AUSTRALIA’S LARGEST CONSTRUCTION PARTNER

For more than 78 years we have established a strong reputation for delivering high-quality, large-scale and technically-complex construction projects.
A safety-first culture driven by our objective – everyone safe, every day

Experience, capability and financial capacity ensure quality and certainty of delivery

More than 78 years of pioneering Australia’s construction industry

A 20,000-strong team to support the largest and most remote of projects

Strong relationships with global LNG technology providers
ENERGY FOCUSED

Increasing energy demand and global environmental management are key forces driving production of this more efficient source of energy – available via conventional liquefied natural gas (LNG) as well as shale gas and coal seam gas (CSG).

Demand for LNG in Asia, particularly in Japan, Korea and Taiwan, is outstripping other regions. Australia’s natural resources are at the heart of this Asian boom and we are well-positioned to become the second-largest LNG producer by 2020 after the Arabian Gulf region.

Characterised by long-term production timeframes, the sector relies on precision planning and meticulous, high-quality and safe construction methods to deliver infrastructure capable of maintaining reliable LNG supplies to meet competitive international demand.

Since 1986, Thiess has been involved in the construction of all of Australia’s LNG plants. Past projects include the Woodside-operated North West Shelf Project and Pluto LNG, and Conoco Phillips’ Darwin LNG. Currently we are working on the Chevron-operated Gorgon and Wheatstone projects in Western Australia, and BG Group’s Queensland Curtis LNG project in QCLNG.

Our partnerships with internationally-recognised LNG technology and specialist construction leaders give us access to global sector experts. This pairing of international specialists with Thiess’ significant construction capability ensures certainty, quality and safety in project delivery.

We are ready to meet the needs of the LNG industry in Australia.

“NATURAL GAS IS THE ENERGY CHOICE OF THE FUTURE AS THE CLEANEST FOSSIL FUEL WITH THE LEAST ENVIRONMENTAL IMPACT”
REMOTE AREA PROJECTS DEMAND AN ABILITY TO MOVE PEOPLE, PLANT AND MATERIAL AT SHORT NOTICE.

Our experience gives us the capability and flexibility to take on projects in challenging locations. We understand the critical time-paths specific to LNG projects. Our people construct to the most exacting specifications while managing schedules, logistics, specialist partner interfaces and quality assurance processes.

We encourage local industry participation whenever possible, fostering skills development in regional and remote communities, alongside supporting Indigenous participation through pre-apprenticeships and proactive training programs.

We work in a fiercely competitive industry characterised by challenging programs, budgets, technical complexities and little margin for error. We understand that successful projects balance the demands of safe delivery, productivity and quality, while retaining people and meeting the needs of community and the environment.

Thiess offers clients proven systems, processes and initiatives to support their objectives in these areas.
The Right Safety Culture

Driving beyond compliance and promoting safety first, above productivity and profit, protects everyone’s fundamental right to remain safe. We bring to each project an industry-leading safety culture and proven safety record founded on the principle that safety leadership is every person’s responsibility. The health and wellbeing of our people, project partners and public are at the forefront of everything we do.

Our objective – everyone safe, every day – is founded on our belief that safe projects are successful projects and that all injuries are preventable. We forward plan to design out, as much as possible, activities that involve high risk. Our safety leadership programs create safer work attitudes and encourage behavioural change as a way of life, and are managed, monitored and supported by our health, safety and environment teams.

The Right People

In an unprecedented resource boom and a tightening labour market, workforce planning and access to skilled talent are vital for project delivery. Our ‘one team’ approach draws on the multi-disciplinary specialist skills and capability of our construction and services teams. By pooling our resources (people and plant) we are able to deliver sustainable infrastructure with single point accountability, using the best techniques to optimise plant, productivity, operation and maintenance costs, and product quality. We employ 20,000 people and have major operations in all states and territories in Australia.

Delivering workforce certainty requires strategies to attract, develop and retain an engaged and productive team while offering flexible FIFO and DIDO rosters. We are committed to diversity, building our Indigenous workforce and attracting women to our industries.

The Right LNG Technology Partnerships

We have teamed with leading international LNG technology, design and construction specialists including BESIX and Consolidated Contracting Company (CCC).

These ongoing joint venture relationships provide a seamless and integrated capability spanning design, construction, and commissioning through to handover.

They enable smoother, faster mobilisation on complex projects. With shared systems and processes in place, clients benefit from our ability to rapidly mobilise our partnerships to deliver tailored programs.

