STEPPING FORWARD 2005

The Face of Construction is Changing

A WORK RESEARCH FOUNDATION WHITE PAPER

written by

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I. Introduction

Construction people are more than aware of the challenges associated with beginning a project before all of the engineering is completed. No one would argue that this is the ideal way to do things, but sometimes necessity demands it. When there is urgency to completing a project and some of the key ingredients are in place, we begin building, trusting that we can make the missing pieces "fit" within the overall framework, recognizing that some adjustments will inevitably have to be made to work already done.

This conference and discussion document represents such a beginning. For the past several years, research has been pursued with respect to the industrial construction sector, analyzing the implications of various developments, in an attempt to chart the future. However, there's still too little data, and there are ongoing differences about the desired outcomes of change in the industrial construction sector, to confidently predict what this industry will look like in the future.

While there is a wide range of data to be considered, three specific research pillars inform this discussion paper and our conference.

In *Working Competitively in Tomorrow's Construction*, the Work Research Foundation argued that the construction industry was changing from a bi-polar union/non-union environment into a continuum with at least seven variations of craft organization at work on the front-lines of industrial construction. Following from this, there will be pressures on the organizational infrastructure supporting the industry – including infrastructure involving unions, contractor associations, safety, apprenticeship and training systems, labour relations structures, and other labour market institutions – to adapt to these changing realities. The pace and the shape of these changes will be significant

The second pillar comes from research that looked at certain quality of life and job satisfaction measures for mobile workers. This work, completed under contract to the Construction Sector Council and released this past spring under the title W*orking Mobile: A Study of Labour Mobility in Canada's Industrial Construction Sector,* argues from a significant research base that ensuring opportunity and competency for workers should not presume that workers will be willing to go where the industry needs them. The report paints an alarming picture of mobile workers – a pool of workers on which Canadian construction must increasingly rely given geographic realities – who work mobile because they feel they have no choice, who experience a comparatively negative quality of life, and who exhibit disturbing levels of negative self-esteem.

The third pillar comes from an ongoing sense that has been widely shared in the industry, but is best documented by the Construction Sector Council's latest release of Labour Market Information reports in June. These reports documented the significant construction investment that is being planned across Canada, and the implication that it will have on the demand for construction workers. Combined with the ongoing "image" challenge the skilled trades have convincing young people that the trades are a desirable career destination and with the demographic realities construction shares with many industries in Canada, this increased demand paints a picture of significant labour challenges in the years to come.

To summarize, we have a construction sector poised to experience significant growth, but organizationally in flux. The industry must recruit extensively, but is not currently offering a positive experience for a significant subset of its constituency known as "mobile workers."

This document is a discussion paper, not a research document. It intends to ask questions, to prod consideration of some uncomfortable issues, and to open up a conversation not being carried on within the industry. Through personal interviews, the co-sponsors of this project, and by way of those registered to this conference, we bring to the table an industry cross-section that includes players who frankly sometimes spend more time talking about each other than talking to each other. There are diverse and sometimes conflicting perspectives on the questions raised in this paper and we are under no illusion that these differences can be easily overcome. In fact, given the history and partisanship which continues to operate within this industry, this exercise's objectives will be met if we are able to better understand each other and respective positions that we hold. There are challenges not only between, but also within, organizations. For these reasons, our objectives for this exercise are to facilitate dialogue and understanding, not to champion specific proposals.

Restraints:
During the past few months, I conducted eighteen formal, and approximately twenty-five informal, interviews with a cross-section of industry players. These included union representatives, contractors, owners, front-line workers, industry association representatives, and government officials. I selected the interviewees with a view to obtaining as broad a cross-section of input as possible, recognizing that not everything I heard was equally representative of industry practices. I assured each of the interviewees that what they told me would be treated confidentially and nothing would be attributed. There was a definite bias in the interviews involving those involved in the Alberta oil-sands mega-project work, although the subject matter discussed is applicable to most other sectors and regions.

This discussion document is divided into three sections. In the first, we focus on "the numbers." Given the increased demand for construction workers that has been identified, where will these workers come from? Our recruitment systems, apprenticeship programs, labour mobility (including foreign worker) plans all tie into this numbers issue.

The second section deals with "quality of life" issues that involve the workers' life on construction projects. What can we do differently to make this a more desirable occupation to work in? While there is always be a "numbers" component to industrial construction, workers should not be treated as commodities. They are people with whims, fancies, likes and dislikes, and unique personalities who make this world much more interesting and the business of workforce planning much more complicated. We ignore the emotional, social, community, and job satisfaction dimensions of construction work to our peril. In the second section, we attempt to canvass some of the issues related to quality of life.

Beyond the worksite involving an owner, contractor, and workers, the third section recognizes that there are many organizations involved in this process who perform an indispensable role in the delivery of services and organization of this sector. It is through them that the "voices of construction" are heard. What do these challenges mean for the various organizations in the sector? Are they up for the challenge of change? While philosophy and competition for market share divide them, it is helpful to take a step back and observe the interactions within the industry "from 30,000 feet" in order to more clearly understand the issues raised by our organizational infrastructure.

I am aware of the inherently political nature of these observations. I have done my best to refrain from getting into issues which involve either the internal affairs of any organization or the direct "partisan" interactions between organizations. However, in an industry where networking – or to use the more technical term "social capital" – is such a significant factor in how work gets done, we cannot look at the labour issues facing us without making some observations as to the nature and quality of interactions within the industry.

Finally, a preliminary comment. The Work Research Foundation is an independent think-tank, and I am the lead researcher in our organization on construction-related matters. We have diligently attempted to be a "neutral" observer of this industry for the several years. We have engaged in research that asks forthright questions, and been willing to go where the data leads us. That being said, even the most precise data requires interpretation. We have done our best to suspend our biases and experiences in this sector to provide a report that is balanced and reflects the questions that confront the entire industry.

That being said, any meaningful analysis takes place with a basic framework of core convictions. My own views regarding the dignity of the human person (which for me stem from a religious belief that every person is a divine image-bearer), the importance of workers having access to collective bargaining structures (since work is a social activity, and by definition, my decisions affect my neighbour), and the value of markets (an economy works best when reward has a connection to risks, and prices at least in part reflect the laws of supply and demand). This belief in markets is qualified in that while I believe in a market economy, I do not believe in a market society, where everything is commercialized and the impersonal market hand is given god-like status. Our responsibilities as citizens of this society and stewards of this world are to identify and to bring the unique gifts each of us possesses, as we live our lives in the diverse spheres which make up contemporary society.

This is a "nuts-and-bolts" discussion document that relates to challenges facing those involved in industrial construction in Canada in 2005. this report does not expand on these core convictions and attempts a high level of objectivity. Still, as with any research, we operate within a framework of assumptions that we openly acknowledge for your consideration.

