Andy Robertson arrived in Vancouver in August 1977, the same month that Neil Armstrong, the first man to walk on the moon, opened the Lookout Restaurant atop Harbour Centre, the city’s tallest building at 147 metres. Dubbed “the little village on the edge of the rainforest,” Vancouver, and Canada’s West Coast, was a far different place than conservative, racially divided Johannesburg. It was liberal writ large, Canada’s California, home to a healthy counterculture and a frontier’s entrepreneurial, caveat emptor ethics. Robertson’s marketing enthusiasm and ambition made the city the perfect place for him to make a landing.
The original plan envisioned Robertson becoming SRK’s representative in what would be a consulting partnership with Doug Piteau. Like so many best-laid plans, it was not to be. Robertson’s arrival was badly timed in terms of the demands and priorities Piteau was juggling. They had difficulty reaching agreement on everything from bailiwicks to direction; it proved impossible for the pals to forge a working relationship.

At the end of seven months, the two parted on good terms, agreeing to be amicable competitors rather than bitter colleagues. Under those less than auspicious circumstances, Robertson said, SRK Canada was born on April Fool’s Day, 1978.

Robertson immediately found an office on the North Shore, in West Vancouver’s Park Royal development. His wife, Renée, was the bookkeeper. He hired a couple of local engineers to help with the contracts he landed — Jim Robertson (no relation) and Paul Davis — so he could have some time free to continue marketing SRK. Jim Robertson jokes that he was the first North American employee even though he was hired second — he filled in the employment paperwork faster.

SRK was a three-man office for about 18 months, until the operation moved over to downtown Vancouver in the wake of Robertson’s unrelenting and successful campaign to give SRK a beachhead in North American markets. He worked tirelessly to expand SRK’s trapline, whether on the phone from his office or on the road in Toronto, San Francisco, New York, Denver — wherever mining companies were based. All the while, Robertson also acted as the principal engineer, doing designs and analysis for numerous projects.

Robertson started off with some mining work, notably for the waste dumps at the Island Copper Mine on Vancouver Island and the development of the tailings site selection and design work for a uranium prospect called Poison Basin in Wyoming.

In 1978, the firm probably did half its work in civil engineering, half in mining. But Robertson and SRK wanted to be as heavily involved in New World mining as they were with the African industry. They had the expertise and the technology. Now they needed clients.
A Toe in the Door

In South Africa, Robertson had built up an impressive résumé of civil engineering achievements, and had honed his skills as a consummate marketer of SRK’s services. But he was an outsider in Canada, and especially Vancouver, where a cliquey local civil engineering fraternity divvied up the major building, municipal and other civil contracts. It was an old boys’ club, and Robertson lacked the requisite school tie. He found it very difficult to find work outside of small jobs. But mining proved to be a much easier market to crack, especially given South Africa’s reputation as a hub for enviable, state-of-the-art industry technology.

Vancouver in those days had a reasonable amount of mining consulting work because of the large companies that maintained offices in the city and the members of the junior stock exchange. Robertson found them a lot more gregarious than the local municipal managers and developers. Civil engineering seemed to be a provincial affair, whereas mining in Vancouver was a global business. There was also an established consultancy culture. Robertson quickly learned that his experience and his South African accent were valuable assets. “If I flew in to look at a mining consulting job in Denver, or wherever, most of the other people who were coming to compete for that job were also flying in from somewhere else. It wasn’t so closed. I knew the geotechnics and they respected that. The rest was showing enthusiasm.”

He could do that in spades. Few could marshal as much information about tailings ponds and dams or could talk about them with such passion as Robertson, especially after the crash course he had received. He was also motivated. He was hungrier than his North American competitors: “They didn’t try very hard and they didn’t need to because they’d made their mark and could take time off and play golf, or fish, or swim or sail. Andy Robertson was there with four kids and six mouths to feed. I was ready to get out on a Saturday and a Sunday, work 15 hours a day. If you were prepared to do that and others weren’t, there was a good chance you could find the work. It came.”

