

# A NEW PERSONAL BEST

The Carrara Sports Precinct is being constructed for the Gold Coast 2018 Commonwealth Games and is set to host the badminton, wrestling, and weightlifting events. The project involves five separable portions including a full refurbishment of the Carrara Indoor Sports Stadium, Northern Precinct works which involve reshaping fields, building road works, an AFL office, training facility, three new grass playing fields, a clubhouse, installing lighting, and developing a broadcast lighting upgrade to the adjacent Metricon Stadium lighting towers.

**Hansen Yuncken is rightly proud of its participation in creating infrastructure that enriches communities.** It has constructed countless stadia, museums and art galleries, contributing to enhanced lifestyles and well-being for Australians of all ages.

Now it can add one of the decade's most significant multi-purpose sporting structures to its record – the Carrara Sports Precinct on Queensland's Gold Coast.

As the Gold Coast prepares for the 2018 Commonwealth Games, Hansen Yuncken is the Managing Contractor in the construction of the precinct including the northern precinct site infrastructure, incorporating the new state-of-the-art indoor sports facility set to host badminton, wrestling, and weightlifting events.

The sports and leisure centre is a major multi-faceted project, with a series of structures including two large indoor halls accommodating mixed-use sports courts, change rooms and amenities, meeting and

function rooms, indoor café and commercial kitchen, large multi-purpose function room and terrace, approximately 5,350 permanent spectator seats, 460 undercroft carpark spaces, public plaza with pedestrian access to Carrara Indoor Stadium, and elite multi-purpose sports fields.

Queensland State Manager for Hansen Yuncken, Greg Baumann, said that the building programme had a number of complexities. “This was a very unique project, with large halls both in dimension and height. Added to this, was the issue of the site, which posed a few issues in designing the foundations. The project utilised around 15,000m³ of concrete and over 1,100 tonnes of structural steel.”

Another challenge was the coordination of the different trades and specialist

contractors. When the floor slab was poured, a channel was left to allow access for crawler cranes and other heavy-lift equipment to position the steel spans and unusually large air conditioning ducts.

Despite these challenges, which were exacerbated by a spell of wet weather in the earlier stages of the project, the end result is a spectacular addition to the sporting and entertainment resources for the people of south-eastern Queensland and the visitors who will attend international standard sporting events at the complex.

Greg said the statistics surrounding the project were significant in their own right. “Over 12,000m² of timber sports floors will have been laid and 15,000m² of steel roof sheeting secured in place. Proudly, the project has utilised Australian contractors, some of whom have called on first-class international equipment and know-how, to enhance the building's integrity and security, including the unique window louvre system which incorporates smoke-reduction technology in the event of a fire.”

Hansen Yuncken has been the managing contractor in a number of major projects on the Gold Coast including the Coomera Indoor Sports Centre which is the first complex completed ahead of the Gold Coast 2018 Commonwealth Games, 18 months ahead of the event. This project

consumed 160,000 man-hours and the \$40 million Queensland Government project was handed over on time and on budget.

The Coomera Indoor Sports Centre has provided new world-class community infrastructure for one of the Gold Coast's fastest growing regions. This new multi-purpose facility accommodates a range of community facilities and indoor sports such as netball, soccer, gymnastics and basketball. The venue has been designed to world-class competition standards with potential for elite training and competition use. Key features of the venue design include a gymnastics arena and eight mixed-use sports courts.

A key to Hansen Yuncken's success is its commitment to environmental sustainability. Its philosophy is that each small choice in decision-making has a ripple effect, from materials selection, construction processes, use of efficient technologies, resource optimisation, reduced energy consumption, recycling of construction waste, avoidance of harmful products, through to ongoing facility maintenance.

“The Carrara Sports Precinct is an example of our commitment to sustainable construction methods as a proud addition to the Hansen Yuncken building record,” Greg said.

