DISCIPLINARY COMMITTEE DECISION

COMPLAINT ABOUT RICHARD JOYCE

In accordance with:
Chartered Professional Engineers of New Zealand Act 2002
Chartered Professional Engineers of New Zealand Rules (No 2) 2002
Institution of Professional Engineers Rules
Institution of Professional Engineers Disciplinary Regulations
Institution of Professional Engineers Regulations for Competence Registers

Prepared by:
Peter McCombs CPEng DistFEngNZ IntPE(NZ)
Chair of Disciplinary Committee

Dr Cordelia Thomas
Hamish Wilson
Hamish Baker MEngNZ
Garry Macdonald FEngNZ
Members of the Disciplinary Committee

19 September 2018

engineering new zealand
Institute of Engineering Professionals

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EXECUTIVE SUMMARY

1. Some time prior to March 2012, the complainant was engaged to fit a previously existing deck and a Palfinger PK29002 crane to a DAF FAD85CF truck and subframe. At that time, the complainant hired Dick Joyce Consultants Limited to carry out calculations and issue an Inspection Certificate for the vehicle. The work was carried out and the Inspection Certificate issued on 28 March 2012.

2. The vehicle passed its subsequent load testing inspection as undertaken by an independent inspection and certification company in March 2012.

3. However, in March 2014 the same vehicle failed its load testing because concerns were noted during dynamic stability testing. In particular, more than the allowable number of the vehicle's wheels were lifted off the ground during the test. Further testing in June 2014 found that the crane was unsafe when operating at its full load rating at 90 degrees to the truck chassis. During its load testing the torsion[1] applied to the chassis of the truck broke a cross-member between the chassis rails.

4. In July 2014, in response to the issues, Dick Joyce, then of Tasman SV Limited, inspected the vehicle. Mr Joyce identified no issues with the original design and issued an Inspection Certificate and LT400.

5. In October 2015, the complainant engaged another engineer to review the design of the vehicle. This engineer raised concerns about the torsional rigidity of the truck sub-frame for the size of crane and its positioning on the vehicle.

6. The complainant then complained to Engineering New Zealand about Mr Joyce.[2] This investigation relates to Mr Joyce's actions in signing the Inspection Certificate and its associated LT400 forms in July 2014.

7. Having considered the matter following its hearing held in August 2018, the Disciplinary Committee found that the engineering services provided by Mr Joyce in certifying the vehicle in 2014 did not meet the standard to be reasonably expected of a chartered professional engineer and a member of IPENZ. The complaint is upheld.

[1] Torsion is a structural action that increases member shear strength. It occurs when it is twisted causing twisting force acting on the member, known as torque, and the resulting stress is known as shear stress.
[2] Then the Institution of Professional Engineers New Zealand Inc (IPENZ).

BACKGROUND

COMPLAINT

8. In May 2016, the complainant complained to Engineering New Zealand about Richard (Dick) Joyce. Mr Joyce is a director of Tasman SV Consulting Limited (TSV) and previously operated out of Dick Joyce Consultants Limited (DJC).

9. Mr Joyce is a heavy vehicle engineer and was on the Heavy Vehicle Certifier List used by the New Zealand Transport Agency (NZTA) at the time the engineering activity was carried out.[3] Mr Joyce was a Chartered Professional Engineer (CPEng) until 18 July 2018 when the Registrar directed that he be removed from the register for failing to provide evidence demonstrating his current competency. Mr Joyce was a Professional Member of IPENZ at the time of the events giving rise to the complaint.[4]

10. The complaint relates to work undertaken by Mr Joyce in 2014 to issue an Inspection Certificate and Heavy Vehicle Chassis Modification Certification (LT400) for a crane fitted to a truck, and Mr Joyce's response to those concerns.

INVESTIGATING COMMITTEE

11. Following an initial investigation, the portion of the complaint centred on Mr Joyce's response when concerns were raised about the work was dismissed.

12. The aspect of complaint about the appropriateness of Mr Joyce's 2014 inspection and Inspection Certificate was referred to an Investigating Committee for formal investigation. On 22 March 2018, the Investigating Committee referred the matter to a Disciplinary Committee for consideration.

DISCIPLINARY COMMITTEE

13. The Disciplinary Committee heard the matter on 9 August 2018.

14. The members of the Disciplinary Committee are:

    - Peter McCombs CPEng DistFEngNZ IntPE(NZ) (Chair)
    - Dr Cordelia Thomas, Barrister and Solicitor
    - Hamish Wilson, nominated by Consumer New Zealand
    - Hamish Baker MEngNZ
    - Garry Macdonald FEngNZ

15. The following parties also attended the hearing:

    - The complainants
    - Richard (Dick) Joyce
    - Mr Joyce's expert engineer (providing expert evidence for Mr Joyce)
    - Investigating Committee representative

[3] NZTA independently certifies the competency of engineers who are on the heavy vehicle specialist certifiers list. Any modifications made to buses, trucks, trailers, or other heavy vehicle that change part or all its structure or layout need a heavy vehicle specialist certifier to oversee their work. NZTA suspended Mr Joyce from the register of Heavy Vehicle Certifiers List in June 2018.

[4] On 1 October 2017 IPENZ changed its trading name to Engineering New Zealand. It also changed its membership pathway and classes, and from 1 October 2017 Mr Joyce has been a Chartered Member of Engineering New Zealand.

- Expert advisor to the Investigating and Disciplinary Committees: Shane Speight
- Engineering New Zealand staff

INFORMATION GATHERED

ENGAGEMENT

16. Some time prior to March 2012, the owner of the vehicle engaged the complainant to fit an existing subframe and a Palfinger PK29002 crane onto a DAF FAD85CF cab and chassis (**the vehicle**).

17. In May 2012, the complainant engaged DJC to carry out the design and assessment of the installation of the subframe and crane. The work was carried out by an engineer employed by DJC (the DJC engineer) who has subsequently died.

18. No written record of the brief has been provided. However, the complainant has stated that DJC was engaged to "design and supervise modifications to the truck for the purpose of: installation of the crane; and enabling the crane and the truck to achieve load and stability tests with a load of 1,370kgs and to inspect and certify the crane mountings".[5]

INSPECTIONS

Inspection requirements

19. There are two processes of certification required when a heavy vehicle is modified, i.e. when a crane is mounted on a truck.

Certificate of Inspection

20. The Code of Practice for Cranes issued by the Department of Labour requires that all truck-mounted cranes be inspected annually and have a current Certificate of Inspection (**CoI**) in order to operate.

21. In order to obtain a CoI, the crane must be inspected by an equipment inspection company, who will make recommendations to an inspection body[6] whether or not to issue a CoI. In undertaking such an inspection, an equipment inspector is required to inform the owner of any safety issues relating to the equipment, and the action required to make the equipment safe.[7]

Inspection Certificate and Heavy Vehicle Certification (LT400)

22. An engineer must carry out calculations that specify the maximum rating of a crane. The engineer will then issue an Inspection Certificate which certifies the maximum rating.

23. Upon the completion of any modification or repair work, NZTA requires a heavy vehicle certifying engineer to issue an LT400.[8] The engineer must assess the chassis as able to handle all the loads that

[5] See letter from the complainant's lawyers to Mr Joyce dated 21 October 2015.
[6] https://worksafe.govt.nz/the-toolshed/registers/recognised-inspection-bodies/?start=12
[7] Regulation 27(1), Health and Safety in Employment (Pressure Equipment, Cranes, and Passenger Ropeways) Regulations 1999.
[8] https://hve.nz/heavy-vehicle-certification/

the crane can produce, and the engineer must deem the vehicle as a whole (truck/subframe/crane) "fit for purpose".

