Final Report
on
Study on Improvement in Rates and Ratio used in Estimation of Gross Value Added Construction for Nagaland State of India

Sponsored By
Directorate of Economics and Statistics, Kohima
Government of Nagaland

Architecture Planning and Energy Efficiency Group,
CSIR-Central Building Research Institute Roorkee
Uttarakhand – 247667

January, 2026

FOREWORD

As the construction sector plays a very important role in the state economy, the Department of Economics and Statistics, Government of Nagaland, has conducted this *Study on Improvement in Rates and Ratio used in Estimation of Gross Value-Added Construction for the State of Nagaland.* The Report provides insights into the expenditure aspects of the construction sector, which will improve Gross State Domestic Product estimation of the state. The Report will also be of immense utility to the state government in framing policy to regulate and promote the development of the construction sector in the state.

I earnestly acknowledge the vital contributions of the officers and staff of the Department led by the Director, who have contributed to the successful publication of the Report.

I am confident that the Report will be of use to researchers, policymakers, planners, administrators and other stakeholders.

Date: 21/01/2026

Place: Kohima

(AKUNU S MEYASE) IAS
Secretary to the Government of
Nagaland

PREFACE

The *Report on Study on Improvement in Rates and Ratio used in Estimation of Gross Value-Added Construction for Nagaland State of India* is a significant study to enhance the estimation of Gross State Domestic Product of the state. The findings of the study on the rates and ratios used in construction sector and capital formation will bridge the data gaps in the computation of Gross Value Added of construction sector.

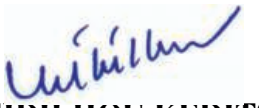
This report is the result of a project undertaken as part of the central sector scheme, *Support for Statistical Strengthening Scheme*, under Ministry of Statistics and Programme Implementation (MoSPI). The project was conducted in collaboration with Architecture Planning and Energy Efficiency Group, CSIR-Central Building Research Institute (CBRI), Roorkee, Uttarakhand. I am grateful to CSIR-CBRI for conducting the survey and compiling the Survey Report.

I extend my gratitude to Ministry of Statistics and Programme Implementation (MoSPI) for providing the necessary financial resources to undertake the project. I also sincerely acknowledge the invaluable contributions of the officers and staff of the Department led by Shri Charles N Kikon, Additional Director and Nodal Officer, assisted by Shri Vikosieto Krose, Deputy Director for their untiring effort in bringing out this salient report.

It is hoped that the report will be of use to researchers, policy makers, planners, administrators and other stakeholders.

Date: 12/01/2026

Place: Kohima



(NEIDILHOU KEDITSU)
Director
Economics and Statistics
Nagaland: Kohima

ACKNOWLEDGEMENT

This study titled **"Study on Improvement in Rates and Ratio used in Estimation of Gross Value Added Construction for Nagaland State of India"** has been undertaken with the objective of analysing and improving the understanding of cost structures and material consumption patterns in residential construction across the state. The study presents detailed insights into district-wise expenditure, consumption of materials, labour inputs, and related construction practices, which we hope will contribute meaningfully to the estimation and enhancement of GVA in the construction sector.

The project team is thankful to the competent authority of **Department of Economics & Statistics Nagaland**, whose tireless efforts in conducting surveys, gathering field data, and coordinating with various stakeholders made this study possible. Their valuable contribution, especially in collecting ground-level information from different towns, cities, and villages across Nagaland, has enriched the depth and quality of the study.

The project team also appreciate the tremendous support of Mr. Neidilhou Keditsu, Director of Economics & Statistics Department, Kohima, Nagaland, Mr. Charles N. Kikon, Additional Director of Economics & Statistics Department, Kohima, Nagaland, Mr. Vikosieto Krose, Deputy Director of Economics & Statistics Department, Kohima, Nagaland and local people for their cooperation & support during the study period.

The project team is also thankful to Prof. R. Pradeep Kumar, Director CSIR-CBRI, Roorkee for their interest, guidance and appreciable support throughout the execution of this work.

The project team also conveys its sincere thanks to all colleagues of CSIR-CBRI, who directly or indirectly extended their help during execution of this project.

(Dr. Kishor S Kulkarni)

Principal Scientist

CSIR-CBRI, Roorkee

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EXECUTIVE SUMMARY

This project deals with the study of rates and ratios used in the construction sector and capital formation or the improvements in the rates and ratios used in the estimation of Gross Value Added (GVA) of construction sector and capital formation. The scope of this study is to work out the expenditure in respect of, different materials used in the construction and construction workers. The study is limited to the construction activities in residential buildings such as individual houses, Multi-storeyed Houses, Housing Complex, Villa in the selected/identified cities/towns as defined in **Chapter 1**. The study covers the expenditure (or proportions) in respect of various materials (e.g. Cement and cement products, Iron and Steel, wood and wood products except for furniture, glass and glass products, other non-metallic mineral products excluding cement (such as bricks and tiles, etc.), bitumen, marble/ Kota stones/tiles, wooden furniture, iron furniture, and others used in the construction sector as well as the factor inputs like labour, hiring charges, rentals for construction related machines/equipment's, etc. in different district of states. The study relates the weights of the construction materials used in construction activities. A technical questionnaire was created to determine the realistic amount of building material, labour, other items, and associated costs of the construction materials and labour. The study also relates the percentage cost of the materials used for construction activities. The study provides the district-wise consumption of construction materials, which may be useful for the district–wise allocation of GVA construction.

Chapter 2 Provide the surveyed location details, including GPS coordinates, of residential building projects carried out by the CBRI team in two separate phases, along with site photographs. "As part of the study aimed at assessing material and labour costs across various towns, cities, and villages in each district of Nagaland. This data will also be used to analyze differences in residential construction practices across specific locations. **Chapter 3** covers the Schedule of Rates of materials and items for analysis of rates, overhead costs and the computation procedure for performing analysis of different materials by citing an example of cement used in **Kohima**.

The Bill of Quantities (BoQ) provides a district-wise percentage of the total cost of materials, labour & miscellaneous items for Urban and Rural residential buildings. The study offers the material-wise cost and quantity distribution for Cement & Cement Products, Iron & Steel, Bricks & Tiles, Timber& Round wood, Glass & Glass Products, Fixtures & Fittings, Sand, Other Materials, Labour, Miscellaneous & Lump Sum in different district-wise separately. The study also enlightens information on the percentage quantity of material consumption/

construction cost distribution for Urban and Rural area separately.

Chapter 4 covers the weights and cost composition for construction activities in urban and rural area, including the factor inputs such as labour, hiring charges, and rentals for machinery and equipment if any.

The survey analysis is supported by graphs and tables that present district-wise data across the Nagaland state.

Chapter 5 It summarizes about the key findings of the Study on Improvement and Rates and Ratio in Estimation of Gross Value Added Construction for Nagaland State of India.

(Dr. Kishor S Kulkarni)

Principal Scientist

CSIR-CBRI, Roorkee

DISCLAIMER

The views and interpretations expressed in this report are those of the authors and do not necessarily reflect the official policies or positions of the Department of Economics & Statistics, Government of Nagaland, CSIR-CBRI Roorkee, or any other associated entity. Thus, all procedural, legal or operational matters will be the responsibility of the party using this report.

PROJECT TITLE

''Study on Improvement in Rates and Ratio used in Estimation of Gross Value Added Construction for Nagaland State of India.''

PROJECT TEAM MEMBERS

- Dr. Kishor S Kulkarni (Project Leader)
- Er. Rajat Kumar
- Er. Aditya Arya
- Er. Pradeep Rawat
- Er. Abhinav

CHAPTER 1

INTRODUCTION

1.0 Background

Construction activity is one of the important indicators to know the economy of the Country. Of late, there has been tremendous increase in the construction cost in India and huge amount is being spent in this sector. The expenditure on construction activity plays a pivotal role in estimating the Gross Domestic Product (GDP) as well as investment levels. The National Accounts Division of Central Statistics Office is responsible for compiling estimates of Gross Value Added (GVA) construction and related macro-economic aggregates for the country. In the estimation of the GVA from Construction Sector and Gross Fixed Capital Formation (GFCF) from construction, machinery and equipment through commodity flow approach, various rates and ratios are used. The main rates and ratios used in the estimation of total value of construction output are the proportions of various materials and factor payments in the total cost involved in construction. These include the proportion of different construction materials and the distribution of factor payments within the total construction cost. The construction landscape in Nagaland reflects a blend of traditional methods and modern techniques, influenced by geography and urbanization levels. While urban districts move toward RCC-framed multi-storey structures, rural areas mainly rely on load-bearing and moving toward to RCC structures. At the same time, traditional architecture remains an important part of construction in Nagaland, valued for its cultural significance. In Nagaland, where construction is often influenced by both terrain challenges and logistical factors, careful estimation becomes crucial.

To arrive at the rates and ratios for all construction works, the cost of construction is estimated. In the estimates, the quantities of different items of work were calculated and from these quantities, the cost was calculated using prevailing market rates and schedule of rates of Nagaland States. Since, foundation is not exposed and invisible, hence, based on the buildings, specifications of materials used in the foundation, the costs have been worked out. The rates in the estimate provide for the complete work, which include the cost of materials, transport, labour, scaffolding, tools and plants, cost of water, taxes, establishment and supervision cost, reasonable profit of contractor etc.

The prices of buildings are primarily driven by the cost of construction. There are number of other rates and ratios which are important in deciding the value of output of each component of basic materials such as: cement, steel, timber, bricks, sand, aggregates, paints, windows, doors, glass, wood, and fixtures & fittings etc. Both traditional bricks 229 x 114 x 76 mm

(nominal size) and Stone masonry of different types are used in the majority of buildings. The materials for different items of work vary to some extent from region to region. Uniformity in units is maintained for all items of works throughout the state based on the Indian Standard Institution.

Hence, there is a need to update the existing rates and ratios for estimation of construction sector and estimation of the capital formation on account of construction. Also many new materials are being used and there is a need to obtain information on these materials along with the traditional materials and technologies for the construction of buildings, etc. Hence, the aim of this project is to ***"Study on Improvement in Rates and Ratios in Estimation of Gross Value Added Construction for Nagaland State of India"*** with special emphasis to building construction.

1.1 Field Survey

The field survey was split into two phases as per the scope of the project. In the first phase, the survey of identified 4 district were carried out, as shown in Table 1. In second phase 12 district were identified and filed survey carried out as shown in Table 2. Based on the requirements and terms of reference of the project specified by the Govt. of Nagaland, the list of identified cities in two phases, and consolidated is given in ***Table 1 & 2.***

Table 1: List of city/town surveyed in Phase-I

District	Urban	Rural
Kohima	Kohima, Jakhama	Meriema, Jotsma
Dimapur	Dimapur, Kuda	Dimapur, Kuda
Niuland	Niuland, Kuhuboto	Nihokhu, Vihokhu
Chumukedima	Chumukedima, Medziphema	New Chumukedima, Sirhima

Table 2: List of city/town surveyed in Phase-II

District	Urban	Rural
Mon	Mon & Tizit	Mon & Tizit
Longleng	Longleng & Tamlu	Longleng & Tamlu
Tuensang	Tuensang & Longkhim	Tuensang & Longkhim
Noklak	Noklak & Nokhu	Noklak & Nokhu
Shamator	Shamator & Chessore	Shamator & Chessore
Kphire	Kiphire & Pungro	Kiphire & Pungro

Tseminyu	Tseminyu & Chunlikha	Tesophenyu & Tsonsa
Wokha	Wokha & Bhandari	Wokha & Bhandari
Peren	Peren & Jalukie (HC)	New Peren & Jalukie
Phek	Phek & Pfutsero	New Phek & Pfutsero
Mokokchung	Mokokchung & Changtongya	Ungma & Changtongya
Zunheboto	Zunheboto & Aghunato	Zunheboto & Aghunato

1.2 Objectives of the Study

i) To study expenditure (or proportions) in respect of various materials (e.g. Cement and cement product, Iron and steel casting and forging (including steel bars, angles, frames etc.), wood and wood product except furniture, glass and glass products (glass panes etc.), other non-metallic mineral products excluding cement (such as bricks and tiles etc.), stones and others use in construction as well as the factor inputs like labour, hiring charges rentals for construction related machine/equipment etc.in different regions of Nagaland State.

ii) To identify certain weights for combining the cost estimates of various construction materials and construction workers used across rural and urban areas, to arrive at an overall cost composition for the construction activity.

iii) To estimate the consumption of various construction materials in the different regions of the state for the estimation of GVA construction and Gross Fixed Capital Formation.

1.3 Scope of Work

The scope of study is to work out the expenditure in respect of different materials used and factor inputs in the construction sector in Nagaland state. The scope of study is limited to the construction activities in single and multi-storeyed residential buildings, individual houses, single villas, etc. in 48 locations (cities/towns/villages) across 16 districts of Nagaland. The project aims to describe the current state of real estate and other construction and to gather and analyse cost of projects in different heads to identify general trends. The goal of the project is to gather specific and quantitative information of identified buildings and analyse the using statistical methods.

As envisaged, gathering the data from interviews, site visits, surveys and reports, each survey provides distinct insight into accomplishing goals. The goal of the surveys is to learn how different organizations evaluate the construction process and the surveys focus on the type of building and how different construction companies carry out different activities. One of the major goals is to find out the cost of construction per sqm. for different typology of projects in different regions of the District and to find out the variations in the cost of construction in Urban and Rural areas as well as private contractors and construction agencies. A synthesis of these different data will lead to generation of recommendations for future.

1.4 Methodology of the Study

To carry out a systematic and scientific study, the following methodology is adopted-:

i) Identification of the 10 residential building sites location in cities/towns/village for survey in both urban & rural area and collect information by contacting different house owners and construction workers.

ii) Preparation of the survey questionnaire to get a summary of information on completed buildings or under construction buildings in about 16 district.

iii) Collection of the data of materials used and other inputs like labour both skilled & unskilled, machines like cranes, mixers, scaffolding, vibrators, etc., from different construction sites located in different district of the Nagaland state.

iv) Analysis of the data collected and identifying trends and empirical modelling.

v) Analysis to identify the weights of different materials used in different types of construction activities to attain the cost composition for the construction sector.

vi) Empirical modelling to estimate the consumption of various construction materials by different regions of the state for allocation of GVA of the construction sector and capital formation.

vii) The Data Collection Questionnaire designed and used to get the information on completed building or ongoing construction in selected cities/towns/villages is given below.

