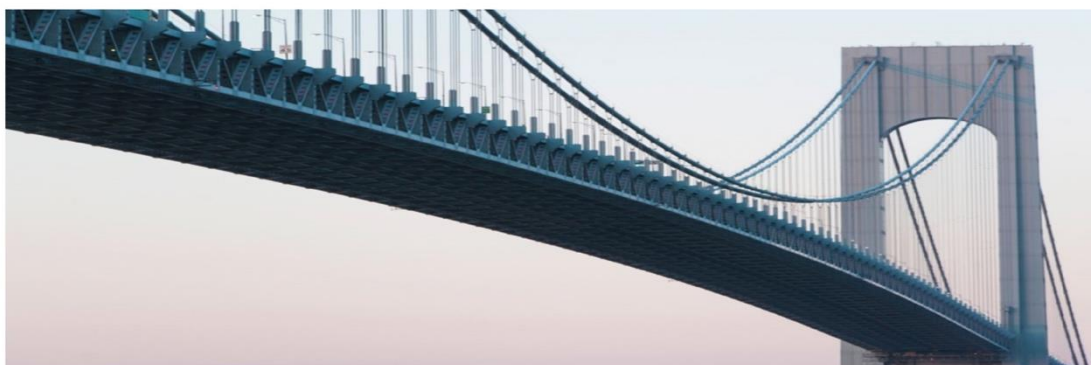
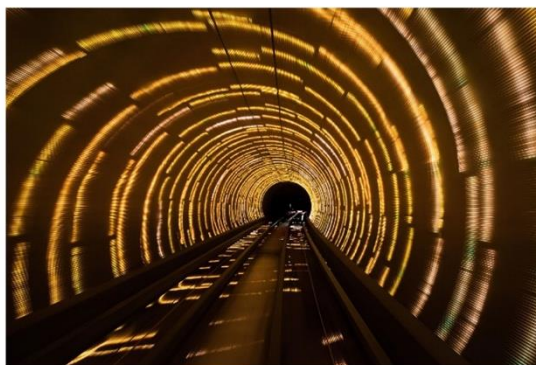
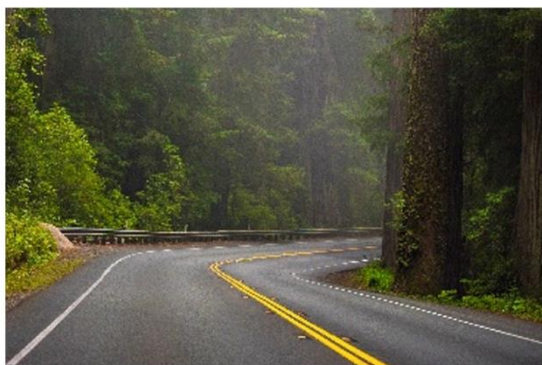


# Engineering Surveying Professional Australasia Pacific Certification Guide



## About GCA

The Geospatial Council of Australia is the peak body representing the interests of organisations and professionals, including new and emerging professionals working in the vast range of occupations for surveying, space and spatial in the digital world.

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## About ESP-AP Certification

Specialist Certification in Engineering Surveying is the official recognition by the Geospatial Council of Australia that a person has the necessary knowledge and experience to competently perform engineering surveys and associated activities. It benefits an employee by providing recognition and career opportunities and an employer by increasing their credibility to customers.

The Engineering Surveying Professional – Australasia Pacific (ESP-AP) Certification is open to all persons irrespective of membership status with the Geospatial Council. To achieve certification, you will have to fulfil the requirements of the relevant criteria.

A registered or licenced land surveyor may require ESP-AP certification to conduct engineering surveying work in an Australian State and Territory, if stipulated in infrastructure specifications.

This certification entitles a person to be recognised as a Certified Engineering Surveying Professional – Australasia Pacific (ESP-AP). Current certified professionals are listed in the ESP-AP Register on the Geospatial Council of Australia website.

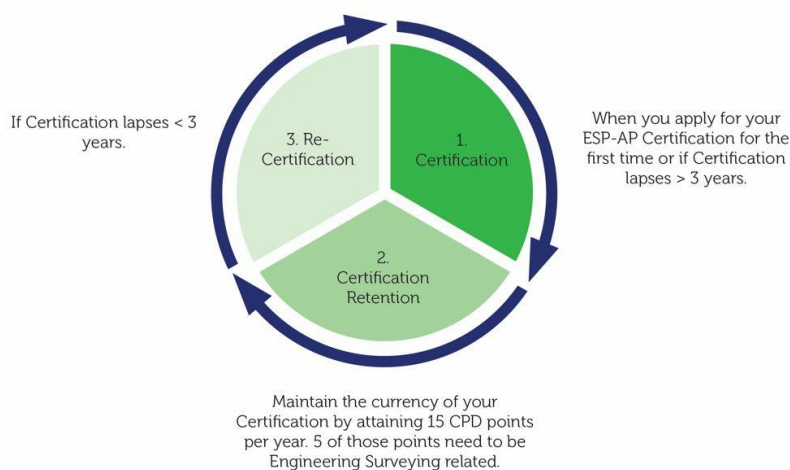
A professional who achieves the Engineering Surveying Professional – Australasia Pacific (ESP-AP) Certification status is eligible to use the post-nominal ESP-AP.

This Guide outlines the revised ESP-AP (Version 1.2) Certification process released October 2023.

## ESP-AP Certification Overview

The ESP-AP Certification process is a comprehensive framework designed to ensure the ongoing currency and expertise of Engineering Surveying Professionals. The process begins with initial certification, where candidates undergo a rigorous assessment to demonstrate their proficiency in the field.

To retain their certification and stay current in their practice, certified professionals must earn at least 15 Continuing Professional Development (CPD) points annually. Within this requirement, at least **5 CPD points** must be related to Engineering Surveying to maintain the specialised knowledge in the field.



## Application Intake

Certification intake for aspiring professionals takes place three times each year, with scheduled sessions occurring in the months of **March, July, and November**. The precise dates will be published on the official GCA website, ensuring transparency and accessibility for all candidates interested in pursuing certification.

This regularity in certification intake not only provides multiple opportunities for individuals to embark on their certification journey but also allows them to align their preparations with their preferred examination window.

## ESP-AP Competency Overview

The ESP-AP Competency Framework is a structured and comprehensive approach for defining, assessing and demonstrating knowledge, skills and abilities required for job roles associated with Engineering Surveying.

The Framework outlines specific competencies that are necessary to successfully perform duties as an Engineering Surveyor and provides a clear and objective framework for assessing an individual's level of competence. The Framework includes categories or domains of competencies, specific descriptors for each competency, performance criteria for assessing competency and allocated points or level of proficiency and evidence of Qualification and or Degree attained.