Poison Basin Uranium
Another SRK Vancouver project for tailings site selection & design. Deposits were first discovered in 1953

Mt. Tolman Amax Mine
Caldwell solves engineering challenge of building a 300 m high tailings dam on top of 30 m of soft glacial mud
Tucson

Shortly after establishing the Vancouver office, Robertson decided it was time to act on the discussions he and SRK had been having with Rick Call. The men had become friends while graduate students at Wits and they remained in contact over the years, sharing professional insights. Steffen flew over to Vancouver and accompanied Robertson to Arizona for the exploratory meeting. A burly, bearded pipe-smoker, Call was a partner with Pincock, Allen & Holt (PA&H), one of Tucson’s premier mining consulting firms.

SRK’s vision was broader than having a single office in British Columbia. Steffen, Kirsten and Robertson, who remained in close weekly contact, wanted to see the firm operating across the continent and to use a strong North American presence as a springboard into other countries. They believed that Arizona and a partnership with PA&H made sense. Mining had been the state’s lifeblood since the 19th century — it was the second-largest copper producer in the country — and an office there seemed like a good idea.

Their nearly decade-long personal friendship with Call was the springboard. SRK and PA&H decided to form a joint venture, Robertson Pincock, Inc., which would handle tailings consulting. John Welsh was hired to be the manager.

A Midwesterner from Joplin, Missouri, Welsh graduated from the Missouri School of Mines in 1970, following three years in the military, with service in Vietnam as an infantry officer. Upon graduation, he joined the Climax Molybdenum Company in central Colorado as a construction engineer. Within a year, he was project engineer on the tailings impoundment system, and four years later, in charge of all surface construction at the mine. Welsh designed and oversaw the initial construction of what was the largest tailings impoundment in Colorado. He was a no-nonsense, hands-on guy.

In 1977, Welsh returned to school and earned a master’s degree in geotechnical engineering at Colorado State University at Fort Collins. In 1978, under the aegis of the school, he helped establish the first short course on tailings held in Denver. Robertson attended the course in late 1978 and was impressed. So was Welsh.

“Later, Andy asked if I wanted to work on a joint venture he was involved in down in Tucson,” Welsh remembers. “I did.”

After an interview with PA&H, Welsh flew to Tucson to begin work — in essence, he was SRK’s first U.S. employee.

“We were going to design tailings impoundments anywhere in the world except South Africa as an arm of PA&H,” he explains. “At that point, PA&H did not have any geotechnical engineering or tailings-dams design capability. The joint venture was to take advantage of SRK’s impoundment technology.”

SRK South Africa, which was backing the North American venture, sent Caldwell over to buttress the company’s presence at a tailings conference in Denver. He arrived with Fritz Wagener and Gary Rae, of Fraser Alexander, to impress the North American audience with the breadth and depth of the firm’s expertise. They flew down to Tucson to continue the relationship building with the principal partner, Kay Pincock, and Call.
The joint venture was a big success.

“We started using former SRK South Africa employee Dirk van Zyl, who was at that point in late 1978 finishing his PhD at Purdue, and some of the Vancouver staff,” Welsh says. “Within a year, we grew from that core group to where Robertson Pincock had about 12 engineers and technicians.”

Van Zyl had left South Africa in 1975 with every intention of returning home when he was done. Robertson called out of the blue and asked if van Zyl was up to doing fieldwork on a tailings project.

“I was sort of stagnating on my degree, so it was a good way to clear my head,” van Zyl says. “My wife and I packed up and drove out to Wyoming with our three-month-old. I worked in the field for a month or so and then we drove up to Vancouver. I worked with Andy in the North Shore office and then went back to finish my PhD in 1979.”

Van Zyl’s revised plan was to complete his doctorate, return to South Africa with his family, deal with their household possessions that were in storage, apply to immigrate and join the Tucson joint venture within six months. He liked working for SRK and he liked the group of people gathering around Robertson in North America.

One of the big clients that Robertson Pincock landed was the Amax Mine at Mount Tolman on the Colville Confederated Tribes territory in northeastern Washington. There were an estimated 900 million tons of low-grade copper-molybdenum at the site, and Amax envisioned the largest extraction operation in the world. The tailings impoundment was to be built in a flat valley covered by 30 metres of soft glacial mud. That posed a big problem — how do you build a 300-metre-high impoundment on such an unstable foundation?

Robertson thought the project was nearly identical to one Jack Caldwell had recently completed in South Africa — the construction of the Triomf Fertilizer gypsum impoundment at Richards Bay. It was built atop near identical goop — 30 metres of soft mud — and you sank to your ankles trying to walk across it. As at Bafokeng, Caldwell came up with a solution.

