



100 Years of Construction Excellence

A compilation of historical stories on the
PCL family of companies

From the book:
“The PCL Story: Our First 100 Years”
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Table of Contents

ORIGINS.....	1
MAKING EDMONTON HOME.....	2
NEW HORIZONS.....	3
PCL EDMONTON ESTABLISHED 1932.....	4
THE OXFORD CONNECTION	6
PCL CALGARY ESTABLISHED 1947.....	7
POOLE FAMILY SUCCESSION	9
REDEFINING BORDERS.....	10
THE RIGHT TIME: EMPLOYEE OWNERSHIP	11
THE STORY OF CIVIL	13
THE WORLD OF INDUSTRIAL.....	18

ORIGINS

Ernest E. Poole was just 19 years old when he and several friends joined a 'harvest excursion,' a train loaded with able-bodied young men from central Canada and the Maritimes, all seeking summer jobs in the new West. So began a journey that ultimately led to the building of one of North America's construction giants.

In the spring of 1906 he formed a partnership with James Martin and they commenced contracting under the name of *Martin and Poole*.

During the summer of 1906 Martin and Poole recruited two brothers, Silas and James Lamont, to help them as carpenters. As the successful building season drew to a close in the small farming community of Stoughton, Saskatchewan, James Martin returned to Prince Edward Island to retire, leaving Ernest to commence business under his own name – **E.E. Poole General Contractor**.

"We specialized in building brick schools, town halls, banks and stores throughout Saskatchewan and into Manitoba. Over the next few years the work was fairly profitable because the local small contractors could not handle it and the larger contractors in Regina did not pay it any attention," explained Ernest Poole.

In 1910 company headquarters were moved to Rouleau, one of the most active small towns in Saskatchewan at that time. Over the next few summers Poole kept a crew of about 30 carpenters busy working throughout the province.

John Poole said of his father, "I remember him relating the tale that during one summer at Rouleau he was overwhelmed with work. He needed two good finishing carpenters to meet his commitment so he went into Regina and hired himself on as a carpenter at the biggest job in town. He worked one full day while observing his fellow workers and at the end of the day he hired the two best carpenters and took them back to Rouleau."

Poole constructed buildings that were typical of the prairie landscape at the time. Branch railway lines were still being built and towns were growing up around them every few miles. The change from steam to diesel locomotives and from horse-drawn carriages to motorized vehicles later caused many of the little towns to dry up and disappear.

In 1920 Poole secured a three million dollar contract for the Weyburn psychiatric hospital, by far the largest project undertaken up to that time by the company. Over four million bricks and 1.25 million feet of rough timber were used in construction and the building covered nearly six acres; its base is just eight feet short of spanning one mile.

They followed up a year later with a two million dollar contract for the provincial 'gaol' (jail) at Prince Albert, Saskatchewan.

MAKING EDMONTON HOME

Having constructed several landmark buildings in Alberta, Ernest Poole was well positioned to relocate the company's head office to **Edmonton in 1932**. Poole was a big operation in Regina, with a significant number of employees in both the office and an equipment repair facility, but Ernest liked Edmonton and had long thought it would be a good place to build his business. Once he made up his mind, he pulled up stakes and made the move. Poole's new head office was established in Room 733 in Edmonton's downtown Tegler Building.

Even when there wasn't any building work, Ernie Poole would find something to keep his superintendents going. "He was very strong on the idea of loyalty, and it went both ways," recalled Harry Ellenwood, a carpenter who had followed Ernest from Regina. "Mr. Poole acquired many of the really good tradesmen in Edmonton by going out and finding jobs. I used to chase the fire engines. Mr. Poole gave my phone number to the fire department. I kept a half-ton truck at home with nails and plywood sheeting. I'd follow the sirens and board up the damage and most of the time the insurance company would give us the repair job."

Just when the company was in desperate need it landed the contract for the Corona Hotel, a reinforced concrete building in downtown Edmonton. "The only thing Mr. Poole had going in Edmonton in 1932 was the Corona Hotel. That was because a gas explosion had blown up the old one. He had a crew of 25 and all were superintendents. I didn't have a trade so they put me to work polishing concrete with a carborundum stone," said Sol Slominski, a 40-year Poole employee.

Today, the PCL Business Park on 54th Avenue and 99th Street is home to the **North American Headquarters**. The Corporate Office group of more than 100 employees support PCL operations in 26 major locations across Canada, continental North America, the Hawaiian Islands and the Bahamas.



In 1922 a small office was opened in Edmonton, Alberta with the Edmonton Public Library its first job.

NEW HORIZONS

Canadian Buildings Operations

During the 1950s Canadian prairie farms were transformed as oil and gas discoveries brought new wealth to Alberta and the province flourished with an influx of people arriving to meet the demands of petroleum-based industries. In grain-rich Saskatchewan and Manitoba similar patterns of post-war population growth unfolded, while Vancouver, situated on Canada's west coast, was destined to become the jewel of the Pacific.

Over the next few decades Poole constructed many schools, colleges and universities across the west as war babies grew up. Hospitals and churches, residential complexes, government and commercial buildings and the infrastructure to support all these community facilities created an unprecedented demand for construction.

And so it was that Poole Construction built on its existing western Canadian offices and established new district operations that would carry the PCL name into the twenty-first century.

In order of their founding, PCL's western Canadian districts are:

- Saskatchewan 1906
- Edmonton 1932
- Calgary 1947
- Winnipeg 1965
- B.C. Region 1975

The development of Canada's North is a special story that encompassed 17 years in the life of Bob Stollery. Beginning in 1957 he led the transformation of a barren parcel of land in the Northwest Territories into the town of Inuvik. Herein is a saga of isolation and hardship, but a tribute to the spirit of the Poole people who were pioneers in the adventure.

The visionary leadership of Bob Stollery, Nick Oneschuk and Jock Dawe prompted PCL to follow Oxford to Halifax in the 1960s and Toronto in the early 1970s, enabling PCL to serve its most important client. Today PCL Toronto has emerged as the organization's largest operation. In 1989 PCL entered the marketplace in Ottawa. Notably PCL Ottawa established the framework for a new dimension in the PCL family of companies by successfully negotiating a major contract entirely in French. PCL has left its signature on many of the landmark public buildings in Canada's capital region. Expanding beyond central Canada to the Maritimes, although Poole had worked on the east coast several times since the 1960s, it was an innovative public-private partnership agreement that led PCL to put down roots in Halifax at the millennium.

PCL's Central Canada and Maritime operations were formally established as follows:

- Toronto 1983
- Ottawa 1990
- Atlantic Canada 2002

Everyone who has contributed to PCL over the last half century has helped to define the distinct personality of each district. The stories of those who built PCL's Canadian buildings operations are as varied as the regions in which they lived and worked.

*(For historical information on Canadian PCL operations not described below,
please contact Wade Wilson by email at wwilson@pcl.com)*

PCL Edmonton established 1932

*(Also see the **Oxford Connection** immediately following this section)*

When the **University of Alberta** contracted Poole Construction to build its hockey arena in 1944, it began a relationship that would bridge the millennium. Poole began extensive civil work in 1948 in preparation for an aggressive long-term building plan. Concurrently, it constructed the **students' union building** and by 1950 had completed the landmark **Rutherford Library**. Spanning seven decades of almost continuous construction PCL has built more than half the major buildings and facilities on the Edmonton campus. The loyal tradition lives on today.

With the dawn of the 1960s all post-secondary schools faced pressures of rising enrolment. In 1968 Poole built a large expansion for the **Northern Alberta Institute of Technology** and completed various other projects over the next 30 years, most recently the school's state-of-the-art **HP Centre for Information and Communications Technology**. The **Alberta Vocational Centre** was completed in 1970, and over a 20-year span the company built all four campuses of Edmonton's **Grant MacEwan College**, including a reenergized **Alberta College** to replace the original that Poole built in 1926 and the landmark **City Centre Campus** in 1993.

PCL broke ground for the **Walter C. Mackenzie (WCM) Health Sciences Centre** at the University of Alberta in 1977. It was the beginning of a dream to integrate advanced research with regionalized public health care delivery in an area serving 1.5 million people. Subsequent redevelopment projects and substantial expansions spanned the millennium. PCL Edmonton continues to provide construction management services to the regional health authority for the city's two largest hospitals, the **WCM Health Sciences Centre** and the **Royal Alexandra Hospital**.

