MELBOURNE AIRPORT MAIN RUNWAY WIDENING & LIGHTING UPGRADE PROJECT

ACAA TECHNICAL CONFERENCE PAPER

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ABSTRACT

In 2004 Melbourne Airport announced a tender for widening its main north-south runway to accommodate the massive new Airbus A380 aircraft. With a 555 passenger capacity the A380 carries 35 per cent more passengers than a 747 jumbo and its wingspan is approximately 15m wider than the jumbo. The project requirement was to widen the main 3.7km runway at Melbourne Airport by 15 metres, 7.5m either side, to accommodate the Airbus.

Other tasks included upgrading the entire runway lighting and guidance system, replacing 60 distressed runway slabs, installing stormwater and drainage systems, removing or sealing asbestos ducts and replacing a dilapidated water main under the runway.

The major challenge was to complete the works while the airport remained operational and within a maximum construction period of six weeks. Being an airfield, pavement strict quality requirements were specified as well as stringent security and safety requirements while minimising disruption to an estimated 1.6 million passengers and 30 airlines.

This was a world first, prior to this project; no international airport with a single major runway had ever decommissioned its main runway for upgrading works.
Shutting down the main runway affected the airport's ability to handle long-haul flights and significantly impacted its revenue.

The project was completed in 29 days, within budget; there were no MTIs, LTIs, incidents or rework and none of the 1.6million passengers where inconvenienced.

KEY WORDS

ACAA, Melbourne Airport, John Holland, Runway widening, A380, Airbus, Concrete pavement.

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INTRODUCTION

In May 2005 Melbourne became the first city in Australia to be A380-ready.

This significant outcome was achieved because of the strong commitment, innovation and expertise of the construction team. The $27 million project to accommodate the world's largest commercial aircraft was completed in just 29 days and set an international benchmark in terms of runway widening.

The scale of the John Holland component, totalling $18.5 million, was massive, requiring an enormous amount of work to be completed in the shortest possible timeframe. When annualised, the cost of the project equates to around $200 million.

We could not disrupt air traffic, and the entire program needed to incorporate the airport's strict operational, regulatory and security protocols, which were tightened along with most international airports after September 11.

Although it was a construct only lump sum contract, it was successfully delivered by adopting alliance principals and behaviours, with all parties committed to achieving the best outcome for everyone.

Due to the very short construction period, the criticality of all activities was intensified. Detailed planning, hourly and daily monitoring and immediate correction of issues was required to ensure that the runway was delivered on time and to the satisfaction of the client and stakeholders.

In fact the project was successfully delivered under budget and reopened two weeks ahead of schedule with zero safety or environmental incidents.

PROJECT SCOPE

Final Scope of Works

The project scope was to widen the main 3.7km runway at Melbourne Airport by 15 metres, 7.5m either side, upgrade the entire runway lighting and guidance system, replace 60 distressed runway slabs, extend and remove asbestos from duct banks, install stormwater drainage and water mains.

Activities included:

- Install 7,000m of temporary security fence.
- Remove the existing runway directional and guidance systems.
- Strip 65,000m² and haul to stockpile.
- Excavation 15,000m³.
- Slip form 7,000m of concrete kerb.
- Stabilise 42,000m² of sub grade with three per cent lime, 300mm deep.
- Place 18,000m³ of concrete in 12 days at an average rate of 65m³ per hour.
- Install 165km of lighting cable, 300 runway lights and upgrade the existing lighting and guidance systems.
- Remove and replace 60 distressed runway slabs (7m x 7m x .5m each).

- Seal 20,000m of joints.
- Supply and place 14,000m² of turf adjacent to either side of the runway; mesh and pin the turf to resist jet blast.
- Spray 100,000m² of hydro seed.
- Clean the entire pavement area of all foreign particles.
- Complete flight testing and MALMS testing of lighting and guidance systems.
- Provide all specified technical data including concrete strength and density test results as built survey data, testing and commissioning results for the electrical works and all QA information prior to opening the runway.

Original Scope of Works

The documents released for tender specified a flexible pavement for the shoulder widening, made up of sub base, base and asphalt layers on the natural sub grade with any unsuitable material removed and replaced. The edge lights were to be installed prior to the pavement by supporting the light base with concrete to hold it in place, a method traditionally adopted for edge lights.