The ESP-AP Competency Framework is used by industry including Government, building and construction, engineering, town planning and surveying to guide recruitment, training, development, and performance management processes. It informs the eligibility for issuing a certification for a professional issued by the Geospatial Council of Australia.

The ESP-AP Competency Framework has been developed and approved by the ESP-AP Certification Committee and endorsed by Geospatial Council of Australia (GCA). GCA will assess applications based on evidence provided aligned to the Performance Criteria, which is a component of the Certification application.

The examples must align with the Competency Framework Structure with a minimum of three months duration in any of the sub-categories. The examples may be concurrent with a project.

There are three mandatory categories (Survey Control, Topographical and Construction Surveying).

A minimum of four sub-categories selected from the three mandatory categories is required in total.

### MANDATORY WORK EXPERIENCE EXAMPLES WITH SUPPORTING EVIDENCE:-

- **Survey Control** – one Sub-Category i.e. Primary, Medium or Simple.
- **Topographical** – one Sub-Category i.e. Complex or Simple.
- **Construction Surveying** – select a minimum of two Sub-Categories.

**Management** and **Cadastral Surveying** category is optional. The **Team Leader** and **Supervisor** components can be concurrent with other categories.

A full breakdown of each Category including the Descriptors and Performance Criteria is contained in Appendix A of this guide.

Competency Framework comprises: -

COMPETENCY FRAMEWORK STRUCTURE				
<b>SURVEY CONTROL (select at least one sub-category)</b>				
Primary	Medium	Simple		
<b>TOPOGRAPHICAL (select at least one sub-category)</b>				
Complex	Simple			
<b>CONSTRUCTION SURVEYING (choose a minimum of any two sub-categories)</b>				
Bridge	Large/Complex	Medium	Simple	
Road	Major Motorway	Major Arterial	Minor Arterial	Low Volume/ Urban/Rural
Earthworks	Substantial	Minor		
Drainage	Complex	Simple		
Water/Wastewater Networks	Large/Complex	Minor/Simple		
Retaining Structures	Substantial & Complex	Minor/Simple		
Tunnel	Major	Minor		
Dam	Major/Complex	Minor		
Port infrastructure	Major/Complex	Minor/simple		
Processing plant	Major/Complex	Minor/simple		
High Rise building	Above 3 levels	Max. 3 levels		
Rail	Major	Minor		
*Other (specify)	Major	Minor		
<b>MANAGEMENT (optional)</b>				
Team Leader	Supervisor			
<b>CADASTRAL SURVEYING (optional)</b>				
Cadastral	Cadastral boundary location			
<b>MANDATORY</b>	<b>SUB-CATEGORY</b>			

*Mandatory and optional elements.*

\*Other – this can relate to any engineering surveying related activities not previously covered but relevant to the project/work undertaken and demonstrates competency



## Pathways to ESP-AP Certification

There are two (2) pathway Provisions, **Qualification** based and **Long-Term Practice**, each comprising two (2) levels: -

### 1. Qualification-Based Provision

This applies to those candidates that hold a minimum of four years documented survey related work experience and in terms of educational achievement\*, one of the following levels:-

**Level A.** AQF/NZQF Level 6 Certification (Associate Degree in Surveying or Advanced Diploma in Surveying-related subjects) and five (5) additional Course Points covering one or more of the **12 Knowledge Areas**, as (set out below); OR

**Level B.** AQF/NZQF Level 7 Degree in Surveying related Qualification

If you are applying with an AQF or NZQF Level 6 you must acquire at least five more Course Points to meet the minimum 30-points requirement and be eligible under the education component. Additional points can be attained for the successful completion of individual subjects (courses/papers) whose content appears within one or more of the **12 Knowledge Areas of Engineering Surveying**.

The successful completion of course work aligned to the 12 Knowledge Areas will attract one point for every certified certificate submitted, regardless of whether the course provider is a tertiary institution, a Registered Training Organisation (RTO), recognised training provider or in-house learning and development program.

An example of additional education could be provided from a recognised equipment supplier in Industry. For example, uploading and testing surveying information for machine guidance during construction works.

Applicants will receive one Course Point for every certified certificate submitted. Applicants cannot claim Course Points for subjects completed in achieving the original undergraduate, postgraduate or certificate qualifications. The final decision regarding the validity of all course points lies with the Engineering Surveying Certification Panel.

**Applicants who claim Course Points must provide evidence of their achievements with an official transcript that states subjects by title or certified copies of Certificates.**

\*for overseas qualifications we will require confirmation of the Australian equivalency. You may provide the formal evidence or alternatively we may access this information independently.

### 12 Knowledge Areas:

1. Conceptualisation of space
2. Formalising spatial concepts
3. Spatial data models and data structures
4. Design aspects of Engineering Surveying projects and tasks
5. Spatial data acquisition, sources and standards
6. Exploratory spatial data analysis
7. Confirmatory spatial data analysis

8. Application of design to project (set out procedures)
9. Confirmation concepts of structures, facilities, and surrounds
10. Organisational and institutional aspects of Engineering Surveying
11. Professional, social and legal aspects of Engineering Surveying
12. Quality assurance aspects of Engineering Surveying

## 2. Long-Term Practice Provision

This applies to those candidates that hold: -

**Level A.** AQF/NZQF Level 5 Diploma of Surveying-related qualifications obtained during or before 2015 along with 10 years documented work experience OR