2012 Load Testing and Initial Design Certification

24. In early 2012, the owner of the vehicle engaged an inspection and certification company (The I&C Company) to carry out load testing and make a recommendation as to whether the vehicle should be issued with a CoI.

25. On 20 March 2012, The I&C Company carried out the load testing and recommended that the vehicle be issued a CoI. The Inspection Report noted: "Detailed observations from this inspection: load and stability tests carried out – 2400 kgs @ 9.2 metres cut out and stability satisfactory at this point".

26. On 14 May 2012 the DJC engineer issued an Inspection Certificate and LT400 for the vehicle verifying its design. The Inspection Certificate noted "the 750mm extension to the rear of the chassis and the mounting of the Palfinger PK29002 hydraulic crane on the rear of the chassis, has been carried out in accordance with the recommendations of the Land Transport Rule 31002, Heavy Vehicles 2004"; and "the manufacturer's original GVM rating of 32,000kg is retained and the crane mountings are suitable for a crane maximum rating of 28.3 tonne-metres".

27. There are no comments on this Inspection Certificate that care needed to be taken when lifting the maximum rated load combination out to the side.

28. It is understood that this same vehicle was also inspected and received a CoI in 2013 although no information has been provided to verify this.

2014 Load Testing

29. On 24 and 28 March 2014, the I&C Company carried out inspection load testing on the vehicle and noted that repairs to the vehicle were required before a CoI could be issued. During the inspection "a full dynamic stability test was undertaken with a load of 1370kg to a measured radius of 13.7 metres". The Inspection Report noted that "during the test, the required number of wheel sets were not seen to remain in contact with the ground, with the load witnessed perpendicular to tipping line [and] … the Paltronic rated capacity indicator reached a maximum lifting moment of less than 100%". The I&C Company identified that this problem needed to be corrected before a CoI could be issued.

30. On 12 May 2014, the DJC engineer emailed the I&C Company to ask why the vehicle had been failed, when it had been working satisfactorily for two years since it was initially certified by the I&C Company. The I&C Company responded that the vehicle failed the braked wheel criteria during a stability test and was unstable at <100% load across its tipping line.

31. On 23 May 2014, the owner of the vehicle emailed the DJC engineer, the I&C Company and the complainant stating that nothing had changed on the vehicle since it was first tested; he asked the DJC engineer and the I&C Company to resolve the issue so the vehicle could be certified.

Further inspection by the I&C Company

32. The I&C Company carried out a further inspection in early June 2014. The load testing carried out at that inspection demonstrated that the crane was unsafe when operating at its full load rating at 90 degrees to the truck chassis, in that at least two wheels lost contact with the ground at a load well below the full crane rating. During load testing the chassis of the truck twisted as a result of torsion

and a cross-member between the chassis rails broke. The I&C Company advised the owner of the vehicle that the crane could be certified as safe only if the load rating was downrated by 29%.

33. The complainant contacted DJC about the issues identified by the I&C Company and communicated with the DJC engineer by email about the issues. While the complainant had carried out repairs to the cross-members, the I&C Company would not issue a CoI for the crane because of concerns about safety.

34. On or about the first or second of July 2014, the DJC engineer advised Mr Joyce that the complainant and the owner of the vehicle had contacted him as the vehicle had failed its load testing. Mr Joyce made an appointment with the owner of the vehicle to inspect the truck.

Mr Joyce's Inspection and Certification

35. On 3 July 2014, Mr Joyce attended the owner of the vehicle to inspect the vehicle. Mr Joyce says he went to the owner of the vehicle with an intention to speak to them and find out what exactly what the issue was with the vehicle. He says that when he visited the owner of the vehicle on 3 July 2014, the owner was not at the site, and none of the employees, including the owner of the vehicle's son, knew what the issue with the vehicle was.

36. Mr Joyce said he re-measured the truck, re-visited the DJC employee's calculations, and carried out another set of stability calculations using the latest set of tare weight figures. Mr Joyce did not contact the owner of the vehicle, the I&C Company or the complainant following his site visit to discuss the nature of the failure.

37. On 14 July 2014, Mr Joyce issued an LT400 and an Inspection Certificate, which he says included a stability diagram. Mr Joyce has not been able to provide a copy of either the stability diagram, or a copy of his associated calculations.

38. The Inspection Certificate dated 14 July 2014 as issued and signed by Mr Joyce states: "This is to certify that at the time of inspection, the 750mm extension to the rear of the chassis and the mounting of the Palfinger PK29009 hydraulic crane on the rear of the chassis, has been carried out in accordance with the recommendations of the Land Transport Rule 31002, Heavy Vehicles 2004", and: "The crane mountings are suitable for the crane maximum rating of 28.3 tonne-metres."

39. There are no comments on this Inspection Certificate that care needed to be taken when lifting the maximum rated load combination out to the side.

DESIGN REVIEW

40. In October 2015, the complainant engaged an engineer (the complainant's expert) to carry out an engineering design review of the truck with its crane. The complainant's expert provides professional engineering services specialising in the design and certification of heavy vehicles, as well as that of general mechanical equipment and minor structural design.

41. The complainant's expert's report, dated 8 October 2015, identified that the crane mounting to the truck, including the outriggers, was correct. However, he identified that the truck sub-frame design

appeared to be "grossly inadequate from a torsional rigidity point of view for the size of crane and its positioning on the vehicle".

42. The complainant's expert carried out calculations on the crane/vehicle stability and torsional rigidity of the chassis, sub-frame and deck combination. He noted:

> ***Torsional Rigidity of the Chassis, Subframe and Deck Combination:*** *With the crane operating at maximum load at maximum reach at 90 degrees to the longitudinal centre line of the vehicle, the resultant twist between the front Stabilizing Legs and the rear Stabilizing Legs calculated to be between 51 and 56 degrees. This level of torsional rigidity is well under an acceptable level and will render the components prone to premature failure as well as being unable to satisfy the requirements of crane compliance testing. The design target for torsional rigidity should be no more than 3 degrees in order to achieve compliance and prevent failure.*
>
> ***…***
>
> ***Conclusion:*** *The level of calculated twist in the chassis, sub-frame and deck combination suggests that this whole aspect of design was not considered and therefore was not carried out by the design engineer. Therefore, it is concluded that the failure of this vehicle/crane combination to achieve the customer's requirements for a crane of this size, is a design failure."*

CONCERNS RAISED WITH MR JOYCE

43. In October 2015,[9] the complainant's lawyer sent Mr Joyce a letter outlining the complainant's concern that "the sub-frame, which was designed and assessed as being suitable by you or parties under your control, is inadequate to support the Truck and the Crane in lifting the specified loads for which they [were] meant to be designed to be able to safely lift".

44. On 10 November 2015, Mr Joyce responded to that letter, explaining his actions with regard to the site visit and his issue of the Inspection Certificate. He asserted that he found no error in the work done by the DJC engineer.

45. Mr Joyce further stated that both the DJC engineer's file and his own file stated that care needed to be taken when lifting the worst load combination out to the side, and that the crane stability factor of safety is less than the normal figure of 1.4 but is still better than 1.0. Mr Joyce said this meant that the worst case lift is able to be made without fear of a roll over, but because this factor of safety is less than 1.4, additional care needs to be taken.

COMPLAINT TO ENGINEERING NEW ZEALAND

46. On 6 May 2016, the complainant raised concerns with Engineering New Zealand about Mr Joyce. Its concerns centred on the Inspection Certificate signed by Mr Joyce in July 2014.