A "concrete option" profile was also included in the documents for anyone wishing to consider an alternative tender for the shoulder widening, in addition to a conforming bid.

APPROACH TO TENDER

The Tender

Given the tight construction window and high level of risk, John Holland saw the need for an experienced project manager to develop the tender during the bid phase. It became obvious that in order to meet the client's needs, a high degree of innovation and planning would be required. It also required a person with the skills to facilitate a close working relationship with the client and the designers to develop the most efficient construction options.

Pavement Analysis

After thorough analysis of the proposed construction method and expected timing for delivery, the project bid team concluded that Melbourne Airport's preferred option, a conventional flexible asphalt pavement with an unbound crushed rock base, would be slow to deliver, particularly in the event of bad weather. The client option therefore presented an insurmountable risk.

Weather was considered to be the factor most likely to delay the construction, given that the shut down was scheduled for April/May, typically the months when the weather breaks in Melbourne. The ground conditions, being basaltic clays, were also highly susceptible to wet weather.

The decision to choose the time of year was based on meteorological statistics that show it is a very stable period of the year with low winds. This enabled the east/west runway to take the full aircraft load without risk of too many aircraft diversions to other airfields, however, it was also quite conceivable that a rain event could occur and the sub grade or pavement would not dry out until the Spring.

Concrete Alternative

John Holland recommended that consideration be given to the concrete pavement alternative, an un-reinforced high strength mass concrete option placed directly on the natural sub grade. The specified mix was similar to the slab replacement mix, although with a slightly lower strength requirement, consisting of:

- Average flexural strength at 28 days to exceed 4.8MPa.
- Minimum flexural strength at 28 days to exceed 4.6MPa.
- Maximum slump of 50mm.
- Course aggregate particle size 40mm.
- 400kg of cement.

We believed that the concrete option, despite the likely placement and finishing problems with this mix, would cope better with rainy conditions and was likely to be faster to construct, if a number of significant hurdles could be overcome. These hurdles included:

- Placement and finishing.
- Amount of edge form given the 72 hour strip time.
- Wet sub grade.
- Delivery capacity of the concrete supplier.
- 48 hour delay between adjoining pours.
- Dowelled construction joints.
- 24hr a day, 7 day a week production would be required.
- 65m^3 per hour production.
- Mix could not be pumped and placement was from one side only.
- No cracks were allowed in the finished pavement.
- Edge lights in the way and could possibly be knocked out of alignment.

Despite the extensive list of risks, there was a significant upside if these issues could be overcome, namely: a likely shorter construction period thus reducing the weather risk, saving the client and airlines a significant amount of money and reducing the period of disruption to passengers.

It also dispensed with the need for a displaced threshold would have meant that the last two weeks of the works would have had to be completed under aircraft traffic and two commissioning activities would have been required. This approach also presented a considerable OH&S risk in terms of noise, worker distraction when planes landed and likely stoppages during inclement weather.

The Bid Proposal

A number of significant innovations were developed to enable the concrete option to be adopted and to formulate a detailed construction methodology. As time and weather were the two fundamental drivers, every option considered had to pass two simple tests: Did it reduce time? Did reduce the weather risk?

Lime stabilisation of sub grade

There was a significant testing regime required to prove the sub grade capacity, which would be very time consuming, and the sub grade was highly susceptible to wet weather. It was determined that a solution was required to mitigate this risk.

Stabilisation was the first choice because it would effectively make the sub grade homogeneous, would improve the CBR and seal and waterproof the sub grade. Testing and trials would enable a process to be proved that could overcome the weak sub grade and time delays for testing.

Slip formed kerb in lieu of formwork

The specified method of achieving the edge was to use formwork. However this presented two significant problems, first there was a 72 hour strip time and at the anticipated production rate 2.5km of edge form would be required and second this would require a significant labour force, exposing the project to likely labour resource and industrial issues.

The John Holland solution was to use a slip-formed concrete kerb, similar to a conventional road kerb, as the edge form. This had the advantage of rapid construction, high strength using a 30MPa mix and the ability to achieve the high tolerances of plus or minus 5mm. The kerb could be left in place after concreting to avoid stripping operations and had the side benefit of enabling the critical electrical conduit works to start much earlier.

Concrete placement

As the concrete mix was (1.) low slump (2.) high strength (3.) with large aggregate, it was anticipated that it would be very difficult to place and finish. Also the mix was not able to be pumped and the pavement strip was 7.5m wide with access for the agitators being from the existing runway pavement only.