One project of which PCL is most proud is the **Stollery Children's Hospital**, made possible through the generosity of Bob and Shirley Stollery. Giving well beyond a financial commitment, the Stollery family takes an active interest in the remarkable medical discoveries and improvements that contribute to the care of seriously ill children who travel from distant points for treatment. This outstanding 'hospital within a hospital' is encompassed as a separate facility in the WCM Health Sciences Centre.

In oil-rich Alberta, investor confidence led to an unprecedented building boom from the mid-sixties until it came to a crushing halt with the introduction of the federally imposed National Energy Program in 1980. In 1965 Poole demolished the **Edmonton Public Library** that it had built in 1922 to replace it with the **Alberta Government Telephones (AGT) Tower**.

Over the ensuing decade the organization erected numerous office complexes and professional buildings, but the biggest change in the city's downtown core came in 1972 with the start of **Edmonton Centre**, a premier business and retail development. It was one of Alberta's largest indoor office and commercial developments and a flagship project for both Poole and Oxford. Comprising a total 650,000 square feet of retail space, four office towers, the **Four Seasons hotel** and parking garages, the complex was built in four phases and took ten years to complete at a cost exceeding \$150 million.

Construction of the world's largest indoor shopping center began in June 1980 when Edmonton's Triple Five Corporation broke ground for **West Edmonton Mall (WEM)**. PCL Edmonton built the project in four phases spanning 19 years. The mammoth mall was completed in May 1999 at a cost in the billions of dollars. Encompassing five million square feet set on a 121-acre site, WEM houses 800 retail spaces and commercial establishments, a hotel, a world-class amusement park and family water park, plus a national hockey league-sized ice arena, a casino and other entertainment facilities.

Two interesting downtown developments were underway in Edmonton in 1982 – **Manulife Place** and the **Brownlee Building**. Manulife Place is a centrally-located 36-story office complex. At the time of construction the tower reached the maximum height allowed in the city as it was in the flight path of one of Edmonton's two airports, so PCL employed a Linden flat top crane that would stay within the allowable limits. The 10-story John E. Brownlee building was constructed with a unique concrete tree system rather than the more typical slab and beam method.

A **joint venture of PCL and Maxam** began in 1983 in response to a dramatic shift in demands for construction services in the Alberta and Saskatchewan marketplaces. What began as Fidelity-Maxam, a Joint Venture became PCL-Maxam when Fidelity's name was changed to PCL Construction Management Inc. By combining the management expertise of PCL Construction Management Inc. with the skilled workforce available through Maxam Contracting Ltd., the joint venture gained a significant portion of the market. Today the companies continue to joint venture on the majority of building projects in both provinces. Maxam subcontracts a portion of today's workforce to an independent third party labor supply company called Coram Construction.

The **Francis Winspear Centre for Music** is a remarkable gem that resides in downtown Edmonton. Architectural standards of excellence were matched by the on-site commitment of every worker involved.

In 1998, after the acquisition, Forest Construction built a new **multi-level parking garage at the Edmonton International Airport** as the first stage of a planned \$300-million terminal redevelopment and expansion. PCL-Maxam, a Joint Venture undertook the next phase, which was construction of a new terminal, and subsequently built a central hall and concourse to connect the existing and new terminals. Combined with a refit of the original facility, the entire task encompassed seven years.

PCL Edmonton's Special Projects division undertakes work of varying kinds and scope including the **historical renovation of Edmonton's W.W. Arcade Building** in 1993. The refurbishing was accomplished by cleaning badly weathered and paint-laden brick, then replacing it with the interior side facing outwards to ensure consistency with existing brickwork. On completion, PCL was engaged by the city's governing body to provide continued maintenance on the building. Finishing and detail work is a specialty of the team. Edmonton's **Scotia Place lobby and the 101 Street retail overpass pedway**, which links Edmonton's Manulife Place and Edmonton Centre multi-use complexes, are representative of such projects. The division also maintains significant work for repeat clients such as national client **Bank of Montreal (BMO)** and **Fairmont Hotels and Resorts Inc.**, for which PCL completed an extensive renovation of the fine **Edith Cavell dining room facility at the Jasper Park Lodge**.

A distinct honor for the Special Projects division was to undertake the **Lois Hole Memorial Garden project** in recognition of the enormous affection the people of Alberta shared for their Lieutenant Governor, who passed away in 2005.

Approaching its centennial year PCL had cranes on virtually every corner of the **University of Alberta** campus. The **Electrical and Computer Engineering Research Facility (ECERF)** was completed in 2002. Another part of the faculty's development in that area included the **Engineering Teaching and Learning Complex (ETLC)**. The **Civil and Environmental Engineering Building** was delivered in 2004.

At the leading edge of scientific research at the molecular level is the **National Institute of Nanotechnology**, a prestigious institute accommodating more than 320 scientists, engineers, students, and administrators under the auspices of the National Research Council in collaboration with the University of Alberta.

Servicing another highly technical discipline on campus is the **Health Research Innovation Facility (HRIF)**. The first phase, to be completed in 2006, adjoins the **Heritage Medical Research Centre** constructed by PCL in 1986. And so the work continues.

In 2005 PCL was a lead member of the consortium that commenced construction on the **Anthony Henday Drive Southeast Leg Ring Road** project in Edmonton. It is the first highway/infrastructure to be built as a public-private partnership (P3) and the largest single highway design-build contract let by the Province of Alberta. The project entails approximately seven miles of four- and six-lane divided roadway with auxiliary and crossroad accesses, five interchanges and 24 bridge structures. PCL Construction Management Inc. is the prime contractor responsible for the design-build portion and PCL-Maxam, a Joint Venture is the subcontractor responsible for the construction of the bridge structures. The project will be delivered in fall 2007.

THE OXFORD CONNECTION

Client of the 20th Century

Recognizing the tremendous value of an unsurpassed relationship, PCL named **G. Donald Love**, president and chief executive officer of Oxford Development Group Ltd., its ‘Client of the 20th Century.’ A unique window in time was created by Don Love, fostered by John and George Poole and perpetuated by the Oxford and PCL organizations respectively. Where Oxford led, PCL followed.

Ultimately the relationship between Oxford Developments and the Poole/PCL family of companies would span more than four decades, encompass more than four billion dollars in development projects and reach across North America.

The three young men (*Don Love and John and George Poole*) started a new company called ‘POLO’ – PO for Poole and LO for Love. The trio secured a mortgage and built the Baker Clinic, which they then sold back to the doctors for a \$25,000 profit. They were officially in the development business.

Starting on their home turf, Poole’s first project for Oxford was **Edmonton’s Essex Building** in 1961 followed by the **Bank of Montreal** that same year and the Royal Bank of Canada in 1964. They created a template for 120,000-square-foot 10-story structures that was eminently workable for financial institutions, and over the next decade Poole built a number of office complexes for Oxford across Canada.

Poole’s first tower crane, an 82-foot Heede Americana, was erected at the Royal Bank Building in Edmonton in 196.

Over the ensuing decade the company erected numerous office buildings and retail complexes in Edmonton, but the biggest change in the downtown core came in 1972 with the start of **Edmonton Centre**. The premier development for both Oxford and Poole occupied center stage in the city for ten years. It is described in greater detail in the Edmonton section herein. The project signaled the start of Oxford’s portfolio of retail and mixed-use properties constructed under the banner of PCL.

In their first decade together the largest project undertaken by Oxford Developments and Poole Construction was McCauley Plaza, a one-million square-foot twin tower complex in downtown Edmonton.

PCL Calgary established 1947

Poole Calgary's first project for the **Canadian Bank of Commerce** was its main downtown branch, constructed in 1947. Pictured here is a 1953 addition that required building around the existing bank while it remained open for business.