**For more information contact Hansen Yuncken**, Level 1, 120 Wickham Street, Fortitude Valley QLD 4006, phone 07 3872 4000, email [info@hansenyuncken.com.au](mailto:info@hansenyuncken.com.au), website [www.hansenyuncken.com.au](http://www.hansenyuncken.com.au)

MAIN CONSTRUCTION COMPANY : Hansen Yuncken  
ARCHITECTS : BVN Donovan Hill  
STRUCTURAL ENGINEER : Bligh Tanner  
CONSTRUCTION VALUE : \$124 million – Sports Precinct  
CONSTRUCTION VALUE : \$22 million – Gold Coast Suns Facility



**Below** EBSA supplied and installed specialist louvre technology throughout the Carrara Sports Precinct project.

**Visitors to the Carrara Sports and Leisure Precinct on the Gold Coast may not realise it, but they will be protected against the dangers created by smoke in the event of a fire by world-class window louvre technology provided by EBSA Pty Ltd.**

EBSA is a commercial window louvre specialist, installing the latest louvre technology which combines natural light and ventilation with automated window systems to help create energy efficient and sustainable buildings, including smoke exhaust systems. EBSA was selected by builder, Hansen Yuncken, to install this louvre technology at the Carrara Sports and Leisure Precinct.

One of the most import features of the EBSA architectural glass louvres, besides their attractive appearance, is their capacity to not only provide an excellent ventilation system, but more importantly, to form an integral part of a commercial smoke exhaust system. Smoke exhaust systems are an essential element of fire safety solutions in large public buildings. This extraction process protects individuals from smoke inhalation, the cause of the most deaths in fires. It also ensures occupants can escape from a building quicker with better visibility and less confusion. In the event of a fire, the automated smoke control system engages the louvres to open and allow fresh air to enter the building while very large exhaust fans remove the smoke.

David Auret, Director of EBSA, said the Carrara project had some special challenges relating to the reduction of fire cabling required in the original design. EBSA opted for a proprietary fire-rated bus system that networks localised panels and interfaces with the Fire Indicator Panel.

The proprietary ADCOMNET technology combined with the Ventilation/Smoke control system was produced by D+H Mechatronic AG from Germany and meets current Australian Standards. This design was chosen as it provides a high level interface with the Building Management System (BMS) and the Fire System.

David said that D+H Mechatronic window automation products were second-to-none in the world and EBSA was proud to supply them to the Australian market as the sole Australian distributor. “This technology is an example of EBSA combining the high

quality Schneider louvre range with advanced D+H Mechatronic AG automation solutions to provide a project-specific service to design engineers, architects, builders, window fabricators, and contractors.”

Unlike traditional louvre systems, all Schneider products are custom made to suit each specific project. Every piece of glass is sized for optimum aesthetic value. The frameless Schneider G12BS glass louvres have been designed to add architectural appeal to the main entrances of the building whilst forming part of the natural ventilation and smoke extraction system.

Elsewhere on the project EBSA opted to use aluminium louvres from SafetyLine Jalousie which were also fitted with D+H fire-rated actuators and integrated into the smoke and ventilation system.

D+H take extraordinary lengths to ensure their products are built to the most exacting standards. Every drive is physically tested during production and finally placed on a test rig before being shipped. It is their dedication to quality that has given D+H the reputation it has today as the market leader in window automation solutions.

EBSA has provided its automation solutions and louvre systems in many commercial projects across Australia. These include office buildings and public buildings such as schools, universities and hospitals such as the Lady Cilento Children’s Hospital in Brisbane.

David said “Builders are looking to partner with companies who instill confidence by being able to deliver smart solutions on time and within budget. Our range of products are specifically designed for the commercial market and this has been achieved with Carrara Sports Precinct. Working alongside the Fire and BMS contractors, EBSA has delivered one of the finest systems in the country.”

Utilising the best technology in the world, EBSA can design and install automated façade elements such as operable windows and louvres for both ventilation and smoke control solutions.

