

MEMOIR OF SID LASSWELL

CH2M HILL

Interviewed February 2006

TABLE OF CONTENTS

<u>OREGON STATE</u>	<u>3</u>
<u>FIRST HIRED BY CH2M</u>	<u>4</u>
<u>WATER AND WASTEWATER</u>	<u>13</u>
<u>LEADING UP TO THE MERGER</u>	<u>15</u>
<u>UPPER OCCOQUAN</u>	<u>21</u>
<u>RECRUITING AND HIRING</u>	<u>23</u>
<u>THE DISCIPLINE SYSTEM</u>	<u>28</u>
<u>FOOTHILLS PROJECT</u>	<u>32</u>
<u>BOARD SERVICE</u>	<u>35</u>
<u>CAPSTONE SEMINAR</u>	<u>37</u>
<u>NEARING RETIREMENT</u>	<u>42</u>

[Editor's note: Following is a summary of Sid Lasswell's original memoir. The summary focuses on key events and issues that have impacted the history of CH2M HILL as recalled by Sid.]

Memoir of Sid Lasswell, Technology Director and Board Member for CH2M HILL, February 20, 2006. By Tripp Baltz, memoir historian.



OREGON STATE

.....

And what were you studying then? [.. 1946]

Water and wastewater, or we used to use the term sanitary engineering. Everybody thought sanitary engineers were garbagemen so we changed it to water and wastewater engineers.

This was actually a kind of a new discipline.

There really weren't a whole lot of people who studied water and wastewater before-

No, there weren't. But there were pressures right after the war and Oregon was leading that. The governor, I forget who he was, now, but one of the better governors we've had, was leading the fight to clean up the environment.

... The greater population, was located along the Willamette. Many food processing industries were along the Willamette, and they were a major source of pollution -- they were discharging directly into the Willamette in those days.

So, why did you decide to study that when you came back from the war?

I don't know. I have no idea. It just did. The first year or two, you know, you took a wide variety of engineering courses and one of which was structural engineering, design bridges, and you know, count the ... rivets and stuff. Then you had to design a highway, and it just occurred to me that I didn't like to do any of that kind of stuff.

And most engineers probably did like it.

Yeah. You know, the methodical guys liked to do that and I thought, God this is boring. So the only thing that was left was water and wastewater. So I said, hey there's no rivets, there's no surveying, no asphalt. Sounds good to me.

.....

When did you come across Professor Fred Merryfield?

Probably my junior year, well it may have been my freshman year. He taught a course in Specifications and I remember that course. Not much of it, because he didn't know much about Specifications either. Fred must have gotten the short straw or something on that one. But then, when I decided to be a sanitary engineer, or wastewater engineer, why then Fred was teaching all those courses.

That was a big area for him, too.

Yeah, and Fred was good at it. Fred was a very complicated guy, but a good teacher, an enthusiastic teacher.

.....

FIRST HIRED BY CH2M

At your graduation, did you know your were going to go work for CH2M HILL?

I don't remember. Probably did.

This was clearly before anybody was using that term, CH2M—

CH2M wasn't really officially used until I think the early 70's.

At that point, it was Cornell, Howland, Hayes and Merryfield.

Yeah, it sounded like a law firm.

What did you know about them?

I knew they offered me a job and that was important.

What did they offer you?

\$265 a month.

Must have been a lot of money back then.

Oh, that was better than \$90.

By a long shot! I mean, you were offered this job, either right before or—

June of '49.

Did you take any time off, you and your wife or did you go straight to work?

No—I went straight to work.

So, he said, 8:00 in the morning, let's see you down there at the office over the JC Penneys store.

Over in the JC Penneys. I was employee number 11.

Were you nervous?

Yeah, I'm sure I was.

How many employees were there? You were number 11. The six original partners were there ...

All of the six original partners were there. There was a draftsman there, an electrical guy was there, I think Earl Reynolds was also there.

Almost all of them graduates at Oregon State.

All of them, except for the secretary and the draftsman.

What was it like in that office in those first couple of days?

Well, I don't remember much about the office, because I immediately was sent to Bingen, Washington, to be the resident engineer on a water job.

It wasn't a student project anymore, it was the real deal?

And it wasn't a sewer system, it was a water system. I was the resident engineer up there, in Bingen, Washington, for I don't know, four months or so, at the end of the wintertime. I'd drive back and

forth on the weekends in the only car that CH2M had, which was a Chevrolet Suburban. And I'd live up there during the week. So I commuted during the weekends.

.....

You came back and then what'd they put you on?

Well, I almost immediately went to a resident engineering job in Forest Grove, which was west of Portland, about 20 miles towards the coast. That was a sewage treatment plant.

[I] lived in another one room apartment in Forest Grove. We took bids on this sewage treatment plant, maybe it was a couple hundred thousand dollars. It seemed like a lot of money at the time, but it was, you know, you spill more than that now.

The bids were too high, they didn't have enough money. They said, well, how can we build this thing? I said, well, we can do some of it internally and take it away from the contractors. So they finally says, Lasswell, let's do that. So we took all the mechanical work away from the contractors. That's all the piping and all the installation of equipment, away from ... a union contractor. So he'd do the structural and concrete work, and electrical and civil type stuff, and we'd come in at 4:00 when his crew quit because we couldn't work on the same site with union people. An ex-fire chief who happened to be kind of mechanically inclined, and I, installed all the pipe work and machinery.

By yourselves?

Yeah, I ordered all the materials and between he and I we installed all the piping and equipment. First design build we ever did.

I wanted to back up here a little bit. About you getting hired by CH2M. You were a young engineer and you were working with the partners, was that unusual? Or was that part of the early culture?

That was part of the early culture. There wasn't anybody else to work with. There were six of them, and they just needed some arms and legs and bodies.

Who of the original partners did you work with the most?

Archie Rice and Ralph Roderick.

What was it like to work with them?

Well, Ralph's been pretty well described in all the previous interviews. Ralph was a great guy. A nice man. A great "why not" "why can't we do this", "will this work here." A good business development man. Not a great detail, design engineer. Didn't ever claim to be. But came up with great ideas and asked the right questions to prod us to think beyond what we were doing.

Archie Rice was a very smart guy, full of life and a great sense of humor. But really only when he was not on the job. He was a tough taskmaster, and he expected good performance and excellent work. I worked for him for years. I learned much of my craft and how to manage people from Archie.

He was a great report writer and I'd write what I thought were the greatest tomes in the world and take them down to Archie and he'd just tear the crap out of them, you know? I mean, destroy them. After a year or two, I finally said "you're not making any headway Lasswell, you gotta do something." And then in my brilliance I finally said "What I gotta do is write like Archie." So I started to do that and I bet you if he and I wrote a report now, you couldn't tell which one was which. And he quit tearing them up. And most of the guys at that came on then went through that same period of having their stuff torn to pieces by me.

You say you learned a lot of what you know about managing people from Rice. Talk a little bit more about that, what was his style like?

Well, I managed people a little different, but I learned the trade and the craft from Archie. I tempered it a little bit. Archie, I don't think many people know this, but I understand he tended to get migraines. A migraine day wasn't a good day for Archie. It isn't for most people, of course, but Archie was so insistent on a high level of performance that it was hard to please him at times. He had so much energy. He scared most people. His exuberance and his smartness scared most people.

He was intimidating.

Intimidating, yeah. And, I came to the conclusion that intimidation, while it was effective in the short term, it was not so effective in the long term. And so I toned down those kind of things. I wasn't of

that same persuasion anyway so that wasn't hard to do. He was a great teacher and great technician and technical guy.

.....

Now it's the 1950 timeframe.

.....

So what kind of projects were you doing at that time?

Water and wastewater. In 1951 we were doing projects all over the state, in Coquille, Canyonville, Drain, Roseburg, and on and on and on. Almost any town in Oregon, we were competing with local engineers for the facilities that were required by the state and feds turning these things out faster than you could shake a stick. In those days, I went to more public meetings, always alone. You never had anybody with you to explain why we were going to recommend a certain bond issue or why we were going to recommend a certain wastewater or water connection. Some of those meetings were almost dangerous of course.

The public response to it?

