Capability Statement
We are ADG

We are not limited by discipline, restricted by geography or held back by the technology of our time.

Our engineering project teams are multi-disciplinary, using our combined strength and expertise to provide the best possible outcome for our clients.

T: 1300 657 402
info@adgce.com
www.adgce.com
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The ADG difference
We believe in always moving forward. If we...

...require advanced technology, we find it.

...need to think about a problem differently to achieve the right outcome, we do it.

...have an idea which will save our clients time, money and risk, we speak up.
Our commitment to creative yet practical engineering is what sets us apart as technical experts. However it’s the personal involvement of our leaders, combined with the importance we place on the relationships we build both in the office and on the job site, that sets us apart in delivery.

We begin every project by listening to our clients to ensure we understand their needs and ensure the most appropriate solutions are carefully evaluated from a cost, efficiency and technical viewpoint.

A multi-disciplinary service offering affords us a unique perspective and approach to design. We are able to confer with experts across Structural, Construction Services, Civil and Hydraulic departments under the same roof in order to deliver a complete solution to a project. This integrated insight allows us, as a team, to foresee risk, overcome potential issues and create seamless efficiencies in design.

In addition to technical expertise, we have the support of the best industry engineering management, CAD, BIM and computer modelling practices. They are integral to project delivery success. We collaborate with an experienced, proactive technical support team and employ advanced drafting and modeling software.

Our culture of hands-on design and accountability sees us operate strongly as part of the greater project team, working alongside architects, building contractors, project managers and sub contractors. We believe in involving ourselves in a project’s broader objectives in order to work as an integrated, powerful team which, altogether, drives project delivery.

The senior managers of our company lead by example in demonstrating a collaborative, challenging approach to decision making. Strong project delivery requires an understanding of the broader issues of a project and the ability to quickly resolve fundamental issues which arise. This often requires us to look at solutions in a broader sense than from a purely engineering perspective.

Our job doesn’t end when our designs are completed - we are with our clients at every step of the way, and see every project through to final completion.
ADG in development

ADG have an extensive and proven track record working within the development industry for the last ten years.
The ADG difference brings a smarter approach to development and construction than most engineering firms dare. We consider every site’s individual constraints as opportunities. We then leverage the best of our technology and all of our experience to ensure our clients get maximum value from their engineering and construction dollars.

We have worked with development and construction clients since our inception and know when you develop or construct property, every day counts. We understand the importance of efficient engineering, the cost and availability of materials and the changing market forces that our clients are building in.

It is this approach that keep our clients coming back, time and time again.

In development, our experienced multi-disciplinary team works with your Architects and Planners from early in a project, helping to define the site requirements and assess environmental and planning needs. We make it our job to ensure our engineering approach specifies the most cost effective materials and efficient construction methods to bring your project in on time and under budget wherever possible.

We design the Structural, Construction Services, Civil and Hydraulic services required to obtain development approvals and document these for construction in collaboration with your Architecture and Development team. We then work with your contractors on the site to manage the delivery of a project without clashes, concerns or issues.

In construction, we are the trusted partners to many of Australia’s most respected Contractors, optimizing the designs of civil, structural and hydraulics on projects to minimise the time, costs and risks associated.
In the mining, resources and energy industries, it is not just the mine facilities that matter.

The ADG difference brings a smarter approach to civil construction and design and construct services than most engineering firms dare. We consider every site’s individual constraints as opportunities. We then leverage the best of our technology and all of our experience to ensure our clients get maximum value from their engineering and construction dollars.

We have worked with development and construction clients since our inception more than ten years ago and know when you develop or construct major facilities or property, every day counts. We understand the importance of efficient engineering, the cost and availability of materials and the changing market forces that our clients are designing for, and building in.

It is this approach that keep our clients coming back, time and time again.

Across the resources industry ADG is experienced in the complex staging of workforce accommodation, warehousing, support facilities and infrastructure that is required to deliver from pit to port and involves just as much engineering as the mines and conveyors themselves. This is where our expertise lies.

ADG’s multi-disciplinary team works closely with the civil and structural contractors delivering mine facilities, providing innovative engineering skills, and readily available expertise.

Our team is working hard on the supporting facilities and accommodation around major mines and LNG projects in Australia’s fastest growing regions of Mackay, Gladstone, the Surat Basin, Perth and the Pilbara.

Our engineering underpins the construction of infrastructure modular accommodation facilities, office and industrial facilities, conveyors and large warehousing needed by mine sites.

With ‘Safety Plus’ as one of our core values, our team put safety first; managing risks on all projects carefully every day, on every site.
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Our services
Since our beginning in 2002, we have focused on delivering structural solutions that are cost effective and tailored to meet the changing market, site conditions and geographical constraints.

We differentiate our offering through combining the latest technology, construction techniques and innovative ideas to provide unique solutions to complex projects. We have a track record of working closely with all levels of the project team including consultants, contractors and sub-contractors to develop the most suitable and effective outcome for all the stakeholders.

Program, materials qualities, cost, logistics and labour are all taken into consideration through the design process.

We’re often employed by contractors to redesign structures to be more cost-effective and considerate of the construction timelines and constraints they impose and our widely respected for this capability.

We provide a full range of Structural Engineering services including:
- Deep basement construction
- Steel and composite construction
- Large span structures
- Deep foundations
- Difficult ground conditions
- Construction in high water tables
- Precast hybrid building construction
- Complicated transfer structures
- Stages or progressive strength analysis
- Complex temporary works analysis
- Dynamic and lateral analysis.

The construction environment is continually changing. We tailor each of our designs to suit the conditions.
Building Structures

The built environment is continually changing. We tailor each design to suit the conditions.

ADG has developed a strong reputation within the industry providing temporary works and construction services on a variety of building structures. Whether working directly for the principal contractor or engaged by the sub-contractor / supplier, we provide a diverse range of engineering services to facilitate the construction of building structures which continue to become increasingly complex.

Our extensive experience in providing engineering services directly to the sub-contractor and suppliers means we are well placed to provide fully integrated solutions to ensure engineering processes work efficaciously for the project site. We work collaboratively with all stakeholders on the project to meet the requirements of all parties.

A working understanding of the requirements of our clients in conjunction with an ability to communicate effectively translates into a collaborative approach.

We provide a full range of Building Structures services including:

- Hoardings and gantries design, inspection & certification
- Scaffolding - design, inspection & certification
- Structural capacity assessment of existing structures
- Formwork - design, inspection & certification
- Falsework
- Propping, lifting and support of precast
- Temporary retention solutions
- Back propping of new and existing structures
- Lifting design of reinforcement mats / cages
- Temporary buildings
- Temporary fencing
- Piling platforms & loading platforms
- Sign boards, wheel washes, barriers
- Heritage / general condition study & remedial work
- Concrete cancer assessment and recommendations to concrete structures
- Detailed construction sequencing and staged erection methodologies of steel framed building and long-span roofs.
Infrastructure Services

Numerous project sites spread across a large area requires an integrated approach with fully considered solutions

At ADG we ensure we understand our clients needs and actively encourage a partnership style of relationship to ensure that the best interests of our clients are made our own. Our experience and reputation within industry has found us teaming with consultants, lead contractors and client teams to deliver integrated and highly desirable project outcomes for the client. ADG have been heavily involved with principal contractors to assist in delivering iconic infrastructure projects throughout Australia; such projects have included the Toowoomba Second Range Crossing project in QLD and the North West Rail project in NSW.