RESPONSE TO COMPLAINT

47. Mr Joyce responded to Engineering New Zealand by email on 13 June 2016. He said that his 10 November 2015 letter to the complainant's lawyer gave a good summary of events. He added that

[9] Engineering New Zealand has been provided with a draft letter dated 21 October 2015. Mr Joyce's response refers to a letter dated 30 October 2015.

the DJC engineer's file states he was presented with an already completed unit (crane mounted on the deck and the deck already fitted to the truck). Mr Joyce said that "at that time, the strength of the unit was the sole concern, and the codes applicable at the time did not stipulate that a [torsion] calculation was required."[10] The DJC engineer therefore, did not carry out a torsion calculation. He also stated: "It is interesting to note that the configuration of the deck sub-frame was exactly that specified by the truck manufacturer in his body mounting manual. That is, [the DJC engineer] used the truck manufacturer's recommendations when approving this deck sub-frame unit."

48. Mr Joyce also stated that his calculations "suggest that there should have been … [torsional twist] between the two sets of outriggers in the order of 6.8 degrees". He said: "I cannot [imagine] any way that a load combination would give … [torsional twist] of 51 – 56 degrees as claimed by [the complainant's expert]." Mr Joyce added:

> *"It should be noted … that the subframe is some 3.68 times as torsonally [sic] stiff as the original truck chassis. That suggests that the subframe should have failed way before the truck chassis and therefore, I am at a loss to understand the comment that a chassis cross member failed during the second load test carried out by [the Inspection and Certification Company]. I can only conclude that there was some other problem with the vehicle that we have not been told about."*

RELEVANT STANDARDS

49. During the Initial Investigation, Engineering New Zealand spoke with the complainant's expert (referred to above), and an employee of the NZTA to obtain general information about the standard expected for inspections for vehicles of this nature.

Land Transport Rules

Vehicle Standards Compliance

50. The Land Transport Rule: Vehicle Standards Compliance 2002 – Rule 35001/1 (1 April 2002),[11] sets out the requirements to control the entry of vehicles into, and operation of vehicles in, the land transport system. Pursuant to Rule 7.4.1(b), a vehicle may be certified for operation in service only if a vehicle inspector or inspecting organisation has inspected the vehicle and has determined, on reasonable grounds, that (among other things) the vehicle "has been designed and constructed using components and materials that are fit for their purpose and is within safe tolerance of its state when manufactured or modified". This requirement has not changed since at least 2004.

51. The NZTA employee and the complainant's expert advised Engineering New Zealand[12] that there is some discrepancy amongst the heavy vehicle engineering profession as to the meaning of "fit for purpose". The NZTA employee and the complainant's expert advises that they consider this to mean that the vehicle would be able to safely operate at its specified capacity with the crane boom extended in all rotational positions (which would mean in this case that consideration should be

[10] In responding to the complainant and Engineering New Zealand, Mr Joyce used the word deflection. It was later clarified that he was referring to torsional twist between the chassis and the auxiliary legs. For consistency, the word deflection has been changed to torsion where it has been referred to by Mr Joyce as such.
[11] https://www.nzta.govt.nz/resources/rules/vehicle-standards-compliance-2002-index/
[12] File note of telephoned advice 18 October 2016.

given to deflection as part of the inspection). However, they advised there are a small number of people within their industry who disagree with this interpretation.

Heavy Vehicles

52. The Land Transport Rule: Heavy Vehicles 2004 – Rule 31002[13] contains a requirement that: "The chassis and body of a vehicle must be of adequate strength for all conditions of loading and operation for which the vehicle was constructed."[14]

53. This Rule also contains a requirement that: "If practicable, a modification to a vehicle must be carried out in accordance with instructions from the vehicle manufacturer and the manufacturer of any system, component or equipment or equipment being fitted to the vehicle."[15]

Palfinger Crane Installation Manual

54. The Palfinger Crane Installation Manual (2006, and 2010 edition) includes instructions regarding truck chassis for consideration when installing a crane on a truck, and outlines the requirements to assess a truck chassis for torsional stiffness if auxiliary stabilisers are being used. The manual includes a schedule for dynamic and torsional moments.

Department of Labour Code of Practice - Cranes

55. In addition, the Department of Labour Code of Practice – Cranes, third edition (issued in November 2009) requires that all cranes are safe to operate up to their full rating. The Code is mandatory and every crane of this type must be inspected annually and a CoI issued in order for the unit to continue to be operated.

56. In particular, Part 14.2 clause (2) applies:

> *"(a) In the case of cranes mounted to road vehicles requiring a Certificate of Fitness, a certificate from a New Zealand Transport Authority – approved HVEC engineer to certify that the crane installation/vehicle modification complies with the crane/vehicle manufacturer's recommendations as specified in appropriate land transport rules. This must include an assessment of suitability of the mounting to include crane loadings due to transport and operation under the crane's maximum safe working load. Note: This Rule should be read in conjunction with Land Transport Rule: Heavy Vehicles 2004 and subsequent amendments.*
>
> *…*
>
> *(c) a stability test demonstrating the stability of the vehicle with the crane at maximum load for any given radius with the crane boom at minimum operating angle and the vehicle on level ground in accordance with the crane manufacturer's recommendations. If the manufacturer's recommendations are not available, then the requirements of AS1418.11 Cranes Hoists and Winches: Vehicle- Loading Cranes clause 2.7.3 "Stability" must be met. The stability test shall be conducted as per clause 3.2.5 of AS1418.11. When testing stability to AS 1418:11 clause 3.2.5, up to half the wheel sets in only one axle group may lose contact*

[13] https://www.nzta.govt.nz/resources/rules/heavy-vehicles-2004-index/
[14] Ibid, at cl 3.1(1).
[15] Ibid, at cl 6.1(3) from the consolidated rule amended in 2008.

with the ground. At least half the individually braked wheel sets shall stay in contact with the ground."

INDEPENDENT ADVICE

57. The Investigating Committee requested independent advice from Shane Speight (CPEng CMEngNZ). They asked Mr Speight to advise:

    a. The relevant standards that applied at the time, and any changes to them since the events giving rise to the complaint;

    b. Whether he considered Mr Joyce complied with those standards (based on how the majority of his peers would have approached the situation in 2014); and

    c. His assessment of the adequacy of the steps taken by Mr Joyce in satisfying himself that he could issue an inspection certificate, including the extent of his inspection and that he did not consider deflection (torsion).

58. Mr Speight's advice dated 22 November 2017 (see Appendix One) advises:

    a. *"[T]here is plenty of information available advising a Heavy Vehicle Specialist Certifier that torsional reactions of truck mounted cranes are important and need to be considered."*

    b. *"[T]he requirement to consider the effects of mounting a component to a Heavy vehicle chassis has always been there and was specifically stated in Land Transport Rule 31002 – Heavy Vehicles 2004 – clause 6.1(3).*[16] *In my opinion this rule applied at both the time of initial certification in 2012 and at re-certification in 2014."*

    c. *"Mr Joyce has not met the requirements of clause 6.1(3) of the Heavy Vehicle Rule 31002."*

59. At the hearing, Mr Speight advised the primary issues a certifying engineer needs to consider for a crane installation are stability (torsion), and the strength of the subframe/chassis (bending), and that the best place to get information about this is the crane manufacturer's manual. He stated that if he had certified a crane with limitations on load and reach, he would make sure that everyone involved was aware of this to limit his liability. He said that the best way to communicate this would be by attaching a Design Statement to the Inspection Certificate.

SUBMISSIONS TO THE DISCIPLINARY COMMITTEE

The complainants

60. The complainants made no written submissions to the Disciplinary Committee, but provided oral evidence on the day of the hearing. These have been incorporated into the Information Gathered section above, where relevant.

