Collaborative Contracting: Achieving Globally Competitive Project Delivery Through Trust

An Inspired Conversations Summary Report | July 31, 2017

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Introduction

Nothing short of a paradigm shift in Alberta project delivery is required in order for investment in growth to return.

According to a Report Published in 2014 by the Construction Owners Association of Alberta (COAA), the average *project cost growth* for Alberta projects is much higher than US projects (15.9% versus 0.5%, respectively). The average *project schedule growth* for Alberta Projects is higher than US projects (16.2% and 5.4%, respectively). These overruns in both cost and schedule are making investors and producers rethink future investments in Alberta, adding significant challenge to overall competitiveness as the market faces long-term oil pricing below $50/bbl. Project owners and vendors must challenge existing business models in order to achieve global competitiveness, enabling Alberta's massive wealth of energy opportunity to stand head-to-head against plays that provide returns with $30 WTI.

While stakeholders across the project delivery chain recognize that there is a major problem, there continues to be a disconnect in making material headway to overcome it. Collaborative and meaningful dialogue between producers and suppliers is imperative in order to move projects forward. Now more than ever, companies need to be working together towards a common end goal (projects that are safe, on-time and on-budget), and approaching projects from a highest-value perspective as opposed to lowest-cost.

Alberta's industry can apply learnings from more mature markets to dramatically reduce inefficiencies. This includes addressing adverse silos, building trust and long-term partnerships through alliancing, encouraging collaboration across industries, supply chains and disciplines, more effectively deploying technologies, embracing deeper front-end planning and redefining contract frameworks.

Event Overview

On June 7, 2017, JWN hosted *Collaborative Contracting: Achieving Globally Competitive Project Delivery*, an Inspired Conversation workshop sponsored by Aecon, Amec Foster Wheeler and Waiward Steel LP.

The objective of the event was to bring producers and suppliers together to understand their challenges and identify potential solutions to reduce costs through increased collaboration within project delivery.

The dialogue centered around three key questions:

1. Why do silos exist between project partners/functions of work?
2. How can all stakeholders effectively collaborate throughout the delivery process?
3. How must contract models change so that producers and suppliers share a common vision of value?

The first half of the event featured presentations from executives sharing their perspectives on current issues and expectations for the future. The second half of the event consisted of a collaborative workshop facilitated using the Inspired Conversation methodology (see page 4).

Industry Presentations

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Inspired Conversation Methodology

An Inspired Conversation is a dialogue designed to seek input and views from a variety of participants on an issue of significant importance to a company, organization, sector or political jurisdiction.

The Inspired Conversation is intended to generate input from diverse participants in order to:

- Identify potential initiatives to address the key challenge and potential collaborators to design, develop and test the initiative;
- And determine the appropriate next steps required to continue the conversation and possibly turn it into action.

Operating Principles

1 A key challenge is identified as the focus of the conversation. The hosts have invited attendees to be engaged in a dialogue to advance the discussion on the key challenge and to identify potential solutions.

2 The Inspired Conversation event operates under “Chatham House Rules”. Participants voice their opinions freely, secure in the knowledge that anything said will not be attributed back to them as an individual, or their organization.

Attendee Breakdown

This round-table event was attended by a curated group of asset stakeholders (owners, operators, EPCs, oil and gas services, fabricators, constructors, academia, and public sector organizations) to accelerate the learning curve, and derive tangible results that can be shared across industry.

83
Professionals

70%
Management Roles

45
Organizations

Participating Organizations

Aecon
Alco Gas & Oil Production Equipment
Amec Foster Wheeler
BIG Associates
Calgary Economic Development
ClearStream
DB Schenker
Enbridge
Fleming & Muir
Galaxy Broadband Communications
Gemini
GO Productivity
Griffiths Sheppard Consulting Group
Human Capital Policy Centre
Husky Energy
Independent
Jet Power & Controls
JSG Professional Services
JWN
Keyera
Kinder Morgan
Kinetica Ventures
Magus Material Solutions
MEG Energy
Mesh Organizational Services
MMR Canada
Peak Solutions
Revay and Associates
RV Associates
SAIT
Shell Canada
SNC-Lavalin
Stantec
Stream Systems
Suncor Energy
Supply Chain Management Association Alberta
Total Geomatics & Consulting
Triskele Logistics
University of Calgary
Upside Engineering
Veerum
Viking Projects
Waiward Steel
Westcor Construction
Wood Group

Key Questions

The facilitators and scribes at each of the discussion tables were responsible for guiding the conversation based on the following set of key questions:

1. Why do silos exist between project partners/functions of work?
Purpose: To understand the perspectives of both producers and suppliers on: project integration, safety, cost reduction and efficiency.