Yes, we traveled all over this country by car in bad and good weather, putting together water districts and sewer districts and facilities for municipalities. All driven by the state of Oregon's rather unique laws at the time and the new federal financing opportunities.

Did you learn anything about politics of the public hearings at that time? Another skill you had to pick up as a young engineer?

That's right, there hadn't really been any real training in school on writing, report writing and the like, so all that had to be developed. Public relations had to be developed, and I'm not sure you can teach a lot of that stuff. People either have those abilities or they don't. Maybe you can improve upon them, but I'm not sure you can change a prune into a peach completely.

Now, CH2M, even from its early years, had gotten a reputation for being very professional and very courteous and very compassionate to the concerns of a town or city and that really helped you guys secure jobs up and down the Northwest.

Most of the competition who had been around a longer than we tried to exhibit the same things.

What was the distinguisher, you would say? What was it about the culture at CH2M HILL that really came across in terms of its public figure?

Well, in those early days, Fred Merryfield's name and connections were a factor in many cases. I think we were aggressive, we made a better sales pitch and I think we performed better and word got around. And, some of those other engineers had been in these communities for a long while. After you're with a community, regardless of how well you perform, someone will always say, well shouldn't we look at somebody else. Later on, other competitors of ours did the same thing.

Between 1951 and 1961, what were some of the other big projects that stood out, or experiences that stood out for you from the early part of your career.

Well, the largest real early project that we did .. was the Salem city treatment plant. Salem was a great big food processing center. In 1959 we did a study for the greater metropolitan Salem area which eventually resulted in a large main collection trunk sewer down through the city of Salem, way north, and we built a major wastewater treatment plant way north of Salem. And that plant was, in those days, I don't know what the construction cost was but it was in the several million, maybe five million or so, which was a lot of money in those days. And, we completed that, I remember, in the fall of 1964.

A month or so later, we had the largest flood in history. The '64 flood, and that brand new sewage treatment plant got completely flooded out and submerged. I remember getting that call from the city, I think it was Christmas Eve. It cost about \$100,000, which was a lot of money in those days again, to clean it up, dry out all the electrical. We had a whole bunch of electrical control buildings that were built below ground. Just why we did that, I'm not sure. But it seemed brilliant at the time. But less brilliant after the flood covered them over. Devastating flood. Devastating. And, interestingly enough, there was never a lawsuit regarding it, probably the reason there wasn't was because it was the largest flood in history. Otherwise, I think we'd have probably been in trouble.

Were you the project manager on that?

I was the project manager, yes.

Were you beginning at that point to carve out a reputation for being one of the go-to men on that.

Yes, that's right. ... And, I might give you a story. In 1953, February 13th, to be exact, 1953. We had a water treatment plant and water pump station on the Coquille River, down near the city of Coquille near the coast. And, we had to change the shaft or the impeller in a pump, something was wrong. So Bill Waters and I, ... were appointed or elected to go down and pull that pump and replace the shaft or the impeller or whatever was wrong. Dead of winter, ... Cold, foggy, rainy, wet, and it was going to be a simple one or two day job. It ended up to be closer to a week in very miserable conditions. I remember that we were sitting in the bar of the Coquille Hotel after one cold, wet day arguing about the benefits of artificial insemination with a bunch of cattle guys [when I] and got a call from my mother informing me that my oldest son had just been born. So, I missed the birth of my oldest son who is now 54. 1953.

.....

Back at the home office, there was just a lot of hiring going on. ... You'd come back and there would be a couple of new faces.

Major hiring started in the mid-60s and it's still going on.

Well, that's true enough, yeah. With you doing mostly projects in Oregon?

Yes, with me and the people we started hiring. Water and wastewater was the core business that has driven this firm for 40-50 years. Without it, we would not have done very well. It gave us the money, allowed us to hire the people, allowed us to grow, and provided all of the things that it took to start to develop into new areas in the 90s.

In other words, getting into environmental hazardous waste, radioactive waste, that sort of thing ... that was all done on a solid foundation of water and wastewater work—

We would not have gotten those REMFIT jobs in the 80s if we weren't one of the greatest environmental firms at the time.

Over time, I think, CH2M's revenues have been about 70% from water and wastewater, right?

That's right. I don't think we've properly addressed that core business in the draft history. Because it provided our ability to do everything else. And it's still doing that to some degree.

.....

Start from the beginning on Tahoe, your memory of it.

Well, it's pretty well spelled out in that history.

Let's hear your version of it.

Well, most of the Tahoe processes were developed as a result of work at Hanford in water treatment. I don't know all the things that were going on at Hanford but they had to have a large supply of relatively clean water for cooling and whatever in their reactors. Archie Rice met the guys that were developing some fairly innovative water treatment processes up in Hanford and eventually got them to come with us and do some further development really concentrating on their ability to produce clean water at a lower cost.

We'd been working with Clair Hill for years since the early 50s and Clair Hill had been working for the Tahoe sewage district for quite some time. They got into a problem where they had no place to put their sewage. The EPA was saying you can't put it in the lake and in those days Clair Hill did not have any wastewater expertise. So, Harlan, who was the strong project manager for the Tahoe plant approached us again for one of many projects that we did with him and said, hey, let's see if we can solve Tahoe's problem.

It was Ralph Roderick who said well if we have to produce drinking water, why don't we take a look at this process that came out of Hanford that we'd been developing and pilot testing and the like, and why don't we wrap it around some other relatively proven techniques, and put them all together and see if it works. So, it was Ralph that really was the visionary if you will, not the technical visionary, he was the 'what if' visionary to put this all together.

We ran some pilot tests, but pilot tests don't always tell you the true story. We hired some good people in Russ Culp [and his son Gordon], who had technical abilities in this area. We designed that

plant in the Corvallis office, Gene Suhr, Russell Culp and several others. [\[Read More .. Lake Tahoe Project, Vignettes\]](#)

There was a certain amount of risk involved in that. [If] that thing would not have worked you would have had a big headline on the front page and not a good one. But it did work, thanks to some luck and probably the technical vision of half a dozen guys. It catapulted us forward. If it hadn't worked, neither one of the firms was big enough to cover the loss. ... I suspect given the same conditions today and the same size of the firm, you wouldn't have touched it because you would have been afraid the risks were just too great.

.....

With Tahoe, was there a sense in the firm at that time that this was an enormous gamble?

I don't think we were smart enough to realize that. It was such an opportunity and the money was so good for those days and we thought we were smart enough to wrap enough technical people around it to be sure that there wasn't a major pitfall.

How many years did it take?

It was from 60-61 into 67-68. And later years was when all the publicity started, you know, the governor drinking the water or supposedly drinking the water. Articles in the Reader's Digest and those kinds of things. [\[Read More .. Reader's Digest at end of Tahoe Project.\]](#)

Was the press bigger than you thought it was going to be? I mean, you probably didn't have any idea that—

Well, yeah, we didn't. And today we have a lot more awareness of press and what it will do for you. We'd probably have brass bands out there and all sorts of things now. But we were fairly naïve in those years. We were just working to make a living and Tahoe was an opportunity to do that.

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WATER AND WASTEWATER

So for about 15 years, you were the wastewater and water manager.

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Can you think of a story that really stands out in those projects, one that stays with you?

Of course, I remember that Salem job because of the consequences. I remember, just after we merged with Clair Hill, which was 1971, and we'd just opened up the Denver office. A guy by the name of Ken Bielman went over and opened up the Denver office. We'd gotten a job for the Aurora Water District there and that allowed us to open the office up—our policy was not to open [an office] until we had a job.

[One day] I got a call from Ken Bielman that said we have an opportunity to work for the Denver Metro people, which was the big operation that supplied the city of Denver. ... And he says we've got to get a proposal to them to do this major study for Denver Metro. ... I remember putting together a proposal full of preprinted stuff and some hand-colored—I mean hand-colored—drawings in there and the like, and had it flown over because the mail wouldn't get it there in time. Just one copy of this silly thing. [It] got us the Denver Metro job, which really was the start of the Denver office.

What would you say, in your early years as the manager in Corvallis, for water and wastewater, was the biggest success?