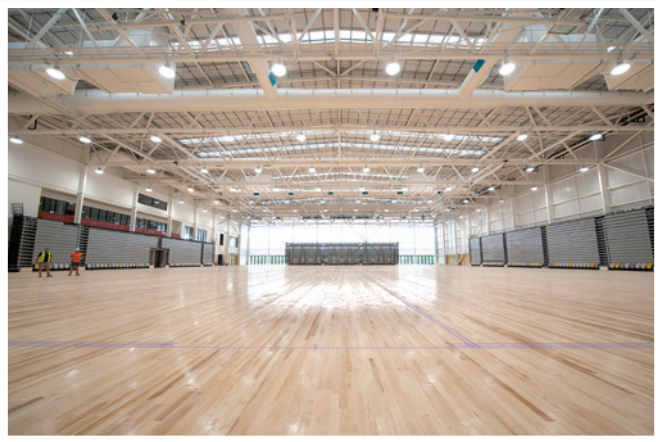
***For more information contact EBSA Pty Ltd,***  
5/18 Hinkler Court, Brendale QLD 4500,  
phone 1300 327 200, email [info@ebsa.com.au](mailto:info@ebsa.com.au),  
website [www.ebsa.com.au](http://www.ebsa.com.au)





**Below** Coolmaster supplied and installed air conditioning and mechanical services throughout the project.

**Below** Bligh Tanner's expertise is embedded in the structure of the Carrara Sports Centre.



Providing cool air in exceptionally large spaces, especially in the Queensland climate, is the province of Coolmaster Pty Ltd, a proudly Australian-owned and operated business based in Brisbane. Sports people and spectators alike will appreciate Coolmaster's skills when they visit the Carrara Sports and Leisure Precinct where the company has installed all air conditioning and mechanical services.

The size of the two halls required the installation of 2,100mm extra large spiral ducting insulated with perforated steel. It weighed 95kgs per metre and came in 4m lengths which had to be lifted to the high trusses in the roofline.

Construction Manager for Coolmaster, Adrian Wallin, said that the complexity of the job required a significant team plus equipment suited to the task. "We had as many as 40 of our own people plus as many as 25 subcontractors working on the installation. From the equipment perspective we used a telehandler, two beam lifts and scissor lifts with up to eight people to lift each section."

Adrian also explained that the ducting was powder-coated so had to be handled very carefully to avoid scratching. "With so many personnel

and the amount of large equipment involved, more coordination with the builder and other trades was required than usual."

Coolmaster thrives on delivering new and innovative services that supports clients in achieving sustainable energy efficiency through cost effective solutions.

Its specialty air conditioning, mechanical and maintenance services have been utilised by large corporate and construction clients, as well as government agencies throughout Australia. Current projects include the Robina Town Shopping Centre and the Ruby Apartments in Surfers Paradise.

"Coolmaster's experience gained over 40 years of operation was invaluable in addressing the issues in the Carrara Sports and Leisure project," Adrian Wallin said. "The end result is very satisfying and Coolmaster is proud to have been part of this outstanding development."

*For further information contact Coolmaster Pty Ltd*, 7 Dulwich Street, Loganholme QLD 4129, phone 07 3209 8099, fax 07 3209 7066, email [reception@coolmaster.com.au](mailto:reception@coolmaster.com.au), website [www.coolmaster.com.au](http://www.coolmaster.com.au)

**Bligh Tanner has contributed innovative engineering solutions to the City of Gold Coast's legacy, ensuring the structural design for the \$110M Carrara Sports and Leisure Precinct is world class.**

The precinct has been redeveloped to provide civic and sporting community buildings, including two large sports halls, a new Gold Coast Suns AFL training facility and mixed use offices.

Bligh Tanner had a team of six staff involved in the project. According to Paul Callum, Director of Structural Engineering, "The construction methodology was a major challenge. The roof trusses were large, being 70m long and weighing approximately 20 tonnes each. For ease of erection we allowed for the movement of cranes within each hall footprint, and provided a large access void through the 300mm thick, post-tensioned slab to allow the crawler crane lifting and placement access."