Data Collection Questionnaire in Nagaland, India		
CSIR- Central Building Research Institute, Roorkee- 247667 (Uttarakhand), India		
S.No.	**DESCRIPTION**	**DETAILS**
1	Name/ Identification of Building/ Structure (Rural Area/ Urban Area)	
2	City/ Town	
3	Work Done by	Builder/ Contractor/ Own
4	Names of Representatives	
5	Date of Visit	
6	Code No	
7	Geo- Climatic Zone Classification	I/ II/ III/ IV/ V

S.No.	**GENERAL**	
1	Type of Construction	Villa/ Apartment/ House
2	Structure Type:	Load Bearing Structure
		Framed Structure
		Confined Masonry Structure
		Others (Specify)
3	Number of Storeys	1/ 2/ 3/ 4/ more (Specify)
4	Storey Height	2.7 m/ 3.0 m/ 3.3 m/ 3.6 m/ 3.9 m/ 4.0 m (Specify)
5	Plinth Height (Mtr.)	
6	Site Area (Sqm.)	
7	Plinth Area/ Built-Up Area (Sqm.)	Basements (1,2,3) =
		Ground Floor =
		First Floor =
		Second Floor =
		Third Floor =
		Fourth Floor =
		Other Floors =
8	Cost of Construction per Sqm.	Rs. = (Residential Building)

S.No.	**BASIC MATERIAL/ LABOUR; UNIT**	**Unit Rate (Rupees)**
1	Cement (Grade: 33/ 43/ 53/ PPC/ Other); Tonne/ Bag	
2	Coarse Sand; Cum./ Trolley Cum.	
3	Fine Sand; Cum./ Trolley Cum.	
4	Fly Ash	
5	Coarse Aggregate (40 mm); Cum.	
6	Coarse Aggregate (20 mm); Cum.	
7	Coarse Aggregate (10 mm); Cum.	
8	Brick Aggregate (25 mm); Cum.	

9	Bricks; 1000 Nos. (Burnt Clay, Calcium Silicate, Clay Fly Ash, Sand Lime/ Others)	
10	Blocks; 1000 Nos. (Aerated Concrete Blocks, Concrete Blocks, Hollow Blocks/ Others)	
11	Brick Tiles; 1000 Nos.	
12	Stone	
13	Timber (Scantling: Frame); 10 Cubic Decimeter	
14	Timber (Planks: Shutter); 10 Cubic Decimeter	
15	Timber (Shuttering); 10 Cubic Decimeter	
16	Glass (Normal-3 mm/ 4 mm/ 5.5 mm/ Others Specify)	
17	Ballies; Meter	
18	Aluminum Frame	
19	Pressed Steel Frame	
20	Steel Frame	
21	Lime; Qtls.	
22	Marble Chips; Qtls./ Bag 25 kg/ 50 kg	
23	Marble Stone	
24	Granite Stone	
25	Kota Stone	
26	Sand Stone	
27	Marble Powder; Cum.	
28	Ceramic Tiles; Sqm./ Box	
29	Vitrified Tiles; Sqm./ Box	
30	Flush Shutters; Sqm.	
31	Steel W & V; Sqm.	
32	Glass Panes; Sqm.	
33	Glass Strips; Meter	
34	T- Iron MS Frames; kg.	
35	MS Round Guard Bars; kg.	
36	Enamel Paint; Liter	
37	Snowcem; kg./ Bag	
38	Apex/ Snow Cryl (Outside)	
39	Putty (One Coat/ Two Coat/ Three Coat) (Outside)	
40	Oil Bond Distemper (Inside)	
41	Acrylic Emulsion (Inside)	
42	Textured Paint	
43	Red Lead Primer; Liter	
44	Anti- Termite Chemical; Liter	
45	Bitumen; kg.	
46	Steel Reinforcement; kg.	
47	Steel Sections (Angle/ Tee/ I/ Channel); kg.	
48	Water Proofing Treatment (Mud Phaska + Brick Tiles/ Lime Terracing/ APP/ PMB/ Others Specify)	
49	WC; Nos.	

50	Wash Basin & Sink; Nos.	
51	BIB/ Stop Cock; Nos.	
52	Water Tank (200/ 400/ 500/ 800/ 1000 Liter); Nos.	
53	Pipes & Access. (GI/ PVC/ Other); LS	
54	Pipes (RCC NP2/ Stoneware/ Other); LS	
55	Rainwater Harvesting	
56	Green/ Energy Eff. Design Features/ Measures/ Materials Adopted	
57	Wires & Cables	
58	Switches	
59	MCB/ MCCB	
60	Mason; Day	
61	Carpenter; Day	
62	Blacksmith; Day	
63	Painter; Day	
64	White Washer; Day	
65	Glazier; Day	
66	Fitter; Day	
67	Beldar; Day	
68	Misc. (if Any)	

PROFORMA FOR FIELD SURVEY ANALYSIS OF MATERIALS & SPECIFICATIONS

Type of Structure	Permanent House		Semi-Permanent		Temporary/ Kaccha						
Foundation											
Type of Foundation	Raft	Piles	Stepped	Strip	Isolated	**Depth of Foundation**					
Materials used in Foundation, Column & Plinth						DPC- Yes/ No		Mat. & Thickness			
Wall											
	Grass/ Thatch/ Bamboo/ Reeds		Mud		Un-Burnt Brick		Wood				
	GI/ Metal/ AC Sheet		Burnt Brick		Stone		Concrete Blocks				
	Plastic Polythene		Other								
Thickness											
Mortar	Mud		Cement	Other							
Flooring											
Flooring Material	Mud		Brick		Wood		Stone				
					Bamboo						
	Cement		Mosaic		Floor Tiles		Any Other				
Finishing Materials											

Plastering on External Walls	Yes		No		Ceiling Plaster	Yes		No
Plastering on Internal Walls	Yes		No		Plastering Material			

Roof

Roofing Material	Grass, Thatch, Mud		States		Tiles			RCC			
					Hand Made		Factory Made				
	GI/ Asbestos/ Tar Sheet		RB/ RBC		Stone			Plastic/ Polythene			
					Dressed		Random Rubble				
	Bamboo		Wood		Any Other						
Type of Roof	Flat		Sloppy		Type						

Openings

Doors	Framed		Frameless		Board/ PVC		Any Other
Material Used	Steel		Wooden		GI Sheet		Any Other
Windows	Framed		Frameless		Board/ PVC		Any Other
Material Used	Steel		Wooden		GI Sheet		Any Other
Ventilators	Framed		Frameless		Precast		Any Other
Material Used	Steel		Wooden		Jalli		Any Other

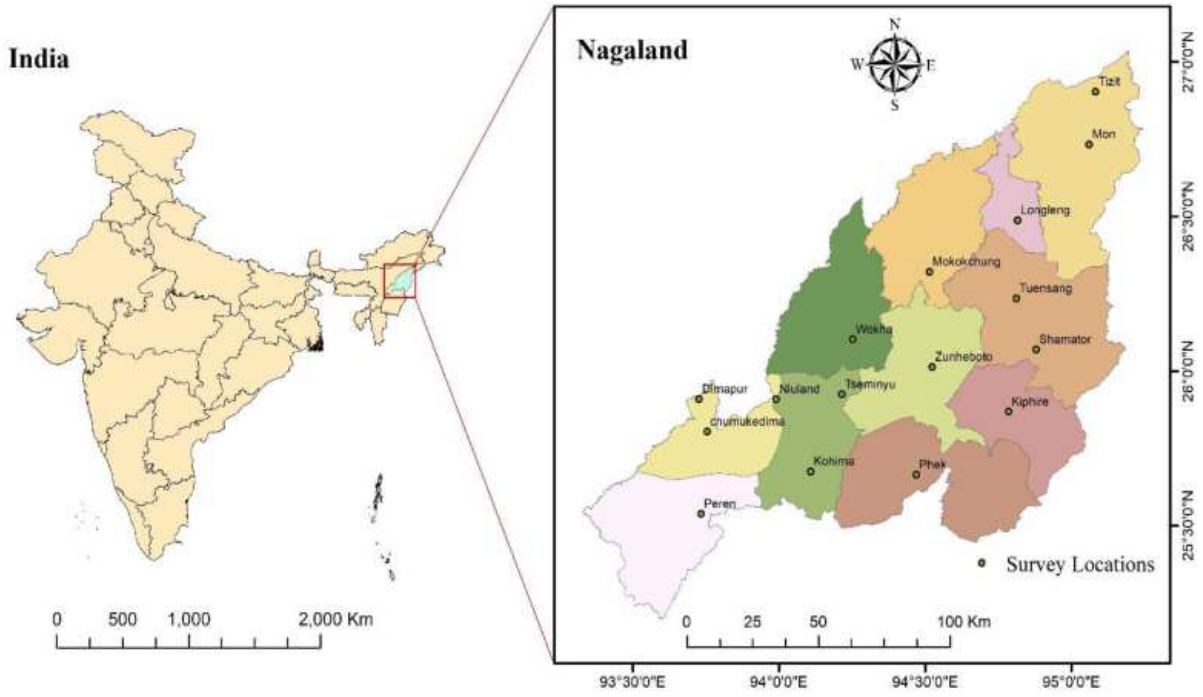

Fig 1: Mapping of Cities/Towns surveyed

CHAPTER 2

DETAILS OF FIELD SURVEY

2.0 Introduction

Nagaland is a small State in the Indian union yet due to hilly terrain" it's is not possible to cover all the cities, towns and villages of the state. Therefore, to get a reasonable kind of data sets and to identify construction work, the CSIR-CBRI, conducted background research by reviewing the literature to gather specific and quantitative information on buildings/construction projects and to learn how different organizations evaluate the construction process. Based on the findings from the literature review, a multi-method approach was adopted to collect data. This included administering questionnaires, conducting interviews, making site visits, performing surveys, and reviewing reports, each contributing unique insights toward achieving the study's objectives.

The survey questionnaire was prepared in English, while interviews and discussions were conducted in both English and local languages, depending on the respondents' preferences. Assistance was provided by staff from the Directorate of Economics and Statistics, Kohima, to facilitate communication. The methodology and rationale adopted in the previous study sponsored by Ministry of Statistics & Programme Implementation, Central Statistics Office, National Account Division, GoI, New Delhi to CSIR-CBRI during 2021-22 was also considered.

2.1 A survey was carried out in selected urban and rural areas across all 16 districts of Nagaland State.

With the support of local hardware store and house owners, data was gathered on locally available construction materials, labour, and other relevant items. Specification of residential buildings was noted in questionnaire sheet.

Photographs of the surveyed sites were also taken with coordinates and their details are provided below.

2.1.1 KOHIMA DISTRICT

a) Kohima Town

In Kohima town, some houses were studied as shown in below **figures** and the survey of different residential was carried out. Cement found to be Rs.540 per bag. Steel reinforcement cost in the range of Rs.60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.700-800 respectively depending upon the class of work. The normal brick was found to be Rs.12-13 per brick (1st Class), AAC block Rs.95/p and coarse sand rate is Rs.40 /cft, Fine sand rate is Rs.38-40 /cft, coarse aggregates rate is Rs.28 /cft. RCC framed structure buildings are commonly used in Kohima Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.1

Figure 2.1.2

Figure 2.1.3

Figure 2.1.4

Figure 2.1.5

b) Meriema

In Meriema Village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs. 530 per bag. Steel reinforcement cost in the range of Rs.60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.700-800 respectively depending upon the class of work. The normal brick was found to be Rs.13 per brick (1st Class) and coarse sand and fine sand rate is Rs.45/cft and Rs.28/cft, coarse aggregates rate is Rs.55/cft. RCC framed structure buildings are commonly used in Meriema Village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-6 feet.

Figure 2.1.6

Figure 2.1.7

Figure 2.1.8

Figure 2.1.9

Figure 2.1.10

c) Jotsoma

In Jotsoma village, some houses were studied as shown in **figures** and the survey of different residential was carried out. PCC Cement found to be Rs.500-550 per bag. Steel reinforcement cost in the range of Rs.60-65 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-900 and Rs.600-700 respectively depending upon the class of work. The 1st class, 2nd class brick was found to be Rs.15, Rs.13 per brick and coarse sand & fine sand rate is Rs.55/cft & Rs.30/cft RCC framed structure buildings are commonly used in Jotsoma village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.11

Figure 2.1.12

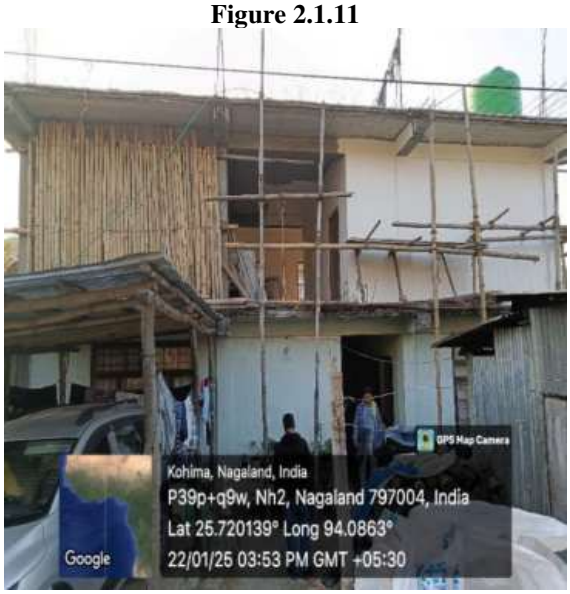

Figure 2.1.13

Figure 2.1.14

Figure 2.1.15

d) Jakhama

In Jakhama Town, some houses were studied as shown in **figures** and the survey of different residential was carried out. Cement found to be Rs.540 per bag. Steel reinforcement cost in the range of Rs.63-65 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800 and Rs.600 respectively depending upon the class of work. The 1st class brick was found to be Rs.15, coarse sand & fine sand rate is Rs.65/cft & Rs.52/cft coarse aggregates rate is 62/cft. RCC framed structure buildings are commonly used in Jakhama Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.16

Figure 2.1.17

Figure 2.1.18

Figure 2.1.19

Figure 2.1.20

2.1.2 CHUMUKEDIMA DISTRICT

a) Chumukedima Town

In Chumukedima Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.510 per bag. Steel reinforcement cost in the range of Rs.50-60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.13 and coarse sand & fine sand rate is Rs.90/cft & Rs.65/cft coarse aggregates rate is 50/cft. RCC framed structure buildings are commonly used in Chumukedima Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6-7 feet.