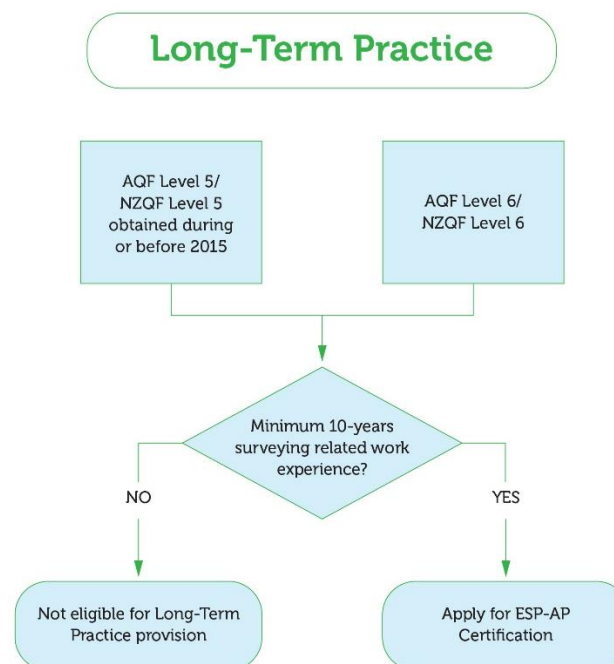
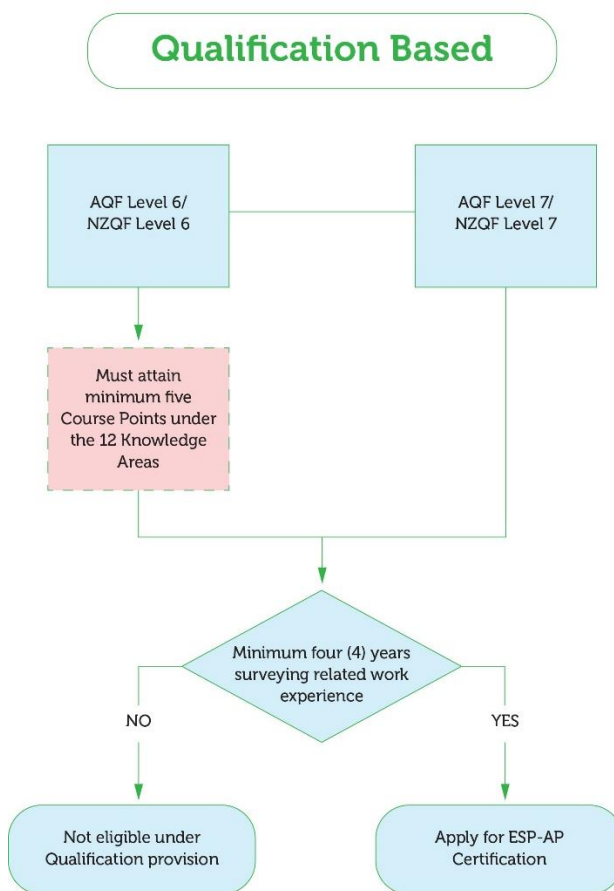
**Level B.** AQF/NZQF Level 6 Associate Degree in Surveying-related subjects or Advanced Diploma in Surveying-related qualification

Regardless of the Level achieved above, applicants must have a minimum 10 years of documented surveying related work experience.

The structure of the Long-Term Practice provision allows for candidates seeking to demonstrate competence through learning outcomes and demonstration of competence in the workplace.



## Eligibility Criteria of Long-Term Practice and Qualification Provision:



**Applicants must hold the minimum requirements, as set out in the diagram to be eligible to apply.**

## Application Process for ESP-AP Certification (Step 1.)

In preparing for your ESP-AP Certification application you are required to provide *mandatory* evidence of your competency as set out below and may provide supplementary materials as *optional* to support your application.

### Applicants are required to:

- a) Download the current Application for Certification Form from the [Geospatial Council of Australia](#) website.
- b) Collate the mandatory primary and optional secondary materials needed for the application.

#### a. Primary materials include:

- Current Resumé and ensure it includes:
  - Name of employer
  - Dates of employment with each employer
  - Position title (indicate whether the position is full-time, part-time, contract)
  - Duties
- Certified copy of all qualifications (if claiming) signed by a Justice of the Peace (JP)
- Work Experience examples (see work experience template and examples)
- Email from your current Employer/Supervisor/Client (see email templates)
- Referee's report (see email template)

**Note: Inclusion of the above documents is mandatory. The Certification Panel will not consider exceptions or exemptions to this requirement.**

#### b. Secondary Optional materials:

- Transcript of coursework
- Certificates of CPD completion/participation
- Awards
- Publications

Please note, following initial review of the information and documentation provided, **applicants may be requested to undertake a brief interview** (via videoconferencing) to confirm key details of their application. Appropriate notice will be provided and timing will be sought that is suitable for both parties.

## Additional Evidence

You may submit additional evidence in support of the application if you consider the certification process does not sufficiently recognise your engineering surveying skills. Such evidence would typically include, but is not restricted to, copies of professional licences or relevant certification, personal statements, letters of reference and affidavits.

However, consideration of this supporting material in awarding certification as an ESP-AP is at the discretion of the Engineering Surveying Certification Assessor Panel.

## Application Points Summary

Based on your pathway option, you will select and update the appropriate table in the application form and as shown in the example below, by inserting the total sum of:-

- Total Educational Achievements including additional Course Points claimed under the 12 Areas of Knowledge (*where relevant*)
- Combined total of your Professional Work Experience points, taken from the work experience examples prepared.

Qualification Based Application	Min. Requirement	Points
Educational Achievement	30	
Professional Work Experience	110	
Total Points		

Long-Term Practice Application	Min. Requirement	Points
Professional Work Experience	300	
Total Points		

### Key Steps for Application - Summary:

1. Complete the Application form and agree to the Acknowledgement and Code of Ethics
2. Determine which provision you qualify for i.e. Qualification Based Provision or Long-Term Practice Provision

3. Document your Educational Achievement including additional Course Points (if applicable)
4. Document your professional work experience using the templates and use examples aligned to the Competency Framework
5. Obtain Employer/Supervisor or Client email and Referee Report
6. Pay the application fee
7. Email the PDF of your application to [certification@geospatialcouncil.org.au](mailto:certification@geospatialcouncil.org.au)
8. Prepare to attend an interview – if requested

PDF files [can be combined](#) prior to submission and can also be compressed online at [Adobe](#).

## Retaining Certification - CPD Requirements (Step. 2)

The ESP-AP Certification is valid until the end of the first full financial year, following initial achievement. Once initial certification is achieved, to retain the currency of your Certification you are required to complete 15 CPD points **per financial year**, in line with the Geospatial Council's Certification CPD Policy. Additional points over and above the minimum requirement will not roll into the next period and lack of evidence may result in your ESP-AP status being removed.

It is important to note that in each CPD cycle, at a minimum of **five (5) CPD points** must relate to **Engineering Surveying**.

Certified professionals will be required to maintain records of the completed CPD, which may be subject to audit. Geospatial Council Members will be able to track and manage their CPD by logging in to the membership portal and updating their CPD record. There are no additional annual fees for full current Members in relation to retaining the ESP-AP Certification.

Non-members are required to track their CPD using the CPD template document and submitting their completed form to [certification@geospatialcouncil.org.au](mailto:certification@geospatialcouncil.org.au) by the 31 July each year. In addition, Non-members must also pay an annual fee of \$385 or \$215, dependent on the events or programs attended.

Certificants may be eligible for exemptions if they take leave, (extended sick, maternity/paternity, long service) are on a gap year or take a career break. Supporting documentation must be supplied and exemption will be applied proportional to the time taken per year, subject to approval.