“I was probably the only one in the world, frankly, who had much practical experience building on soft mud when Andy called me,” Caldwell says. “There was another guy who was doing similar things trying to build roadways in Quebec and a professor at the Imperial College London who knew the theory. But I had practical experience. It was technology I understood.”

When Robertson told Amax he had someone who might have a solution to the Mount Tolman problem, the client said to get him fast.

“Andy phoned on a Sunday night and said, ‘Can you be in Tucson on Monday?’” Caldwell remembers. “I said, ‘I don’t know, I have to speak to Oskar.’ He said, ‘I’ve already done it. He’s agreed.’ So I flew to Tucson.”

It was a good example of how the South African operation served as a backstop and resource pool.

An abrupt and unexpected change in management control at PA&H, however, led to a collapse of the joint venture in December 1979. Harry Winters persuaded Kay Pincock to assume control and active management of the firm by ousting the junior shareholders/partners in both PA&H and Robertson Pincock. Rick Call, Robertson and SRK were unceremoniously dumped.
Call went on to form the Call and Nicholas Group, specializing in rock mechanics. Robertson packed up, asked Welsh to join him as president of a new SRK incarnation in Denver and told Caldwell to learn Canadian. He was hoping a few of the large projects and big clients would follow them to Denver and he had work in Vancouver for Caldwell.

In Johannesburg, van Zyl picked up the phone: “Dirk, I’m sorry,” Robertson began, “but don’t worry, I’ll have another project or two quickly. We’re moving to Denver. As soon as I do, I want you to come and help.”

Van Zyl had already shipped his car from Indiana to Tucson. He told his wife the move wasn’t going to happen quite on schedule. In April 1980, because it was easier for his family to immigrate to Canada than to the U.S., van Zyl arrived in Vancouver.

“We had landed immigrant status in Canada, but I was working in Denver,” van Zyl laughs. “We did an intercompany transfer from South Africa, so I’d officially work in Vancouver and then get transferred to Denver.”

In Tucson, Caldwell bought a Toyota Corolla, because Toyota was the only car company that would finance a man with no job and about to decamp to Canada. He packed his three kids in the car and headed north. A week after the historic May 18, 1980, eruption of Mt. St. Helens in Washington State, Caldwell joined van Zyl in the Canadian office, which now housed about 12 people, all working flat out.

**Denver**

In those days, Denver was still a mining mecca. All the major U.S. companies maintained offices there, as did the big consulting firms that specialised in metal and mineral mines. There were professional societies and academics in abundance studying mining and developing new technologies. The fraternity was all present and as close culturally as in South Africa.

Robertson and Welsh took over the old Robertson Pincock office in Denver, vacant with the demise of the joint venture. The Tucson debacle taught the two men an important lesson — no more joint ventures. SRK would be in charge from now on, they agreed. Both saw Denver as a prime opportunity. Robertson commuted biweekly from Vancouver so he could spend more time in the U.S. exhorting, leading, managing and planning — essentially building SRK’s presence across the continent. While Robertson searched for work, Welsh flew to Johannesburg to spend six weeks in South Africa to see how the “home office” did things.

“At that point, I think SRK had roughly 70 employees in South Africa,” he recalls. “It was doing well and beginning to subdivide into various divisions. I spent some time in each of the divisions and remote project offices. SRK in those days was still very much run by the three principals, because they were the dominant shareholders. Division heads and company officers like myself needed to convince those three principals that what we wanted to do was good for the whole company. The only true satellite office or operation was Robertson’s Vancouver office, and our U.S. office was essentially a second-tier subsidiary of the Canadian office.”

Welsh liked the model SRK had created in which individuals were developing their own practices, doing a wide range of work. Some were working together on different aspects of a project as part of a team; some...
were doing their own thing completely. There was a vibrant energy about the office and the Friday night sessions were an incredible team-building exercise without anyone realizing it. Welsh understood what Robertson wanted to emulate in North America.

“Robertson was the most expansion-minded of the partners but I believe the flavour of the company was set mostly by Oskar Steffen, who was the clear leader of the whole entity — a highly respected and very human person to work for,” Welsh fondly remembers. “I enjoyed my mentorship under Andy and Oskar and to a lesser extent Hendrik — not to diminish Hendrik; I just spent more time with Andy and Oskar. I enjoyed the camaraderie of the senior staff.”

