


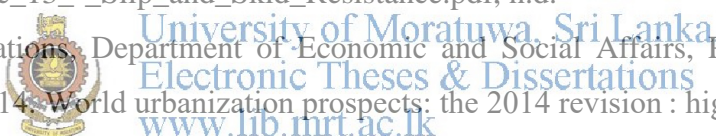
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# Annexes

## Annex 1

### Questionnaire survey on pedestrian walkways in urban areas

Date  Time

1 Please tick the respondent category you belong to


1.1 Gender

1.2 Age Group

15-20	21-25	26-30	31-35	36-50	Above 50
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.3 Experience as a Pedestrian  Driver

2 Location (City)

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3 Profession / Educational level

4 Do you prefer to have a **separate pedestrian walkway** along the road?

Yes  No

5 Should there be a **visual identification** between the pedestrian walkway and vehicle path?

Yes  No

6 Your favourite material for a pedestrian walkway

(Place numbers 1 to 5 according to your favourite, insert 1 for the most favourite option)

6.1	Asphalt	<input type="text"/>
6.2	Concrete	<input type="text"/>
6.3	Clay Brick	<input type="text"/>
6.4	Soil	<input type="text"/>
6.5	Turf	<input type="text"/>

7 Do you prefer to have a separate recreational area?

Yes

No

8 Your favour material for recreational area

(Place number 1 to 5 according to your favourite, insert 1 for the most favourite option)

8.1	Asphalt	<input type="text"/>
8.2	Concrete	<input type="text"/>
8.3	Clay Brick	<input type="text"/>
8.4	Soil	<input type="text"/>
8.5	Turf	<input type="text"/>

9 Please mark the most uncomfortable time of the day on urban walkways



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8.00 – 9.00 am	<input type="text"/>	2.00 – 3.00 pm	<input type="text"/>
9.00 – 10.00 am	<input type="text"/>	3.00 – 4.00 pm	<input type="text"/>
10.00 – 11.00 am	<input type="text"/>	4.00 – 5.00 pm	<input type="text"/>
11.00 – 12.00 am	<input type="text"/>	5.00 – 6.00 pm	<input type="text"/>
12.00 – 1.00 pm	<input type="text"/>	6.00 – 7.00 pm	<input type="text"/>
1.00 – 2.00 pm	<input type="text"/>		<input type="text"/>

## Annex 2

### Details of Existing Paving Blocks

Manufacturer				
Shape / Type				
Size in mm	length			
	width			
	thickness			
Unit price				
No of units per m <sup>2</sup>				
Colour				
Usage	pedestrian			
	car park			
	gardening			
	other			
Strength achieved (N/mm <sup>2</sup> )				
Standard used				
Output per day				
Manufacturing method				
No of blocks per cement bag				
Demand				
<b>Mix proportions</b>				
Course aggregate (Chip) (Kg or cube)				
Fine aggregate (Sand) (Kg or cube)				
Cement (kg)				
Water ( l )				
Admixtures				



## Annex 3

### Cost Analysis for mud concrete paving block

Current Price of materials

#### Soil

Current industry soil price	= Rs. 3500 per 3 cubes
Loose Soil density	= 1440 kg / m <sup>3</sup>
Price of Soil	= Rs. 3500 / (3*2.83*1440)
	= Rs. 0.30 per kg

#### Cement

Current industry cement price	= Rs. 900.00 per bag
Price of cement	= Rs. 900/50
	= Rs. 18.00 per kg

#### Current labour wage

The mud concrete paving block can be produced without skilled labour because of its simple production method. Therefore, the current labour wage of unskilled labour in construction industry can be assumed at Rs. 1000.00 per 8 hr day.



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#### Price for form work material

In the manufacturing process of this block, a well prepared steel mould with several blocks can be used. For the production of the mould, a 4 inches thick, 8 ft x 4 ft in size steel plate is used. The price of a steel plate in the current market is Rs. 12,500.00 and the production of the mould may cost Rs. 7,500.00. Therefore, the total cost of the mould will be Rs. 20,000.00. This steel plate mould can be used for 80 numbers of mud concrete paving blocks.

#### **Cost for mud concrete paving block**

Block size	= 200 mm x 100 mm x 80 mm
Volume of block	= 200 x 100 x 80 mm <sup>3</sup>
	= 0.0016 m <sup>3</sup>
Measured actual weight of block (average)	= 3.66 kg

According to the mix proportions

Soil = 100 kg

Cement = 22 Kg

Total weight = 122 Kg

Therefore, actual requirement for a block:

Material cost

Soil weight =  $(100 \times 3.66) / 122 = 3.0\text{kg}$

Cost for soil =  $\text{Rs.} 0.30 \times 3 \text{ kg} = \text{Rs.} 0.90$

Cement weight =  $(22 \times 3.66) / 122 = 0.66\text{Kg}$

Cost for cement =  $\text{Rs.} 18.00 \times 0.66 \text{ kg} = \text{Rs.} 12.00$

Total material cost = cost for Soil + cost for cement  
=  $\text{Rs.} (12.00 + 0.90) = \text{Rs.} 12.90$

Form work cost

Assume steel mould can be used 200 times repetitively and 80 numbers of block mould can be assembled with the above mentioned size one steel plate.

Cost for use of one time =  $\text{Rs.} 20\,000.00 / 200$   
=  $\text{Rs.} 100.00$

Form work cost for a block =  $\text{Rs.} 100.00 / 80$   
=  $\text{Rs.} 1.25$

Labour cost

Assume blocks can be cast four times a day with three numbers of labourers.

Nos of block cast per day =  $80 \times 4$   
= 320

Cost for labour for a block =  $\text{Rs.} (1000.00 \times 3) / 320$   
=  $\text{Rs.} 9.38$

Total cost for production of mud concrete block = (material cost + form work cost + labour cost)

=  $\text{Rs.} 23.53$

Add 25% profit =  $\text{Rs.} 23.53 \times 25\%$

Total cost for block =  $\text{Rs.} 29.41$

=  $\text{Rs.} 29.40$