ADG are extensively experienced in the delivery of infrastructure projects having delivered a variety of engineering solutions on all project phases from concept through to commissioning. Our team members have delivered designs in a range of industries from transport road & rail infrastructure, marine to residential, and in doing so have a proven track record of excellence. Our experienced engineers and designers use a range of design packages to ensure optimal design solutions. We have experience in both infrastructure/civil construction as well as design, allowing our team to provide design solutions that are conscious of safety in design, engineering integrity and constructability.

We also have developed alliances with several consultants in specialised areas such as geotechnical, tunneling and rail to further broaden our capability and offering.

We provide a full range of Infrastructure Services including:

- Dilapidation, existing condition surveys and reports
- Temporary retention solutions
- Temporary bridges
- Vehicle impact protection barriers
- Haul roads
- Launch noses for incrementally launched bridges
- Crash decks
- Structural capacity assessment of road infrastructure
- Concrete canver assessment and recommendations to concrete structures
- Staged erection sequencing and temporary strength & stability assessment for elevated bridge construction
- Design and analysis of Heavy Precast Lifting
- Formwork - design, inspection & certification
- Falsework
- Propping, lifting and support of precast.
Materials Handling Equipment

Often underestimated and undervalued, proper planning & coordination of site equipment can greatly improve the delivery of materials on-site and increase efficiencies of the construction process.

ADG has rapidly become an experienced industry leader in materials handling based by growing our existing team with highly experienced engineers.

The ability to engage and work with our clients to provide a mutually beneficial outcome has ensured that a comprehensive understanding of client deliverables in a timely manner remains our priority focus.

We provide a full range of Materials Handling Equipment services including:

- Concrete placing boom installations - foundations, chocks / ties and staging sequences
- Tower crane installations - foundations, grillages, staging sequences & crane to building ties / chocks
- Mobile & tower crane certifications and 10 year inspections
- Personnel hoist installation - overrun pits, building ties, landing platforms and staging sequences
- Auxiliary equipment - ambulance cages, block cages, spreader bars, loading bays, tower crane transition sections and bogmats.
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2. / ADG CAPABILITY DOCUMENT / OUR SERVICES

Ann Street. In progress

GLNG, Gladstone

Cajuput, FIFO Accommodation

Bromelton, Mirvac

Haul Road, Origin

GLNG Aerial, Gladstone
Civil & Environmental

A complete project approach draws on an impressive cross-section of expertise to deliver effective and creative civil design solutions.

The Civil engineering landscape has changed drastically in recent years, with innovations in design strategies, along with legislative and social focus on environmental and impacts.

Our integrated Civil and Environmental engineering, planning and development approach results in a coordinated design with minimal interruptions during construction, saving our clients risk, time and money.

Our team provides cost effective, environmentally sensitive, practical solutions by identifying the key design constraints and converting them into opportunities, such as using grass swales for drainage, rather than pit and pipe where transport, or availability of product is an issue.

We are well respected for our outstanding skills in managing complex engineering projects for major mining groups, town planners, engineering and development consultants, government agencies and construction companies.

We provide a full range of Civil and Environmental engineering services including:

- Project scoping and concept design
- Development and sub division master planning and design
- Development feasibility studies on brownfield and greenfield sites
- Master planning of education, retirement and healthcare facilities
- Detailed design and contract documentation
- Project management and coordination of specialist inputs
- Construction management and supervision
- Wastewater assessments
- Environmental monitoring and audit reports
- Environmental impact assessments
- Environmental risk assessment.
Hydraulics

Comprehensive support and a focus on lasting design solutions with robust processes and long-term vision.

Personalised design approach to each project with a focus on value engineering solutions and options. We stay at the forefront of industry innovation to ensure we are providing our clients with the latest design options as well as the latest products available from both local and international suppliers and manufacturers.

We adopt this mindset in all aspects of our design such as roof drainage, house drainage, and water reticulation.

We focus on collaborative yet efficient for construction documentation in order to extract competitive pricing from the industry as well as constantly seeking the best long term solutions for our clients.

Services may include assistance with value engineering, due diligence and feasibility studies, concept design, detailed design and development applications, tender evaluation, contract administration and construction support.

By providing practical solutions on a project to project basis, we ensure the delivery of effective and tailored results.

We have successfully provided hydraulics engineering expertise for high rise, retail, commercial, industrial, residential, theme park, entertainment, health care, community and specialist developments.

We have provided hydraulic systems including:

- Potable water services
- Trade waste plumbing and drainage
- Reduced air velocity stack systems
- Collaboration with siphonic stormwater drainage manufacturers and designers
- Rainwater harvesting
- Stormwater drainage and management
- Waste water collection and treatment systems.

Call us for more information on 1300 657 402 / www.adgce.com
Gladstone Construction Camp. Sub Hydraulics.
Virtual Design

Validating and enhancing design and risk through digital prototyping.

We provide digital modeling of facilities and buildings of all scales and sizes. Our BIM (Building Information Modeling) design process allows clients to understand the way [Structural, Civil, Mechanical, Electrical, Hydraulics and Building Services] combine with architectural designs to deliver a finished asset. We then integrate this with the Contractor scope and budget to offer the most cost effective construction options.

We have a specialist BIM team skilled in Revit, Navisworks, 3DS Max, and a range of virtual reality and analysis technologies, which enable us to understand the design of every component of the building. Our systems allow us to simulate and report construction and installation scenarios for planning and onsite feedback.

3D modelling also provides an excellent tool for engaging stakeholders at all stages of the project to understand the planned construction in greater detail prior to approvals, and during the pricing and construction process. Our technology means greater accuracy in pricing and development, leading to more certainty and less commercial risk at construction stage.

The ADG difference brings aspects of this technology to all of our projects. We know how BIM works in our business and have developed a detailed process for collaborating with other service providers. We are leaders in our field and we pride ourselves on leading the technical design for whole design and construction teams.

Our Virtual Design services include:

- Develop BIM execution plans
- Interference checking and constructability issues
- Scheduling integration and quantity take-off (4D & Construction Sequence Methodology)
- Site logistics planning and construction management models
- Value to clients and contractors through reduced paperwork and faster QA/OHS issues/defects logging and approvals onsite
- Barcoding tools to enable OHS compliance on site plant tracking and maintenance procedures
- Data capture plan for client in the form of; as built 3D models, 2D drawings and O&M data into a cohesive and searchable system.
3

Our clients
Our clients

The ADG team are proud to have worked alongside some of the most successful construction and resources companies in Australia.
4

About ADG
About ADG

We believe project success is created through continuous collaboration with our clients, partners and colleagues as we go about the delivery of an outstanding outcome.

