DEVELOPING A CAR PARK WITH INTRODUCING INTERLOCKING CONCRETE BLOCK AT INTI INTERNATIONAL UNIVERSITY.

BY

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I declare that this project is entirely my own work except where due reference are made

G.RAVINTHIRAN
25/1/2015

ABSTRACT

This project is mainly about developing car park with introducing interlocking concrete block at inti international university. The purpose of my project is to create a greener environment around campus. The work has been done with collecting some literature view based on topic.

In this project there are few section been divided:

The first section is introduction where introduces briefly about interlocking concrete block as well as the purpose and objective of this project.

The second section is about advantages and the limitation of interlocking concrete block consists of studies about concrete blocks.

The next section will shows about the types of interlocking concrete block and characteristics of interlocking concrete block and physical requirements. A survey form has been created to investigate the perception of the road users towards the use of interlocking concrete block around campus.

The fourth, which is the most important section of this project, is developing car park with introducing interlocking concrete block. After all the researches and studies, this section will show the methods and techniques how to develop car park with interlocking concrete block. A calculation of the number of concrete block needed. With collected data, the estimation of the paving cost being calculated. The car park area was calculated using the JKR method which follows the specific standard measurements of Malaysia.

The fifth section is conclusion where concludes the report with the final information and results obtained.

The last section is references which show all the books and website links used as references to study and researches for my project.

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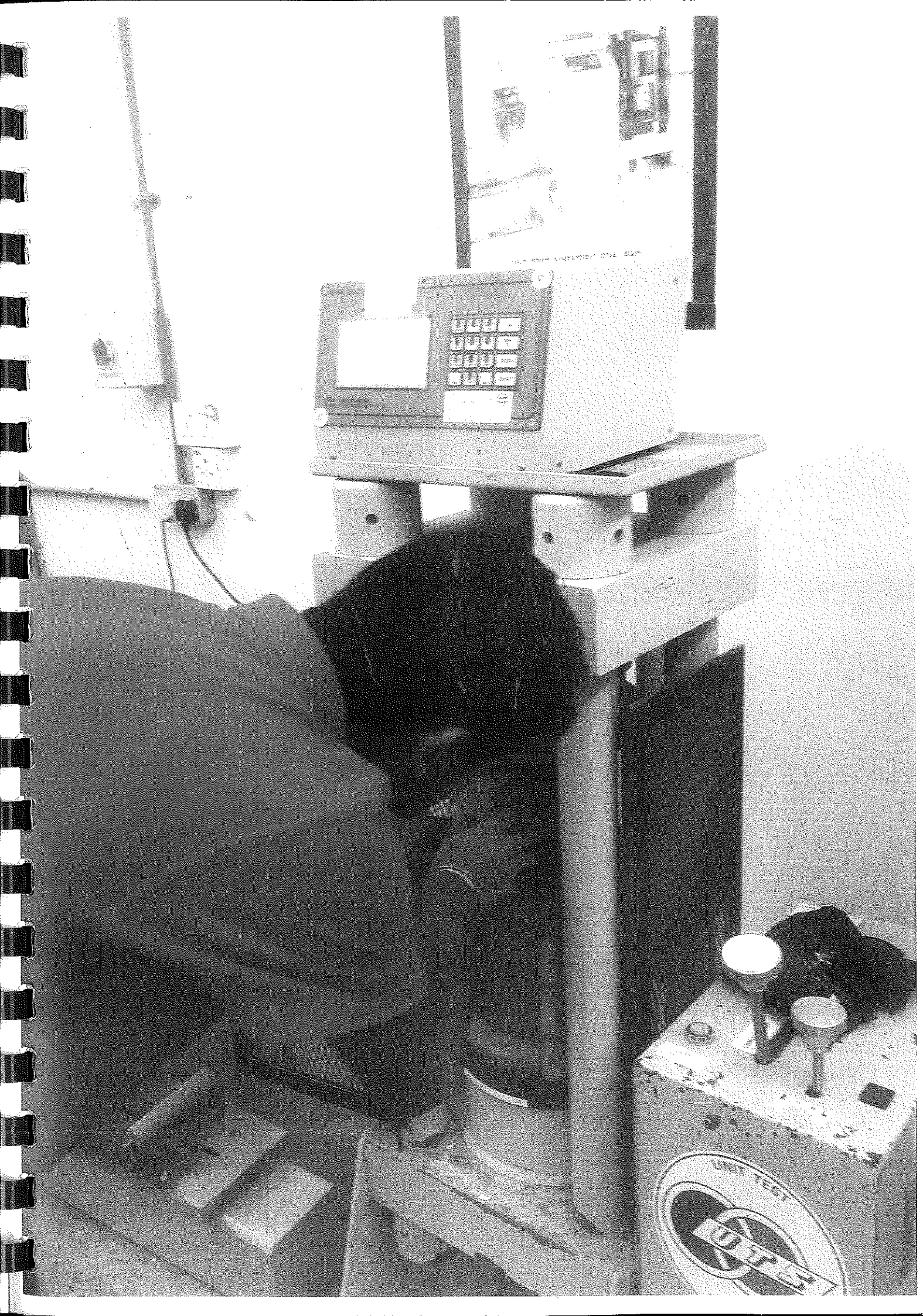
Appendices