Site batching and concrete placement with a paver was initially considered to place the concrete pavement option, but was subsequently ruled out because of high mobilisation cost, breakdown risk and duration required if trialling was to be undertaken prior to the main works.

The solution adopted was to place and finish the concrete using excavators. A number of excavators would have modified attachments to facilitate placing without segregation, undertake compaction and screeding.

A specialised screed bar that fitted to the boom of an excavator was developed, comprising a 250UC with a third of a steel tube welded on the front to facilitate trimming of the surface without tearing. A plate at the bottom extended to the rear, with eight form vibrators attached, to enable a good surface finish. See figure 1

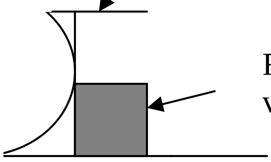

Figure 1: Cross section of 8m long screed bar

The screed had to be strong enough to trim and carry a large weight of concrete and sufficiently rigid to ensure it did not flex under the excavator load thus screeding the surface out of tolerance. Tolerance was specified at 7mm over the width of the pavement.

Lighting installation

In most runway/taxiway situations, light bases and conduits are installed prior to the paving works. It was recognised that due to the high concrete volume, large machines and speed of concrete placement, that damage or displacement of the light system could occur, creating a major problem for the light installation and commissioning.

To eliminate this risk and save time, it was proposed that all lights and cables be installed after paving.

The proposal was to slot the concrete adjacent to contraction joints for the wiring and to use an epoxy to hold the electrical cables in place. To install the lights, 300 diameter holes 550mm deep were cored into the pavement to facilitate safe, accurate, and damage-free light placement. The bases were then grouted in place. This process also allowed the lateral conduit to be installed in advance of concrete placement and wires pulled through from the ring mains to the slip formed kerb ready for installation into the concrete pavement.

Strict security and access

A potential barrier to the speed of construction works was the comprehensive but necessary security arrangements at Melbourne Airport. Strict rules governed security clearance while visitors and workers were required to be escorted and supervised at all times by airport staff.

It soon became obvious these arrangements were impractical for a major construction project with an extremely tight deadline. To resolve this problem a 7km temporary security fence was proposed with the aim of fencing off the entire worksite from airside operations. This would improve the access for construction vehicles and material deliveries, reduce the time to enter and exit the site and significantly reduce the number of airport security personnel required to supervise construction works.

A flexible industrial agreement

To achieve the construction targets that were required to deliver the project, the normal working conditions and practices could not be applied. A project-specific industrial agreement was negotiated with relevant unions to ensure work could proceed in all weather conditions, 24 hours a day, seven days a week.

Workers were compensated for working outside normal conditions and agreed to remain on site in the event of extreme heat or heavy rain. Rostered days off were accrued and employees could work up to 11 days straight. Scheduled lockdown weekends were also accrued.

This special industrial agreement enabled an environment where everyone worked together to achieve a common goal. Communication between management, employees and the unions was open and honest which lead to a perfect industrial relations and safety record on the project.

The submission

These innovations, along with detailed work plans and schedules clearly outlining how we expected to deliver the work in 4 weeks – surpassing the client's requirements of 6 weeks – were included in the John Holland tender submission.

The methodology adopted was driven by two fundamental requirements: (1.) keep it simple and (2.) must be capable of high production levels. This resulted in an assembly line type approach where the site was divided into discrete rolling work zones where only one trade at a time worked in each zone. The site was divided into six zones, allowing one day for each of the preliminary trades, two days per zone for the concrete and three days per zone for the electrical and finishing works.

The spacing of the zones allowed each trade to plan and resource to a known productivity and was large enough to enable highly cost effective operations. The zones were also large enough to run additional crews to recover lost time in one or all areas. This zoning arrangement also enabled clear delineation of work areas for management teams to check, monitor and record progress and quality.

POST TENDER NEGOTIATIONS

Between the tender submission and contract award a period of intense discussion and negotiation transpired. We had to convince a nervous client that our unconventional, untried system of work could be successfully delivered. The designers, Beca, were very open to new approaches to constructing sensitive runway works; however no-one had anticipated the unique methodology proposed by John Holland.