ADG Engineers (Aust) Pty Ltd was founded in 2002. Today the firm has grown to a staff of over 170 in 7 offices throughout Australia and the world, and remains led by our founding partners.

Our offices are centred in the major business hubs of Brisbane, Gold Coast, Melbourne, Darwin, Sydney, Sunshine Coast and Perth. This brings us closer to our Resources and Development clients, allowing us to provide all of our multi-disciplinary engineering, technical and drafting services required for both complex and simple projects.

Internationally, we have an office in Jordan, serving some of the fastest growing regions of the world.

Our dedicated staff encompass a cross-section of services including Structural, Construction and Temporary Works, Civil and Environmental, Building Services, Hydraulics, Virtual Design and Tension Membranes so we can support our clients’ needs on all frontiers.

We are led by our hands-on Managing Director, Marco Ficca, who has over 19 years of design experience across a variety of industry sectors throughout Australia and Asia. Marco has built a reputation for providing strong design and analytical skills in the areas of structural steel, reinforced and post-tensioned concrete and finite element analysis. From Marco, through all levels of the company, our culture is dynamic, energetic and creative enough to find opportunities for our clients and support their success at every step.
Our people

Our company culture is one of guidance, support and open communication across all disciplines and all locations.

At ADG, we are our people. With over 100 staff, we have a dedicated and technically excellent team who value accountability and a collaborative approach to their work.

Led by an experienced, responsive and engaged team of senior engineers, our hands-on management team is dedicated to guiding our staff through all projects and sharing their knowledge.

Through this, and a dedication to innovation and progressive thinking, we are continually learning new approaches to design, working with engineers, draftspeople and technicians across multiple disciplines.

We value collaborative communication and the relationships we build with our colleagues, clients and partners. With this in mind, there is no detail too small, no issue too inconsequential for us as we remain focused on the creating an exceptional final outcome on all projects we are proud to be part of.
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Our Projects
Gateway Shopping Centre
Palmerston, Northern Territory

<table>
<thead>
<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hutchison Builders</td>
<td>In progress</td>
<td>$300M</td>
</tr>
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</table>

ADG Engineers are providing structural engineering services on the $300M Gateway Shopping Centre in Palmerston, NT. Stage one of the 15-hectare site consists of 40,000 square metres of retail space to accommodate Woolworths, Big W, a six-screen Event Cinemas complex, 100 specialty stores and kiosks, dedicated restaurant precinct and a food court with seating for more than 350 patrons. The total roof area of Stage one of the shopping centre will be 37,000 square metres and will carry 1.5 megawatts of solar panels.

ADG were able to identify and implement significant value engineering measures to assist the builder achieve the required price to enable the project to proceed. Value engineering measures included consultation with the geotechnical engineer to re-design the whole foundation system, re-design of the lateral resisting system from column frame to ductile shear walls, economical and efficient re-design of all post tensioned slabs, re-design all steelwork to find efficiencies despite increases in internal wind pressures associated with the re-design.
Skytower
222 Margaret Street, Brisbane

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<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>Hutchinson Builders / Bilbergia</td>
<td>May 2019</td>
<td>$367m</td>
</tr>
</tbody>
</table>

Skytower is a 90 storey residential tower over nine levels of existing inground basement carparking. ADG provided specialists structural engineered services for the design and documentation of the structure. ADG were also the hydraulic engineers for the project. ADG also completed an independent review of the full building design including a complete finite element analysis of the buildings lateral system. Value engineering items encountered as part of this review were included in the final building design, which provided the contractor with savings in materials, cost and progress.

ADG were engaged by the building contractor to ensure efficiency in the horizontal slab designs were maximised to reduce material, labour on site and slab angle time, all vital to the successful completion of the project. ADG provided highly detailed drawings including all information from all stakeholders to ensure all identified efficiencies were fully achieved on site.
Elegance, Mermaid Beach

2-16 Mermaid Avenue, Mermaid Beach

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<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>UMB Properties / KPG Projects (Mermaid Avenue) Pty Ltd</td>
<td>2019</td>
<td>$186m</td>
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</table>

The project involves the development of two high rise residential apartment towers of 47 and 52 levels respectively, over 5 basement levels. ADG provided civil and structural engineering services.

The location of the project brings complexity through the ground conditions, due to the significant depth of sand and the high water table.

ADG worked with dewatering and geotechnical experts to resolve various foundation and retention options to reduce cost and construction program. Working with these consultants and the architect, ADG lead an alternative design solution that shifted two basement levels above ground, to facilitate the use of a more cost effective and low risk retention solution; saving upwards of $8m.
Spire Apartments

550 Queen Street, Brisbane

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<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>Hutchinson Builders</td>
<td>September 2017</td>
<td>$92m</td>
</tr>
</tbody>
</table>

Spire is a prestige 40 level residential building over four levels of inground basement parking, located in Brisbane City. ADG provided structural, construction services, civil and hydraulic engineering advice.

Located at 550 Queen Street in the city centre and bounded by busy Queen & Ann streets, the project is located alongside the heritage listed Orient Hotel and St Johns Cathedral.

ADG worked integrally with the building contractor, geotechnical engineer, bulk earthworks contractor, piling contractor and our in-house construction services team to provide an integrated top down basement construction procedure, which allowed off-street loading over the excavation. This also reduced boundary vibration limits between the strict heritage list requirement of the neighbouring church and hotel and allowed both piling and excavation to occur simultaneously in a very tight site. The strategy also reduced program and risk at the most critical point of the project.
The construction of a Brisbane project including 12 level commercial office tower, a 22 level residential tower and a 4 level mixed use building with recreational landscaped deck was in danger of extensive project delays due to the presence of strong rock in the project grounds, resulting in a lengthy excavation process.

Upon review of the construction program, it was suggested that slip form construction for the central lift and stair cores to the residential and commercial buildings would maintain original target dates, if the core structure was able to be accelerated. ADG re-engineered the core structures to cantilever free standing up to 22 levels unsupported, allowing the building structural works to commence whilst excavation work continued into the strong rock below ground.

ADG delivered an economical solution to keep work progressing and provided the client with a talking point in the market and giving the development’s pre-sales and leasing team a selling advantage.

A subsequent challenge was to mitigate the potential delay from when the cores were to be completed and the structural slab construction was to commence.

ADG carried out detailed finite element analysis of the core structures to analyse staging in order to minimise temporary works requirements. The cores were able to cantilever over 60m high from foundation level, while maintaining structural integrity of the wall and its foundation.
Central @ Townsville
Flinders Street, Townsville, Queensland, Australia

Client
Parkview Queensland

Year
2007

Value
$40 million

This project contained several innovative structural features. The façade of the commercial building, one of the four building precincts in the project, leans towards Flinders Street at an angle of 60° to the horizontal.

ADG solved the ‘out of balance’ loads by employing specialised ground anchoring techniques to tie the whole building down to a stable deep rock foundation.

Being located adjacent to Ross Creek, the project encountered a number of foundation issues like high water tables and poor bearing conditions which added to the project’s complexity.