Well, I'm proudest of ... the way we grew and saturated the Oregon, Washington, Idaho area in the water and wastewater business. We were killing people, not literally but...we were smart and aggressive and we were turning out good work, and occasionally we made money at it. And I think it was the growth we were able to take advantage of both in Oregon and later in Washington and Idaho to help promote and allow the growth that was automatically starting in other technical fields and of the opportunities that were coming up.

For you personally, was there a specific thing that you did that was a standout success during that period?

I was the leader of so many that they all kind of went in together. I quality-controlled and checked almost everything that went out.

Trained almost every person that was doing that work then. Tore their reports apart and assigned them to job and tried to develop their careers the way they should be developed. So, I kind of put it as the total package in, during those times that I'm the proudest of.

.....

A lot of the partners say that in their personal histories, there were some big costs in doing this kind of work.

Yes, there were some big costs.

However, you guys were having so much fun, there was a lot of collegiality, people treating each other with decency and that culture didn't exist at every firm.

No, that's true. And it started with, of course, Howland, and Hayes, and Merryfield. But somehow we were able to keep hiring people that fit the mold, if you will. And I think the biggest thing that held people together, because there were a lot of diverse people, was that they all seemed to respect each other. We could go into meetings and disagree vehemently about an issue and when we came out of that meeting, why it was all over you know. We'd said what we wanted to say and no one took it to heart and said, hey, we just had an argument and I lost and you won and okay.

.....

What .. would you say was the formula for success for a young engineer?

When we hired people in those days, we looked, of course, at their academic record but we also looked at their outside interest record to see if they were well balanced in terms of their outside interests. Because, while it isn't so necessary for where most engineers go in private industry, in the consulting engineering business you've got to go out and sell yourself and most people valued your efforts. Not on what you do, they assume your going to do that well, but on how they perceive your service. You may turn out baddest, lousiest job in the world, but as long as you could convince them it was the best, and they're pleased, that's the way they'll measure you. So we said we've got to have people who can do more than just puts marks on a piece of paper. We've got to have people who can go out and do business development, go to public meetings, good writers, good speakers, and the like. Not just people that shove the stuff under

the door. Because, consulting engineering business is a lot more than that.

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LEADING UP TO THE MERGER

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We talked about a couple things that happened in the 60s, I think we were at about 1969. There's the Flow Matcher, we could talk about that—

Yes, I installed the first flow matcher in the Corvallis treatment plant all by myself.

You actually, physically installed the first one?

That's right.

And that was an invention of whose?

Burke Hayes, and later on, a guy by the name of Carl Ryden.

The original flow matcher was a series of stainless steel plates. As the water rose between these plates it would reduce the resistance and increased the current [to] the motor and pump increased speed. So, as the water rose on these plates, the pump moved faster; and, as the water lowered, the pump moved slower.

The problem was, these plates were down in this wet well which is not a very nice place to be. It was hard to install and hard to maintain and a bad environment for it. So Carl figured out a way to get the [plates] all up and out of the water and just sense the water level by air pressure. Really, in essence, you could put the plates anyplace you wanted to. They didn't need to be physically in the wastewater.

What was the significance of the invention at the time?

It greatly reduced the size of the wet well, which was the thing that really determined the size of the whole pump station. If you had an on/off pump, the size of the wet well had to be about three times the volume of the pump in gallons per minutes in order to delimit the turnoff time to less than three minutes a cycle. If the cycle time was too short, you'd burn out your motors. So, it allowed you to make a much smaller pump station. It allowed a uniform rate of

flow to whatever you were pumping it to. So it made the downstream treatment system more efficient and more effective [as well].

Very good. So this sort of revolutionized the type of work or elements of the types of water projects that CH2M—

Well, it was an advantage to us because we could offer this, for the cost savings. So when you went to the Council, or whoever it was, they were always interested in price. If they asked you well how much is this total thing going to cost, why you had the advantage of undersizing and underpricing the pump station in all of the facilities.

Because you had a patent on it.

Yes. [However,] when we went public with it our advantage changed. ... it made it harder because now we were trying to sell our own product and that became a problem.

In this same time frame, Filbert and Gene Suhr were hired by the firms.

Yes. About 1962-63.

.....

How did they contribute to the success? and the impact they made on water and wastewater?

They had great insight into the biological processes, were willing to develop new processes and take new chances, and they were good salesmen, good project managers, and good designers. They couldn't design an outhouse if you gave them the seating arrangement when they first came, but they became good designers. And they were willing to travel and did so almost all of their careers.

How did you manage them?

My philosophy is that you've got to work harder than your employees and essentially manage by example. You've got to let them have their hand, and then you've got to look over their shoulder, but not too closely. And you've got to make it fun for them.

You had a pretty good relationship with them.

Very close relationship, still do. We traveled literally hundreds of thousands of miles together.

When you traveled with one of them, say, for example take Gene Suhr for a second. What were the roles that you played as opposed to the roles that he would play when you were working with a client.

Gene, like Filbert, was extremely intelligent, ambitious and drive, and possessed technical skills far superior to mine. Gene also became a great business developer, an excellent designer, and a fine project manager. He was also extremely productive and extremely energetic and would do almost anything for you. My job was to properly motivate Gene and John, through whatever means I could. Gene and I spent many miles on airplanes drinking many brandies solving the problems of the world. Many a times I was trying to get him to go somewhere else right after he'd been somewhere worse.

Sometime in the mid to late 60s, CH2M HILL which had up to this point had been a partnership, actually incorporated, isn't that right?

In 1966. .

1966. How big was the firm at that point?

We were 200 people and did \$3.3 million in 66. And Clair Hill was about 140 people doing \$2 million.

Okay. You guys were really starting to run parallel at that point, the merger actually started happening until 1973.

That's right. And Clair Hill of course had been in business six or seven years longer than CH2M because Clair was older and it started earlier.

Right. What did the incorporation do for the company? What was the reasoning behind that decision?

That was simple. We'd gotten up to 12 partners and it was the judgment of Jim and others that if we were going to continue and expand the ownership, a partnership was not the way to do it.

In a partnership you're responsible for the actions of the other partners and there seemed to be some limit at which it was better to incorporate to protect your liability and those other things.

.....

What were your thoughts about the merger before it happened?

Well, there were mixed feelings. I suspect that there were mixed feelings on both sides. I don't think the Clair Hill people as a group thought it was a good idea. They were a strong, Clair Hill people, and they just weren't sure it was a good deal and weren't sure for the next 20 years that it was a good deal.

We thought it was a good deal in order to get into the California area. In hindsight, it didn't really help us because they weren't really strong in the wastewater business and they weren't really strong other than in Northern California.

I think most people in CH2M HILL [thought] ... the Clair Hill people would fight you to the death and claim it was an equal merger.

It doesn't make any difference what it is now, because it benefited us both tremendously. And certainly it was the greatest decision Clair Hill ever made. I suspect Clair Hill consulting wouldn't be around today because it was in such a remote place and doing fairly narrow engineering, however, with people like Harlan, they'd have probably changed.

.....

The KE Employee Program came out of this era, too, didn't it? The merger. Talk about that a little bit.

The key employee program was in place before the merger, not because of the merger. Archie was a big proponent of this, as was Jim, but lesser so. Archie was the proponent, his philosophy was it was better to own a little of something that's worth a lot than a lot of something that isn't worth very much. The only way you're going to make a little worth a lot is to expand and grow, motivate the employees, etc. etc. etc.

I used to sit in meetings and we were arguing about no money really, at that time, because you know the stock was a dollar or something, or 40 cents or something. I used to sit there though, in my ignorance, and [ask why] are these guys giving the store away

for? ... They ought to be sitting around trying to keep it. But, Archie's logic was the correct logic, of course. It finally prevailed in the board and the company.

.....

And what kind of things were you doing at the time that the merger came together in 1971? ... Lot of jobs coming in. What do you attribute that to?

Well certainly to Tahoe, certainly our growth, and certainly to our reputation which was expanding. And, we had just acquired, Black Crow and Eidness, but the Tahoe job and the publicity was the thing that drove that boat. The UOSA job was strictly a Tahoe thing, the Colorado Springs was strictly Tahoe, and it certainly wasn't that cruddy proposal we gave to Denver Metro.

It was the press about Tahoe.

It was the press about Tahoe, that's right.

Were there growth pressures or growing pains happening because of all these jobs coming in?