61. In their evidence, the complainants advised that in March 2014, the owner of the vehicle got in touch with them to advise the vehicle had failed the load testing carried out by the I&C Company. The

[16] If practicable, a modification to a vehicle must be carried out in accordance with instructions from the vehicle manufacturer and the manufacturer of any system, component or equipment being fitted to the vehicle.

complaints advised the DJC engineer, who said he felt looking at the vehicle after it had failed the load test was outside his comfort zone, so he would get Mr Joyce to have a look at it.

62. The complainant confirmed that their expectation was that the crane would be certified by DJC to lift to its maximum rating of 1300kg at 16m through a full 360 degree arc. They confirmed that there had been no physical changes to the vehicle between the 2012 and 2014 inspections by the I&C Company. They considered that Mr Joyce knew why the vehicle had failed the I&C Company testing in 2014.

Mr Joyce

63. Mr Joyce's submissions to the Disciplinary Committee of 31 July 2018 are incorporated into the Information Gathered section above, where relevant.

64. Mr Joyce submitted the reason for the vehicle passing its first examination by I&C Company in 2012 but failing the second test in 2014 was due to two different inspectors applying different interpretations of the rules. He further suggested that in the period between inspections (March 2012 and May 2014), the subframe had failed due to operator abuse. He provided a copy of his calculations from 2016 (which were completed after the receipt of the complainant's expert report) demonstrating the shear stress on the subframe as 190.6 MPa material yield stress or 54.5% shear stress,[17] and said that this was satisfactory.

65. On 7 August 2018, being two days before the Disciplinary Committee hearing of this matter, Mr Joyce forwarded a copy of his design and mounting of a truck and crane combination he had prepared for a transport company, a letter of reference from the same company, and a report authored by Mr Joyce's expert engineer dated 4 August 2018.

66. At the Disciplinary Committee hearing held on 9 August 2018, Mr Joyce stated that he believed his role in this matter was to do a design and stability check and issue an Inspection Certificate and an LT400 (immediately followed by a practical load test by I&C Company). He stated that he knew the owner of the vehicle had been calling the DJC engineer because I&C Company had failed the vehicle during a load test, but he did not know what that problem was, he did not have a copy of the I&C Company report, and he did not know that the vehicle had failed due to stability issues.

67. He said that he issued another LT400 and Inspection Certificate because he believed this was what the owner wanted, and he wanted to resolve the issue quickly for the client (the complainant). He said that his calculations were the same as the DJC engineer, and he accepted the decision that the DJC engineer had made in 2012 to accept a flexible subframe. Mr Joyce said that he did not know what other actions he should have taken to find out the reason why the vehicle had failed the load test.

68. He further stated that, provided the crane was set up correctly, his calculations from 2016 showed a maximum amount of torsional twist would be 6.2 degrees which he considered high, but satisfactory.

[17] Shear stress arises from shear forces, which are pairs of equal and opposing forces acting on opposite sides of an object. If the applied load consists of two equal and opposite parallel forces which do not share the same line of action, then there will be a tendency for one part of the body to slide over, or shear from the other part.

He said he could not provide the stability diagram that he prepared in 2014, but he had copied the DJC engineer's stability diagram from 2012.

69. He stated that the vehicle had worked faultlessly for two years and that he did not accept the complainant's expert conclusion that the subframe was too small. He suggested that the reason why the vehicle had failed the 2014 I&C Company test was due to operator abuse.

Mr Joyce's expert

70. The report presented by Mr Joyce's expert commented on the history of the matter and the standards used in truck mounted crane certification. The report comments on the complainant's expert report, and agrees with its finding that the subframe used on the truck was undersized. In his report, Mr Joyce's expert stated that he took issue with Mr Speight's report to the Investigating Committee which states that Mr Joyce had not met the requirements of the Heavy Vehicle Rules 31002. Mr Joyce's expert's report describes how Mr Joyce confirmed by hand calculation and a TrailerWin process that the crane mounting design was stable and there was a 40% safety margin from vehicle tip over.

71. Mr Joyce's expert's report concluded that "the issue of an LT400 Chassis Certificate by Mr Joyce after inspection of the 'failed' truck, even if accompanied by a reviewed Trailerwin crane loading diagram and calculations, was perhaps not the best way for Mr Joyce of recording that from a chassis certifier's perspective, there had been no fault of design of the vehicle…".

72. At the hearing, Mr Joyce's expert spoke to his report and his view was that there should be no more than 2.8 degrees of torsional twist in the chassis. He mentioned that Mr Joyce's calculations (from 2016) show 8 degrees of torsional twist, and he said that certifying this level of torsional twist was a judgement call to be made by an engineer.

73. Mr Joyce's expert said he believed the vehicle failed the 2014 I&C Company load testing due to fatigue in the subframe that had built up over time, along with cracks in the subframe that were not able to be seen during inspection.

74. Mr Joyce's expert said he was unsure why Mr Joyce issued an LT400 as these were only provided when a vehicle had been repaired or modified, and he personally would not have issued one. He further stated that after an engineer certifies a truck/crane combination, the stability diagram is put in the truck so that the operator knows if there are any limitations.

Mr Speight

75. Mr Speight gave further evidence in response to Mr Joyce's expert's evidence. He said that he did not agree with Mr Joyce's expert's statement that the subframe failed because of its age. He stated that if a certifying engineer was unhappy with the reuse of a subframe as part of a truck/crane combination (i.e. they considered it too small for a crane) the engineer could refuse to issue an Inspection Certificate. Mr Speight stated that he did not accept Mr Joyce's expert's assertion that subframes deteriorated over time. He agreed with the complainant's expert's conclusion that the subframe was too small for the crane. He also said that the cranes that had been on the subframe

before the combination of 2012 did not put any torsional load on the stabilising legs, and would not have affected the subframe when it was mounted with the larger Palfinger crane.

76. Mr Speight agreed with Mr Joyce's expert in respect of the amount of torsional twist. Mr Speight said the guidance that he had received was that the recommended torsional twist angle along the length of its chassis between the crane and its forward legs should be limited to 2.8 degrees. He referred the Disciplinary Committee to Mr Joyce's 2016 calculations (Appendix I in the report) where Mr Joyce had calculated torsion at 10.8 degrees, much higher than the recommended amount of 2.8 degrees.

77. In respect of shear stress, Mr Speight said that the allowable shear stress is 37% of the material yield stress, being 131 MPa for C350 grade steel. He said that Mr Joyce's calculations showing stresses of "233 MPa, high but 76% of yield, [C]350 grade (steel)", which exceeds the 131 MPa limit that would be acceptable.

DISCUSSION

THE DISCIPLINARY COMMITTEE'S ROLE

78. Professional disciplinary processes primarily exist to protect the public, uphold professional standards, and maintain public confidence in the profession and its regulation. They do this by ensuring that members of the profession adhere to certain universal (or accepted) professional standards.[18]

79. The role of the Disciplinary Committee in the disciplinary process is to consider whether Mr Joyce has acted in accordance with accepted professional standards and, if not, whether there are grounds for disciplining him in accordance with the Chartered Professional Engineers of New Zealand Act 2002 and Rules and/or the IPENZ Rules and Disciplinary Regulations.[19]

THE LEGAL TEST

80. The legal test to assess whether Mr Joyce acted in accordance with acceptable professional standards is whether he acted in accordance with what a reasonable body of his peers would have done in the same situation.