Both of these situations were overcome by employing the use of ductile cast-iron piling technologies. The buildings contain the use of post tensioned reinforced concrete slabs, all fully designed and documented by ADG who are considered specialists in this field.

Precast concrete wall systems were used extensively through the project and with close consultation with the Architect and Builder, clever yet practical detailing was achieved, which led to an aesthetically pleasing product.

Large roof overhangs required for architectural and practical effect led to some sophisticated structural steel design solutions.
53 Albert Street
Brisbane, Queensland, Australia

ADG’s innovative approach to design and the team’s specialist capabilities allowed this complex development to be constructed on time and within budget.

Hutchinson Builders and ADG rose to the challenge of redeveloping a Kings Parking Station of the corner of Albert and Margaret Streets in Brisbane’s CBD. The project involved maintaining the existing 9 level car park constructed in the 1980s as well as adding 13 levels of commercial office space above.

A complex framework of steelwork bracing frames, fully designed and documented by ADG, was installed through the existing carpark levels to laterally brace the existing framing. The braces allowed the existing shear cores and their foundations to be completely cut out and replaced with a storage-upgraded shear core without compromising safety, as well as being faster and cheaper than strengthening the existing cores. The new core was then tied back into the old building using post-tensioned reinforcement.

As the new works continued, shear walls and cores were installed and the use of a post-tensioned coupling system was adopted to lock the old structure and the new together.

A deep transfer slab used to support the new commercial space and transfer of loads into the new supporting structure was designed to be poured in layers. This ensured the existing carpark slabs below were not overloaded during construction and formwork and propping required was kept to a minimum.
Victoria Cross Retirement Tower
Southport, Queensland, Australia

The high rise tower is located in a high end corridor of the heart of the Gold Coast’s business precinct. The multi-purpose tower consists of three levels of basement carparking, four levels of aged care with its own reception, exercise and physio equipment, and 31 levels of residential apartments.

ADG were brought into the team to provide a value engineered alternative design to the current documentation on the confirming tender.

The challenge was to re-engineer the structure by using the main cores in the most efficient manner and minimise additional bracing elements and vertical formwork.

Rationalising the basement raft slab and suspended slabs also provided significant raft savings. We tailored the structural design, material use and systems to suit the builder’s construction methodology and site constraints.

The project was delivered on time and on budget, with substantial savings in construction costs and program realised.
ADG provided an as built 3D model that reflected drawings dated back in the early 1980’s. We also combined all existing documentation of the facility into one central location.

Beach Haven was one of the Gold Coasts iconic apartments during the 1980’s. Situated in a prime Broad Beach location where ample activities such as a shopping complex, the iconic Jupiter’s Casino and of course the beach front.

With major renovation to the 32 level apartments scheduled to commence later in the year. ADG assisted the Client with data capture to completely assess the state of the building. We combined all associated drawings from old sketched schematics to overlays that were practically not readable.

The 3D model includes the architectural fit out of each apartment; we also modelled all Hydraulic elements, all Electrical fixtures and Mechanical equipment’s. Also included with ADG’s facilities service were on site investigations and surveying. Further investigations were conducted on site to clarify changes to the building that was not reflected clearly on the drawings. ADG Virtual Design generated a user interface which allowed users to manoeuvre around the 3D model, we also included an interactive drawing sheet that allowed efficient identification of what was required at each apartment.

A tight schedule to deliver the project was at hand due to the commencement of renovations. Another obstacle that ADG assisted Beach Haven Body Corporate with was the out dated drawings that clearly had worn out during the years. This required close discussion and access to the site in order to clarify the state of the building.
CONSTRUCTION SERVICES

Sydney Metro (Northwest)

Sydney, New South Wales, Australia

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<thead>
<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
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<tbody>
<tr>
<td>CPB Contractors</td>
<td>In Progress</td>
<td>$1.15b</td>
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The Sydney Metro project is the largest public transportation project in Australia, providing world class rail infrastructure to the residents of North-West Sydney. The project involves the construction of 15km twin tunnels between Bella Vista and Epping, along with additional civil works for five new rail stations and two service facilities.

ADG was engaged by the principal contractor responsible for the delivery of Northwest Tunnels and Station Civil Works – CPB John Holland Dragados (CPBJHD) – to provide on-going temporary works engineering solutions and other associated construction services on the project. Our involvement focused on the construction of the Cudgegong Station Concourse Bridge, Precinct Street C Overbridge, Pedestrian Bridge and station retaining walls.

- Staged erection sequencing for the construction of elevated bridge girders and precast decking units, including design and documentation of temporary works solutions as part of the strength and stability assessment
- Temporary works design for the propping and sequencing of a number of concrete precast wall panels and retaining walls throughout each station
- Independent 3rd Party design certification of various formwork & scaffolding systems
- 50t precast concrete girder lifting arrangements, propping and road transport steel support frames
- Lifting arrangements of several complex precast concrete shapes requiring in-depth analysis
- Scaffold and edge protection design and documentation services for safe access at various work fronts
- Comprehensive design documentation and quality assurance for all tasks as well as site support across all stations.
CONSTRUCTION SERVICES

Sydney Metro (Norwest & Bella Vista Stations)
Sydney, New South Wales, Australia

15km of tunnels and 65km of track. The first autonomous metro rail system in Australia

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<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
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<tr>
<td>CIVMEC</td>
<td>In Progress</td>
<td>$1.15b</td>
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The Sydney Metro project is the largest public transportation project in Australia, providing world class rail infrastructure to the residents of North-West Sydney. The project involves the construction of 15km twin tunnels between Bella Vista and Epping, along with additional civil works for five new rail stations and two service facilities.

ADG was engaged by CIVMEC – the civil sub-contractor responsible for the construction of the Norwest & Bella Vista Stations, to provide wide ranging temporary works solutions to facilitate the construction of the two stations. Aside from the stations being situated in the middle of Sydney’s densely populated Norwest real estate corridor, and the deep open-cut excavation required to construct the stations, forward thinking precast concrete design also offered up a range of logistical and construction methodology challenges.

For each station in excess of 990 individual precast elements were analysed, lifted and propped during installation. The lifting, propping and shoring of these elements were specified by the ADG design team with a high attention to detail, with any delay during precast installation impacting the construction program for the whole project.
Airport Link

Brisbane, Queensland, Australia

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<tr>
<th>Client</th>
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<th>Value</th>
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<tr>
<td>Thiess - John Holland JV</td>
<td>2012</td>
<td>$4.8 Billion</td>
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ADG were involved in a number of temporary works packages during the construction of the airport link project. These included the following:

- Temporary road diversions
- Pavement design
- Stormwater, sewer and water diversions
- Small waterway diversions
- Earthworks, including laydown areas, piling platforms / pads
- Sediment and erosion control including slope stability.

Safety in Design

ADG conducted fortnightly meetings with the client to present our progress, and one of the most important items was safety in design. We held regular meetings with the contractor to understand their materials handling process for each of the jobs, the equipment they were using, maximum slopes during construction, delivery and laydown areas, etc. This information informed our design to ensure a safe design that incorporated the site limitations and the safety of personnel on site.