Over many meetings and discussions the pros and cons of the proposal were considered. Variations on the theme and counter proposals were exchanged before arriving at a workable solution suitable to all parties. Again, decision making was based on: (1.) did it save time? (2.) did it reduce risk? Some of the issues addressed were:

- 24x7 operations.
- Achieving design tolerances.
- Concrete delivery.

- Concrete segregation, compaction and finish.
- Mix design.
- Achieving high early concrete strength.
- Verification of test results.
- Relevant test data required to verify the works.
- Reinforcing of odd shaped slabs.
- Security.
- Site access.
- Safety.
- Control of the work site.
- Lighting installation.
- Electrical timing and resources.
- Edge beam proposal.
- Lime stabilisation.
- Detailed planning and timing.
- Duct banks.
- Asbestos.
- Industrial.
- Weather impacts and strategies to overcome.
- Logistics.

At the end of this process we had arrived at what everyone believed to be the optimal solution. Our tendered price had actually increased, however the client's overall cost exposure was reduced, the airlines – although sceptical of the proposed timeframe – were comfortable with the proposal and the designer's concerns had been addressed. All that was required was for Melbourne Airport to take the final step and sign off on the project.

The post tender negotiation proved to be a pivotal stage in the process. Despite intense discussion, long days and numerous submissions, the outcome was a relationship between the parties that would form the foundation for a very successful project.

THE DELIVERY

Collaborative Working Environment

Project success required a seamless delivery system. Early on we took the decision to establish a central project office away from the main terminal to maximise communication between all parties and to facilitate rapid decision-making and resolution of issues.

The project office included representatives from Melbourne Airport, designers Beca, project superintendent Connell Wagner, John Holland and construction subcontractors. Team briefing sessions were held to develop everyone's understanding of the project and to align goals. It was vital that everyone understood the project and the part they had to play in the delivery. There would be no time to familiarise staff once the shut down started.

A decision making process was also developed where staff were encouraged to make decisions on site at the lowest level. As such, John Holland engineers, designers and superintendent's representatives were rostered onto all shifts and all areas across the site. For unresolved matters a time frame for decision making and referring upwards was developed and key staff were to be contactable 24 hours a day for the duration of the works.

Hour by Hour Tracking and Monitoring

A detailed plan of all activities was developed. Every activity had to be broken down to the smallest possible component and included in the program. All aspects of the project were monitored on an hourly basis to ensure there were no construction delays. Charts were developed and displayed around the office, clearly indicating progress against planned work.(See attachments 1 and 2.) There was no opportunity to overcome delays once they occurred. All problems had to be solved immediately.

It was clearly understood by all on site that the failure of a single piece of equipment could stall the entire project. John Holland made sure all contractors and suppliers had back-up equipment either on site or within two hours of the site.

To ensure continuous delivery of concrete, three concrete plants – each fully stocked with the special aggregates required for the project – were ready at any time to produce the specific mix required in case the first plant failed. This plan was tested during construction when a belt at the first plant failed and the second plant took over concrete production for a period of 12 hours, avoiding potential project delay.

Foreign Object Debris (FOD)

Small pieces of "runway junk" (rocks, nuts, bolts, rubbish) can be sucked into jet aircraft engines and easily damage the jet engine fins on the way through. Although this may not have an immediate impact on aircraft functionality, the greater fear is that subtle damage will create a weakness that may trigger a significant problem later.

We needed to be impeccably clean to avoid the accumulation of FOD – not the simplest task for a project requiring extensive excavation and heavy plant and equipment. FOD avoidance was the subject of constant monitoring, sweeping and training for the duration of the project.

Inductions and Training

It became apparent as we worked through issues and developed the project planning that controlling and protecting workers would be a major issue. With loud noise, close proximity to aircraft, vast work fronts, hundreds of employees from differing work backgrounds, FOD risk and security concerns, it was clear that a detailed induction and training regime was required.

The program was developed jointly with the responsible airport department, John Holland's safety and training managers and the project team. The comprehensive program was so successful that Melbourne Airport put all of its executive team through the process.

No one was allowed onto the site without an induction, or in exceptional cases a permanent security escort for the duration of the visit.

Existing Services

More than 30 duct banks crossed the runway. And there were many kilometres of direct buried cables around the runway. Some of these connected Air Traffic Control operations to the main terminal. Others provided important electrical and communication services.