81. The assessment of whether an engineer has acted in accordance with accepted standards may be informed by whether reasonable members of the public would "consider such an act or omission, if acceptable to the profession, were to lower the standard of that profession in the eyes of the public".[20]

82. If the evidence is that Mr Joyce acted in accordance with accepted standards then we will dismiss the complaint. If the evidence is that Mr Joyce did not act in accordance with accepted standards then we will uphold the complaint. Where the behaviour meets this criteria, we must consider whether

[18] *Dentice v Valuers Registration Board* [1992] 1 NZLR 720 (HC).
[19] When referring to the Rules or Disciplinary Regulations, we refer to the IPENZ Rules and the accompanying Disciplinary Regulations that were in place at the relevant time.
[20] *Robinson v RA* (10 July 2015, *Appeal Ruling* #21) Chartered Professional Engineers Council.

the conduct "falls seriously short of accepted conduct" before imposing a disciplinary sanction under the Rules.[21]

83. This means that the matter for the Disciplinary Committee to decide in this case is whether the engineering services provided by Mr Joyce in certifying the vehicle in 2014 met the standard to be reasonably expected of a Chartered Professional Engineer and a Professional Member of IPENZ.

84. Our approach to this question has been to consider the work undertaken by Mr Joyce, the standards that applied to the performance of that work, and whether his performance met those standards.

ANALYSIS

Work carried out

85. At the request of the complainant, Mr Joyce inspected a crane that had been mounted to a truck and subframe. He did this at the premises of the vehicle owner. He was aware the vehicle had failed load testing carried out by I&C Company. Mr Joyce says he did not know the vehicle had failed the test due to stability. The complainants say Mr Joyce's employee would have told Mr Joyce why the vehicle failed. The Disciplinary Committee has not been able to make a finding on this point.

86. Mr Joyce says that no one on site at the time of the inspection could tell him what the nature of the failure was. Mr Joyce did not make any further enquires after the inspection with either the owner of the vehicle, or with the complainant.

87. Following the inspection, Mr Joyce issued an LT400 and an Inspection Certificate. The Disciplinary Committee has not been provided with calculations carried out in 2014, or a stability diagram; although Mr Joyce says he prepared both. The Disciplinary Committee is unable to verify whether Mr Joyce carried out any calculations in 2014 or completed a stability diagram before issuing those certifications.

Relevant Standards

88. In order to be certified for operation, a vehicle must comply with the Vehicle Standards Compliance Rule. An engineer must inspect the vehicle and determine, on reasonable grounds, that the vehicle is fit for purpose. There is no set definition of what fit for purpose means. However, considering the advice given to Engineering New Zealand from the complainant's expert, the NZTA employee and Mr Speight, we take it to mean that the vehicle is considered safe to operate at its specified capacity with the crane boom extended in all rotational positions, taking into account torsion.

89. Further, the Heavy Vehicle Rule requires that the chassis and body of a vehicle must be of adequate strength for all conditions of loading, and if practicable, any modification to a vehicle (such as a crane being mounted to a truck), must be carried out in accordance with the instructions from the vehicle manufacturer. The manufacturer of the crane, Palfinger, has produced and circulated a readily available installation manual which sets out the requirements to assess a truck chassis for torsional stiffness if auxiliary stabilisers are being used.

90. The Department of Labour Code of Practice requires that all cranes are safe to operate up to their full rating, and an engineer must certify that the crane installation/vehicle modification complies with

[21] Ibid.

the crane/vehicle manufacturer's recommendations as specified in appropriate land transport rules. In particular, when testing against its maximum load up to half the wheel sets in only one axle group may lose contact with the ground. At least half the individually braked wheel sets shall stay in contact with the ground.

Did Mr Joyce's work meet the relevant standards?

Understanding the nature of the failure

91. At the hearing, Mr Joyce gave evidence that following his inspection of the vehicle he did not contact the owner of the vehicle or I&C Company to determine the nature of the failure of the vehicle. He said that he did not know what further steps he could have taken in order to find out why the vehicle had failed testing.

92. Mr Joyce has issued an Inspection Certificate and LT400 for the vehicle after it had failed the I&C Company load test inspection without consideration of the cause of that failure. We consider that a professional engineer acting reasonably would have taken the opportunity following the inspection to consider this matter carefully, including taking steps to understand the issue that needed to be resolved for their client, namely why the vehicle had failed the test.

93. The fact that the vehicle had failed the load testing should have concerned Mr Joyce as a professional engineer. It is our view that before issuing the Inspection Certificate, and as part of determining whether the vehicle was "fit for purpose", it was the responsibility of Mr Joyce to take appropriate steps to understand why the vehicle had failed the I&C Company load testing.

Subframe

94. In his report of 8 October 2015 as commissioned by the complainant, the complainant's expert comments that the subframe used on the vehicle was "grossly inadequate from a torsional rigidity point of view for the size of crane and its positioning on the vehicle". At the hearing, Mr Speight said that he agreed with the complainant's expert in that the subframe was too small for the truck/crane combination.

95. In his report, Mr Joyce's expert states that he agrees with the complainant's expert in that the subframe used on the truck was undersized. At the hearing, Mr Joyce's expert suggested that the subframe itself was unsuitable because it had been used for many other vehicles, and it had fatigued, causing cracks in the subframe, which were undetectable to the eye. He further stated that he was of the view that subframes have an expected life span and suggested that this one had worn out. Mr Joyce said he believed that the subframe failed because of operator abuse.

96. We are inclined to accept the evidence of Mr Speight that the subframe was unsuitable for the truck and crane combination because of its size. Mr Speight was able to give us information regarding the manner in which subframes are reused, and that every truck/subframe/crane combination is custom

built, and it is up to the certifying engineer to decide whether or not it is fit for purpose and safe to certify.

Torsion

97. The complainant's expert's report states that the torsional twist experienced in a chassis with a rear mounted crane should be 3 degrees or less. Both Mr Speight and Mr Joyce's expert's agree that the degree of torsion should be no more than 2.8 degrees.

98. In Mr Joyce's initial response to the concerns raised with him, he stated that the standards that applied at the time did not require him to carry out a calculation regarding the torsional twist between the crane stabiliser legs and the auxiliary stabiliser legs.

99. Mr Joyce has also claimed that he carried out his own calculations in 2014 prior to issuing the Inspection Certificate and LT400 to confirm that it was fit for purpose. He has not been able to provide the Disciplinary Committee with his calculations or the associated stability diagram. Therefore the Disciplinary Committee is unable to make a finding as to whether or not a stability diagram was prepared and calculations were completed at the time of the inspection, and if calculations were completed, the accuracy of the calculations and whether they took into account torsion.

100. Mr Joyce has provided calculations that he carried out in 2016. He advises he would have applied the same thought processes/calculations in 2014. His 2016 calculations do not hold much evidentiary weight as they were not carried out at the time that he issued the Inspection Certificate and LT400.

101. At the hearing, Mr Speight interpreted Mr Joyce's calculations from 2016 to show the torsional twist under maximum load as 10.8 degrees. Mr Joyce's expert has interpreted the calculations as showing 8 degrees. Mr Joyce said that he calculated the maximum torsional twist to be 6 degrees.

102. Mr Speight, Mr Joyce's expert and Mr Joyce cannot agree exactly what Mr Joyce calculated torsional twist to be in 2016. However, Mr Speight and Mr Joyce's expert both recommend a torsional twist should be no more than 2.8 degrees, and Mr Joyce's calculation departs significantly from this recommendation.

103. This suggests that either Mr Joyce made an error in judgement in 2014 and 2016; or he did not complete engineering assessments/calculations considering torsional/stability issues in 2014.

Shear stress

104. In his submissions to the Disciplinary Committee, Mr Joyce provided his 2016 calculations of shear stress on the subframe as 190.6 MPa or 54.5% of its yield strength, and said that this was satisfactory.