Value Add

ADG added value through our site based approach to the packages. We reviewed the scope on site, set out clear milestones, discussed potential challenges, and agreed the way forward with the contractor. ADG resolved any offsite/onsite issues due to supply shortage of CBR 45 available for the temporary off ramp in one section, good quality CBR 15 from a local Quarry which we had NATA tested, and used a thicker layer of this CBR 15 material to achieve the loading capacity, saving time and money, and allowing works to progress unobstructed by supply issues.
# Casino Towers

**South Brisbane, Queensland, Australia**

![Image of Casino Towers construction site]

$200m, 30 storey, 376 apartment residential development

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<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various Subcontractors</td>
<td>2016</td>
<td>$200m</td>
</tr>
</tbody>
</table>

ADG provided a broad range of engineering services to facilitate the construction of this 30 storey high-rise building in South Brisbane. Engaged by multiple sub-contractors, ADG provided temporary works engineering solutions for the overall site retention and various onsite materials handling equipment, including:

- Tower crane (Lindores Construction Logistics) – Favco M380D Tower Crane Installation on Steel Grillage and Favco 1000EMkII Tower Crane Standard Installation
- Personnel Hoist (Morrow Equipment) – Alimak 20/32 SCI Personnel Hoist Installation
- Formwork (Heinrich Formwork) – Slab Formwork Design, Inspection and Certification
- Site retention (QPS) – Design and documentation of a temporary retention system to brace the basement walls during excavation.
# CB & I QC-LNG Tanks, Curtis Island

Application of BIM technology to design and detailing of bespoke reinforcement fabrication

<table>
<thead>
<tr>
<th>Client</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB + I / Forge</td>
<td>2016</td>
<td>Qld Curtis LNG $20.4billion investment</td>
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</table>

ADG undertook the design and detailing of all temporary works, including pump supports and scaffolding for the construction of 2 x 160,000 cubic metre LNG tanks.

ADG assisted in the design of reinforced fabrication and detailing. This included the application of 3D BIM technology to animation and modularisation of the construction methodology, including the following:

- Defining Company processes and workflow
- Establishing existing systems and better understand interpellation
- Phase 1: advised on current BIM technologies to improve productivity
- Phase 2: advised on future BIM technologies for company progression & change of management
- Revit Used for modelling and documentation
- AutoCAD for further detailing
- CostX used for early risk analysis and cost planning
- Navisworks, Primavera and Microsoft Project for construction simulation and distribution of Planned and Actuals
- Vico Office used as a Phase 2 implementation.
Hercules Street, Hamilton

Client

Mirvac

This development is a mixed use residential development consisting of three towers overlaying a common two level basement.

ADG was the principal structural and civil engineer to Mirvac and assisted with modelling and delivery of 4D and 5D documentation.

Further to ADG capabilities our VDC Team developed 4D sequencing of the site. We then utilised the modelled information to provide prelim estimates of requirement material and equipment. They included concrete, reo rates, post tensioning rates, formwork and other site equipment. The key areas that we provided are:

- Site logistical planning with Mirvac
- Early planning certainty using simulation to provided confirmation
- Provided documentation for better understanding of construction methodology with the team
- Early accuracy of site requirements of equipment and material.
Tower Crane Installations

Cosmo Cranes
- Stage 2 O’Dea Avenue Apartments, Waterloo
- Altitude - 28 Second Avenue, Blacktown
- Macquarie Green - Whiteside Street & David Avenue, North Ryde
- 102-106 Old Canterbury Road, Lewisham
- Canterbury Road, Canterbury

General Cranes
- Holmes Hill Apartments, Chadstone

Hutchinson Builders
- Southpoint C, South Brisbane

Lindores Construction Logistics
- Jewel Surfers Paradise
- 300 George Street, Brisbane
- Beach Apartments, Broadbeach
- Grand Central Apartments, Toowoomba
- Jupiter’s Suite Hotel, Broadbeach

Morrow Tower Cranes
- The Duke, Kangaroo Point
- Stage 6 Atria, Hamilton Beach
- Aveo Clayfield
- Stage 3 & 4 Eden Cone, Woolloongabba
- Folkestone Street, Bowen Hills

ADG works with our clients to provide design, documentation, inspection and certification for their tower crane installations. Designs incorporate best practice methods whilst bringing to the table extensive Construction Industry knowledge. Ease of installation, prompt response times and client communication form the basis of our design approach.
Formwork Installations

Mirvac
- Art House, Hope Street, South Brisbane

Superform
- Aveo Clayfield
- Opera Apartments, South Brisbane
- Southpoint C, South Brisbane
- Spice Apartments, South Brisbane
- Vivir Apartments, Nundah
- Wharf Street, Brisbane
- Ivy Apartments, South Brisbane

Heinrich Constructions
- Casino Towers - Hope Street, South Brisbane

Rocktown
- Gateway Motorway Upgrade

To accommodate formwork system installations ADG perform site based inspections and provide office base support in terms of design and certification for their projects. Site inspections are performed to ensure conformity with the intent of the structural engineering documentation and for local council certification ensuring a responsive and proactive response with regards to support and communication.
Dilapidation Reporting

BMD Urban
- Bayliss Road, South Ripley
- Loganlea Road and Webb Road Signalisation, Loganlea
- Teviot Road Upgrade, South Maclean
- Woodash Stage 2, Kingston

Built
- Westfield Shopping Centre Complex, Northlakes

Hutchinson Builders
- 900 Ann Street, Fortitude Valley
- Queen Arms Hotel, Fortitude Valley
- Skytower - 222 Margaret Street, Brisbane

Moreton Bay Regional Council
- James Drysdale Reserve, Bunya

PBS Building
- Olympia on Russell, South Brisbane
- 109 Melbourne Street, South Brisbane
- 2-4 Edmondstone Street, South Brisbane

Pradella
- 321 Montague Road, South Brisbane

Probuild
- Jupiter's Hotel and Casino, Broadbeach

WATPAC
- Newstead Series, Newstead

ADG provide comprehensive dilapidation reports to our clients, detailing the existing condition of any infrastructure or areas within the vicinity of work to be carried out.
Structural Capacity Assessment

Equipment & Lifting Solutions
- Kemp Place Overpass, Fortitude Valley
- Mater Hospital Pedestrian Bridge, South Brisbane
- Queensland Children’s Hospital, South Brisbane
- Redcliffe Dolphins Grandstand, Redcliffe

Hutchinson Builders
- Adina Hotel - 171 George Street, Brisbane

ADG provide structural assessment of existing structures to accommodate builder’s requirements, mobile crane lifting operations inclusive of outrigger pads and general lift reviews.
Hoist Installations

Morrow Tower Cranes
• Casino Towers - Hope Street, South Brisbane
• Coorparoo Square, Coorparoo
• Kon Tiki Apartments, Maroochydore
• Melbourne Tower, South Brisbane
• Olympia on Russell, West End
• Vulture Street, South Brisbane