John Holland needed to redesign some sections of pavement to accommodate the shallower than expected services. This involved incorporating reinforcement options that would not compromise productivity or pavement integrity. A similar reinforcement and redesign regime was applied to all taxiway intersections along the otherwise straight edge of the runway.

There were also kilometres of direct buried cables and conduits within the worksite. All of these were located and proven in any work area prior to the commencement of the works. The services were so numerous that we had to abandon the use of a standard security fence for fear of striking an unknown service. We had to design a temporary fence system that would comply with security requirements, resist jet blast and be free-standing to avoid below ground services.

Project Logistical Issues

The logistical challenge of the project was enormous, with 18,000m^3 of concrete required to be placed in 12 days, effectively a concrete truck emptied every three minutes, 24 x 7. We had to strip 65,000m^2 of grass and pavement area, excavate 15,000m^3, stabilise 35,000m^2 of sub grade, extrude 7,000m of kerb, install 10,000m of subsoil drain, remove and replace 3,000m^2 of runway slabs, install 165,000m of electrical cable and 300 runway and taxiway lights, seal 21,000m of joint, groove the runway slabs and remove old line marking, place and pin 16,000m^2 of turf and hydro seed over 100,000m^2 of disturbed ground. This all took place in under 25 days with four additional days required for final commissioning, flight testing certification and cleaning of the runway pavement.

Smooth arrival and departure of deliveries, particularly concrete, was vital. But our requirements had the potential to conflict with the project's strict security regime. We worked with our client to institute a flexible yet secure photo security identification system that allowed authorised vehicles and personnel fast access with minimum delay during the checking process.

Replacement of Damaged Runway Slabs

The replacement of 60 distressed runway slabs, each 50m^2 x 500mm thick, was another major component of the project. Each new slab had to be restrained from vertical movement by a series of 40mm diameter 400mm long steel dowels. The dowel holes needed to be perfectly straight to avoid lock up of the slabs that could cause cracking.

Drilling the dowel holes manually would have been time consuming, awkward, prone to errors and introduce OH&S issues. Instead John Holland modified a rock drill with a centralising plate to enable drilling to be undertaken by one person from above. We also equipped a forklift with a hydraulic drill to complete the task. Mechanisation saved valuable time and ensured much-needed accuracy.

Plant Availability

Availability of backup plant was vital. Extra plant was either kept on-site or available within two hours for all activities. This was a major inconvenience but absolutely necessary to achieve the production deadlines. Every item of plant had a backup. In many cases we simply insisted on two fleets of equipment for processes such as lime stabilising, slip form kerb installation and concrete placement. We also had backup for every individual item of plant including concrete agitators and batching plants.

Stakeholder Groups

Those affected by the works were kept fully informed for the duration of the project. The groups were as diverse as local councils, plane watching groups, the local golf club and Members of Parliament.

A briefing kit was distributed to all local councils, Members of Parliament and airport and related businesses. Stakeholder groups were regularly and comprehensively consulted. The client liaised with the major airlines to develop messages and take advantage of communications opportunities to advise passengers of the works and their likely impact.

Pavement Trials

During the negotiation phase it became apparent that in order to prove to the client and ourselves that the proposed construction methodology would work a trial was necessary. The client made available a taxiway where we could replicate the shoulder widening process and the slab removal and replacement process, as well as testing the electrical installation methodology.

A full scale trial was proposed to test every aspect of the work. This would enable sub grade verification of the lime stabilisation, tolerance checks on the kerb installation and concrete placement, testing of the workability of the concrete, as well as strength testing, joint sealing and electrical installation including coring for the installation of lights.

The outcomes where varied. The stabilisation worked well and the percentage of lime and compactive effort were refined. The kerb worked well but had tolerance problems; however we were able to trial corrective measures that worked very well. The prototype screed was a dismal failure and was immediately abandoned. This led to the development of the screed detailed earlier in this paper. The slab replacement trial went well until it came time to place the concrete. The mix was too dry and completely unworkable in the hot windy conditions.

While the trials delivered mixed results, the learning’s were invaluable. We resolved to conduct a series of trials on varying concrete mixes to improve workability and ascertain what strengths could be obtained from the varying mixes. We also resolved to develop a new screed and undertake a further trial to test the screed and address the slower than expected productivity that was achieved during the trial.

The lessons learned prepared everyone for the enormity of the task we were about to undertake and in overcoming the problems we had gained a far greater understanding of what to expect and what we could achieve.