105. In these calculations, Mr Joyce had calculated the maximum shear stresses to be 76% of a presumed 350 MPa yield strength of C350 grade steel. Mr Speight gave evidence that this calculation was

considerably above the allowable shear stress of 37%, and above the acceptable limits of material yield stress, being 131 MPa.

106. Despite not having Mr Joyce's original calculations, the significant difference in the 2016 calculations between what Mr Speight and what Mr Joyce has stated indicates to the Disciplinary Committee a significant departure from the relevant standards expected of a Chartered Professional Engineer.

Stability

107. At the July 2014 testing, the I&C Company noted that the required number of wheel sets were not seen to remain in contact with the ground, and were only willing to recommend a CoI was issued if the crane was downrated by 29%. In his response to this complaint, Mr Joyce stated that there were notes on his file that care needed to be taken when lifting the maximum rated load combination out to the side. There were no notes to this effect on the Inspection Certificate.

108. At the hearing, Mr Speight said that the best way to communicate any limitations on a crane would be to attach a Design Statement to the Inspection Certificate. We accept Mr Speight's evidence and consider that any limitations placed on the movement of a crane is a safety critical matter, and a professional engineer acting reasonably would have made it unequivocal to the client that there were limits on the movement of the crane.

PROFESSIONALISM

109. The professionalism of Mr Joyce does not form part of this complaint. However, the Disciplinary Committee would like to comment on the lack of professionalism shown by Mr Joyce during the disciplinary process.

110. In our view, it is incumbent on an engineer to ensure that they retain accurate records of their work. It is in their own interests and their client's interests to keep these records, especially when dealing with a safety critical area of engineering. Mr Joyce's notes and records do not demonstrate or support that he acted in a manner that a professional engineer should. In particular, Mr Joyce has not been able to produce his file from 2014, including the calculations and stability diagram that he claims he prepared.

111. Further, Mr Joyce's expert's report included a set of hand calculations completed by Mr Joyce demonstrating torsion. This gave the impression the calculations were completed by Mr Joyce in July 2014. However, no effort was made to state when they had been prepared, and it was only under questioning that it was acknowledged by Mr Joyce they were completed in 2016. In addition, a set of CraneWin calculations from 2012 (likely prepared by the DJC engineer) were included in Mr Joyce's expert's report with an inference that these had been prepared by Mr Joyce. Mr Joyce's expert's report included a diagram showing a 29% downrating, allowing the inference that this was part of Mr Joyce's calculations. It was only after the complainant demonstrated that this drawing had come from the I&C Company that this was acknowledged by Mr Joyce.

112. The above points indicate that either Mr Joyce's record keeping and referencing is of a very poor standard, or there has been deliberate effort to conceal the lack of engineering consideration taken in July 2014 in issuing the Inspection Certificate and an LT400.

113. Our second comment is in relation to Mr Joyce's engagement in the disciplinary process. We believe that it is incumbent on a professional engineer to fully participate and adhere to the directions of the

Chair of the Disciplinary Committee including timeframes, to show respect to the disciplinary process.

114. In this respect, on 20 June 2018, the parties were sent a Hearing Procedure with clear timetabling for any submissions to be provided to the Disciplinary Committee and other parties, as well as a notice period for notifying witnesses attending the hearing.

115. In response and despite reminders, Mr Joyce provided his expert's report, the transport company's file and reference to the Disciplinary Committee less than two days before the hearing began and well after the deadline specified in the Hearing Procedure. Also, Mr Joyce did not advise the Disciplinary Committee that he intended to bring his expert to the hearing to give evidence.

116. The timeframes set out in the Hearing Procedure exist to ensure all parties are treated fairly, giving all parties, including the Disciplinary Committee as the decision maker, the ability to see and consider all information prior to the hearing. Adhering to these principles of natural justice are necessary to ensure a procedurally fair process for all parties, and to maintain public confidence in the disciplinary process.

117. The lack of engagement by Mr Joyce in the disciplinary process could be seen as an attempt to hinder the Disciplinary Committee in carrying out its function in a fair and timely manner.

DECISION OF THE DISCIPLINARY COMMITTEE

DISCUSSION

118. In coming to our decision, we have appreciated the rationale the Investigating Committee have helpfully set out in its decision. The quality of Mr Joyce's work is at issue. We have made the following determination about Mr Joyce's competency to practice engineering in respect of section 21(1)(c) of the Chartered Professional Engineers of New Zealand Act 2002 (the Act) and Rule 4.3 of the IPENZ Rules.

Section 21(1)(c) of the Act

119. The Disciplinary Committee may make an order for discipline if it is satisfied that an engineer has performed engineering services in a negligent or incompetent manner.

120. In order to determine whether Mr Joyce acted negligently or incompetently we refer to the decision of the Chartered Professional Engineers Council in *R v K:*[22]

> *The starting point is to consider what standard sets the benchmark for negligent or incompetent behaviour. We consider that incompetence is a more serious allegation than negligence. One can be negligent without being incompetent, but it is highly unlikely that someone who is incompetent is not also negligent.*

121. Further, *Robinson v RA* states:[23]

> *Whether engineering services have been performed in an incompetent manner is a question of whether there has been a serious lack of competence (or deficit in the required skills)*

[22] *R v K,* Appeal Ruling 11/14, Chartered Professional Engineers Council at [36] and [38].
[23] *Robinson v RA* (10 July 2015, *Appeal Ruling* #21) Chartered Professional Engineers Council at [40(c)].

judged by the areas of competence which in this case are encapsulated by Rule 6 [of the Chartered Professional Engineers Rules (No 2) 2002 (the Rules)].

122. Chartered Professional Engineers are assessed against the 12 elements set out in Rule 6 of the Rules to establish their competence. The 12 elements are grouped into four criteria: engineering knowledge; managing engineering work; professional acumen; and developing technical solutions.

123. Mr Joyce's actions in 2014, in issuing an Inspection Certificate and an LT400 without making enquiries as to the nature of the failure of the vehicle during load testing, do not exhibit to us the elements of competence required of a Chartered Professional Engineer found in Rule 6, including good practice, risk management, judgement and investigation/analysis.

124. We find that Mr Joyce's behaviour fell below the accepted standard of a Chartered Professional Engineer and a reasonable member of IPENZ. We consider Mr Joyce acted incompetently.

125. We therefore conclude that Mr Joyce has met the grounds for discipline under section 21 of the Act, and Rule 4.3 of the Engineering New Zealand Rules.

DECISION

126. Having considered all the evidence, including written submissions and the oral evidence provided at the hearing on 9 August 2018, we have decided to uphold the complaint about Mr Joyce. We find that by certifying the vehicle in 2014, Mr Joyce breached his professional obligation to act competently. Accordingly, we find that there are grounds for disciplining Mr Joyce under section 21(1)(c) of the Act and Rule 4.3 of the Engineering New Zealand Rules.

127. Having found Mr Joyce in breach of section 21(1)(c) of the Act and Rule 4.3 of the Engineer New Zealand Rules, we need to determine what orders, if any, should be made against him.

ORDERS

128. There are a range of disciplinary actions available to us as set out in section 22(1) of the Act. There are also a range of sanctions in respect of Mr Joyce's membership with Engineering New Zealand under Rule 10 of the Engineering New Zealand Rules.

129. On 19 September 2018, our reserved decision was sent to the parties and they were invited to make submissions on penalties. The complainant made submissions on 4 October 2018. Mr Joyce did not provide a submission on penalties.

