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What is the Building Services Industry?

In Australia the Building Services industry is a multi billion dollar business that nationally employs tens of thousands of people. Building services have been called “the systems that bring buildings to life”, these are the air conditioning, ventilation, lighting, power, water, waste and fire and life safety systems. Virtually every facet of modern life depends in one way or another on building services. The quality and safety of the food we eat and water we drink, public health, hospitals and sanitation, banking and commerce, industrial production, arts and entertainment, communications, transportation and our comfort and safety in our homes, and places of work and entertainment all depend on building services.

Why are Building Services Important?

Homes, office buildings, industrial plants, schools, public and government facilities and computer technology all rely on building services systems to create and maintain safe, healthy and comfortable living and working environments.

Many industrial, medical, technical and commercial processes depend on sophisticated heating, cooling and ventilating systems for their operation. Most buildings rely on fire and life safety systems to protect their occupants and assets in case of fire. Building Services people are problem solvers; experts who contribute to making equipment work better, more efficiently, quicker and less expensively.

What is the Future of the Industry?

Building Services are a necessity today for personal comfort and safety, medical health, food processing, water and power supply, building fire protection and workplace productivity. In fact all human activities have come to depend on building services in one way or another. The industry will produce thousands of new jobs in the coming decades as the market for these services expand.

Technical jobs are the fastest growing segment of the economy. A secure and rewarding future awaits in this industry

The Building Services industry offers careers with variety, job security, respect, upward mobility, great salaries, life long employment and opportunity. Australian Building Services professionals are recognised as some of the best trained and most capable in the world and can use their skills anywhere in the world.

What Jobs do People do in the Building Services Industry?

There is a very wide range of roles in the building services industry, here are a few:

- Service Technicians: Install, maintain, service, repair and troubleshoot HVAC equipment and other building services using diverse knowledge of electrical components, motors, control systems, air flow, piping design, thermodynamics and refrigeration systems.
- Commissioning Technicians: Carry out the setting up and tuning of new HVAC systems and complex building services.
- Draftspersons: Use sophisticated computer aided design and drawing systems together with technical knowledge and skills to design and document HVAC and other building services systems for manufacture and installation.
- Plumbers: Fabricate, install and repair pipe and ductwork systems that carry fluids such as heating and cooling water and air for air conditioning and ventilation throughout buildings. They also install the plant and equipment that heats and cools and pumps the fluids and heats and cools and moves the air.
- Engineers: Conceive and design building services systems based on functional requirements and the need to conserve energy and water, they also play roles in solving problems and ensuring that systems are maintained correctly and operate efficiently. They address areas thermodynamics, electrical theory, fluid mechanicals, mechanical design, materials technology and regulatory and code compliance.
- Sprinkler Fitters: Fabricate, install and repair fire sprinkler and fire hydrant systems that protect building occupants and buildings from the effects of fire.
- Alarms Technicians: Install, maintain, service, repair and troubleshoot complex fire and life safety monitoring and alarm systems that help protect building occupants and buildings from the effects of fire.
- Controls Technicians: Install, maintain, service, repair and troubleshoot the sophisticated computerised building automation systems (BAS) that control the efficient operation of HVAC, electrical and fire and life safety systems in modern buildings.
- Electricians: Install, maintain, service, repair and troubleshoot lighting and power systems.
- Contractors and Business Owners: Combines technical and entrepreneurial skills to communicate an assess customer needs and derive appropriate technical solutions.

Where do These People Work?

