

AUSTRALIAN STAINLESS

SPECIALISING IN STAINLESS STEEL AND ITS APPLICATIONS

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ASSDA Accredited Fabricator



ASSDA
ACCREDITED



Special Edition



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ASSDA

NORTHERN HOSPITALITY SHINES IN STAINLESS AT BAR ZUSHI



Friendships in business are the key to success in Darwin's hospitality community. Like the many subtle flavours in sashimi, creating a Japanese restaurant such as Bar Zushi in the Casuarina Square Shopping Centre requires the co-ordination of many people and elements to design a truly inviting and friendly atmosphere.

Darwin-based company Brilliant Kitchens and Interiors won the HIA NT Housing Award in 2005 for Best Commercial Kitchen and Fitout for the unique restaurant design that features a waterfall centrepiece manufactured from stainless steel by local ASSDA Accredited Fabricator, Northern Stainless.

Drawing customers to the restaurant is an exquisite eastern theme blending the rich colours of the curved jarrah timber and contrasted by modern stainless steel panelling.

Lining the length of the wall is a staggered garden arrangement of bamboo poles set in large white stones - a feature that further enhances the attractive, tropical experience.

To fit out the restaurant design, Brilliant Kitchens and Interiors called on Northern Stainless to fabricate the stainless waterfall and bench panel architectural features.

The three metre long water feature separates diners from the engine room where master chefs are preparing their next creation.

Northern Stainless specialises in the supply, fabrication and installation of stainless steel commercial products including custom made benches, handrails, grates, trays, trolleys, pipework, shelving and tanks.

CONTACT:

- > Northern Stainless Pty Ltd
9 Cato Street, Winnellie NT 0821
Phone (08) 8947 4828 Fax (08) 8947 4845
www.northernstainless.com.au
- > Arafura Catering Equipment - (08) 8981 6655
- > Atlas Specialty Metals - (08) 8947 2717
- > Bar Zushi - (08) 8945 7622
- > Brilliant Kitchens and Interiors - (08) 8947 3444

Welcome to a special edition of Australian Stainless magazine focusing on recent achievements of ASSDA's Accredited Fabricators.

The ASSDA Accreditation Scheme is an industry-based scheme designed to establish a benchmark for stainless steel fabricators to become recognised providers (ASSDA Accredited Fabricators) of a standardised level of quality. The application-based articles featured in this edition highlight eight of the 21 Accredited Fabricators now recognised by the Scheme as Stainless Steel Specialists. Also included in this edition, is advice on how ASSDA can assist you in specifying for projects and an informative technical article on common traps to avoid in stainless steel fabrication.

CELEBRATING MELBOURNE CITY'S CULTURAL LINKS IN STAINLESS



Piazza Italia at the northern end of Argyle Square on Lygon Street, Carlton is Melbourne's newest public open space and meeting place was officially opened on 29 January 2006.

Lord Mayor John So said the Piazza will be a wonderful addition to Melbourne's famous Italian cultural precinct.

"For generations, Argyle Square has been a place where city residents, workers and visitors have stopped to soak up the atmosphere of Lygon Street, eat gelati and catch up with friends and family," the Lord Mayor John So said.

The northern end of Argyle Square features new gardens, traditional porphyry stone paving, a giant 45m² solar clock and stainless steel street furniture.

ASSDA Accredited Fabricator T.R.J. Engineering fabricated the 16 stainless steel double bench seats for the redevelopment.

In December 2005, Melbourne City Council released a statement announcing that all powder-coated seats, litter bins, benches and drinking fountains in the city centre will be replaced with stainless steel finishes over the next ten years to give the streetscape a sleek, modern feel.



Lord Mayor John So said the stainless steel replacements would be designed to improve its functionality for the elderly, the young and people with disabilities, while withstanding high levels of wear and tear.

"The maintenance cost of stainless steel is half that of powder-coated items, while its lifespan is twice as long," the Lord Mayor said.