Figure 2.1.21

Figure 2.1.22

Figure 2.1.23

Figure 2.1.24

Figure 2.1.25

b) New Chumukedima

In New Chumukedima, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.515 per bag. Steel reinforcement cost in the range of Rs.55-60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.14 -15 and coarse sand & fine sand rate is Rs.92/cft & Rs.67/. RCC framed structure buildings are commonly used in New Chumukedima. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.26

Figure 2.1.27

Figure 2.1.28

c) Medziphema

In Medziphema Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.550-600 per bag. Steel reinforcement cost in the range of Rs.65-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.18-19 and coarse sand & fine sand rate is Rs.68-70/cft & Rs.75-80/cft. RCC framed structure buildings are commonly used in Medziphema Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.29

Figure 2.1.30

Figure 2.1.31

Figure 2.1.32

Figure 2.1.33

d) Sirhima

In Sirhima village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.600-650 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate is Rs.75/cft & Rs.80/cft. RCC framed structure and old traditional buildings are commonly used in Sirhima village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.34

Figure 2.1.35

Figure 2.1.36

Figure 2.1.37

Figure 2.1.38

2.1.3 DIMAPUR DISTRICT

a) Dimapur Town

In Dimapur Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.600-650 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate is Rs.75/cft & Rs.80/cft. RCC framed structure buildings are commonly used in Dimapur Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.39

Figure 2.1.40

Figure 2.1.41

Figure 2.1.42

Figure 2.1.43

b) Kuda

In Kuda village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.670 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The 1st class brick was found to be Rs.23, AAC block rate is Rs.120/p and coarse sand & fine sand rate is Rs.80-85/cft & Rs.90/cft. RCC framed structure buildings are commonly used in Kuda village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.44

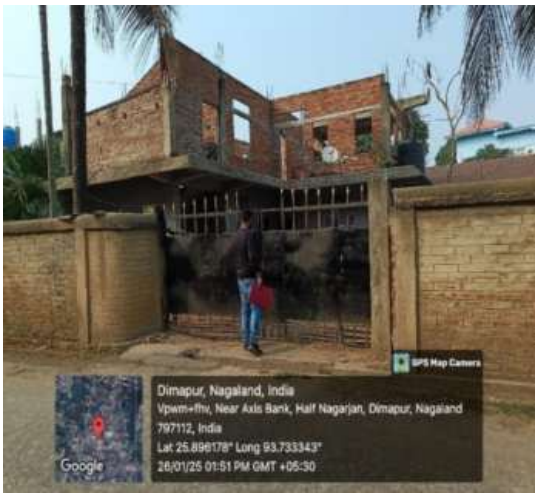

Figure 2.1.45

Figure 2.1.46

Figure 2.1.47

c) Thaykhu

In Thaykhu, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.670 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.24, AAC block rate is Rs.120/p and coarse sand & fine sand rate is Rs.180/cft & Rs.210/cft coarse aggregates is Rs.50/cft. RCC framed structure buildings are commonly used in Thaykhu. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame.

Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.48

Figure 2.1.49

Figure 2.1.50

Figure 2.1.51

2.1.4 NIULAND DISTRICT

a) Niuland Town

In Niuland Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.700 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate

is Rs.120/cft & Rs.180/cft. RCC framed structure buildings are commonly used in Niuland Town. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.52

Figure 2.1.53

Figure 2.1.54

Figure 2.1.55

Figure 2.1.56

b) Kuhuboto

In Kuhuboto, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.700 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.20-22 and coarse sand & fine sand rate is Rs.110-115/cft & Rs.180-185/cft. RCC framed structure and traditional buildings are commonly used in Kuhuboto. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.57

Figure 2.1.58

Figure 2.1.59

c) Nihokhu

In Nihokhu village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.720 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.23 and coarse sand & fine sand rate is Rs.140/cft & Rs.210/cft. RCC framed structure buildings and Traditional houses are commonly used in Nihokhu village. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.60

Figure 2.1.61

Figure 2.1.62

d) Vihokhu

In Vihokhu, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.690 per bag. Steel reinforcement cost in the range of Rs.68 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.22 and coarse sand & fine sand rate is Rs.110/cft & Rs.140/cft. RCC framed structure buildings are commonly used in Vihokhu. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.63

Figure 2.1.64

Figure 2.1.65

2.1.5 MON DISTRICT

a) Mon Town

In Mon Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.500-600 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The 1st class, 2nd class brick was found to be Rs.18, Rs.16 per brick and coarse sand & fine sand rate is Rs.65-70/cft & Rs.45-50/cft RCC framed structure buildings are commonly used in Mon Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet in some houses depth of foundation is 8-10 feet.

Figure 2.1.66

Figure 2.1.67

Figure 2.1.68

Figure 2.1.69

b) Mon village

In Mon village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.550-600 per bag. Steel reinforcement cost in the range of Rs.80 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The 1st class brick was found to be Rs.16 and coarse sand & fine sand rate is Rs.70/cft & Rs.50/cft. RCC framed structure buildings are commonly used in Mon village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.70

Figure 2.1.71

Figure 2.1.72

Figure 2.1.73

Figure 2.1.74

c) Tizit Town

In Tizit Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs. 500-550 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The normal brick was found to be Rs.11-14 per brick (1st Class) and coarse sand and fine sand rate is Rs.50/cft and Rs.40/cft RCC framed structure buildings are commonly used in Tizit Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

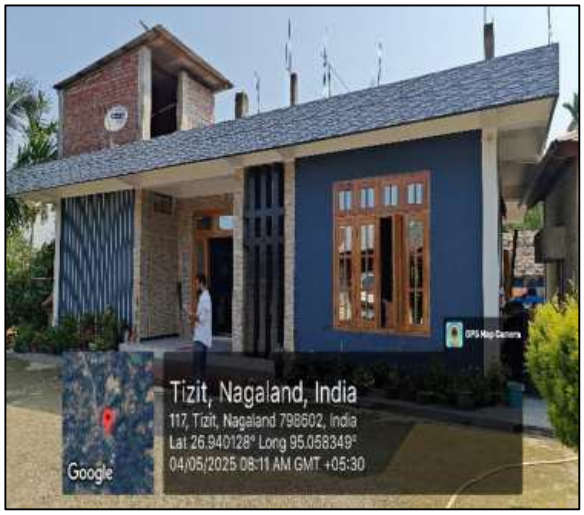

Figure 2.1.75

Figure 2.1.76

Figure 2.1.77

Figure 2.1.78

d) Tizit Village

In Tizit Village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs. 500 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The normal brick was found to be Rs.12 per brick (1st Class) and coarse sand and fine sand rate is Rs.45-50/cft and Rs.35-40/cft RCC framed structure buildings are commonly used in Tizit Village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-5 feet.

Figure 2.1.79

Figure 2.1.80

Figure 2.1.81

Figure 2.1.82

2.1.6 LONGLENG DISTRICT

a) Longleng Town

In Longleng Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.550-600 per bag. Steel reinforcement cost in the range of Rs.50-60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The 1st class brick was found to be Rs.18, AAC block Rs.90/p and coarse sand & fine sand rate is Rs.125/cft & Rs.75/cft coarse aggregates rate is 55-60/cft. RCC framed structure buildings are commonly used in Longleng Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with

the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.83

Figure 2.1.84

Figure 2.1.85

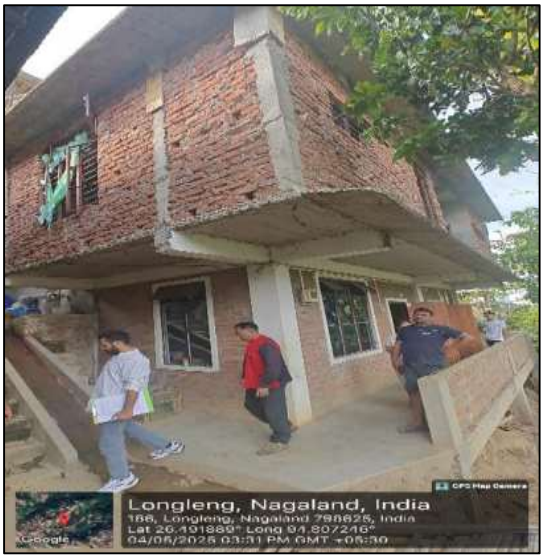

Figure 2.1.86

b) Longleng Village

In Longleng village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.500-550per bag. Steel reinforcement cost in the range of Rs.50-60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The 1st class brick was found to be Rs.20, AAC block Rs.90/p and coarse sand & fine sand rate is Rs.120/cft & Rs.50/cft. RCC framed structure buildings are

commonly used in Longleng village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.87

Figure 2.1.88

Figure 2.1.89

c) Tamlu

In Tamlu, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 500-600 per bag. Steel reinforcement cost in the range of Rs.60-65 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The normal brick was found to be Rs.12-15 per brick (1st Class) and coarse sand rate is Rs.50 /cft. RCC framed structure buildings are commonly used in Tamlu.

Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.90

Figure 2.1.91

Figure 2.1.92

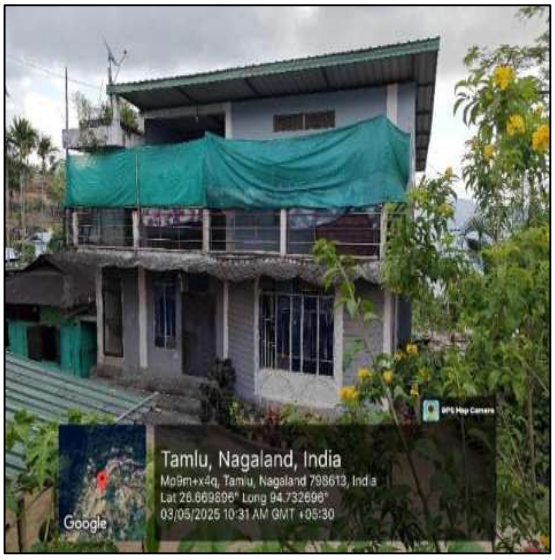

Figure 2.1.93

d) Longkhim

In Longkhim Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.610 per bag. Steel reinforcement cost in the range of Rs.60-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour

in the area was found in the range of Rs.800-900 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate is Rs.70/cft & Rs.75/cft. RCC framed structure buildings are commonly used in Longkhim Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.94

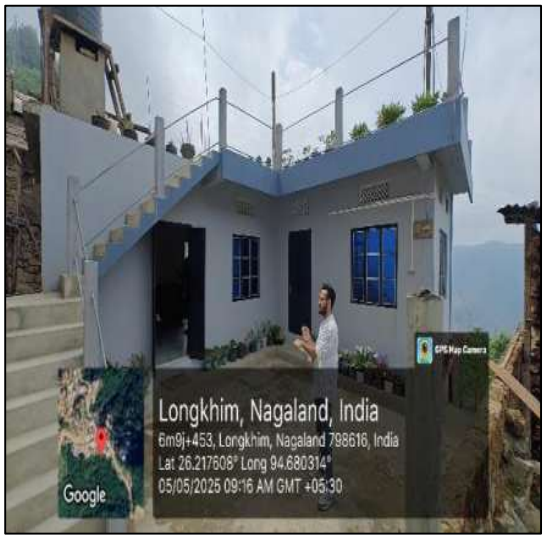

Figure 2.1.95

Figure 2.1.96

Figure 2.1.97

2.1.7 TUENSANG DISTRICT

a) Tuensang Town

In Tuensang Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.550-600 per bag. Steel reinforcement cost in the range of Rs.65-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.18-19 and coarse sand & fine sand rate is Rs.68-70/cft & Rs.75-80/cft. RCC framed structure buildings are commonly used in Tuensang Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.98

Figure 2.1.99

Figure 2.1.100

Figure 2.1.101

Figure 2.1.102

b) Tuensang village

In Tuensang village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.600 per bag. Steel reinforcement cost in the range of Rs.68-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.19 and coarse sand & fine sand rate is Rs.68-70/cft & Rs.75-80/cft. RCC framed structure buildings are commonly used in Tuensang village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.103

Figure 2.1.104

Figure 2.1.105

Figure 2.1.106

2.1.8 SHAMATOR DISTRICT

a) Shamator Town

In Shamator Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.670 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.24, AAC block rate is Rs.120/p and coarse sand & fine sand rate is Rs.180/cft & Rs.210/cft coarse aggregates is Rs.50/cft . RCC framed structure buildings are commonly used in Shamator Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.107

Figure 2.1.108

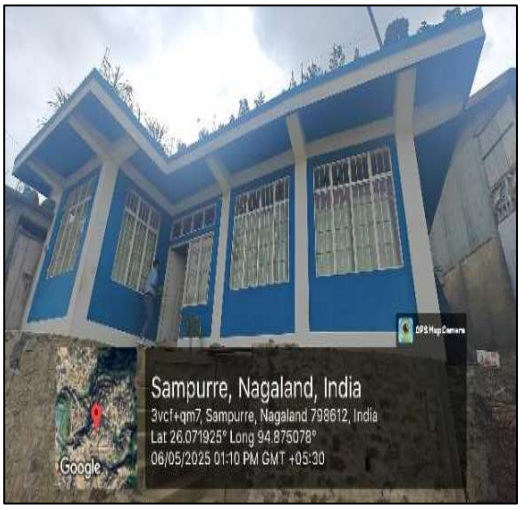

Figure 2.1.109

Figure 2.1.110

b) Shamator village

In Shamator village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.670 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.24, AAC block rate is Rs.120/p and coarse sand & fine sand rate is Rs.180/cft & Rs.210/cft coarse aggregates is Rs.50/cft. RCC framed structure buildings are commonly used in Shamator village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.111

c) Chessore Town

In Chessore Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.600-650 per bag. Steel reinforcement cost in the range of Rs.70-75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate is Rs.75/cft & Rs.80/cft. RCC framed structure buildings are commonly used in Chessore Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.112

