

**FINAL YEAR PROJECT REPORT
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**EFFECT OF TEMPERATURE ON
CRACK BEHAVIOUR OF REINFORCED
CONCRETE BEAMS.**

BY

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ABSTRACT

Behaviour of crack propagation can be predicted upon load application on normal Reinforced Concrete Beams. In most conventional method of reinforced concrete analysis, cracks are formed in the principal stress direction and are not allowed to change direction with the change in state. This phenomenon leads to crack direction in consistence with the limit state. A proposed model will be analyzed. Cracks might occur not only due to loading and support conditions but also moment in beam, direct tension, shear, torsion, shrinkage, creep, torque, changing of temperature and others. Reinforcement detailing (1) might lead to thermal cracking and in this study a cracked structural beam is analysed with respect to thermal changes.

1.0 INTRODUCTION

1.1 General

Aiming at giving full play to their potential functions, concrete structure are born as a result of design and construction work which place emphasis on durability. In some cases, however, they are born as structures which deviate from the originally intended design conditions and construction conditions. Further, due to changes encountered after birth such as change in enviromental conditions and load conditions, or due to factors that were unpredictable at the time of birth , concrete structure deteriorate, and sustain injuries. Maintenance control and repair are indispensable for enabling the concrete structure to display their usefulness even while suffering from such deterioration and injuries.

From the above phenomenon a case study on a deteriorated structure located at the Student Centre , School Of Architecture and Planning (KSPU), ITM Shah Alam was considered as having only an extremely crack of occurance.

It has been pointed out that although steel is provided in reinforced concrete to resist tensile stresses, it does not prevent cracking. Unsightly cracking provokes adverse criticism, while uncontrolled cracking can result in serviceability problem and even in reduced strength, so that excessive cracking under normal service conditions must be prevented. Cracking in the reinforced concrete can be classified into various type. These fall broadly into two catagories, those caused by external loads applied to the structure and those which occur independantly of the applied load. Flexural cracks and