Also, to celebrate Melbourne's successful hosting of the 2006 Commonwealth Games and to recognise the many athletes who participated, Melbourne City Council

commissioned T.R.J. Engineering to fabricate stainless steel cladding for existing street poles in Bourke Street.

These cladded fabrications proudly feature the names of all the teams that competed in the Melbourne 2006 Commonwealth Games acid etched into the stainless steel.

CONTACT:

- > T.R.J. Engineering Pty Ltd
17-19 Apollo Drive, Hallam Vic 3803
Phone (03) 9703 1701 Fax (03) 9702 3288

STAINLESS METAL CRAFT: ARTISANS OF FABRICATION



Traditionally artisans of yesteryears searched for the right stone or timber and personally hand carved their works of art. However, modern artists and sculptors now work collaboratively to create sculptures using a wider range of materials including stainless steel.

Installation artist, Marion Borgelt is a modern artist who in early 2005 completed the most significant work in her 25 year career.

However, this is no public installation. Located high on the 32nd floor of the JP Morgan Chase building overlooking Circular Quay, 'Time and Tide (wait for no man)' features 16 stainless steel spheres resting on an ascending spiral of 16 sandstone pliths.

The 4000 kilogram sculpture represents the different phases of the moon and demonstrates how people in corporate life are governed by the global clock.

ASSDA Accredited Fabricator, Stainless Metal Craft took up a challenge that some of the metal workers never faced before.



Mimicking artisans of years gone by, man and machine merged through the use of skilled computer experts and metal workers.

Many hours were spent in the complex machining operation and many more in the mirror polishing, to complete the 16 hollow spheres. The team of modern fabricators at Stainless Metal Craft worked tirelessly to bring Borgelt's design to fruition.

Based in Emu Plains, Stainless Metal Craft uses the latest processes and technology to manufacture architectural and commercial building products for industries such as health, aged care, councils, government and schools.

CONTACT:

> Stainless Metal Craft
6 Bromley Road, Emu Plains NSW 2750
Phone (02) 4735 5666 Fax (02) 4735 7950
www.smcraft.com.au

SPECIFYING FOR PROJECTS MADE EASY WITH ASSDA



If time is precious and you need information for specifying stainless steel fast, the Australian Stainless Steel Development Association (ASSDA) can be your best friend in business.

ASSDA is the peak industry body for stainless steel in Australia and represents more than 200 member companies including overseas mills, stockists, distributors, fabricators, engineering consultants, end users and service providers.

ASSDA's job is to make stainless steel the logical choice for decision makers. We do this by making stainless steel easy to understand and use. Services available include the Technical Hotline, LeADmail and the ASSDA Accreditation Scheme and technical bulletins.

Technical Hotline

Whether your enquiry is about design, stainless steel properties, corrosion, supply or other technical issues, ASSDA can assist. Utilising its own technical specialist and a network of stainless steel experts, ASSDA responds to more than 2000 technical enquiries every year.

LeADmail

When a specifier needs stainless steel now, LeADmail listings deliver.

LeADmail is a weekly email bulletin distributed to more than 440 personnel of ASSDA member firms. The service provides supply referral opportunities that effectively connect members with customers.

Members who receive LeADmail benefit from location specific sales opportunities. Architects, engineers and asset owners who list on LeADmail benefit from rapid product supply by members.

LeADmail is also an ideal communication tool for offering a potential stainless fabrication project for tender.

ASSDA Accreditation Scheme

The ASSDA Accreditation Scheme is a sharp instrument that targets the key issues of stainless steel fabrication expertise and aims to meet the expectation of asset owners and

specifiers that the job will be properly specified and trouble free.

The Stainless Steel Specialists Register lists those businesses that are competent, for defined business functions, in the supply of semi-finished materials, and/or design, fabrication and installation of stainless steel structures and equipment.

To find an ASSDA Accredited Fabricator, simply visit the ASSDA website and click on the link to the Stainless Steel Specialists Register.