A milestone project for Poole Construction was the **University of Lethbridge, Phase I**, completed in 1972. When Poole was appointed construction manager, cost estimates indicated the project would be 35 percent over budget but by employing value engineering the Poole team was able to bring costs in line and successfully delivered the project under a guaranteed maximum price contract. One challenging aspect was the situation of the campus in a coulee, a dry valley, adjacent the Oldman River that flows through southern Alberta. It was of major concern that the main building could slip into the river; the solution was to secure the foundation with a large number of belled caissons. In 1978 PCL was awarded a second contract to complete Phase II of the project over the next two years.

On completion of the university project Poole established a temporary office in Lethbridge to build **Lethbridge Centre**, a large shopping mall plus an office tower, an apartment complex and two theaters.

The Calgary skyline was forever changed when American petroleum-based companies began to move there in the 1960s to establish corporate offices; leading to today's metropolis of high-rises. The first such development was the landmark Husky Tower spire, which was completed in 1967 and subsequently renamed the **Calgary Tower**. Construction involved a 25-day continuous slip form pour to create a 492-foot tall structure. Including a sky-high restaurant and observation deck, the structure was the tallest tower in the world for many years.

1977 brought the addition of **TD Square**, encompassing the Home Oil Tower and Dome Tower, and in 1979 **Gulf Canada Square**, a uniquely designed energy efficient complex, became another major addition to Calgary's downtown core.

The stately Edwardian-style **Palliser Hotel** was built in 1914 and has since been a Calgary landmark. In 1978, PCL was engaged to undertake a major renovation including restoration of original ornamental architecture. Over the years PCL has renovated virtually every room in this fine old hotel property.

Among mountain properties owned by the Fairmont chain is the magnificent **Banff Springs Hotel**, where a 1995 renovation entailed the creation of an elegant European-style spa. PCL Calgary returned to Banff again in 1999 to begin a major 30-month redevelopment of this elegant castle hotel. At another mountain resort, in 2002 PCL constructed the **Fairmont Chateau Lake Louise meeting facility**, which comprises guest rooms, a conference center and banquet areas.

In 1998 PCL Calgary undertook its first major design-build project, the 36-story **TransCanada PipeLines Building (TCPL)**.

Concurrently, work began on the west tower of **Bankers Hall**, a 52-story twin to the existing tower. The project was completed in 2001 with the addition of a particularly interesting architectural feature, 10 eight-story artificial tree sculptures composed of steel create a striking art form on the adjacent pedestrian thoroughfare.

Light civil work undertaken in Calgary during the 1980s included seven additions to the city's **Bonnybrook sewage treatment plant** to increase capacity, and a renovation to the **Glenmore water treatment plant**. A rural project beginning in 1984 entailed a four-year winter works contract to repair and modify the **Bassano Dam**, and in 1985 the district completed the **Bearspaw**

Dam revetment. Meanwhile, PCL Calgary was continuously engaged in the light civil arena to construct and modify roads, overpasses and bridges throughout southern Alberta.

In 1985 PCL Calgary constructed the world-renowned **Tyrrell Museum of Palaeontology** in southern Alberta's 'badlands,' once inhabited by dinosaurs.

Over the course of 60 years PCL Calgary has had a hand in the construction of many health care facilities in the city and numerous regional hospitals. One of southern Alberta's crowning achievements in the delivery of health services was the **University of Calgary Health Research Innovation Centre (HRIC)**, for which construction began in 2003.

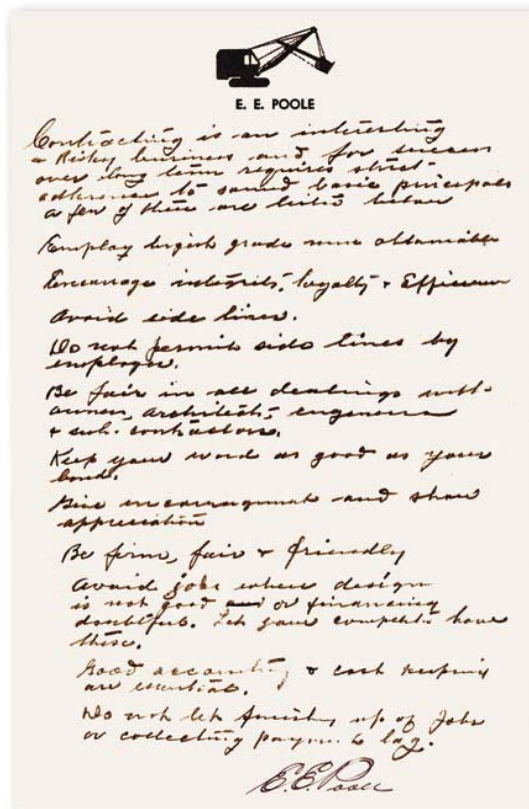
Restoration of Calgary's historical **Centre Street Bridge** was completed in a shortened time frame during 2000-03 when PCL was called in to rescue the project in progress. The original 1916 structure required major rehabilitation. During construction casts were made to enable duplication of the enormous concrete lions that guard the bridge entrance, and one of the original lions was carefully moved to the Calgary Municipal Building as a permanent display. The other restored and replica lions were to be installed on the bridge during the night before a civic ceremony to re-open the structure. Superintendent Bob Delorme and the PCL crew arrived early so each one could encase a hand-written message in a small time capsule, which was then secretly tucked under the base of one of the lions before the massive piece was lowered into position. "It was pretty special," said Bob. "Maybe some day in the very distant future, people will know how much this meant to us."

POOLE FAMILY SUCCESSION

In 1948 the Poole sons (George and John) took a leap of faith and purchased the company from their father. "He was 64 years of age by that time. Apparently people in the office were beginning to wonder what was going to happen to the company so they were quite happy to see the new generation, although they didn't yet know what we could do," said John Poole.

Ernest Poole remained as president for another 10 years and after that assumed the role of chairman until his death in 1964. "There was a general feeling of a good future even though it hadn't been felt to any great extent yet. I guess we wanted to try to make a go of it. We wondered if we would ever get it paid for, because, of course, we had to buy the company at its appraised value," recalled John. "George and I felt we were taking on a pretty hefty burden."

When John and George bought the company in 1948, their father penned several guidelines by which he hoped his sons would continue the tradition. These came to be known as 'Poole's Rules.' The original list still hangs in the Edmonton office.



POOLE'S RULES

Contracting is an interesting and risky business and for success over long term requires strict adherence to sound basic principles, a few of which are listed below:

- Employ highest-grade people obtainable.
- Encourage integrity, loyalty and efficiencies.
- Avoid sidelines.
- Do not permit sidelines by employees.
- Be fair in all dealings with owners, architects, engineers and subcontractors.
- Keep your word as good as your bond
- Give encouragement and show appreciation.
- Be firm, fair and friendly.
- Avoid jobs where design is not good or financing doubtful. Let your competitors have these.
- Good accounting and cash keeping are essential.
- Do not let finishing up of jobs or collecting payments lag.

REDEFINING BORDERS

PCL Operations in the United States

When PCL entered the United States in 1975, it was not clear whether it would simply complete a single project for Oxford in Colorado Springs or go on to develop and grow in this huge new market, but it did not take long for the question to be answered. Oxford's U.S. program was ambitious and fast moving and PCL did not hesitate to make the commitment to follow its lead client wherever Oxford went. This foray into the United States led to the establishment of a United States head office based in Denver.

In 1977 Dennis Wilson was transferred to Denver from Canada as development manager to support the new U.S. operation. Jim Bennett was hired in 1978 as vice president of PCL's U.S. operations to lead the quickly expanding operation.

Ron Taylor was transferred to Denver in August 1978, replacing Jim. Other transferees soon joined him to support the organization's U.S. expansion. This early 'head office' was the predecessor of PCL Construction Enterprises, Inc., which is based in Denver, Colorado and is the holding company of PCL's U.S. operating companies. Enterprises provides support services in the areas of executive management, finance and administration, human resources, marketing and communications and information technology.

As PCL's penetration into the United States unfolded through the late 1970s and early 1980s, many of the organization's long-time Canadian employees moved to the United States. People like Wally Clark, Bill Golly, Ken Widynowski and Arny Frederiksen formed the executive management team and core support group for the operating companies that were emerging to build projects throughout the nation. They were joined by Americans including Gary Basher, hired as controller in 1979, and Denny Dahl, who transferred to Enterprises in 1987 to look after human resources, and Ron Elkins, who became director of estimating.

