ENGINEERING COUNCIL OF SOUTH AFRICA

PRACTICE NOTE: 2016/1

ERROR VERSUS IMPROPER CONDUCT

1. INTRODUCTION

1.1. When a failure occurs on an engineering project, there appears to be an automatic assumption of professional negligence on the part of the engineer involved in the design or supervision of the work. However, the question needs to be asked whether all failures or losses associated with engineering work are as the result of professional negligence or improper conduct.

1.2. This policy framework seeks to differentiate between error and professional improper conduct.

1.3. Although it is written primarily from the point of view of investigation of improper conduct in terms of the Rules of Conduct for Registered Persons (Code of Conduct), Board Notice 256 of 2013, that there is significant overlap with an engineer's potential liability in a civil matter.

2. BACKGROUND

2.1. ECSA Code of Conduct

2.1.1. The Code of Conduct contains rules which deal with the competency and integrity of the registered person, and the safeguarding of public interest, the environment and the dignity of the profession.

2.1.2. When assessing the question of "error versus negligence" the competency requirements are particularly relevant. Clause 3(1) of the code requires that "registered persons:

a. *must discharge their duties to their employers, clients, associates and the public with due care, skill and diligence;*

b. *may only undertake work which their education, training and experience have rendered them competent to perform and is within the category of their registration; and*

c. *must, when carrying out work, adhere to the norms of the profession."*

2.1.3 Requirements (a) and (c) are particularly relevant as they set the standard which will be used to judge the conduct of the engineer with regard to the execution of his or her professional duties.

2.2. Professional Services Contracts

2.2.1. There are a number of standard professional services contract used for the appointment of an engineer. The most common of these are the FIDIC, NEC, PROCSA, CIBD and CESA forms of agreement. All of these agreements spell out the obligations of the professional in much the same manner.

2.2.2. To take but one example, in terms of the NEC Professional Services Contract, the consultant provides the services in accordance with the scope, is obliged to use the skill and care normally used by professionals providing similar services and obeys instructions from the employer which are in accordance with the contract. The FIDIC contract is even more specific in this regard when it states that "*the consultant shall have no other responsibility than to exercise reasonable skill, care and diligence in the performance of his obligations under the contract*".

3. DISCUSSION

3.1. Common Obligations

3.1.1. The requirement for professional to exercise skill, care and diligence are common threads both in the ECSA Code of Conduct and professional services contracts.

3.1.2. Even where no contract exists between the engineer and the person who has suffered damage, one of the requirements of a delictual claim is to establish fault (blameworthiness or culpability) on the part of the engineer. The test which is typically applied is that of the reasonable person. This test requires an adequate level of skill and care on the part of the engineer and does not represent a standard of exceptional skill, care or diligence.

3.1.3. Note that there is no requirement that the professional services rendered are to be free of errors. Such an obligation may arise when the basis of the appointment is fitness for purpose of the final product, i.e. when the acceptability or otherwise of the engineer's performance is based on the fitness of the product rather than the standard of the services provided.

3.2. Non-negligent errors

3.2.1. On engineering projects, there are a number of possible causes of failure, damage or loss that could be attributed to the engineering services performed. Some examples are inadequate investigation of physical conditions, overlooking critical design situations, mistakes in design calculations and inadequate supervision of the work. Many of these are seen

as errors that could have been prevented by the exercise of skill, care and diligence in accordance with the norms of the profession. The question, however, arises whether all errors fall within this category.

3.2.2. A simple illustration many assist in answering this question. Take the example of a geotechnical investigation for a building. Such an investigation would typically involve obtaining information on the soil profile at a limited number of borehole or test pit positions, sampling and testing of materials and the formulation of recommendations based on the results. It is neither practical nor economical to investigate, sample and test all the materials on site. Anomalies will occur – and failure to detect them is not the result of an error by the investigator. They simply represent imperfections in the available information.

3.2.3. With geotechnical work, as with most other forms of engineering, assessments are required and decisions are made on the basis of imperfect information. This requires engineering judgement, i.e. a process of making considered choices knowing that there is a possibility of that the choice made may be incorrect even where skill, care and diligence is exercised.

3.3. Error v Negligence -The Basic Test

3.3.1. The basic test in the assessment of error versus negligence be it in a civil liability or professional conduct matter, is whether or not the error could have been avoided had the engineer exercised skill, care and diligence in accordance with the norms of the profession.

3.3.2. The norms of the profession will be judged, inter alia, in terms of codes and standards (including the ECSA Code of Conduct), the scope of services normally offered in the execution of such work and the conduct of the reasonable person / engineer in a similar situation.

3.3.3. If it can be shown that the engineer acted outside of the requirements of accepted codes and standards, failed to provide the scope of services that would normally be expected or acted differently to the conduct expected of a reasonable engineer, there would be *prima facie* evidence of both professional misconduct and liability for damages.

3.3.4. It is important to note that the level of skill, care and diligence expected of the engineer is dependent on the nature of the services which are being offered, as is shown in the above quote from the NEC Professional Services Contract. Specialised work will require a higher standard. This concept also comes through in the ECSA Code of Conduct where Clause 3(1)(b) requires that the registered person may only undertake work which their education, training and experience have rendered them competent to perform and is within their category of registration. Thus, undertaking specialised work without a higher

standard of skill, care and diligence or without registration in the appropriate category is also *prima facie* evidence of misconduct.

3.4. Precedent

3.4.1. There is precedent of the application of the above principles by ECSA's Investigating Committee.

3.4.2. Probably the best example of this is a complaint against an engineer for cracking of a house founded on a backfilled quarry. In this instance, the engineer was provided with extracts from a geotechnical report indicating that the quarry had been backfilled and compacted for the purposes of township development. In addition, he was provided with a certificate signed by the registered professional who investigated the township development giving a soil classification for the stand on which the development was to take place. The engineer dug test holes on site to confirm that the expected conditions were present and designed the foundations in accordance with standard requirements for the given soil classification. In this instance, the Investigating Committee held that the engineer had acted reasonably under the circumstances, exercising skill, care and diligence in accordance with the norms of the profession. It was, however, noted that the Investigating Committee would have found otherwise had the engineer not been provided with geotechnical information on the site including a soil classification certificate signed by a registered professional, and had he not taken steps to confirm the correctness of the information provided and to design the foundations accordingly.

4. CONCLUSION

4.1. It is concluded that errors do occur in engineering practice and that not all errors are negligent or constitute professional misconduct.

4.2. The basic test to be applied is whether the error could have been prevented by the exercise of skill, care and diligence in accordance with the norms of the profession, commensurate with the type of services provided.