THE ENGINEERING AND PROFESSIONAL STANDING OF PEOPLE WITH BEngTech AND NZDE RECOGNISED ENGINEERING QUALIFICATIONS IN NEW ZEALAND

INFORMATION PAPER

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This Information Paper presents the views of the author but is based on a careful study of all the available information on the Engineering New Zealand (EngNZ) membership structure and membership pathway which came into effect from 1 October 2017 and the terminology which is used.

- The BE or BE (Hons) degree is a recognised engineering qualification at Level 8 on the New Zealand Qualifications Framework (NZQF). It is a Washington Accord level of engineering qualification.
- The BEngTech degree is a recognised engineering qualification at Level 7 on the NZQF. It is a Sydney Accord level of engineering qualification.
- The NZDE diploma is a recognised engineering qualification at Level 6 on the NZQF. It is a Dublin Accord level of engineering qualification.

People obtaining all these three levels of recognised engineering qualifications, and who then after gaining several years of acceptable engineering experience, are approved to become a Member of Engineering New Zealand (MEngNZ) are now known as being an engineering professional and ‘a type of engineer’ within the wider engineering profession.

The use of the term ‘engineer’ is not legally reserved because of its very common usage in the English language and the variety in its meanings. Any person can call themselves an engineer.

In my view, a person described as being a ‘type of engineer’ is an engineer and cannot also be described as being a ‘technologist’ or a ‘technician’ because that would be a contradiction in terminology.

The Code of Ethical Conduct of Engineering New Zealand (EngNZ) states that members must only undertake engineering activities that are within their competence.

The International Engineering Alliance (IEA) states that it uses the term engineering as an activity in a broad sense, and it uses the term engineer as shorthand for the various types of professional and chartered engineer (Reference 1, Page 1).

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**SIX KEY POINTS**

1. **People who have graduated with a BEngTech or NZDE recognised engineering qualification are entitled to call themselves a graduate engineer or an engineering graduate because they have graduated with a recognised engineering qualification and employers recognise them as such.**

2. **For those who choose to join the membership of EngNZ, such people are entitled to refer to themselves as being an emerging professional and an engineering graduate who makes an annual commitment to the EngNZ Code of Ethical Conduct.**

3. **The IEA states (Reference 1, Page 3) that the term ‘graduate’ does not imply a particular type of qualification but rather the exit level of a qualification, be it degree or diploma.**

4. **People who have qualified with a BEngTech or NZDE recognised engineering qualification and who choose not to join the membership of EngNZ, and who obtain several years of acceptable engineering experience are then entitled to refer to themselves as being an ‘engineer’ or a ‘type of engineer’.**

5. **In a recent promotional brochure for the NZDE qualification, the New Zealand Board for Engineering Diplomas (NZBED) states:**
   
   “There is currently a high demand for engineers in New Zealand with NZDE qualifications.”

6. **For People Who Successfully Apply to Join EngNZ as a Member**

   EngNZ can set a high standard for what is described as being acceptable engineering experience (resulting from an initial professional development programme), before a person with a recognised engineering qualification is accepted as a Member of EngNZ. Such a person is then regarded as being an engineering professional and entitled to refer to themselves as being an engineer or a ‘type of engineer’ within the wider engineering profession.
## DEFINITIONS

### 1 ENGINEER

An engineer is a builder and maker of things.

Sixteenth Century Definition  
(from about 1592)

An engineer is a person who designs builds or maintains engines, machines or structures.

Twenty-first Century Definition  
(Oxford English Dictionary)

### 2 PROFESSION, PROFESSIONAL AND PROFESSIONALISM

<table>
<thead>
<tr>
<th>Noun</th>
<th>A profession is an occupation which requires training and a formal qualification.</th>
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<tbody>
<tr>
<td>Noun</td>
<td>A professional is a person who is engaged or qualified in a profession.</td>
</tr>
<tr>
<td>Adjective</td>
<td>Professional - appropriate to a professional person; competent or skilful.</td>
</tr>
<tr>
<td>Noun</td>
<td>Professionalism – the competence or skill expected of a professional.</td>
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(Oxford English Dictionary)

In an engineering context, a person with a BEngTech degree or NZDE diploma has a recognised engineering qualification and therefore has a formal qualification, but also requires training in order to be recognised as being an engineering professional.