In December of 1987 Jim Bennett rejoined PCL as executive vice president of Enterprises reporting to Ron Taylor, who had returned to Edmonton. On Ron's departure, Jim reported to new CEO Bob Tarr; and in 1994 Jim was named president and chief operating officer of the U.S. operations. Jim's team grew with the addition of Dave McCay, who transferred to Enterprises in 1990 as senior administration officer, and Pat Klein, who became vice president of major projects in 1994. Al Troppmann, who had been managing the Denver operating office, became regional vice president, reporting to Jim. Peter Beaupré transferred to Denver in 1997 and began a transition with Jim and upon his retirement, Peter became president and chief operating officer of Enterprises in 1999. Peter's growing support team saw the arrival of Mike Kehoe in 2002 as vice president finance to replace retiring Wally Clark. That year also brought Peter Greene to the team as vice president professional development and in 2003 Robert Saiz became director of environment and safety upon Arny Frederiksen's retirement. U.S. corporate marketing grew with the team of Shaun Yancey, Rolle Walker, Pat Klein and Steve Vrabel.

The role of Enterprises is crucial to PCL. Over the years the organization has worked in 40 of the nation's states, thus it requires complex oversight of licensing, tax management and administration, as well as Workers' Compensation, insurance, and marketing efforts nation-wide.

Enterprises has a solid history of philanthropy and community involvement. Enterprises won the PCL United Way Chairman's Award in its inaugural year in 1983 and for the eighth time in 2004. Enterprises and Denver district combined were presented the prestigious Champion of Hope Award by Mile High United Way in Denver on three occasions for their high level of community support and volunteerism.

*(For historical information on U.S. PCL operations,
please contact Wade Wilson by email at wwilson@pcl.com)*

THE RIGHT TIME: Employee Ownership

If it can be said that there is a right time for everything, then late 1976 and early 1977 was the right time for the acquisition of Poole Construction Limited and its subsidiaries. It was then that the Poole family and Bob Stollery arrived at the final terms whereby ownership of the organization could be transferred.

John and George Poole had tremendous respect for the man they chose to run the Poole organization. "The smartest thing we ever did was to hire Bob Stollery," said John Poole. Twenty years after joining the company as a field engineer, on February 1, 1969 Stollery was named president.

By 1975 it was apparent that the Pooles favored the sale of the company to Bob and some of the employees. John and George brought in consultants and Bob asked then vice president Hank Gillespie to work with him to establish company values.

Once an agreement in principle was reached, Bob and Hank reviewed the proposal with senior vice presidents Nick Oneschuk and Jock Dawe, who both embraced the plan enthusiastically. Together, the four created a list of the Poole employees who would be invited to purchase shares in the new company. The group was asked to attend a Saturday morning meeting at the small Van Winkle Motel in south Edmonton. Everyone attended and everyone agreed to participate in the venture. They became known as 'The Original 25.'

The purchase price for the shares of Poole Construction Ltd. was calculated on a valuation of assets and goodwill. Bob Stollery ultimately agreed that acquiring a well-established business outweighed the requirement to change the corporate name, and as Poole insiders had long referred to the organization as PCL, it was a natural choice for the name of the new entity. The importance of the goodwill factor was borne out over the years as the much-respected name of the Poole family continued to be associated with the PCL group of companies, long after John and George retired from the construction industry.

Hank Gillespie continued, "With the purchase price established, we began to explore means of funding. We wondered if lending institutions would accept our plan as responsible or consider us reckless in our overriding desire to own the company. We needed a knowledgeable party to review the overall financial structuring so I approached Jim Burns, the president of Great-West Life Assurance Company. It was our intent to offer Great-West Life a minority interest as we understood that their acceptance would validate the deal in the eyes of the banks and bonding companies. After due diligence and some deliberation they agreed to our offer and Great-West Life management of the day later affirmed that this was one of their most successful investments."

It was time to go to the banks. As it was prudent for the company to request comparative lending proposals, three banks were invited to submit. They responded with terms and conditions that were alternately fair and reasonable, and onerous in respect of security requirements. It was no simple matter and lengthy negotiations ensued, but in the end the company accepted TD Bank's commitment to being the financier. The Pooles graciously allowed the employee ownership group to defer payment on a substantial portion of the purchase price.

Some important factors arose in formalizing the original employee involvement model. Bob and Hank felt strongly that each participant must be willing to accept a significant financial risk, yet shares needed to be affordable and fairly distributed. Only employees could own shares and, for the model to remain viable, share ownership must not continue beyond active employment, so the company must repurchase shares when an employee retired. Voting rights ensured competent direction of the company by senior management. All these points were critical. Bob Stollery held a position of great trust with John and George Poole and they had previously

shared an agreement that guaranteed Bob a percentage of profits. That arrangement was carried forward to the new company.

On **June 27, 1977** John and George Poole and Bob Stollery signed the closing documents to execute the sale of Poole Construction Limited to PCL Construction Holdings Ltd. In November 1977, in addition to being president of Poole Construction Limited, as the majority shareholder Bob Stollery became chairman, president and chief executive officer of the new employee-owned PCL Employees Holdings Ltd. On March 1, 1979 Poole Construction Limited officially adopted its new name - PCL Construction Limited.

At the end of the first year a second offering was made to broaden the employee base of ownership; the process has been repeated every year thereafter. Ultimately, all the financing was repaid and Great-West Life's share interest was repurchased. PCL is justifiably proud that it has realized a profit every year since the employee group purchase.

After the new PCL company had been in operation for a few years, Bob Stollery presented an offer whereby he stipulated that he would sell ten percent of his shares each year to enable younger employees to be brought into ownership. By selling down his own shares early, Bob also made it possible for the company to buy him out over time without severe financial strain. Many hundreds of today's shareholders were brought into company ownership using these shares and the stage was set for PCL to become 100-percent employee owned.

THE STORY OF CIVIL

Poole Engineering Company Limited was formed on February 21, 1944, primarily to undertake highway work. At the end of WWII George Poole returned home to start work under the guidance of Dick Pettinger, and thus was groomed to eventually assume responsibility for the Poole engineering operation, his chosen specialty.

Following the purchase of the parent company by John and George from their father in 1948, they sold 50 percent of Poole Engineering to American-based Peter Kiewit Sons' Co., thereby allowing Kiewit to enter the Canadian market and also enabled Poole to grow rapidly in the civil market with an experienced partner. In 1958 Poole bought Kiewit's portion and renamed the company **Poole Engineering (1958) Limited**, which then became a wholly-owned subsidiary of Poole Construction Limited. Poole Engineering continued civil work, often joint venturing with Kiewit on larger projects.

In 1956 Poole moved 150,000 tons of asphalt on a **single Alberta highway job**; it was a major project at the time. Bob Hollingshead, who joined Poole Engineering that year as a project manager and estimator, remembered it as a busy summer. "We graded the Trans-Canada Highway through Yoho National Park in the Rockies, constructed two bridges near Canmore in southern Alberta and built the airport at Fort Smith on the Alberta-NWT border."

Poole Engineering made its first move out of the province in 1959 with highway jobs in Manitoba. More northern work came with the highway at Hay River, NWT and major bridge renovations on the Great Slave Lake Railway for the CNR in 1963. Closer to home the company built large sections of the Banff-Jasper Highway in 1962.

Significant capital investment was necessary for highway construction. **In 1963 Poole Engineering built an equipment shop on the Edmonton site that was to become PCL corporate headquarters.** During the 1960s Poole owned three asphalt plants and two soil cement plants in Alberta and maintained a fleet of scrapers and other heavy equipment.

In a joint venture led by Kiewit, the A. Johnson and Poole companies undertook eight contracts on the **South Saskatchewan River Dam project at Lake Diefenbaker** during 1962 to 1967. Dale Anderson, who spent six years on the project, later joined PCL to head up civil operations. He recalled the scope of work, "Poole poured over one million cubic yards of concrete constructing the tunnels, control shafts and spillways." Later renamed the Gardiner Dam, the structure measures 205 feet in height, spans 16,000 feet, and took over seven years to complete. It was officially opened on Canada Day, July 1, 1967.