Figure 2.1.113

Figure 2.1.114

Figure 2.1.115

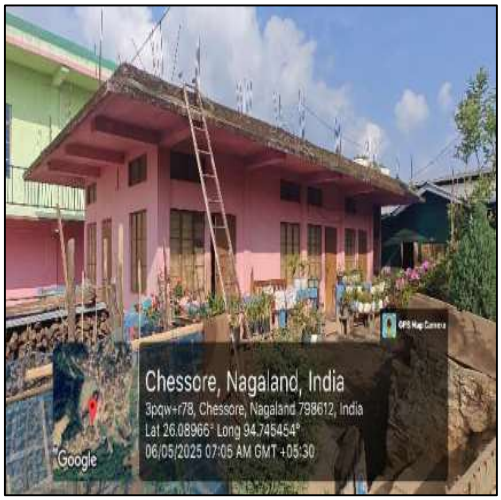

Figure 2.1.116

2.1.9 NOKLAK DISTRICT

a) Noklak Town

In Noklak Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.720 per bag. Steel reinforcement cost in the range of Rs.90 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.25, AAC block rate is Rs.130/p and coarse sand & fine sand rate is Rs.180/cft & Rs.220/cft. RCC framed structure buildings are commonly used in Noklak Town. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.117

Figure 2.1.118

Figure 2.1.119

b) Noklak Village

In Noklak Village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.730-750 per bag. Steel reinforcement cost in the range of Rs.95 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.25-27 and coarse sand & fine sand rate is Rs.185/cft & Rs.225/cft. RCC framed structure buildings are commonly used in Noklak Village. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.120

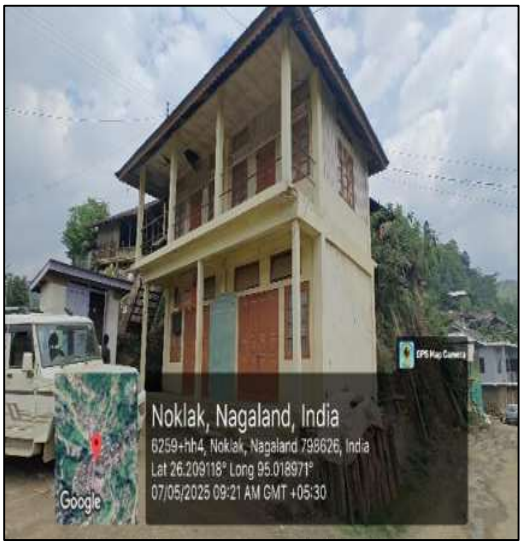

Figure 2.1.121

Figure 2.1.122

c) Nokhu

In Nokhu, we found only One RCC building as shown in below figures. Ground floor of this building was RCC structure and first floor was wooden structure. Apart from this building all houses were traditional houses. Cement found to be Rs.750 per bag. Steel reinforcement cost in the range of Rs.95 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.28 and coarse sand & fine sand rate is Rs.190/cft & Rs.230/cft.

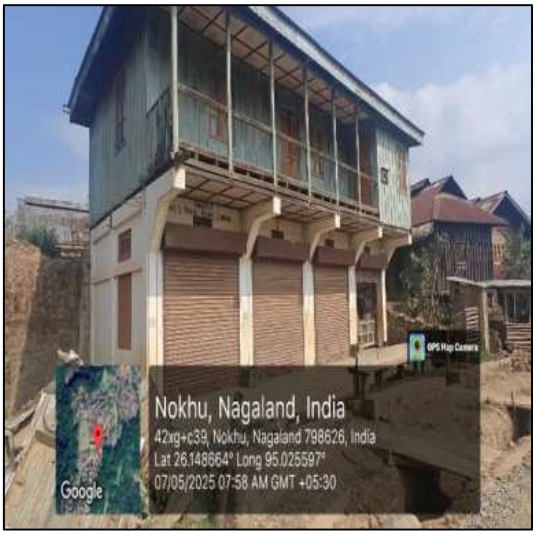

Figure 2.1.123

Figure 2.1.124

2.1.10 KIPHIRE DISTRICT

a) Kiphire Town

In Kiphire Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.690 per bag. Steel reinforcement cost in the range of Rs.68 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.22 and coarse sand & fine sand rate is Rs.110/cft & Rs.140/cft. RCC framed structure buildings are commonly used in Kiphire Town. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.125

Figure 2.1.126

Figure 2.1.127

Figure 2.1.128

Figure 2.1.129

b) Kiphire village

In Kiphire village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.700 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.25 and coarse sand & fine sand rate is Rs.110/cft & Rs.150/cft. RCC framed structure buildings are commonly used in Kiphire village. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.130

Figure 2.1.131

Figure 2.1.132

Figure 2.1.133

c) Pungro Town

In Pungro Town, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.700 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.21 and coarse sand & fine sand rate is Rs.120/cft & Rs.180/cft. RCC framed structure buildings are commonly used in Pungro Town. Material of doors & windows are wooden used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.134

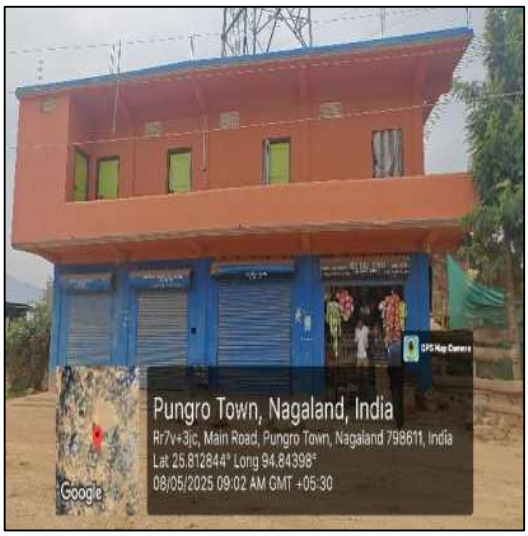

Figure 2.1.135

Figure 2.1.136

Figure 2.1.137

Figure 2.1.138

Figure 2.1.139

d) Pungro Village

In Pungro village, some houses were studied as shown in figures and the survey of different residential was carried out. Cement found to be Rs.720 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.500-600 respectively depending upon the class of work. The 1st class brick was found to be Rs.23 and coarse sand & fine sand rate is Rs.140/cft & Rs.210/cft. RCC framed structure buildings and Traditional houses are commonly used in Pungro village. Material of doors & windows are wooden used in residential

respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.140

Figure 2.1.141

Figure 2.1.142

2.1.11 TSEMINYU DISTRICT

a) Tseminyu Town

In Tseminyu town, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550-570 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000-1200 and Rs.700 respectively depending upon the class of work. The normal brick was found to be Rs.14 per brick (1st Class) and coarse sand rate is Rs.75 /cft. RCC framed structure buildings are commonly used in Tseminyu. Material of doors & windows are wooden, stainless steel and

glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.143

Figure 2.1.144

Figure 2.1.145

Figure 2.1.146

Figure 2.1.147

b) Tseminyu Village

In Tseminyu rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 560-570 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000-1200 and Rs.700 respectively depending upon the class of work. The normal brick was found to be Rs.14 per brick (1st Class) and coarse sand rate is Rs.80 /cft. RCC framed as well as wooden structure buildings are commonly used in rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5 feet.

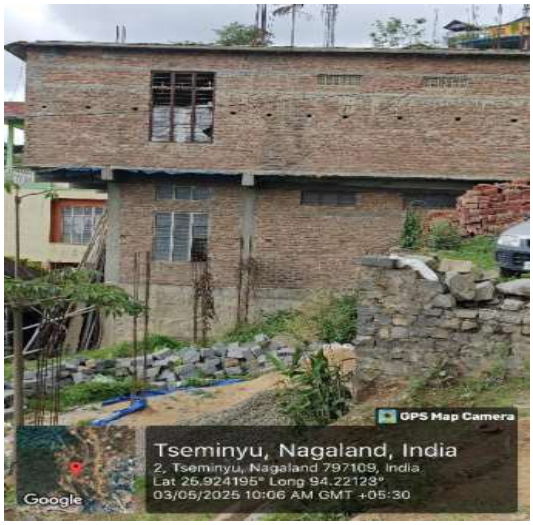

Figure 2.1.148

Figure 2.1.149

Figure 2.1.150

Figure 2.1.151

c) Chunlikha Town

In Chunlikha town, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 530 per bag. Steel reinforcement cost in the range of Rs.72 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000 and Rs.700-800 respectively depending upon the class of work. The normal brick was found to be Rs.15 per brick (1st Class), aggregate rate is Rs.80-85 /cft and coarse sand rate is Rs.80/cft. RCC framed structure buildings are commonly used in Chunlikha. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 6 feet.

Figure 2.1.152

Figure 2.1.153

Figure 2.1.154

Figure 2.1.155

d) Tsonsa Village

In Tsonsa village, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 560 per bag. Steel reinforcement cost in the range of Rs.70-72 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.400-500 respectively depending upon the class of work. The normal brick was found to be Rs.14-15 per brick (1st Class), coarse aggregate rate is Rs. 75 /cft and coarse sand rate is Rs.75 /cft. RCC framed structure buildings are commonly used in Tsonsa. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.156

Figure 2.1.157

Figure 2.1.158

Figure 2.1.159

2.1.12 WOKHA DISTRICT

a) Wokha Town

In Wokha town, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 540-550 per bag. Steel reinforcement cost in the range of Rs.60-65 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000 and Rs.700 respectively depending upon the class of work. The normal brick was found to be Rs.14-15 per brick (1st Class), fine sand rate is Rs.50 /cft. and coarse sand rate is Rs.45-50 /cft. and coarse aggregate rate is Rs.55-65 /cft. RCC framed structure buildings are commonly used in Wokha. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

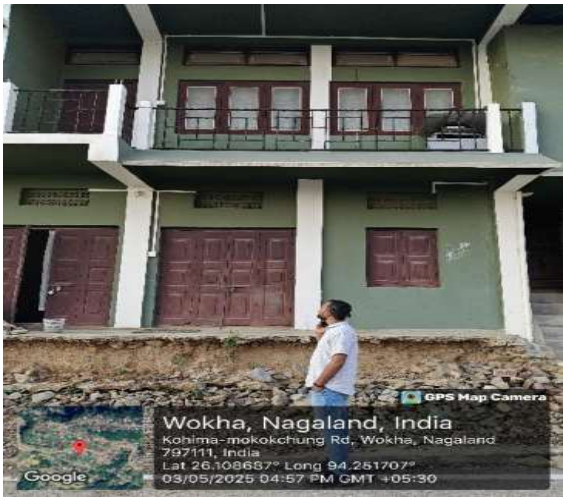

Figure 2.1.160

Figure 2.1.161

Figure 2.1.162

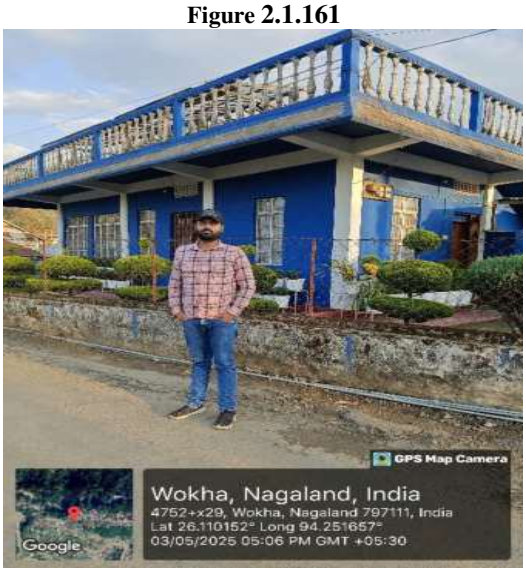

Figure 2.1.163

Figure 2.1.164

Figure 2.1.165

b) Wokha Village

In Wokha village area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550 per bag. Steel reinforcement cost in the range of Rs.60-65 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.600-700 respectively depending upon the class of work. The normal brick was found to be Rs.15-16 per brick (1st Class), fine sand rate is Rs.50-60 /cft. and coarse sand rate is Rs.50-55 /cft. and coarse aggregate rate is Rs.65 /cft. RCC framed structure buildings are commonly used in village area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.166

Figure 2.1.167

Figure 2.1.168

Figure 2.1.169

Figure 2.1.170

Figure 2.1.171

c) Bhandri Town

In Bhandri town, some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550 per bag. Steel reinforcement cost in the range of Rs. 65-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.600 respectively depending upon the class of work. The normal brick was found to be Rs.13 per brick (1st Class), fine sand rate is Rs. 45-55 /cft, coarse aggregate rate is Rs. 60 /cft. and coarse sand rate is Rs.48 /cft. RCC framed structure buildings and load bearing structure are commonly used in Bhandri. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.172

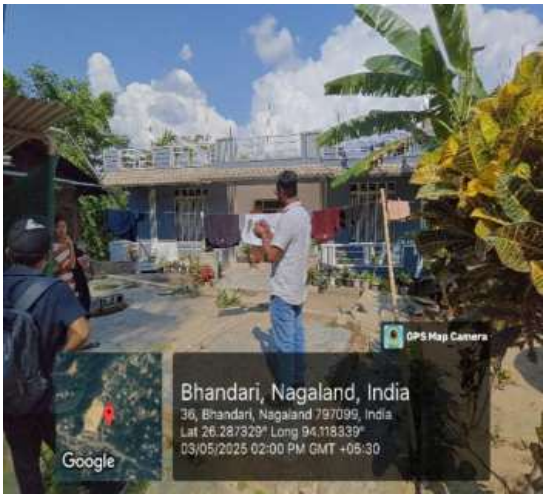

Figure 2.1.173

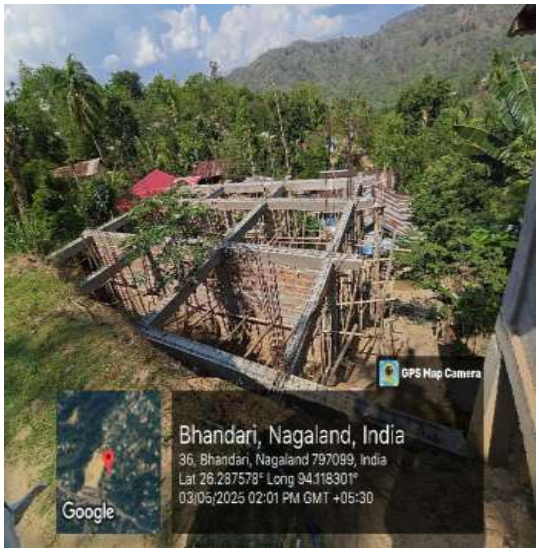

Figure 2.1.174

Figure 2.1.175

d) Bhandari Village

In Bhandari rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550 per bag. Steel reinforcement cost in the range of Rs. 65-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.700-800 and Rs.600 respectively depending upon the class of work. The normal brick was found to be Rs.13 per brick (1st Class), fine sand rate is Rs. 45-55 /cft, coarse aggregate rate is Rs. 60 /cft. and coarse sand rate is Rs.48 /cft. Load bearing structure are commonly used in rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with

the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 3-4 feet.