RELEVANT LAW

130. In *Roberts v A Professional Conduct Committee of the Nursing Council of New Zealand*[24] the High Court outlined a number of principles to be applied by the Health Practitioners Disciplinary Tribunal in determining the appropriate penalty to impose in disciplinary proceedings. The High Court determined that a disciplinary penalty must:

    a. protect the public (including through deterrence of other practitioners from engaging in similar conduct);

[24] [2012] NZHC 3354.

b. set and maintain professional standards;

c. where appropriate, rehabilitate the practitioner back to the profession;

d. be comparable with penalties imposed on practitioners in similar circumstances;

e. reflect the seriousness of the practitioner's conduct, in light of the range of penalties available;

f. be the least restrictive penalty that can reasonably be imposed in the circumstances; and

g. be fair, reasonable, and proportionate in the circumstances.

131. The High Court also stated that while penalty may have the effect of punishing a practitioner, punishment is not a necessary focus for the Tribunal in determining penalty.

132. The principles in *Roberts* are broadly applicable to our power to make disciplinary orders under section 22 of the Act and Rule 10 and they are the principles we rely on when considering the appropriate penalty orders in this case.

133. The principles have general application to professional disciplinary proceedings in the light of the Supreme Court's decision in *Z v Dental Complaints Assessment Committee*.[25] In *Z,* the Supreme Court makes general statements about the purposes of professional disciplinary proceedings, noting that such proceedings are designed to:

> *Ascertain whether a practitioner has met appropriate standards of conduct in the occupation concerned and what may be required to ensure that, in the public interest, such standards are met in the future. The protection of the public is the central focus.*

134. This is consistent with *Roberts*, as *Roberts* lists public protection and the maintenance of professional standards as the foremost considerations relevant to penalty.

135. The Supreme Court in *Z v Dental Complaints Assessment Committee*[26] also states that while professional disciplinary proceedings are not intended to punish practitioners, they may have a punitive effect in practice. This is also consistent with the principles set out in *Roberts*, in that the penalty must be the least restrictive penalty and that punishment is not a necessary focus of a disciplinary penalty.

136. It is appropriate that disciplinary penalties mark the profession's condemnation of the relevant conduct, noting that to do otherwise would not be consistent with the purpose of the Act to establish the title of Chartered Professional Engineer as a mark of quality.[27]

137. The reasoning underlying *Roberts'* focus on practitioner rehabilitation is less relevant to penalties under the Act in light of the fact that the removal or suspension of a Chartered Professional Engineer's registration does not prevent the individual practising as an engineer but does prevent use of the Chartered Professional Engineer title. Similarly, the removal of an engineer's membership

[25] [2008] NZSC 55.
[26] Ibid.
[27] Section 3 of the Chartered Professional Engineers of New Zealand Act 2002.

to Engineering New Zealand does not prevent the individual practising as an engineer but prevents the individual from claiming to be a member of Engineering New Zealand.

THE COMPLAINANT'S SUBMISSIONS

138. The complainant submitted that Mr Joyce:

- have his registration as a Chartered Professional Engineer removed, and not be allowed to apply for re-registration;
- be censured; and
- fined $5,000;

139. They further submitted that the Registrar of the Licensed Building Practitioners be notified, and that the public be notified of the Disciplinary Committee's decision.

MR MARTEN'S SUBMISSIONS FOR MR JOYCE

140. Mr Joyce instructed counsel, Bevan Marten. Mr Marten advised the Disciplinary Committee that Mr Joyce did not wish to make submissions on penalty.

DISCUSSION

141. Engineers hold significant knowledge and specialised expertise. They are capable of making judgements, applying their skills and reaching informed decisions in relation to their work that the general public cannot. The decisions engineers make and the services they provide often do not just impact the engineer and their client but have wide-reaching effects on the public.

142. The public places significant trust in engineers to self-regulate. As a professional, an engineer must take responsibility for being competent and acting ethically. The actions of an individual engineer also play an important role in the way in which the profession is viewed by the public.

143. The Disciplinary Committee has found that Mr Joyce has departed from what could be expected of a reasonable engineer, and this departure is serious. That is, Mr Joyce by certifying the vehicle in 2014, Mr Joyce breached his professional obligation to act competently.

144. In our view, Mr Joyce's actions, if condoned, would undermine the public's trust in the engineering profession and reduce the public confidence in the Chartered Professional Engineer label and in members of Engineering New Zealand. Mr Joyce's actions are serious, and our orders need to reflect our view of the seriousness of the breach of his obligation to act competently.

Registration

145. In respect of orders relating to registration, the Disciplinary Committee may order that an engineer's registration be removed, and that they may not apply for re-registration before the expiry of a specified period; that their registration be suspended for a period of no more than 12 months or until they meet specified conditions relating to the registration; or that the engineer be censured.[28]

146. Mr Joyce is not currently registered as a Chartered Professional Engineer, and therefore the Disciplinary Committee's only real option in this respect is to censure him. We consider that if Mr

[28] Section 22 Chartered Professional Engineers of New Zealand Act 2002.

Joyce had still been a Chartered Professional Engineer, his actions were sufficiently serious to have warranted a suspension from the register.

147. With this in mind, we consider that a censure is appropriate in this case.

Membership

148. In respect of membership with Engineering New Zealand, the Disciplinary Committee may order that an Engineering New Zealand member be:[29]

- removed from membership;
- suspended from membership for any period;
- suspended from membership until such time as the Engineering New Zealand member has fulfilled requirements for professional development as have been specified by the Committee;
- suspended from membership for a period of time if by a prescribed date, the member fails to fulfil requirements for professional development as has been specified by the Committee.

149. Mr Joyce is a Chartered Member of Engineering New Zealand (CMEngNZ) and all the options outlined above are open to the Disciplinary Committee to consider.

150. In *A v Professional Conduct Committee*[30] the High Court said, in relation to a decision to cancel or suspend a professionals' registration, that four points could be expressly and a fifth impliedly derived from the authorities:

> *First, the primary purpose of cancelling or suspending registration is to protect the public, but that 'inevitably imports some punitive element.' Secondly, to cancel is more punitive than to suspend and the choice between the two turns on what is proportionate. Thirdly, to suspend implies the conclusion that cancellation would have been disproportionate. Fourthly, suspension is most apt where there is 'some condition affecting the practitioner's fitness to practice which may or may not be amendable to cure'. Fifthly, and perhaps only implicitly, suspension ought not to be imposed simply to punish.*

151. In the recent decision of *Attorney-General v Institution of Professional Engineers New Zealand Incorporated and Reay*[31] the High Court set out the standard the public expects when an engineer is a member of Engineering New Zealand:

> *…membership of a professional body, such as the Institution, can confer a status that signals trustworthiness to the public. This status reflects the value that society places upon the training and skill acquired by members and upon the Institution's ability to maintain the standards of its members through ongoing education, training and disciplinary processes.*

152. The Court also went on to set out the public expectation of Engineering New Zealand's role in maintaining the standard of the profession:[32]

> *There is, however, a counterbalance to the public trust that is reposed in members of professional bodies such as the Institution. That counterbalance is the public expectation*

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[29] Rule 10.5 Engineering New Zealand Rules.
[30] *A v Professional Conduct Committee* [2008] NZHC 1387 at [81].
[31] [2018] NZHC 3211 at [55].
[32] Ibid at [56]

that the Institution will tightly regulate admission into its ranks and ensure members maintain high professional standards. The public expects that if a person is to be afforded the status of membership of the Institution, then those individuals will maintain professional standards and that those standards will be enforced by the Institution through, if necessary, disciplinary proceedings. If a professional body, such as the Institution, wishes to maintain that public trust, and the value associated with membership status, then it must act in accordance with this expectation.