By the time Poole became an employee-owned organization in 1977 and was subsequently renamed PCL Construction Limited its civil portfolio had grown to include airports, dams, bridges, tunnels and small pipeline work.

Beginning in the early 1980s, transitions in PCL civil operations led to the establishment of four major divisions – Civil Heavy and Civil Canada, and American-based Civil Southeast and Civil Southwest.

In 1983 under the leadership of **Joe Thompson, then president of PCL Civil Constructors Inc.**, PCL began to pursue **heavy civil work**. One of its early successes was a joint venture to construct the **Alex Fraser Bridge spanning the Fraser River at Delta, B.C.** At 3,050 feet, it was the longest cable-stayed bridge in the world from the time of its opening in 1986 until 1991, and remains the longest cable-stayed span in the Americas. The bridge was built in 27 months and had the lowest cost per unit of deck area of such a structure in the world. It casts a striking profile that garnered numerous awards and is considered a landmark civil project for PCL.

PCL created Westbrook Construction, Inc. in 1983 and established an office in Denver, Colorado. Led by Jack McRae, district manager during 1984-89, this office successfully constructed numerous Denver-area projects, the largest of which was a major expansion to the **Stapleton International Airport** that provided five years of continuous work. The Denver operation was the precursor to the establishment of two civil districts in the United States.

In 1986 the existing civil group was separated into Civil Canada under the direction of Bob Hollingshead and Hugh Garrard, and Heavy Civil under the management of Peter Sanderson. Civil Canada maintained traditional operations as the highways division and from the Northwest Territories to the American border, the western Canada highways and interchanges were dotted with PCL equipment as the division undertook highway work, asphalt paving and small dams.

Meanwhile, Heavy Civil launched the company into the civil world in the United States in 1986 when it successfully bid the **\$29-million Glade Creek Bridge in West Virginia**. The project was undertaken by Westbrook Construction Inc., PCL's civil company in the U.S., and managed by Alan Bodie, who would later become one of the leaders in the growth of PCL Industrial. Dale Anderson joined PCL in 1987 as president of PCL Civil Constructors Inc., managing operations in both Canada and in the U.S. He was invaluable in the restructuring of the divisions.

While the company continued to pursue large projects across North America, regional Canadian buildings operations were encouraged to pursue more light civil projects. Examples of completed projects delivered in this format include:

- University of Alberta LRT Tunnel, Edmonton
- Norwood Bridge, Winnipeg
- Big Qualicum Upstream Bridge, Vancouver Island
- North Battleford Bridge, Saskatchewan
- Centre Street Bridge, Calgary
- Spadina Subway Extension, Toronto

In joint venture with Harbert International, Inc. in 1987 the heavy civil division was awarded two major contracts in Florida – a multilevel series of **precast segmental bridges on I-595 west of the Fort Lauderdale airport** and a **series of steel girder bridges on I-95 adjacent the airport**. Jerry Harder and Dave Hrynyk were assigned to lead the charge and the completion of these substantial projects led to PCL's establishment of a heavy civil district in Florida.

The heavy civil division partnered with Hochtief in 1988 to build the **first hydroshield tunnel in North America when construction of the south extension of Edmonton's light rail transit (LRT) system** called for construction of tunnels through sandy soil from the river's edge to downtown Edmonton. The LRT bridge that spans the river required the casting and erection of 201 precast segments and was the first precast segmental bridge built in western Canada. The project was subsequently renamed the **Dudley B. Menzies LRT Bridge**.

In 1990 PCL's heavy civil division, in joint venture with Perini and O&G, undertook the \$135-million **Raymond E. Baldwin Bridge**, a precast segmental bridge in Old Saybrook, Connecticut. To build the decks in balanced cantilever fashion the team used a steel launching truss capable of lifting the 150-ton segments from 12-axle trucks and moving them into position.

One of the largest contracts in hydroelectric power work in Canada was let in 1990. **The Kemano Completion Underground Powerhouse and Penstock and its companion project, the West Tahtsa Intake**, were located on the remote northern B.C. coast. With the project already underway, Tom Beck was called on to leave his position as district manager of Civil Prairie to oversee Kemano. Dave Filipchuk was project manager on the equally demanding West Tahtsa project. The sites were accessible only by boat/barge or helicopter and weather was just one factor.

Kemano called for excavation of over 80,000 cubic yards of hard rock using drill and blast techniques to make way for the turbines to be installed within the mountain itself, and the excavation was completed on schedule. West Tahtsa required difficult open cut, underwater and tunnel excavation with extensive rock support. To the disappointment of the many people involved in the projects, the owner canceled the entire undertaking before completion in response to environmental concerns raised by external groups. Many knowledgeable parties still believe it was the most environmentally-friendly solution to meeting power needs for a large region.

PCL Heavy Civil was part of an international joint venture contracted to build the **Chesapeake Bay Bridge-Tunnel Parallel Crossing during 1995-99**. The project required restoration of the original bridge built in the 1960s, then called the “**eighth wonder of the world.**” Quantities were staggering - 237,000 lineal feet of concrete piling, 664 bent caps and 1,847 modular deck units. It remains a remarkable achievement in engineering and construction and, although it presented many challenges, the project put PCL on the map in the civil world.

In April 1989 Westbrook Construction, Inc. was formally renamed **PCL Civil Constructors, Inc.** and Westbrook’s Fort Lauderdale office became the **Civil Southeast district for the PCL civil organization**. Concurrently, Westbrook’s Phoenix office became PCL Civil Southwest district - that story follows. In preparation for future growth in the U.S. marketplace PCL purchased an interest in Green Construction, Inc. in 1991. This acquisition resulted in heavy civil work in Georgia, Oregon and Colorado, and commercial work in the San Francisco/Oakland area.

PCL Civil Southeast

PCL Civil Southeast entered the 1990s with a series of firsts in Florida, starting with the **Southport Bulkheads project** to expand the pier for cruise ships at Port Everglades. At \$39 million it was the largest project awarded by the Port Authority to that date. In 1991 the district was awarded its **first major marine crossing bridge at St. Augustine** and followed in 1992 with the contract for its **first people mover project, the Skyway Metromover in Jacksonville**.

In joint venture with Missouri-based McCarthy Construction, in 1991 the heavy civil division was awarded the **cable-stayed Clark Bridge in Alton, Illinois**. At the same time it successfully bid its first project in Tennessee -**the award-winning Natchez Trace Parkway Bridge**, which it undertook in partnership with the Civil Southeast district. The now internationally recognized bridge arches were constructed using a precast, postensioned approach; it was the first time in North America the method had been used for arches. It is one of PCL’s 20 REMARKABLE PROJECTS OF THE 20TH CENTURY.

PCL’s specialization in bascule bridge construction began in 1992 with the **rehabilitation of the Atlantic Boulevard Bascule Bridge in Fort Lauderdale, Florida**. Gordon Houston was at the helm of this first project and would go on to manage several more; in doing so, he developed a renowned expertise and reputation as the ‘bascule guru’ in this type of work throughout the state of Florida and PCL became known for its numerous bascule bridge reconstructions.

In 1999 PCL Civil Southeast teamed with a designer to meet an emergency need for a **bascule bridge repair over an intracoastal waterway in West Palm Beach**. The contractor-design team had just one month to prepare concepts and technical proposals and estimates for the fast-track project. A very aggressive 12-month schedule included developing a novel steel space frame to support the bascule leafs on the new structure and using the tides to float the bascule leaf components from the existing bridge, thus eliminating the cost of renting a large water-borne crane.

In 2001 the **Royal Park project was recognized as ‘best design-build in the civil sector under \$15 million’** by the Design-Build Institute of America. In 2005 PCL brought the job to closure by demolishing and replacing the temporary bridge.

Completed in 2003, the **Ringling Causeway design-build bridge** is a precast segmental structure spanning Sarasota Bay. It is one of the widest single box segmental bridges in North America and was erected in halves. The Florida Department of Transportation considers the project one of its world-class structures.