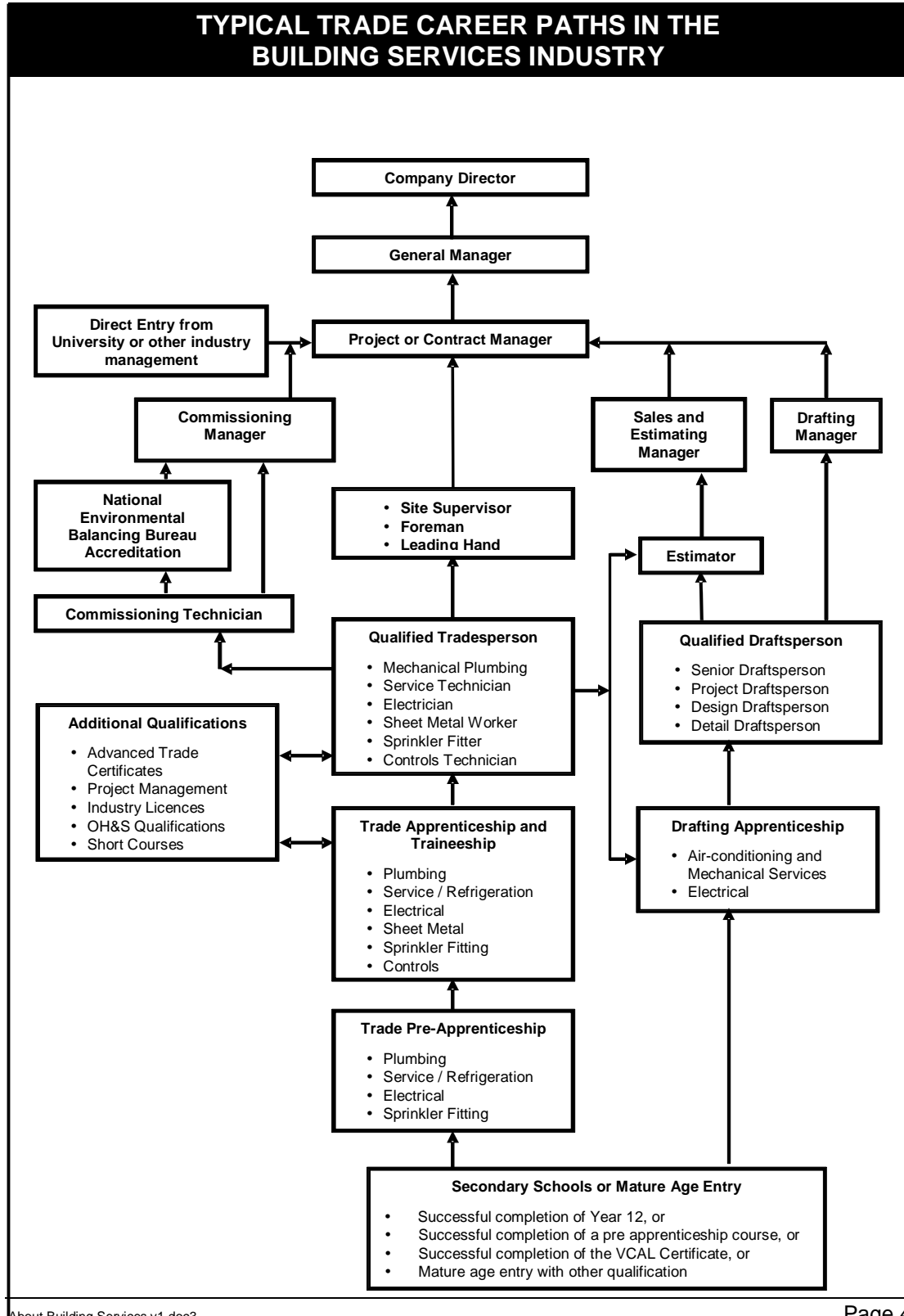
Building Services people work everywhere!

- Sporting facilities such as the Melbourne Cricket Ground and Telstra Dome
- Shopping Centres
- Arts and Entertainment Complexes such as the Victorian Arts Centre
- Office Buildings including large city buildings
- Factories and industrial plants
- Hospitals and medical facilities
- Computer Data centres
- Schools and Universities

- Power stations and water utilities

What are the Career Paths in the Building Services Industry?

There are a wide range of career opportunities and potential career paths in the building services industry. The diagram below shows some of the typical trade career paths.



What are the Educational Requirements?

To get started in the building service field you should think about taking subjects in the following areas:

- Maths – Algebra and geometry
- Science
- Physics
- Information Systems and Technology
- Technology and Technology Applications
- Design
- Materials
- Electrical and Electronics
- Mechanical drawing
- Computer applications
- CAD – Computer Aided Design
- Business
- Building and construction

Apprenticeship selection requirements at A.G.Coombs include:

- Successful completion of Year 12, or
- Successful completion of a pre apprenticeship course, or
- Successful completion of the Victorian Certificate of Applied Technology (VCAL) Certificate, or
- Mature age entry with other qualification

Can I do Work Experience?

Work Experience is offered to a limited number of secondary school students with an interest in a career in building services and students undertaking the VCAL Certificate or involved in a TAFE pre apprenticeship course. Work experience is usually offered as a 2 week block or 1 day per week for 8 weeks.

What's Involved in an Apprenticeship?

Apprenticeships require both “off the job” and “on the job training”.

Off the job training is received at TAFE Colleges and training providers. A.G.Coombs partner a number of TAFE and training organisations including:

- Holmesglen Institute of TAFE

- Royal Melbourne Institute of Technology
- Air Conditioning and Mechanical Contractors Association

On the job training is conducted on our worksites and at A.G.Coombs facilities at Moorabbin and Port Melbourne under the supervision and direction of expert and experienced staff. Our work sites are predominantly located within the Melbourne Central Business District or the Melbourne metropolitan area.