Figure 2.1.176

Figure 2.1.177

2.1.13 MOKOKCHUNG DISTRICT

a) Changtongya Town

In Changtongya town some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 580-590 per bag. Steel reinforcement cost in the range of Rs.60-62 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000 and Rs.600-650 respectively depending upon the class of work. The normal brick was found to be Rs.20-21 per brick (1st Class), fine sand rate is Rs.60/cft. and coarse sand rate is Rs.75/cft. and coarse aggregate rate is Rs.50 /cft. RCC framed structure buildings are commonly used in Changtongya. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.178

Figure 2.1.179

Figure 2.1.180

Figure 2.1.181

Figure 2.1.182

b) Mokokchung Village

In Mokokchung rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550 per bag. Steel reinforcement cost in the range of Rs.72 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.600-800 respectively depending upon the class of work. The normal brick was found to be Rs.17-18 per brick (1st Class), fine sand rate is Rs.30-40/cft. and coarse sand rate is Rs.40-50/cft. and coarse aggregate rate is Rs.50 /cft. RCC framed structure buildings are commonly used in rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.183

Figure 2.1.184

Figure 2.1.185

Figure 2.1.186

Figure 2.1.187

c) Mokokchung Town

In Mokokchung town some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 530 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.600-800 respectively depending upon the class of work. The normal brick was found to be Rs.17 per brick (1st Class), fine sand rate is Rs.30-40/cft. and coarse sand rate is Rs.40-50/cft. and coarse aggregate rate is Rs.50 /cft. RCC framed structure buildings are commonly used in village area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.188

Figure 2.1.189

Figure 2.1.190

Figure 2.1.191

Figure 2.1.192

d) Ungma village

In Ungma village some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 530-550 per bag. Steel reinforcement cost in the range of Rs.70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.600-800 respectively depending upon the class of work. The normal brick was found to be Rs.17 per brick (1st Class), fine sand rate is Rs.30-40/cft. and coarse sand rate is Rs.40-50/cft. and coarse aggregate rate is Rs.50 /cft. RCC framed structure buildings are commonly used in village area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.193

Figure 2.1.194

Figure 2.1.195

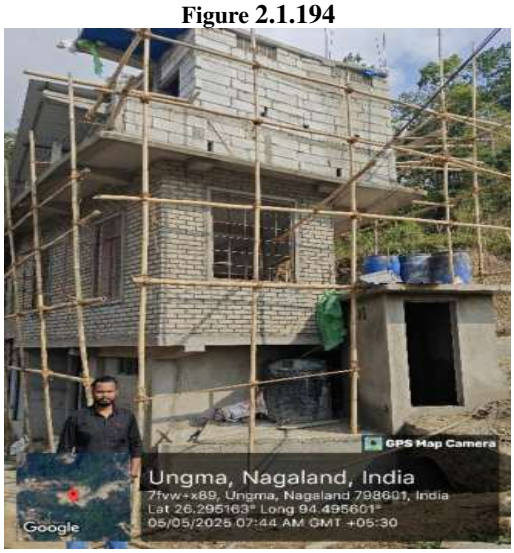

Figure 2.1.196

2.1.14 ZUNHEBOTO DISTRICT

a) Aghunato town

In Aghunato town some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 630 per bag. Steel reinforcement cost in the range of Rs.75-78 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.900-1000 and Rs.500-700 respectively depending upon the class of work. The normal brick was found to be Rs. 20-25 per brick (1st Class), fine sand rate is Rs.120/cft. and coarse sand rate is Rs.80-90/cft. and coarse aggregate rate is Rs.70-80/cft. RCC framed structure and load bearing buildings are commonly used in village area. Material of doors & windows are wooden, stainless steel and

glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-5 feet.

Figure 2.1.197

Figure 2.1.198

b) Zunheboto Town

In Zunheboto some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 600-620 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-900 and Rs.500-700 respectively depending upon the class of work. The normal brick was found to be Rs. 18-20per brick (1st Class), fine sand rate is Rs.50/cft. and coarse sand rate is Rs.50-60/cft. and coarse aggregate rate is Rs.50-55/cft. RCC framed structure buildings are commonly used in urban area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-5 feet.

Figure 2.1.199

Figure 2.1.200

Figure 2.1.201

Figure 2.1.202

Figure 2.1.203

c) Zunheboto Village

In rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 600-620 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-900 and Rs.500-700 respectively depending upon the class of work. The normal brick was found to be Rs. 18-20per brick (1st Class), fine sand rate is Rs.50/cft. and coarse sand rate is Rs.50-60/cft. and coarse aggregate rate is Rs.50-55/cft. RCC framed structure and load bearing buildings are commonly used in village area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-5 feet.

Figure 2.1.204

Figure 2.1.205

Figure 2.1.206

2.1.16 PHEK DISTRICT

a) Phek

In Phek urban and rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 630-640 per bag. Steel reinforcement cost in the range of Rs.80 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-1000 and Rs.500-700 respectively depending upon the class of work. The normal brick was found to be Rs.20 per brick (1st Class), fine sand rate is Rs.60/cft. and coarse sand rate is Rs.90/cft. and coarse aggregate rate is Rs.50/cft. RCC framed structure and load bearing buildings are commonly used in urban and rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-6 feet.

Figure 2.1.207

Figure 2.1.208

Figure 2.1.209

Figure 2.1.210

Figure 2.1.211

Figure 2.1.212

Figure 2.1.213

Figure 2.1.214

Figure 2.1.215

Figure 2.1.216

Figure 2.1.217

b) Pfutsero

In Pfutsero urban and rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 600 per bag. Steel reinforcement cost in the range of Rs.60 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-1000 and Rs.500-700 respectively depending upon the class of work. The normal brick was found to be Rs.17 per brick (1st Class), coarse sand rate is Rs.70/cft. and coarse aggregate rate is Rs.60/cft. RCC framed structure and load bearing buildings are commonly used in urban and rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-6 feet.

Figure 2.1.218

Figure 2.1.219

Figure 2.1.220

Figure 2.1.221

Figure 2.1.222

Figure 2.1.223

Figure 2.1.224

Figure 2.1.225

Figure 2.1.226

Figure 2.1.227

2.1.17 PEREN DISTRICT

a) Peren Town

In Peren some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 580-600 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.1000-1200 and Rs.700-800 respectively depending upon the class of work. The normal brick was found to be Rs.18 per brick (1st Class), coarse sand rate is Rs.80/cft. and Local and rate is Rs.30/cft. RCC framed structure and load bearing buildings are commonly used in Peren. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-6 feet.

Figure 2.1.228

Figure 2.1.229

Figure 2.1.230

Figure 2.1.231

Figure 2.1.232

b) Peren Village

In Peren rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 590-600 per bag. Steel reinforcement cost in the range of Rs.75 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs. 1000-1200 and Rs.700-800 respectively depending upon the class of work. The normal brick was found to be Rs.20 per brick (1st Class), coarse sand rate is Rs.80/cft. and Local and rate is Rs.30/cft. RCC framed structure and load bearing buildings are commonly used in new Peren area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 4-6 feet.

Figure 2.1.233

Figure 2.1.234

Figure 2.1.235

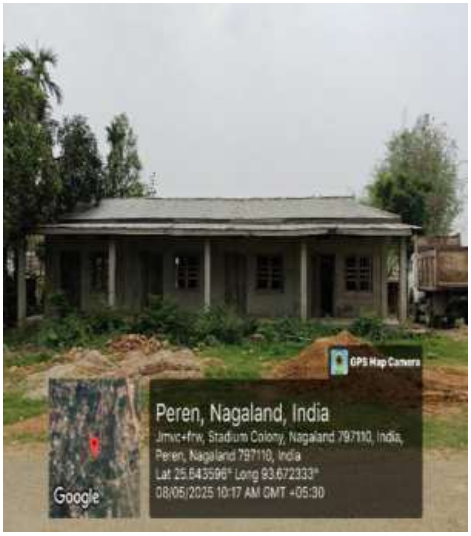

Figure 2.1.236

Figure 2.1.237

c) Jalukie

In Jalukie urban and rural area some houses were studied as shown in below figures and the survey of different residential was carried out. Cement found to be Rs. 550-560 per bag. Steel reinforcement cost in the range of Rs.66-70 per kg depending upon the diameter of the bar. Skilled and Unskilled labour in the area was found in the range of Rs.800-1000 and Rs.50-700 respectively depending upon the class of work. The normal brick was found to be Rs.14 per brick (1st Class), fine sand rate is Rs.75/cft. and Local sand rate is Rs.27/cft. RCC framed structure and load bearing buildings are commonly used in urban and rural area. Material of doors & windows are wooden, stainless steel and glass also used in residential respectively along with the frame. Isolated footings in foundations are used in the Residential buildings and depth of foundation is 5-6 feet.

Figure 2.1.238

Figure 2.1.239

Figure 2.1.240

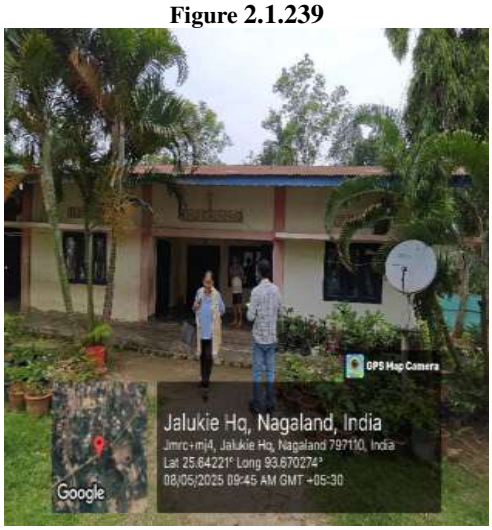

Figure 2.1.241

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Figure 2.1.243

Figure 2.1.244

Figure 2.1.245

Figure 2.1.246

CHAPTER 3

SCHEDULE OF RATES OF MATERIALS AND ITEMS IN THE SURVEY

3.0 Introduction

The following items of works were studied during the surveys by using the questionnaire and using the standard specifications given in the CPWD- DSR.

A) Earthwork

Earthwork in excavation and earthwork in filling were taken out separately under different items, and quantities were calculated in cubic meter. Foundation trenches are usually dug to the exact width of foundation with vertical sides. Earthwork in excavation in foundation has been calculated by taking the dimensions of each trench length (L) x breadth (B) x depth (D). Filling in trenches after the construction of foundation masonry is also accounted for by deducting the masonry from the excavation. Earthwork in plinth filling is calculated by taking the internal dimensions in between plinth wall (length x breath) which are usually less than the internal dimension of the room to offset of plinth wall i.e. 115 mm and height is taken after deducting the thickness of concrete in floor, usually 75 mm. Excavated earth is used in trench filling and plinth filling and usually not paid for separately, but is included under a separate item back fill at a lesser rate.

B) Concrete in foundation

The concrete is worked out in cubic meter length x breadth x thickness. The length & breadth of foundation concrete have been considered the same as for excavation; only the depth or thickness differs. The thickness of concrete varied from 200 mm to 300 mm. Foundation base consists of lean cement concrete. The production of cement concrete in foundation is in 1:4:8 or 1:5:10.

C) Damp proof course

D.P.C. of 25 mm thick rich cement concrete 1:1.5:3 or 20mm thick rich cement mortar 1:2, mixed with standard water proofing material, is provided at the plinth level to full width of plinth wall, and the quantities are counted in sqm. (Length x Breadth). People are also providing plinth band / beam in place of DPC in earthquake prone areas.

D) Masonry

Masonry was computed in cum. (Length x Breadth x Height). Foundation and plinth masonry is taken under one item, and masonry in super structure is taken under a separate item. In multi-storeyed buildings, the masonry in each story as ground floor above plinth level, first floor, etc. is computed separately. In taking out quantities the walls have been measured as solid and then deductions are made for opening as door, window etc. different mortar, etc. are taken out under separate item. Thin partition walls are measured in sqm. Stone or Block masonry is calculated in the same manner as for brick masonry.

E) Lintels over openings

Lintels either of R.C.C. or R.B.C. are provided in buildings and were calculated in cum. Length of the lintel is equal to the clear span plus two bearings of about 120 mm. Thus, the length of the lintel, l = s+2t, i.e. clear span plus two bearings. Quantity of lintel = l x t x thickness of wall.

F) Reinfor**ced Cement Concrete and Reinforced Brick Concrete work**

R.C.C. and R.B.C. works in roofs or floor slabs, beams, lintels, columns, foundations, etc. and the quantities were calculated in cum. Length, breadth and thickness are found correctly from the plan prepared during field survey. Bearings are added with the clear span to get the dimensions. The quantities were calculated in cubic meter exclusive of steel reinforcement and its bending but inclusive of centring and shuttering and fixing and binding reinforcement in position. The reinforcement including its bending is taken up separately under steel works in quintal. For this purpose, 2% of R.C.C. or R.B.C. work by volume has been taken for steel. In R.C.C. work plastering has not been not taken separately, but the exposed surface is finished with thin rich cement sand mortar plastering to give smooth and even surface, which was not taken into consideration.

G) Flooring and Roofing

The base lime concrete and floor finishing of Cement Concrete or stone or marble or mosaic, etc. were taken as combined one item, and the quantity is calculated in sq. m. multiplying the length by the breadth. 1st and 2nd floor supporting structure is taken separately in cum. as R.C.C., R.B.C. Roof- Supporting structure is taken separately in cum and lime concrete terracing is computed in sq. m. with thickness specified, under a separate item including surface rendering smooth.