Looking to the future, in 2004 the estimating groups of PCL Construction Services, Inc. in Seattle and PCL Civil Constructors, Inc. in Tampa jointly began pursuit of the **Sound Transit Project in Seattle, Washington**. PCL Construction Services, Inc. was named low bidder for the \$231-million job and given notice to proceed in spring 2005. Both companies immediately began to build an integrated team to undertake the work. The project is scheduled for completion in 2007.

“Civil Southeast has been a significant contributor for the past few years,” said Ross Grieve, president & chief executive officer. “What an exciting thing for this organization. Much of it has to do with the fact that it is the same people whose projects were struggling five years ago and they learned a lot of lessons. Now they are taking those lessons and converting them into real winners for us.”

PCL Civil Southwest

PCL Civil Southwest, the Phoenix-based district of PCL Civil Constructors, Inc. traces its roots to 1986, when it began performing concrete paving work for the government under Denver-based Westbrook Construction, Inc. In 1987 Austin Whelihan was appointed district manager for Westbrook Civil in Phoenix to oversee heavy civil and highway work. The operation was awarded its **first highway project in 1987** and followed up in **1988 with its first Arizona pipeline project for the United States Bureau of Reclamation**, a part of the Central Arizona Project (CAP) to control the water supply to the desert cities of Phoenix and Tucson, and a lead-in to other significant work for the bureau.

PCL Civil Southwest focused on building a presence in Arizona, however, in 1989 it undertook the **Freeman Diversion Improvement project** in California. The first roller compacted concrete structure in the state, the job required continuous placement of the concrete, which meant that crews worked around the clock for two months straight. The 24/7 timetable led the project to be completed three months ahead of schedule. Shortly afterward, severe rainstorms hit the area. It was estimated that due to early completion of the diversion structure, 25 to 50 percent more storm runoff was diverted for irrigation purposes.

Subsequent PCL-constructed roller compacted dams constructed by Civil Southwest included the **Cuchillo Negro Dam** in 1992, built as a flood control structure at Truth or Consequences, New Mexico, and the **Spring Hollow Dam** near Salem, Virginia, which was constructed during 1993-94.

The district’s **first large-diameter pipeline was the South Bay Land Outfall**, south of San Diego on the U.S.-Mexico border. Luis Ventoza was in charge of the project. Throughout the 1990s PCL’s expertise in concrete and pipeline work allowed the district to acquire many large-diameter pipeline contracts in southern California and a civil operations office was set up in San Diego. This introduction contributed to PCL establishing San Diego as a new commercial district.

In 1993 the **Salt River Siphon Replacement project** was awarded as a next step and a key link in CAP. To transport water from the Colorado River via northern Arizona to the south desert country through a series of pipelines and canals, the siphon takes water under the Salt River, which is normally a dry riverbed but can carry peak flows up to 98,000 cubic feet per second. The project encompassed close to 8,000 lineal feet of 21-foot diameter (252-inch) pipe placed in open cut excavations and 500 lineal feet of 20-foot liner placed on the inside of existing concrete pipe. “Excavation was a huge challenge as the pipe trench totaled 860,000 cubic yards including 150,000 of blasted rock,” said Tom O’Donnell, who oversaw the project. “The pipe was shipped to the site in sections up to 60 feet in length and weighing 60 tons each; it was so big that more than 200 utility lines had to be raised to clear the pipe as it was hauled along the route.” The Salt River Siphon Replacement project was selected as one of PCL’s 20 REMARKABLE PROJECTS OF THE 20TH CENTURY.

Having developed the necessary technical expertise and qualified personnel, in 1997 PCL Civil Southwest was awarded a similar project – the **Agua Fria River Siphon Replacement and Centennial Wash Siphon Repair**. A unique challenge on this project was the installation of 1,000 feet of 20-foot diameter liner at the Centennial portion of the project, which was 120 miles away from the Agua Fria Siphon location in one of the most desolate deserts in Arizona.

The project team was able to complete the work at Centennial in less than three months while work continued at the Agua Fria site. As the massive pipeline plays a vital role in the arid desert cities of Arizona, schedule was of the utmost importance, but even with all the challenges, the team completed the project on time with zero lost-time accidents and even realized a significant saving for the client. “The success of these two projects was the consequence of an excellent construction plan and the development of engineering solutions to the challenges encountered by the team,” said Luis Ventoza.

The district’s most distant work was the **Diamond Fork Pipeline and Road Rehabilitation project** in Provo, Utah in 1995. The state-owned water conservation project called for installation of a 36,000-lineal-foot, 96-inch pipeline and construction of seven miles of roadway through the Uinta National Forest.

Civil Southwest launched a new and promising component of work in 1996 with its first contract for a **wastewater treatment plant in Arizona**. Similar projects were undertaken in southern California and again in Arizona over the next few years. In April 2000 the district received a large contract from the city of Mesa, Arizona for the **Northwest Water Reclamation Plant Expansion**, which confirmed PCL’s respected standing in municipal water infrastructure construction. The district proved its expertise in self-performing structural concrete, yard piping, mechanical piping and major equipment installation.

As the district continued to build water and wastewater plants throughout Arizona, PCL earned a reputation as a premier contractor in this specialized market, and as agencies started to implement ‘construction manager at risk’ proposals, they recruited PCL to provide preconstruction services and help with subcontractor prequalification and selection.

The **Randolph Park Water Reclamation Facility project**, completed in 2003, was designed to provide the greater Tucson area with safe and reliable water for irrigation. The project encompassed two sites over two miles apart so the operations team needed an innovative approach to manage logistics. Each site operated as an independent project with its own office, superintendent and engineering staff, and a separate third office location was opened to provide project management and support engineering.

In September 2003 construction began on the **East Mesa Water Pollution Control Facility** in Yuma, Arizona. Typically, such a project would take 30 months, but by using 3D modeling to create a visual map that included every essential component of constructability and design, PCL eliminated potential costly changes. Luis Ventoza noted with pride that the project “put us on the map as a respected waste treatment plant contractor.”

In 2004 PCL Civil Southwest commenced work on its largest project to date, the \$160-million **Albuquerque Water Treatment Plant**.

THE WORLD OF INDUSTRIAL

PCL's industrial division had its humble beginnings in Alberta during the 1950s with the construction of power generating facilities and a **major polythene plant for Canadian Industries Limited (CIL)**. The large Hinton pulp mill contract was awarded to Poole by Northwestern Pulp and Power Company in 1955, when Northwestern was given full responsibility to manage and sustain one million hectares of Alberta forest.

In 1979 **PCL Industrial Construction Ltd.** commenced operations.

Although Poole had been fabricating its own piping since 1958, in 1978 it took the step to open its **first fabrication shop in Edmonton**. The building was a two-bay rented facility operated as an extension of field projects, with each project manager responsible for fabrication costs incurred for a project. The first project for a third party was **fabrication of nickel lined piping for Dow Chemical Canada Inc.**, signifying the beginning of a longstanding working relationship with Dow.

Shortly after the opening of the shop **Syncrude Canada Ltd. contracted PCL for a sizeable tank farm project** and the result was the fabrication team's first attempt at module construction. Workers double-teamed to build during the day while loading at night to avoid blocking the road.

The 'Fab' team's ingenious assembly process expedited the completion of 240 lineal feet of process pipe rack for the Syncrude project, but flagged the need for a larger fabrication facility. In **1982 PCL rented an 8,000-square-foot building with two acres of yard, enabling the fabrication of pipe for third party clients as well as PCL's own field projects**. 1986 brought the first of 20 projects for **Syncrude's Capacity Addition Project (CAPS)** in Mildred Lake, Alberta. These were the mainstay for the fabrication facility for four years as PCL pre-fabricated pipe spools, poured concrete, installed underground piping and undertook a significant share of the mechanical work for the CAPS project.

1982 signaled the start of a continuing client relationship when **Union Carbide Canada Limited (UCCL)** entrusted PCL with total responsibility for the construction of its Prentiss, Alberta air separation plant. The project entailed cold box erection, a 180-foot tower, an air compressor and oxygen compressor. In 1993 and 1997 UCCL's successor company, **Praxair Canada Inc.**, engaged PCL to undertake plant expansions and fabrication and installation of additional equipment.