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> Australian Stainless Steel Development Assoc.
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Email assda@assda.asn.au
www.assda.asn.au



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SYDNEY: 7 Cosgrove Road, Enfield NSW 2136 Phone (02) 9642 8900
MELBOURNE: 170 Northbourne Road, Campbellfield Vic 3061 Phone (03) 9305 3535

TECHNICAL ARTICLE: STAINLESS STEEL FABRICATION – COMMON TRAPS TO AVOID



ERRORS IN STAINLESS STEEL FABRICATION CAN BE EXPENSIVE AND DIFFICULT TO RESOLVE. SO A 'GET IT RIGHT THE FIRST TIME' APPROACH TO STAINLESS FABRICATION IS NECESSARY TO GAIN THE BEST RESULT. CHECK THE ASSDA WEBSITE - WWW.ASSDA.ASN.AU FOR YOUR LOCAL STAINLESS STEEL SPECIALIST.

ASSDA ACCREDITED FABRICATORS – ENSURING THE BEST RESULT

ASSDA Accredited Fabricators are companies and individuals that have a common understanding of successful technical practices for fabricating stainless steel.

To ensure the highest standard in quality, Accredited Fabricators belong to the ASSDA Accreditation Scheme, an ASSDA initiative that is intended to achieve self regulation of the industry, for the benefit of both industry members and end users.

The Accreditation Scheme criteria requires all fabricators to conform to stringent standards of competence, training and education, personal and professional conduct, adhering to a Code of Ethics and a Code of Practice, and committing themselves to continuing competency development.

The Scheme gives owners and specifiers of stainless steel greater certainty that fabrications using stainless steel will be performed by technically competent industry specialists.

COMMON TRAPS TO AVOID

Surface damage, defects and contamination arising during fabrication are all potentially harmful to the oxide film that protects stainless steel in service. Once damaged, corrosion may initiate. Common causes of surface damage and defects during fabrication include:

Scratches and Mechanical Damage

Scratches and gouges form crevices on the steel's surface, allowing entrapment of process reactants or contaminants, providing ideal locations for corrosion. Scratches may also contain carbon steel or other contaminants embedded by the object that caused the scratch.

Scratches will also raise customer concerns in situations where appearance is important. Mechanical cleaning is the most effective way to remove them. Prevention would be better.

Surface Contaminants

Common contaminants likely to attack stainless steel include carbon steel and common salt. Dust and grime arising during fabrication may



Scale on a welding site. Note the crevice corrosion and corrosion from the weld heat tint at this seaside site.

contain these contaminants and should be prevented from settling on stainless steels.

Oil, grease, fingerprints, crayon, paint and chalk marks may also contain products that can provide crevices for localised corrosion and also act as shields to chemical and electrochemical cleaning. They should be removed.

Residual adhesives from tape and protective plastic sometimes remain on surfaces when they are stripped. Organic solvents should remove soft adhesive particles. If left to harden, adhesives form sites for crevice corrosion and are difficult to remove.

The most frequently encountered fabrication problem is embedded iron and loose iron particles, which rapidly rust and initiate corrosion. Other common sources of



Corrosion on a handrail caused by rough grinding.

contamination are abrasives previously used on carbon steel, carbon steel wire brushes, grinding dust and weld spatter from carbon steel operations, introducing iron filings by walking on stainless steel and iron embedded or smeared on surfaces during layout and handling. All should be avoided.

Welding

The high temperature characteristics of welding can introduce surface and other defects which must be addressed.

Undercut, spatter, slag and stray arc strikes must be minimised as they are potential sites of crevice corrosion. General cleanliness and removal of potential carbon contaminants such as crayon marks, oil or grease is important in obtaining good weld quality. It is also important to remove any zinc that might be present.