“Safety Leadership is an integral part of our business at every level.”
Thiess’ expertise extends to delivering technically-complex, multi-disciplinary engineering solutions, integrating earthworks, civil, structural, mechanical, piping, electrical, instrumentation and controls work packages. We have available one of Australia’s largest plant fleets and most skilled construction workforces. This capacity, combined with our construction engineering expertise, also makes us the ideal local partner to support front-end engineering and design (FEED) work.
UPSTREAM CSG

The Staged Implementation of CSG fields relies on precision planning, logistics management and flexible construction programs to ensure a coordinated start to projects and a reliable, steady supply of gas to LNG plants.

Thiess supports all key components of upstream infrastructure including:

» Early pioneering works including roads and access tracks
» Site preparation works
» Wellhead facilities and hook up
» Civil concrete works
» Operations infrastructure
» HV substations and transmission
» Electrical and instrumentation works for wellheads, field compressor stations and central processing plants
» Structural, mechanical and piping construction including water and gas gathering pipelines and trunk mains

Water infrastructure is key to these projects and we are leading Australia’s most diverse and complex water projects. Our team’s expertise in this sector – featuring collection and storage, water management, water and brine treatment including evaporation dams, pipelines and tunnels, and distribution networks – can be leveraged to support LNG projects of any scale.

Active involvement at the earliest stages enables clients and partners to benefit from our experience in project staging, construction methodology and workforce planning, supported by the resources to deliver multiple packages simultaneously.
SETTING THE FOUNDATION

Thiess is delivering vital infrastructure for the landmark QCLNG project, a CSG upstream project in Queensland, as part of early works and south compression facilities projects near the centres of Dalby and Chinchilla in the Surat Basin. We have a long history with QGC, having managed early exploration and field developments more than a decade prior. Today, our team is constructing field compressor stations, central processing plants, and intermediate high pressure gas trunklines, and delivering bulk earthworks for water storage ponds.
Thiess’ capability spans the breadth of LNG site preparation requirements. Our core capability focuses on site specific earthworks which are necessary to create the basis for the integrity of LNG production long into the future. We have extensive experience managing acid sulphate soils and pindan sands. Our multi-disciplinary team is involved in delivering site preparation works for Australia’s newest LNG plants – for the QCLNG project on Curtis Island as well as the Chevron-operated Gorgon and Wheatstone projects in Western Australia.

**PROCESS TRAIN**

We understand that the performance of LNG process trains is dependent on the quality of each component of the network. From natural gas intake through to production of LNG, the interdependent system is only as effective and reliable as the quality of its construction. Gas treatment facilities operating at temperatures as low as -160°C require specialist skills to ensure the integrity of cryogenic pipelines, exchangers, compressors, and storage for condensate, LPG and LNG. In particular, the welding requirements of the high pressure piping are highly specialised, demanding strict quality assurance and control. For onshore gas fields, our team undertakes full pipelining services.

Our partner, international expert CCC, has been involved in the development of 17 LNG trains, including six of the largest in the world. In related projects, we delivered the Phosphate Hill 600 TPD Ammonia Plant for Linde in Queensland, as well as Indonesia’s Suban Phase Two Gas Treatment Plant by Conoco Phillips Indonesia, in partnership with Hyundai Engineering.

**SITE PREPARATION**

Meeting the exacting specifications and managing vital interfaces are crucial to delivering reliability, certainty and overall project success.
A MODULAR APPROACH

Using LNG design principles, Thiess was the lead constructor on the Alcan Gove bauxite mine and alumina refinery expansion project and the first in Australia to use significant offshore modularisation. More than 500 modules, ranging from 500 to 2,500 tonnes, were fabricated in Thailand and Vietnam and shipped to Australia to be installed and ‘hooked up’ by Thiess – totalling more than 50,000 tonnes of modules.

WELL-CONNECTED AT PLUTO

Through our Thiess Kentz Joint Venture we provided services for the LNG processing site at Woodside’s Pluto LNG Plant, on the Burrup Peninsula approximately 1,400 kilometres north of Perth. The contract involved the installation and testing of high voltage cabling, switchboards, transformers, UPS systems, instrument control system cabinets, motor control stations, field panels, lighting and small power, trace heating, process instrumentation, fire and gas detection and protection devices, above-ground cabling, earthing and bonding, as well as the recovery and termination of cables installed underground.
Cryogenic and Condensate Tanks

With the strength of our international technology partnerships, we offer design and construction services for cryogenic and condensate tanks.