In an engineering context, an emerging professional is a person who has recently gained a recognised engineering qualification, has joined the membership of EngNZ and is working to complete an initial professional development programme.
TERMINOLOGY

1. USE OF THE TERM ‘ENGINEER’
   - The use of the term ‘engineer’ is not legally reserved because of its very common usage in the English language and the variety in its meanings. Any person can call themselves an engineer.
   - People who have recently qualified with a BEngTech or NZDE recognised engineering qualification are entitled to refer to themselves as being a ‘graduate engineer’ or an ‘engineering graduate’ because they have graduated with a recognised engineering qualification.
   - People who have qualified with a BEngTech or NZDE recognised engineering qualification and who then obtain several years of engineering experience, are then able to refer to themselves as being an ‘engineer’ or a ‘type of engineer’ within the wider engineering profession.

2. USE OF THE TERM ‘PROFESSIONAL’
   - The use of the term ‘professional’ in an engineering context should be confined to people who have joined the membership of an appropriate professional body, which in New Zealand is EngNZ. People who join an overseas engineering professional body which has an engineering code of ethics may also be included.
   - People who have joined the membership of EngNZ are bound by an annual commitment to the EngNZ Code of Ethical Conduct and continuing professional development expectations.
   - A key point in this Code of Ethical Conduct is that members of EngNZ must only undertake activities that are within their competence.
   - People who have joined the membership of EngNZ as a recent engineering graduate are entitled to refer to themselves as being an engineering graduate and an emerging professional who is working to complete an initial professional development programme.
   - After gaining several years of acceptable engineering experience after graduation, a BEngTech or NZDE graduate may apply to become a Member of EngNZ (MEngNZ). If their application is successful, they are then known as being an engineering professional and ‘a type of engineer’ within the wider engineering profession.

3. USE OF THE TERMS ‘TECHNOLOGIST’ OR ‘TECHNICIAN’
   - In an engineering context, a person who is described as being an engineering professional or an emerging professional cannot possibly also be referred to as being a ‘technologist’ or ‘technician’ because that would be a contradiction of terminology in any normal understanding of the English language.
   - Many people described as being a ‘technologist’ or a ‘technician’ have no connection with engineering whatsoever.
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1 FOREWORD

In this paper, I strongly advocate that a person with a BEngTech or NZDE recognised engineering qualification who is approved to become a Member of Engineering New Zealand (MEngNZ), is to be described as being an engineering professional and a ‘type of engineer’ within the wider engineering profession. Such a person makes an annual commitment to the EngNZ Code of Ethical Conduct which is an engineering professional code of ethics and to continuing professional development expectations.

I believe that such a person cannot also be described as being a ‘technologist’ or ‘technician’ because that would be a contradiction in terminology (a person described as being an engineering ‘professional’ cannot also be described as being a ‘technologist’ or ‘technician’ in a normal understanding of the English language). Many people described as being technologists or technicians have no connection with engineering whatsoever.
FOREWORD (CONTINUED…)

PEOPLE WITH A BEngTech OR NZDE QUALIFICATION

Case 1: A person who chooses not to join the membership of EngNZ

- People who have recently graduated with a BEngTech or NZDE recognised engineering qualification and who choose not to join the membership of EngNZ are entitled to call themselves a graduate engineer or an engineering graduate because they have graduated with a recognised engineering qualification and employers recognise them as such.
- A person who has graduated with a recognised engineering qualification cannot be referred to as being a ‘technologist’ or a ‘technician’.
- After obtaining several years of engineering experience such a person would be entitled to refer to themselves as being an engineer. The use of the term ‘engineer’ is not legally restricted because of its very common usage in the English language and the variety in its meanings.