II. Where will the workers come from?

During the past number of years, the construction industry has been a good industry for most to work in. Historically a cyclical industry, construction by and large has provided relatively stable work opportunities throughout the first half of this decade. Driven primarily by strong residential activity, the CSC forecasts that non-residential investment will drive activity for the next several years, with peak demand expected in 2008. The longer term forecasts are for a more "stable and subdued" pattern of growth, but when considered against the context of demographic shifts, the prospects remain quite favourable.

The Alberta forecast involves a significant spike in labour demand, peaking in 2008 but with good prospects throughout the period. The forecast only for workers involved in mega projects (those exceeding $100 million), prepared by the Construction Owners Association of Alberta, predicts demand for an additional 12,000 workers required in the oil sands between now and 2008. These forecasts do not include the various spin-off implications for work on projects under $100 million. The CSC report is based on $40 billion of investment over the forecast period, but the more common estimates relating to this industry double that amount. Given that as projects are completed there will be an increased demand for maintenance construction workers drawing on the same labour pool), it's safe to say that labour demand far exceeds present capacity to supply that demand.Some observations about the composition of the workforce that has historically been looked to supply this need are in order:

- There is a "Western Canada mobile pool" (which includes many workers from Atlantic provinces) that move regularly across provincial borders;
- There are major projects in other provinces (including the Manitoba Hydro and Floodway projects, various Saskatchewan mining projects, projects relating to both mining expansion and the Olympics in BC) which result in demand requirements for construction workers that parallel (at least in timing, if not in scope) those in Alberta; and
- The effects of various recent natural disasters in the United States, especially that of Hurricane Katrina and its impact on the southern U.S. oil and gas production facilities, will exert upward demand pressures on the North American skilled trades force.

There is wide-spread awareness of the challenges that the present and future labour shortage poses. This clearly was the top-of-mind issue

A new Vancouver Convention Centre projected to cost $565 million is slated to be completed in time for the 2010 Winter Olympics to become home to some "10,000 journalists during the Games and 50,000 conventioneers annually." 6000 skilled workers are needed to bring this architectural jewel of Vancouver's Olympiad to completion. But where will 6000 skilled trades people come from in a labour market already pushed to meet labour demand? 100 certified glaziers are required to install the glass sheathing on just one of the Convention Centre buildings, but to certify one glazier requires "540 hours of schooling and 6,000 hours of on-the-job training." Only one B.C. institution, BCIT, teaches glazing. BCIT "graduates just 32 glaziers per year." What can be done?

Source: Ross Howard, "Who's Going to Build This?" *BC Business* (September 2005):59-67.

with virtually everyone I interviewed. As one would expect given the public positions of the various industry players on these questions, their preferred solutions varied. But everyone seems to agree that the ideas presently on the table are not adequate to the challenge. There is agreement that no one solution will "solve" the problem and that different organizations pursuing different strategies for their own reasons is, in fact, a good thing. Different strategies may complement each other.

Most of the input received focused on recruitment and apprenticeship. There is awareness of various industry initiatives and a certain "buzz" about what various companies are doing to get a leg up on their competitors in this regard.

a. Recruitment

i. Image Issues

Although the details of this point form the second section of this report, we note that general impressions of life working industrial construction are not very positive, especially in camp life on the mega-projects, although the image spills over into an impression of working in construction generally. Horror stories circulating include limited recreation opportunities, unhealthy lifestyle choices (especially relating to drug and alcohol abuse), harsh working conditions, and an "institutionalized" camp life that most would find undesirable. The predominance of a white, male, English-speaking workforce can make it intimidating for those who do not fit that description. It is perceived as affecting recruitment among potential workers not of that description.

"The Immediate Future – (2004 to 2008)

The sector shift expected for most provinces will require several adjustments in the near future. There are several distinct markets that will be strong and draw workers from related or adjacent markets. These markets include:

- Alberta oil sands projects from 2005 to 2009
- All sectors in B.C from 2005 to 2009
- Industrial building in New Brunswick from 2005 to 2008
- Engineering projects in Manitoba from 2005 to 2008

The associated demand for workers create large requirements for most of the trades associated with industrial, institutional and engineering/civil projects. These trades include:

- Steam, pipe, gasfitters
- Insulators
- Industrial electricians
- Boilermakers
- Welders
- Construction millwrights
- Ironworkers
- Crane operator"

Labour Requirements for Canada and the Provinces from 2005 to 2013: National Summary. Ottawa: Construction Sector Council, 2005, p. 8.

On-the-job working conditions are such that most interviewed who were familiar with sites admitted that they would not recommend mega project construction as a career choice for their own sons or daughters, except to earn significant money in the short term. While negative images drawn from the present mega-project work environment are top-of-mind, there were other negative connotations recruiters face which add to the challenge. Although some efforts of the past decade to profile the opportunities in skilled trades positively have netted some results, many high school students are still steered toward the professional and business worlds. Career paths and opportunities for those who enter the construction trades are not as widely understood as they might be in order for young people to consider the trades to hold potential for advancement.

ii. Connections

A regular theme emerging from the interviews regarded the lack of an intentional means to connect people interested in joining the construction workforce with a particular employment opportunity or employer. Several interviewees cited examples of conversations in a cab, bar, or other social occasion where someone currently occupied in another sector was interested in the "boom" and expressed interest in learning more and seeking an opportunity, but did not know how to pursue that interest. Several cited looking up the name of an oil company in the phone book, calling the number, and asking if they were hiring construction workers for the oil sector and receiving a negative answer. They didn't know where to turn.

A unique suggestion raised by one interviewee involved copying the approach to recruitment employed by the Canadian Armed Forces: a recruitment office. Noting that the Canadian Armed Forces is presently spending $8 million to fill 6,000 recruit positions, this interviewee suggested that a similarly coordinated strategy among various organizations in the industry might better manage the considerable resources being spent by the industry. Further, such a strategy could by itself draw attention to the impending labour shortage in the sector which in the view of many is simply not well enough understand among the general population. While any specific proposal – and certainly this one – raises as many questions as it would solve, there is a sense that something "radical" needs to be done about the system of entry into the construction sector.

There is a related point we pick up under apprenticeship. Some recruits are lost since they are unable to adjust to the "employer turnover" factor which is an inherent part of working in this sector. There is a sense that many new recruits enter the construction sector but leave the sector again before becoming established. Although the Building Trades hiring hall system, CLAC's referral system, and the Merit referral system are all designed in different ways to help address this issue, there is a sense among many that the industry is losing potential participants whom it really cannot afford to lose.

Quantifying the extent of the challenge is difficult. We know from apprenticeship data that if a person is registered as an apprentice and completes the first school component, 76% proceed to journeyman status. Because many jobs involve short-term crew-ups, workers recycle through jobs but may not have an adequate network or understanding of the process to hire onto the next job.

Because contractors are usually the employers, each of whom completes a small piece of a large project and has irregular work force requirements from day-to-day, employment in the construction industry is very different than other sectors. The CSC survey of 875 workers on industrial projects[1] asked "In a typical year, how many employers do you work for?" One-third of respondents responded with "one," an additional one-third replied "two," eighteen per cent replied "three," and the balance indicated "four or more employers."