2. How can all stakeholders effectively collaborate throughout the delivery process?
Purpose: To understand the perspectives of both producers and suppliers on: communication, technology and avoiding adversarial approaches (win-lose situations).

3. How must contract models change so that producers and suppliers share a common vision of value?
Purpose: To understand the perspectives of both producers and suppliers on: contract negotiation, bidding process, incentive compensation models, shared risk agreements, collaborative/alliance contracting models, clear scope definition at the bidding stage and clear terms and conditions of contracts.

The following section outlines the key insights and recommendations that came out of the workshop discussion.

Insights & Recommendations

TRUST

INSIGHTS

At the root of silos are trust issues, based on long-standing project performance concerns, resulting in poor alignment protecting interests, conflict, competing objectives and fear-based decision-making.

- **Distrust has led to a win-lose approach to doing business, rather than an alignment of common goals.**

- Distrust leads to a counterproductive market environment with:
  - **Little/no sharing of information** on safety, quality, productivity and project performance;
  - **Single project based thinking instead of a holistic agenda;**
  - **Duplication of efforts;**
  - **Inefficient use of the supply chain;**
  - **Adversarial** contract negotiations and inefficient, unnecessary and costly tendering;
  - **Complex contracts** where each stakeholder holds separate short term risks instead of long-term value-based relationships.

- Companies who focus on **creating value first and foremost** are able to easily establish **rapport and build long-term trust-based relationships.**

TRUST

RECOMMENDATIONS

- **Choose long-term alliances over short-term relationships.** *"Our most successful projects (highest productivity ratios), are our long-term maintenance partnerships. It's like a successful marriage – you have good days and bad days, but you always come back together."*

- Show **clients high quality and high value work,** and trust will naturally form.

- Look for opportunities to **simplify and standardize contracts and incentivize value-add.**

COMMUNICATION

INSIGHTS

There is not enough transparent dialogue occurring at the beginning of projects focused on common interests, goals and objectives – both within organizations and across the owner-vendor spectrum.

- Open communication enables **alignment of expectations and interests** between various stakeholders. Right now, expectations are not being addressed as comprehensively as they should. While expectations of safety, quality, cost and schedule need active management, over-arching project imperatives also need to be **addressed at the outset** (e.g., how do we make this project economical?).

- Siloed interests exist even within organizations. For example, differences in objectives between supply chain and operations **creates a disjointed approach with invisible barriers** (conflict between lowest component cost and overall best value).

- **It is critical that each stakeholder group understands how their piece of the project fits into the bigger picture, and work towards shared common goals (TIC, reduced cost, higher productivity, improved safety).**

- The absence of an open forum for alignment results in **little care or understanding of multiple perspectives.** This siloed mentality **prevents opportunities for value-add, maintains the status quo, and prevents shared accountability.**

COMMUNICATION

RECOMMENDATIONS

- **Agree business and project objectives, expectations, goals, and the definition of success at the beginning of the project with all stakeholders**
- Ensure that all stakeholders share a **common purpose.** Doing so will **reduce cost and time without sacrificing quality and safety.**
- Discuss together **project risks and how they will be mitigated.** Conversations and a risk registry can help to manage, or eliminate, each other's risks – risks must be allocated to those parties best able to manage them
- Check-in regularly with partners to **gauge their perception of value.**
- Convey how **strategic objectives fit into personal objectives – Desired outcomes must be incentivized across the value chain**

COLLABORATION

INSIGHTS

Most companies in industry are not set up for true open collaboration and cooperation. They are void of the processes to allow for it.

- **Understanding both business strategy and project strategy through collaboration and cooperation are key, and should not be subjugated to task-focused thinking.**
- The **lack of urgency around collaboration has resulted in a deficit of integrated project processes and experienced teams.**
- If there are no opportunities to collaborate with others **across functions and disciplines,** even within your own company, everyone stays in their specialty. This leads to reduced opportunities for value-add, and **less robust and insightful decision-making.**
- Current project development practices often **foster misalignment between owner, engineer, and constructor.** For increased productivity, engineering needs to be aligned with construction early in the design process (and frequently throughout).
- **Misperceptions** about the collaborative process exist: Collaboration is **costly, results in inefficient dependencies, and requires a larger decision-making group** (i.e., more meetings and resources). Therefore the effort is often not even initiated.