There were always growing pains. And, our problem was to slow the growth rather than to allow it. Because we had a theory, which I'm not sure we totally proved, that was that if we grew more than 7-10% a year, over a 3 or 4 year time frame we'd get into problems, because we didn't have the capabilities to train those new people and to control and manage them. And then we'd be working harder and making less. Eventually we proved that to be true and backed off on the growth rate. ...

That's how you slowed the growth?

No, we just quit hiring. [But] we were proposing on anything that would work. If we could do it and had the expertise to do it, why let's go after it. And, we spent a lot of money on business development, not getting a very high hit rate but they were doing so much development that we couldn't help but get some.

.....

All right so now let's once again discuss the merger. What actually took place?

Well, there was no exchange of money, there was an exchange of stock. Because it was determined that the value of the stock would be diluted unless certain steps were taken why the Clair Hill employees were only given, or only guaranteed, half the bonus as the CH2M employees for the first five years. That did not necessarily build employee loyalty from the Clair Hill employees.



Jim Howland and Clair Hill

Describe what you saw at that time. Did that create some problems?

Well, it didn't help, because Clair Hill people were already reluctant and opposed for the most part. Harlan Moyer, however, thought that that was a good move. I never saw Harlan reluctant at all. Although, he'd make mention many times of that deal that was imposed upon them. He didn't like that deal.

But he thought it was a good step.

He understood it. Yes, the step was good, he didn't like the half-bonus deal. And as it turned out, the first year, the only year that we didn't pay a bonus, was the first year they were supposed to get a full bonus.

Right, they were not getting anything-

Not getting anything. But neither did the original CH2M employees.

What was it like for you to start working alongside some of the Clair Hill people?

No real difference.

No real difference?

We'd been together long enough and we'd known the principal players there, it really didn't seem to be a problem.

Did the cultures mesh well?

For the most part, I'm not aware of any real cultural differences. Although, for years and years, the guys in Redding had trouble not using the Clair Hill name rather than CH2M HILL. They just did.

I'd heard that there was a period in the company's history, and I'm sure this also applies to the years after the merger, when there was a sense that Corvallis decisions are the right decisions and Redding and Seattle and Boise ---

You've got to remember that Corvallis was the seat of all knowledge in those days. [☺]

The Corvallis office seemed to make most of the money, and it was where the big happenings were going on. So the other offices kind of didn't think they were being properly recognized and all that. All the great news came out of Corvallis and so forth, and I suspect a normal reaction if you were one of the satellite offices.

Was it your sense that it was a bumpy ride for the people in Redding to start thinking of themselves as a "satellite" office—

It was a bumpy ride. That was my feeling, it was bumpy mainly because they started out with just plain not wanting to do it.

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UPPER OCCOQUAN

What were the projects that were coming out in the middle 70s?

Well the first project that resulted from the Tahoe job came right after the merger when the Upper Occoquan Authority wrote a specification that said proposed facilities had to be modeled after Tahoe. So that's when Harlan and I and Gene Suhr put together a proposal and went back there. That was the first involvement with the agency and Harlan's long term stay back there. This was 1971. Right after the merger.

Gene Suhr also stayed there long term.

Gene Suhr stayed there a long time, so did John Filbert.

Describe what it was like to put that proposal forth.

Well we were competing with all the big boys back there. And, the Upper Occoquan board couldn't make up their mind. They'd reached an impasse. So in August of 1971, I was then the director of water and wastewater so I could go back there and tell the Occoquan people that we're going to take our resources plan to their project. That was one of the things they were worried about. Where are all these people going to come from? Next thing they were worried about was, who was going to manage this project? ... It was obvious to us that when we went back the second time to meet the board that that was a key element in their decision process.

It was August 14th, I believe it was, just hotter than hell, and I had on a wool suit. It was killing me! They were all, the board was all up in a big, kind of like a judge's dais, up here, you know, about six feet high. And we were sitting down in these little iron chairs, something like this, but worse. Down below, looking up, you know. ... And making all these ... promises of what we were going to do. And finally Harlan brought it out, and said, "I guarantee you, I'll come back here and manage this project." I looked at him—you crazy son of a bitch—you know. And, that's the promise he made.

And that's what broke it for them, right?

That's what broke it for them.

They wanted Harlan to be the manager.

Well, not Harlan, but they were impressed by Harlan and it was at least somebody who said he'd do it. Because all of the rest of the firms were kind of hedging on that because they didn't know who in the hell they were going to send, you know, they really didn't. And, so that was the clincher.

What specifically was your role in that? I know you were there for the proposal, but in an ongoing basis as director of water and wastewater, what did you do?

Well, I was responsible for staffing the project.

We had to send Gene Suhr back there, who lived with Harlan back there, doing that preliminary study. ... We had to open up an office back there and we eventually opened up the office in Reston, Virginia.

I remember that after we were told that we got the job, Harlan and I, these two country bumpkins from Redding and Corvallis, were so excited. He says, well now we got to go find an office.

...

We were heading out towards the Dulles airport. ... Someone had told us about the new planned city of Reston .. so we went out to Reston. Got the full treatment by the Reston [realtor]... on facilities and the like and tentatively bought some, or leased some. We were so happy with our success we went down to a restaurant which was by a manmade lake, kind of the centerpiece for Reston and there was an Italian restaurant there and other big stores and the like. So we went in just before we had to catch the plane and had a good Italian meal. We were so happy with ourselves we walked out and never paid the bill and were halfway back to the car before the waiter rushed out with the bill chasing us down to pay the damn thing. I remember that. It was kind of embarrassing.

He went back to Redding and I went to Corvallis. I remember that really bothered me. I woke up in the morning and I gave Harlan a call. It was early. The sun was out and it was shining, it was a nice day. And I says, Harlan, do you really want to do this? I mean, do you know what you just promised to do? You know, this is going to disrupt your whole life and the like. And he said, no, he said, this is what I've got to do. We're going to do it and I'm committed. And I remember that to this day, that little phone conversation on a Sunday morning maybe, August 14th, 15th. And, of course, why, from there we got all kinds of work on the East Coast, West Coast, Midwest, and everywhere.

What did that phone call make you think about Harlan?

Well, it raised my estimation of Harlan. Harlan had some goals he had set, and I'm convinced this was part of his way of satisfying those and I give him full credit for that. [\[Read More UOSA Story, Vignettes\]](#)

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RECRUITING AND HIRING

So let's do a check in here, Mr. Lasswell, if we could, ... where are you at this point -

In 1971 I'd been with the firm for 22 years, so I wasn't necessarily a neophyte and I'd seen a lot of changes in that time frame. But we

were starting to get big now, in 1971, we were doing \$9.3 million a year.

That was kind of a turning point, wasn't it? At that point, this firm really had hit the big time. In terms of work and projects—

Oh yeah, \$9.3 million, that was a lot of money in 1971, you know. But you think of billions today and it pales of course.

You returned to Corvallis after helping secure the Upper Occuquan project--

The problem with that, a hundred other projects we had going, a thousand other projects, was staffing them all. That was just a single project.

Did you have to hire people?

Oh yes.

Where did you hire them from?

Everywhere. Major universities, we tried to diversify.

How did you do that?

We had a human resources guy by the name of Willie Loud, who happened to be African-American. Nice man. Stayed with us through thirty years and it was Willie's job to cultivate the universities.

So he recruited basically.

He recruited but we interviewed and hired.

He would go and talk about the firm ... speak to professors, talk to guidance counselors and things like that—

Yes, that was his job.

..... what was the philosophy of employment?

... there weren't that many resources around. So college applicants are probably your best resources. Because other engineering firms were hiring at the same time, to some degree.

You wanted to get the best.

Yeah, our objective was to find the most well rounded, well educated people we could.

Now you would come back, say for example, from a proposal like Upper Occoquan and you would say boy oh boy we've got all these staffing needs, what would you do?

It was a major responsibility, that's right. Well, in 1971, I was only responsible for the water and wastewater group which made it a little simpler, but it was the largest group of course. And, we had requests in almost every regional office, ... but the biggest demands were on these new offices, new projects, of course. And, so I'd call up Willie and say hey we're going to need six sanitary engineers and we need them right now. And Willie would keep a list and say I'll send you out some to interview.