Amax was one of the big companies that remained committed to SRK in Denver. With the mine at Mount Tolman, it became an anchor client for SRK in the U.S. The dam there grew to 1,000 feet in height on paper. Unfortunately, the mine was shelved in December 1981. Regardless, the North American practice started to grow and other SRK engineers from South Africa, such as Tony Crews, Rob Dorey, Allan Moss and Adrian Smith, arrived to spur it on.

There was a major global expansion of metal and uranium projects at that time, and within a year the North American offices were working on several large tailings design contracts.

“Opening the Denver office was a great move,” Robertson says. “In the first two years of the 1980s, there was more work than anyone could do. By the end of 1981, Denver and Vancouver had about 12 or 13 people each.”

Denver also started a soils laboratory under the direction of Juan Rodriquez and a U.S. version of GEMS under the direction of George Chedsey.

**Crossing the Atlantic**

Van Zyl had been working in Denver for about a year when Robertson asked him to lead another foray into Tucson for SRK. The Colorado office was doing well, and all the reasons that originally compelled SRK to be in Tucson continued to hold sway. Van Zyl still thinks he should have known the idea was jinxed, given the company’s history there. “On the day I arrived — March 30, 1981 — I walked into the hotel and everyone was glued to a TV screen — John Hinckley Jr. had shot President Ronald Reagan. I thought, this is not going to inspire confidence in the economy and be good for business.”

Nevertheless, van Zyl arranged to share an office with SRK’s former Tucson joint-venture partner, Rick Call.

“His company had really good people,” van Zyl says. “But I just couldn’t get any projects going down there. I tried and tried without luck. We were ahead of the game. I would propose methods that people thought were too way-out. It’s a very conservative industry and the first question I heard was: Where else has it been used? If you can’t answer that, they’re not going to be the first. We were into state-of-the-art solutions and proprietary ideas. I couldn’t make it work.”

About 18 months after his arrival, Robertson told van Zyl to come back to Denver, where there was work available. But with a home and a life already established in the southwest, van Zyl decided to join the University of Arizona. He continued to work with SRK on contracts because he loved the people.
U.S. Growth

Given SRK’s success in the field elsewhere, Robertson saw an opportunity and recruited Ian Hutchison, another former South African, to create a hydrology and groundwater practice in the Denver office.

Born in Johannesburg, Hutchison had trained in civil engineering in Cape Town before doing graduate work at Wits. That’s where he met Steffen and Robertson — Steffen was lecturing and Robertson was finishing his PhD. Hutchison even did some freelance work for Robertson. But he immigrated to Canada in 1976 after finishing his PhD and went to work for Acres International Ltd., a major consulting firm based in Niagara Falls, Ontario.

“Acres worked on hydroelectric plants in Canada, irrigation developments in South America and harbour developments in Peru,” Hutchison says. “I ended up moving to the Buffalo office of Acres and running the hydraulics department. Andy and I kept in touch, and he approached me in 1981 to join SRK in Denver.”

Hutchison jumped at the chance to move to a smaller, more dynamic company and warmer climes.

“I wasn’t disappointed, and soon helped Andy develop mine-water balance and treatment work,” he says. “We even did a study for the US Forest Service to determine how much more water they could generate in the local rivers if they reduced the number of trees in the Rocky Mountains!”

Hutchison was the engineer of record on the 300-foot-high tailings dam at Wenatchee, Washington, that Caldwell designed. Later, he was heavily involved in the design of the proposed tailings dams on soft clay at the Greens Creek Project on Admiralty Island in Alaska.

Mike Henderson, who had worked with Welsh at Climax in Colorado, arrived as well. The dream of SRK establishing a viable foothold as a consulting firm in North America was becoming a reality. Work flowed between Denver, Vancouver and Johannesburg, depending on where the expertise lay, as if they were one company. It remained for all intents and purposes a family-style company in which you could know everyone else and the ties to South Africa remained organic, strong and nurtured.