Case 2: A person who joins the membership of EngNZ

- People who have recently graduated with a BEngTech or NZDE recognised engineering qualification and who then, either join the membership of EngNZ or transfer from the EngNZ membership class of Student, are also entitled to call themselves a graduate engineer or an engineering graduate because they have graduated with a recognised engineering qualification.
- As part of their membership commitment these people must commit to work to complete an initial professional development programme and to commit annually to the EngNZ Code of Ethical Conduct and they then become known as being an emerging professional.
- People who are referred to as being an engineering graduate and an emerging professional cannot also be referred to as a ‘technologist’ or ‘technician’ because that would be a contradiction in terminology.
- Such people who then after graduation gain several years of acceptable engineering experience under an initial professional development programme may then be able to successfully apply to become a Member of EngNZ (MEngNZ). They are then entitled to refer to themselves as being an engineering professional and a ‘type of engineer’ within the wider engineering profession.
- Such people who have since gained a higher level of engineering experience may then apply to become a Chartered Member of EngNZ and would then be described as being ‘a highly experienced engineering professional with proven technical or leadership expertise’. Such people could not possibly be referred to as being a ‘technologist’ or ‘technician’.
FOREWORD (CONTINUED…)

RECOMMENDED DEFINITION OF THE TERM ‘ENGINEERING TECHNOLOGIST’

Engineering Technologist is a term used by EngNZ to describe an occupational group of its members within the wider engineering profession who have a recognised engineering qualification at Level 7 on the NZQF (BEngTech or equivalent).

Within the overall EngNZ membership, this occupational group is made up of engineering professionals and emerging professionals as follows:

- **Chartered Members (Engineering Technologist)** described as being recognised highly experienced engineering professionals with proven technical or leadership expertise.

- **Members** who have gained several years of acceptable engineering experience since graduating with a recognised BEngTech qualification or equivalent and are then approved to become a Member of EngNZ. They are described as being engineering professionals and a ‘type of engineer’.

- **Emerging professionals** who have joined the membership of EngNZ and who have recently completed a recognised engineering qualification (BEngTech or equivalent) and are working to complete an initial professional development programme.

RECOMMENDED DEFINITION OF THE TERM ‘ENGINEERING TECHNICIAN’

Engineering Technician is a term used by EngNZ to describe an occupational group of its members within the wider engineering profession who have a recognised engineering qualification at Level 6 on the NZQF (NZDE or equivalent).

Within the overall EngNZ membership, this occupational group is made up of engineering professionals and emerging professionals as follows:

- **Chartered Members (Engineering Technician)** described as being recognised highly experienced engineering professionals with proven technical or leadership expertise.

- **Members** who have gained several years of acceptable engineering experience since graduating with a recognised NZDE qualification or equivalent and are then approved to become a Member of EngNZ. They are described as being engineering professionals and a ‘type of engineer’.

- **Emerging professionals** who have joined the membership of EngNZ and who have recently completed a recognised engineering qualification (NZDE or equivalent) and are working to complete an initial professional development programme.
2. INTRODUCTION

On 1 October 2017, the name used by the Institution of Professional Engineers New Zealand (IPENZ) changed to Engineering New Zealand (EngNZ) with a tagline ‘Institute of Engineering Professionals’. The legal name of the Institution remains as IPENZ.

On the same date, the new membership structure and membership pathway for EngNZ came into effect. After gaining several years of acceptable engineering experience after graduation, the new membership rules state that a person to be approved to become a Member of EngNZ must have a recognised engineering qualification. Such a person is now described by EngNZ as being an engineering professional and ‘a type of engineer’ within the wider engineering profession.

EngNZ has the tagline ‘Institute of Engineering Professionals’. It seems clear that this covers all three levels of engineering professional qualifications in New Zealand as these are now all regarded as being recognised engineering qualifications.

