



NZIS Admissions Panel

2015/2016 Annual Circular

This circular is published in July each year and has been compiled for the benefit of those seeking admission as full members of the Institute and or licensing as a cadastral surveyor. For those seeking a license the circular should be read in conjunction with the statutory requirements, which are contained in the Cadastral Survey Act 2002.

Graduates are recommended to carefully read the contents of this Circular including the Appendix (NZ Institute of Surveyors Admissions Policy and competencies for NZIS membership), and to consult with members of the profession about the practical aspects of the surveying requirements.

A pass in the Professional Entrance Examinations will show that the candidate has sufficient competency for both entry as a Member of the New Zealand Institute of Surveyors and for the granting of a licence by the Cadastral Surveyors Licensing Board.

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For further information on examinations please refer to the Admission Panel web page on www.surveyors.org.nz: https://www.surveyors.org.nz/Category?Action=View&Category_id=748

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1. NZIS EXAMINATIONS CALENDAR 2015/2016

Cadastral Law Examination

2016

The following for timetable for the examinations to be held on Tuesday, 9th February 2016 will apply:

15 January 2016

Closing date for applications to sit 2016 Cadastral Law Examination

27 January 2016

Examination Entry and Identification form sent to candidates for 2016 Cadastral Law Examination.

1 February 2016

Assignment for Research component of Cadastral Law Examination forwarded to candidates by email

9 February 2016

Date of 2016 Cadastral Law Examination

9 March 2016 (Approximately)

Results of written examination will be sent out when available.

Answer scripts of the written examination will be returned to candidates when available.

Professional Entrance Examinations 2016

7 March 2016

Closing date for applications to sit April 2016 Professional Entrance Examinations

13 March 2016

Timetables sent to eligible candidates to sit April 2016 Professional Entrance Examinations

12 April 2016

Start of April Professional Entrance Examinations

1 July 2016 (Approximately)

Publication of NZIS Admissions panel 2016/2017 Annual circular

19 August 2016

Closing date for any exemptions for November 2016 Professional Entrance Examinations

30 September 2016

Closing date for applications to sit November 2016 Professional Entrance Examinations

7 October 2016

Timetables sent to eligible candidates for November 2016 Professional Entrance Examinations

14 November 2016

Start of November Professional Entrance Examinations

2017

Cadastral Law Exam

2. CADASTRAL LAW EXAMINATION EXPLANATORY NOTES

- (a) The 2015 Cadastral Law Examination will be held on Tuesday, 9 February 2015.
- (b) Applications to sit the 2015 examination together with the required fees are to reach the Membership Coordinator, NZIS on or before 16 January 2016.
- (c) The examination will be held from 9:00 a.m. to 11:00 a.m. on the date shown above. Applications on the prescribed form together with the fee of \$200.00 plus GST (NZIS Members) and \$250.00 plus GST (non-members) must reach the Membership Coordinator on or before the closing date. An application form is included in this circular.
- (d) Intending applicants are to note that late or incomplete applications will not be accepted.
- (e) To be eligible to sit the examination, applicants must hold an approved degree in surveying and have had not less than 10 month's post-graduation practical experience in land title surveying in New Zealand at the time applications close. For the purpose of this section, post-graduation means the date that the University has declared that the requirements for the degree have been fulfilled. Applicants are required to provide written confirmation from the University that the requirements for completing the degree have been fulfilled and that they are entitled to apply for graduation.
- (f) An overview of the legislation that will be covered in the 2016 written examination section will be available on the NZIS website at www.surveyors.org.nz at the start of October 2015.
- (g) The examination will consist of two separate parts.
 - Research Component. This part of the examination is designed to test the candidate's experience and research ability and will be based on a case study assignment. The assignment will be emailed to candidates 10 days prior to the written examination and is to be handed into the Examination Supervisor when sitting the written examination component. The research component of the examination will be assigned forty percent (40%) of the total marks for the overall examination. No correspondence will be entered into between the Examiner/Institute and the candidates. Guidelines on the maximum number of words to be used in this part of the examination will be provided to candidates.
 - Written Examination. This part of the examination is to consist of short answer questions and is to be sat by candidates on a specified day at an approved examination venue. The examination will be of two hours duration and is designed to test core competencies. Sixty percent (60%) of the total marks for the overall examination will be assigned for this part of the examination. Some choice will be provided in the examination which will allow the candidate to drop one question from the total.

The pass mark for the overall examination is sixty percent (60%) and candidates are required to attain a pass mark of at least fifty (50%) in each of the research and written parts of the examination.

- (h) The written examination will be held at a number of locations throughout New Zealand. Details of the location and venues will be advised to candidates prior to the examinations.
- (i) Candidates will be sent an Examination Entry and Identification Form approximately one week after the closing date. Entry to the examination venue is by means of presentation of this form to the Examination Supervisor.
- (j) A pass in the examination is considered to substantially fulfil the requirements of Section 2 (Land Law, Land Tenure Systems and Land Boundary Definition) of the Admissions Policy (Appendix 1). Candidates may be required to also answer questions relating to Section 2 during the Professional Interviews.

3. PROFESSIONAL ENTRANCE EXAMINATION REQUIREMENTS

3.1 General

- (a) The Professional Entrance Examinations will be held during the following weeks:
- Week commencing 12 April 2016.
 - Week commencing 14 November 2016.
- (b) Application forms and fees together with Forms 2, 3, 4 and 5 and all assignments are to reach the Knowledge Manager, New Zealand Institute of Surveyors as follows:

February Examination — 7 March 2016.

November Examination — 30 September 2016.

Completed applications and assignments are to be forwarded either by hand or by courier to:

Membership Coordinator
New Zealand Institute of Surveyors
Level 3, Gleneagles House
69 – 71 The Terrace
Wellington 6011

- (c) The fee of \$800.00 plus GST (NZIS Members) and \$1,000.00 plus GST (non-members) must accompany the application. For those who are seeking or will seek accreditation in the Hydrographic Surveying discipline and thus require only a restricted examination (see Section 3.2.7), the fee will be reduced by \$400.
- (d) Candidates are advised to familiarise themselves with the requirements of the NZIS Admissions Policy (Appendix to Circular).
- (e) The purpose of the Entrance Examination Requirements is to:
- Ensure candidates have the required practical experience
 - Ensure candidates demonstrate they meet the competencies as set out in the Appendix
 - Assess candidates' general suitability for membership of a professional body.

- (f) To be eligible to attend the Professional Entrance Examinations, applicants must hold a degree in surveying with at least two year's post-graduation practical experience in an approved professional environment. For the purpose of this section, post-graduation means the date that the University has declared that the requirements for the degree have been fulfilled. The practical experience shall be not less than 24 calendar months beginning from the time notification of the university's requirements of the degree have been met has been received and the closing date of applications to sit the examinations. For the purposes of calculating practical experience this is to be calculated at the rate of 20 days per month (e.g. 4,000 hours over period of 24 months or more).
- (g) If an applicant intends seeking a cadastral surveying licence only, the following rules apply:
- At least 12 months of this experience must be in land title surveying, six months must be in land development engineering and three months in the planning process, subdivisional consents and their implementation.
 - Such candidates must appear before examiners in the Spatial Measurement, Cadastral Surveying, Land Development Engineering, Planning Design and Resource Management, Geodetic
 - Surveying, GIS and Professional Practice disciplines. However, they will only be examined in the competencies as listed under Cadastral Surveying Column (b) in the Appendix.
 - Candidates must also have passed the written examination on NZ Cadastral Law/Acts and Regulations Examinations affecting surveys within the previous 5 years.
 - Other details are given in Section 3.5 - Licensing.
- (h) For those candidates seeking membership of the NZIS as well as a Cadastral Surveying Licence **complete competency** in the Spatial Measurement, inclusive of the geodetic project, and the Cadastral Surveying disciplines will be required along with full competency in at least two other discipline areas.
- (i) A pass in the NZIS Professional Entrance Examinations, as set out in Section (g) above, will be accepted as meeting the competency standards for the issue of a licence by the Cadastral Surveyors Licensing Board (CSLB) to undertake cadastral surveys.
- (j) Except as provided, all assignments as prescribed in this Circular are required to have been produced post-graduation — i.e. after having fulfilled all the requirements for the BSurv, or equivalent degree.