H) Plastering and Pointing

Plastering of 12 / 15 / 20mm thick is calculated in sq. m. For walls, the measurements were taken for the whole face of the wall. Plastering of ceiling usually of 12 / 15mm thick is computed in sq. m. under a separate head as this work is done with richer mortar (1:4). Pointing in walls is calculated in Sqm. for whole surface.

I) Doors and Windows

Door and window frames or chaukhats made of wood were computed in cum. Length is obtained by adding the length of all the members of the chaukhat. Door and window leaves or shutters are computed in sqm. by multiplying the breadth by the height of the shutters, the rebate in the chaukhat has been be taken into consideration in finding the breadth and the height. The rebates in the chaukhat are taken as 12mm to 20mm. The name of the timber used, the thickness of shutters, type of shutters and the nature of fittings (iron, brass etc.) have been noted in the item. Shutters of different types as paneled and partly panelled and partly glazed, etc. have been computed separately as the rates differ. Fittings are computed by number taken under a separate item in sq. m. basis of shutters, or a sum provision may be made. Holdfasts are taken separately under a separate item by weight or by number.

J) Wood work

The quantities of wooden members, cupboards, panelling etc. have been computed in cum.

K) Iron work

The quantities of iron work in gates, grills, purlins, rafters, etc. have been computed by weight in kg or quintal and quantities are calculated correctly by multiplying the weight per running meter by the length.

L) White- washing and / or Colour-washing or Distempering

The quantities are computed in sqm. and are same as for plastering. The inside is distempered or with white putty and oil bond distemper. The outside is colour-washed, apex, snowcryl and the quantities of colour-washing are same as for outside plaster. Number of coats of paint (white-washing or colour-washing) is taken as one job or work and the rates cover for number of coats. Other type of surface finishing is also considered and taken accordingly.

M) Painting

Painting or Varnishing of doors and windows are computed in sqm. For iron bars, grills, etc. the area of the clear opening inside the chaukhat was taken. For both faces of doors and windows, the single area as measured above is multiplied by appropriate number as below: -

i) Panelled, framed and braced, Ledged and battened or ledged battened and braced

ii) Fully glazed

iii) Partly panelled and partly glazed

iv) Flush door

v) Iron bars, grills in windows

Painting is done in two or three coats, usually over a coat of priming. The rate covers for the number of coats of one item. For beams, rafters, purling, posts, etc. of timber or iron, the area of actual exposed surface is taken for painting.

N) Lump-sum Items

A lump- sum rate is provided for certain small items for which detailed quantities have not been taken out as it was not possible to find out the details at site.

3.1 Analysis of Rates

The determination of rate per unit of a particular item of work, from the cost of quantities of materials, the labours and other miscellaneous petty expenses required for its completion is known as the analysis of rate. A reasonable profit, (15%) for the contractor has been included in the analysis of rate. Rates of materials taken as the rates delivered at the site of work and include the first cost (cost at origin), cost of transport, railway freight if any, taxes, etc. If the materials are brought from a distant place, more than 10 km, then cost of transport is also added. The rates of materials and labour vary from place to place and therefore, the rates of different items of work also vary from place to place.

For the purpose of analysis, the details about all the operations involved in carrying out the work were studied, and number of labours used and their wages per day was also noted. The rates of a particular item of work were collected on the following: -

(i) Specifications of works and materials, quality of materials and their proportions, method of constructional operation, etc.

(ii) Quantities of materials and their rates, number of different types of labour and their rates.

(iii) Location of the site of work and its distance from the source of materials and the rate of transport, availability of water, electricity etc.

(iv) Profits and miscellaneous expenses of contractor.

3.2 Overhead Costs

Overhead costs include general office expenses, rents, taxes, supervision and other costs which are indirect expenses. The miscellaneous expenses on overheads were considered under the following heads: -

- General Overheads: (i) Establishment (office staff), (ii) Stationary, printing, postages, etc. (iii) Travelling expenses, (iv) Telephone, (v) Rent and taxes etc.
- Job Overheads: Supervision (Salary of Engineers, Overseers, Supervisors, Mate etc.), handling of materials, repairs, carriage, amenities to labour, workmen compensation, insurance, etc. interest on investment, losses on advances.

The Contractor's net profit of 10 % and the miscellaneous overhead expenses of about 5 to 10 % have been added. For overhead expenses and contractors profit about 15 % of the actual cost has been considered for adding under the head profit. The analysis of rate is worked out for the unit of payment of the particular item of work under two heads- i) Materials and ii) Labour

3.3 Typical BoQ of Kohima District (Urban Area)

Table 3.3.a

BILL OF QUANTITIES : KOHIMA																																
Plinth Area		Sqm	544																													
S.No.	**Description**	**Unit**	**Total Quantity**	**Unit Qty. (A/R)**	**Cement**	**Coarse Sand**	**Stone Agg. (40mm)/ Brick Agg. (40mm)**	**Stone Agg. (20mm)**	**Stone Agg. (10 mm)**	**Rubble Stone**	**Bricks/ Blocks**	**Fine Sand**	**Steel Reint.**	**G.I. Sheet**	**Chlorpyriphosfor Anti Termite Treatment**	**Mason / Stone Mason / Painter/ Carpenter**	**Blacksmith/ Fitter**	**Mate**	**Beldar**	**Bhisti/ Bandhani**	**Coolie**	**Batch Mix Plant + Pump Charges**	**Mixer + Vibrator**	**Excavator 3D with Driver + Hire & Running Charges Loader**	**Centering& Shuttering Sub-Structure**	**Centering & Shuttering-Columns**	**Centering & Shuttering-Slab, Beam, Chhajja, Staircase etc.**	**Sundries + Scaffolding**	**Water Charges @ 2%**	**Contractor's Profit @ 15%**	**Rate per Unit**	**Amount (in Rs.)**
					Tonne	**Cum**	**Cum**	**Cum**	**Cum**	**Cum**	**1000 Nos**	**Cum**	**Qtls**	**quintal**	**Litre/ Kg**	**Day**	**Day**	**Day**	**Day**	**Day**	**Day**	**Cum**	**Day**	**Day**	**Sqm**	**Sqm**	**Sqm**	**L.S**	**1%**	**15%**	**Rate (in Rs.)**	
RATE PER UNIT =					10800	1410	990	1120	1150	1450	13000	1340	6000	10000	0	1000	900	800	700	700	700	0	1850		307.95	804.25	766.55	1.7				
Item of Work: FOUNDATION																																
1	Surface Dressing (2.28)	100 sq.m	149.60	100 sq.m															1.97		1.29								45.64	349.15	2676.79	400447.19
2	Earthwork in excavation (2.8.1)	cum	40.05	10 cu.m														0.40	4.10					0.04					63.80	488.07	374.19	14986.94
3	Earth filling (2.25)	cum	12.02	10 cu.m														0.20		0.20	2.50								41.00	313.65	240.47	2890.97
4	Stone filling (2.27)	cu. m	52.38	10 cu.m								10.00							0.89	0.35	1.07								300.34	2297.60	1761.49	92266.05
5	Plain Cement Concrete (PCC) 1:4:8 All work up to plinth level (4.1.8)	cum	5.51	1 cu.m	0.17	0.47	0.65	0.24								0.10			1.63	0.70			0.07					13.52	105.89	810.06	6210.43	34190.15
6	Plain Cement Concrete (PCC) 1:5:10 All work up to plinth level (4.1.10)	cum																														
7	Design mix reinforced cement concrete (M25 grade) All work up to Plinth, Footing including plinth/ earthquake band etc. (5.33)	cum																														
	OR Nominal Mix 1:1.5:3	cum	12.98	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	164.67	1259.72	9657.85	125317.93
8	Centering and Shuttering	sqm	86.08	1 sq.m																					1.00				6.16	47.12	361.23	31092.83
9	Brick work in foundation and	cum	0.00	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	158.58	1213.12	9300.62	0.00

	plinth in CM1:6 (6.1.2)																															
	Or randam Rubble Masonary in Foundation and Plint in 1:6	cum	27.51	1 cu.m	0.08	0.35				1.00						1.07			1.32	0.11	0.71							63.52	110.31	843.84	6469.42	177991.90
10	Plinth Protection (4.17)	sq.m	23.24	10 sq.m	0.11	0.23	0.75	0.35	0.12			0.06				0.32			2.24	0.33	1.19							20.15	117.03	895.27	662.97	15409.01
Material/ Labour Consumption (FOUNDATION)					3.46	12.84	5.32	2.13	0.28	27.51	0.00	52.52	0.00		0.00	30.73	0.00	1.84	74.46	9.81	32.84	0.00	0.39	0.17	86.08			1868.93	6366.18	48701.26	373376.33	**894592.96**
Item of Work: WALLING																																
1	Design mix reinforced cement concrete (M25 grade) Above Plinth up to floor level V. (5.33 A) – Columns	cum	0.00	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	158.58	1213.12	9300.62	0.00
	OR Nominal Mix 1:1.5:3	cum	9.41	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	164.67	1259.72	9657.85	90891.94
2	Centering and Shuttering	sqm	162.53	1 sqm																						1.00			16.09	123.05	943.39	153329.75
3	229/ 345 mm thick Brickwork in super structure above plinth up to floor V level in CM 1:6 (6.4.2)	cum	22.40	1 cu.m	0.06	0.27					0.49					0.94			0.19	0.22	2.93						35.20	216.17	1653.70	12678.38	283985.64
	Or Coursed Rubble Masonary work in super structure above plinth upto floor V level in CM 1:6(7.7.1)	cum	5.60	1 cu.m	0.08	0.32				1.10						2.02			1.82	0.11	2.21						49.75	155.46	1189.24	9117.51	51056.21
4	115 mm thick Brickwork in super structure above plinth up to floor V level in CM 1:4 (6.13.2)	sqm	376.15	10 sqm	0.11	0.30					0.57					1.20			0.21	0.72	3.29						24.84	262.25	2006.21	1538.10	578561.63
Material/ Labour Consumption (WALLING)					9.59	23.06	0.00	5.36	2.64	6.16	32.32	0.00	0.00		0.00	79.11	0.00	0.00	41.09	41.03	201.76	0.00	0.66	0.00		162.53		2135.94	19741.26	151020.67	1158298.76	**1157825.17**
Item of Work: STRUCTURAL SLAB																																
1	Design mix reinforced cement concrete (M25 grade) Above Plinth up to floor level V. (5.33 A) – Slab, Chhajja, Beams	cum	195.16	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	158.58	1213.12	9300.62	0.00
	OR Nominal Mix 1:1.5:3	cum	63.00	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	164.67	1259.72	9657.85	608398.10
2	Centering and Shuttering	sqm	800.04	1 sqm																							1.00		15.33	117.28	899.16	719365.62
Material/ Labour Consumption (STR. SLAB)					25.20	26.77	0.00	35.91	17.64	0.00	0.00	0.00	0.00		0.00	10.71	0.00	0.00	125.99	56.70	0.00	0.00	4.41	0.00			800.04	900.83	22638.77	173186.6	1327763.73	**1327763.73**

Item of Work: STAIR-CASE																																
1	Design mix reinforced cement concrete work (M25 grade) Above Plinth up to floor level V. (5.33 A) – Stair-case	**cum**	9.79	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	158.58	1213.12	9300.62	91071.66
	OR Nominal Mix 1:1.5:3	cum		1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	164.67	1259.72	9657.85	0.00
2	Centering and Shuttering	sqm	102.82	1 sqm																							1.00		15.33	117.28	899.16	92448.36
Material/ Labour Consumption (STAIR-CASE)					3.72	4.16	0.00	5.58	2.74	0.00	0.00	0.00	0.00		0.00	1.66	0.00	0.00	19.58	8.81	0.00	9.79	0.23	0.00			102.82	127.30	3129.07	23937.39	183520.02	**183520.02**
Item of Work: REINFORCEMENT																																
1	Reinforcement Cold Twisted Bar (5.22)	kg	14942.34	1 Qtls									1.05				1.00		1.00									52.91	159.80	1222.46	93.72	1400427.45
2	Reinforcement Mild Steel (5.22.1)	kg		1 Qtls									1.05				1.00		1.00									52.91	159.80	1222.46	93.72	0.00
Material/ Labour Consumption (REINFORCEMENT)					0.00	0.00	0.00	0.00	0.00		0.00	0.00	156.89		0.00	0.00	149.42	0.00	149.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7905.99	23877.71	182664.45	1400427.45	**1400427.45**

Table 3.3.b

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Fine Sand	Marble Stone	Kota Stone	Red Sand Stone	Stone Agg. (20mm)	Stone Agg. (10mm)	Marble Chips	Vitrified Floor Tiles	Ceramic Wall Tiles	Marble Powder	Dark Shade Pigmen	Second Class Indian Teak/ Sal wood	Mason/ Stone Mason/ Painter/ Carpenter	Blacksmith/ Fitter	Belda	Bhisti/ Bandhani	Cooli	Mixer + Vibrator	Sundries + Scaffolding	Water Charges @ 2%	Contractor's Profit @ 15%	Rate per Unit	Amount (in Rs.)
					Tonne	Cum	Cum	Sqm	Sqm	Sqm	Cum	Cum	Qtls	Sqm	Sqm	Cum	kg	Cum	Day	Day	Day	Day	Day	Day	L.S	1%	15%	Rate (in Rs.)	
RATE PER UNIT -					10800	1410	1340	450	240	145	1120	1150		850	720		54	42300	800	900	700	700	700	1550	1.7				
Item of Work: FLOORING																													
1	40 mm Cement Concrete (CC) Flooring (11.3.1)	**sqm**	1105.95	**10 sqm**	0.17	0.18					0.27	0.09							0.7	0.0	1.4	1.0		0.0	40.4	38.0	576.9	442.3	489211.0
2	18 mm Marble Stone Flooring (11.23.2)	**sqm**																											
3	60 x 60 cm Vitrified Tile Flooring (11.41.2)	sq. m	292.833	1sq. m	0.01	0.03								1.03					0.21		0.02	0.00	0.20		31.52	28.29	216.40	1659.04	485822.83
4	Ceramic Glazed Wall Tiles (11.36)	sq. m	34.430	1sq. m	0.01	0.01									1.03				0.26		0.01	0.00	0.25		67.91	27.54	210.70	1615.34	55616.32
Material/ Labour Consumption (FLOORING)					5.88	10.01	0.00	0.00	0.00	0.00	2.96	0.99	0.00	300.15	35.29	0.00	0.00	0.00	78.02	0.33	21.16	12.06	67.17	0.22	12016.65	10327.93	79008.69	605733.30	**605733.30**