The structures also had to bear major loads beyond the usual insulation, ceiling and cladding. "The mechanical ducting, up to 2,200mm in diameter and weighing 220kg per metre, was just one challenge – there were solar panels, sprinklers, large blade fans,

smoke exhausts, retractable basketball systems, sports curtains and heavy electrical and lighting systems to consider," Paul explains. "Coordinating all the different trades was a critical part of the process to ensure timeframes were met."

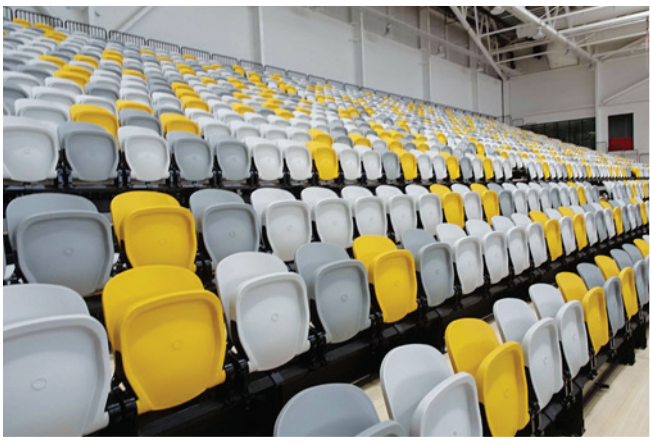
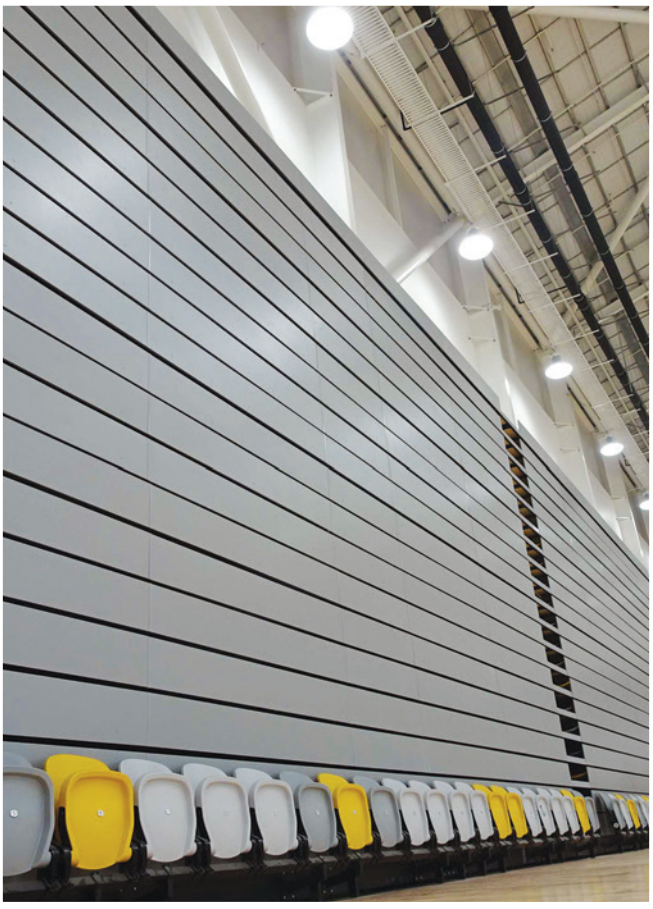
Bligh Tanner is no stranger to complex engineering, having been responsible for some of Queensland's most innovative projects over the past 24 years, spanning multi-million dollar special structures through to world-leading, integrated water management systems.

The highly regarded group of 40 staff offer expert structural, civil, environmental and water-engineering design and consultancy distinguished by its personalised service. Bligh Tanner is currently involved in design work for Brisbane's State Netball Centre.

