Introduction:

1.1 General:

In India there is large amount of use of concrete which is made from natural material like river sand, course aggregate from demolition of mountains by stone crusher and artificial material like cement. Indian buildings in 2013 have generated more than 626 million tonnes of solid waste which is 52 times more than official estimate. A great part of this waste is being used illegally for dumping and filling up urban water bodies. From the large amount of solid waste generated from various industries, construction and demolition waste contributes in large amount.

Construction and demolition waste is the waste which is generated from various activities like residential construction work, road work, renovation work, demolition, etc.

1.2 Construction Waste:

Presence of Construction waste and other inert material like drain silt, dust and grit is significant. Non inert construction waste is directly put to use for land filling. Recycled aggregates are obtained by crushing of concretes from demolition of structural components in many structures such as old buildings, concrete pavements, bridges and structures at the end of their service life construction waste needs to be focused upon in view of (i) the potential to save natural resources (stone, river sand, soil, etc) and energy (ii) its bulk which is carried over long distances for just dumping, (iii) its occupying significant space at landfill sites.

Utilization of Construction waste is quite common in industrialized countries but in India so far no organized effort has been made. The utilization of the construction Waste is necessary in upcoming years in growing industries.

1.3 Coir Fibre
Coir fibre is a natural fibre which is obtained from the husk of coconut. It is the fibrous material found between the hard, internal shell and the outer coat of coconut. The word coir is obtained from Tamil word “kayiru” and its scientific name is “cocoas”.

The individual cellular structure is narrow and hollow, with thick walls of cellulose. It is pale in colour at immature stage but with age becomes hardened and yellow with deposition of lignin layer. Each cell is about 1mm long with diameter 10-20 μm. Generally length of fibre is found between 10 to 30 cm. Coconut coir has about 48% of lignin which adds strength and elasticity to the cellulose based fibre walls. Since lignin resists bio-degradation, high lignin content also imparts longevity to outdoor applications. Coir fibre nearly takes more than 20 years to decompose.

Fig No 1: Coir Fibre

Availability Of Coir In Different Forms
Coir fibres are available in different forms based upon the necessity of the market such as for house-hold uses, for commercial uses involving light-weight boards for sound-proof walls in auditoriums, etc. They can be illustrated as below:

1. Random distributed coir
2. Coir ropes
3. Coir grids/nets
4. Coir sheets
5. Coir mats
6. Coir cement boards
7. Coir blocks

1.4 Paver Block

Concrete paver block were first introduced in Holland in the fifties as replacement of paver bricks. These blocks were rectangular in shape and had more or less the same size as the bricks. During past five decades, the block shape has steadily evolved from non-interlocking to partially interlocking to fully interlocking to multiply interlocking shapes.

Interlocking concrete block pavement (ICBP) consists of a surface layer of small element, solid unreinforced precast concrete paver blocks laid on a thin, compacted bedding material which is constructed over properly profile base coarse. Concrete paving block is versatile, aesthetically attractive, functional and cost effective and requires little or no maintenance if correctly manufactured and laid. Interlocking concrete paving block technology has been introduced in India in construction, a decade ago, for specific requirement like footpaths, parking areas, gardens, etc.
A properly design ICBP gives excellent performance when applied at location where conventional systems have lower service life due to number of geological, traffic, environmental and operational constraints. Many number of such applications for light, medium, heavy and very heavy traffic conditions are currently in practice around the world.

1.3 Small steps to make reuse from Construction waste:

1. Construction waste can be recycled and reused in construction and minimize environmental degradation and pressure on land. Small steps in Delhi have been taken to reuse the recycled aggregates in RMC, pavement blocks, kerb stones and concrete bricks.
2. Processed Construction waste can be used for road and embankment construction.
3. Finer grade can be molded into blocks and slabs with appropriate binder