Bob Stollery believed that PCL could compete against the big worldwide contractors that would typically be awarded major industrial projects in Alberta but had no vested interest in Canada. "Why don't we come up with an Alberta solution?" he challenged, and so it was that in 1979 PCL teamed up with C.F. Braun and H.A. Simons with a goal to provide **complete engineering, procurement and construction (EPC) services to the energy and processing industries**.

The jointly owned Canadian company, **PCL-Braun-Simons Ltd. (PBS)**, was able to land the state-of-the-art **Shell Canada Ltd. Scotford Refinery project**, constructed during 1980-84. "It was a real pioneering venture, the first of its kind in the world, to refine synthetic crude oil out of the Alberta tar sands," said Stollery. "

The early 1980s brought contracts for a **hydrogen reformer in Saskatchewan** and a **state-of-the-art tunnel ventilation system for Canadian Pacific Railways in B.C.** In Alberta, PCL's industrial and civil operations collaborated on the **Obed Marsh Coal Preparation project for Union Oil**.

The very successful Obed Marsh project (1983) immediately raised the profile of PCL in the industrial sector and also within the PCL organization.

In 1988, PCL was awarded a major project by Neptune Resources Corporation. **Colomac Gold Mine**, situated 'in the middle of nowhere,' north of Yellowknife in the Northwest Territories, was a huge undertaking at a critical time in the life of PCL Industrial. In March 1988 the civil team began mobilizing to build a 5,100-foot airstrip and a winter road to transport equipment and materials and start building a 350-man camp. The following spring, construction began on a mill capable of crushing, milling and refining 10,000 tons of ore per day, and a tank farm comprising eight 70-foot diameter fuel storage vessels, each with a capacity of one million gallons – a full year's supply.

One point of pride for PCL on the Colomac project was the establishment of on-site training in all major trade disciplines for unskilled laborers from Yellowknife and surrounding areas, including members of the Dogrib First Nations community. In the end the program was deemed a complete success and provided a model for future projects.

"We are recognized not just for what we build but for being good community people," noted Peter Stalenhoef, president and chief operating officer, heavy industrial. "We give back to the communities where we work and the universities and technical schools that we build, and the colleges that produce the people we need to build our projects. We try to be good citizens. We have a good reputation for being straight shooters, we are credible and we do what we say we'll do."

In a timely move PCL negotiated a lease-to-purchase deal in **1987 to move its fabrication facility to a larger building in Nisku**. From that point on, the demand for fabrication services continued to grow. The biggest single module assembly project in this era entailed the fabrication and **assembly of 36 pipe rack modules for Shell Canada Limited at its Caroline, Alberta gas plant in 1990**, leading to PCL's recognition as a major constructor of plant modules. Concurrently, **Fluor/DuPont** contracted PCL for a specialty stainless steel fabrication job, and the quality of workmanship resulted in Fluor Daniel Inc. honoring PCL as its supplier of the year. The fabrication facility completed a record volume of work in 1991. Work hours doubled, split evenly between PCL projects and external clients, with much of the work driven by the huge **Husky Oil Bi-Provincial Upgrader on the Alberta/Saskatchewan border**. The PCL Industrial fabrication team worked on two Husky Oil projects, one that was taken over in midstream when a major competitor had been unable to meet its commitments, so it was doubly satisfying when PCL delivered this fast-track project on schedule.

1991 was a banner year for PCL Industrial Constructors Inc. as well, as it became a construction partner on the **Topsides Assembly and Hook-up Package, part of the \$6-billion Hibernia offshore oil project in Newfoundland**.

Norwegian contractor Aker Stord had significant experience in the offshore industry, particularly in the harsh North Sea, but needed a Canadian partner and approached PCL for this role. Steen Contractors and its subsidiary, Becker, provided local knowledge of the east coast market and union scene. The six-year mega project was contracted to PCL-Aker Stord-Steen-Becker (PASSB), A Joint Venture.

Per Inge Saetrivik of Aker Stord and Darcy Trufyn of PCL Industrial jointly managed the massive undertaking. In a 1992 Aker publication, Saetrivik was generous in his remarks about his Hibernia experience. "Although our offshore expertise gives us greater professional weight, we Norwegians could probably learn something from Canadians when it comes to commitment to the job."

While underway, Hibernia was the largest construction project in North America. PASSB's scope of work encompassed the design, procurement and construction of the topsides fabrication facilities at Bull Arm, Newfoundland. The next part of the task involved fabrication of the 4,000-tonne M-20 wellhead module on which two mobile drilling derricks are mounted, plus the flare boom, main lifeboat station and auxiliary stations and the helideck. The other four super modules were constructed in Italy and Korea and then shipped to the fabrication site where they were welded together to form one integrated unit.

The final aspects of the project involved the assembly and hook-up of the entire 38,000-tonne platform, which stands 735 feet, half the height of the Empire State Building and 108 feet taller than the Calgary Tower.

"The Hibernia mega-project gave more than construction experience to PCL. During six years of offshore experience in Newfoundland, we developed a solid team and infrastructure that will be extremely beneficial for the Terra Nova project. The Terra Nova team will be able to draw on one of the highest skilled labor pools in the country," said Alan Bodie at the time.

Tow-out of the Hibernia platform began on May 23, 1997. On June 5 it was installed at its permanent location on the Grand Banks, approximately 200 miles off the coast of Newfoundland - within one meter of the targeted contact point on the ocean floor! Drilling of the first well commenced on July 28, 19 days ahead of schedule. First oil was achieved on November 17, 1997, a full four weeks ahead of schedule.

As travelers approach the east coast of Canada by air, the unmistakable mass that is Hibernia stands out as a remarkable achievement of engineering and construction.

Ray Baron, quality control manager on the topsides project, summed up the thoughts of many who made Hibernia a reality. "Many things have been said of the magnitude of the project, but the immense cultural exchange played an integral part in its success. People from many parts of the world joined together with common values and goals to complete this enormous project. I am sure that we all came away from it with a far better understanding of our global neighbors."

On February 27, 1997 the gigantic topsides module was lifted from its assembly pier by two enormous barge mounted cranes, then floated to the middle of Bull Arm and mated with the 550,000-tonne gravity base structure to form one integrated unit.

For the first time in the history of the offshore oil industry, a total oil field development was let as a single contract when **Petro-Canada** selected one of three international teams of engineers and contractors competing for the **\$1.9-billion Terra Nova project**. PCL was a member of the successful team known as the Grand Banks Alliance, which was responsible for the design, fabrication, assembly, installation and hook-up of the production facilities, as well as drilling the necessary preproduction sub-sea wells for the development.

In early 1997 the Grand Banks Alliance and the owner companies established an integrated project management team, the Terra Nova Alliance. Within the framework of the alliance agreement, each party was legally and ethically committed to achieve the common project goals and to share in the risk and reward. Alan Bodie, then president of PCL Constructors Inc., was PCL's executive sponsor in the alliance. In his words, "It was truly energizing for all the key players, owners, contractors and engineers, to be on the same side of the fence. The level of commitment demonstrated by all the parties was essential to the success of this complex and unique project."

Terra Nova was really a first ever. The unique design provided for oil to flow from sub-sea wells through flexible flow lines and risers to a floating production, storage and offloading vessel (FPSO), to then be offloaded to tankers. To undertake the fabrication and installation of the FPSO's massive topsides modules and flare tower, PCL created a sub-alliance with Scotland-based BARMAC, a leading fabricator for the North Sea oil and gas sector.

Petro Canada's Terra Nova vessel is one of the largest floating production platforms of its kind in the world. Because it must withstand the most hostile weather conditions imaginable, it was designed to enable it to disconnect and thereby avoid a collision with an ice floe. It can drop all its moorings and flow lines, maneuver out of danger and then reposition itself, retrieve the lines and resume operation. A key part of the design was an enormous rotating turret connected to both the moorings and the flow lines, allowing the ship to rotate 360 degrees.

The Terra Nova oil field, located in the waters of the Grand Banks off Canada's east coast, is second in size only to Hibernia. The field began production in January 2002; its rated production of 150,000 barrels per day represents a significant portion of Canada's light crude oil supply.