GCA Member	Non Member
*No additional cost to retain ESP-AP Certification	*Yearly Certification fee \$385 or \$215 if min. 6 CPD points gained via GCA events
*15 CPD points with a min. 5 of those points relating to Engineering Surveying	*15 CPD points with a min. 5 of those points relating to Engineering Surveying
*Log-in to your membership portal to update CPD online	*Use the CPD tracker template to record your points & submit by 31 July each year

Failure to comply will result in removal from the ESP-AP Register and the post-nominal ESP-AP being revoked.

If three (3) consecutive years lapse without adequate evidence of attaining the required minimum 15 CPD points, you will be required to submit a new ESP-AP application (Re-certification).

## CPD Points

Type/ Category of Event	Allocation Points Per Hour (not including breaks)	Conditions
Attending GCA Hosted or Co-hosted Event/ GCA Member/Supporting Partner Event	1	Time allocation does not include breaks and social functions.
Attending Other Events	1	Max. eight (8) points per year
Papers & Peer Review	1	Point per hour of writing or reviewing.
Formal Course/Training	1	Per contact hours only.
Mentoring/Coaching	1	Max. six (6) points per year.
Self-paced Learning	1	Max. five (5) points per year.
Research & Development		
Teaching or Presenting at GCA Event	1	In addition to points claimed for attendance
Other Event - Teaching or Presenting		
GCA Volunteer - E.g. Area of Practice/Assessment Panel/Board/Chairperson/Committee/ Mentoring/Coaching/YEPs/Working Groups.	1	Max. five (5) points per year.
Engineering Surveying Related Activities - <i>refer to the Competency Framework</i>	1	Minimum five (5) points per year.

## Re-Certification- Lapsed ESP-AP (Step 3.)

### Re-Certification

Re-certification is required after a lapse of up to three years and follows a streamlined process and ensures that the certificants are still equipped to meet the industry's evolving standards and challenges. This multi-tiered approach ensures that ESP-AP-certified individuals are consistently updated and aligned with the latest advancements and best practices in Engineering Surveying. Applicants will need to complete and submit the following: -

- Application Form
- Submit a CPD record of the points accumulated in the last 12-months
- In accordance with the Competency Framework, include professional work experience examples with supporting evidence

Using the work experience template in Appendix B, applicants must provide a minimum of four examples with supporting evidence spanning the lapsed period. These examples must align with the Competency Framework Structure, with a minimum of three months duration in any of the categories. The examples may be concurrent with a project.

The application cost for Re-Certification is currently \$220 inc. GST for Geospatial Council Members and \$605 inc. GST for Non-members.

### New Application

Certifications that have lapsed for three years or more must apply under a new application. This means the applicant is to submit a new ESP-AP application with updated work experience examples, supporting evidence and references.

The application cost for a new ESP-AP application is currently \$330 inc. GST for Geospatial Council Members and \$850 inc. GST for Non-members.

## Assessment Panel

Each assessment will be overseen by a team of two carefully selected ESP-AP Assessors, each possessing significant experience as Engineering Surveyors. They will meticulously review your application form and conduct a reference check to validate your skills and work experience.

The assessment process is expected to be completed within a maximum period of four (4) weeks and notification of the outcome of each submission will be sent by the end of the next calendar month following the closing date for applications.

## Appeal

If a candidate has been denied certification, they can request their application be reviewed by an independent assessor. Only one appeal per application is permitted.

The basis for appeal would be if the candidate believed they were evaluated unfairly, believed that mistakes have been made in the assessment process, or believed that the results of an assessment were flawed. The appeal shall be made in writing to the GCA Certification team. An appeal must be filed within one (1) year from the date of the ESP-AP certification evaluation notification to the candidate.

## Code of Ethics

As holders of the ESP-AP Certificate, individuals are obligated to adhere to the high standards set forth in the [Geospatial Council of Australia \(GCA\) Code of Ethics](#). The GCA Code of Ethics serves as a guiding framework for professionals in the geospatial industry, emphasising ethical conduct, integrity, and responsible practices.

ESP-AP Certificate holders are expected to demonstrate a commitment to professionalism, honesty, transparency, and integrity for quality across all aspects of their work. You are required to prioritise the accuracy and reliability of engineering surveying standards.

By upholding the GCA Code of Ethics, ESP-AP Certificate holders contribute to the overall credibility and professionalism of the Geospatial sector in Australia.

## Confidentiality

The Geospatial Council of Australia (GCA) is committed to protecting personal information and will take all reasonable steps to secure the personal information it holds. The GCA understands the importance of privacy and is committed to collecting and handling personal information in accordance with all applicable privacy laws including the Australian Privacy Act 1988 (Cth) ('Privacy Act') and the Australian Privacy Principles ('APPs').

The GCA recognises that certification candidates may submit sensitive and proprietary data as part of their certification process and is committed to safeguarding such information. The GCA ensures that all confidential materials and information are handled with strict confidentiality protocols and security measures. Access to these materials is restricted to authorised personnel and validated Assessors involved in the certification process, and they are bound by confidentiality agreements.

All sensitive or personal information (e.g., driver's license number, maiden name etc.) may be removed or obscured from any document. These omissions are the only allowable marks that you may make to an official document. However, if this information is included, only Geospatial Council staff and the ESP-AP Certification members will view it.



## Application Fees

The Certification fees are: -

Application Type	Description	Member inc. GST	Non-member inc. GST
New Application	No previous application history or Certification has lapsed for 3+ years	\$330	\$850
Annual Certification	Each New Financial Year	N/A	\$385/\$215*
Re-Certification	ESP-AP lapsed <3-years	\$220	\$605

*Non-members are welcome to join the Geospatial Council immediately prior to submitting their application and access the Member rate. <https://geospatialcouncil.org.au/individuals/>*

Details of how to make payment including bank account information can be found on the application form.

\*Non-member fees for the annual certification will reduce to \$215 if the applicant can evidence that they have obtained six CPD points or more via GCA hosted or GCA Partner events.