COLLABORATION

RECOMMENDATIONS

- **Incorporate Integrated Project Delivery (IPD)**, which describes bringing partners together as a team (instead of individual contributors) to plan an entire project. Successfully executed IPD means **mutual trust, incentivization, respect and transparency.**
- Facilitate **interactions with cross-functional teams** (especially those that integrate both office and field). People need to understand that they must work together to **pool knowledge (knowledge management and continuity).**
- **Approach projects from a highest-value perspective, as opposed to purely a lowest-cost perspective.** Doing so tends to encourage more collaborative behaviors. IPD is one example of an approach that **collaboratively harnesses the expertise of partners to optimize project results and maximize efficiency.**
- Identify **shared risks together** so that there's visibility into fear and opportunities.
- Develop budgets **collaboratively,** including facilitated collaboration across industry. For example, shared infrastructure investment.
- Look for opportunities together to **optimize processes (remove non-value-add people and steps).** Processes should be enterprise-wide to promote internal integration.

CULTURE – WITHIN ORGANIZATIONS

INSIGHTS

The current project culture does not promote collaboration, or integrated project processes.

- The current project development culture contains **a "follow process at all costs" mentality,** which leads to:
  - a **lack of focus** on overall asset value, and return on investment;
  - **diminished accountability and incentivization** for overall performance;
  - **minimal feedback loops;**
  - an environment where people are **uncomfortable in suggesting new ideas** to make the project perform better: *"Just do my job, get it done, get paid - without making trouble"*;
  - **short-term relationships and inequitable risk distribution.**

- **Leadership sets the tone for collaboration.**
  - This is why it's important to have **the right people as leaders** - those that are respected by all stakeholders, and are **able to bring the disparate views of collaboration together.**
  - **Without this skillset, it will not be possible to reap the full benefits of collaboration.**
  - These tensions are heightened if there are continuous changes in management.

CULTURE – WITHIN INDUSTRY (CONTINUED)

INSIGHTS

Current industry norms do not promote collaboration, or integrated project processes.

- Industry needs a **paradigm shift** in how it views development, **from building and executing "projects" to delivering "high value assets".**

- The current downturn has resulted in extreme pressure to reduce costs, rather than innovate to add value. **However, the culture should be to promote efficiency and innovation in both good times *and* bad times.**
  - Some see early conversations around **increased openness** becoming more common as the downturn continues but most agree that there's still a lack of understanding on how to do it.

- **Industry has traditionally been risk averse.** Companies are reluctant to be early adopters.
  - **We see examples of protectionism where there is an unwillingness to share knowledge (e.g., benchmarking and technologies) in fear of impacting competitive advantage and this perception of competitive advantage hurts the overall industry.**
  - This **culture of protectionism** means **companies are constantly reinventing the wheel (e.g., designs).**

CULTURE – WITHIN INDUSTRY (CONTINUED)

INSIGHTS

- Industry's culture of risk aversion and protectionism is largely why **benchmarking is so tough.**
  - There is **no platform to benchmark projects** that are well executed and the best practices that were applied.
  - It is **difficult to gauge how one company compares to another company** (no transparency).

- **A holistic approach to continuous improvement across industry is a relatively new concept for some of the major players and a culture of collaboration is the window to improvement.**

CULTURE – WITHIN INDUSTRY

RECOMMENDATIONS

- **Explore parallel industries and geographic markets** to gain best practices on **how to solve problems** (e.g., technical, contracts, collaboration). Other industries, such as manufacturing, have been able to improve their safety, quality, and productivity in a quantifiable and structured way.
- **Empower employees at all levels of the organization to speak up,** and use both their heads and hands.
- Encourage a **culture of cross-functional learning** by providing employees with the ability to learn about different business units. The ideal project employee has the capacity to pivot back and forth between specialist and generalist.
- Teach employees to **manage up *and* down.**
- **Champion a culture of continuous improvement with a positive attitude towards failures.** Understanding that failures are inevitable, but choosing to view each one as a **learning opportunity** is part of a **winning corporate culture.**
- **Develop industry benchmarks for project cost, schedule, quality and performance.**

CONTRACTS – SCOPE DEFINITION

INSIGHTS

Collaboration and industry engagement prior to bidding, and clear scope definition at the bidding stage, reduces the possibility of change orders and contingency costs.