Details on the apprenticeships currently offered across the A.G.Coombs Group of companies are as follows:

Trade	Course & Qualification	Duration	Off the Job Training	Additional Part Time Training
REFRIGERATION MECHANIC	Certificate III in Engineering – Mechanical Trade – Air Conditioning	4 years	3 years (1 week's attendance every 4 weeks)	In the 4 th year- Advanced Commercial Refrigeration
PLUMBER – MECHANICAL SERVICES	Certificate III in Plumbing & Gas Fitting	4 years	3 years (1 week's attendance every 4 weeks)	At the completion of 2 nd year - Certificate IV in Engineering, Welding Ticket No. 3 and 3E At the completion of 3 rd year - Stage 3 Advanced Gas
FIRE PROTECTION	Certificate III in Sprinkler Fitting	4 years	3 years (1 week's attendance every 4 weeks)	At the completion of 2 nd year -Certificate I in Engineering – Basic Welding
SHEET METAL	Certificate III in Engineering Production (Sheet Metal)	1 year (Traineeship)	Training is provided "on the job"	
SHEET METAL	Certificate III in Engineering – Fabrication Trade	4 years	3 years (1 week's attendance every 4 weeks)	
DRAFTERS	Certificate IV in Drafting - Air Conditioning and Mechanical Services	4 years	1 day per week in first 12 months, then periodically after that.	At the completion of 2 nd year - Advanced Diploma in Technology (Air conditioning an refrigeration) 4 year part time night school course

1.1 The A.G.Coombs Apprenticeship Program

A.G.Coombs operates a structured and comprehensive apprentice program to ensure that apprentices make the most of their training opportunities and become effective and capable tradespeople with a great future in the industry.

A.G.Coombs Apprentice Supervisors look after the career interests of all apprentices providing support, career direction and mentoring to individual apprentices. Fortnightly reports and 3 monthly reviews ensure that training and on the job progress is monitored and supported. Individual training plans

are prepared for each apprentice and are a combination of formal “off the job” schooling, “on the job” training and experience, and additional specialised training courses in areas such as welding skills, particular plant such as compressors, and Occupational Health & Safety courses including; First Aid, Confined Space and Manual Handling. A.G.Coombs apprentices are encouraged to complete extra training in relevant areas.

A.G.Coombs actively engages with partner educational facilities to continually track training progress and to help ensure that the educational curriculum is appropriate to workplace and apprentice needs.

In the workplace apprentices are mentored by selected and experienced tradespeople who are at the top of their respective trade and have a demonstrated track record in supervising apprentices.

The Allan Coombs Training Award for best overall A.G.Coombs Group apprentice in any field was established to recognise educational and on the job performance and personal and community achievements and contribution. This award is conferred annually.

1.2 Awards and Industry Recognition

A.G.Coombs commitment to training and the development of its staff is well recognised in the building services industry.

1.2.1 Melbourne East Group Training (MEGT) Host Employer of the Year

Winner 2002

1.2.2 Air Conditioning and Mechanical Contractors Association (AMCA) Training Award

A.G.Coombs Apprentices were winners in 2004, 2002 and 1991 and finalists in 2003 and 1998

1.2.3 Master Plumbers and Mechanical Services Association of Australia Andrew Letten Gold Medal Award

A.G.Coombs Apprentices were winners in 1995 and 1967

1.2.4 Holmesglen Institute of TAFE

Best First Year Plumbing and Gas Fitting Apprentice 1999

1.3 Safety is Important to Us

Occupational Health and Safety is a major focus at A.G.Coombs. The well being of our employees is extremely important to us.

A.G.Coombs is one of the few organisations in the building services industry currently SafetyMAP accredited. SafetyMAP is a rigorous safety quality assurance system applied by the Victorian Government’s WorkSafe organisation, it requires adherence to highly demanding occupational health and safety standards and is subject to regular and independent auditing.

In recognition of our commitment to safety A.G.Coombs has been the recipient of the Master Builders Association Excellence in Health and Safety

Award in 2001, 2002, 2003, and a finalist in 2004. This is an outstanding record.

1.4 Where Can I Get More Information?

Your school Careers Advisor can provide you with additional information on the opportunities in the building services industry.

More information can also be found at the following websites:

www.amca.com.au

Air Conditioning & Mechanical Contractors Association¹

www.fpaa.com.au

Fire Protection Association of Australia

www.newapprenticeships.gov.au

New Apprenticeships

www.holmesglen.vic.edu.au

Holmesglen Institute of TAFE

www.rmit.edu.au

RMIT – Royal Melbourne Institute of Technology

www.bhtafe.edu.au

Box Hill Institute

www.coombs.com.au

A.G. Coombs Group Pty Ltd

¹ *This document is based in part on material from the Air Conditioning and Mechanical Contractors Association*