The issue may not just be finding the next job. Some input suggested the emphasis on productivity combined with the attitudes of some journeymen results in a lack of time being taken for hands-on training of younger workers at the jobsite. While some companies have adopted formal Apprenticeship Mentoring programs in which checklists are developed and targets are set for apprentices to learn specific skills from journeymen during a specific time-period with incentives for participation, training cannot be addressed with check-lists and programs. It's really a cultural issue. A less-than-welcoming learning environment does have a significant impact on how a newly recruited construction worker will view involvement in this industry.

To frame these issues slightly differently, it may be helpful to redefine our understanding of recruitment. To date, recruitment has been understood as placing someone not currently involved in construction in their first construction job. Perhaps we should extend our understanding so that we think about recruitment as getting someone currently outside of construction through their first year of regular construction employment. While this overlaps with retention issues evident at all stages of a worker's construction career, these issues are especially pronounced for workers in the first year of employment. For too many, the first year involves irregular paycheques, a less than hospitable work environment, and stresses involved in worrying about where to find future work. It's not surprising that some recruits abandon the sector.

iii. Placements

Although significant numbers of workers are needed, much of the work is not suited for entry-level positions. Various interviewees noted the challenge involved in maximizing the number of first-year apprentices on jobs and finding meaningful and productive work for them to do. Although wanting to be good corporate citizens, concerns about both productivity and safety were repeatedly raised as impediments. Suggestions made included restructuring the apprenticeship training models so that there is more schooling during the early part of the work period in order to broaden the range of tasks for which apprentices might be equipped to make a productive contribution. There were also suggestions of creating a pre-job safety program (going well beyond what is covered in CSTS) through which new recruits might be better prepared for the realities of the job site and be less of a safety risk. While no concrete data is available to us to verify the concerns, there seems to be significant anecdotal concern that a disproportionate share of both incidents and lost-time injuries occur among recent recruits. Given the concerns raised about apprentices and the potential implications of lagging behind industry norms, this is becoming a factor in the decision-making of some as to how many entry level positions are being provided.

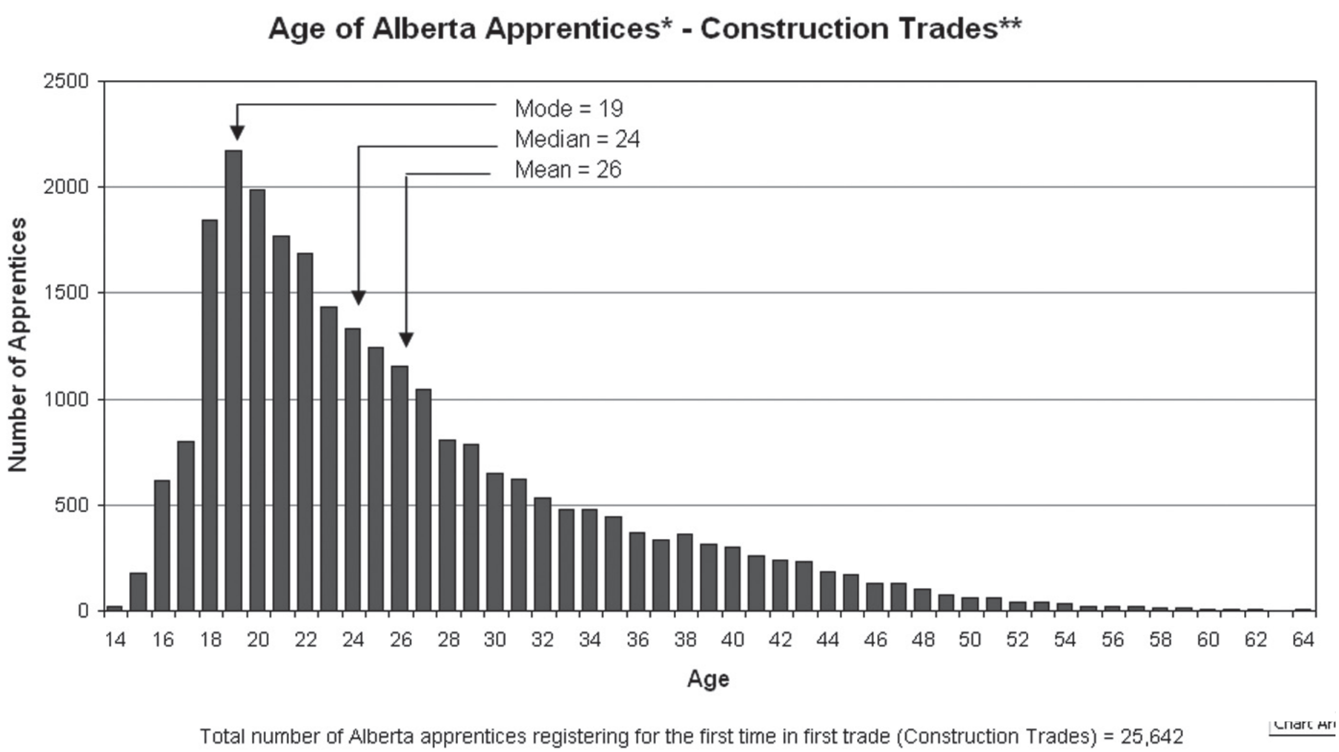
iv. Target Audiences

Considerable attention has been paid over the past decade to advertising the trades as offering desirable occupation for young people to consider. The Registered Apprenticeship Program allows high school students to start an apprenticeship while still in high school. The "Trade Up" CD promoted industry awareness among high school students throughout the province. Targeted advertising campaigns focused on young people's making career choices in favour of the trades. These have all been positively regarded as being useful and worthwhile endeavours. There are also some initiatives focused at increasing the numbers of aboriginal and women recruits to construction frequently identified. Some interviewees, however, suggest that current programs are not effective enough in heightening awareness of the construction opportunities, particularly among targeted audiences other than high school students.