References may be made to projects or reports completed during the undergraduate course of study but any such work should not form the substantive part of the project submitted to the Admissions Panel.

- (k) The NZIS Admissions Panel has a policy that provides for a possible reduction of the practical experience requirements for graduates who hold appropriate tertiary qualifications in land, spatial or surveying related disciplines e.g. NDS or an equivalent examination. However, it should be noted that in no circumstances will any reduction in the required experience be given.

Exemptions apply at the Panel's discretion on a case by case basis and graduates must make application for this exemption. Candidates should apply as soon as possible after graduating, but not later than six months before the examinations, in order that individual cases may be considered.

Applications for any such reductions need to contain full details of:

- Certificate held
- Work experience, including employers, broken down for periods before and after obtaining the certificate prior to attending the university.

- (l) Candidates must refer to the Admissions Policy Appendix to determine the competencies relevant to their chosen disciplines.

- (m) The examiner may modify requirements for any of the projects. Applications for any modification should be made at least six months before the Professional Entrance Examination, in order that the examiner may consider individual cases.

However, graduates should realise that approval of modifications is not given lightly and examiners generally expect the requirements of the project to be adhered to. In many cases it is possible for the candidate to extend the size of a project beyond the client's requirements in order to obtain a project that complies with the examination requirements.

- (n) A different examiner will interview candidates in each discipline. Interviews will cover competencies listed both in that section and may cover any other section where competencies for that particular discipline occur. Examiners questions may also cover Professional Practice where it relates to the discipline, as well as any projects required in the relevant prescription for the discipline.

- (o) The Admissions Panel may issue a partial pass in the Professional Entrance Examinations. However, a candidate who receives requisitions on more than 50% of the projects submitted will be required to attend a subsequent set of Professional Entrance Examinations and will be re-examined in all of his or her nominated disciplines. The candidate will also be required to pay a further examination fee. Where the Admissions Panel imposes requisitions in specific areas, candidates may submit each requisition immediately on completion of that requisition. All requisitions are required to be completed within 6 weeks from the date of notification unless otherwise agreed by the Admissions Panel.

- (p) Candidates are advised that an appropriate standard of dress and presentation is expected at the Professional Entrance Examinations.

3.2 Project Requirements

In order to assess candidates' competencies for membership of the NZIS, projects in the chosen disciplines are to be submitted as outlined in Sections 3.2.1 to 3.2.10 below.

For candidates seeking a cadastral surveying licence only, the following project requirements will apply –

- Spatial measurement – no project is required but oral examination of any required competencies in 3.2.1 below can be expected.
- Topographical and miscellaneous – projects as detailed in 3.2.1.2 below are required, except that only one miscellaneous survey is required.
- Cadastral – full projects as detailed in 3.2.2 below are required.
- Land development engineering – no project is required, but oral examination of any competencies listed under 3.2.3 below can be expected.
- Planning, design and resource management – either an urban development and subdivision or a rezoning project as detailed in 3.2.4 below is required.
- Geodetic – no project required but oral examination in any of the competencies listed in 3.2.5 below can be expected.

3.2.1 SPATIAL MEASUREMENT

While the relevant examiners will discuss professional survey practice and the responsibilities of a surveyor during their interviews, this examination will focus upon the general principles of spatial measurement. This includes the principles, use and adjustment of survey instruments, including the practical use of aerial photography and GPS as they relate to modern survey practice.

It is expected that candidates will be able to describe the errors likely to be associated with their measurement techniques and be able to give the appropriate statistical interpretation of these errors.

Attention is drawn to aspects of modern equipment and methods that may have been used on any of the projects presented at the Professional Entrance Examinations e.g. GPS and various data output devices. Questions on these may be made during this examination in order to test the candidate's understanding of the operational requirements and appropriate survey practice methodologies for the practicing measurement specialist.

It is expected that the results achieved in the use of this equipment will meet the accuracies expected of the method used.

Candidates will be expected to demonstrate that they have the requisite competencies listed under this discipline in the Appendix.

3.2.1.1 Geodetic Project

Candidates are required to submit a geodetic GNSS project as detailed below. Candidates may apply to the examiner with evidence for an exemption from the GNSS project and substitute it with a Field Astronomy project as detailed below.

(a) GNSS Project

The objectives of the survey are for the candidate to show an understanding of modern GNSS principles, datums and projections, modern adjustment techniques such as least squares, measurement errors, and the use of GNSS technology for carrying out surveys.

The project should be completed following graduation from university.

A cadastral survey that has made use of GNSS could be a suitable project for this requirement if it meets the criteria set out below.

Candidates shall submit a project based on the following criteria:

- a survey that connects by GNSS to a minimum of three NZGD2000 5th or better order marks; and
- the fix of a minimum of 5 additional marks by GNSS (they may be new or existing survey marks) to 6th order or better. The fix of the marks should include their three dimensional position (i.e. include heights).
- the survey may include conventional observations (angle and distance) but should also have sufficient GNSS observations to meet the criteria in listed in the two points above.
- three dimensional coordinates shall be computed for all marks fixed by GNSS in the survey in terms of NZGD2000 (or an appropriate projection based on NZGD2000). The relative and absolute accuracy of these coordinates should be provided to demonstrate that they meet 6th order accuracy requirements or better.

Candidates are to provide a project plan of the observed survey network. The plan should clearly identify:

- the stations connected to, including the new or upgraded marks;
- horizontal and vertical datums used;
- sufficient observations to indicate how the survey was carried out.

Candidates are to provide a survey report that covers:

- A. A description of the survey that includes:**
- a brief statement as to the purpose of the survey to enable the type of survey carried out to be put in context of the GNSS methodology used;
 - a summary of the observations that were made;
 - how check observations were made (e.g. were they repeat observations of the same line or were observations from a different base station used to provide a fully independent measurement)?;
 - a description of precautions taken to identify and minimise the effects of multipath and gross errors.
- B. A list of equipment used. This should include information on any base station service that has been used.**
- C. A description of the GNSS methods employed which include as applicable:**
- the method of survey used e.g., static, rapid static, stop and go, kinematic, or real time kinematic (RTK);
 - the expected precision from the method of survey used. This may be provided by manufacturers, software providers, other survey literature or the surveyor's experience;
 - description of any specific parameters programmed into the receiver or used in processing that would be likely to affect the result of the survey, e.g., use of tropospheric models;
 - for static observations, an indication of observation and session times;
 - the mode of operation e.g. single or dual frequency observations, carrier phase, differential pseudo-range, or carrier phase smoothed DGPS;
 - tabulation of the observations used from any base stations;
 - description of the GNSS reduction techniques used including the software used.
- D. A list of station coordinates and assessment of the GNSS data quality. This shall be provided so that the appropriateness of the methodology used for the survey can be assessed. This should include:**
- a list of coordinates for the existing control and new or upgraded marks and their accuracy;
 - a description of the adjustments carried out and results;
 - a comparison of GNSS observations with any underlying geodetic observations where they have been re-observed;
 - a summary of independent checks to verify quality assessment e.g. loop closures or network analysis.
- E. Proof of Origin. Proof that an origin of the survey has been established in terms of NZGD2000.**

The project submission should include all plans, reports, field notes, relevant computations and other data. The project is to be endorsed with the certificate as at paragraph 3.3.