One example of these partnerships in practice is the Entrepose Vinci Thiess Joint Venture (EVT JV) delivering two LNG and two condensate tanks for the Chevron-operated Wheatstone Project in Western Australia.

The most proven tank design featuring a 9 per cent nickel alloy inner tank, constructed using pre-curved panels, requires the utmost technical and staging precision.

Our team offers specialist welding capabilities across all metal types required in the construction of LNG storage tanks, combining knowledge and experience in the required precise fitting and erection procedures.

Our submerged arc and flux core arc welding processes are tailored to the specific requirements of each project.

Our concreting expertise means we can fast track construction of the external tank to the highest standards. The breadth of our construction experience enables our team to effectively establish the supporting temporary infrastructure, such as concrete batch plants, to ensure seamless program delivery.
VIRTUAl MODELLING CREATES SUCCESS

Thiess’ technical services team created three 4D models for the Darwin LNG tank project. They highlighted potential problems in the proposed construction methods, optimised the development program, and provided a valuable project asset for communication between engineers, construction managers and the broader team.

Project time savings included:
» Reinforcement panels for the tank walls assembled on the ground and installed with a custom-designed lifting frame
» Tank stiffeners and other attachments pre-installed outside of the tank
» Dry air introduced early during perlite insulation
SUPPORTING INFRASTRUCTURE

MARINE

Thiess’ work includes all facets of transport and logistics infrastructure to support LNG developments. This includes Materials Offloading Facilities (MOFs) and Product Loading Facilities (PLFs), berths and terminals, causeways and breakwaters, and associated facilities. For jetties, Thiess offers piping expertise to connect LNG tanks to PLFs.

Our long-term partnership with Brussels-based BESIX provides a unique in-house design capability in the Australian market and a track record of excellence in LNG marine facilities. BESIX has designed and constructed four LNG terminals in the past 10 years. The BEST JV (BESIX and Thiess) provides certainty by designing facilities to suit its extensive company-owned marine fleet, delivering the most efficient construction program to maximise the movement of plant and equipment throughout project staging.

Our team understands the unique constraints of marine sector projects, including how to best manage critical construction timelines for weather-sensitive locations. Environmental protection is a strong value for both companies and marine locations present specific challenges for construction works. As one example, on the Darwin LNG project, Thiess included a series of environmental initiatives designed to meet strict quarantine standards and the preservation of mangrove trees.

MARINE HEALTH FRONT AND CENTRE

The Darwin LNG jetty was constructed at Wickham Point in Darwin Harbour, in an ecologically and archeologically sensitive area. The project had a high emphasis on environmental best practice. Thiess implemented several environmental initiatives which major projects in the Northern Territory had not adopted previously. As just one example, the team saved several hectares of mangroves by converting them into a living buffer strip for sediment control without detriment to mangrove health. They also implemented a detailed in-field plant and equipment servicing plan to minimise the impact of hydrocarbons on the marine environment.
Our work at Gorgon has created accommodation to ensure as many as 4,000 workers have a good work/life balance. Boasting swimming pools, two gymnasiums, golf driving ranges and an outdoor cinema, the accommodation village on Barrow Island off Western Australia’s north-west coast has all the amenities of a well-equipped resort. The team has incorporated smart construction techniques, developing the largest modular camp dining facility in the Southern Hemisphere. The manufacture of the accommodation modules also involved leading-edge design. For example, bathrooms pods were manufactured so they could be inserted inside the bedroom module for shipping and then pulled out on site, minimising on-site work and shipping costs.

Thiess has a longstanding record in the design and construction of villages and camps to support large-scale LNG development projects. We develop solutions that contribute to workforce attraction and retention strategies and build community-oriented destinations that support individuals and families. Environmentally-sustainable design is a highlight of our villages and camps. This commitment is carried through to our construction work, featuring best-practice reuse and recycling techniques.
COMMITMENT DRIVES SUCCESS

SUSTAINABILITY

Sustainability permeates everything we do; we strive to leave a positive legacy for future generations. Across all of our projects, we work to minimise environmental impacts and actively seek sustainable solutions that reduce water, waste and our carbon footprint.