**NOTE:** Payment in full is required before an application for ESP-AP certification is processed.

## Appendix A: Competency Framework

### Competency Framework Structure

COMPETENCY FRAMEWORK STRUCTURE				
<b>SURVEY CONTROL (select at least one sub-category)</b>				
Primary	Medium	Simple		
<b>TOPOGRAPHICAL (select at least one sub-category)</b>				
Complex	Simple			
<b>CONSTRUCTION SURVEYING (choose a minimum of any two sub-categories)</b>				
Bridge	Large/Complex	Medium	Simple	
Road	Major Motorway	Major Arterial	Minor Arterial	Low Volume/ Urban/Rural
Earthworks	Substantial	Minor		
Drainage	Complex	Simple		
Water/Wastewater Networks	Large/Complex	Minor/Simple		
Retaining Structures	Substantial & Complex	Minor/Simple		
Tunnel	Major	Minor		
Dam	Major/Complex	Minor		
Port infrastructure	Major/Complex	Minor/simple		
Processing plant	Major/Complex	Minor/simple		
High Rise building	Above 3 levels	Max. 3 levels		
Rail	Major	Minor		
*Other (specify)	Major	Minor		
<b>MANAGEMENT (optional)</b>				
Team Leader	Supervisor			
<b>CADASTRAL SURVEYING (optional)</b>				
Cadastral	Cadastral boundary location			
<b>MANDATORY</b>	<b>SUB-CATEGORY</b>			

\*Other – this can relate to any engineering surveying related activities not previously covered but relevant to the project/work undertaken and demonstrates competency

**Note: A condition of application for work experience is a minimum of 3 months duration in ANY of the 4 mandatory categories.**

Survey Control – Overarching					
This category can be stand-alone or incorporated into other categories					
Category	Sub-Category	Descriptors	Points Per Year	Performance Criteria	Evidence Examples
Survey Control	Survey Control Networks (Primary control)	Primary survey control networks for large scale projects. Connected to appropriate Geodetic datums. If incorporated in other work categories, then pro rata time against those projects	30	Performance criteria should include majority of the following: <ul style="list-style-type: none"> <li>• Control network design.</li> <li>• GNSS observations</li> <li>• GNSS processing by Least squares adjustment for Minimally constrained and Constrained adjustment.</li> </ul>	Evidence should include: <ul style="list-style-type: none"> <li>• GNSS network design</li> <li>• GNSS network adjustment reports</li> </ul>
	Survey Control Networks (Medium)	Terrestrial observations (for example, for bridge control networks). If incorporated in other work categories, then pro-rata time against those projects	25	<ul style="list-style-type: none"> <li>• Control network design.</li> <li>• Terrestrial observations (for example, for bridge control networks).</li> <li>• Levelling networks.</li> <li>• Least squares adjustments</li> <li>• Validate any existing survey control</li> </ul>	Evidence should include: <ul style="list-style-type: none"> <li>• network design</li> <li>• network adjustment reports</li> <li>• leveling reports</li> </ul>
	Survey Control Networks (Simple)	Could include infill control between primary survey control by traversing methodology. If incorporated in other work categories, then pro rata time against those projects	20	<ul style="list-style-type: none"> <li>• Terrestrial observations</li> <li>• Bowditch adjustment</li> <li>• Levelling</li> <li>• Validate any existing survey control</li> </ul>	Evidence should include: <ul style="list-style-type: none"> <li>• network design</li> <li>• survey control adjustment reports</li> <li>• Levelling reports</li> </ul>

Topographical Surveying (Mandatory)					
Category	Sub-Category	Descriptors	Points Per Year	Performance Criteria	Evidence Examples
Topographical	Topographical (complex)	<p>Includes majority of the following:</p> <p>Complex urban environments / high number of features. Major drainage features. Complex intersections. Complex bridges and extensive underground services</p>	25	<p>In addition to the survey control requirements, majority of the following should include:</p> <ul style="list-style-type: none"> <li>• Capture data by terrestrial observations.</li> <li>• Process and analyse data.</li> <li>• Create digital terrain model with contours</li> </ul>	<p>Supplied evidence should include majority of the following:</p> <ul style="list-style-type: none"> <li>• survey control reports</li> <li>• project description</li> <li>• hard copy drawings.</li> </ul>

Construction Surveying (Mandatory - minimum two Categories e.g. Bridge is one category)					
Category	Sub-Category	Descriptors	Points Per Year	Performance Criteria	Evidence Examples
Bridge	Bridge (Large/Complex)	Medium /complex activities plus majority of the following: Significant fabricated steel superstructures, incrementally launched or balanced cantilever construction, very heavy foundations, construction over navigable waterways.	35	Majority of the following should include: <ul style="list-style-type: none"> <li>• Setting out of works in accordance with contract specifications and tolerances,</li> <li>• Conformance checking and reporting,</li> <li>• As constructed survey</li> <li>• Processing of measurements,</li> <li>• Volume measurements</li> <li>• Monitoring (if required)</li> </ul>	Supplied evidence should include the following: <ul style="list-style-type: none"> <li>• project description</li> </ul> and the majority of the following*: - <ul style="list-style-type: none"> <li>• conformance reports</li> <li>• as constructed survey drawing or model</li> <li>• volume measurement reports</li> <li>• monitoring reports (if applicable)</li> </ul> <p><b>* NOTE:</b> Multiple evidence of the same sub-category is not required. For example, if three bridge (large/complex) types are submitted, only</p>
	Bridge (Medium / Complex)	Simple activities plus majority of the following: Complex geometry, super T's / T-roffs, major slipform piers, complex earthworks, cast in-situ piles, setting out with horizontal and vertical curve geometry.	30		
	Bridge (Simple)	Cast in situ reinforced concrete flat slab bridges, simple bridges, moderate earthworks, non-complex pile foundations, setting out abutments and piers without horizontal/vertical curve geometry.	25		
Road	Road (Major – motorways / multiple carriageways)	Major arterial activities plus majority of the following: Complex grade separated interchanges. Multiple carriageways. Motorways on new urban alignments.	35		

		Slipform large scale concrete pavements. Variable message signs & ITS work.			evidence of one is needed.
	Road (Major arterial)	Minor arterial activities plus majority of the following: Grade separated intersections. Duplication of major arterial roads. Heavy duty asphalt pavements. Complex service relocations.	30		
	Road (Minor arterial)	Low volume rural / urban plus majority of the following: multi-layer granular or simple A/C pavement. complex urban intersections. Earthworks exceeding 5m cut/fill. Complex drainage works including large size culverts/multiple bays. Moderately complex service relocation works.	25		
	Road (Low volume rural / urban)	Activities include majority of the following: Low complex at grade intersections. Multi-layer granular or simple A/C pavement. Low to Medium drainage works. Earthworks up to 5m cut/fill. Non-complex service relocation works.	20		
Earthworks	Substantial	Earthworks on major construction sites. Can include a range of activities from topsoil stripping, excavations and filling. If incorporated in bridge or road categories, then pro-rata time against those projects.	25		