Would you do the interviewing?

Jim Howland and maybe Suhr, John Filbert would.

What would you offer these guys to come on board?

Whatever the going rate was at the time, we didn't offer signing bonuses or anything like that. ... Our name had gotten to the point that we could attract people. We never had any problem in finding people.

Still true to this day.

It's true today. I mean, good people. And women were starting to come into the picture then. The early 70s were when the whole makeup of the workforce started to change.

Let's talk about that a little bit. The advent of professional women in the firm, the beginnings of that, in the early 70s was it not?

... they was started by a few, I'm sure today they'd be called radicals. They decided they were going to break into the male-dominated engineering profession.

Okay, so these women are showing up at your doors. How did you handle it at first?

Well, we had a lot of concerns because of this problem in the professional field where the women have to travel over extended periods of time with essentially strangers, if you will, or colleagues. Not their husbands and the like. Where women had other responsibilities, in the home and the family and child raising and the like. We didn't know how all that was going to work. It works better in other engineering fields where they're not required to travel and to work long hours and sacrifice family time. ... And, in the early years, it appeared to us that the colleges were turning out probably women and giving them a break just to ... meet what they perceived as a quota. That became a problem and we were suspicious of that.

Well, that actually was a program or a policy for a while—in order to get the women to come in—

Yeah, that's right.

Okay, so you were concerned about that, well how did you rectify that?

———In those days, the man was, historically, the wage earner and the woman went wherever the man went. And the man was much more likely to stay and be able to travel in the conventional sense much more easily than a woman.

Pretty soon, the women were starting to prove us wrong because all those problems really didn't exist and they were in our minds and not theirs. These women were starting to demonstrate that they were willing to travel and would somehow work around the family problems and the children problems and all the other problems and at least get on somewhat equal footing with the males so that the male was as likely to move as they were as likely to move. And all those things worked out within the 10 years of the 70s. But starting out, we had all those concerns because simply it had never happened before, you know.

So your concerns ended up being allayed by the reality—

Absolutely. The women just proved us wrong.

How did that change the firm?

Well, you take a male-dominated society and the influence of women is certainly a softening influence, if you will. I think it makes us act better in different ways. I think it puts a little more emotion into the business and to some degree, environmental sensitivity into the business. And, they just provide a leveling influence that a total male-dominated society doesn't have. While it's subtle, it's there.

You were telling me about how, in the Corvallis office, you didn't even have a women's bathroom on the 2nd floor. There were other changes, too.

That's right. In the early years, right after the formation of the management system, I was the Water and Wastewater Discipline Director, and Gene Suhr and Fred Harem who happened to be the water discipline group director, decided that they needed some secretarial, administrative type help. So we were going to hire the first discipline assistant

The first concern was getting the women on the 2nd floor and the language problems and all that kind of stuff, how would that be. And the second problem was the bathroom facilities and just having a woman up there, they didn't really know how they were going to make that work. After about 82 interviews, they finally figured out that they were going to hire a lady, which they did. And it worked out fine. She took about half the work away from them that they were doing, and it became a very standard process in our system where discipline assistants were the accepted norm.

Let's fast forward and talk about the changes that were happening there in respect to the coming of professional women at the firm. How that's reflected in the company today, here in the 21st century basically.

I understand that 30% of our professional staff is now women. We have women on the Board, we have women in very high management positions throughout the company in both engineering and environmental and planning and other areas, scientific and chemical and so forth. And they've proved that they're equal in

every way with men and they're willing to make the sacrifices that it takes. So, our original concerns were proven false which is good. And, their value to the company has increased and will continue to increase.

We might even have a woman president someday.

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THE DISCIPLINE SYSTEM

Explain a little bit about that.

Well, both firms, Clair Hill and ourselves, were organized in the conventional manner that every consulting engineering firm I knew in those days organized. Regional offices: when you expanded you opened a regional office. That regional office had some kind of area of designation, circumference and area of responsibility for business development and project execution. This was the standard way for consulting engineering firms to expand. And that's the way CH2M HILL had been organized.

In 71 we had eight offices with Clair Hill combined. Not necessarily scattered in the most strategic areas and sometimes organized or started for reasons which had nothing to do with business, but we had eight offices. And so we'd adopted a regionalization concept rather than a centralization. And, in those days, we decided to decentralize project management and client relations. The regional offices were going to do that. Right or wrong. And we said we were going to provide many services, a multi-services firm rather than a structural engineering firm, or an electrical engineering firm, we were going to be a multi-service firm. And our goal was to become a major international firm by 1980. Those were the things we decided to be in 1971.

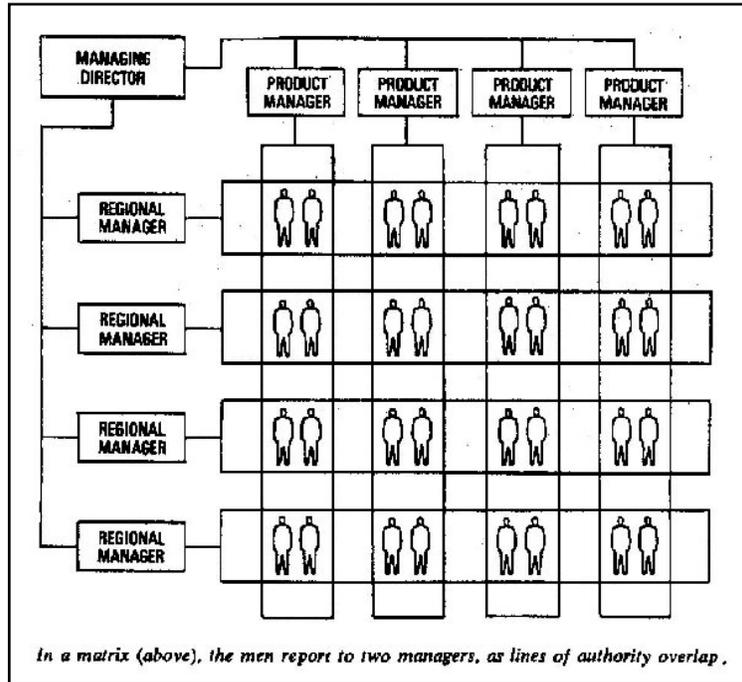
At that time, we still had this group of relatively autonomous offices and with business development and project management capabilities basically limited to the capabilities of each regional office. So they could only really procure and implement projects that they had the capability to execute. So Archie Rice in 70-71 was asked to come up with a [system] to solve this, because if we were going to grow, our real limiting factor was the scarcity of good people.

We had to figure out the way to take the few good people we had and provide them access to all the regional offices So that was

his charge, to organize some kind of a system that not only controlled business development and project execution but provided the people in the right place at the right time, wherever those people might be in the organization.

So we came up with the discipline organization. Which overlaid a technical part of the organization over the regional part. The

regional part of the organization was responsible in their designated geographic area for business development, care and feeding of their employees, and project execution for all projects that were assigned to them. ... And so we said well, the only way we can get the right people to the right regional office and the right project is to establish



a matrix in which someone else has control, or at least parallel control, over the people. So we came up with the concept of the discipline system. Which essentially is a system that has two bosses.

The regional office boss manages all the people in his/her office, is responsible for their care and upkeep, is responsible for their professional development to some degree, and is responsible for all the project execution in his office or her office and is a profit center. The discipline side of that matrix is responsible for the technical quality of the work, the overall training of the people and the staff, business development in specialized areas that the regional office can't do and is responsible for distributing the resources across the company in the best and most profitable way it can in order to benefit all the offices and the firm as a whole. Our objective was to convert those eight original offices from a group of relatively autonomous offices into some kind of a cohesive entity that would make it possible to use all the capabilities of the firm, regardless of where the offices existed, or what the job was.

It [also] provided a two ladder concept for the employee, [who] could proceed at the regional office management ladder or at the technical ladder, cross back and forth if he wanted to, and still have equal recognition on either ladder.