The attached data indicates that although high school graduates are the single largest group of apprentice registrants, there are presently an equal number of apprentices registering for the first time after the age of 24 as there are before that age. While we do not have historical data with which to compare and learn whether this has changed significantly in recent years, anecdotal input suggests there is a market for potential recruits who are not being specifically targeted.

v. Government Policy

Age of Alberta Apprentices

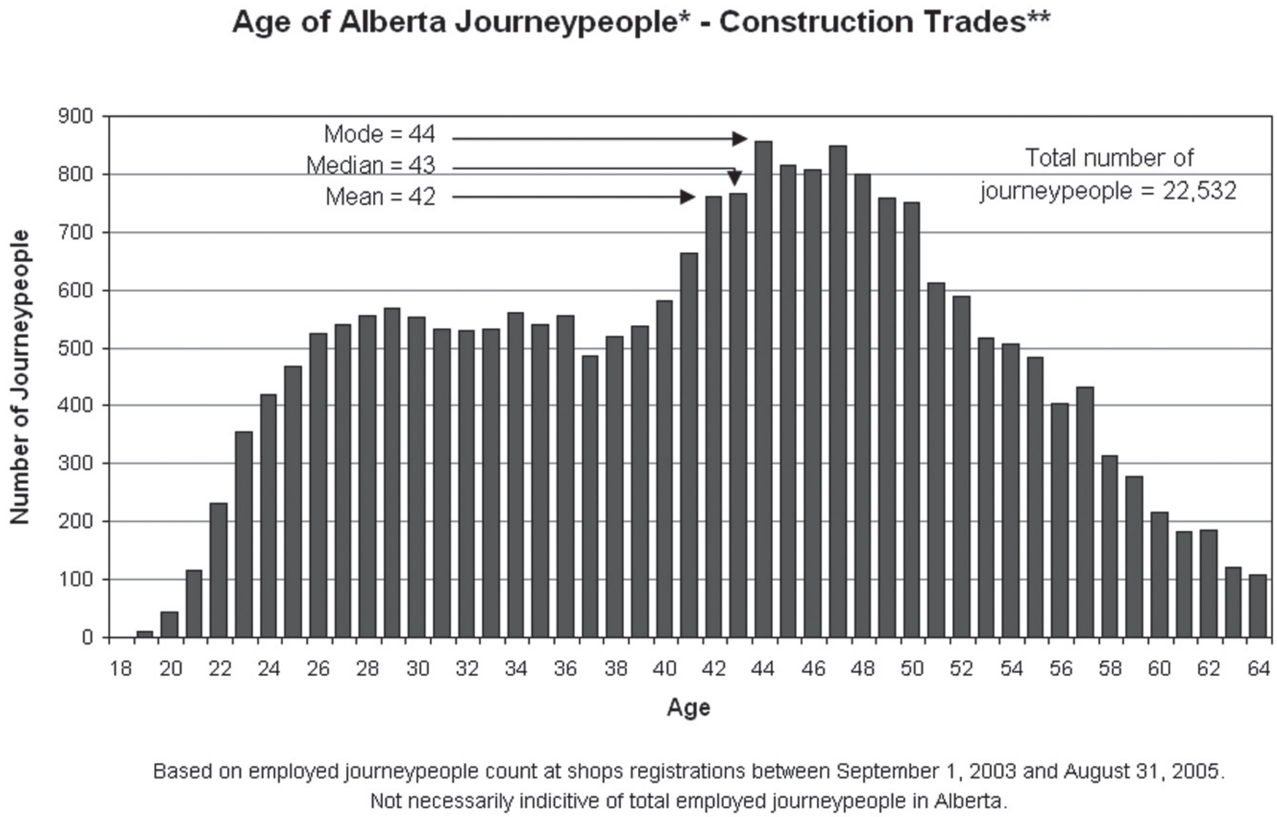


Source: Alberta Advanced Education, October 2005

* Age at date of registration.
** Construction Trades include: boilermaker, bricklayer, carpenter, crane and hoisting equipment operator (except wellhead boom truck), electrician, insulator, ironworker, millwright, plumber, sheet metal worker, steamfitter-pipe fitter, and welder.

Mean - defined as the sum of the ages of all apprentices divided by the total number of apprentices involved, i.e., average age.
Median - defined as the middle age category with an equal number of apprentices younger and older than this group.
Mode - defined as the largest age category or most frequent age of apprentices.

Age of Alberta Journey People



Source: Alberta Advanced Education, October 2005

* Age at date of registration.
** Construction Trades include: boilermaker, bricklayer, carpenter, crane and hoisting equipment operator (except wellhead boom truck), electrician, insulator, ironworker, millwright, plumber, sheet metal worker, steamfitter-pipe fitter, and welder.

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Mode - defined as the largest age category or most frequent age of apprentices.

There were a wide range of recommendations provided by interviewees as to potential public policy changes that might be undertaken to assist in the recruitment of construction workers. Recognizing the controversial nature of many of these proposals, even within the construction industry, as well as the focus of this exercise to facilitate an industry dialogue, not a public policy white paper, we have chosen to consider this beyond the scope of this paper.

b. Apprenticeship

By all accounts, Alberta's apprenticeship system works well and is held in very high regard by all segments of the industry. Although various comments and suggestions were made in the context of the present workforce challenges, the system, those involved in administering it, and its responsiveness to industry concerns were the subject of laudatory comments of the sort not typical of industry when commenting on government or quasi-government administrations.

This is not an in-depth report on the apprenticeship system. But we should not ignore the various comments that have direct relevance to the supply issues that form the heart of this discussion paper.

Apprenticeship systems are programs designed to

Apprentice Registrations and Completions, Alberta

Occupations	2004			Average C of Qs Issued 1999-2004
	Total Reg.	New Reg.	C of Qs Issued	
Boilermakers	189	41	26	21
Bricklayers	212	69	21	16
Cabinetmakers	399	115	44	40
Carpenters	3,091	1,093	246	209
Concrete Finishers	86	46	9	10
Construction Millwrights and Industrial Mechanics (except textile)	1,357	366	191	200
Construction Trades Helpers and Labourers				
Crane Operators	1,679	885	326	241
Drillers and Blasters – Surface Mining, Quarrying and Construction				
Electrical and electronics engineering technologists and technicians				
Electricians (except industrial and power system)	6,422	1,442	825	601
Elevator Constructors and Mechanics	88	25	19	8
Floor Covering Installers	55	32	1	4
Gas Fitters	278	86	41	44
Glaziers	156	45	16	10
Heavy Equipment Operators (except crane)				
Heavy-duty Equipment Mechanics	2,833	963	437	506
Industrial Electricians				
Industrial instrument technicians and mechanics	1,289	341	186	142
Insulators	461	96	53	33
Ironworkers	368	146	103	64
Land Survey Technologists and technicians				
Other Trades Helpers and Labourers				
Painters and Decorators	154	63	21	20
Plasterers, Drywall Installers and Finishers, and Lathers				
Plumbers	2,722	720	279	191
Power System Electricians				
Public Works Maintenance Equipment Operators				
Refrigeration and Air Conditioning Mechanics	533	150	69	62
Residential and Commercial Installers and Servicers				
Roofers and Shinglers	160	63	15	9
Sheet Metal Workers	944	242	90	67
Stationary Engineers and Auxiliary Equipment Operators				
Steamfitters, Pipefitters and Sprinkler System Installers	1,985	591	285	158
Structural Metal and Platework Fabricators and Fitters	131	39	29	24
Tilesetters	57	22	9	5
Truck Drivers				
Welders and Related Machine Operators	4,700	1,632	980	843
Total	**30,349**	**9,313**	**4,321**	**3,525**