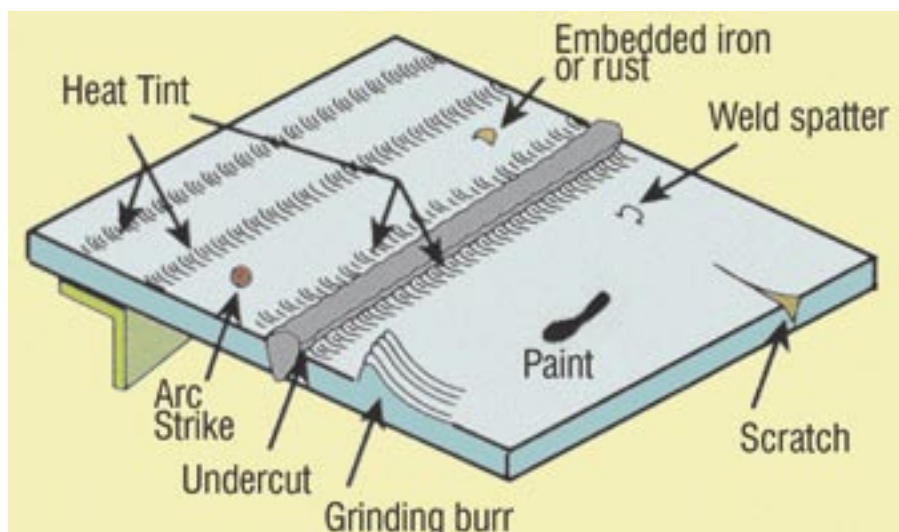
Heat Tint and Scale

Heat tint and scale occur when stainless steel surfaces are heated to moderately high temperatures in air (350 °C+) during welding.

Deleterious oxides of chromium may develop on each side and on the under surface of welds and ground areas. These oxides lower the corrosion resistance of the steel and during their formation the stainless steel is depleted of chromium. The oxidation and the portion of the underlying metal surface with reduced chromium should all be removed by mechanical, chemical or electrochemical means to achieve the best corrosion resistance.

Distortion

Stainless steel has a relatively high coefficient of thermal expansion coupled with low thermal conductivity, at least compared with carbon steel. So, stainless steel expands rapidly with the input of heat that occurs during welding and the heat remains close to the heating source. Distortion can result. Distortion can be minimised through using lowest amperage consistent with good weld quality, controlling interpass temperatures and using controlled tack welding, clamping jigs with copper or aluminium backing bars as heat sinks on the welds.¹



REMOVAL OF SURFACE CONTAMINATION

There are three methods of repairing the surface of stainless steel.

Mechanical Cleaning

Wire brushing should only be done with stainless steel bristles that have not been used on any other surface but stainless steel. Clean abrasive disks and clean flapper wheels are commonly used to remove heat tint and other minor surface imperfections. Also effective is blasting with stainless steel shot, cut wire or new, iron-free sand (garnet is a common choice).



This photograph was taken a month after installation. Corrosion resulting from rough finishing technique is evident. Note also the crevices that are likely corrosion sites.

Chemical and Electrochemical Cleaning

Embedded iron, heat tint and some other contaminants can be removed by acid pickling, usually with a nitric-hydrofluoric acid mixture or by electropolishing. These processes remove, in a controlled manner, from the affected areas, the dark oxide film and a thin layer of metal under it, leaving a clean, defect-free surface. The protective film reforms after exposure to air.

Passivation

Passivation involves treating stainless steel surfaces with, usually, dilute nitric acid solutions or pastes. This process removes contaminants and allows for a passive film to be formed on a fresh surface, following grinding, machining etc.

Care must be taken. Nitric acid treatments will remove free iron, but not iron oxide contaminants. Passivating, unlike pickling, will not cause a marked change in the appearance of the steel surface.

INSTALLATION

Stainless steel is best installed last to avoid damage during construction. Also, careful storage and handling including protective coating films are required prior to and during installation to minimise risk of damage to the stainless steel structure.