- Increasingly, **small scopes are going out to bid.** This is **financially unfeasible.** Companies are looking at increasing the value threshold of what needs to go out to bid, and what does not.

- Owners are getting together to produce the **most efficient designs.** This standardization across industry can **radically reduce cost and time to operations.** They can use lean manufacturing to optimize the delivery of standardized products. **Production efficiency resulting from standardization can be a powerful differentiator.**

- Owners need to move **towards standardized designs that are cost-effective during development and operations**, and to choose partners that understand and can inform their processes and systems.

CONTRACTS – BIDDING PROCESS

INSIGHTS

Silos are created when owners spread work around different companies for short-term price reductions, rather than long-term value for money. Instead of working towards the ideal end-goal (a safe asset delivered within required cost and schedule targets), the end-results are competing objectives and misalignment of incentives which leads to inefficiency.

- **The lowest-cost bid approach does not promote collaboration and typically does not result in the lowest overall cost.** Common practice in industry is to “lowball” entry into a project, and then load up with change orders. **Bringing contractors into the discussions early requires trust, and provides them with an opportunity to demonstrate their expertise in bringing project costs down.**

- A non-incentivized, unsustainably competitive market with multiple contractors / suppliers creates an **environment that inhibits overall value and creates guarded and non-collaborative behaviours which inhibits lowest overall cost.**

- It is generally regarded that it is difficult to **standardize the RFP and contracting process,** as companies have different standards and **risk profiles**. The current process requires effort, time and cost to produce and review the RFP, with uncertain return on investment for participants.

- Some owners are **producing guidelines, rather than specifications and standards for service suppliers.** This allows the **engineer to decide on the specifications,** which is followed by a discussion around any specification gaps and a decision on whether or not to use that company.

CONTRACTS – BIDDING PROCESS (CONTINUED)

INSIGHTS

- There is a belief that sole sourcing leads to price gouging. However, **the value of sole sourcing is the elimination of RFP time, alignment of business models, and consistency in learning – ultimately increasing efficiency and reducing costs.**

- There is an industry movement to increase productivity nevertheless companies are driven by price, instead of value when it needs to be the other way around. **Bids need to be awarded based on highest value add and not simply perceived lowest cost.**

- **Reverse auctions** describe being given a scope of work, going out to a select number of contractors and bidding against each other in real time. **This is not applicable nor effective for service scopes**, as it results in contractor pricing and strategies that may not deliver to requirements, and may likely be unsustainable.

- Whilst bid lists have been broadened to include smaller contractors because of their lower overheads / rates, it is still difficult for smaller and newer companies to participate in the bidding process for larger complex scopes of work. Conversely, larger and established companies have seen a reduction in sole-sourced contracting, significant renegotiation and lock-in of Master Service Agreements / rates, and reduced automatic pre-qualification for smaller scopes of work. **When driven purely by short term cost at the expense of other value enhancing considerations this process can be resource intensive and ultimately unproductive.**

CONTRACTS – MODELS

INSIGHTS

Industry needs more contracting models that promote teamwork through shared risks and responsibilities across partners.

- Lump-sum models have **built-in risk premiums,** so may not necessarily provide a cheaper option. However, there is a lack of experience remaining in the industry, both with Owners and EPCs, to execute lump-sum contracts. There is now significant nervousness regarding multiple **change-orders.** Fixed price contracts can be effective, as long as there is a sufficiently **high definition of design** and a **clear understanding** of **how the work is going to be executed in the field (constructability in design).**

- **Cost reimbursable contracts are more difficult to predict. However, they can provide greater transparency of costs. Creeping inefficiency and low productivity needs to be managed.**

- Owners need to work together with Engineering, Fabricators and Construction Contractors to determine the correct contractual framework for execution, with risk and accountability placed with the stakeholder best equipped to manage it. **Contract types and execution need to be aligned to deliver the best result.**

- **An incentive based contracting model** is needed where there is an opportunity to share risk and participate in the upside, which **shifts the focus from short-term to long-term**. This type of model could be difficult to implement as it would mean the partners would have to open up their books to each other. Incentives and penalties are put into place to drive performance. Long term relationships should be benchmarked for performance to avoid **reaching a point of complacency (comfort zone).**

CONTRACTS

RECOMMENDATIONS

- Consider the **full installation cost of the asset, versus the individual sticker price of component project elements. Elicit and incentivize** competent suppliers to inform and modify the design and execution process of the whole asset, based on their unique skill set and experience, fuelled by their desire to be a **long-term partner.**

- **Avoid horizontal contracts** (e.g., one contractor for engineering, one for procurement, one for construction) **in favour of vertical contracts** (e.g., design and build physical components of a facility such as steam gen). This could be done as lump sum for each component.