Source: Alberta Learning

Taken from *Construction Looking Forward: Labour Requirements for 2005 to 2013 for Alberta.* (2005) Construction Sector Council transfer knowledge and skill from those who have it (journeymen) to those who don't (apprentices.) As noted in the recruitment section, this involves not only formal systems of learning, but also requires a willingness on the part of journeymen to invest in sharing that knowledge with those who are their apprentices. As one journeyman noted in an interview, it isn't just the ability to understand the math and do exact calculations which make a productive journeyman, but also the ability to learn the shortcuts. This carpenter recounted for me how his journeyman mentor – someone with only grade eight education by his account – provided him with numerous mathematical calculating shortcuts learned in the field which enable experienced journeymen to do their jobs efficiently and productively. This particular journeyman, who was involved in an apprenticeship mentoring program, was lamenting the attitudes of some present-day journeymen who were not willing to provide their understudies with the same insights for various reasons. His essential point was that an effective apprenticeship system is as much a function of attitude and commitment of all those involved as it is that of proper systems and accountability mechanisms. That being said, the systems exist in order to ensure that credentials mean something and can be counted on as representing a certain body of knowledge and skill.

i. Delivery Models

Most of the input received reported and reacted to variations on the delivery models. There are experiments occurring which involve mobile delivery of various schooling components – on-site delivery of the classroom component of apprenticeships delivered either in the evenings or during the certain days in the work cycles. The challenge facing many of these programs is the inflexibility of the Employment Insurance system. The "ordinary" approach of attending trade school in blocks each year results in the employee receiving EI income for most of their time spent in trade school. When the delivery is provided through alternate means (such as working six days and going to school four during a 10-day work schedule at a remote project location), there is no way of accessing income support to offset the wages for the period, meaning either the employer or apprentice needs to offset this cost. Although there is widespread acknowledgement of the value of these sorts of alternate delivery systems in that the employee is putting to the theory to practice as he learns it, there is an inherent bias in the system against such innovations.

ii. Ratios

The ratios of journeyman to apprentice are for the most part 1:1, although for boilermakers the ratio remains 3:1. There were various other trades for which ratios exceeded the 1:1 ratio, but the Alberta Apprenticeship Board changed these earlier this year.

This is a very political issue with those supporting the status quo arguing that the work environments in which these specific trades regularly work require high journeyman to apprentice ratios in order to ensure that knowledge is passed on to the apprentices. Those opposed to the ratios may suggest this is a political issue designed to limit the supply of journeymen thereby maintaining upward pressure on wages. Most interviewees, recognizing this as the hot political potato that it is, found a way of evading the issue and moving the discussion on to safer topics.

iii. Challenge exams

There are various companies who are working with the Apprenticeship Board to provide assistance to those who have worked for some time in the industry but are not equipped with the knowledge or credited hours to obtain these credentials. This includes providing special classes to workers who have accumulated the hours in order to upgrade their theoretical knowledge and equip them to challenge the exam for their particular trade. The Apprentice Board has been working with employers, allowing some of this experience to be credited and registering new apprentices with advanced standing based on their documented hours and ability to demonstrate their skills and training.

c. Labour Mobility

The themes of the "Working Mobile; A Study of Labour Mobility in Canada's Industrial Construction Sector" were reinforced by our interviews. The 2005 report of the Best Practices Committee of the COAA summarizes the issues well:

> " (I)t takes considerable resources to attract and retain a worker to work on a remote site away from his or her home, family, and friends. [*Working Mobile also*] suggests that there is only a relatively small subset of the construction industry that are prepared to "work mobile" on a regular basis, and that generally these workers only do so out of financial necessity.
>
> The *Working Mobile* report confirms what many of us believed through anecdotal evidence; that in order to domestically meet the demand for workers on remote projects, such as those planned for the Fort McMurray region, there has to be a significant surplus of workers available in Alberta and the rest of Canada. This requirement is due to the fact that there are only a small proportion of those available workers who will be willing to temporarily relocate to work in that area, and the majority of them will only do so if they see it as a significant financial benefit. Also they will only be retained on remote sites for as long as they perceive this financial benefit significantly exceeds that which they would be able to earn closer to home.
>
> This situation leads us to believe that, although the forecast suggests that the supply of workers, while tight, will be able to meet most of the demand for most of the trades with shortages only occurring at peak periods, we may be over-estimating the number of workers who will actually be prepared to "work mobile" on remote northern sites. This, combined with the number of recently announced mega projects as discussed earlier, suggests that unless we are able to develop innovative ways of attracting workers to these sites and retaining them, we may be facing even more shortages on these remote projects than is forecast in this report."[2]

Various solutions in respect of the attraction of mobile workers will be covered with the various quality of life issues in section 2 of this report.

d. Foreign Workers

This issue has been high profile and the focus of some controversy, and one on which interviewees were generally reluctant to provide much detail. Those who were actively involved in pursuing the possibility of bringing in foreign workers emphasized that this was a "last resort" option, and highlighted the significant costs associated with bringing over foreign workers. All involved took pains to emphasize that their policy was "first local, then provincial, then Canadian, then North America, and only then the rest of the world." Most suggested that the political issues entailed in bringing in foreign workers, as well as the cultural issues involved in making them effective contributors on-site, would make this a difficult proposition to see through to completion. Although there was a widespread acknowledgement that importing foreign workers may be a necessary part of the equation, there was reluctance on the part of most to become identified with this solution and little substantial input was received on this topic.

III. Connecting Construction with Communities

In this section, we turn to the quality of life issues surrounding construction labour. Since "quality of life" is a very subjective phrase embodied by a range of goals and aspirations far too diverse for us to sort through, we have organized this section around the theme of "communities." Families, neighbours, those with whom we spend our recreational hours, and workplace peers all represent different "communities" to which we belong. Whatever the differences in our aspirations, there is a common desire to belong. With belonging comes stability and a sense of self-worth which most would agree significantly affect a worker's ability to be a productive contributor to society.

Especially as they relate to the construction of mega-projects located in remote areas with a comparatively harsh climate, discussions regarding quality of life have their limitations. There are some things which many find unpleasant but which cannot be changed and must be endured as "part of the job." But this does this require a resignation to the status quo. Just because something is currently being done in a certain manner doesn't mean there is no possibility of changing the practice in a manner that mitigates the negative impacts on workers. From our interviews we concluded that while some degree of innovation has occurred over the past decade in part as an attempt on the part of one company to distinguish it self from its competitors and gain an "edge" in the competition for workers, many companies are rethinking these issues at an even more fundamental level and are open to considering changes that would unlikely have been even discussed a few years ago.

a. Construction Families and Community

Approximately 70% of workers on industrial construction projects have a spouse or common-law partner,[3] with about half with dependents at home.[4] The input provided by interviewees for this paper reflected themes similar to those we heard in the focus groups for our *Working Mobile* study. Unless something is done to "normalize" the opportunity to combine work in remote construction sites with family life, workers will consider working remote only in the context of a "short-term" sacrifice to be made in return for handsome financial rewards or as an undesirable path to be followed only in cases of necessity. Given the construction industry demand anticipated throughout the country, much of which will take place "closer to home" than the mega project work in northern Alberta, finding workers willing to work mobile may become increasingly difficult over time.