Lindores Construction Logistics
• Jupiter’s Suite Hotel, Broadbeach
• Carrara Sports & Leisure Centre, Gold Coast
• Emandar East Quay Drive Stage 2 & 3
• Outlook Apartments, Southport
• Skyring Gasworks, Newstead
• South Hampton Apartments, Southport

ADG provides design and documentation for our clients personnel hoist installations. A detailed design and documentation approach inclusive of foundations / overrun pits, elevation details, relevant staging information, ties and access plates utilising historical knowledge combined with modern day technological advancements provide accurate documentation for all types of hoists and installations.
Concrete Placing Boom Installations

Pumpcorp
• Portside Building 2 - Pinnacle Apartments, Brisbane

Specialised Concrete Pumping
• Lexington and Akira Apartments, Woolloongabba
• 35 Archer Street, Toowong
• Jade Apartments

Concorp
• Bayside Apartments, Moorabbin

Sunbuild
• Seabreeze, Darwin

ADG provides design and documentation for concrete placing boom installations. The designs include provision of design loads, maximum freestand capability, staging sequence, radius plan, backpropping and slab penetration requirements.
Gantry (B Class Hoardings) Installations

High Rise Gantry
- 1 William Street, Brisbane
- 15 Stratton Street, Newstead
- 38 Buchannan Street, Newstead

Royal Wolf
- 15 Stratton Street, Newstead
- 234 Vulture Street, South Brisbane
- 27 First Avenue, Mooloolaba

Hutchinson Builders (Casa)
- 550 Queen Street, Brisbane
- Student One - 38 WHarf Street, Brisbane
- Skytower - 222 Margaret Street, Brisbane

Design, documentation and certification of Gantry / B Class Hoarding installations. Stability design and structural capacity of gantry componentry. Outside of the box design enabling structurally stable design whilst maintaining site requirements.
Excavation Retention Systems

QPS
- Land Street, Toowong
- Breeze Apartments, Mooloolaba
- Newstead Central Stage 2 & 3, Newstead
- Casino Towers - Hope Street, South Brisbane
- Gasworks Newstead
- Skyring Terrace, Newstead

Design, documentation and certification of excavation / retention systems. Outside of the box design enabling structurally stable design whilst maintaining site requirements.
Precast Concrete Panel Installation

Transport, Temporary Wind Bracing & Deadman Design

Konnect
- Beach Apartments, Broadbeach
- Somerville House, South Brisbane
- Mode Apartments, Newstead
- Kerryl Street, Kunda Park
- 326 Settlement Road, Melbourne

ADG provides design, documentation, inspection and certification of precast concrete panel installation (transport, temporary wind bracing and deadman design) across a wide variety of design intents. Providing both standard and innovative design solutions for their clients. ADG provides itself on its economic foresight.
C2 Apartment Tower
Darwin, Northern Territory, Australia

Client: Halikos Group Pty Ltd
Year: 2009

The development of an 11 storey apartment building on The Esplanade in inner city Darwin required multi-disciplinary design including structural, mechanical, electrical, hydraulics and engineering services to avoid construction delays in the notorious wet season.

Some of our design solutions included the use of flat plate slabs and post tensioning. Post-tensioned concrete combines and optimises today’s very high strength concretes, resulting in an efficient structural system.

Delivering practical solutions to facilitate the strict construction schedule, ADG was able to provide significant cost and programme advantages for our client.
Kelvin Grove Urban Village
Brisbane, Queensland, Australia

Client
Pradella Developments Pty Ltd

Year
In Progress

The project consists of three residential towers of 6 level, 12 level and 17 levels overlying a common podium with over 4300sqm of external living and recreational facilities and three levels of in ground basement parking which is tiered to follow the existing natural ground profiles.

The project is staged into three separate releases which provide challenges in the building design to allow construction to continue without interfering with the functioning of the early stage releases. ADG were able to tailor the slab design and pour services to ensure this was made possible without limiting functions of the builder or property use and without penalty on costs.

ADG also overcame the varying geotechnical profile across the large site which was efficiently achieved by specialized detail including balancing loading and foundation design to ensure against differential settlements through the building.
The Avenue
Salonika Street, Parap, Darwin, Northern Territory, Australia

Client
Sunbuild Pty Ltd / Dabford Pty Ltd

Year
2010

Project Value
$140 million

ADG’s value engineered proposal delivered at tender stage included a gravity drained two level basement, a three level, Ground Floor to Level 2, commercial tenancy with fully landscaped Podium (Level 3) including residents facilities and amenities and two 12 storey towers of 288 residential apartments.

This was a fringe CBD project with 20,000m² of basement and podium levels. Flat plate slabs were key to the overall design efficiencies achieved.

ADG delivered a simplified structural frame and achieved a time effective build program.

The Avenue was the largest private section project in the Northern Territory on a landmark site establishing a new residential and commercial hub for the area.
Deakin University Accommodation
Melbourne, Victoria, Australia

Client
Hutchinson Builders

Year
2012

The student accommodation was scheduled to be ready for occupation in the first half of 2012 and included sustainable design, construction and operational features.

Such tight delivery time frames required an unusually fast early works package to ensure the contractor did not lose time. Several innovative solutions were provided to reduce costs and keep the contractor on time and on budget, including a reduction in precast panel widths and using Onesteel’s Trussdek slab solutions.

A result of our partnership with Green Star accredited professionals, the development incorporates features such as the use of recycled materials during construction and rainwater harvesting for toilet flushing and landscape irrigation, as well as mechanisms to reduce electricity consumption.
Hercules Street, Hamilton
Brisbane, Queensland, Australia

Client
Mirvac Queensland Pty Ltd

Year
2011

This development is a mixed use residential development consisting of three towers overlaying a common two level basement.

ADG was the principal structural and civil engineer to Mirvac and assisted with modelling and delivery of 4D and 5D documentation.

The project is located in the Hamilton Precinct of Brisbane with a high water table and challenging ground condition. Given the scale of the site, the logistic and site specific requirements were included in the design.

ADG provided a complete 4D and 5D delivery for Mirvac, incorporating temporary works fit-out and a bill of quantities of material and temporary works requirements.
Silo Living, Islington Street
Melbourne, Victoria, Australia

Client: Southern Cross Prestressing  Year: 2010

The original Islington Street Malt Store was erected in 1878 by Thomas Hood for the purpose of making malt liquor. By 1909, Hood’s sons had taken over and the malt house was storing and supplying local brewing companies including the Victoria Brewery.

This project transformed the existing silo structure into six storeys of bespoke apartments. 21 of the 48 apartments are located within the silos themselves, retaining the curved exterior walls from their previous life as a strong and important point of difference.

The development included the construction of a car park directly underneath the existing silos, bringing the challenge of how to support these massive structures.

One of Collingwood’s earliest and most successful enterprises, the malt store represented an early phase of industrial development in the area. The expansion of the original malt store to incorporate the adjoining silos mirrored the burgeoning brewing industry in Victoria at the time.

