I cannot think of a job—I can think of ones that were really hard, but hard in a way that you run into a problem, you solve it together. I've worked on



plenty of jobs where you know going in that it's all about pointing fingers at one person or the other. So you have to spend a lot of energy making sure no one can point a finger at you, and I never ever felt on any Pankow job that I would have a finger pointed at me. Which is not to say that nothing ever went wrong that I might have caused, but it was always that positive, "How do we solve it?"

Adamson: Great. I thank you for your time.

Nakaki: You're welcome.

[End of interview]