



3B

DIMENSIONAL CONTROL LASER SCANNING ENGINEERING FABRICATION CONSTRUCTION SURVEYING SERVICES



Overview

3B is a privately owned survey service company with offices in Perth and Melbourne in Australia; Aberdeen, Scotland and Singapore.

3B Directors and senior management have been involved in the resources industry since the mid 1980's. They bring that wealth of experience to 3B and between them have worked on oil and gas fields in every continent of the globe.

3B plan to maintain this rapid growth rate by continuing to provide a cost effective and, most importantly, a SAFE system of working on all major projects in the future.

The company provides a range of services to clients all over the world. These services include Engineering Management, Welding and Fabrication, Dimensional Control Surveying and laser scanning.

We provide these services to a number of industry sectors:

- Offshore oil and gas
- Onshore LNG & CSG plants
- Refineries / Petrochemicals Processing
- Mining / Mineral Processing
- Shipbuilding / Civil Infrastructure & Marine
- Greenfield / Brownfield Construction

The Benefits of Using 3B.

The key to our success is our commitment to understanding client's needs and to delivering cost effective and safe solutions.

The principal benefits of using the 3B dimensional control system are:

- No re-work
- Reduced installation times
- Full 3D CAD model produced
- Elimination of clashes
- Greatly enhanced design and constructability
- Minimisation of welding & grinding onshore / offshore
- Minimisation of offshore NDT
- Minimisation of offshore / onsite activities by bringing the worksite to your office



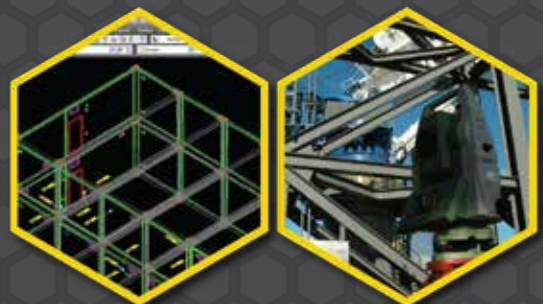
Dimensional Control

Dimensional control surveying is the technique whereby 3-dimensional spaces are accurately measured to determine the area between points, creating digitally mapped distances and angles.

Dimensional control surveying has been used for decades in the world's large jacket and fabrication facilities. However, following the Piper Alpha disaster in the North Sea in 1988 in which 167 men lost their lives, Dimensional Control survey began to be used on offshore installations, as the subsequent enquiry found that one of the causes of the fire was naked flame from offshore fabrication, welding and grinding in a highly explosive environment. Dimensional Control survey eliminates the need for this.

Dimensional Control Surveying is suitable for application in:

- Industrial Measurement - 3D capture
- Replacement pipe-work - clash checking
- Topographical surveys - civil & mining surveys
- Alignment surveys - SMP / rail / modules
- Drill rig alignments - structural monitoring
- Fabrication surveys - as-built and module assembly
- Laser scanning - 3D modelling



Dimensional control can be defined as the process of acquiring accurate dimensional information that is spatially referenced to a known or established benchmark. Using the latest survey technology from Leica Geosystems, 3B's surveyors can measure and produce 3D CAD models from single pipe spool replacements to full FPSO / Jacket construction surveys.

The captured data can be transformed to a clients preferred format, offering quick and easy data evaluation and problem checking.

As we offer a full draughting service, we can provide full 3D models using AutoCAD or Micro-station, 2D drawings or Point Cloud data from our Laser Scanners. Our workforce globally totals over 50 experienced surveyors bringing with them decades of experience in the field of engineering and land survey.

Laser Scanning

As technology advances, new survey methods are readily embraced by 3B. We now have the capability to provide laser scanning services to our clients. Laser scanning differs from dimensional control methods in that it captures an as-built 'point-cloud' of entire areas. The unit shoots millions of points in a matter of minutes, this information is then converted into a point cloud, which looks like a black and white photograph, but is in fact millions of coordinated survey points. Using Leica total stations to coordinate each scan, accuracy of 3mm can be achieved. This is an ideal tool for clash checking large modules or difficult access areas. The software allows our engineers to import client's routing models into AutoCAD, Micro station or PDMS.



3B delivers the latest in 3D detailed laser scanning software and services for maintenance, brownfield and greenfield projects.

3B offers its clients the ability to create accurate as-built information which can be modelled and rendered into CAD packages including Auto-plant, PDMS and Navisworks.

Typical Projects include:

- Reactor repair
- Tanker to FPSO upgrades
- Valve Upgrades
- Processing plant upgrades / expansions
- Structural & Piping Maintenance - onshore / offshore
- Greenfield / Brownfield construction

Engineering Support



● **Subsea Engineering Management** From gas lift hook ups, subsea construction to jumper spool fabrication all of this needs to be project managed. 3B have a team of subsea engineers with many years experience ready to provide project management expertise whatever the task.

● **Subsea Metrology** Using Sonardyne EHF, Aquanav and Sonardyne software, 3B provide subsea metrology services with an experienced team of metrologists based in Paris and Cameroon.

● **Draughting** From single spool isometrics to full Gas or 3D CAD models, 3B has a team of draughting personnel to cater for your needs.

● **Fabrication/Welding** Central to the business of 3B is the provision of fully qualified welding and fabrication personnel. With a core crew of multi-coded welders and fabricators, 3B have a 'flying squad' ready to mobilise anywhere a client requires. We also provide medium-long term placements of supervisory staff.

● **Rigging** An integral part of our construction crew, rigging teams can be provided for offshore deployments or rigging training/supervision.





The world wide network

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