*For further information contact Bligh Tanner*, Level 9, 269 Wickham Street, Fortitude Valley QLD 4006, phone 07 3251 8555, fax 07 3251 8599, email [blightanner@blightanner.com.au](mailto:blightanner@blightanner.com.au), website [www.blightanner.com.au](http://www.blightanner.com.au)



**Below** Starena Australia Pty Ltd supplied and installed retractable seating units in the multi-purpose sports halls.



**Below** MHE-Demag designed, manufactured and installed a retractable hoisting system for the Carrara Sports Centre.

One of the keys to the success of the Carrara Sports and Leisure Precinct will be the functionality, durability, appearance and comfort of the seating across the complex which includes two extensive multi-purpose sports halls. The supplier of the seating and installer is an Australian success story – Starena Australia Pty Ltd, based in West Gosford New South Wales.

The company installed four retractable seating units with a total of 5,001 seats, making it **the largest retractable seating system in the Southern Hemisphere, surpassing the previous Starena-supplied Stadium Southland in Invercargill, New Zealand.** The polymer seating ranged from Starena’s Apollo 2863 used in three units and the padded Apollo 2863R used in the VIP seating area. An attractive and varied seat colour scheme covered light greys to ochre.

Noel Carty, Managing Director of the Starena Group of companies, said that the company has an outstanding global track record in the design and manufacture of fixed stadium, retractable, theatre, educational, house of worship and auditorium seating.

“The Carrara project will be an excellent showcase of our capabilities. There have been challenges along the way, including working at heights

and slotting in with other contractors who were busy with their own trades at the same time. The floor was not quite finished so we had to take extra care not to cause any damage, but we successfully negotiated around all these issues.”

Starena had around 22 – 25 people engaged on the project including the office team, the staff on the site and some Chinese engineers. “This was our biggest project to date, so we are very proud to have been selected for this major iconic project on the Gold Coast,” Noel said.

Starena Australia has stadiums and venues worldwide featuring its products and is an innovative and progressive Australian company with an international network of distributors. It is a manufacturer in its own right and also has strategic working relationships with other key suppliers.

*For more information contact Starena Australia Pty Ltd, Unit 1, 16 Jusfrute Drive, West Gosford NSW 2250, phone 02 4323 9092, email [info@starenaaust.com](mailto:info@starenaaust.com), website [www.starenaaust.com](http://www.starenaaust.com)*

**Unusual design challenges call for special solutions.** The Carrara Sports and Leisure Precinct had a unique requirement for a permanent hoisting system to lift two electrical transformers out of their location to facilitate regular maintenance. MHE-Demag has built a reputation for problem solving methodologies and was called on to deliver a solution.

Luis Velazquez, State Manager of Queensland for MHE-Demag, said that the hoist installation required for the job was not standard. “We only see this kind of requirement every two years or so. MHE-Demag designed a solution around a 6.3 tonne retractable cathead hoist that would be fixed in position to lift the transformers out of their position and then lower them 12m to the floor. From there they could be manouvered by two manual 8 tonne chain blocks to allow Energex to undertake regular maintenance.”

The transformers will be used to power the two large sports halls and the food areas that will be established between the two halls.

Luis said that the hoist was assembled at the company’s Smithfield factory and transported to Carrara for installation. “We had a team of four working on this job from our Brisbane office where we have a total number of 25 people.”

With more than 40 years experience and over 26,000 crane installations in the Asia-Pacific region, MHE-Demag is a trusted brand for superior material handling solutions with a strong commitment to sound engineering practices and creative methods of solving client problems.

All its products have a long life span, are extremely durable and require minimal maintenance. ISO9001, ISO14001 and OHSAS18001 certified, MHE-Demag ensures that all production processes are safe and sustainable at every stage of the value chain.

“Our hoist won’t necessarily be seen by visitors to the Carrara Sports and Leisure Precinct but it will play a vital role in the ongoing successful operation of the complex,” Luis said.