The shutdown

When the shut down commenced every single detail had been planned and scheduled, every design clarification was resolved, all resources and subcontractors were engaged and ready to commence as scheduled, all security and access arrangements were in place and operational and all parties understood to the smallest detail what was to take place over the next four weeks.

During the construction period two planners collated data on the progress of the works. This data was collected on an hourly basis from the field staff. Our charting recorded the target productivity of every activity and work component. All the components were weighted to reflect there contribution to the overall completion of the works.

Every morning the charts were analysed for trends and problems areas, following this the construction program was updated and resource levels for each activity reviewed. The outcomes were advised to all parties and each team then took the relevant action to correct any deficiencies or re balance the work fronts.

As expected, a number of issues arose to challenge our planning and recovery strategies. Some of these challenges were:

- The last plane to take off on the first morning was late and delayed the start by three hours.
- We found rock above sub grade level in the very first zone.
- A severe rain squall hit the site on the first day of concrete placement.
- A second rain event brought the works to a halt.
- The last section of sub grade to be stabilised became saturated while being mixed.
- A batch plant broke down for 12 hours.
- Some of the duct banks were higher than expected.
- Outlet drains for connection of the new subsoil drains were non-existent.
- Concrete washout bays filled and had to be cleaned out.
- The electrical works were not proceeding as quickly as planned.
- The MALMS (Mobile Airfield Light Monitoring System) testing unit for the lighting had to be flown in from England.
- The cleaning of the runway required three times the planned resources.

Despite these issues and many other minor daily incidents, our monitoring and rectification processes were such that the planned outcome was not affected.

Commissioning and Handover

To minimise delays, the new runway was handed over for final inspection in sections as soon as all required testing was complete. An enormous amount of verification data was required to ensure the runway could be recertified.

Making sure this information was in place and ready to hand over for certification meant that every document, test result and sign-off was identified and captured. A large matrix wall chart was progressively ticked off as every test was checked off and the appropriate documentation filed into a set of 30 folders, in accordance with procedures established during the planning phase.

The entire runway was mechanically swept time and again over a period of five days to eliminate Foreign Object Debris. With the potential for Foreign Object Debris to cause an aircraft disaster, every square metre of the runway was physically walked and visually inspected to check for debris.

To obtain certification of the runway, flight certification tests where required for the guidance systems and MALMS testing of the lighting system were also required for runway certification. All test results and as-built survey data for the pavements had to be verified and signed off. The only tests not completed were the 28 day strength tests on the concrete, however the seven day results were used to verify the pavement strength. Any minor defects were also identified and corrected prior to handover and all the works were completed according to the rigorous standards imposed by the Airport and CASA.

CONCLUSION

The project clearly demonstrated what can be achieved as a result of comprehensive planning, innovative approach, expert engineering, early involvement of contractors and full consultation and cooperation with designers, unions and the client. The result proved that with all parties working together and committed to achieving the best outcome, anything can be achieved.

This project could best be characterised as a risk management exercise. The key to successful risk management is to identify the real risk by taking the time to undertake in-depth analysis with all the parties that play a part in the project, and to jointly develop strategies to first mitigate the risk and second overcome the risk if the event actually occurs. It is very easy to stop looking once the obvious risks are identified, however a stand out feature of this project was the extent to which the team was prepared to identify and manage every conceivable risk.

Despite losing a full day to bad weather, the works at Melbourne Airport were completed in record time, within 29 days. The month-long project met all quality and safety requirements. Not a single hour was lost due to industrial action or injury/incident thanks to early consultation with unions and a focus on safety.

The runway was recommissioned two weeks earlier than scheduled, resulting in a major benefit to airlines, passengers and Melbourne Airport. Because of the great success of this project it continues to attract significant international interest.

Lessons to Take Away

- **Understand what it is the client actually requires.**
- **What are the real project drivers?**

- **Allow time to be creative and develop innovation.**
- **Explain and demonstrate in detail what is being offered.**
- **Achieve buy-in from all parties.**
- **Trial and prove work methods in critical situations.**
- **Identify all risks and develop strategies to overcome them.**
- **Put appropriate people on the project.**
- **Develop a team culture and ensure all relevant parties are included in the development of this culture.**
- **Ensure all parties are aligned and focused on the same outcome**
- **PLAN, PLAN, PLAN**

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