

# BUILDING CAREERS OPTIONS

## IN THE SURVEYING & SPATIAL INFORMATION SECTOR

Do you have students who are looking for a career that is outside the square, with work that is interesting, diverse, leading-edge and that will provide options to work around the world?

# THE SURVEYING & SPATIAL INFORMATION SECTOR

The Surveying & Spatial Information Sector provides careers for the 21st Century and is tailor made for students who have enjoyed and succeeded in geography, maths, IT or the sciences.

The sector provides the opportunity to use the latest technologies to help understand the world and help solve problems – ranging from environmental issues to disaster planning and business analysis. The sector gives spatial professionals the skills to build and analyse information that will help governments decide where to place new public infrastructure such as hospitals or schools.

Spatial information is also a key tool of industry and is used by marketers to make better decisions about where to launch or promote a new product or by farmers deciding where to plant crops to maximise the use of scarce water resources.

## What does 'spatial' mean?

Spatial refers to space, location or place. Since everything is located at a point on the earth's surface the collection, mapping, analysis and presentation of spatial information is very important and has an almost limitless range of applications.

People understand issues better when they have access to maps and other spatial information. New technologies, including satellite systems, make it possible to gather, analyse and present information in ways that were not possible even a few years ago.

## What are the 'spatial sciences'?

Google Earth is a good example of spatial science. It uses satellite technology and gives users access to the virtual world. You may also be familiar with satellite navigation systems used in cars and mobile phones which are also 'spatial tools'.

The availability and growth of these technologies provides a clue to the vast world of tools that are available to surveying and spatial information professionals. The pace of development also means that spatial sciences are becoming more accurate and allow more complex and sophisticated modelling of the world.



Another exciting aspect of the tools used in the sector is the capacity of the new software to combine spatial information with other data to improve understanding of complex issues. For example, census data in the hands of a spatial information professional can be used by marketers to map and locate where there is the greatest concentration of likely customers. Spatial information experts can also combine mapping information with other data sets to, for example, provide information that will help develop bush fire management plans or model the effects of global warming on the coast line.

## Who works in the Surveying & Spatial Information Sector?

Surveyors and mapping professionals comprise the core workforce for the Surveying & Spatial Information sector along with other new roles such as GIS operators and other specialists in areas such as remote sensing and photogrammetry – which is the science of obtaining accurate measurements and maps from photographs.

The message is that the Spatial Information sector is diverse and offers young people an array of job roles and places to work.

## The sector can be found everywhere

Young people interested in travelling can take their skills in spatial information to any part of the globe. The sector is encountering rapid growth everywhere and the skills and technologies are readily transferable.

## Maybe working outdoors is a career choice consideration...

The Spatial Information sector provides jobs in the mining industry, land management, town and regional planning, agriculture, transport and government agencies – to name just a few.

Many jobs entail field work to collect data on the ground as part of a mining exploration team or to establish the route of a major new road network.

But, if using technology and doing detailed analysis is also of interest then the spatial information sector utilises sophisticated software and systems to analyse and map data that has been collected in the field.

## Contributing to the community and the nation

Spatial Information reaches into both the public and private sectors.

Young professionals may pursue a career in the commercial world or also find satisfying work in the public sector. Government agencies need skilled surveyors and spatial information practitioners to work in many different fields. Just think about the importance of being able to plan where a new airport should be built or a powerline run. Governments also need spatial experts to help map and plan where new hospitals will be needed to reflect changing population patterns or to map environmental values when establishing or managing a national or state park. The options and needs are endless.

Spatial Information professionals, including surveyors, have always played a major role in the nation's property industry and local government. Surveyors are first on site when plans are being made for a new property subdivision and their work underpins the land title system that affects every person when buying or selling a house.

## Business Ownership

The industry is also a great choice for young people who aspire to being their own boss. The Spatial Information sector is made up of small and medium sized consulting firms and professional practices and offers significant scope to build and run a business in an area where skills are needed and well rewarded.

## New skills for new challenges

The Spatial Information sector is also at the centre of work to ensure the better management of the environment and the fight against climate change.

People with special skills in hydrographic surveying and other spatial expertise are monitoring and mapping the health of our rivers and waterways. Other professionals are working hard to contribute to the management of wetlands, national parks and other aspects of the natural environment.

Looking further afield there are spatial information professionals involved in monitoring the effects of climate change on the ice sheets in Antarctica while others are contributing their skills to the negotiation of maritime boundaries between countries or monitoring the flow of ocean currents.

## Education Pathways

Students who have enjoyed and met the challenges of a wide range of senior secondary subjects should consider a career in the Surveying and Spatial Information sector. If students are interested in surveying they will need to have a good maths background. Science, geography and IT subjects will also serve potential new entrants to the sector well. Spatial Information is a 'people industry' as well as a technical one and the sector seeks good communication, problem solving and team skills.

*Spatial Information  
is everywhere!*



**AUSTRALIAN  
APPRENTICESHIPS**  
SPATIAL INFORMATION SECTOR

## CAREER PATHWAYS

### Young people may –

undertake a school-based traineeship or apprenticeship that will give a great understanding of the industry and connect them with an employer

undertake a cadetship soon after leaving school

enrol in a TAFE course that will prepare them for work as a GIS officer or assistant surveyor

enrol in a degree in surveying or a spatial discipline at university

***A Spatial Information career may follow many directions with just one possible education and work pathway shown...***

#### SURVEY FIELDHAND or ASSISTANT

Your career can start by working in the field assisting a surveyor. The outdoor life suits many people and you can gain understanding about the industry.

#### TECHNICIAN SURVEYOR

Students interested in spatial sciences at school but who want to work rather than start at Uni may choose a cadetship

#### PROFESSIONAL SURVEYOR

The next step may be to build on a cadetship and complete a degree

#### GIS ANALYST AND CONSULTANT

Well into a career and the options are opening up. Those interested in technology and the analytical side of the industry may upskill and move into broader spatial roles

#### START MY OWN BUSINESS IN ENVIRONMENTAL SYSTEMS AND SPATIAL CONSULTING

There is also great opportunity to start a business and seek self employment

#### VOCATIONAL GRADUATE CERTIFICATE OF BUSINESS

#### FURTHER INFORMATION

Construction & Property Services Industry Skills Council  
email: [info@cpsisc.com.au](mailto:info@cpsisc.com.au)  
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Surveying & Mapping Industry Council of NSW  
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Australian Apprenticeship Centre

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