(b) Field Astronomy Project

Candidates are required to produce evidence of observations and computations in detail of the determination of azimuth by either:

- East and west observations of the sun; or
- Daylight observations of an east and west pair of stars. (The accepted norms set for balancing observations can be relaxed so that stars of sufficient magnitude can be observed).

The azimuth so determined is to be reduced to the local meridional circuit bearing (NZGD2000 where applicable but otherwise NZGD49), and a comparison with the bearing as determined from existing survey control is to be supplied. The project should be completed following graduation from university.

In every case the submission must contain all field notes, relevant computations and other data. A full report is required for the project, listing among other items, the methods used, procedures adopted, the parameters that had to be met, an assessment of the comparative results, and any problems encountered. The project is to be endorsed with the certificate as at paragraph 3.3.

Candidates should note that while calculators or spreadsheets may be used for computations of the Field Astronomy the computation workings must be shown in detail so that these can be followed and checked by the examiner.

Candidates should ensure that the correct almanac is used. Extrapolated data from an out-of-date almanac is not to be used. (The Star Almanac for Land Surveyors can be found at: <http://www.ukho.gov.uk/HMNAO/ProductsandServices/Pages/Almanacs.aspx> and select the "Star" tab.

3.2.1.2 Topographic Project

Candidates shall submit a project based on ONE of the following three types of surveys:

1. A topographic survey of hilly country covering an area of not less than 5 hectares, showing contours at a height interval appropriate for the survey and the plan scale. All information relevant to the purpose of the survey must be included in the project.
2. A topographic survey prepared for the purpose of road upgrading works, covering at least 1.5km of existing road and showing all existing features, services, drainage, levels etc. within the road boundaries. All information relevant to the purpose of the survey must be included in the project.
3. A topographic survey of an area of not less than 1 hectare within an existing urban area showing all services, buildings, basements, access ways, occupation, kerblines etc. prepared for the purpose of a redevelopment, a subdivision or for providing an 'as-built' plan. All information relevant to the purpose of the survey must be included in the project.

At the discretion of the Admissions Panel, alternative projects of sufficient size and complexity that will demonstrate a sound knowledge of the principles and practices of topographic surveying may be submitted, including hydrographic surveys. Candidates must obtain the Panel's prior approval to such projects.

The final plan is to show all relevant cadastral information, control survey information and any other information necessary for its full and proper interpretation, and is to be in a format suitable for use as a stand-alone document i.e. of a standard suitable for presentation to a client.

The project is to be accompanied by a comprehensive report (of at least 2,000 words) stating the purpose of the survey and addressing the following matters:

- the equipment and methodology etc used,
- the control survey, field data and calculations,
- a discussion on checking procedures in both the field and office,
- a sample of field observation data,
- a base plot if spot heights are not shown on the final plan,
- a discussion on the accuracies required for the particular survey and whether they have been achieved,
- a discussion on quality assurance procedures for topographic surveys,
- a description and comment on an audit process for topographic surveys, including accuracy of final DTM,
- a discussion on the appropriateness of showing cadastral boundaries and how they can be sourced and shown,
- a description and comment on an audit process for topographic surveys,
- a discussion on the importance of the other non-survey information shown on the plans,
- any other matters which the candidate considers to be relevant.

Candidates are to provide:

- a. A full size copy of the final topographic plan at the original scale. (While an A3 copy may be bound into the folder, candidates must separately include full size (i.e. A1) copies of the final plan and spot heights);
- b. A plan showing the spot heights (if these are not shown on the final topographic plan) at the same scale as that topographic plan so that the density of the spot heights and the relationship/reliability of the derived contour lines can be determined;
- c. A topographic survey of not less than 1 hectare within an existing urban area showing all services, buildings, basements, access ways, occupation, kerblines etc. prepared for the purpose of a redevelopment, a subdivision or for providing an 'as-built' plan. All information relevant to the purpose of the survey must be included in the project. This existing area must be currently developed to urban density and contain multiple dwellings, services etc. A bare plot of land containing one dwelling will not satisfy the requirements under this section;

- d. Copies of the underlying cadastral plans for the area surveyed;
- e. Suitable photographs - together with captions - of the area surveyed to assist the examiner to relate the topographic plan to the field situation;
- f. Copies of field notes and any checklists used;
- g. A completed comprehensive check list (refer the final paragraph of Sec. 3.2.1.3 below).

3.2.1.3 Miscellaneous Survey Project

In addition to the above topographic project, candidates are to provide a comprehensive summary (refer Form 2) of the “Miscellaneous Surveys” which they have undertaken. From that summary, candidates are to choose **THREE** unusual or complex surveys and in **three separate folders** provide A3 copies of the resultant plans together with a brief report (say 500 words) for each survey together with photographs to assist the examiner in the interpretation of those plans.

The following list of surveys is neither exhaustive nor prescriptive. The Admissions Panel will consider all surveys that demonstrate a sound knowledge of good survey practice, application of measurement science principles and a distinctive or complex characteristic.

Examples of such surveys are:

- a. A detailed site survey for the design of a residential or commercial building;
- b. an as-built survey of completed engineering works;
- c. a survey for the precise set-out of building and construction works;
- d. a survey for the measurement of Rentable Areas;
- e. a survey for the monitoring of movement of a structure or earthworks;
- f. a survey for certification of compliance with height-in-relation-to- boundary and maximum height controls;
- g. a control survey for photogrammetric purposes;
- h. a topographic survey prepared for a court or tribunal;
- i. a hydrographic survey.

Important Note: To ensure that all of the above provisions are covered, candidates are to prepare, complete and enclose a comprehensive Check List on which all of the requirements of Sections 3.2.1.2 to 3.2.1.3 inclusive, are clearly identified.

3.2.2. CADASTRAL SURVEYING

3.2.2.1 The practical competencies required for cadastral surveying are generally outlined in items 2.16 — 2.32 in the Appendix to the Membership Policy attached as Appendix to this document. Candidates must also be prepared to be examined on applicable land law and land tenure issues.