The value of the financial rewards for working mobile are constantly being weighed by workers against not being able to coach a son's hockey team, not being present for significant family occasions, or just not being a part of family life day to day. . The challenge might be dubbed "the MasterCard dilemma": the premium income to buy a better lifestyle is clearly tempting, but there are some things that remain "priceless."

Financial costs are also figure into workers' calculations. Approximately thirty per cent of workers cited both "personal expenses incurred in the process of getting to and/or maintaining this job" and "significant personal expense in dealing with a family/personal commitment or emergency" as barriers to working mobile.[5] Examples cited span a significant range, from having to hire help at home to deal with repairs that the worker would have made himself had he been working local, to premium priced airline tickets required to fly home because of a family emergency. Obviously those with more dependents are more likely to encounter these challenges than those with fewer dependents.

When asked to provide strategies to mitigate these negative effects, two areas tend to be raised, but no consensus is evident as to how either might significantly impact the situation in either the short or medium term.

The first strategy involves scheduling. The pros and cons of various scheduling patterns can be reviewed, however there is no single pattern that suits all workers. Given that financial motivations are the reason most workers are willing to work remote, the opportunities to earn overtime hours or other premiums are as much a factor in schedule preference as is the opportunity to return home. Those who live further away prefer longer cycles, since more of their "off-time" is taken up with the commute. Those who live closer tend to prefer shorter, more intense cycles which enable them to be home with their family on a more regular basis.

The second strategy involves moving families to be closer to work. This will be discussed in more detail under the next heading, but under the heading of families, it must be noted that for almost all of the front-line workers with whom I raised this option during the past year (approximately 100), the response was negative. Reasons cited included financial (there were concerns that certain premiums presently available would no longer be available); the perception of Fort McMurray as a desirable place to raise a family (with a wide range of negative perceptions about

PROFILE OF THE MOBILE WORKER:

"The mobile worker is male, aged 30 to 49 years. He is a member of a traditional craft union and has completed an apprenticeship in his trade, which he pursues on industrial construction sites. He is married, with at least two dependents under the age of 18 years, and his working mobile has a negative impact on his marriage and family. His motivation for working mobile is financial, but the personal expenses incurred on the job site and at home because of it could become a barrier to his continuing to work mobile"

Working Mobile: A Study of Labour Mobility in Canada's Industrial Construction Sector, Ottawa: Construction Sector Council, p. 2. This is a report researched and written by the Work Research Foundation.

available amenities); and a concern about moving away from a supportive social infrastructure. (Many workers suggested that extended family, well-established social relationships and community groups, and a "rootedness" in a home community provide needed supports for families that help the family cope with the challenge of dad's working mobile.) There are perceptions that this region is particularly vulnerable to a boom-bust cycle, and concerns about the long-term implications of buying real estate – a family's single most significant investment – in such a market seem widespread. Whatever arguments may be advanced in favour of an approach that would encourage more families to relocate to the region, it is clear that significant work with the workforce is needed to change their perceptions of the community as a desirable place to raise a family before this will have any significant impact mitigating the negative effects on family life.

b. In what community do workers live?

Most interviewees provided input regarding the necessity of significant development needing to occur in Fort McMurray in order to better address the range of quality of life concerns. At present, the city's physical infrastructure (roads, schools, and hospitals), recreation and cultural amenities, and the cost of housing make the consideration of moving families to Fort McMurray a non-starter for most workers. Furthermore, the combination of live-out allowances (or free camp living) and travel allowances are calculated into the mental math of some workers as part of the compensation package, with the result being a disincentive to working locally.

The issues relating to the Athabasca (Wood Buffalo) Region in northeastern Alberta are the subject of a Special Working Group on the subject, government attention, and active discussion within the various companies who are the major employers in that area. This is a subject beyond our scope. We cite the issues because they are presently magnified in that region, and similar concerns are identified in other areas where remote construction projects are undertaking.

Various owner and organizational interviewees mused about possibilities of reorganizing the cost of mobile workers so that there are incentives for workers to relocate to the Fort McMurray region. Companies spend approximately $25,000 to $30,000 per FTE annually, not including

Fort McMurray's population is expected to grow from 60,000 at present to 80,000 by 2010. "Fort Mac's" infrastructure is already strained. Athabasca Region has established a Regional Issues Working Group (RIWG) to address the strain, making the business case to the Government of Alberta for assistance in expanding infrastructure to meet the demand from growth. The RIWG presented a plan to the Alberta Government last April in an effort to return some of the revenue stream coming from the oilsands to Fort McMurray. As a result, the province "recently announced funding to accelerate housing and road development in Fort McMurray as well as planned improvements to water ands waste water treatment facilities." Average price of a single-family bungalow in Fort McMurray: $420,540. Average rent: $1053 per month.

Source: Deborah Jaremko, "Oilsands stress." *Oilweek* Vol. 56, No. 9 (September 2005):39-44.

infrastructure costs, on living and transportation costs for front-line workers. Suggestions range from providing local residency incentives including matching down payments, providing mortgage assistance, or other options. The argument in favour is that once a worker is local, even if the cost is the same, there is a long-term commitment to being part of the Fort McMurray workforce. Many also advanced arguments that this would be necessary to build up the local population base, providing a more solid foundation for the social and recreational infrastructure to be built which would make the city a more desirable place to live.

For every interviewee who floated suggestions in this direction, there were others who argued against this approach. Almost all interviewees consider it inevitable that the town will grow with the increased activity in the region. Many suggest this is a political and economic matter that the construction industry should not actively intervene in, and that by the time any solutions are found, the most significant crest of demand for workers will have passed.

c. Construction Work and Recreation

The most significant concern raised by interviewees regarding the quality of life in the minds of most interviewees with first-hand experience of camp life is the quality of social life. Recognizing that thousands of construction workers will always engage in a wide array of practices, some of which are deemed acceptable by some and repugnant by others, there is the sense that the prevailing culture is one in which pressures for unhealthy lifestyle choices are more pronounced than in other environments. In part, because there are few alternatives, there is a perception that a larger proportion of workers pursue the unhealthy distractions in remote work sites than in the construction work force as a whole.

For obvious legal, privacy, and practical reasons, it is very difficult to measure these issues. In our society, we value freedom and that includes the freedom of one individual to make choices that others may disagree with. Our legal codes provide significant latitude for individuals on many of these matters, up to the point where they pose a risk to others. While the anecdotal evidence is such that it would appear in some quarters the laws are being stretched – if not broken – and that there are even criminal elements that are attracted to this area, it is impossible for us to go beyond these impressions.