We implement full environmental controls and deliver rehabilitation programs including:

» Designing and constructing facilities that feature energy and water saving initiatives
» Implementing dust suppression techniques
» Using alternative energy sources
» Diverting waste from landfill
» Protecting areas of historic and cultural interest

COMMUNITY

We emphasise building community relationships early and maintaining these for the life of a project. We innovate to minimise impacts on local communities and prioritise advanced roster management to ensure efficient transport of the workforce to and from sites. We are committed to transparent, consistent and timely communication. We also encourage practical economic benefits and skills development for communities. Through scholarships, education and employment programs, and our people’s passion for fundraising and volunteering, we are proud to be making a difference.

TRAINING

We understand the broader workforce challenges facing the resources industry and maintain a fundamental belief that investing in our team is critical to remaining at the forefront of our industry.

We also take seriously our responsibility to train future industry leaders. As just one initiative, Thiess is heavily involved in a National Apprenticeship Scheme (Resource and Energy Industries), which includes a coordinated strategy to recruit, train and employ experienced adult apprentices on major projects across Australia.
OUR TEAM DELIVERS WORLD-CLASS PROJECT OUTCOMES, PRIORITISING EXCELLENCE IN PROJECT MANAGEMENT AND QUALITY ASSURANCE, BACKED BY INDUSTRY-LEADING SAFE WORK PRACTICES AND SAFETY LEADERSHIP — WE GO BEYOND COMPLIANCE IN ALL WE DO
Our geographic diversity gives us the ability to respond quickly to client needs and deploy additional plant and resources wherever they are required at short notice. We have proven our ability to manage complex projects throughout the LNG supply chain and draw on the best mix of approaches to achieve tailored and cost-effective solutions.

In the LNG sector, we are delivering for:

» Chevron-operated Gorgon Project – a 4,000 worker construction village, and site preparation and temporary facilities for the LNG plant and MOF
» Chevron-operated Wheatstone Project – condensate and LNG tanks, breakwater and MOF, micro-tunnel and site preparation
» BG Group’s QCLNG project – site preparation, upstream early works, and compression facilities
» Santos’ GLNG Project – Narrows Crossing tunnel

We are poised to take on the challenges and opportunities facing the LNG sector in Australia, backed by our high-performing team that is responsible for some of the country’s most significant projects including Engineering Procurement Construction contracts on the:

» $4.8 billion Airport Link, Australia’s largest road infrastructure project which included the largest jacked box operation in the country
» $3.5 billion Victorian Desalination Project, Australia’s largest desalination plant which draws on our civil; structural, mechanical, piping, electrical and instrumentation; tunnelling and services capabilities
» Bundamba Advanced Water Treatment Plant – winner of the 2008 Global Water Awards Project of the Year
» Dawson Coal Mine, which has one of the largest coal handling and preparation plants in the Southern Hemisphere

CONSTRUCTION INDUSTRY LEADERSHIP

“THIESS IS ENTRUSTED WITH SOME OF THE MOST TECHNICALLY COMPLEX INFRASTRUCTURE PROJECTS EVER UNDERTAKEN IN AUSTRALIA”
GORGON PROJECT

THIESS IS PLAYING A CRITICAL ROLE IN THE LARGEST, SINGLE RESOURCE PROJECT IN AUSTRALIA’S HISTORY - THE CHEVRON-OPERATED GORGON PROJECT IN WESTERN AUSTRALIA.
The Thiess, Decmil and Kentz (TDK) team is behind the design and construction of an accommodation village for more than 4,000 workers.

The LNG plant will consist of three export LNG trains and a domestic gas plant. Thiess is responsible for the bulk earthworks for the LNG plant site and associated areas spanning 154 hectares.

The MOF includes constructing a two-kilometre causeway and breakwater, drainage construction, concrete and road works, installation of 220 transportable buildings, supply and installation of all supporting services and utilities, and the design and installation of 11 steel-framed buildings.

Environmental management of the most exacting standards has been vital throughout all stages of project works as Barrow Island is an internationally significant Class A nature reserve demanding rigorous quarantine management and environmental protection initiatives.
DARWIN LNG TANK PROJECT

THIESS CONSTRUCTED THE LNG TANK AND EXPORT JETTY AT THE CONOCO PHILLIPS DARWIN LNG PROJECT.

Together with LNG tank specialist TKK, our work showcases best-practice design and construction for the 188,000m³ double containment LNG storage tank – the largest in the world at the time.

At 47 metres high and 94 metres in diameter, the LNG tank comprises a post-tensioned outer concrete tank lined with a carbon steel vapour barrier. A 9 per cent nickel alloy inner tank was constructed inside the concrete tank to hold LNG at a temperature of -165°C and the space between the inner and outer tanks was insulated using foamglas, glass wool and perlite cold insulation.