3.2.2.2 Candidates are to submit a full cadastral dataset for one survey they have undertaken as their own work.

The submitted survey is to have:

- A comprehensive report additional to that prepared as part of the cadastral survey dataset lodged with LINZ. This additional report is to discuss the complexities of the definition, the issues encountered and their resolution, and any logistic or client or professional difficulties encountered. Site photographs and aerial imagery should be attached to the report where possible to assist the examiner to relate to the survey submitted; **and**
- A reasonable degree of complexity with regard to the definition of the external boundaries of the land being subdivided (see para 3.2.2.3 below); **and**
- Where completed under the **Cadastral Survey Rules 2010**—
- If boundaries are **Class A**, it is to have not less than two lots or sections, except where the survey is for the removal of limitations-as-to-parcels when one lot is acceptable. In either case, all external boundary points must be defined by survey and monumented by the candidate's survey; **or**
- If the majority of boundaries are **Class B** the survey must contain not less than three lots or sections with the area encompassed by non-boundary marks occupied by the survey being not less than 10 hectares. At least three existing external boundary points must be defined by survey and monumented by the candidate's survey.
- A survey with no Class A or Class B boundaries is unacceptable.
- Where the survey was completed under the **Surveyor-General's Rules 2002/2**
- If **Class I** it is to have not less than two lots or sections, except where the survey is for the removal of limitations-as-to-parcels when one lot is acceptable. In either case, all external boundary points must be defined by survey and monumented by the candidates survey; **or**
- If **Class II** the survey must contain not less than four lots or sections with the area encompassed by the traverse (excluding adoptions) being not less than five hectares. At least two existing boundary lines must be defined by the survey on the ground by the candidate's survey; **or**
- If **Class III** the survey must contain not less than three lots or sections with the area encompassed by the traverse (excluding adoptions) being not less than thirty hectares. At least two existing boundary lines must be defined by the survey on the ground by the candidate's survey;

- 3.2.2.3** Complexity of definition of external boundaries includes, but is not limited to, situations where:
- a. Substantial buildings (not carports) are on or within 0.20 m of a Class A boundary or boundaries.
 - b. Water boundaries defined by survey by the candidate form most or all of at least one significant boundary of the survey.
 - c. The survey is a road or railway legalisation survey of at least 2 km long which creates multiple parcels.
 - d. The survey purpose is to remove limitations-as-to parcels from the underlying title.
 - e. The survey is based on a diagram-on-transfer.
 - f. There are conflicts in evidence discovered in the boundaries of the land being dealt with or they misclose significantly outside the limits prescribed by the Survey Rules under which the survey was completed.
- 3.2.2.4** The survey must be carried out, and the cadastral survey dataset (CSD) presented, in terms of the Surveyor-General's Rules which were current at the time the survey was undertaken. Full verification data must be provided for parcel closures and placement of new boundary marks on existing boundary lines. Original field notes or photo copies are to be submitted unless a data recorder was used.
- 3.2.2.5** The candidate is also to submit a brief report on other cadastral surveys they have undertaken which involved unusual or complex definition issues. The report should list the surveys and outline the definition issues. The report is separate to the Form 2 Diary of Practical Experience. The examiner may refer to these surveys in the interview.
- 3.2.2.6** Candidates who are uncertain if a survey will meet the requirements as set out in this document should provide the Admissions Panel with details of such a survey at least six months before the Professional Entrance Examinations to enable an assessment to be completed. All such requests, which should include draft copies of survey plans, are to be made through the Membership Coordinator.
- 3.2.2.7** On submission of the project, the candidate is to provide an email address to the Membership Coordinator at which they can be contacted for the three weeks prior to the Professional Entrance Examinations. Three weeks prior to the examinations, the candidate will be emailed the CSD numbers of four approved surveys lodged in Landonline. These datasets will be of surveys containing complexities in definition. The candidate should study these datasets and any supporting information and may be questioned by the cadastral examiner on any aspect of the survey they represent.

3.2.3 LAND DEVELOPMENT ENGINEERING

3.2.3.1 The engineering project is to consist of an engineering design and construction plan of a proposed urban street of not less than 200 metres in length, to be constructed in accordance with the requirements of a Territorial Authority. At least one end of the street is to connect with an existing street. A full set of contract documents must be prepared, including general and particular conditions of contract and a schedule of quantities. The accompanying report must include a description of the requirements for supervising the construction contract and an analysis of the economic viability of the development.

An alternative engineering project demonstrating this or greater level of complexity may be acceptable to the Admissions Panel. Such a project must be submitted to the Admissions Panel at least six months before the Professional Entrance Examinations. An alternative of a medium density development as outlined in item 3.2.3.7 may be acceptable.

3.2.3.2 Documentation: In addition to the requirements of Section 11, reports and contract documentation for the engineering project are to be presented in a bound A4 format. Plans must be clearly legible and presented in an A3 format, but must still be at a recognised engineering scale. Plans are not to be individually folded but may be bound and then folded in half. In exceptional circumstances, where plans cannot be reduced the candidate may apply to the Admissions Panel to present larger format plans. The information obtained must fully describe the project.

3.2.3.3 (a) The provision of all ancillary services are a requirement of a Territorial Authority and as such should be provided for in the design plans. These are to include sanitary sewer, stormwater, water reticulation, earthworks, silt and sediment control, carriageway construction, power and telecommunications. A position for these services may be assumed if they do not exist on site.

(b) Contract Documents are to include:

- A Specification, General and Special Conditions of Contract, Conditions of Tender and Forms of Tender. The Special Conditions of Contract must pertain to the particular project.
- A fully priced Schedule of Quantities.

(c) The following are also to be submitted as part of the design work:

- All engineering calculations including horizontal and vertical curves, coordinates for reference points, road centreline and manhole positions.
- All stormwater calculations necessary to determine pipe sizes and grades, quoting appropriate reference tables and charts.

(d) A Design Report covering all aspects of the project.

(e) Economic viability of the project including details of all development costs, gross realisation, profit and risk factor, and calculated raw land value.

3.2.3.4 Candidates will be questioned on various aspects of the design and inspection of a land development project with particular reference to the examination project.

3.2.3.5 Candidates should take note of the required minimum six months appropriate engineering experience not less than two months of which is to be spent on contract observation.

The NZIS Admissions Panel realises that a candidate cannot become fully experienced in all aspects of land development engineering in the relatively short time available between graduation and attending the Professional Entrance Examinations. Therefore, the Panel considers that “observation” should be seen more as “inspection” in terms of the basic requirements in paragraph 3.2.3.6, which the Admissions Panel feels are essential to an applicant’s knowledge.

3.2.3.6 These basic requirements can be summarised as follows:

(a) Contract Documents

Knowledge of the requirements of NZS 3910, the format of a set of contract documents, calculation of liquidated damages, the role of the engineer and time requirements for contract payments.

(b) Contract Administration

All approvals obtained from Territorial, Regional and ad hoc bodies; Health and Safety Plan; Insurances sighted; Contract signed; Advise Territorial Authority work is commencing; Changes to drawings; Variation Orders; Contingencies Item; Time extensions - wet weather - additional work; Daily report sheet or diary; Measure-up records, Progress Payment Certificates; As-built drawings; Approval of works by Surveyor and Local Body; Completion Certificate; Maintenance period; Bonds - retention moneys.

(c) Earthworks

Resource Consent Approval for earthworks where required; Silt retention structures; Strip topsoil, clean gullies, unsuitable foundation materials, seepage, drains, earthmoving equipment and compaction, soil tests, air voids, shear strengths, moisture content, subgrade testing, C.B.R., Scala Penetrometer, Nuclear Densometer, Benkleman Beam tests; respread topsoil, harrow grassing, fill, as-builts, grass take, removal of silt ponds.

(d) Carriageway Construction

Approved subgrade - under channel drains, filter media, string subgrade, approval to metal, approved sub-base, kerb and channel, boxed and poured, precast blocks, machine laid, basecourse, compaction of metal courses, types of rollers, appearance of finished metal surface, Benkleman Beam tests, Clegg Hammer tests, string for metal depth and cross-fall - brooming - types of seal - chip - appearance and type of chip, binder temperature, check rate of application, Asphaltic Conc. - tack and blind, depth, rollers, Bitumen, Interlocking concrete block paving. Footpaths - concrete, asphaltic concrete, expansion joints, vehicle crossings. Alternative surfaces, e.g. concrete block pavements.