One of the most important things that it also provided was peer group identity. All these people, being engineers or professional planners or economists all wanted to be identified with their group and their projects that they represented. They didn't want to just be working for water and wastewater, they wanted to have a career in economics and then planning along with providing services to the other projects that needed it. But they needed peer group identity to make them feel important and make them feel part of the total firm. Many people missed that as a principal purpose of the matrix system. It provided opportunities for a broad range of project and management assignments for employees because they could work on projects all over the firm and did and could work on multiple different kinds of projects.

It [dramatically] increased ... [the] ease and flexibility with which the staff and the related experts could be assigned between offices and projects. And, [therefore] a more responsive reaction to the marketplace. We drove our competition crazy by being able to move our key people around for projects. The other firms were having trouble doing that because it was their regional office that they depended on for the expertise. And it provided us an opportunity to facilitate new disciplines and new technologies into our service and marketing areas.

How else was the 1970s a good decade?

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Shortly after the Occoquan project, ... we acquired a major project in Montgomery County. A major ... new plant.

... So, about in the 72-73 time frame Harlan and I and Gene Suhr met with the several principals of the Montgomery County agency to renegotiate this design fee for Montgomery County. Gene and I and Harlan all got together in the Reston office and decided on what was a walk-away number and what was the number we'd like to have.

And as I remember it, our biggest problem was not with the client with final negotiations, it was with Gene. Because Gene thought we could really design that project for about five and a half million

dollars and was so anxious to get it that his number and Harlan's and mine were miles apart. So we started that negotiation with tape over Gene's mouth as best we could. And we finally negotiated, as I remember it, a seven and a half million dollar contract for the final design. Which seemed like a lot of money at the time. The client was happy and we were happy, it was one of those negotiations that everybody's happy. We did it in about two hours and started the design for Montgomery County plant.

It started, John Filbert was the project manager, and it really was being managed originally back from the Reston office and proceeded into 74 and 75 and we had to submit sets of plans, set periods of time. Every year in order to determine bonuses, we had to determine on all of our projects how much money we'd earned through the end of that fiscal year so we could take that in to profit and determine how much money we'd made. And since [Montgomery] was a very large fee, our computation of how much we earned on it was kind of critical. The difficulty in predicting how much you earn on major, complicated projects is not as simple as one might think. And as it turned out, we estimated very optimistically that we were about 80% complete on Montgomery County and paid bonuses in 1975 accordingly. In a very short time we found that that estimate was very optimistic and that we were in fact maybe 60% complete. Ongoing with that, the state and federal governments had determined that Montgomery County probably shouldn't build this plant. They didn't like where the effluent was going to be discharged and it became very apparent that it probably was never going to be built.

So the question was, if we've already spent the money or given the money away in bonuses, should we finish these plans and specifications because it's not going to be built or should we not finish them and just give them a set of rolled up plans which they'll never use and which they couldn't use because they weren't finished. Well, since there was a lot of money involved that incurred several meetings. At the expense of bonuses in 1976, we decided it was morally responsible and right to finish those plans even though they'd probably were never going to be used. We spent the money that we'd already paid out in 1975, and walk away with a good feeling about it, if not in the pocketbook at least from a moral standpoint.

How big was the loss?

Well, we'd probably spent about a million and half dollars more than we'd earned, in 1975. We paid out in bonuses about a million and a half dollars more than we'd earned. And so in 1976, we had to spend that money [to finish the project] and that was about as much, in fact [why] we paid no bonuses in 1976.

Was that also the first year—

It was the only year we never paid bonuses.

The only year you never paid bonuses was also the first year that the Clair Hill associates folks were eligible—

Eligible for a full bonus.

And they didn't get it.

And they didn't get it. ... So, it was Montgomery County that caused us not to pay bonuses and it was because of the difficulty in predicting how far along we really were.

FOOTHILLS PROJECT [et al]

And this was in the Denver metro area.

In the Denver metro area. And shortly thereafter, for another major project, the Milwaukee project which is featured in the current draft of the history, was acquired mainly, I believe, through Tom Gibbs' connections with the Milwaukee Water Pollution Abatement Program. That project which extended from 76 through about 95, was a major project management task and we designed the [Jones Island] treatment plant. All the tunnels and the like were designed by other people as I remember it. It was a type of project that will probably never be done again. We thought maybe it was an entrée into total project management for major public works, but the clients get smarter and smarter and can figure out that they probably pay more money than they need to or think they need to in that kind of a project and lose some control. So it's like many things that are one-timers, the clients get smarter and figure out other ways that they'd rather do it. But it was a major influence on us at the time, all in the 1970s. [Read More, The Milwaukee PMO, Expansions, Expansion Office]

In addition, we were still acquiring people, Black Crow and Eidsness, that addition, which opened us up into the southeast, came about in 1976. Joe Worth, a longtime employee of us, was the only employee that wanted to go down there [Gainesville, FL] and manage it, as I remember.

... we thought we'd given it due diligence in looking into the accounts receivable and all the other things that we should have looked into, in fact, we hadn't done a very good job. And Black, Crow and Eidsness was in deep, deep trouble financially and in accounts receivable, which really weren't receivable. It took Joe and us five years to get that back on track and to be really worth the problems that were associated with it.

At about the same time, we had our first major job in northern California for the city of San Francisco. And that's when Archie Rice moved down there as the project manager and John Filbert moved down there to be the design manager.

Then more importantly towards the end of that decade a new president was elected. ... Earl Reynolds and myself and Les Wierson, and Jim Poirot were all candidates along with Harlan. I don't think there was any question that Harlan was the proper choice. When I got the phone call late that December night in 1977, I heaved a sigh of relief and went on with the business of being director of technology. By that time, I was also the, as I remember it, the regional office manager for Corvallis, and we were starting to plan for a new building that we're in right now on Walnut.

At about that same time, in the late 70s, it was agreed that we should expand into the international arena. Trinidad was kind of an accident, that we hadn't really developed an international attitude yet. So Les Wierson was given the assignment of getting work in the international arena and what little work we got was in the planning area. New city planning for Saudi Arabia and those type of things, which our planners did well but we were never really able to make much money at it. So, in about 1979, Les Wierson uncovered a potential job in Egypt under the US AID program to renovate the Alexandria, Egypt wastewater system and build a new treatment plant. It was a very, very large job and very intriguing. It became obvious to me and several of the other wastewater people, John Filbert, and Gene Suhr that if we were going to get that job we were going to have to put our best people on it, write the best proposal we could and team up with the best people and get serious about it.

It was time we quit fooling around and got into the game or got out of the game.

So in 1971, we teamed up with two Egyptian consulting engineering firms headed by a guy named Dr. Abdul Warith and another by the name of Sanni Abdulkal and with Metcalfe & Eddy, as a local US firm. We put together, in Seattle, after visiting Egypt, a major proposal. Gene Suhr and I and John Filbert, the two Egyptian consultant principals came over and in about a week we put together this major proposal. The Egyptian government had broken down into thousands of little tasks, and they wanted you to show, in some kind of a form, how many people were going to be working on each of these tasks, how much time they were going to be spending, which individual expenses were going to be on each task, and on and on and on. And this got to be a tremendous matrix of numbers, you change one number, you change thousands of numbers, of course. And that was really before there were any computers or anything.

I remember, we were working late at night one night [on the proposal]. The two principals from Egypt ... had no real expertise in putting together these proposals, so they wandered around Seattle and admired how nice it was compared to Egypt. But about midnight one night, when we thought we were about done, ... one of the principals came back, ... looked at our draft/final number for this thing and he says, "you know, that seems a little high to me." Apparently someone had told him what the number had to be.

Gene and John were exhausted by that time. And I remember, Gene, who is really a pretty calm guy, just exploded. They knew if we changed these, it was just a massive matrix change of numbers again. And these two Egyptian fellows were really surprised at the explosion. ... We did quiet Gene down, and changed all the numbers and we got the job. And that was our major entrée into Egyptian work.

We're still working in Egypt, all through that country. It was the start, of at least some solid international design work. We never did really accomplish everything we thought we needed to do to be strong in the international marketplace. There wasn't any question in our mind that you had to do the design work someplace where the labor was cheap. And we never did get to that point. And they still haven't gotten to that point. It is one of Ralph's frustrations that our international work really hasn't produced the results that

we'd hoped for. It will be interesting to see how we change that. It hardly has ever been a profitable.

BOARD SERVICE

Let's talk about that a little bit, What was it like for you to serve on the board in the early 70's time frame?