For instance, SRK US had as a client the planned Thompson Creek Molybdenum Mine in Idaho’s historic mining area in the mountains of Custer County, 35 miles southwest of Challis. It was a very large job in the upper Salmon River drainage basin. Tapping the talent available in Vancouver, Welsh sent most of the initial work to Rob Dorey, who had moved there from the South African office to help Robertson on a project.
Since joining SRK half a decade earlier, Dorey had taken time to go to the University of Cambridge to do postgrad work in advanced geomechanics — achieving a master of philosophy in soil mechanics. He so impressed Welsh that the American asked Dorey to move to Denver. Work for the Thompson Creek Mine, which opened in 1983, kept the U.S. office thriving for years.

Caldwell wrote regular letters back to Steffen as if he were an immigrant’s son telling the folks back home not to worry, they were all doing fine.

“I have been in Vancouver for over a month,” he wrote in one. “Andy has moved from the office on the 8th floor to space on Robson Street, and has thus established SRK International offices. I moved into an office overlooking the Burrard Inlet, Stanley Park, the hills to the north and the beauty that is Vancouver … To more important matters, such as jobs. Mt. Tolman was visited last Monday. We have been asked to write our own contract with them. They intend to build the tailings impoundment themselves and thus we will be at the elbow to advise. Bill Brown and I are busy setting up a dewatering scheme to enable them to excavate the alluvial soils in the valleys where the rock embankments will go.

“We are all busy on Thompson Creek, too. Rob Dorey is responsible for the design of three 70-foot-high sediment dams at the base of the rock dumps. Cam Scott is doing a 60-foot-high seepage return dam at the base of the tailings impoundment. Allan Moss is settling in, although he is somewhat shell-shocked to find he has to beat the market-place for work. He is transitioning from the comfort of the big SRK in South Africa where he could always blame ‘the company’ to the tiny SRK British Columbia where ‘the company’ is him, me, Andy and there is no amorphous ‘they’ running things — simply a few young individuals of whom he is one.”

Everyone believed the North American offices were beginning to flourish and that the first tentative step to expand globally was a success.

“There were some bumps, it wasn’t all absolute smooth sailing,” Welsh says. “There were some challenging times where it was difficult to keep everyone fully billable, but we had the luxury that we were working on some major projects that carried on through that time, so we grew fast and kind of stabilised.”
PROJECT: Island Copper Mine
Seepage Barrier Wall Design and Construction Supervision, Port Hardy, B.C., Canada

CLIENT: BHP-Utah Mines Limited

SCOPE: The Island Copper Mine was a 50,000-tonne per day, open-pit mine that operated from 1971 to 1995 on the shoreline of Rupert Inlet. By the mid-1980s, the pit was 300 metres deep, and its rim was within 30 metres of the original shoreline and 1,200 metres of the new shoreline, formed by dumped waste rock.

The project goal was to access additional ore by establishing a new pit rim in the waste-rock dump, more than 100 metres beyond the original shoreline. To prevent excessive seepage from Rupert Inlet into the pit, it would be necessary to install a 1,250-metre-long wall through up to 32 metres of permeable waste rock (with boulders up to the size of Volkswagen Beetles), beach deposits and till strata.

Following a comprehensive options review, SRK and Woodward-Clyde Consultants co-designed a plastic concrete wall with a complementary system of monitoring wells in the pit slope and a seepage collection system at the pit rim.

OUTCOME: The slurry wall was completed in 1989. Its construction enabled the pit’s expansion and the recovery of an additional 67 million tonnes of mill feed, prolonging the mine’s life by approximately four years. In recognition of their work on the seepage barrier wall, SRK and Woodward-Clyde shared the 1992 Engineering Excellence Award for Special Projects over $10 Million, presented by the Consulting Engineers Council of Colorado.

above: When the mine was closed, the pit was flooded with water from Rupert Inlet — creating the highest salt water waterfall in history. The anoxic bottom water of this new lake was the perfect environment to neutralise the acid rock drainage from the mine.

photo: UVic Archives/ESA

right: The hatched area along the left edge of the pit shows the position of the pit crest prior to pushback and the ultimate crest after installation of the 24-metre-deep cutoff wall that prevented salt water intrusion into the expanded pit.