- Consider the use of **convertible contracts** to share risk, allow collaboration, and ensure a sufficient progression of design, whilst maintaining cost and schedule certainty in execution.

METRICS & KPIs

INSIGHTS

Different profit centers within an organization are being measured against their own metrics and KPIs, not towards those of the overall organization. Misaligned KPIs are also found within projects.

- Each piece of the project has **its own set of metrics and drivers**, which are often not aligned with the success of the overall project.
- **This environment creates considerable friction and drives inefficiency.**
- **Project managers should consider ways to measure activity** in order for partnership models to work.
  - Currently the focus in contracting is **on liability first and then on the partnership.**
  - This leads to **adversarial environments.**
- The industry should consider making KPIs **open and transparent** between partners so that it is clear what results are being worked towards and so that **any misalignments can be spotted early and fixed.**

METRICS & KPIs

RECOMMENDATIONS

- **Define clear KPIs** for all stages of work (**including those that measure risks and rewards**) for the overall project, at the beginning.
- Measure the KPIs on a frequent basis **to ensure alignment and a high quality of work.**

FRONT-END PLANNING

INSIGHTS

There is a lack of sufficient project planning taking place at the beginning of project.

- The majority of the value (~70%) comes at the front-end of the project – the **decisions made at the beginning of the project are the most important.** There is sometimes a focus on reducing engineering costs at the risk of increasing total installed costs.

- **Safety is not only of the utmost importance, but it is also a reliable indicator of good project performance.**
  - While effective safety management costs money, poor safety costs a lot more (e.g., injury / loss of life, jobsites closures, poor productivity, etc.)
  - Yet safety, for many, is not a priority in the budgeting process or the planning phase of projects (e.g. Technical Safety in Design)

- **Every project has a "lessons learned" review,** but there is rarely time to revisit them in advance of a new project. Better review/sharing of lessons learned would help every stakeholder be more productive. **This is hindered by legal implications of disclosure and claims.**

- Whilst companies are trying to spend the least amount possible during FEED (front end engineering design), and pushing that cost into detailed engineering. to **avoid unnecessary cost before FID (Final Investment Decision),** insufficient front-end and execution planning results in poor estimating, and potential for escalation in eventual sanctioned projects**.**

FRONT-END PLANNING

RECOMMENDATIONS

- Place more emphases on healthy asset development **(more holistic and systems thinking).**
- **Involve all parties at the pre-FEED and FEED stages** of the project, including construction and fabrication, aligned to asset optimization and cost efficiency.
- Consider running parallel FEEDs in competition with each other, as **competitive FEEDs can encourage innovation and better outturn prices.**
- Bring partners (contractors and specialists) in at the beginning (competitive scoping) to to ask for feedback and find the **“best way” to work together to deliver value.**
- Follow the **80/20 rule for standardized designs:** Utilize intelligent standardization of all generic components of a facility (templating), whilst accommodating customization within the template for specific requirements (e.g. site, technology, infrastructure, etc.).

TECHNOLOGY

INSIGHTS

The right technology can be a driver for industry growth, viability of projects, and collaboration amongst all stakeholders.

Technology that reduces the cost of development and operations.

- **Proposing new technologies is often met with organizational resistance.** There are a number of reasons for this: contracts departments are often not technically competent to evaluate the merit of new technologies, operations personnel are often not empowered to look outside their own operations for new technology enhancements, and there is no formalized way to evaluate, rank and commercialize new technologies within owner organizations.