Well, it was quite an honor. But, the original partners at that time had said, well, we've got to have some kind of a program where all of our partners serve on the board as early as possible. And I happened to get in at 69-70 and 71, and all the other partners of my time period had got the same honor just as soon as there were spots available. And, I served again on a three term period in 78, 79, and '82 through '87. Which was the end of the time of great expansion and we had the new president in Harlan, and international was expanding, work everywhere was expanding in all of our disciplines.

.....

Describe your management style.

My management style...well, I think I've said, I liked participative management. I'd present a problem and everybody would give me their opinions and then I'd make a decision. I never believed in consensus. The consensus was always nice, but seldom possible on anything very controversial.

I always had an open door policy. Tried not get the monkey on my back but would talk with anybody who had a problem. And I had a lot of interaction with the people. Several things had happened during that time, during the 70s, which had nothing really—well it may have had something to do with our growth. We started the softball tournament. Which started in Corvallis and grew during the 70s and 80s, and was one of the biggest firm-wide meetings and, I think, social events, that any firm I'm aware of ever had.

People actually would travel from the regional offices to Corvallis to participate in the softball tournament.

For many, many years, we operated that tournament in spite of corporate. Because corporate just couldn't see that that they could bear that cost. So the regional offices would scramble up money or everybody would contribute to their expenses. At the peak of that

tournament we had 40 or more teams playing. Generally in Bend, [Oregon] because they had the only facilities that could handle 40 teams.

It was a great experience, a three-day experience. And a great social experience. We had offices everywhere, most people had never met the other two-thirds of the firm and this was a way to do that.

When did it run?

I can't remember when it started, but the early 70s, to the late 80s. I'm guessing. Maybe the early 90s.

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What would you say was your ... greatest success during that time?

Well, I think it was the accumulation of the successes we had. And the many, many friendships that I'd acquired even while I was sending these guys to strange places all the time and away from their wives. Our relationships were always solid. To this day all of them are my friends. I consider that in terms of, certainly in relation to the many times that I asked them to do things that were quite extraordinary. ... and their wives, God bless them, ... were amazing at what they put up with.

.....

Was there a mentor here? Holly Cornell—

Well, all of the early guys were mentors to some degree. But for the most part, the mentoring, you either had to search it out or you didn't get it because we were all so busy there wasn't really time to stop and discuss what you should or not do. Most of the time you were on your own. And so you either developed management skills or you fell behind. And the people who progressed in the firm, both in stature and financially, were the people who had or could develop the management along with the technical skills to make it work.

You were one of the early partners, but even if you look at the founders or the partners earlier than you, which single one of them made the strongest impression on you?

Oh, technically I believe, Archie, and from a project standpoint, Archie.

Holly always impressed me as ... being a good solid type, a very impressive, natty dresser and he just made an impression.

Burke, when he wanted to, could be very impressive. Big, tall guy—could address the high and the low, and either way make them feel great. Just knew how to do it and he was just a happy guy.

Jim, there isn't a nicer man in the world than Jim Howland and I respected his philosophies and the like, didn't always agree with them. But I certainly respected and I understood them.

So all of them had some influence on my life. Archie, in the early years, probably was the one that gave me the greatest bawling out at times for not performing or not doing something I should have. But I remembered those times. They had some impact on the way I conducted myself in the future. And Archie was the one that took my wife to the hospital when I missed the birth of my oldest son.

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CAPSTONE SEMINAR

So, it's 1982, 83, time frame. What's going on at CH2M HILL?

We'd grown probably too fast, the people don't really know each other and many still didn't understand the matrix system. There were, like today, many project overruns and weren't making as much money as we should have for the amount of work that's going through. There's no use working harder and making less. And there's no use growing and making less. So one of the concerns was ... to develop some systems and processes in design and project delivery that will improve our bottom line. And we needed to get the people more familiar with each other and more familiar with the system. The organizational system that we had, which to any outsider was terribly confusing.

So, in 1980, I put together what [was] to be called the Capstone Seminar which really was a project management seminar - a potpourri of project management and description of our organization and how it really works, and how it doesn't work.

We had a series, we met full days Friday and Saturday, traveled to every regional office at least twice, I believe. We ran it from 1980 through 1992. Spent 96 weekends doing that.

The two days included the organization, the matrix system, and how it works; project execution for design and the project manager's role; managing non-projects ... ; quality assurance which was getting to be a big buzz word; the project control system, that's our accounting system, and how it works for the project manager; communication skills, the outside consultant; and the loss prevention.

The most important part of it, I felt, was that not only I got a chance to meet them all, but on Friday night after the sessions, we had a three hour sit down question and answer with the employees at which they could ask any question, I mean any question about CH2M HILL. And, some of them were corkers of course. And we'd answer it. I don't care what the question was, if it was legitimate, we'd answer it. I don't care how private it was or how scary it was, or whatever. So they could sit down there and they could vent their spleen or whatever they wanted to do.

Were some private, and scary?

Yeah, some were. I don't particularly remember them, but some of them were hard to answer. But, we answered them. And that impressed those people. It totally impressed them.

I bet. Why do you think it impressed them?

Just the openness of the firm, and ability of some top guy to come down and bare his soul and tell them what was really going on, good or bad.

Now you called this, was it Capstone?

It was Capstone, it was this project management seminar.

I thought the program was exceptional, I don't think we have a comparable one now. And, as I went around the firm in the later years, almost everyone I met, would comment on how much they enjoyed that and how much it meant to them. ... It was one of the better programs over the longest period of time, that I can remember that the firm has ever had.

So this was something that all employees were getting—

All. Not just the new ones.

.....

What did the participants think about the program, what did they say to you about its benefits?

They were totally impressed, with the openness and the wealth of information that was provided. And we had a contractor who had the same social skills and likeability of most of our people. They were impressed with the quality of the people and the quality of the effort we'd put in and really the quality of the product we delivered. And, the openness and fun we had doing it.

Clearly it was a priority of the board, what did they think about the program?

Well, they supported it and they paid for it. It was managed for a small fee by a college professor out of Oregon State, a good friend. A guy by the name of Hal Pritchett, who ran the construction engineering division at Oregon State for years and years. He ran it for the full 12 years.

.....

Good. Well, it seems like we're breezing through the 80's here. What else do we have in the early 80s to mid 80s time frame?

Well, in 1981, we created the OMI organization. Which was, I think, a valid effort to get into the operation end of the business. ... I think it has still great potential if managed properly and if we keep all the ducks in a line.

... And, of course, very early that year, the Superfund program came about. That was when Ralph started to sense new opportunities and new directions for the firm to go. By then, we were a major environmental player of course, all over the country and had designs to be all over the world.

Obviously, you were a major environmental player because you had this huge tradition of water and wastewater and then the Clean Water Act came online—

Which was just a big new funding—

Superfund—was there a sense on the board or was there a sense in among the ownership that the Superfund was going to do the same thing for hazardous waste?

Well, quite frankly, most of us didn't have, in those early years, any real concept of what Superfund was or what it was intended to do. And quite frankly, I don't think the people who ... drew up the law and certainly those who voted for it had no idea either. They just knew that there was a great deal of hazardous waste around and somehow it had to be cleaned up. They didn't know how and didn't know how long it was going to take, didn't know how much it was going to cost, and how they were going to do it. Many thought the Corps of Engineers was the logical outfit to do it.

And so, Ralph was the industrial group director for industrial and waste. They weren't a big group, but they were a group of highly technical people who were doing mostly work for private clients in a whole variety of industries. Not necessarily large jobs, but very technical jobs to some degree.

In 82, Ralph saw this as an opportunity to break his group out into a major marketplace. And certainly, to break the firm out into a new major marketplace. Ralph wanted to immediately create a new, either a new organization or a new firm, like an IDC or an OMI or something like that to pursue this work. He was convinced that, with our organization structure and regional office concepts we just simply couldn't do a major project like this. And of course, there was some validity in that because a majority of the firms were probably going to be competing against us were firms who were federally oriented and therefore organized for major federal work. They didn't have regional offices scattered all over the country. They were centralized and went after major project and concentrated on federal work and all the proper contacts and the like, which we didn't have at the time.