(e) Sewer and Stormwater Reticulation

Start of contract - connection to existing lines - laser, types and classes of pipe - bedding and surround - width of trench, Construction Act, Health and Safety regulations, OSH guidelines, timbering, side batters, grade, alignment, position of house connections, ramped risers, marker posts, backfilling.

Wingwalls; manholes, drop manholes, precast, cast insitu; benching, rungs, jointing compound, cast iron lids, testing lines, air, water, smoke, test manhole; approval by Local Authority; as-builts, topsoil, grass, stormwater treatment.

(f) Water Reticulation

Fire and domestic supply, size of pipe; class and types of pipe; position of pipeline — relative to kerb, relative to boundary, depth of main, bedding - deflection of pipes, thrust blocks, hydrants, valves, house connections, tapping bands, Talbot ferrules, metallic detector tape, partial backfill, fill pipes to mains pressure, soak, check visible leaks, bleed air, calculate make up water required, contractor pretest - Council and Surveyor test, backfill, disinfect lines - install house connections after underground power and telecommunications.

(g) Utility Services

Road Opening Notices, advise Power Authority & Telecommunications. Determine road crossing and street light positions, ducts, transformer sites, RoW cabling, position of trenches relative to boundary, estimated cabling date, restoration of berms after trenching.

(h) Certifications

Design Certificates, Certification of Works, Certification of Suitability of Land for Building Construction, TA. Completion Certificates, Code of Compliance Certificates for Building Consents.

3.2.3.7 The following is offered as an alternative to the proposed urban street project as required in 3.1.

Medium Density Development

The Admission Panel's main concern is to ensure that a candidate has a sound knowledge of the design and inspection of engineering aspects associated with land development. The design and inspection of a "development" would provide scope for an applicant to obtain sufficient knowledge of engineering works to satisfy the Panel's requirements. The development would need approximately 20-25 units with a suitable level of complexity for it to be considered. It would also have to provide for the following basic engineering works:

- (i)** Connection to an existing road and existing services.
- (ii)** Sufficient earthworks to show the applicant has a knowledge of stripping topsoil, stockpile, cut and fill operations, carriageway subgrade preparation and replacing topsoil.
- (iii)** Sanitary sewer, stormwater and water reticulation, power and telecommunications to serve each of the units and the connection of these services to existing or assumed services.

3.2.4. PLANNING, DESIGN and RESOURCE MANAGEMENT

The project required for this examination shall consist of ONE of the following urban and rural planning, design and development projects prescribed in the following paragraphs.

3.2.4.1 Urban Extension

The planning and design of an extension of an existing urban area to accommodate an additional population of 3,000 to 5,000. Plans are to show the overall concept and structure of the main land uses and a design of a neighborhood unit of sufficient size to clearly illustrate the planning concepts proposed. Also to be shown are the location of traffic and pedestrian routes, a detailed layout of part of the residential area, the location of open spaces, the location and layout of a local shopping centre and local service industrial area, the location of community facilities including schools and the provision of services.

3.2.4.2 Rural Development

A scheme of land development for pastoral, forestry, horticulture or factory farming or other productive rural use, containing at least 5 new allotments. The scheme is to be accompanied by a comprehensive report including, information on topography, landscape values, drainage, soils, land use classification, heritage values and surrounding land uses. The report shall include an Environmental Effect Assessment in accordance with the Resource Management Act 1991. An economic analysis of the likely returns from the proposed activities on each new allotment is required.

3.2.4.3 Urban Development and Subdivision

The preparation of an overall development or structure plan, and a detailed subdivisional plan of a part thereof located within or adjoining an existing urban area. The overall development plan is to provide at least 200 allotments and the proposed subdivisional plan at least 40 allotments.

3.2.4.4 Urban Design Critique

The critical examination of at least 5,000 words supported by plans, photographs, diagrams and maps of an existing urban development of at least 50 allotments or units within an established area. Consideration should be given to the context of the project, and relationships between buildings, with the landscape and with streets and other public places. Comparison with other areas as appropriate and practicable suggestions for improvements should be made. Background information about the planning policies of the areas and consents needed for the project should be included.

3.2.4.5 Rezoning Proposal

An application with supporting reports, to rezone a significant area of land for urban or semi-urban use, either as part of a review of a District Plan or an application for a District Plan change pursuant to Section 73 of the Resource Management Act 1991. An analysis of the matters set out in Section 32 is required.

3.2.4.6 Reserve Management Plan

A management plan including objectives and policies and plans illustrating these matters, prepared in accordance with the requirements of the appropriate legislation, for a major area of open space, park or National Park.

3.2.4.7 Special Purposes Development Study

A comprehensive report of at least 5000 words, supported by plans, diagrams and maps, illustrating the planning, design, marketing and development concepts, of a significant existing development project such as - an infill housing or urban renewal project or a retirement village, or a tourist resort, or an energy project, or a major transport facility.

All projects should include (as appropriate to the particular project) a comprehensive report, plans and photographs to a good standard of presentation that:

- summarise the project including the activities and uses, site area and number of allotments and units proposed
- show compliance with District and Regional Plans, structure plans and other policy guidance, and consents
- analyse market conditions and general financials of the project
- provide a landscape analysis of the site identifying important features, vegetation, views and design opportunities
- discuss the overall design concepts that guide the layout and design of the project
- indicate relationships with community activities and uses including shopping and business activities, schools and other community facilities
- show the proposed open space and reserve network and planting schemes
- discuss traffic generation, roading patterns and new roading and pedestrian links
- indicate the general provision of services required for the project including, power, water, stormwater and waste disposal
- identify heritage and cultural features that need special consideration
- consider the effects on the natural environment including, air, water and land resources
- show the consultation undertaken and relationships with the local community.

3.2.5. GEODETIC SURVEYING

A project is required to be submitted as part of the requirements for Geodetic Surveying. Projects, undertaken by students as part of their university courses, may be submitted to the Panel if the project meets the Panel's requirements as described below.

The submission must contain all field notes, relevant computations and other data. A full report is required for the projects, listing among other items, the survey methods used, procedures adopted, the design parameters that had to be met, the equipment and software used, an assessment of the comparative results and accuracies achieved, and any problems encountered. The projects are to be endorsed with the certificate as in paragraph 3.3.

Candidates should note that while programmes and spreadsheets may be used for computations of the results, the computation workings must be shown in sufficient detail so that these can be followed and checked by the examiner.

3.2.5.1 Control Survey Project

Candidates are required to produce evidence of a project that shows a control survey that established at least 5 new control stations from 3 or more existing higher order control stations. The new marks are to be a minimum of 5th order NZGD2000 marks, with at least 2 being new control stations of NZGD2000 3rd order or higher status. The project is to show the criteria used for the site selection of new control station and the construction design. The project shall demonstrate that the appropriate Land Information New Zealand accuracy standards have been exceeded for both the horizontal and vertical coordinates. The observations are to be adjusted by the least squares method and the appropriate corrections applied. The observations shall include GPS and terrestrial observation (angles, distances and height differences).

3.2.6. MINING SURVEYING

Candidates who hold a Certificate of Competency as a Mine Surveyor will be deemed to meet the Mining Surveying Competencies provided they have a recognised professional degree.