Tension is felt by those in positions of responsibility for establishing the “rules” for camps. Crack down too hard and a camp takes on more of an “institutional feel” which is not a desirable atmosphere for attracting workers. However, turning a blind eye to these social issues and a different aspect of undesirability enters into the picture

Several suggestions were made about the provision of a wider range of recreational activities for workers. These include ensuring that more personal amenities were available for workers in the camp setting: organized activities such as sports, or simply more comfortable alternatives where workers can escape what they perceive as a negative environment.

d. Getting to the Job

The issue of how workers get to and from the job was a surprisingly controversial one, no doubt influenced by the coincidence in timing between the conducting of our interviews and the commencement of scheduled air service by CNRL for its workers. While there are certain political issues surrounding this project that it would not be prudent for us to wade into, the issue does speak to a wide-spread concern acknowledged by all involved. The roads leading to and from Fort McMurray are inadequate for those commuting into the city, as well as those going from Fort McMurray to the various jobsites, and many workers feel vulnerable driving as a result. Although many companies have instituted bus services both for the daily commute and for the commutes from their homes to the camps, some workers still feel the risk posed by drivers impaired by fatigue or for other reasons..

There is a connection between individual worker motivations and transportation to and from "Fort Mac" – from outside the region, and about the daily commute. Several interviewees told me that they did use the bus services into Fort McMurray available to them, because they could not stand the "helpless and stuck" feeling that accompanied being located remotely without a vehicle. This is an expensive option: in some cases the family would be able to do without an additional vehicle entirely if it were not for this practice. But workers nonetheless insisted that they "needed" the ability to "get out" that only their own vehicles provided. These comments may have more to do with sociological and psychological issues related to working mobile than they do with transportation infrastructure, but the implications of the one upon the other do merit further consideration.

e. The Workplace Community

There is near universal acknowledgement that the quality of camps has improved dramatically over the past decade, but camps are still not considered a very desirable place to live. The quality of food and the cleanliness of the eating area are the most frequently raised concerns cited by interviewees, followed closely by the lack of privacy in the sleeping and washroom facilities.

Many interviewees suggest that the "camp of the future" will continue to evolve and look very different from present-day camps. The importance of convenient and comfortable internet access, personalized access to television and video entertainment, and expanded recreational and sports facilities are among the more common "wish list" items. Some suggest that camps may need to expand to provide accommodations for family visits or, at a minimum, some accommodation for children and daycare services if the industry is to serious about attracting a greater proportion of women into the workforce.

Increasingly owners recognize they should build a relationship with construction workers even though the construction workers are not direct employees. Some interviewees suggested incentives for workers to "come back to Phase II" of a project, and follow-up events in which workers who contributed to the building of a project could come back with their families to see it in its finished and operational state.

If a single theme emerged from the interviews, it would be to switch emphasis from organizing a series of projects over the next decade to creating a work environment that will attract a workforce capable of sustaining the oil sands over the long haul. With an estimated 6.6 million person years of employment for skilled workers over the next twenty years, and an estimated eighty years of oil reserves that require a significant workforce, all are agreed that a different model for organizing work in the region is needed. Even if we could "get away" with inferior working and social conditions in exchange for a wage premium, in the past, that model is not sustainable in the present and on into the future.

Discussion on this issue is still quite fragmented and there is no industry consensus on how to proceed. While the magnitude of the projects on the horizon is such that both numbers of workers and dollars entailed exceed far and away the typical size of projects in Canada, this is more than a discussion about numbers. It is about individual workers and their ability to find satisfying and productive work, maintain healthy relationships, and convert their involvement in this sector into a life of meaning and fulfillment. That may be the greatest challenge facing this sector.

III. Innovations for Tomorrow

So, how do industries change? It is clear from the foregoing that significant challenges face the industrial construction sector. To meet those challenges, there will be significant adaptation required. So, how do we know **if** an industry can change? Is this something that the market sorts out on its own? Is the quality of change measured by the successes of industry leaders and inevitable copying of best practices which follow? Does adaptation to change simply become a weapon in our arsenal as we compete for market share?

While there is a market aspect to change, in an industry as interdependent as construction there are certain things to be done in concert with others if anything meaningful is to be accomplished.

Defining an industry voice?

Not surprising is where the input of interviewees was very much coloured by where they came from. The industry and its opportunities look very different depending on where we find ourselves in the organizational mix that composes this industry. Certain organizations are favoured, and others are thought less favourably of. While arguments pro and con are raised in defence or criticism, getting beyond the natural self-interest that colours such comments is a challenge since there is often more at stake than apparent to an outside observer.

Still, the diversity that exists within the sector cannot be ignored, regardless of which side of the partisan fences one finds oneself on. It is not my intention to wade into the various debates between various organizations. Instead, the purpose of this section is to provoke a conversation about the industry and its ability to adapt to change. Change will most often be carried out through different organizations and this will inevitably have uneven results. However, stimulating dialogue by which we can better understand each other – even when we disagree and compete – is a worthwhile objective since there are times we need to deal with the consequences of each others positions.

Nuance within the industry must be accounted for. Including local, provincial, and national branches of the various construction employer organizations, there are approximately 2,000 active employer organizations representing portions of the industry across Canada. A "fully-engaged" contractor might easily belong to half a dozen. These would typically include general construction associations, sub-sector contractor associations, and bargaining associations (or non-union associations), not to mention holding associate memberships or serving on construction related committees of such organizations as Chambers of Commerce, user councils, and training and technical bodies. This in no way is meant to invalidate any specific organization or the usefulness of the functions each performs. We simply note a theme repeatedly raised in our interviews: How do we sort out between the different voices that speak for construction? There are segments of the industry that do not feel included in any "industry conversation," and in some cases view themselves as a separate industry from others in construction, When one considers this in the contexts of the various sub-sectors of construction (residential, institutional, commercial, industrial, civil), the challenge of sorting through an industry voice becomes even clearer.

Not only is it difficult to define a unified voice on the construction side of the conversation, when government is involved it is equally difficult to define the hearer on the other side of the table. A consistent theme raised by interviewees is that government generally does not adequately understand construction. Considering that construction is responsible for 13% of GDP, it's notable that no single government department or line ministry deals with construction. Several ministries including trade, labour, public works, health and safety, economic development, natural resources, and finance are involved in the typical issues on which construction and government converse. The complaint underlying much of the input is that there is no "champion" within government to carry forward the concerns of industry.