Today, the malt store and silos complex are prominent elements of The Islington Street development.
Cajuput FIFO Accommodation
Wickham, Western Australia, Australia

Client
Hutchinson Builders

Year
2013

The Cajuput Fly-in, Fly-out Accommodation project provided for the design and construct of two short term accommodation blocks. Each block consisted of three levels of accommodation with common use areas. ADG were engaged for structural, civil and hydraulic engineering services.

The remote project location in regional Western Australia required the use of modular construction methods to remain economically viable. To compete with overseas modular unit manufacturers ADG carried out extensive R&D including full scale testing to devise an innovative structural module design.

This was Hutchinson Builders flagship project in Western Australia. Despite many challenges and site constraints, ADG delivered an efficient design demonstrative of the team’s innovative thinking.
The project consisted of an existing building with a new ground floor and mezzanine floor, and a seven storey commercial building. The building was completed in an extremely short timeframe so ADG worked closely with the post-tensioned subcontractor by dividing up the design package to ensure the accelerated program is maintained. The Goods Shed was built in 1889 and refurbishing this building, presents an incredible opportunity to renew an integral part of Melbourne’s history, with a modern, sustainable design sympathetic to its heritage value. The historical façade and key elements of its interior have been retained. A polychromatic, face brick building, the structure is arranged under three gabled roofs each with clerestories. Iron columns at nine metre intervals support the truss-framed roofs internally, while the outside walls are solid brick. The central trusses span fifteen metres and those in the side sections nine metres.

In length the building originally measured 370m. The centre of the Goods Shed contains three tracks and to each side are wide storage and loading areas at the floor level of the rail wagons. Outside walls have arched doors at close centres along the full length of the sides, serving loading areas which also run the full length of both sides of the building, allowing goods to be transferred from horse-drawn vehicles directly inside. The two-storeyed office block is situated in the south-east corner of the building and has a central tower and stucco decoration, including the main door surround. On the blocks south facade is the VR insignia with a crown above, while the east facade displays the construction date, 1889, in the tympanum. The principal south facade features gables in the manner of industrial architecture of the time.
STRUCTURAL

Splash Avalon
Avalon, New South Wales, Australia

Client
Interior Developments Pty Ltd

Design and documentation of new support structure and cut out of the existing slab / beam in order to install new stair through the lower ground floor. This will involve the following works:

- Design and documentation of steel framing to support the slab
- Design and documentation of new stair
- Work method statement to ensure that the structure remains stable at all times during the demolition works
- Certification of the design.
Santos Tower
Brisbane, Queensland, Australia

Client: M J Nielsen Pty Ltd  
Year: 2008  
Value: $136 million

Providing multi-disciplinary consulting services on a 6 star Green Star, 36-storey commercial tower located in Brisbane’s CBD.

ADG provided innovative design solutions by having precast post-tensioned beams integrated into the in situ floor plate to reduce formwork and cycle times. The solution allowed for clear 14m spans off the core and assisted in completing ahead of program.

The use of prefabricated post-tensioned beam supports off the core of the building perimeter allowed for an open span floor plate, reduced on-site formwork and provided a lighter, more efficient structure which minimised cycle times.

The inner city location of the construction site brought with it neighbouring construction projects and limited on site storage, challenges which were resolved by the use of prefabricated components and offsite assembly.

This project was completed after only 24 months of on-site construction, within 3 days of the completion date set 3 years earlier.
6 Briggs Street - Apartments
Darwin, Northern Territory, Australia

Client
Halikos Developments Pty Ltd

Year
In Progress

Value
$60 million

The development application sought to rejuvenate and revitalize an existing building into a hotel and apartment building consisting of a two level basement car park, ground floor car park and loading areas along with car parking on levels one and two and residential apartments on levels three to 12 and internal/external services infrastructure.

The site is located in the CBD with limited construction access to the apartments. The construction was essentially two buildings which shared common civil, hydraulic and electrical services.

Efficiency in construction of the concrete frame was a key objective in structural design resulting in a compressed construction program. Light weight external cladding solution reduced both construction time and cost for the client.

This was the first Northern Territory hotel in the H Hotel Group chain and construction times met the constrained program targets for opening for operation.
The Queensland Children’s Hospital commenced construction in 2009. AbiGroup was the Managing Contractor for the $1.4 billion development in Brisbane. The project was an agreement between AbiGroup and Queensland Health.

During the construction of the hospital, project management found a need to prepare themselves for the Furniture, Fixture & Equipment (FF&E) stage of the project, with a foresight for a logistical nightmare.

ADG initially provided a hand held tracking solution to assist with the tracking of maintenance and tracking of equipment on site.

We then used the same technology and used it to our advantage, which in turn tracked delivery of items, then the distribution to the appropriate fit out group.

These systems provided a quick clarification when items have been installed and accounted for. The FF&E Coordinator then produced reports to pass onto team members of the status of areas being completed.
ADG has provided specialist post-tensioned floor design to the transfer level of this mixed use development. The use of post-tensioning allowed ADG to minimize the depth of structure while maintaining an open basement. The flexibility of a flat plate solution accommodated a complex system of local transfer and load bearing walls without the need for a beam grillage.

ADG’s design of post-tensioned elements involved the integration of consultant designed structure and supports. Our Knowledge of overall building design was critical in achieving the objectives of our clients, Tensioned Concrete and Pindan.
Old Treasury Building
28 Barrack St, Perth, Western Australia, Australia

Significant gains in program and cost achieved on this heavily constrained site through alternate floor, core and construction methodologies.

**Client**
Mirvac WA Pty Ltd

**Year**
2015

**Value**
$100 million

This Mirvac development consisting of a 32 storey commercial and 5 storey retail tower forms part of the historic treasury site in central Perth.

ADG has provided specialist design services for the floor designs and dynamic review of the vertical structure. We further advised on foundation alternatives and proposed construction methodologies.

The Old Treasury Building site is heavily constrained by adjacent buildings in the CBD and it was evident early that efficiencies achieved by reviewing the horizontal and vertical structure would have significant gain in program and cost.

ADG specialist design services have the capability to extract critical design elements, refine and reintegrate to the overall structure with mutual benefit to the contractors and the client.

ADG’s long term relationship with Mirvac continues to advance project specific engineered solutions.
Arena Apartments
9 Edmondstone Street, Brisbane, Queensland, Australia

This project consists of two, eleven level residential towers on a shared podium over two levels of basement car parking.

ADG provided structural and civil engineering design for the contractor, Hutchinson Builders, who won the D&C contract.

ADG sought benefit for our client through a value engineered solution resulting in a reduction in vertical structure and transfers. This gave our client an edge and secured the project for them as a D&C alternative.

Existing geotechnical results suggested temporary retention requirements were severe. The retention system was collaboratively redesigned with a specialist geotechnical engineer to yield a cost saving of approximately 30%.