The term ‘emerging professional’ is now used by EngNZ to describe people who have joined its membership and who have recently qualified at one of the three levels of engineering professional qualification in New Zealand and are working to complete an initial professional development programme.

3. REVISED MEMBERSHIP CLASS DEFINITIONS

On 29 March 2019 some modifications were approved to EngNZ Rule 6 - Membership Class Definitions.

Rule 6 now includes the following:

EngNZ Rule 6.5
 Emergining Professional
   a. has recently completed a recognised engineering or engineering geology qualification; and
   b. is working to complete an initial professional development programme acceptable to the Board.

EngNZ Rule 6.4
 Member
   a. holds a recognised engineering or engineering geology qualification or demonstrates equivalent knowledge to a standard specified by the Board; and
   b. has completed an initial professional development programme acceptable to the Board.
EngNZ Rule 6.3
Chartered Member

a. holds a recognised engineering or engineering geology qualification, or demonstrates equivalent knowledge to a standard specified by the Board; and
b. has demonstrated general competence to a standard specified by the Board that reasonably conforms to accepted international standards.

Chartered Members are categorised by reference to the particular occupational group within the wider engineering profession in which they practise, for example, Chartered Member, Chartered Member (Engineering Technologist), Chartered Member (Engineering Technician), or Chartered Member (Engineering Geologist).

4. THE VIEW OF THE AUTHOR

• Emerging Professional
  In my view, a person referred to as being an emerging professional, cannot also be referred to as being a ‘technologist’ or ‘technician’ as they are bound by an annual commitment to the EngNZ Code of Ethical Conduct and committed to an initial professional development programme. 

  It is my view that a person committed to an engineering code of ethical conduct cannot be described as being a technologist or a technician.

• Member
  A person who is approved to become a Member of EngNZ (MEngNZ) is described as being an engineering professional and a ‘type of engineer’ within the wider engineering profession who is bound by an annual commitment to the EngNZ Code of Ethical Conduct and to continuing professional development expectations. Such a person cannot also be described as being a ‘technologist’ or ‘technician’.

• Chartered Member
  A person who is approved to become a Chartered Member of EngNZ is described as being a ‘recognised highly experienced engineering professional with proven technical or leadership expertise’. Such a person cannot possibly also be described as being a ‘technologist’ or ‘technician’.

  In the view of the author that the terms ‘engineering technologist’ and ‘engineering technician’ can only be used to describe occupational groups within the wider engineering profession and cannot be used to describe individual people who have a recognised engineering qualification and have become a Chartered Member of EngNZ.
5. A CONSENSUS VIEW OF THE ENGINEERING INDUSTRY IN NEW ZEALAND

BEngTech Qualification

There is now general acceptance that despite its name, the BEngTech is not an engineering technologist qualification. It is a recognised engineering qualification at Level 7 on the NZQF and its graduates who have since obtained several years of acceptable engineering experience can apply to become a Member of EngNZ and can then be described as being an engineering professional and a ‘type of engineer’ within the wider engineering profession who commits annually to the EngNZ Code of Ethical Conduct and to engineering continuing professional development expectations.

The term ‘engineering technologist’ is not used in the engineering employment sector in New Zealand and BEngTech graduates are mostly referred to as being ‘engineers’ within the wider engineering profession.

NZDE Qualification

The situation is rather different for the NZDE qualification than for the BEngTech qualification. Although NZDE graduates who are approved to become Members of EngNZ are now referred to as being engineering professionals in the same way as for BEngTech graduates, the term ‘engineering technician’ is still being used in some places to refer to NZDE graduates.

The term ‘engineering technician’ is used in the engineering employment sector in New Zealand, but mostly to describe people at a lower level of qualification than the Level 6 NZDE recognised engineering qualification. People with a NZDE qualification are generally referred to as being engineering professionals or as a ‘type of engineer’, especially after they have obtained several years of acceptable engineering experience in order to be approved to become a Member of EngNZ.