All candidates will be required to complete the examination in Spatial Measurement and Geodetic Surveying. Other candidates will be expected to submit for evaluation plans that they have prepared of a working Mine Operation, and undergo an oral examination. Such candidates must show evidence of at least 2 year's practical experience in Mining Surveying in either surface or underground extraction sites.

3.2.7. HYDROGRAPHIC SURVEYING

It is expected that candidates seeking competency in this discipline area will seek to become Level I Accredited Hydrographic Surveyors. These guidelines should be read in conjunction with those provided by the Australasian Hydrographic Surveyors Certification Panel (AHSCP) since the NZIS has fully aligned its hydrographic competencies with those of the AHSCP. In general, gaining a pass in this discipline will require a minimum aggregate period of two years of appropriate experience in hydrographic surveying; 50% of which should include surveying afloat, and 50% of this aggregate period should be in a responsible senior position — preferably in charge.

Those seeking membership of the NZIS may achieve this by completing the AHSCP Level I process and by completing a reduced NZIS entrance examination in the areas of Spatial Measurement and Geodetic Surveying. The fee for such an examination will be reduced accordingly (see Section 3.1.c).

3.2.8. PHOTOGRAMMETRY

3.2.8.1 Candidates are expected to have met the specific competencies as outlined in the Appendix. As part of the oral examination, candidates will be expected to demonstrate a sound understanding of:

- The practical implementation of photogrammetric techniques and the underlying theory.
- The role of photogrammetry in geospatial data acquisition.
- Methods for the assessment of output quality.
- Current and evolving technologies and their application.

3.2.8.2 Candidates will be expected to produce evidence of at least 12 months of experience in photogrammetric operations. These operations should cover project planning, aerial triangulation, data capture, and the production of final data outputs.

3.2.8.3 Candidates will also be expected to submit for evaluation at least one project that has been entirely their own work. The material submitted must include project specifications (including camera station positions and control requirements), design criteria, details on the production of supplementary photogrammetric control, details of data capture methods, and the production of the final feature coded digital data set. A hard copy version of this data set should also be submitted. While this project requirement has deliberately been left as broad as possible, the intention here is that the candidate be able to demonstrate his/her competence to undertake successfully a significant photogrammetric project from start to finish.

3.2.9 REMOTE SENSING

3.2.9.1 Candidates are expected to have met the specific competencies as outlined in the appendix. As part of the oral examination, candidates will be expected to demonstrate a good understanding of:

- The basic physical principles of remote sensing.
- Sensor and platform technologies and their application.
- The properties of digital image data and the processes for correction and registration.
- Image interpretation and analysis techniques and the underlying theory and processes.
- The practical application of remote sensing technologies.

3.2.9.2 Candidates will be expected to produce evidence of at least six months of experience in remote sensing activities. This experience should cover the full range of competencies shown in the Appendix.

3.2.9.3 A significant project is to be submitted prior to the examination, the scope and extent of which must be agreed with the examiner prior to it commencing. The intention of the project is to demonstrate to the examiner the candidate's understanding of remote sensing techniques and his/her ability to use the full capabilities of at least one specialist remote sensing software package.

3.2.10. GEOGRAPHIC INFORMATION SYSTEMS

A project is to be submitted as part of the requirements for Geographic Information Systems. The topic and scope of a project must be agreed with the examiner prior to commencing. The intention of project is exhibit the candidate's ability to identify a set of GIS user requirements (the problem) and to design and possibly implement a GIS solution to meet the requirements. The solution must incorporate data from a variety of sources, have defined maintenance processes and quality measures, and contain some element of spatial analysis.

An oral examination will also apply.

As part of the oral examinations, GIS candidates will be expected to demonstrate a sound understanding of:

- GIS fundamentals
- The NZ environment for spatial data and standards
- International standards and trends
- Spatial analysis techniques
- Commercial, scientific and government application of GIS.

3.3 Plans and Reports

For the purposes of the Professional Entrance Examination:

- a. Field notes supplied are to be the original field notes for the survey or legible photocopies thereof. While it is preferred that the candidate present the original field notes, good quality photocopies will be accepted.
- b. Reports are to be typed and, together with field notes, calculations, and any supporting documents, bound in a separate folder for each project including each survey plan. Each folder shall be clearly labelled with the nature of the contents and the candidate's name; and
- c. Plans of cadastral surveys are to be prepared in the format required by Schedules 2 and 3 of the Surveyor-General's Rules 2002/2 or in the format required by the Rules for Cadastral Survey 2010 as appropriate.
- d. For further details on the requirements for the Engineering project see 3.2.3.1 and 3.2.3.1 and 3.2.3.2
- e. For further details on the requirements for the Topographic project see Section 3.2.1.2

Drawings and Reports are both to be the candidate's own work and are to be certified as such by attaching a signed copy of the certificate at paragraph below. Reports should be bound or stapled. Pages of reports are to be numbered and it is preferred if sections and paragraphs are also numbered.

Candidates are permitted to submit drawings produced by means of computer graphics but candidates are to have been personally involved in any such process.

Candidates are permitted to submit cadastral datasets that have not been prepared by the candidate, so long as they have supervised the preparation of the plan. All fieldwork and calculations are to be the candidate's own work.

The certification of such plans will need to be amended by deleting the words "this plan/scheme and".

In addition to the certificate below, each plan must bear the candidate's name at the top right hand corner.

All documents are to be professionally presented, bound, cross referenced and with the candidate's name clearly shown, in addition to the type of project concerned.

DECLARATION

I hereby certify that:

(a) This survey/scheme/document was prepared by me personally between the

... .. day of and the

... .. day of; and that

(b) *Except to the extent permitted by the examining Panel; this drawing/scheme/document and the accompanying field notes and relevant computations are entirely my own work and have not been copied from any public matter.*

3.4 Practical Experience

Candidates must have obtained all the practical experience that is required for the Admissions Panel recognition of competency prior to the closing date for applications to attend the Professional Entrance Examinations. Experience should be recorded on Form 2 (Practical Experience) and Form 5 (Certificate of Practical Experience) copies of which are attached to this circular. In addition, candidates are required to complete a Summary of Practical Experience on Form 4 (Summary of Practical Experience). Applicants are required to provide four copies of all certificates of practical experience in addition to the original, **(i.e. five copies of each are required)**.

Form 2 should show a list of the various surveys/tasks that have been undertaken with an indication of the date and the total number of days spent in the office and field for each survey/task. It is not to be a diary showing exactly how much time each day (or month) is spent on various jobs. An example is shown at page 35.

Separate sets of Form 2 are to be used for each of the disciplines in which the candidate is seeking examination with the total number of days worked being tallied for each of these disciplines.

All lists are to be typed and the forms are to be signed by the applicant's supervisor. In the case of an applicant seeking a Cadastral Licence, this should be either a Licensed Cadastral Surveyor or Chartered Professional Engineer or Member of NZPI (where appropriate) as a true and correct description of the practical experience gained by the candidate.

Redefinition surveys are to be included as cadastral experience.

Site surveys, concept plans, topographic plans, etc for subdivisional surveys do not qualify as cadastral experience and should be recorded as miscellaneous surveys. Similarly, building site layouts do not qualify as engineering experience and should also be recorded as miscellaneous surveys.

In certain circumstances, applicants may claim up to six months pre-graduation experience. They must supply a separate set of Forms 2 and 3 for pre-graduate and post-graduate experience respectively. Only in exceptional circumstances will the Admissions Panel accept this experience and applicants should make special application.