Table 3.3.c

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Stone Agg. (20mm)	Fine Sand	Bitumen 80/100	Kerosene Oil	Steam Coal	Mud Phuska / Brick Bats	Kota Stone	Brick Tiles	Water Proofing Compound	PVC Sheet (400 micron thick)	Rain Water Pipe	Mason/ Stone Mason/ Painter / Carpenter	Blacksmith/ Fitter	Beldar	Bhisti/ Bandhani	Coolie	Sundries + Scaffolding	Water Charges @2%	Contractor's Profit @ 15%	Rate per Unit	Amount (in Rs.)
					Tonne	Cum	Cum	Cum	Tonne	Litre	Qtls	Cum	Sqm	1000 Nos	kg	Sqm	Mtr	Day	Day	Day	Day	Day	L.S	1%	15%	Rate (in Rs.)	
RATE PER UNIT - ₹					10800	1410	1120	1340	0	50						450.00	250	1000	900	700	700	700	1.7				
1	Mud Phuska with Flat Brick Tiles (12.16.1)	sqm																									
2	Water Proofing Roof Treatment (BrickCoba)	sqm																									
3	75X75mm Gola(12.21.1)	mtr.	25.00	10 mtr.	0.03	0.04	0.08	0.01										0.89		1.09	0.06	0.16	20.38	47.65	364.52	279.46	6986.55
4	110 mm PVC Rain Water Pipes (12.41.2) with accessories	mtr.	38.08	6 mtr.													6.00		0.23	0.45	0.11		1046.38	77.56	593.31	758.12	28869.10
Material/ Labour Consumption (FINISHING/TREATMENT)					0.09	0.10	0.21	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38.08	2.23	1.46	5.59	0.85	0.39	6691.95	611.35	4676.82	35855.65	**35855.65**

Table 3.3.d

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Standard Rolled Steel Sections (Ready-made)	Door Shutter (Flush)	Red Lead Steel Primer	Wood (Frame)	Wood (Shutter 35 mm thick)	Pressed Steel Frame (Profile B/ C/ E)	Ply wood	Glass Panes	MS Laths	M S Angle/Bar/ other sections	Mason/ Stone Mason/ Painter/ Carpenter	Blacksmith/ Fitter	Beldar	Sundries + Scaffolding	Water Charges @ 2%	Contractor's Profit @ 15%	Rate perUnit	Amount (in Rs.)
					Sqm	Sqm	Sqm	Cum	Cum	m	Sqm	Sqm	Sqm	kg	Day	Day	Day	L.S	1%	15%	Rate (in Rs.)	
RATE PER UNIT - ₹					1050	2400	65.00	141000.00		75		740	2250	83	1000	900	700	1.7				
Item of Work: DOOR, WINDOW & VENTILATOR																						
1	Wooden Frame (Sal/ Teak/Other) (9.1)	cu.m	0.49	cu.m				1.06							20.00		1.94		3403.89	26039.75	199638.08	97742.81
2	Angle section Frame(10.13)	Kg.	1142.40	17.5 Kg. or 5.0 m										18.79		0.24	0.20	128.53	41.79	319.70	142.78	163114.22
3	35mm Glazed Door, Window & ventilator shutters + Glass Panes (9.9)	sq.m	80.69	2.16 sq.m					0.06			1.27			2.05		0.77	94.03	73.82	564.70	2032.55	164003.91
Material/ Labour Consumption (DOOR, WINDOW & VENTILATOR)					0.00	61.41	131.94	0.52	2.17	43.98	0.00	47.44	131.94	1142.40	103.92	100.49	135.62	40093.41	25340.13	193851.96	865822.77	**769139.07**

Table 3.3.e

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Fine Sand	Cement Primer	Dry Distemper	Cement Paint	Pink Primer (Wood)	Red Lead Steel Primer	Enamel Paint	Sprit	Shellac	MS Tube / ERW Tube / GI Pipe	Welding	Mason/ Stone Mason/ Painter/ Carpenter	Blacksmith/ Fitter	Beldar	Bhisti/ Bandhani	Coolie	Sundries + Scaffolding	Water Charges @ 2%	Contractor's Profit@ 15%	Rate per Unit	Amount(in Rs.)
					Tonne	Cum	Cum	Litre	kg	kg	Litre	Litre	Litre	Litre	Litre	m	cm	Day	Day	Day	Day	Day	L.S	2%	15%	Rate (in Rs.)	
RATE PER UNIT -					10800	1410	1340	250	110	22	260	280	405	250	390	947.21	2.50	1000	900	700	700	700	1.70				
Item of Work: FINISHING																											
1	12 mm cement plaster (1:6) in Fine Sand (13.1.2)	sq.m	941.94	10 sq.m	0.04		0.15											0.67		0.11	0.93	0.75	18.43	50.97	389.88	298.91	281554.66
2	15 mm cement plaster (1: 6) in Fine Sand (13.2.2)	sq.m	402.11	10 sq.m	0.04		0.18											0.80		0.13	1.00	0.88	19.56	59.04	451.66	346.27	139237.96
3	6 mm cement plaster 1: 3 (13.16.1)	sq.m	443.69	10 sq.m	0.04		0.08											0.51		0.05	0.93	0.75	28.00	45.35	346.96	266.01	118023.16
4	Oil Bound Distempering – Internal (13.41.1)	sq.m	1385.62	10 sq.m				0.70	1.50									0.97				0.50	39.39	34.46	263.65	202.13	280075.49
5	Water Proofing Cement Paint – External (13.44.1)	sq.m	462.40	10 sq.m						3.84								0.44			0.10	0.23	16.77	15.77	120.63	92.49	42765.24
6	Primer Wood Work (13.50.1)	sq.m	201.28	10 sq.m							0.75							0.24				0.25	19.24	12.89	98.57	75.57	15211.16
7	Painting with Synthetic Enamel Paint (13.62.1)	sq.m	201.28	10 sq.m							0.75		1.16					0.76				0.79	35.49	40.83	312.34	239.46	48198.91
Item of Work: MISCELLANEOUS																											
1	Hand Rail with Baluster10.26.1/2/3)	m	85.00	5.4 m												5.67	72.00		0.24	1.03			12.48	131.21	1003.72	1425.03	121127.79
Material/ Labour Consumption					6.75	0.00	25.33	96.99	207.84	177.56	30.19	0.00	23.35	0.00	0.00	89.25	1133.33	292.57	3.78	33.89	173.57	240.16	11296.68	17837.93	136460.13	1045330.88	**1046194.36**

Table 3.4 Consolidated quantity of Material and cost of construction of Kohima District (Urban Area)

NAME OF WORK: (Plinth Area-544 sqm)																						
			QUANTITY										AMOUNT									
MATERIAL	UNIT	RATE	FDN	WALL	SLAB	STAIR	REINF	FLOOR	ROOF	D/W/V	FINISH	TOTAL	FDN	WALL	SLAB	STAIR	REINF	FLOOR	ROOF	D/W/V	FINISH	TOTAL
Cement (OPC/ PPC)	Tonne	10800.00	3.46137	9.586696	25.19808	3.72096		5.8821026	0.086475		6.74925	54.6849362	43420.1176	120257	316090	46676	0	73786.271	1084.759695	0	84663.97352	685978.7766
Coarse Sand	Cum	1410.00	12.8368	23.05866	26.77296	4.1616		10.010118	0.1045		0	76.94466725	21023.0633	37763.5	43846.5	6815.5	0	16393.72	171.1412175	0	0	126013.4357
Stone Agg. (40mm)/ Brick Agg. (40mm)	Cum	990.00	5.32161									5.321612	6119.24181	0	0	0	0	0	0	0	0	6119.241815
Stone Agg. (20mm)	Cum	1120.00	2.13475	5.364384	35.90726	5.58144		2.9616067				51.94944592	2777.05514	6978.42	46711	7260.8	0	3852.6949	0	0	0	67579.99521
Stone Agg. (10mm)	Cum	1150.00	0.27891	2.635136	17.63866	2.74176		0.9872022	0.209			24.49066304	372.545457	3519.82	23560.4	3662.2	0	1318.6307	279.166525	0	0	32712.79089
Rubble Stone	cu.m	1450.00	27.5128	6.15978								33.67258	46336.3699	10374.1	0	0	0	0	0	0	0	56710.51742
Bricks/ Blocks (including Recycled Bricks/Blocks)	1000 Nos	13000.00	0.00	32.32								32.31791936	0	487984	0	0	0	0	0	0	0	487984.4234
Fine Sand	Cum	1340.00	52.52	0.00	0.00	0.00		0	0.024075		25.3319	77.87	81740.9146	0	0	0	0	0	37.47057075	0	39426.84486	121205.2301
Steel Reinforcement	Qtls	6000.00					156.89					156.8946028	0	0	0	0	1093398	0	0	0	0	1093398.487
G.I Sheet	Kg	10000							0.00			0	0	0	0	0	0	0	0	0	0	0
Marble Stone	Sqm	450.00						0				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cement Jali	sq.m	450.00							0			0										
Marble Chips	Qtls	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vetrified Floor Tiles	Sqm	850.00						300.15385				300.1538496	0	0	0	0	0	296334.39	0	0	0	296334.3919
Ceramic Wall Tiles	Sqm	720.00						35.29075				35.29075	0	0	0	0	0	29512.948	0	0	0	29512.94841
Marble Powder	Cum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dark Shade Pigment	kg	54.00						0				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mud Phuska/ Brick Bats	Cum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Proofing Compound	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pipe with carrage	Mtr.	250.00							38.08			38.08	0	0	0	0	0	0	11057.48	0	0	11057.48
Door Shutter (Flush)	Sqm	2400.00								61.40672		61.40672	0	0	0	0	0	0	0	171177.3727	0	171177.3727
Wood (Frame)	Cum	141000.00								0.5168		0.5168	0	0	0	0	0	0	0	84637.1112	0	84637.1112

Wood (Shutter 35 mm thick)	Cum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Glass Panes	Sqm	740.00								47.4420259		47.44202593	0	0	0	0	0	0	0	40776.8957	0	40776.8957
M.S Laths	sq.m	2250.00								131.944444		131.9444444	0	0	0	0	0	0	0	344820.3125	0	344820.3125
M S Angle/Bar/ other sections	Kg	83.00								1142.4		1142.4	0	0	0	0	0	0	0	110132.5008	0	110132.5008
Cement Primer	Litre	250.00									96.9936	96.993568	0	0	0	0	0	0	0	0	28164.50731	28164.50731
Dry Distemper	kg	110.00									207.843	207.8433 6	0	0	0	0	0	0	0	0	26555.10689	26555.10689
Cement Paint	kg	22.00									177.562	177.5616	0	0	0	0	0	0	0	0	4537.231565	4537.231565
Pink Primer (Wood)	Litre	260.00									30.192	30.192	0	0	0	0	0	0	0	0	9117.68208	9117.68208
Red Lead Steel Primer	Litre	165.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enamal Paint	Litre	405.00									23.3485	23.34848	0	0	0	0	0	0	0	0	10983.30011	10983.30011
LABOUR																						
Mason/ Stone Mason/ Painter/ Carpenter	Day	1000	30.73	79.11	10.71	1.66	0.00	78.017037	2.23	103.917792	292.566	598.9408464	35696.3572	91880.8	12438.7	1933.5	0	90616.788	2587.24125	120700.5158	339815.9382	695669.7931
Blacksmith/ Fitter	Day	900					149.42	0.3327648	1.46	100.488073	3.77778	255.4817806	0	0	0	0	156199.8	347.85568	1525.93224	105045.2076	3949.1	267067.8793
Mate	Day	800	1.84253	0	0	0	0.00					1.842528	1712.07702	0	0	0	0	0	0	0	0	1712.077018
Beldar	Day	700	74.4582	41.08513	125.9904	19.584	149.42	21.161533	5.59	135.624854	33.8903	606.8032209	60538.2616	33404.3	102436	15923	121488.7	17205.385	4541.189144	110269.7876	27554.48728	493361.3588
Bhisti/ Bandhani	Day	700	9.80612	41.03154	56.70	8.81	0.00	12.061547	0.85		173.567	302.8288778	7972.86658	33360.7	46096.4	7165.2	0	9806.641	694.3108229	0	141118.835	246215.0191
Coolie	Day	700	32.84	201.76	0	0	0.00	67.174105	0.3925		240.157	542.3232025	26700.5396	164041	0	0	0	54615.906	319.122125	0	195259.3775	440935.8798
MISCELLANEOUS AND LUMP SUM																						
Batch Mix Plant + Pump Charges	Cum	0	0	0	0	9.792						9.792	0	0	0	0	0	0	0	0	0	0
Mixer + Vibrator	Day	1850	0.38537	0.66	4.41	0.23	0.00	0.2218432				5.9041408	828.072562	1415.58	9475.38	490.95	0	476.69112	0	0	0	12686.67015
Excavator 3D with Driver+ Hire & Running Charges Loader	Day	0	0.16521	0	0	0	0.00					0.1652145	1328.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1143.759
Centering & Shuttering Sub-Structure	Sqm	307.95	86.08									86.08	44166.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	38025.44

Centering & Shuttering- Columns	Sqm	804.25		162.53								162.531424	0	151827	0	0	0	0	0	0	0	151826.5152
Centering & Shuttering- Slab, Beam, Chhajja, Staircase etc.	Sqm	766.55			800.04	102.82						902.85504	0	0	712313	91542	0	0	0	0	0	803855.0212
Sundries + Scaffolding	L.S	1.7	1868.93	2135.94	900.83	127.30	7905.99	12016.65	6691.953008	40093.4121	11296.7	83037.68	3690.29603	4217.51	1778.74	251.35	15610.78	23727.478	13213.59581	79166.44693	22305.85585	163962.056
													384422.808	1147024	1314746	181721	1386698	617995.4	35511.4094	1180518.963	1034934.616	**7277246.4**