This project is one of a number of landmark projects ADG are currently working on in the South Brisbane / West End area; this project is an example of efficient design solutions providing value for our clients.
Bromelton is an approximately 100 hectare approximately 14km west of Beaudesert. It is on the rail link, and as such is zoned by EDQ as an industrial hub for heavy industry. The target tenants in this area are organisations needing rail transport either north to the port of Brisbane, or south to the southern states. It is the only area of its kind in south east Queensland where organisations can acquire very large scale parcels of land within close proximity to a resource base and transport infrastructure.

ADG have been involved in the engineering design and documentation of the water and sewer for the local water authority QUU, including the conveyance design of water from Beaudesert to Bromelton. We have also been involved in carrying out the engineering design input for the infrastructure agreement for QUU to enter with any future land holder in this structure plan.

Planning with DTMR included the infrastructure plan required for the area.

During the initial phase of the project, ADG undertook a hydraulic investigation of the development to address the existing infrastructure and downstream properties were not adversely affected from the proposed development. These objectives are achieved through the use of detention storage measures designed to incorporate the proposed land use and achieve the desired flow controls. Each stage of the development needed to be designed to ensure there are no flood impacts to the surrounding properties. A large scale 1D and 2D hydraulic model was created for both the existing and developed case using more than 200 1D links/nodes and 30,000 2D surface points.

ADG are very proud to be involved in this project, as it is the largest industrial project of its kind in the state.
Freshwater Claremont
Freshwater Parade, Claremont, Western Australia, Australia

Client
Freshwater Claremont Pty Ltd

Year
2014

Value
$20 million

Freshwater comprises of 71 residences, in two mid-rise towers, with a wide range of aspects and 15 unique floor plans encompassing highly functional, cleverly designed one, two and three bedroom residences.

ADG has provided full structural engineering designed modelling from foundation through to vertical and horizontal and roof structure. The structure will be a combination of concrete frame, masonry and precast.

ADG provided an efficient solution to the superstructure which enabled flexibility to be achieved in variable ground conditions.

Challenged with architectural variances in structure and site conditions, ADG have been able to maintain a simplified building frame through a detailed understanding of the building and its behaviour.

ADG has developed a strong relationship with the contractor, Pindan, over a number of projects and will continue to build mutual success through collaborative design and construction.
The Milton
Brisbane, Queensland, Australia

Client
Hutchinson Builders

Year
2014

Value
$95.3 million

Project consists of a 31 level residential tower consisting of 4.5 levels of above ground car parking and 1.5 levels of retail/commercial space beneath 24 levels of residential apartments and a roof top plant level.

ADG provided structural engineering services to the contractor Hutchinson Builders as part of a design and construction team.

The project is of a reasonably large scale and early works had commenced on site by the time ADG were appointed. Tight time frame and budget constraints meant design required extensive thought and detail with minimal time to do so.

The building structure had been completely designed by another engineer, however through extensive finite element analysis ADG managed to redesign the vertical structure to give our client the competing edge they required to win the project.

Being the first project of this scale in the Milton region, this project has been a signature project for ADG, demonstrating to the market the value that ADG can provide to a project, even when engaged after construction has commenced on site.
86 Lot Subdivision
69 Boulter Road, Berrimah, Northern Territory, Australia

Client
Halikos Developments Pty Ltd

Year
2013

Value
$15 million

This project was an affordable housing model for the Berrimah area on a relatively flat site requiring earthworks and services design. ADG also provided structural design to simplify and standardise the construction of the dwellings.

The area was zoned for medium density development, one of the first of its type with limited precedence.

The stormwater infrastructure challenges required value engineering solutions in order to make the project viable including the design of a unique discharge weir which was adopted for use by the client. ADG used overland flow and vegetated drainage channels instead of pipe and pit to provide an ‘out of the box’ drainage solution.

Alternative civil solutions were design and implemented resulting in significant savings in earthworks and infrastructure costs.
‘Altitude’ – Tower 6
Bow River Crescent, Burswood, Western Australia, Australia

Client
Mirvac Constructions (WA) Pty Limited

Year
2014

Value
$35 million

“Altitude” Tower 6 is a 3,930sqm site located within The Peninsula development by Mirvac. The project is a residential apartment building and is the 6th and tallest tower to be developed within The Peninsula development to date. It consists of 73 apartments over 23 levels.

ADG provided full structural design of the tower and multi-storey car park including frame dynamics, post tensioned floors and foundation design.

Mirvac benefitted from ADG’s past experience with its in-house architecture and construction systems, not least in the ability to coordinate and visualize the structure through our BIM platform.

ADG addressed efficiencies in the structure by maximizing the benefits of the core for the oval shaped building and optimizing the deep foundations.

ADG continues a strong collaborative national relationship with the Mirvac group built over 10 years providing efficient and economic building solutions consistent with their high quality expectations.
### Ichthys LNG
Darwin, Northern Territory, Australia

- **Client**: JKC / Leighton Contractors
- **Year**: Est 2015
- **Value**: $900 million

$20 billion INPEX Gas project delivered by JKC

ADG is providing civil and structural temporary works design, verification and site support for this $20 billion project.

The biggest challenge of this development is that there are several teams working in parallel, each requiring advice and support from the ADG team. This means that innovative solutions are required in very short timeframes.

This is the largest project in the region being delivered by JKC / Leighton Contractors. ADG is providing advice in support of achieving program and HSE expectations.
The project consists of a 5 storey residential apartment development above commercial tenancies car parking at grade.

ADG in association with our client undertook a detailed Value Engineering exercise which enabled the developers challenging construction budget to be met.

Finite element Analysis of the soil profile and raft foundation interaction enabled piles to be deleted from the project. Detailed analysis of the podium including Post Tensioned alternatives allowed further construction cost savings to be realised.

The project was documented utilising REVIT Structures Suite which delivered to our client a data rich 3D model inclusive of material schedules.
Emporio Place
Maroochydore, Queensland, Australia

Client
Reed Property Group

Year
Under Construction

This development incorporates 9 individual buildings located right in the heart of Maroochydore creating a mixed-use environment consisting of residential units and commercial and retail tenancies.

Our Sunshine Coast Office has completed the design and documentation of Buildings 2, 5 and 7 with construction now complete. Building 3 has also been designed and is currently under construction.

The services provided included the structural engineering design, documentation and site supervision. Post-tensioned alternatives were presented for the commercial tenancies which resulted in increased column spacing and more flexible tenancy layouts.

The project was documented utilising Revit Structures Suite which delivered to our client a data rich 3D model inclusive of material schedules.
Thanks for your time.

Please contact us to discuss your project further.

Brisbane Office
584 Milton Road,
(Cnr Sylvan and Milton Road)
Toowong QLD 4066

Melbourne
Suite 323, 838 Collins Street,
Docklands VIC 3051

Sunshine Coast
Level 3, 2 Emporio Place
Maroochydore QLD 4558

Perth
51 Forrest Street
Subiaco WA 6008

Sydney
Level 13, 20 Berry Street,
North Sydney NSW 2060

Gold Coast
Suite 201/Level 1, 1 Short Street
Southport QLD 4215

Darwin
Tenancy 3, Level 1,
5 Edmunds Street
Darwin NT 0800

T: 1300 657 402
info@adgce.com
www.adgce.com