List of Illustrations

PHOTOGRAPHIC


UNIT TEST


WEIGHT

BODY

INTRODUCTION

Interlocking concrete block called as segmental paver or interlocking concrete block pavement (ICBP). Interlocking Concrete Block Pavement (ICBP) has been extensively used in several numbers of countries for quite some time as a problem-solving technique for providing pavement in areas where conventional types of construction are less durable due to many operational and environmental constraints too. This ICBP technology has been introduced in Malaysia in construction field, for specific requirement like footpaths, parking areas etc. but now it is being adopted extensively in different uses where the conventional construction of pavement using hot bituminous mix or cement concrete technology which is not feasible or desirable. Upon construction and laying of concrete block pavement is a new approach in construction of pavement using Interlocking Concrete Paver Blocks.

This block were shaped in rectangular in shape and has more or less the same size as the bricks. In past five decades, the block shape has steadily evolved from non-interlocking to partially interlocking to fully interlocking to double up the interlocking shapes. Consequently, the pavements in which non-interlocking blocks are used are designed as Concrete Block Pavement (CBP) or non-interlocking CBP, and those in which partially, fully or multiply interlocking blocks are used are designed as 'Interlocking Concrete Block Pavement (ICBP).

ICBP consists of a surface layer of small-element, solid un-reinforced pre-cast concrete paver blocks laid on a thin, compacted bedding material which is constructed over a properly profiled base course and is bounded by edge restraints/ kerb stones. This block joints are filled by using suitable fine material. Many number of such applications for light, medium, heavy and very heavy traffic conditions are currently in practice by using this ICBP around. So now I have decide to introduce in car park at INTI INTERNATIONAL UNIVERSITY. This car park design will be based as two way traffic parking which is 90^0 angled parking.

ADVANTAGES AND LIMITATION

There are many features of ICBP as compared to the conventional methods of pavement construction and hence making it as a suitable option for application in the car park. Some of these are:

- Mass production under the factory conditions ensures the availability of blocks having a consistent quality and a high dimensional accuracy.
- Good quality of blocks ensures the durability of pavements when it is been constructed to the specifications.
- ICBP can tolerates with higher deflections without structural failure and it will not be affected by the thermal expansion or contraction.
- ICBP also does not require curing, and so it can be opened for traffic immediately after the construction.
- Construction of ICBP is a labor intensive and requires less sophisticated equipment.
- The system provides ready access to the underground utilities without any damage to pavement.
- Maintenance of ICBP is a easy and simple and it is not affected by fuel or oil spillage.
- ICBP is use of colored blocks facilitates permanent traffic markings.
- ICBP is a resistant to punching loads and horizontal shear forces caused by maneuvering vehicles
- Low maintenance cost and a high salvage value ensures the low life cycle cost.

However, important limitations of the technique are:

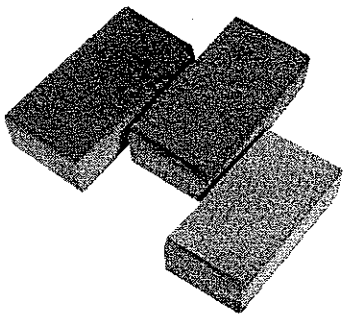
- Quality control of blocks at the factory premises a prerequisite for durable "ICBP".
- Any deviations of base course profile will be reflected on the "ICBP" surface. Therefore extra care needs to be taken to fix the same.

- High quality and gradation of the coarse bedding sand and the joint filling materials are essentially for good performance.

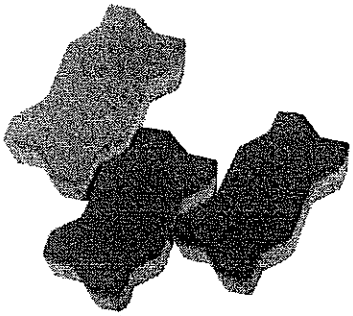
- "ICBP" over unbound granular base course is susceptible to adverse the effects of poor drainage and will deteriorate faster. "ICBP" is not suitable for high speed roads (speed above 60 km/h).

TYPES OF ICBP

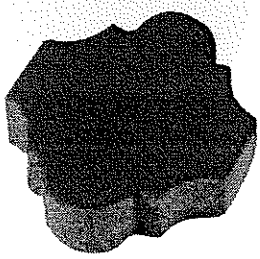
A. FLEXIPAVE (FIGURE 1)



B. SUNPAVE (FIGURE 2)



C. UNI- ESPAVE (FIGURE 3)



D. UNI-DÉCOR (FIGURE 4)