153. The Disciplinary Committee is concerned that Mr Joyce's actions, if condoned, would have a significant negative effect on the value and trust society places upon members of Engineering New Zealand. It has therefore decided to suspend Mr Joyce from membership of Engineering New Zealand until he fulfils the requirements for professional development specified by us. This recognises our view that there needs to be a measure of public protection in our orders, while also recognising that there is potential for Mr Joyce to learn from this matter and rehabilitate.

154. The Disciplinary Committee considers that this is a proportional response to the seriousness of this matter. It notes that the suspension of Mr Joyce's membership does not prevent him from practising as an engineer, it only prevents him from using the postnominal CMEngNZ and holding himself out to be a member of Engineering New Zealand. Mr Joyce has not made submissions on whether he has addressed the concerns relating to his competency. It is on this basis that the Disciplinary Committee considers that supervision during this period of suspension is necessary to protect the public and reinforce the standards of, and public trust in, the engineering profession.

155. We require Mr Joyce to complete a year of supervision with a senior engineer approved by Engineering New Zealand, and professional development to the satisfaction of the supervising engineer. In particular, the professional development will focus on Mr Joyce's competency in heavy vehicle engineering. The supervisor will report back to the Chief Executive of Engineering New Zealand regularly as to Mr Joyce's progress.

156. At the end of the year of supervision, and for Mr Joyce to be considered for readmission to the membership of Engineering New Zealand, Mr Joyce will provide evidence to Engineering New Zealand that he has met the conditions of his supervision and how this will be reflected in his future engineering practice. Mr Joyce's supervisor will also provide a recommendation to Engineering New Zealand as to whether Mr Joyce has suitably fulfilled the requirements of our order. This recommendation should include the supervisor's opinion as to whether Mr Joyce is able to practise engineering work in his practice area competently and with public safety at the forefront of any engineering activity that he undertakes. Engineering New Zealand will decide whether to readmit Mr Joyce as a member.

Fine

157. Under the Engineering New Zealand Rules, and the Chartered Professional Engineers of New Zealand Act 2002, the Disciplinary Committee may order that an engineer pay a fine up to a maximum of $5,000.00.

158. We do not consider it necessary to consider a fine under both the Engineering New Zealand Disciplinary Regulations and the Chartered Professional Engineers of New Zealand Act 2002.

159. As stated above, Mr Joyce's behaviour fell well below the standard expected of a professional engineer, and it is important that Engineering New Zealand condemns this behaviour and that this condemnation is reflected in the fine ordered.

160. We have considered precedent in this matter. Reviewing precedent on fines has been helpful in assisting us to make our decision; however, we are not bound by precedent. We consider that recent precedent does not reflect current approaches to professional discipline, public expectations or the expectations of the profession. We consider that the bar needs to be set higher to condemn this type of behaviour. We find that the appropriate penalty in this case is $3,500.00.

Costs

161. The Disciplinary Committee can order that the engineer pay costs and expenses of, and incidental to, the inquiry by the Registration Authority and Engineering New Zealand. The ordering of payment of costs is not the nature of a penalty.

162. When ordering costs, it is generally accepted that the normal approach is to start with a 50% contribution. That, however, is a starting point and other factors may be considered to reduce or mitigate that portion. The balance of costs must be met by the profession itself.

163. In respect of the medical profession, the Court in *Vatsyayann v PCC* said:[33]

> *…professional groups should not be expected to bear all the costs of a disciplinary regime and that members of the profession who appeared on disciplinary charges should make a proper contribution towards the costs of the inquiry and a hearing; that costs are not punitive; that the practitioner's means, if known, are to be considered; that a practitioner has a right to defend himself and should not be deterred by the risk of a costs order; and that in a general way 50% of reasonable costs is a guide to an appropriate costs order subject to a discretion to adjust upwards or downwards.*

164. The Disciplinary Committee has considered other Disciplinary Committee orders of costs. As Mr Joyce has chosen not to make submissions we have no insight into his means. We have considered whether an uplift is appropriate in this case as additional costs were incurred by Engineering New Zealand in investigating and hearing this matter owing to Mr Joyce's lack of engagement in the process. In terms of mitigating factors, we are cognisant of the length of time that it has taken for Engineering New Zealand to hear this matter.

165. Taking all factors into account, it is the decision of the Disciplinary Committee that Mr Joyce pay 50% of costs incurred by Engineering New Zealand, which is consistent with previous disciplinary orders.

Naming

166. It is open to the Disciplinary Committee to name the Engineering New Zealand member, have the order made against the member stated, have the nature of the breach described in the official journal of Engineering New Zealand, and the matter publicised in any other many as be prescribed by the Committee, or any combination of these possibilities as the Committee might prescribe.[34] The

[33] [2012] NZHC 1138 at [34].
[34] Rule 10.5 Engineering New Zealand Rules.

Registration Authority must notify the Registrar of Licensed Building Practitioners of the order, and may publicly notify the order in any other way that it thinks fit.[35]

167. Naming is the starting point and will only be inappropriate in a limited number of circumstances where the engineer's privacy outweighs the public interest. In *Y v Attorney-General*[36] the Court of Appeal explored the principles that should guide the suppression of the names of parties, witnesses, or particulars in the civil context. It stated that the starting point is the principle of open justice.

168. The question is then, do the circumstances justify an exception to that principle. In a professional disciplinary context, a practitioner is "likely to find it difficult to advance anything that displaces the presumption in favour of disclosure".[37] This is because the practitioner's existing and prospective clients have an interest in knowing details of the conduct, as this allows them to make an informed decision about the practitioner's services.[38]

169. Consistent with these precedents, the starting point is that naming of engineers' subject to a disciplinary order is the normal expectation. This is as public protection is at the heart of disciplinary processes, and naming supports openness, transparency, and accountability.

170. The Disciplinary Committee has considered whether naming would cause extreme hardship, cast suspicion on another person that may cause undue hardship on that person, create a real risk or prejudice, endanger the safety of any other person, lead to the identification of another person whose name is supressed by order or by law, and whether it would prejudice the maintenance of the law. However, the threshold for departing from the fundamental principle is high, and the factors need to be considered against the public interest in naming Mr Joyce.

171. Mr Joyce has chosen not to make a submission to us on this point nor an application for a suppression order. After considering the above factors, the Disciplinary Committee has no factual material to consider justifying the departure from the fundamental principle of naming. In this case, given the seriousness of Mr Joyce's departure from expected standards we consider it appropriate for Mr Joyce to be named.

172. The Registration Authority will carry out its obligation to notify the Registrar of Licensed Building Practitioners.

SUMMARY OF ORDERS

173. In exercising our delegated powers, we order that:

a. Mr Joyce is censured by Engineering New Zealand as the Registration Authority;

b. Mr Joyce's membership with Engineering New Zealand is suspended for a period of one year until Mr Joyce has fulfilled requirements for professional development as have been specified by the Committee;

c. Mr Joyce is fined $3,500;

d. Mr Joyce is to pay of $11,500 towards the costs incurred by Engineering New Zealand in inquiring into Mr Joyce's conduct (approximately 50% of Engineering New Zealand's total costs); and

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[35] Section 22(5) Chartered Professional Engineers of New Zealand Act 2002.
[36] [2016] NZCA 474.
[37] Ibid at [32].
[38] Ibid at [62].

e. Engineering New Zealand publish the Disciplinary Committee's final decision on this complaint on its website, in a public press release and in any other communication it considers appropriate and Mr Joyce's interim name suppression is lifted.

Peter McCombs CPEng DistFEngNZ IntPE (Chair)
On behalf of the Disciplinary Committee