3.5 Licensing

Graduates are advised to familiarise themselves with the licensing process as dealt with in Part 3 of the Cadastral Survey Act 2002. A full perusal of all sections of this Act will eliminate misunderstanding about the functions of the Cadastral Surveyors Licensing Board (CSLB).

Immediately the candidate has obtained a full pass in the relevant Professional Entrance Examination he/she is eligible to apply for a licence to undertake cadastral surveys. There is no obligation to apply for a licence but candidates should note that for Certificates of Competency issued after 13 June 2014 the Cadastral Surveyors Licensing Board accepts the certificate as being valid for 12 months from the date it was issued. If a Certificate of Competency does not comply with this time requirement the applicant must follow the licence reapplication process for a licence that has lapsed.

Applications forms are on the CSLB website at www.cslb.org.nz. All the information required including a recent character reference and the prescribed fee must be lodged with the Secretary before the application will be processed.

On receipt of a licence to undertake cadastral surveys, surveyors will need to apply to Land information New Zealand for access to the Landonline System. Application forms are available on www.landonline.govt.nz.

Form 1



**New Zealand Institute of Surveyors
Application for Examination**

Date:

The Chief Executive
NZ Institute of Surveyors
PO Box 5304
Lambton Quay
Wellington 6145

I, hereby apply:

(a) to sit the examination of New Zealand Cadastral Law ¹ at the preferred venue of

... ..

OR

(b) to attend the Professional Entrance Examinations² in the following disciplines
(delete where not applicable):

(i)	Cadastral Surveying	(vi)	Mining Surveying
(ii)	Spatial Measurement	(vii)	Hydrographic Surveying
(iii)	Land Development, Land Development Engineering	(viii)	Photogrammetry
(iv)	Planning, Design and Resource Management	(ix)	Remote Sensing
(v)	Geodetic Surveying	(x)	Geographic Information Systems

My academic qualification is: Degree University

Date of University's advice of requirements having been fulfilled

Practical experience in land title surveying in New Zealand has been obtained over a period of
... .. months following the above date.

Date on which Acts and Regulations Examination/Cadastral Law Examination passed:

... ..

Fee for Members

- For (a) \$200.00 plus GST \$30.00 = \$230.00 for (a) above¹ NZIS member
- For (b) \$800.00 plus GST \$120.00 = \$920.00 for (b) above² NZIS member

Fee for Non Members

- For (a) \$250.00 plus GST \$37.50 = \$287.50 for (a) above¹ non-member
- For (b) \$1,000.00 plus GST \$150 = \$1,150 for (b) above² non-member

Examination applicants will need to “login” (Members) or “register” (Non Members) to the website www.surveyors.org.nz and book a ticket to the examinations under Events.

You can pay by credit card online through the website when you book your “ticket”, or you can also pay by internet banking to our ANZ Bank Account as follows:

06-0501-0058884-00
New Zealand Institute of Surveyors

If you choose the credit card option, you will be sent an automatic event confirmation and invoice by the system, and a receipt for your payment will follow.

If you choose to pay by internet banking, there will be no event confirmation, and the invoice and receipt will be sent to you manually. This will be the confirmation that you are registered for the examination.

Signature:

Postal address:

Phone (daytime) (. . . .) Fax (daytime) (. . . .)

Email:

Form 2
SURVEYING PRACTICAL EXPERIENCE

Candidate:

Type of survey experience:

Pre/Post Graduate Experience in Urban/Rural/Engineering/Miscellaneous Surveying

(Delete as required)

Date Month/Year	Locality – Description of Survey/Engineering Projects	Area/Length	No. of Lots or Sections	Days		Capacity Employed C, I or O*
				Office	Field	
Number of days in the above category, carried forward from previous page						
Total number of days:						(1)
Total number of months:						(2)
Total number (1) ÷ 20.0						

Certified as a true and correct description of the practical experience completed by the above candidate.

Licensed Cadastral Surveyor/Chartered Professional Engineer: / ... / ...

* *Chaining, Instrument work, or Observation (Inspection). (This could apply to engineering projects).*

Form 3
CADASTRAL SURVEYING PRACTICAL EXPERIENCE

Candidate:

Type of survey experience:

~~Pre~~/Post Graduate Experience in Urban/~~Rural~~/Engineering/~~Miscellaneous~~ Surveying
(Delete as required)

Date Month/Year	Locality - Description of Survey/Engineering Projects	Area / Length	No. of Lots or Sections	Days		Capacity Employed C, I or O *
				Office	Field	
Number of days in the above category, carried forward from previous page				136.6	101.9	
Oct 98— Dec	Tamariki School Conservation Covenant — traverse and pegging	525m ²	1	3.0	1.5	I
Nov 98 — Jan 99	Cannon Hill Crescent — traverse and pegging calculations draughting survey plans	3.7845ha	8	4 3	2 9	C
Dec 98	Sawyers Arms Road — Land for Road — calcs	75m ²	2	0.4		
Dec 98 — Jan 99	70-74 Martin Street — Boundary Redefinition	63m	3		0 5	I
Jan 99 — July 99	Clarke Park — Land to be Classified as LP Reserve — calcs, traverse, pegging.	3.6543ha	1	0.7	1.2	I
Total number of days:						(1)
Total number of months:						(2)
Total number (1) ÷ 20.0						

Certified as a true and correct description of the practical experience completed by the
above candidate.

Licensed Cadastral Surveyor/Chartered Professional Engineer:
..... / ... /...

**Chaining, Instrument work, or Observation (Inspection). (This could apply to engineering
projects).*

Form 4

SUMMARY OF POST-GRADUATION PRACTICAL EXPERIENCE

Candidate:

	Days	Months
Urban Survey		
Rural Survey		
Engineering		
Planning/resource Consent		
Miscellaneous Survey		
TOTAL		

Note: To obtain months ÷ the number of days by 20.0.

Form 5

CADASTRAL SURVEYING PRACTICAL EXPERIENCE

I, Licensed
Cadastral Surveyor * **or**

Chartered Professional Engineer *

hereby certify as follows:

(1) That has been
professionally and continuously employed by me in the practice of land surveying from
... .. to that is to say, for a period of
... .. years months.

(2) During this period a total of month's practical experience in land title
surveying was obtained. *

(3) During this period a total of month's practical experience in civil
engineering (including months experience in contract
observation/inspection) was obtained. *

(4) That I have personally reviewed the projects of the above candidate prior to their
submission to the Admissions Panel.

Dated at this day of

... ..
Licensed Cadastral Surveyor * **or**
Chartered Professional Engineer *

I certify that in my opinion
... ..
is fully competent to execute surveys.

Dated at this day of

... ..
Licensed Cadastral Surveyor * **or**
Chartered Professional Engineer *

* Delete as required

Form 6



Membership Application Form

Associate and Full Member – Rule 6.1c.i & ii (Formerly Technical and Professional Member categories)

Open to graduates of an Approved Course or those who have experience in Surveying and Spatial Science that satisfies the criteria set out in the NZIS Membership policy.

**Rules of the New Zealand Institute of Surveyors Incorporated May 2013.*

1. Level of Membership:			
Associate (tick)		or Voting (tick)	
2. Personal Details			
Name			
Postal Address *()		Post code	
Phone		Fax	
Email – work *()			
Email – private *()			
Date of Birth		Place of Birth	

*Preferred mailing or email address (v)

3. Employment			
Job Title			
Employer's Name			
Employer's Address *()		Post code	
Phone		Fax	
Website details: Facebook; Twitter; Skype; LinkedIn; etc			

*Preferred mailing address (v)

4. Educational Qualifications	
University Degree (NZ)	Summary of recent experience:
Polytechnic Diploma (NZ)	Summary of experience (min two years):
Technical Qualification	Summary of experience (min four years):
Other Qualifications	Summary of location and experience:
CV – if not covered above	

5. Work related competency (application with no formal qualifications)

Attach detailed summary of relevant surveying experience over last 7 years.