- Operators and channel partners ask that **technology tools** be as **practical as possible and accessible to all parties.**
  - Leading-edge technology is coming out all the time, but not everybody has access to it – or the time, resources, and training required to test, implement and utilize it.
  - Some attendees commented they do not have a mechanism to learn about new technologies, so resistance to change continues.
  - Others stated that they know what is available, but that companies are **not willing to pay for commercial development.**
  - There were comments that **technology adoption** is being inhibited by a **fear of job-loss and redundancies.**

TECHNOLOGY (CONTINUED)

INSIGHTS

- The true challenge is **how to select the right technologies,** effectively commercialize the technologies, sufficiently train staff and change internal processes to optimize the returns from that technology. Technology for the sake of technology helps no one, but **game changing technology tools that can dramatically save time and reduce costs** are key and the secret lies in **industry's ability to identify those technologies and effectively weave them into process.**

- **Mature multi-market, multinational organizations often find it difficult to deviate from their existing specifications and processes, even when these are not fit for purpose.**

Technology that enables productivity.

- **Once a company finds a technology that enables increased productivity, it is often not shared with peers as companies fear losing their competitive edge.**

Technology that enhances communication and collaboration.

- Technologies are widely acknowledged to **enable collaboration, especially in an international context**. However, some commented that there are systems and software that are meant to assist in collaboration but can instead add to the complexity and end up negatively impacting collaboration.
  - **Technology needs to increase efficiency, otherwise it is useless.**
  - Many see most interface management tools and collaboration software as creating more burden and bogging down systems.

TECHNOLOGY

RECOMMENDATIONS

- **Collaborate** with stakeholders to **research and implement technologies** that integrate different aspects of a project resulting in increased efficiency.

- Use more **off-the-shelf technologies rather than a homegrown solution. Engage all stakeholders to identify and implement the most efficient tools.**

- Encourage employees to be on the look-out for **tested, accessible, commercial technologies that can be incorporated into organizations to increase productivity and efficiency.**

- Technologies that were specifically identified at the workshop as being used or preferred to support productivity, include:
  - **Blockchain** can be used to get everyone on the same page (one set of documents and one “truth”).
  - **3D modeling** can give stakeholders a valuable visual to see if they have “gotten it right” before they move too far down the path of construction. These simulation tools can help to identify inaccuracies before they get to the point of rework.
  - **Building Information Modeling (BIM)** is a shared information platform that digitally represents the physical and functional characteristics of a facility.
  - **Advanced Work Packaging (AWP) software** can help with communication and KPIs. It enables engineering to prepare the AWP and share it with all parties involved.

TECHNOLOGY: (CONTINUED)

RECOMMENDATIONS

- **RFID technology** is being used to track the locations of everything on a project - where it is and where it should be.
- **Virtual reality** site tours can be used to ensure there is a common understanding for a project.
- **Robots** can be used to digitize module yards, fabrication yards and construction sites.
- **Project collaboration software** designed for the architecture, engineering, construction industries that allows people to collaborate on documents.
- **NEC3** is a suite of contracts designed to work together through EPC stages. All contracts are designed around discovery of issues early in the project. This drives early collaboration and resolution of issues, and penalizes a lack of collaboration.

Conclusion

JWN's *Inspired Conversations* event *Collaborative Contracting: Achieving Globally Competitive Project Delivery* brought together multiple players involved in assets and major projects to discuss project delivery challenges and solutions. Key findings centered around trust, communication, collaboration, culture, contracts, front-end planning, technology and metrics and KPIs.

It is evident that dialogue and collaboration between producers and suppliers is crucial to reduce inefficiencies and costs, and enable investment and growth. Moreover, Industry in Alberta needs to demonstrate predictable return on capital employed, that is not only competitive in North America – but competitive on a global scale.

Partner Profiles

AECON | www.aecon.com

Aecon Group Inc. (TSX: ARE) is a Canadian leader and partner-of-choice in construction and infrastructure development. We are building things that matter and are proud to work on projects that connect communities, homes and people while protecting the ecosystems in which we operate through end-to-end sustainability.

A sophisticated, resilient company with a diverse portfolio of work and flexible capabilities, Aecon provides integrated turnkey services to private and public sector clients in the Infrastructure, Energy and Mining sectors. Aecon also provides project management, financing and development services through our Concessions segment.

SAFETY FIRST
We ensure a safe, healthy work environment and a 'zero injury' culture.

TRUST AND CANDOUR
We conduct ourselves professionally, with candour, respect and integrity.

PASSION FOR EXCELLENCE
Pace-setting and innovative. Always striving to find a better way. Doing it right the first time – every time.