This pushback allowed the pit to be mined to its final depth. Extraction of the ore at the base of the pit ensured the economic viability of the project.
Good Times, Tough Times

Island Copper Mine, at Port Hardy on Vancouver Island, was one of the first big contracts Robertson landed in Canada. It was a lengthy project that required incredible innovation over the years because of the potential for the ocean to breach the waste-rock dump and flood the pit.

The open-pit mine was the third-largest in Canada, the deepest below sea level in the world — a 50,000-tonne-a-day operation that opened in 1971. More than 1 billion tonnes of rock were removed and processed to produce more than 1.3 million tonnes of copper, 31,000 tonnes of molybdenum, 31.7 tonnes of gold, 336 tonnes of silver and 27 tonnes of rhenium by the time it closed in 1995.

Over the years, its life was extended with the help of SRK. For instance, to prevent an inrush of water through the coarse waste rock and over the pit crest, it was necessary at one point to install a 24-metre-deep cutoff wall through the waste rock that contained boulders the size of VW Beetles. SRK worked with another famous geotechnical firm, the Woodward-Clyde Group Inc., to design and supervise construction of this cutoff wall. It was an innovative, masterful feat of engineering that proved to be effective and environmentally safe.

When the mine was closed, the pit was flooded to create a three-layer meromictic lake to control the acidic, metal-contaminated drainage from on-land waste-rock dumps. The discharge met all provincial criteria.

Robertson also secured the job of geotechnical engineer for the Greens Creek Mine on Admiralty Island in Alaska, owned jointly by Kennecott Corp. and Hecla Mining Corp. The area was rich in silver, gold, lead and zinc. Caldwell spent the summers of 1981 and 1982 on the site doing fieldwork. In tropical Africa, tailings ponds worked well because the high rate of evaporation quickly solidified the mass. Robertson,
Caldwell and others at SRK struggled to find a way to deposit wet tailings into a wet environment, until Robertson came up with the idea of filter-pressing them, adding a bit of cement and depositing the mass to dry. It would be years before that idea of so-called filtered or paste tailings gained currency. However, the benefits were evident — a supply of material for underground backfill, a smaller development footprint and reduced initial capital cost.

In spite of the work that went into the design, though, panic still ensued during the initial excavation.

Robertson specified cuts into the glacial materials of the valley. As work began at the toe of the slope, the area above the face started to give way — moving a few centimetres a day. Robertson re-examined the logs, identified ancient landslides and suggested the mine try installing horizontal drains into the slope. The first hole passed through clay and hit gravel. Water gushed out. Another hole, another gusher. With the water draining out, the slope didn’t collapse quite so fast, but it continued to slide.

Eventually, Robertson persuaded the mine to quickly drill numerous horizontal holes. The slide slowed, and finally stopped. It was a triumph. The mill was built, the holes extended, and the design continued to perform as designed.

That was the kind of work Robertson loved to do.

Big ideas, big projects.
Unfortunately, it all came grinding to a halt as markets plummeted. The economic bubble burst in late 1982, with the crash of commodity prices.

Everyone suffered. Within about three months, two-thirds of SRK’s projects in Canada were cancelled. Robertson walked gloomily into Caldwell’s office and slumped into a chair.

“Jack, you may have to lay off everybody, including you and me.”

It was brutal. On November 1, 1982, Robertson cut everyone’s pay. There were fears the entire North American operation would go under.

“With three kids, an 18.5 percent adjustable mortgage and no income, I did the only thing possible,” Caldwell remembers. “I phoned Oskar, who said, ‘Come back to South Africa.’”

The South African practice, which had expanded to well over 100 professionals and support staff, welcomed back Caldwell and Adrian Smith. It also provided some financial support to Robertson. In Denver, the office had enough projects to keep everyone almost fully billable, and they found work for Allan Moss. With temporary staff transfers, Vancouver managed to survive the recession with only one professional layoff and one staff member on temporary leave without pay for six weeks. The way the units supported each other spoke to the family relationship that continued to exist.

The slump staggered Robertson. It was his first major setback in life and it scared him. The enthusiasm and the energy remained, but it was no longer unalloyed — it had been tempered by a major injection of healthy market realism.

**ROBERTSON:**

“JACK, YOU MAY HAVE TO LAY OFF EVERYBODY, INCLUDING YOU AND ME.”
“We had 17 percent unemployment among the professional engineers in Vancouver, and that was the people who registered as unemployed,” he says. “We probably had another 15 percent or 20 percent underemployed. We shrank back from 13 to 8 in Vancouver over a period of about 18 months. It was tough. For the first time in my life, I’d lie in bed and sweat at night. How the hell am I going to get through tomorrow? So many mouths to feed.”