	Minor	Earthworks can include a range of activities from topsoil stripping, excavations and filling. If incorporated in bridge or road categories, then pro-rata time against those projects.	15		
Drainage	Complex	Can include drainage systems and culverts. A drainage system can include an underground network of pipe culverts and / or box culverts connecting between field inlets, gully pits and access chambers. If incorporated in road categories, then pro rata time against that project	30		
	Simple	Culverts under roadways. If incorporated in road categories, then pro-rata time against that project	20		
Water / Wastewater network	Large / Complex	Water networks can include water main lines, hydrants, valves, meters, inspection chambers, inspection pits and envelopers. If incorporated in road categories, then pro rata time against that project	25		
	Minor / Simple	Water networks can include water main lines, hydrants, valves, meters, inspection chambers, inspection pits. If incorporated in road categories, then pro-rata time against that project	20		
Retaining structures	Substantial and Complex	Can include retaining wall pad / strip footings. Can include horizontal and vertical geometry and multiple lifts during construction. If included in bridge or road	30		



		categories, then pro-rata time against those projects			
	Minor / Simple	Can include retaining wall pad / strip footings. Simple geometry. If included in bridge or road categories, then pro-rata time against those projects	20		
Tunnel	Complex	Activities included: Setting out tunnel alignment (including changes in horizontal and vertical geometry), shape and size (profile) of tunnel and monitoring deformation and progress	35		
	Simple	Activities included: Setting out tunnel alignment (horizontal and grade), shape and size (profile) of tunnel and monitoring deformation and progress.	20		
Dam	Major/ complex	Applicant may specify details in the work experience examples (See Work Experience template)	35		
	Minor / simple	Applicant may specify details in the work experience examples (See Work Experience template)	20		
Port Infrastructure	Major / complex	Applicant may specify details in the work experience examples (See Work Experience template)	35		
	Minor / simple	Applicant may specify details in the work experience examples (See Work Experience template)	20		
Processing plant	Major / complex	Applicant may specify details in the work experience examples (See Work Experience template)	35		

	Minor / simple	Applicant may specify details in the work experience examples (See Work experience template)	20		
High Rise building	High Rise	Activities: High precision methodology of transferring horizontal and vertical survey control from ground floor to all floors to maintain building verticality axis and horizontal axis plane for height on columns and all floors. And to avoid twisting of columns.	35		
	Low Rise (Generally max. 3 levels)	Activities: Vertical survey control to maintain building verticality.	20		
Rail	Major	Applicant may specify details in the work experience examples (See Work experience template)	30		
	Minor	Applicant may specify details in the work experience examples	20		
Other (Specify)		Applicant may specify details in the work experience examples			

Management (Optional)					
Category	Sub-Category	Descriptors	One-Off Points	Performance Criteria	Evidence Examples
Management	Team leader	Can include leading multiple types of engineering surveying categories	10 bonus points	<ul style="list-style-type: none"> <li>Assess survey specifications and contractual survey requirements.</li> <li>Determine work procedures.</li> <li>Determine the most fit for purpose surveying equipment that can include terrestrial and GNSS</li> <li>Determine the most appropriate surveying methodologies</li> </ul>	<ul style="list-style-type: none"> <li>project description</li> <li>role description</li> </ul>
	Supervisor	Can include supervision of any type of engineering surveying categories	10 bonus points	<ul style="list-style-type: none"> <li>Supervising of any of the non-management construction surveying activities</li> </ul>	<ul style="list-style-type: none"> <li>project description</li> <li>role description</li> </ul>

Cadastral Surveying (Optional)					
Category	Sub-Category	Descriptors	One-Off Points	Performance Criteria	Evidence Examples
Cadastral	Cadastral boundary location	<p>Cadastral boundaries are often required to be shown on engineering drawings and/or electronic models.</p> <p>A disclaimer should be included to the effect that cadastral boundary information shown is subject to definition by a licenced Cadastral Surveyor.</p>	<p>25 bonus points</p> <p>(to be claimed for one year in total)</p>	<p>Majority of the following should include: -</p> <ul style="list-style-type: none"> <li>• Undertake sufficient cadastral plan searching from relevant authority</li> <li>• Undertake survey connections from survey control to cadastral reference marks and/or cadastral boundary marks</li> <li>• Calculate cadastral boundaries from adopted survey information from cadastral plans</li> <li>• Draft calculated cadastral boundaries on a plan/s or electronic model</li> </ul>	<ul style="list-style-type: none"> <li>• Project Description</li> <li>• <i>Example:</i> 1 x plan showing cadastral boundaries for a topographical survey</li> <li>• Calculation reports</li> <li>• Verified by a cadastral (registered/licenced) surveyor</li> </ul>

## Appendix B: Professional Work Experience

### Work Experience Template

<b>Work Experience Example Number:</b> Click or tap here to enter text.		
<b>Employer/Supervisor/Client/Referee Name:</b> Click or tap here to enter text.		
<b>Project Description:</b>  <i>Use the description examples from the Competency Framework to assist. In addition, describe the name, location and date of the project works. <b>You may also include any relevant links to the project.</b></i>  <i>See the example for guidance.</i>		
<b>Category:</b> <i>Refer to Competency Framework</i>	<b>Sub-category:</b> <i>Refer to Competency Framework</i>	
<b>Responsibilities:</b>  <i>Describe in detail what you personally did that directly addresses the Performance Criteria of the Framework, including validating certain methodologies being utilised in preference to other options.</i>		
<b>Performance Criteria:</b>  <i>List the relevant Performance Criteria relating to each Category undertaken for this project work.</i>  <i>(refer to the Competency Framework)</i>		
<b>Supporting Evidence:</b>  <i>Supply any evidence such photos, sketch diagrams, construction drawings, communications etc and reference by way of dot points here.</i>  <i>NOTE: if applicable, you may remove or redact any commercially sensitive information</i>		
<b>Duration (MM/YY to MM/YY):</b> <i>Pro-rata the time if the Category/Sub-category is a component of the construction surveying works.</i> <b>Months:</b>	<b>Points Per Year:</b> <i>Refer to Competency Framework</i>	<b>POINTS SUB-TOTAL:</b> <i>Formula for calculating points is:-</i>  <i>Duration/12 months (or 52 if in weeks) x Points Per Year = Points (round up to the first decimal place)</i>