A primary goal of the stainless steel industry is to have finished products put into service in a "passive" condition (free of corrosive reactions). Stainless steel is a robust and relatively forgiving material, but adherence to informed, good practice will ensure satisfaction for customers and suppliers alike.

Understanding stainless steel is important to its successful application. Ask your stainless steel representatives whether they have successfully completed ASSDA's Stainless Steel Specialist Course. Their commitment to product knowledge will be your key to success.

REFERENCES

1. NI & Euro Inox (1994) Design Manual for Structural Stainless Steel NiDI Ref. No. 11 013

RESOURCES

- AS 1554.6 'Welding Stainless Steel for Structural Purposes'
- Australian Stainless 2005 Reference Manual
- Stainless Fabrication Group New Zealand Code of Practice for the Fabrication of Stainless Steel Plant and Equipment
- Nickel Institute (NI) 'Cleaning Stainless Steel Surfaces Prior to Sanitary Service'
- ASSDA - www.assda.asn.au
- BSSA - www.bssa.org.uk
- Nickel Institute - www.nickelinstitute.org

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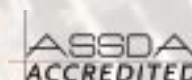
Fabricated pipe showing carbon steel pickup.



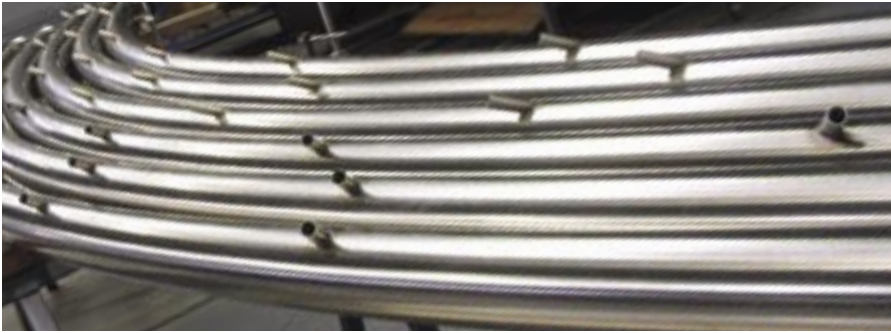
ASSDA Accredited Fabricators

An ASSDA Accredited Fabricator gives asset owners and specifiers greater certainty of high quality service in stainless steel fabrication

Find an ASSDA Accredited Fabricator quickly by searching the *Stainless Steel Specialists Register* online at www.assda.asn.au



AUSTRALIAN STAINLESS PRODUCTS – BUILT ON REPUTATION



Alistair Patterson has a flair for the food and beverage industry that borders on obsession. As the sole proprietor for ASSDA Accredited Fabricator, Australian Stainless Products, Patterson's reputation within the industry means when projects are on, he is onto it!

Australian Stainless Products are custom manufacturers of quality stainless steel food, beverage and pharmaceutical process products and equipment.

Established more than 20 years ago, Australian Stainless Products started out building basic dairy machinery, primarily small repairs and maintenance of equipment for a few of the local food processing equipment plants.

"Back then the business was basically building milking machinery. We did small repairs and maintenance and equipment for a few of the local food processing plants in the area."

Now, the Melbourne-based company manufactures original equipment from large tanks, vessels and hoppers including process equipment up to 50,000 litre capacity.

Working with a small but loyal client base, Patterson has worked with some engineering consultants such as dairy equipment supplier DeLevel for more than a decade.

"It's quite a small industry. We operate by word of mouth and references of jobs. It takes a long time to build, grow and develop a business within this industry," said Patterson.

CONTACT:

- > Australian Stainless Products
14 Edgcombe Court, Moorabbin Vic 3189
Phone (03) 9553 3673 Fax (03) 9553 4277

DESIGNING KITCHENS OF STYLE WITH BELL STAINLESS



Great attention to detail is what immediately comes to mind when you visit the home and kitchen of Kenmore Hills property developer, Matt Sproule.