6. Areas of professional interest

Nominated disciplines to be assessed by Admissions Panel, please tick those applicable.

	Streams (Tick one)		Divisions		Special Interest Groups
(a)	Cadastral Surveying	(g)	Consulting Professionals	(l)	Young Surveyors
(b)	Land Development	(h)	Young Professionals	(m)	Urban Design
(c)	Positioning and Measurement	(i)	Tertiary	(n)	Cadastral Commission
(d)	Engineering Surveying	(j)	Women in Spatial	(o)	Local Authority Surveyors Group
(e)	Hydrography	(k)	Technicians	(p)	OUSSA
(f)	Spatial Information Management				

7. Referees

We the undersigned personally know the applicant and can attest to their good character.

Name	Email	Tel. Contact
1.		
2.		

8. Declaration of Conviction

Have you been convicted of any offence punishable by imprisonment?
If so, please provide details.

8. Bankruptcy

Have you been adjudged bankrupt or a party to proceedings that relate to bankruptcy?
If so, please provide details.

9. Applicant's Declaration

I agree that if this application is accepted by the NZIS I will comply with the rules and abide by the decisions of the Council on any matter and I will also endeavour to further the interests of the Institute at every opportunity.

Signature (submission of this application by email is an acknowledgement of the official application process)

Date

Appendix One

Membership Policy Competencies

New Zealand Institute of Surveyors (Inc.)

POLICY 11: Admissions Policy for Membership

This policy shall come into force on the 1st July 2005.

Any person seeking to be a Member of the New Zealand Institute of Surveyors (Inc) the following admissions policy will apply:

- i) A Professional Associate, or a person who would otherwise be eligible to be a Professional Associate, who has less than 5 years post-graduation experience will need to pass the Professional Entrance Examination conducted by the Institute each year in at least 3 of the disciplines listed below to be eligible for Membership of the Institute. (See also (v) below.) No person is eligible for examination without at least 2 years post-graduate experience. Minimum practical experience requirements apply to some of the disciplines. (See definitions in (viii) below)
- ii) A Professional Associate, or a person who would otherwise be eligible to be a Professional Associate, who has more than 5 years but less than 10 years post-graduation experience will need to supply to the Admissions Panel detailed examples of the work personally carried out since graduation in at least 3 disciplines. (See also (v) below.) To be eligible for membership the Admissions Panel shall either agree that the examples put forward are sufficient to show competence in that discipline or, if not, require the candidate to pass the Professional Entrance Examination in the candidate's chosen disciplines. The minimum practical experience requirements will apply.
- iii) A Professional Associate, or a person seeking membership under Rule 4.4.2 or 4.4.3, who has more than 10 years post graduate experience will need to supply to the Admissions Panel detailed examples of the work personally carried out over the past 5 years in at least 2 disciplines. To be eligible for Membership the Admissions Panel must be satisfied that the candidate has an advanced knowledge and competence in those disciplines.
- iv) In applying for Membership under (i) above any person electing discipline (a), cadastral surveying, must also have sat and attained at least a 60% pass in the Cadastral Law Examination conducted by the Institute. Those electing discipline (a) entering under (ii) above may also be required by the Admissions Panel to sit and pass this examination.

- v) Notwithstanding the above, to obtain entry into the Institute any person who selects discipline (a), cadastral surveying will also need to nominate and pass discipline (b), spatial measurement, plus two other disciplines.
- vi) Any person who was a Member and that membership has lapsed for more than 3 years will need to meet the requirements of (i), (ii) or (iii) above to renew their membership. Otherwise no further examination will be required but the Council will have the final say as to whether to accept the renewal.
- vii) Disciplines
The Institute will accept applications for Membership in the required number of the following disciplines:
 - a) Cadastral surveying
 - b) Spatial measurement
 - c) Land Development and Land Development Engineering
 - d) Planning, Design and Resource Management
 - e) Geodetic surveying
 - f) Mining surveying
 - g) Hydrographic surveying
 - h) Photogrammetry
 - i) Remote sensing
 - j) Geographic information systems

The Admissions Panel shall use the competencies listed in the Appendix to this policy to judge whether the applicant meets the standards required for admission as a Member.

- viii) Definitions

Member — See rule 4.4

Professional Associate — See rules 4.3.1 and 4.3.2

Professional Entrance Examination — A face to face Oral Examination held twice each year, usually in April and November. The oral examination will be for at least 35 minutes in each discipline elected in front of a member of the Admissions Panel. Candidates will need to produce examples of their work to the examiner. See “examples of work” below.

Admissions Panel — The Admissions Panel is appointed by the Council of the Institute and shall be made up of senior members of the Institute who are experts in each of their respective disciplines.

Examples of Work — Projects should be designed to show that the candidate can meet at least 70% of the competencies listed against the appropriate discipline in the appendix hereto. Any particular member of the Admissions Panel may instead elect to prescribe a particular type of project the candidate must complete. The detail of such projects shall be available at least 9 months prior to the examination.

Cadastral Law Examination — This is an examination on the law in New Zealand as it affects:

- a) surveys of land for the purpose of title, subdivision of land, opening and stopping roads, rights-of-way and the acquisition of land for special purposes (reserves, public works etc)
- b) resource management and regional planning related to the development and subdivision of land, and
- c) systems of tenure and associated record systems, including Landonline.

Both this examination and the Professional Entrance Examination may also test the candidate's knowledge and application of professional practice and ethics.

The examination consists of a research component and a two-hour written examination sat on a specified day at an approved examination venue. The marks allocated for the research and written parts of the examination are 40% and 60% respectively.

Practical Experience — The practical experience requirement in (i) and (ii) above is to include:

- a) For those wishing to be examined in discipline (a) Cadastral Surveying, at least 12 months practical experience in cadastral surveying in New Zealand and is to consist of experience in both urban and rural surveying. This experience is to be supervised by a Licensed Cadastral Surveyor.
- b) For those wishing to be examined in discipline (c) Land Development and Land Development Engineering, at least 6 months land development engineering experience, including 2 months contract inspection or observation experience under the supervision of a suitably experienced Surveyor or Chartered Professional Engineer.
- c) For those wishing to be examined in discipline (d) Planning, Design and Resource Management, at least 3 months experience under supervision in designing subdivisions and preparing applications for lodgment with territorial authorities for resource consents, the processing of applications for territorial authorities, and/or advising clients on resource consent matters.
- d) In all cases the supervising person is to certify that in their opinion the candidate has completed the required amount of work and has reached a level of competence commensurate with the required experience to become a Member of New Zealand Institute of Surveyors.

Note

Cadastral Licences

This note is not part of this policy but is provided for the information of those wishing to obtain a licence to carry out Cadastral Surveys and explains an agreement between the Institute and the Cadastral Surveyors Licensing Board (CSLB).

The CSLB has agreed that applicants wishing to obtain a license to practice as a Cadastral Surveyor who have passed the NZIS professional entrance examination (as described above) in discipline (a) and the Cadastral Law examination will have met competency requirements set out in CSLB standards.