The **McClean Lake Uranium Mine** project drew on expertise from across the PCL family of companies. As both the owner, Cogema Resources Inc., and PCL Regina were committed to providing employment and financial benefit to the region in northern Saskatchewan, PCL-Maxam, a Joint Venture created a joint venture with the Prince Albert Development Corporation (PADC) to successfully bid the project in 1995. Together they developed a labor relations strategy to provide for an open site policy that created opportunities for both building trade unions and open shop labor, which facilitated maximum local and aboriginal involvement.

The PCL project team faced a major challenge as equipment and materials needed to be transported by truck from a marshaling yard in Saskatoon, a 13-hour trip, and workers were flown in from various points and then bussed from an airfield to the remote site. Led by PCL Industrial, the project team deployed rotating crews on a seven-day schedule. Despite winter temperatures that dropped to minus 50 degrees or lower, the project was delivered on schedule in September 1997, with no work stoppages.

Key to the success of the project was the tremendous effort and value that Bill Larson and his team delivered through producing a top quality, highly detailed cost estimate. Over the years the high degree of accuracy in estimates has proven to be a primary strength of PCL Industrial.

Another of PCL'S 20 REMARKABLE PROJECTS OF THE 20TH CENTURY was the **Polyethylene Train III project for Dow Chemical in Fort Saskatchewan, Alberta**, led by Roger Keglowitsch. Based on PCL's performance in delivering the Train II project during 1993-94, Dow invited PCL to work with them in Houston to perform preconstruction services during engineering and design, enabling the fast-track design and construction of the Poly Train III project in 1997-98. The value of this early collaboration cannot be overestimated as it enabled field construction to begin just five months after the start of engineering and construction was 70 percent complete by the time engineering was finalized.

To meet the aggressive schedule PCL employed modular assembly of structural segments and pipe rack modules, precast concrete and tilt-up process buildings. PCL is proud that during the 1990s alone it executed over 50 projects for Dow Chemical Canada Inc.

In 1999 PCL Industrial undertook its **first EPC project in the power sector – the Air Liquide Cogeneration facility at Scotford, Alberta**. This successful project led to PCL Industrial Construction, Inc.'s involvement in the **Nelson Energy project**, a 1,100-megawatt natural gas fired cogeneration facility located near Chicago, Illinois.

Under the leadership of Tom Beck and Howard O'Connell, construction on the plant began in 2001, at a time when experts predicted that a U.S. power shortage was imminent. "However, concurrent with the collapse of Enron in the fall of 2001, it became apparent that fears of a power crisis were greatly exaggerated and electricity prices plunged," explained Alan Bodie. "As investors and lenders took drastic steps to limit their losses on power plants, Nelson was one of those affected."

The client asked PCL to take over the role as prime EPC contractor for the project, which it did, but financing came to a halt in September 2002. With the \$700-million project 80 percent complete, PCL was forced to stop construction when the client advised that it would no longer fund the project. Following that, PCL's site team worked closely with the lenders to ensure that the project was properly secured and preserved, allowing for the possibility of future completion. They earned full marks from the owner's senior construction manager, who commented, "The PCL team brought an attitude of cooperation to this project every day." The project was never restarted and in August 2004 an auction in bankruptcy was held to sell the entire project as a single asset, marking the final chapter of this challenging, albeit fascinating, project.

The **NOVA Sclair polyethylene project** and the concurrent offsite project executed in Joffre, Alberta in 1998 called for the PCL Industrial fabrication facility to provide and install 150 modules and various off-site structures required to connect the largest polyethylene production facility in the world to its base plant facilities. Concurrently, PCL's own 30-acre module yard was being developed adjacent the Nisku fabrication facility to enable PCL Industrial to meet the demand for modules for two large projects – the Syncrude Aurora Mine that started in 1998 and the Albion Sands Energy Muskeg River Mine, which was awarded to PCL in 2000 as part of a joint venture named Oil Sands Constructors.

Alberta's massive tar sands development has yielded significant work for PCL. Led by Brian Jolly, vice president and district manager, and Gary Truhn, senior construction manager, PCL Industrial was awarded several contracts for portions of the **UE-1 Upgrader expansion for Syncrude Canada Ltd.**, including the role of prime subcontractor on the largest single train hydrogen production unit in the world, a project that started in 2002. At peak in August 2003, 962 PCL staff, craft and subcontractor personnel were working on the project at PCL's fabrication facility and main module yard in Nisku and a 10-acre leased facility in south Edmonton. At the time, this was the largest module contract awarded in the history of module construction in Alberta.

Considering the tremendous amount of work undertaken by PCL's fabrication facility, the 'Fab' team excelled in safety, achieving two milestones. During May 1991 to August 1998 they worked 960,000 hours without a lost time incident, and from October 1999 to September 2002 they accomplished one million hours without a lost time incident.

Safety is key on every PCL project. PCL was honored to receive the 2002 Syncrude President's Award, presented for exceeding environmental, health and safety objectives on a high-risk Syncrude project site. On March 11, 2004, 300 hungry PCL module team workers were treated to a barbeque to celebrate the major milestone of shipping 250 modules for the UE-1 project. Earlier, Syncrude president Jim Carter had presented the team with a 'One Team – One Goal' award to mark the successful completion of 316 pipe rack and equipment modules. The recognition was especially significant, said Gary Trigg, vice president and manager of PCL's fabrication and module facilities, because the job was not yet done. "We had 66 modules left to go, but there was great satisfaction in being recognized before the critical end date. Syncrude gave us their seal of approval and vote of confidence that we would deliver what we promised."

In late 2004, PCL was selected by Technip Italy to be its construction subcontractor for a major part of the delayed coker and diluent recovery units which form the heart of **CNRL's \$11-billion Horizon project north of Fort McMurray**. The award of this work solidified PCL's preeminent position as a leading industrial contractor in western Canada capable of undertaking world-scale projects.

Peter Stalenhoef, president and chief operating officer of heavy industrial, summarized the growth of the PCL organization in recent years and its impact on the world of industrial: "When **Monad**, an industrial contractor, joined the PCL family of companies in 1995, it became the first acquisition of an external construction firm in the history of PCL. The resulting Monad companies were subsequently restructured to serve the commercial building sector in B.C. under PCL Constructors Westcoast Inc., and the industrial market in both Alberta and B.C. under Monad Industrial Constructors Inc.

One of PCL's objectives was to expand the geographic diversity of the industrial operations. Our successful Edmonton-based industrial division has worked hard to develop long-standing relationships with clients across North America. To enable us to better respond to potential opportunities in the industry we needed to broaden our scope. This led to the **2002 acquisition of a full service industrial company in Bakersfield, California**, which established our first U.S. industrial district office. Under the management of John Kerchinski, PCL Industrial Construction Services, Inc., primarily serves clients in California, Nevada and Arizona.

In April 2003 we **acquired the assets of an industrial electrical company to launch PCL Intracon Power Inc.**, managed by Abe Reimer and Brent Holdner, thus enabling us to better serve western Canada.

October 2003 saw the **acquisition of the assets of Atlanta-based Teton Industrial**. Teton Industrial Construction, Inc. was then incorporated. Founder and president Jim Watson said, 'As a relatively young company, Teton is fortunate to be able to draw on PCL's sophisticated systems, controls, project execution and review processes.'

For PCL, it meant a new geographic marketplace. We opened a Fort McMurray satellite office to better serve our major oil sands clients in northern Alberta. Established in 2003 under the management of Ian Johnston, PCL Industrial Management Inc. was part of a successful joint venture that was awarded the **Tucker Thermal plant project for Husky Energy in 2004**. The project positioned PCL as a leading contractor in the rapidly growing industry employing steam-assisted gravity drainage (SAGD) technology for the recovery of highly viscous crude oil deposits.

Melloy Industrial Services Inc. was incorporated in March 2004 to complement the PCL family of companies following the acquisition of the assets of an Edmonton specialty firm. Melloy specializes in heavy industrial shutdown work, a particularly challenging and specialized niche market. Based in Edmonton under the management of Graham Knight, Melloy serves the oil and gas, pulp and paper, and power industries nationwide.

All of these efforts strengthen our ability to meet our industrial clients' needs. We can deliver consistent project execution throughout Canada and the U.S. with better control of cost and schedule. This is particularly attractive to our clients who have operations on both sides of the border." Peter Stalenhoef