Sproule's residence in Brisbane's westside features a modern stainless steel kitchen designed by Brian Grant Kitchens and Bathrooms that would be the envy of most interior designers and home chefs.

According to Sproule, friend and business associate, Royce Amos of Royce Amos Interior Design was the driving force for the inclusion of stainless steel benches in the design.

Fabricated by ASSDA Accredited Fabricator Bell Stainless, the large prestige kitchen has four food preparation areas all designed for entertaining a large group of people.

The main area of the kitchen design features a five metre long stainless steel benchtop with a highly, scratch resistant textured finish and seamless welded Murray triple bowl sinks (another full size sink is under the drainage tray).

Other kitchen areas include a stainless steel barbeque with hood and in-built drain for oils and grease plus textured stainless side benching, stovetop gas burners, hood and textured stainless bench and a four metre long marble island bench for food preparation.

Bell Stainless' craftsmanship and attention to detail is highlighted in the enduring finish. Sproule said that he was delighted with the way Bell Stainless handled the job. After one year in service and with careful treatment by



its owners, the stainless steel benches show no sign of scratches or dents.

Bell Stainless is a family-owned business operating since 1956, mainly manufacturing for the domestic market, an area not often tackled by many metal fabricators.

Bell Stainless is the only Australian company and ASSDA Accredited Fabricator to have won an international award for kitchen design and manufacture from the South African Stainless Steel Development Association.

CONTACT:

- > Bell Stainless
490 Maroochydore Road, Kunda Park Q 4556
Phone (07) 5476 8877 Fax (07) 5476 8876
www.bellstainless.com.au
- > Brian Grant Bathrooms & Kitchens (07) 3282 1033

SAFE DISPOSAL WITH SIMCRAFT STAINLESS STEEL PRODUCTS



As a general rule, the waste management method adopted for disposing of radioactive substances is critical. The main method of disposal is the dilution and dispersion of radioactive wastes using stainless steel equipment such as isotope flushing sinks.

Last year, the University of Western Australia's School of Biomedical, Biomolecular and Chemical Sciences moved into the new \$65M Molecular and Chemical Sciences building with state-of-the-art laboratories and equipment.

Generally, the materials used in biological sciences research work contain low radiotoxicity substances, however, full precautions are taken to ensure safe handling.

As part of the School of Biomedical, Biomolecular and Chemical Sciences upgrade, many of the laboratories were fitted with a number of isotope sinks and flushing isotope sinks fabricated by ASSDA Accredited Fabricator, Simcraft Products.

Isotope flushing sinks are designed to prevent splashing and to allow for the gradual flow of waste liquid into a stream of waters as it runs to waste.

Simcraft Products fabricates the sinks in 1.2mm grade 316 stainless steel with satin finish to the Australian Standard, AS2243.4.

Isotope flushing sinks feature an absolutely splash free flush action with a non-turbulent continuous curtain of water for a total surface wash and can also be custom built for hospitals, medical centres and laboratories.

CONTACT:

- > Simcraft Products
64 Railway Parade, Welshpool WA 6106
Phone (08) 9258 3033 Fax (08) 9258 3044

SAFEGUARDING LIVES IN CENTRAL QUEENSLAND WITH STAINLESS



Following the tragic death of 15 people in the Palace Backpackers fire in the Central Queensland town of Childers in 2000, there were calls for tighter fire safety regulations.

Central Queensland University Rockhampton recently upgraded facilities at its Capricornia Residential College to increase safety, enhance student well being and ensure compliance with legislative requirements, building codes and duty of care.

CQU's Division of Facilities Management made alterations to Capricornia College as part of a \$6.4 million project to upgrade facilities at Rockhampton, Gladstone, Bundaberg and Mackay campuses.

The CQU division worked alongside Andrews and Girle Architects, Project Services and John Foster Projects to schedule refurbishments during the College's low season to avoid major disruption to students.