*For more information contact MHE-Demag, 92 Long Street, Smithfield NSW 2164, phone 1300 336 241, email [mda\\_sales@mhe-demag.com](mailto:mda_sales@mhe-demag.com), website [www.mhe-demag.com](http://www.mhe-demag.com)*



**Below** Bosform was contracted to create formwork, using table form and conventional formwork methods.



**Below** Evergreen Turf constructed and line planted approximately 2.4 hectares of grand prix couch turf on the project.



Bosform Pty Ltd has an extensive list of accomplishments delivering specialised formwork systems throughout Brisbane, the Gold Coast and the Sunshine Coast. It has now added the state-of-the-art Carrara Sports and Leisure Precinct to that list, providing all the formwork for the project.

Romolo Bos, Director of Bosform, explained that both table form and conventional formwork methods were used in the construction process for the complex. “The unique features of the Carrara project were the high propping required and the deep 2m beams. The height of the propping required was between 4m and 6m.”

Bosform was working at the site for 12 months. “At the peak of activity we had 40 people onsite out of our total numbers of 200,” Romolo said. “Bosform has a full-time team of skilled employees including structural foremen, safety officers, leading hand carpenters and labourers, crane drivers, dogmen, scaffolders and boilermakers. We are therefore equipped to handle the largest of jobs.”

*For more information contact Bosform Pty Ltd, 74 Pearson Road, Yatala QLD 4207, phone 07 3807 9522, fax 07 3807 9611, email admin@bosform.com.au, website www.bosform.com.au*



Evergreen Turf Pty Ltd is no stranger to providing immaculate turf surfaces for high profile customers across the horseracing, sports field and golf course industries. It has achieved a portfolio of national and international projects that showcases its ability to deliver tailored solutions for major projects. One of its latest large scale undertakings is the Carrara Sports and Leisure Precinct, on the Gold Coast.

Evergreen Turf commenced with a clay base that had been prepared by the project builder, Hansen Yuncken. It was working across an approximate area of 2.4 hectares and began by laying out the drainage lines and sub-surface irrigation.

Site Manager for Evergreen Turf, Tim Bayard, said that once this was accomplished, the clay surface was prepared with 120mm of gravel carpet layer topped with 260mm of a sand growing medium. A specialty couch grass was then planted across the prepared sand profile.

“There were a number of challenges,” Tim said. “One was the presence of some reactive soils which we had to be mindful of. While site access was reasonably good, the job site was complex and coordinating all our activities with those of the builder and variety of other trades

onsite required adequate pre-planning. The weather was also an issue, with high rainfall occurring at times. On Several occasions we had up to 30mm overnight.”

Evergreen Turf had up to 15 people onsite during peak activity which extended over three months. In total, there was 6.5km of drainage laid with 6,000 tonnes of gravel and 14,000 tonnes of sand utilised on the project.

Evergreen Turf has been in operation for over 34 years, growing from a domestic turf production farm in the early 1980s to being one of the largest specialty turf solutions and management companies in Australia.

Its projects include the redevelopment of Eagle Farm Racecourse, Townsville Racecourse, Manuka Oval Redevelopment (Startrack Stadium) and creating the baseball diamonds at Sydney Cricket Ground for the Major League Baseball opening series.