Jim Robertson said that, at its worst, three-quarters of SRK’s office space was empty.

“We sublet some to other businesses,” he says, “but we had this big open area of drafting tables that was empty. We could play Frisbee. Andy would let us come in and produce resumés and job applications. I got on the short list for a coal project in northeastern B.C., which never came to anything. We survived.”

Robertson landed a quarry job, in the Interior of the province near Cache Creek, partnering with Clifton Associates in Saskatoon. Jim Robertson went up as the site engineer for nine months, and when he came back, they sent him to Denver. He returned to Canada to work on the decommissioning of the Beaverlodge Mine in northern Saskatchewan.

Uranium had been discovered in the Beaverlodge area in the 1930s, and from 1952 to 1982 Eldorado Resources, a federal Crown corporation, mined and milled the resource. With SRK’s involvement, a decommissioning plan was approved by regulatory agencies and carried out from 1982 to 1985, making Beaverlodge the first Canadian uranium mine to be formally shuttered in accordance with a closure plan.

The job had a legacy impact and it marked a turning point for SRK in Canada; the company was on the way back and work was returning. The Thompson Mine in Manitoba hired SRK to take advantage of its unique and South African—developed MBEM three-dimensional stress analysis program (a product of Tony Diering’s doctoral research work), which was capable of modeling both the narrow tabular ore body and the three-dimensional open pit. Other clients were right behind as the market began to rebound.

The U.S. operation remained strong with contracts for the design of a tailings dam, sediment dams and waste-rock disposal facilities at the McLaughlin gold mine in central California and for construction supervision for the Thompson Creek molybdenum mine in Idaho. These projects led to the hiring of additional geotechnical engineers Clint Strachan and Don Poulter, who were assisted by staff from Vancouver.
PROJECT: Greens Creek
Dry Stack Tailings Storage Facilities, Admiralty Island, Alaska

CLIENT: Kennecott Greens Creek Mining Company

SCOPE: In the 1980s, SRK was commissioned to identify potential tailings storage sites and to produce conceptual designs for the preferred site, based on various tailings disposal methodologies. Site selection was complicated by the rugged terrain and the mine’s location within Admiralty Island National Monument. Over time, the scope evolved to include design and construction supervision of the starter dam and related facilities.

As part of the feasibility-level design studies, SRK evaluated different options to overcome difficult site conditions and minimise the surface area of the tailings facility. The company assessed both wet and dry tailings disposal systems and determined that a dry facility, with its smaller footprint, could be located over the site’s most stable foundation soils. Another benefit would be the use of the filtered dry tailings in the production of underground backfill.

In view of the environmental and economic benefits, a dry tailings facility was selected for final design. SRK conducted comprehensive stability and other studies, designing a stable and cost-effective tailings storage facility. SRK supervised construction of the starter facilities.

OUTCOME: The mine started up in 1988, and SRK provided ongoing consulting services until 1996.
Back to Good Times

Asamera Minerals, a Canadian mining company, hired SRK to design a tailings impoundment for its planned Cannon Gold Mine in Wenatchee, Washington. Robertson called Caldwell in South Africa, telling him to fly back to North America and come straight to the site — it was going to be a big dam.

“I remember the engineer was a huge German guy,” Caldwell says. “I told him we would need to do some drilling and soil tests, the usual thing. He stared at me. ‘Oh no!’ the big German bellowed after a long silence. ‘All that’s civil engineering nonsense. We are miners. We dig holes as we build and we respond to what we see. You will come down here, live here and work here. We will do it like a mining job.’”

Caldwell and his family spent two years at Leavenworth while he oversaw the building of a 340-foot dam — the highest privately owned dam in the state.

“For 12 years the tailings were hydraulically discharged into the impoundment,” he says. “Then a soil cover was placed on top and the surrounding area reclaimed.”

Today, thanks to numerous people from SRK, the area is the Dry Gulch Riding Stable and the project has received numerous awards.

It was also lucrative for SRK. Almost two years later, the North American operation had recovered fully from the recession.