ASSDA Accredited Fabricator, Adnought Sheetmetal was contracted by John Foster Projects to fabricate 20 sets of stairs in grade 316 stainless steel mirror polish finish. Previous carbon steel handrails were replaced with stainless steel.

Adnought Sheetmetal also installed 30 radiation shields from 316 stainless steel perforated sheet supplied by ASSDA member Locker Group to minimise the risk of fire spreading to the stairwells.

According to Architect Russell Girle, the specification of stainless steel for the stairwells and radiation shields was essential to ensuring



the safety of residents in the potential event of a fire.

"The upgrade uses a fire engineered model that is designed to keep the building tenable for a certain length of time to get people out".

To enhance safety further hydrant mains were boosted and tactile surfaces and disabled access were upgraded.

CQU is committed to the safety of students, staff and members of the public on its campuses and the essential services upgrades ensure a high level of protection in the event of an emergency.

CONTACT:

- > Adnought Sheetmetal
417 McLaughlin Street, Parkhurst Q 4701
Phone (07) 4936 1688 Fax (07) 4936 1812
- > Andrews and Girle Architects - (07) 4927 7399
- > CQU Facilities Management - (07) 4930 9152
- > John Foster Projects Pty Ltd - (07) 4957 3511
- > Locker Group - (03) 8791 1000

GOLD COAST'S KIRRA POINT: LOOKING GREAT SIX YEARS ON



When the Gold Coast City Council was seeking a stable and visually stunning medium for use on their Kirra Point board walk project in 1999, they looked no further than stainless steel and after six years in service, it still looks great.

Council engineers chose stainless steel for the upright posts and moveable handrail system for safety, corrosion resistance and aesthetic reasons.

When designing the project, the board walk had to take into account a steep vertical drop to the beach below - an important safety issue met by using stainless steel handrailing.

The board walk project was undertaken in two stages, the first of which involved constructing a concrete walkway and handrails along the Kirra Point foreshore. The second stage saw the construction of a timber board walk out over the foreshore onto the beach.

ASSDA Accredited Fabricator, Stoddart (Tom Stoddart Pty Ltd) supplied 186 custom made upright posts and supplied and installed 326

metres of stainless steel tubular handrails. Both were made from 316 grade stainless steel with a number 4 finish.

The upright posts were passivated in nitric acid after manufacture to ensure a clean surface and promote corrosion resistance.

The knowledge that ASSDA requires for its Accreditation Scheme was used in the execution of the structure, ensuring the ongoing satisfaction of the Council with minimal maintenance.

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- > Australian Stainless Steel Development Assoc.
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- > Stoddart (Tom Stoddart Pty Ltd)
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ASSDA ACCREDITED FABRICATORS

Visit the Stainless Steel Specialists
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The following list of companies are those businesses that are recognised as competent, for defined business functions, in the supply of semi-finished materials, and/or design, fabrication and installation of stainless steel structures and equipment:

- Adnought Sheet Metal Fabrication Pty Ltd
- Arminox Australia Pty Ltd
- Australian Stainless Products
- B & R Enclosures Pty Ltd
- Bell Stainless
- Bridgeman Stainless Solutions
- Eziform Sheetmetal Pty Ltd
- G & B Stainless Pty Ltd
- Hart to Hart Fabrication Pty Ltd
- Interspace Manufacturing Pty Ltd
- Koolall Manufacturing
- Northern Stainless Pty Ltd
- Pryde Fabrication Pty Ltd
- Rocklea Pressed Metals Pty Ltd
- Simcraft Products
- St Clair Sheetmetal
- Stainless Metal Craft (Aust) Pty Ltd
- Stoddart (Tom Stoddart Pty Ltd)
- T & H Sheetmetal Pty Ltd
- Townsend Group Pty Ltd
- TRJ Engineering Pty Ltd

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CONTACT — Max Russell, email max_r@assda.asn.au

MORE INFORMATION

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