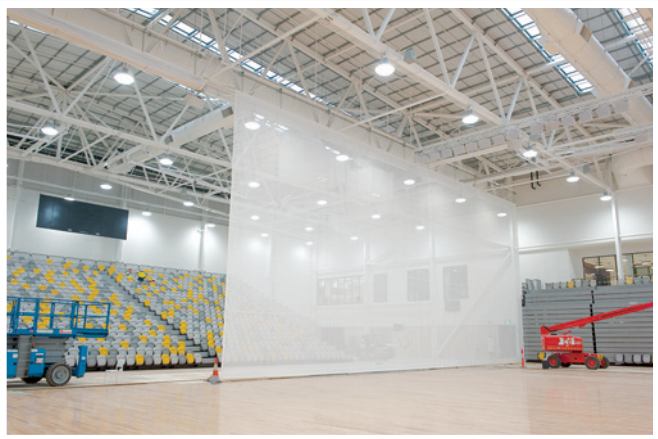
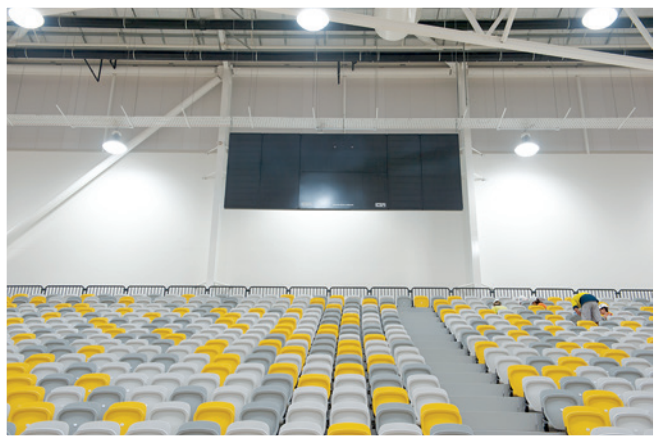
*For further information contact Evergreen Turf Pty Ltd, 560 McGregor Road, Pakenham VIC 3801, phone 03 5945 2100, email sales@evergreen.com.au, website www.evergreen.com.au*





Carrara Sports Precinct, Gold Coast

Below Grand Slam Sports Equipment designed, manufactured and installed all required equipment for the Carrara Sports Complex.



**Building a sporting complex to international standards requires World Class sports equipment and infrastructure.** Local Brisbane company Grand Slam Sports Equipment Pty Ltd (GSSE) has an excellent track record in this field and has designed, manufactured and installed all required sports equipment for this spectacular complex. GSSE has over 30 years experience supplying sports equipment requirements for countless high profile events and facilities, including 2016 Women's U20 Soccer World Cup in PNG, Queensland State Velodrome, Sydney Olympics, Suncorp Stadium, Townsville International Sports Stadium, Melbourne Commonwealth Games, South Pacific Games in Fiji, and the Waitekere Sports Complex in New Zealand to name a few.

GSSE's General Manager, said that one of the most challenging aspects of the project was the height of the ceilings in the two halls. "We supplied basketball systems for 16 courts, 15 to meet the International Basketball Federation's Level 2 standard and one to FIFA Level 1 standard. The systems all had to be winch-retractable to the roof, with a 12m clearance to allow badminton to be played on the courts." He also added that GSSE manufactured, supplied and installed removable netball posts to meet Netball Australia Standards, and also supplied FIFA Level 1 scoreboards in the

main arena. Custom made Tassie Oak with steel frame player benches were manufactured and installed by GSSE along with eight dividing curtains for the courts and custom made magnetic column padding to ensure the safety of players.

GSSE built a 2,000m<sup>2</sup> factory in North Brisbane 25 years ago when Director, Phil Harvey, wanted to expand the business. GSSE prides itself on 'Team Grandslam' staff for their professionalism, dedication and outstanding customer service. GSSE engineers outdoor and indoor sports equipment to ensure the company's high safety standards remain the foremost priority so as to provide an extremely safe product for the end user. GSSE also maintains a high quality product by the inhouse processes, including design, manufacture, sandblasting, powder-coating and dispatch. Equipment is built for strength and reliability using long lasting, highly durable galvanised steel which is powder-coated in high grade polyester to give years of maintenance free use. "We have been very excited to be part of this world class project that's to be enjoyed by the community for many years to come," said Phil.

*For more information contact Grand Slam Sports Equipment Pty Ltd, 19 Deakin Street, Brendale QLD 4500, phone 07 3205 3388, freecall 1800 773 461, email [sales@grand-slam.com.au](mailto:sales@grand-slam.com.au)*