## Work Experience Example 1

<b>Work Experience Example Number: 1</b> <b>Employer/Supervisor/Client/Referee Name: Joe Bloggs</b>		
<b>Project Description:</b> The project is a 2-lane x 3 span 50-metre concrete bridge at XXXXXX constructed in 2016. It consists of 3 piers with different skew angles for each pier and different skew angles for the abutments. The geometry has a horizontal curve throughout. The vertical geometry starts with a vertical grade that transitions to a vertical curve at about mid span and continues this vertical curve geometry to the end of the bridge. There is also a cross fall on the bridge deck. <a href="http://www.projectworkexample1-bridge.com.au">www.projectworkexample1-bridge.com.au</a>		
<b>Category:</b> Survey Control	<b>Sub-category:</b> Survey Control Networks (Medium)	
<b>Responsibilities:</b> I was responsible for carrying out the following works:- <ul style="list-style-type: none"> <li>Validating the existing survey control</li> <li>Developing a network design suitable for bridge construction works</li> <li>Placing suitable survey marks that meet the rigour for stability and avoiding the construction area</li> <li>Undertaking terrestrial observations (6 sets of observations using a 3" precision Total Station)</li> <li>Carrying out a least squares adjustment for the horizontal control</li> <li>Undertaking precise levelling using a digital level</li> <li>Carrying out a pro-rata adjustment after meeting required disclosure requirements of the vertical observations.</li> </ul>		
<b>Performance Criteria:</b> <ul style="list-style-type: none"> <li>Control network design</li> <li>Terrestrial observations</li> <li>Least squares adjustments</li> <li>Leveling runs</li> <li>Validation of existing control</li> </ul>		
<b>Supporting Evidence:</b> <ul style="list-style-type: none"> <li>Least squares adjustment results for horizontal location</li> <li>Levelling results with pro-rata adjustment – initial and regular levelling checks throughout the construction process</li> <li>Diagram of survey control network</li> </ul>		
<b>Duration</b> <b>(MM/YY to MM/YY):</b> 01/16 to 02/16 <b>Months:</b> One Month	<b>Points Per Year:</b>  30	<b>POINTS SUB-TOTAL:</b>  2.5

## Work Experience Example 2

**Work Experience Example Number: 2**

**Employer/Supervisor/Client/Referee Name: Jane Bloggs**

**Project Description:**

The project is a 2-lane x 3 span 50-metre concrete bridge at XXXXXX constructed in 2016. It consists of 3 piers with different skew angles for each pier and different skew angles for the abutments. The geometry has a horizontal curve throughout. The vertical geometry starts with a vertical grade that transitions to a vertical curve at about mid span and continues this vertical curve geometry to the end of the bridge. There is also a cross fall on the bridge deck.

[www.workexperienceconcretebridgeexample.org.au](http://www.workexperienceconcretebridgeexample.org.au)

**Category:**

Bridge

**Sub-category:**

Medium / Complex

**Responsibilities:**

In addition to establishing the survey control (see work experience No. 1), I was responsible for undertaking the following works:

- Setting out, conformance checks and as constructed survey for:
  - Bored Piles
  - Abutment blinding
  - Headstocks
  - Deck units (concrete girders)
  - Deck (including concrete volume calculations and conformance checks for steelwork)

**Challenges:**

The complex structure of horizontal and curve geometry and cross falls required challenges for dealing with the setting out and conformance checks. For the conformance checks for the setting out of the curved surface of the concrete deck.

By creating a "wire frame" three-dimensional (3D) model using 12d model CAD software from the information on the construction drawings, I was able to upload the string data from the electronic 3D model to a survey controller unit for a robotic total station to enable setting out.

For setting out and conformance checks for the deck levels, I was able to construct cross sections from the main alignment string cutting to design surface strings of the outer top design surface and upload this data in the form of an Extensible Markup Language file (xml) file (which is a textual data format that can define geometric parameters). This methodology allowed for very quick setting out anywhere on the deck surface and conformance checks anywhere on the deck surface eliminating manual calculations. One of the main advantages of using xml files is that the geometric parameters of horizontal & vertical alignments and cross sections allows for setting out on a curved surface as opposed to using surface triangular irregular networks (tin) which creates flat surfaces within a triangular mesh.



I carried out an As Constructed survey for the following bridge elements during the construction process as follows:

- Bridge piles
- Abutments
- Headstocks
- Deck units (concrete girders)
- Deck

From the survey of each bridge element, I was able to create a 3D model of the constructed bridge.

#### Performance Criteria:

- Control network design
- Terrestrial observations
- Least squares adjustments
- Leveling runs
- Validation of existing control

#### Supporting Evidence:

Photos during each stage of construction showing:

- Photo 1: Construction of bridge piles
- Photo 2: Construction of abutments including set out lines on formwork
- Photo 3: Set out lines on formwork for headstocks
- Photo 4: Set out lines on headstocks for location of girders
- Photo 5: Markup of formwork for deck construction – prior to concrete pour
- Photo 6: Steelwork for deck prior to concrete pour
- Photo 7: Completed bridge
- Conformance check results – tabular detail (meeting tolerance requirements) and diagrams
- As constructed survey – 3D model format that enables viewing in Autodesk Navisworks Freedom software

**Duration:**  
(MM/YY to MM/YY)  
04/16 to 08/16

**Months:**  
4 Months

**Points Per Year:**

30

**POINTS SUB-TOTAL:**

10

## How to Calculate Professional Work Experience Points

The minimum Professional Work Experience requirement for certification as an ESP-AP under the Long-Term Practice Provision is 300 points and for the Qualification based provision, the minimum is 110 points.

To calculate the Work Experience Points for each template/work experience example, you will need the following information:-

1. Duration in Months
2. Points Per Year (refer to the Competency Framework)

Based on the measurement of the duration stated in your example, select the relevant formula below for calculating the sub-total of points, rounded up to the first decimal place: -

$$\text{Duration in Months} / 12 \times \text{Points Per Year}$$

### EXAMPLE

Road Construction Project			
Category	Duration	Points Per Year	Sub-Total
Survey Control Network (Simple)	1 month	20	1.7
Road (Major Arterial)	4 months	30	10
Retaining Structure	3 months	30	7.5
Drainage	2 months	25	4.2
Earthworks	0.69 month	20	1.15
TOTAL POINTS			24.55

Remember to transpose the total of all your work experience points into Application Summary table, on the Application form.

## Appendix C: Email Templates & Referee Report

Regardless of whether you are applying under the Qualification provision or Long-Term Practice, based on your employment status you will need to provide details for two different individuals:-

Employed	Self-employed
Employer/Supervisor Email	Client Email
Referee Report	Referee Report

Ensure you insert the relevant name of the Employer/Supervisor/Client/Referee into your Work Experience templates.