We provided overall design management and detailed design of the outer concrete tank with our design partner BG&E. Thiess also carried out all earthworks, civil, mechanical and insulation works on site, including the commissioning of electrical and instrumentation systems. Key to the achievement of a fast-tracked construction program was the prefabrication strategy, with more than half of the total assembly performed off site at fabrication facilities in Darwin. Despite more than 500 people, and 1.4 million man hours, the project upheld the highest safety standards with no lost time injuries.

“THE CONSTRUCTION WAS COMPLETED IN 28 MONTHS – FOUR MONTHS FASTER THAN THE THEN INDUSTRY AVERAGE”
AS AUSTRALIA’S FIRST AND LARGEST LNG PROJECT, THE NORTH WEST SHELF PROJECT IS AN OIL AND GAS DEVELOPMENT COMPRISING OFF SHORE PRODUCTION FACILITIES AND AN ON SHORE PROCESSING PLANT.

In 1991, joint venture partners Thiess and Toyo Kanetsu were awarded the design and construct contract for two additional condensate storage tanks. Toyo Kanetsu provided the engineering design of the tanks and Thiess was responsible for all construction and on-site management, including supply, fabrication, painting and site erection of two fully-welded steel structures. The joint venture was also responsible for the hydro testing, commissioning and calibration.

The team achieved an excellent safety result – 270,000 site hours with no lost time injuries.

Thiess’ involvement in the North West Shelf dates back to 1986. Thiess was involved in the first LNG trains, which included earthworks, reinforced concrete structures, and civil engineering contracts. Underground pipework included 7,500 metres of cement-lined pipe and 3,000 metres of steel drainage pipe. More than 3,000 individual concrete foundations were constructed throughout the entire plant area including pipe track supports, pipe racks, rotating equipment, blast-proof enclosures and vessels. On train four, Thiess was also responsible for the below-ground electrical and instrumentation services.
A PROVEN TRACK RECORD

SUBAN PHASE TWO GAS TREATMENT PLANT
Indonesia - Conoco Philips Indonesia

CONDENSATE TANKS,
NORTH WEST SHELF KARRATHA GAS PLANT
Karratha WA - Woodside

TRAINS 1 AND 2 OFF PLOT CIVIL WORKS,
NORTH WEST SHELF KARRATHA GAS PLANT
Karratha WA - Woodside*

TRAIN 4 CIVIL ON PLOT,
NORTH WEST SHELF KARRATHA GAS PLANT
Karratha WA - Woodside*

TRUNK LINE GRAVITY ANCHOR PRECAST FABRICATION,
NORTH WEST SHELF KARRATHA GAS PLANT
Karratha WA - Woodside

ELECTRICAL AND INSTRUMENTATION,
PLUTO LNG
Karratha WA - Woodside*
(Thiess Kentz Joint Venture)

BREAKWATER AND MATERIALS
OFFLOADING FACILITY,
WHEATSTONE PROJECT
Ashburton North WA - Chevron Australia

MICRO-TUNNEL,
WHEATSTONE PROJECT
Ashburton North WA - Chevron Australia

CONDENSATE AND LNG TANKS,
WHEATSTONE PROJECT
Ashburton North WA - Chevron Australia

SITE PREPARATION WORKS,
WHEATSTONE PROJECT
Ashburton North WA - Chevron Australia
SITE CLEARING, EARTHWORKS AND LNG JETTY, DARWIN LNG NT - ConocoPhillips

188,000m³ LNG TANK, DARWIN LNG PLANT NT - ConocoPhillips

UPSTREAM EARLY WORKS, QCLNG Miles, Chinchilla and Dalby QLD - QGC

UPSTREAM COMPRESSION FACILITIES, QCLNG Dalby QLD - QGC

SITE PREPARATION WORKS, QCLNG Curtis Island, Gladstone QLD - QGC

NARROWS CROSSING TUNNEL, GLNG Project Gladstone QLD - Santos

PHOSPHATE HILL 600 TPD AMMONIA PLANT QLD - Linde

DESIGN AND CONSTRUCTION OF 4,000 PERSON VILLAGE, GORGON PROJECT Barrow Island WA - Chevron Australia

SITE PREPARATION WORKS, GORGON PROJECT Barrow Island WA - Chevron Australia

READY TO DELIVER FOR THE LNG INDUSTRY

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* Images courtesy of Woodside