A PEOPLE FOCUSED, LEARNING CULTURE
Developing the best leaders and realizing the full potential of our people. Learning is at the core – we never stop trying to improve.

RESULTS ORIENTED
We have a 'do whatever it takes' attitude. Empowered and entrepreneurial operations within a common framework of values, strategies and key processes.

Partner Profiles

Amec Foster Wheeler | www.amecfw.com

Amec Foster Wheeler designs, delivers and maintains strategic and complex assets for its customers across the global energy and related sectors. Employing around 35,000 people in more than 55 countries and with 2016 revenues of £5.4 billion, the company operates across the oil and gas industry - from production through to refining, processing and distribution of derivative products - and in the mining, power and process, pharma, environment and infrastructure markets. Amec Foster Wheeler offers full life-cycle services to offshore and onshore oil and gas projects (conventional and unconventional, upstream, midstream and downstream) for greenfield, brownfield and asset support projects, plus leading refining technology.

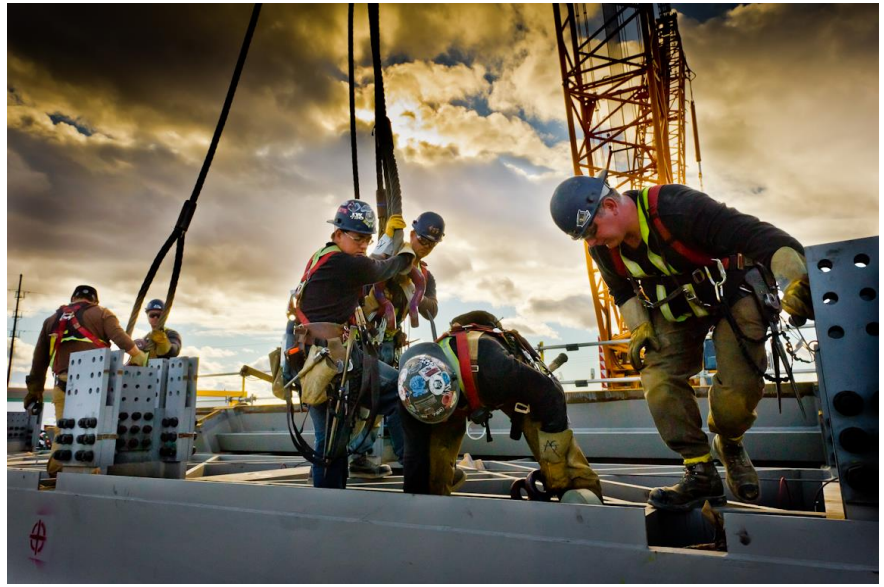
Amec Foster Wheeler shares are publicly traded on the London Stock Exchange and its American Depositary Shares are traded on the New York Stock Exchange. Both trade under the ticker AMFW.

Partner Profiles

Waiward Steel LP | www.waiward.com

With more than 45 years in business, Waiward is one of Canada's largest steel constructors and an industry leading provider of connection engineering, shop detailing and fabrication services. A recipient of "Canada's 50 Best Managed Companies" award since 2004, Waiward offers outstanding value from the early phases of engineering and procurement, to project management and turn over. Our integrated, multi-disciplinary approach serves multiple sectors, including oil and gas, mining, power generation, infrastructure, institutional and commercial.

Waiward has an "Are You Ready" incident-free safety culture with a world class integrated competency management system named MODOS. Since the creation and adoption of MODOS by Waiward, over 4.8 Million hours has been completed without a Lost Time Injury (LTI). Our experience with these core services and our commitment to safety, quality and scheduling allow us to reduce the risk for our client's, and consistently deliver cost and schedule certainty.



Partner Profiles

JWN | www.jwnenergy.com

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Our flagship products include *Oilweek,* the *Daily Oil Bulletin (DOB)* and the *Comprehensive Oilfield Service and Supply Database (COSSD).* Inform, Connect and Grow with jwnenergy.com. Our brands include:

oilweek | Daily Oil Bulletin | CanOils | EvaluateEnergy | jwn Rig Locator

JWN is a founding partner of the Alberta Project Improvement Network (APIN), which is composed of Alberta's most progressive industrial construction companies, organizations and leaders working together to improve project delivery. They share a common mission to make Alberta's industrial construction sector Twice as Safe, Twice as Productive and Internationally Competitive by 2020.