The Employer/Supervisor email is a crucial component of the assessment process, as it helps validate the candidate's skills and work experience, particularly in the field of engineering surveying. When providing a response, the Employer or Supervisor should include the following key information:-

1. **Contact Information:** Begin with the basic contact details, including the referee's name, title, company, phone number, and email address.
2. **Employment Details:** Specify the applicant's job title, dates of employment, and a brief description of their responsibilities within the organization.
3. **Projects Delivered:** Describe the engineering surveying projects on which the applicant worked during their tenure. Include project names, scopes, locations, and any notable aspects that highlight the applicant's contributions and responsibilities.
4. **Duration of Collaboration:** Indicate the duration of the applicant's involvement in each project, emphasizing their start and end dates, to provide a clear timeline of their experience.
5. **Validation of Skills:** Assess and verify the applicant's proficiency in engineering surveying by elaborating on specific skills, techniques, and methodologies they applied during the projects. Highlight any innovations, problem-solving abilities, or leadership roles they undertook.
6. **Quality of Work:** Comment on the quality of the applicant's work, their attention to detail, and their ability to meet project objectives and industry standards.
7. **Team Collaboration:** Describe the applicant's teamwork and collaboration skills, including interactions with colleagues, clients, and other stakeholders. Emphasize their ability to work effectively in a group setting.
8. **Adherence to Regulations and Safety:** If relevant, mention the applicant's adherence to safety protocols, regulatory requirements, and ethical standards in the field of engineering surveying.
9. **Overall Recommendation:** Provide an overall assessment of the applicant's suitability for ESP-AP Certification based on their performance, skills, and contributions to engineering surveying projects.
10. **Contact Availability:** Include a statement indicating the referee's willingness to provide additional information or answer any questions that may arise during the assessment process.

By including these details, Employers and Supervisors can help ESP-AP Certification Assessors gain a comprehensive understanding of the applicant's professional background and capabilities in engineering surveying. This information is vital in ensuring that certified professionals meet the highest industry standards and possess the necessary skills to excel in the field.

Use the text in the template as a guide for the email, ensuring your Employer/Supervisor includes some of the key information mentioned previously, as well as their full email signature with position and contact details.

You may wish to provide your Employer/Supervisor a copy of the key information section to give further context and manage expectations.

PDF the email and include it in your application.

### Employer/Supervisor Email Template

<name of candidate> has been employed as a <appointed position> at <organisation name> for <duration>.

- **Projects delivered:** *<provide details>*
- **Duties carried out:** *<provide details>*

*See example below: -*

***Construction Surveying***

*Establishing and or validation of survey control. Setting out works to enable construction of infrastructure. And undertaking all conformance and As Constructed Survey requirements (List key tasks and complexity of project, months/years and degree of responsibility)*

- **Skills:** *<provide details>*

*For example: - Survey equipment used, Data processing software etc*

- **Overall Recommendation:** *<provide details>*

I endorse <name of candidate> and confirm they have met the expected performance requirements as outlined above.

I understand that the Engineering Surveying Certification Panel does not expect me to be able to vouch for the entire application and that any errors are solely your responsibility.

If the Panel have any questions, they may contact me on the details below.

## Additional Notes

- Immediate Supervisor – The administrative officer who oversees your professional duties, tasks, or operations.
- An individual with a higher position than an immediate Supervisor may also send the email. A peer, partner, or subordinate may not.
- If you are unemployed, please obtain a letter from a past Employer.

## Client Email Template

A client reference for ESP-AP Certification applicants plays a crucial role in validating the candidate's skills and expertise from the perspective of those for whom the work was performed. When providing a client reference, key information to include: -

**Contact Information:** Basic contact details, including the client's name, organisation, phone number, and email address.

**Project Engagement:** Specify the project for which the applicant provided engineering surveying services. Include details such as project name, scope, location, and the dates during which the project was undertaken.

**Work Overview:** Provide a brief overview of the engineering surveying work the applicant performed for your organisation. Highlight the specific tasks, responsibilities, and contributions that the applicant made to the project.

**Project Outcome:** Describe the impact of the applicant's work on the project's success. Highlight any achievements, improvements, or value-added aspects resulting from their engineering surveying expertise.

**Communication and Collaboration:** Comment on the applicant's communication skills and their ability to collaborate effectively with your organisation throughout the project. Mention any instances of problem-solving or adaptability to changing project requirements.

**Adherence to Standards:** Assess the applicant's adherence to industry standards, regulations, and any specific requirements relevant to the project. This demonstrates their commitment to quality and compliance.

**Client Satisfaction:** Share your overall satisfaction with the applicant's performance and the quality of their work. Discuss any positive experiences, feedback from stakeholders, or notable achievements related to the project.

**Recommendation:** Provide an overall recommendation regarding the applicant's suitability for ESP-AP Certification. Indicate whether you would recommend their services to others seeking engineering surveying expertise.

**Contact Availability:** Include a statement indicating your willingness to provide further information or clarify any details about the applicant's work or performance during the project.

A client reference that includes these key points will help ESP-AP Certification assessors gain valuable insights into the applicant's professional capabilities and their ability to meet the needs and expectations of clients in the field of engineering surveying.

If you are self-employed or a business owner you may wish to provide a client with a copy of this section to give context and guidance, particularly around the key points stated above.

Please use the following template for your client communication, remembering to PDF the email and include it in your application: -

Dear <insert applicant's name>

As your client, I am pleased to send this message in support of your application for certification as an Engineering Surveying Professional – Australasia Pacific (ESP-AP).

I can attest that you <ARE/WERE> our <CONTRACTOR/CONSULTANT> for carrying out <TYPE OF WORK> from <START DATE> until <NOW/END DATE> and performed to our complete satisfaction.

<INCLUDE SOME KEY INFORMATION POINTS>

If the Panel have any questions, please contact me on the details below.

## Referee Report

A Referee report should be from a peer or current Supervisor and be contactable by the Panel, as part of the application process. While contacting the Referee is not compulsory, it may be an option the Panel wish to pursue.

The report from your Referee can be emailed to you. The subject line of the email should be “ESP-AP Referee Report” and the body of their “report” should include the following information: -

- a) Referee's name and contact details
- b) Referee's title and qualifications
- c) Length of time the referee has known you
- d) Relationship to you
- e) Brief evaluation of your skills and qualities

Save the report as a PDF and include it with your application submission.

## Application Checklist

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### LONG-TERM PRACTICE

- ☐ Application Form inc. Acknowledgement and Code of Ethics
- ☐ Résumé
- ☐ Work Experience examples (minimum of four)
- ☐ Evidence of work experience (photos, video files, plans etc)
- ☐ One email template from either Employer, Supervisor or Client
- ☐ Referee Report including their contact details
- ☐ Payment of fee

### QUALIFICATION BASED APPLICATION

- ☐ Application Form inc. Acknowledgement and Code of Ethics
- ☐ Certified copy of qualification(s) and transcripts for courses completed (Certified by a Justice of the Peace) including certificates obtained through 12 Areas of Knowledge Course Points
- ☐ Résumé
- ☐ Work Experience examples (minimum of four)
- ☐ Evidence of work experience (photos, video files, plans etc)
- ☐ One email template from either Employer, Supervisor or Client
- ☐ Referee Report including their contact details
- ☐ Additional relevant evidence e.g. certificates of CPD attendance etc
- ☐ Payment of fee

Email the PDF of your submission to [certification@geospatialcouncil.org.au](mailto:certification@geospatialcouncil.org.au)