The picture that emerges is one of a diverse industry, made up of many niche players with competing voices, focusing on their construction competition instead of stepping back to understand the impact on the industry as a whole and on their pieces of the industry. The challenge for any organization that wants to be inclusive of various voices is to be specific enough to make a meaningful contribution to the discussion without alienating a segment of their constituency which almost inevitably will find itself holding a

> "Indeed, after nearly 40 years of commercial production encompassing two distinct phases of growth, the industry is now poised for a third wave of development, one that could see production increasing more than twofold to five million barrels a day, or 16% of North American demand by 2030. This increased production could generate an additional $40 billion of economic growth in Canada, create tens of thousands of new jobs across the country, and produce up to $90 billion in new investment over the next 30 years. To arrive at that point, however, we must plan for it. What we do today sets the stage for tomorrow, raising the question: what is the best way forward? This roadmap helps set a course for oil sands industry growth by identifying issues and technology options to overcome challenges that stand in the way. As producers work toward this new vision, they will rely heavily on technology to grow a truly sustainable industry. To generate and maintain momentum in the oil sands industry, change will need to occur on a number of fronts,"
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> Alberta Chamber of Resources, *Oilsands Technology Roadmap: Unlocking the Potential*, January 30, 2004, p. 2.

minority opinion. Many interviewees expressed frustration at this state of affairs, feeling it was a real detriment to the industry's addressing its challenges. But, perhaps, the problem is illustrated in that none of the suggestions I heard in response to my question, "What should be done about this and by whom?" would achieve any broad-based support. Given the diversity reflected in our conference, the simple fact of this conference's convening to talk about differences in the industry is a necessary first step.

Innovations in Construction Organization

Labour force issues are causing some discussion about alternate construction models. In recent years, off-site fabrication and modularization of construction projects have increased with the consequence that some work can be completed in more desirable circumstances. For many workers, there is a higher quality of life associated with fabrication work, ranging from working conditions and safety, to working regular hours and enjoy family life in a more desirable urban setting. Still, there are limits as to how far this can go and the extent to which it can alleviate concerns.

The expected spike in labour demand from mega projects has made impact elsewhere. One interviewee reported that this was an explicit discussion point at a negotiation table in Atlantic Canada, with the focus being how to arrange the terms in such a way that workers would be provided with local stability and security to prevent their considering the mobile option. Some companies are reportedly rearranging their construction schedules so as to "level out" demand. They are bringing some construction work "in-house," and they are enhancing their maintenance crew complement so they can complete the work. While anecdotes do not constitute a trend, and we don't have data to support or refute this pattern, this is more than an isolated case.

Leadership

The focus of this paper has been the quality of life issues affecting front-line workers in the skilled trades. Several interviewees, however, suggested a corresponding and even greater problem in recruiting adequate foremen, supervisors, and other leadership positions. Given that effective leadership is as much a function of experience and maturity as it is of natural skills or specific training, there will be a lot of inexperienced leaders promoted to positions of responsibility in the next few years. While each of the Building Trades, CLAC, and Merit run supervisory training programs, there are concerns that the present system of "just-in-time" training practiced by the industry has not adequately built up an inventory of leadership experience. This deficiency make itself felt in the consequences for construction in upcoming years.

Reframing Competition

There are interconnected issues associated with attracting a sufficient number of skilled tradespersons to complete scheduled work. Providing working environments that allow the industry to retain workers and have them ready and willing to work where they are needed is forcing a reframing of the industry and the nature of competition within it.

Competition is present at the most basic, front-line level. Brand A vs. Brand B – whether they be a contractor, union, or retail store – compete against each other for their share of the economic pie. There is validity to this concern. Each job won by one party is a job that the other party does not get. This short-term view that looks at competition in the context of each job won or lost leads naturally to a particular type of competitive behaviour.

If we look at workforce development issues only in the context of a series of short-term mega projects through a lense of job-by-job competition, we will not find the resources to meaningfully address the labour issues that confront us. But considering these in the context of an estimated eighty years of significant oil production in Alberta's Wood Buffalo area with projections of 6.6 million person years of employment for skilled trades (plus an additional 1.8 million person-years of work outside of the province),[6] the issues take on a different flavour.

This situation requires us to consider competition in a different way. Regions compete against each other for investment dollars, and for the commitment of a workforce able to deliver, to make those investment dollars accomplish their intended ends, and to start the consequent production with return on investment. Internal issues distinguish various industry players from each other. They continue to be significant and will cause various players in the industry to make different choices according to their preferences. But when dealing with those outside of the industry, many of these internal distinctions are lost.

A federal Department of Human Resources Development (HRDC) study conducted in 1992 for the Upstream Oil and Gas industry[7] highlighted various human resource issues facing the industry. A 2003 report, conducted by the Petroleum Resources Council of Canada,[8] found that "as substantive, industry-wide solutions have not materialized during the intervening years, many of these challenges remain." Simply identifying the issues doesn't lead to a solution. Ways and means need to be found if the industry is to address the challenges it faces.

Is the industry up to the challenge? That's a difficult question to answer. Some disagree about who should be included in the industry. Competitive self-interest always trumps a willingness to share information that could be helpful to industry-wide decision-making. This suggests a need for ground rules in competition Many interviewees pointed to the significant progress made in recent years on joint initiatives in safety, training, and workplace respect [9] to name just a few. Those who insist on seeing a half-empty glass will find no shortage of examples at hand to match the list.

Those involved in industrial construction in Alberta in the twenty-first century have an opportunity not only to build impressive physical plants, but also to make decisions that will shape how construction work is experienced by front-line tradespersons well into the future. Human history provides an adequate basis for suggesting that when confronted with such opportunities, human beings can make a mess of things, but with courage and wisdom they can rise to the occasion and leave a legacy of which future generations can be proud.

The opportunity and responsibility is ours. May we steward it well.

Ray Pennings
Calgary Alberta
November 3, 2005

Footnotes

[1] This data was collected under contract for the Construction Sector Council as part of the project that resulted in the publication of *Working Mobile*. It ended up not being included in that publication and hence is previously unreported.

[2] Construction Workforce Development Forecasting Committee (CWDFC), "Trades Demand and Supply Forecast: Industrial and Engineering Construction Related Trades, 2005." p. 21.

[3] Based on data taken from the survey WRF conducted for the CSC as part of the Working Mobile Project. This is derived from 764 valid responses to Q 35: "Marital Status: Married Common-law -71.1%; Separated/Divorced- 11%; Widowed -0.4%; Single – 17.5%."

[4] Based on data taken form the survey WRF conducted for the CSC as part of the Working Mobile Project. This is derived from 843 valid responses to Q 36: "Do you have dependents at home? Yes – 51.5%; No – 48.5%." Of those who responded yes, 413 valid responses were received to Q 36(b) "If Yes, How Many? 1- 39.7%; 2- 32.4%; 3- 17.7%; 4+ -9.8% (combined from several categories).

[5] See working Mobile, p. 7.

[6] Data taken from a report by the Canadian Energy Research Institute cited in the Calgary Herald, Oct 25/05, p. A7.

[7] Human Resources in the Upstream Oil and Gas Industry, Human Resources Development Canada, September 1992.

[8] The Decade Ahead: Strategic Human Resources Study of the Upstream Petroleum Industry., October 2003 and updated in 2004.

[9] It should be noted that an almost universal comment made in t he interviews were appreciative words for the constructive role that the COAA and its various subcommittees have played in the development of the industry in recent years.