6. THE VIEW OF THE NZ BOARD OF ENGINEERING DIPLOMAS (NZBED)

An Apparent Contradiction

The NZBED appear to be contradictory about the engineering professional status of people who after graduation with a NZDE qualification gain several years of acceptable engineering experience and are then approved to become Members of EngNZ.

About a year ago, the NZBED produced a promotional brochure for the NZDE which contained contradictory statements in two adjacent sentences. The first sentence under the heading ‘Engineering Job Prospects’ read:

“The NZDE qualification provides a structured pathway to a rewarding career as an engineering technician in the manufacturing or infrastructure sector.”
But in the very next sentence, the NZBED state:

“There is currently a high demand for engineers in New Zealand with NZDE qualifications.”

The author believes that most NZDE graduates will be looking for a rewarding career as an ‘engineer’ rather than as a ‘engineering technician’.

Although the two quoted sentences from the NZBED appear to be contradictory, it seems that they may be in accordance with a statement by the IEA which says that it uses the term ‘engineer’ as a shorthand (generic) term for people at any of the three levels of engineering professional qualification.

7. THE VIEW OF THE INTERNATIONAL ENGINEERING ALLIANCE (IEA)

The IEA is responsible for overseeing the Washington, Sydney and Dublin Accords. The IEA acknowledges that people it often refers to as being ‘engineering technologists’ or ‘engineering technicians’ are in fact ‘engineers’ in the common understanding of the English language.

This is why it states that it uses the term ‘engineering’ as an activity in a broad sense and ‘engineer’ as a shorthand (generic) term for people in any of the three categories of engineering professional qualification.

In Reference 1, Page 1, the IEA:

- Acknowledges that it uses the term engineering as an activity in a broad sense and engineer as shorthand for the various types of professional and chartered engineer.
- Acknowledges that typical engineering activity requires several roles including those of engineer, engineering technologist and engineering technician, recognised as professional registration categories in many jurisdictions.
- Acknowledges that the development of an engineering professional in any of the categories is an ongoing process with important identified stages.

The IEA acknowledges that it uses the term ‘engineer’ as shorthand for people at all three levels of engineering professional qualification, as being ‘various types of professional and chartered engineer’.

The IEA also acknowledges that it uses the term ‘engineering professional’ to include people in any of the three categories of engineering professional qualification.

Use of the term ‘graduate’

The IEA states (Reference 1, Page 3) that the term ‘graduate’ does not imply a particular type of qualification but rather the exit level of the qualification, be it degree or diploma.
8. CONCLUSIONS

- The comment has been made in the Foreword of this paper that the terms ‘engineering technologist’ and ‘engineering technician’ are terms used by EngNZ to describe two occupational groups within the EngNZ membership.

- These two occupational groups are made up of people with BEngTech or with NZDE recognised engineering qualifications who have joined the membership of EngNZ as an emerging professional, a Member, or a Chartered Member.

- It is the author’s view that such people who are known as being ‘emerging professionals’ (engineering graduates) or ‘engineering professionals’ (Members) or ‘highly experienced engineering professionals’ (Chartered Members) should not also be referred to as being a ‘technologist’ or ‘technician’.

- It is the view of the author that responsible engineering decisions and judgments should be made by engineers who are committed to an engineering professional code of ethics. Such engineering decisions or judgments should not be made by people who are described as being a ‘technologist’ or a ‘technician’.

- Therefore the use of the terms ‘engineering technologist’ or ‘engineering technician’ should be confined to describing two occupational groups within the EngNZ membership and not be used as terms to describe individual people.

- In making responsible engineering decisions and judgments, an engineering professional must be mindful of a commitment to a code of ethics (or ethical conduct) and only undertake engineering activities for which they are responsible that are within their competence.

9. REFERENCE

http://www.ieagreements.org