We had a DC office, but we didn't have the people who could get through the veil of federalism and to the right people. And so, quite frankly, when he wanted to put in a proposal on this REM work, we didn't know what we were proposing on and Ralph, God bless him, convinced me and Harlan that it was worth the effort. And it was worth the effort because we at least had something to sell which was our environmental background. And if, whatever this was, we didn't know exactly what it was, certainly it was environmentally oriented.

So Ralph was putting in a pretty big sell with you and Harlan.

Yes. Well, Ralph can do that. [☺]

So ... we budgeted a million dollars for this proposal and I think we spent all of it. And Ralph's guys who were brilliant guys and still are, put this thing together.

This was a major shift, major change, major new direction for CH2M HILL.

It was, yes, and not necessarily because of the hazardous waste. It was because of the fact that we had immediately, by getting that job, become a federal player. And we really hadn't been a federal player before. Now the impacts of the REM work really didn't take effect significantly until the mid-90s. Rocky Flats, and these other, and the one up on the Columbia, the Hanford plant. And many others. But the impacts took place in the mid-90s, but the start of our federalism, if you will, and our confidence in that we could get work in that arena, started with the REM program. And I always thought that wasn't the beginning of our environmental work, we were already a major player, that was the beginning of our federal work, which has become one of our prominent big buck items. And now we're doing federal work in all sorts of things. Not necessarily connected with the environment, and not necessarily connected with hazardous waste.

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Okay, it's now 1982, 1983, am I right about that?

The next major happening in the firm was really the development and the creation of IDC, or the Industrial Design Corporation. Headed up by Ken Durant, a civil engineer. It was formed in order for us to get into the private industrial work, predominately in the microelectronics area. Supposedly going to be a low overhead, hire/fire firm. Very successful during the 80s, generally in the microelectronics. We became experts in cleaning, in clean rooms, for these industries. Got into some harder times during the 90s, during the down turn in that industry, but was an excellent organization.

IOTech was an interesting example of doing something that you didn't know anything about. We got the idea that we could take some of this excess Cesium 137 ... and go into the irradiation business to irradiate anything you wanted to sterilize. In Europe, as you may or may not know, you can buy irradiated milk and

irradiated almost everything, but to try to do that here in this country gets much resistance. And of course, in places like Egypt, if you didn't get something irradiated, you'd probably die. And, so we spent substantial amounts of money on what we called IOTech, built it, financed the company, operated it for a short while and then the feds decided that they weren't going to make the Cesium 137 available, so we essentially sued them for our costs to date and reached a settlement and came out all right. But it's a good example of doing something that you really had no business doing.

By 1985, we'd grown another 700 people from 1980. And instead of 1,800 people, we had 2,500 people and we doubled our income from \$125 million to \$250 million. So, we were still growing, but more importantly, we were making more money per person, which is the only way to grow if you have a choice. As I remember it, we were successful at getting the second REM project in 1986 which reaffirmed our entry and stature in the federal contracting business and I think Ralph was right in his evaluation of the opportunity. It certainly proved that way from the mid-90s on when things really started to roll and our stature as a fed contractor was assured.

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NEARING RETIREMENT

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Okay, let's talk about some of those things you did locally and in your professional associations. For example, one thing you did was serve on the Advisory Board of the Oregon State University Environmental Engineering.

Yes, I did.

When did you serve on that?

Well, Lordy, I don't remember. Six or seven years ago. It wasn't all that active, it met once a year for a couple years and really hasn't, as far as I know, met since then. But I was President of the Consulting Engineers of Oregon in 1971. I was the 1989 Oregon Engineer of the Year, and that's probably a sign that your getting older. In 1987, I was voted Business Associate of the Year by the American Business Women's Association. That's pretty famous. I was on the Board of the Bank of Corvallis for five years. I was Chairman of the United Way Fundraising Campaign in 1975.

Is that a charity that you're still involved with?

No, that's not a charity I'm still involved with. I got the whatever-it-is, the John Stotsell Award Volunteer of the Year Award for the United Way involvement. I was Vice Chair of the Boys and Girls Fundraising Program several years ago. I was [also] on the Board of the Good Samaritan Foundation for six years.

I was [also] the Capital Campaign Chairman for Old Mill Center, which is a preschool, it isn't a school anyways, it's a treatment center for children at risk and mostly preschoolers but now it's up through children through 18 years. For children at risk from all sorts of reasons including physical, mental, emotional abuse, rape and all the other things that are happening in our society today. I raised the money for the first building and I've been on that Board of Directors for 12 years and was Chairman for nine. I'm still involved in that and we're in the midst of another \$4 million fundraising effort to triple the size of that school. So that's been, for the last 12 years, my chief fundraising and local endeavor. And, it's been good for me, I think it's been good for the school, too.

Well, how do you actually do the fundraising?

Oh, it's a typical local fundraising, call people, and organize committees and cabinets and the like. And, in any fundraising endeavor now you've got to get-the top 20 contribute 80% of the money in these things. You'll drive yourself crazy trying to get \$1000 gifts from people because it takes an awful lot of \$1000 gifts to get the full four million dollars. So you have to concentrate on the big hitters, both foundations and corporations who give money in large chunks. And so, we're about 55% through that \$4 million fundraising effort. I think we'll get there but it's not going to be easy.

What have these community involvements, awards, and honors meant to you in your life and your career?

There's certainly some self-satisfaction in them. A lot of them are "If you live long enough you'll get them" type awards, you know. And they're not the reason I've done any of that.

What has been the reason?

Because I thought I needed to put something back in the community. And, I had the time and, quite frankly, it keeps me busy and active and thinking. It's as important for me as it is for them.

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..... *where the firm is going now? Talk about that a little bit.*

Well, that's about all I know but I listened to Ralph's talk the other day. His vision, for our firm, which is now about \$3 billion a year.

16,000 employees.

Yeah, to become a \$15 billion in nine years. Now, that's growth and yeah, that has to be done by acquisitions, you can't do it by just new hires, you just can't assimilate that many people. He sees that in terms of gas, energy, oil, international, and a lot of things we're not doing including more federal work, maybe more hazardous waste work, but certainly into new ventures of gas, oil, energy, and the big buck work, and far less local work. More like the Bechtels. And far more in construction and design build. And that's his vision, you can argue whether that's the way to go or not, and I sure would, but it doesn't make any difference.

What do you think?

Well, we're getting into a lot of businesses that I'm not really interested in. You've got to have some kind of a vision and Ralph's been very successful in this last 10 years that he's been there and the people I talk to seem to be motivated and happy at the way this firm's going. So you can't knock success.

What would you say are the biggest risks of that kind of vision or expansion? Over-extension?

Over-extension. Getting a bad killer job that you shouldn't have gotten, just because you think you can do anything that will lay still—and can't. But as long as we continue to build our financial base and all the related strengths that that entails, we could probably weather something pretty catastrophic. But those are the potential problems of getting major work that either was over-sold or under-staffed or something that really caused major financial problems.

Growth, of itself, isn't necessarily good. You got to produce more net income per employee or you're not doing the employees any benefits. All those things Ralph talked about the other day, you got to produce projects better and more economically and more in keeping with your multiplier or profit goals for each project so you can maximize your bottom line and all those things are no different than they were, 10-20-30 years ago.

And the ... new ownership program has achieved a far better financial base for the firm is a significant improvement and was instigated by Ralph and by the financial guys, Sam Iapalucci and the like, who I think has been a major benefit to the firm. And by the new ownership program, which allowed money to be stashed away for significant growth developments and investments.

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You must also be proud of your own career, it seems, too.

Yeah, I am.

-- and your accomplishments—what are you most proud of, would you say?

I'm just proud of the whole thing that happened. I'm very fortunate in that I'm one of the few people that worked, out of the billions that go to work everyday, that can't remember one day I didn't get up looking forward to going to work. Of course, there were some days I should have stayed in bed. But, it was fun, it was 45 years of fun.

Even with the challenges and sometimes the stresses—

Oh yeah. Well, you know, I had high blood pressure and all the other things that go along with it and somehow I proved that hard work doesn't necessarily kill you. Boredom does.

You're in pretty good health—

Yeah, boredom kills you. And we certainly didn't have any of that.

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