Note: *FDN=* ***Foundation****; REINF=* ***Reinforcement;*** *D/W/V=****Door/Window/Ventilator;*** *Agg. =* ***Aggregate;*** *Cum. =* ***Cubic Metre;*** *Sqm. =* ***Square Metre;*** *Qtls. =* ***Quintal***

3.5 Typical BoQ of Kohima District (Rural Area)

Table 3.5.a

BILL OF QUANTITIES : Kohima																																		
Plinth Area		**Sqm**		1301.12																														
S.No.	**Description**	**Unit**	**Total Quantity**	**Unit Qty. (A/R)**	**Cement**	**CoarseSand**	**Stone Agg. (40mm)/ Brick Agg. (40mm)**	**Stone Agg. (20mm)**	**Stone Agg. (10 mm)**	**Stone (Partly/ Fully Dressed) for Masonry**	**Bricks/ Blocks**	**Fine Sand**	**Steel Reint.**	**G.I. Sheet**	**Chlorpyriphosfor Anti Termite Treatment**	**Mason / Stone Mason / Painter/ Carpenter**	**Blacksmith/ Fitter**	**Mate**	**Beldar**	**Bhisti/ Bandhani**	**Coolie**	**Batch Mix Plant + Pump Charges**	**Mixer + Vibrator**	**Excavator 3D with Driver + Hire & Running Charges Loader**	**Centering& Shuttering Sub-Structure**	**Centering & Shuttering-Columns**	**Centering & Shuttering-Slab, Beam, Chhajja, Staircase etc.**	**Sundries + Scaffolding**	**Water Charges @ 2%**	**Contractor's Profit @ 15%**	**Rate per Unit**	**Amount (in Rs.)**
					Tonne	**Cum**	**Cum**	**Cum**	**Cum**	**Cum**	**1000 Nos**	**Cum**	**Qtls**	**quintal**	**Litre/ Kg**	**Day**	**Day**	**Day**	**Day**	**Day**	**Day**	**Cum**	**Day**	**Day**	**Sqm**	**Sqm**	**Sqm**	**L.S**	**2%**	**15%**	**Rate (in Rs.)**	
RATE PER UNIT =					10600	1580	1940	1300	1430	1450.0	13000.0	990	6000.0	10000.0	0	1000	900	800	700	700	700	0	1850		307.95	804.25	766.55	1.7				
Item of Work: FOUNDATION																																		
1	Surface Dressing (2.28)	100 sq.m	156.18	100 sq.m															1.97		1.29								45.64	349.15	2676.79	418060.44
2	Earthwork in excavation (2.8.1)	cum	33.57	10 cu.m														0.40	4.10					0.04					63.80	488.07	374.19	12562.58
3	Earth filling (2.25)	cum	10.08	10 cu.m														0.20		0.20	2.50								41.00	313.65	240.47	2423.31
4	Fine sand filling (2.27)	cum																																
5	Plain Cement Concrete (PCC) 1:4:8 All work up to plinth level (4.1.8)	cum	4.04	1 cu.m	0.17	0.47	0.65	0.24								0.10			1.63	0.70			0.07					13.52	120.02	918.17	7039.27	28423.73
6	Plain Cement Concrete (PCC) 1:5:10 All work up to plinth level (4.1.10)	cum	0.00	1 cu.m	0.13	0.47	0.65	0.24								0.10			1.63	0.70			0.07					13.52	111.54	853.29	6541.92	0.00
7	Design mix reinforced cement concrete (M25 grade) All work up to Plinth, Footing including plinth/ earthquake band etc. (5.33)	cum	0.00	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	162.12	1240.24	9508.53	0.00
	OR Nominal Mix 1:1.5:3	cum	10.88	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	168.13	1286.23	9861.07	107256.30
8	Centering and Shuttering	sqm	72.15	1 sq.m																					1.00				6.16	47.12	361.23	26063.11

9	Brick work in foundation and plinth in CM1:6 (6.1.2)	cum		1 cu.m	0.06	0.27					0.49					0.72			0.19	0.22	1.37							12.84	189.83	1452.20	11133.50	0.00
	Or randam Rubble Masonary in Foundation and Plint in 1:6	cum	23.06	1 cu.m	0.08	0.35				1.00						1.07			1.32	0.11	0.71							63.52	111.18	850.50	6520.48	150376.58
10	Plinth Protection (4.17)	sq.m	38.97	10 sq.m	0.11	0.23	0.75	0.35	0.12			0.06				0.32			2.24	0.33	1.19							20.15	133.13	1018.47	754.20	29387.52
11	Stone filling (2.27)	cu. m	38.42	10 cu.m								10.00							0.89	0.35	1.07								230.34	1762.10	1350.94	51900.57
Material/ Labour Consumption (FOUNDATION)					3.02	10.94	5.55	2.33	0.47	23.06	0.00	38.65	0.00		0.00	26.33	0.00	1.54	65.96	8.27	29.66	0.00	0.28	0.14	72.15			1598.06	5223.45	39959.42	306355.52	826454.14
Item of Work: WALLING																																
1	Design mix reinforced cement concrete (M25 grade) Above Plinth up to floor level V. (5.33 A) – Columns	cum		1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	162.12	1240.24	9508.53	0.00
	OR Nominal Mix 1:1.5:3	cum	5.92	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	168.13	1286.23	9861.07	58344.01
2	Centering and Shuttering	sqm	102.18	1 sqm																						1.00			16.09	123.05	943.39	96394.80
3	229/ 345 mm thick Brickwork in super structure above plinth up to floor V level in CM 1:6 (6.4.2)	cum	18.78	1 cu.m	0.06	0.27					0.49					0.94			0.19	0.22	2.93							35.20	216.83	1658.75	12717.06	238773.03
4	115 mm thick Brickwork in super structure above plinth up to floor V level in CM 1:4 (6.13.2)	sqm	236.48	10 sqm	0.11	0.30					0.57					1.20			0.21	0.72	3.29							24.84	262.84	2010.75	1541.57	364550.60
Item of Work: STRUCTURAL SLAB																																
1	Design mix reinforced cement concrete (M25 grade) Above Plinthup to floor level V. (5.33 A) – Slab,Chhajja, Beams	cum		1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	162.12	1240.24	9508.53	0.00

	OR Nominal Mix 1:1.5:3	cum	43.02	1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	168.13	1286.23	9861.07	424258.77
2	Centering and Shuttering	sqm	546.40	1 sqm																							1.00		15.33	117.28	899.16	491302.49
Material/ Labour Consumption (STR. SLAB)					17.21	18.29	0.00	24.52	12.05	0.00	0.00	0.00	0.00		0.00	7.31	0.00	0.00	86.05	38.72	0.00	0.00	3.01	0.00			546.40	615.24	15610.59	119421.03	915561.26	915561.26
Item of Work: STAIR-CASE																																
1	Design mix reinforced cement concrete work (M25 grade) Above Plinth up to floor level V. (5.33 A) – Stair-case	cum	6.16	1 cu.m	0.38	0.43		0.57	0.28							0.17			2.00	0.90		1.00	0.02					13.00	162.12	1240.24	9508.53	58534.53
	OR Nominal Mix 1:1.5:3	cum		1 cu.m	0.40	0.43		0.57	0.28							0.17			2.00	0.90			0.07					14.30	168.13	1286.23	9861.07	0.00
2	Centering and Shuttering	sqm	64.64	1 sqm																							1.00		15.33	117.28	899.16	58120.11
Material/ Labour Consumption (STAIR-CASE)					2.34	2.62	0.00	3.51	1.72	0.00	0.00	0.00	0.00		0.00	1.05	0.00	0.00	12.31	5.54	0.00	6.16	0.14	0.00			64.64	80.03	1989.00		116654.64	116654.64
Item of Work: REINFORCEMENT																																
1	Reinforcement Cold Twisted Bar(5.22)	kg	10357.75	1 Qtls									1.05				1.00		1.00									52.91	159.80	1222.46	93.72	970750.00
2	Reinforcement Mild Steel (5.22.1)	kg		1 Qtls									1.05				1.00		1.00									52.91	159.80	1222.46	93.72	0.00
Material/ Labour Consumption (REINFORCEMENT)					0.00	0.00	0.00	0.00	0.00		0.00	0.00	108.76		0.00	0.00	103.58	0.00	103.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5480.29	16551.58	126619.57	970750.00	970750.00

Table 3.5.b

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Fine Sand	Marble Stone	Kota Stone	Red Sand Stone	Stone Agg. (20mm)	Stone Agg. (10mm)	Marble Chips	Vitrified Floor Tiles	Ceramic Wall Tiles	Marble Powder	Dark Shade Pigmen	Second Class Indian Teak/ Sal wood	Mason/ Stone Mason/ Painter/ Carpenter	Blacksmith/ Fitter	Belda	Bhisti/ Bandhani	Cooli	Mixer + Vibrator	Sundries + Scaffolding	Water Charges @ 2%	Contractor's Profit @ 15%	Rate per Unit	Amount (in Rs.)
					Tonne	Cum	Cum	Sqm	Sqm	Sqm	Cum	Cum	Qtls	Sqm	Sqm	Cum	kg	Cum	Day	Day	Day	Day	Day	Day	Day	L.S	2%	15%	Rate (in Rs.)	
	RATE PER UNIT - -				10600	1580	990	450	240	145	1300	1430	160	850	720	5760	54	42300	800	900	700	700	700	1550	1.7				
	Item of Work: FLOORING																												
1	40 mm Cement Concrete (CC) Flooring (11.3.1)	sq.m		10 sq.m	0.17	0.18					0.27	0.09							0.77	0.03	1.40	1.04		0.02	40.43	100.21	766.64	587.76	0.00
2	20mm thick Marble Chips Skirting + Glass Strips (11.12.1.1) + (11.13.1)	sq.m	18.500	10 sq.m	0.13	0.19							0.87			0.01	2.84		2.90		3.13	8.01			515.56	256.25	1960.35	1502.93	27804.29
3	18 mm Marble Stone Flooring (11.23.2)	sq.m		10 sq.m	0.13	0.24		11.50											1.24		1.17	5.02	1.00	1.33	170.52	307.16	2349.77	1801.49	0.00
4	60 x 60 cm Vitrified Tile Flooring (11.41.2)	sq.m	278.935	1 sq.m	0.01	0.03								1.03					0.21		0.02	0.00	0.20		31.52	28.32	216.68	1661.25	463381.37
5	Ceramic Glazed Wall Tiles(11.36)	sq.m	78.000	1 sq.m	0.01	0.01									1.03				0.26		0.01	0.00	0.25		67.91	27.55	210.77	1615.88	126038.84
Material/ Labour Consumption (FLOORING)					4.52	8.68	0.00	0.00	0.00	0.00	0.00	0.00	1.61	285.91	79.95	0.01	5.25	0.00	83.19	0.00	11.63	15.37	75.29	0.00	15042.59	10523.86	80507.54	617224.50	617224.50

Table 3.5.c

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Stone Agg. (20mm)	Fine Sand	Bitumen 80/100	Kerosene Oil	Steam Coal	Mud Phuska / Brick Bats	Kota Stone	Brick Tiles	Water Proofing Compound	PVC Sheet (400 micron thick)	Rain Water Pipe	Mason/ Stone Mason/ Painter / Carpenter	Blacksmith/ Fitter	Beldar	Bhisti/ Bandhani	Coolie	Sundries + Scaffolding	Water Charges @2%	Contractor's Profit @ 15%	Rate per Unit	Amount (in Rs.)
					Tonne	Cum	Cum	Cum	Tonne	Litre	Qtls	Cum	Sqm	1000 Nos	kg	Sqm	Mtr	Day	Day	Day	Day	Day	L.S	2%	15%	Rate (in Rs.)	
RATE PER UNIT -					10600	1580	1300	990	46000	50	300	1050	322.80	9000	95	200	70	1000	900	700	700	700	1.7				
Item of Work: FINISHING/TREATMENT																											
1	Mud Phuska with Flat Brick Tiles (12.16.1)	sq.m		10 sq.m	0.03			0.07				1.54		0.38	0.01			1.26		3.96	1.19		47.04	106.69	816.17	625.73	0.00
2	Water Proofing Roof Treatment (BrickCoba)	sq.m		10 sq.m	0.34	0.57	0.08						11.00		6.86			2.20		2.48	0.49	1.00	27.67	193.07	1477.01	1132.37	
3	110 mm PVC Rain Water Pipes (12.41.2) with accessories	mtr.	41.04	6 mtr.													6.00		0.23	0.45	0.11		1046.38	77.56	593.31	758.12	31113.13
Material/ Labour Consumption (FINISHING/TREATMENT)					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	41.04	0.00	1.57	3.08	0.75	0.00	7157.21	530.49	4058.23	31113.13	31113.13

Table 3.5.d

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Standard Rolled Steel Sections (Ready-made)	Door Shutter (Flush)	Red Lead Steel Primer	Wood (Frame)	Wood (Shutter 35 mm thick)	Pressed Steel Frame (Profile B/ C/ E)	Ply wood	Glass Panes	Wire Gauze	M S Angle/Bar/ other sections	Mason/ Stone Mason/ Painter/ Carpenter	Black smith/ Fitter	Beldar	Sundries + Scaffolding	Water Charges @ 2%	Contractor's Profit @ 15%	Rate perUnit	Amount (in Rs.)
					Sqm	Sqm	Sqm	Cum	Cum	m	Sqm	Sqm	Sqm	kg	Day	Day	Day	L.S	2%	15%	Rate (in Rs.)	
RATE PER UNIT -					1050	2400	65	141000	123599	75	300	740	156.84	83	1000	900	700	1.7				
Item of Work: DOOR, WINDOW & VENTILATOR																						
1	Wooden Frame (Sal/ Teak/Other) (9.1)	cu.m	0.82	cu.m				1.06							20.00		1.94		3403.89	26039.75	199638.08	163862.94
2	Pressed Steel Frame Profile-B/C/E (10.14)	m	0.00	5 mtrs.			2.69			5.00				3.00		0.15	0.20	62.30	23.60	180.50	276.77	0.00
3	**Angle section Frame(10.13)**	Kg.	100.89	17.5 Kg. or 5.0 m										18.79		0.24	0.20	128.53	41.79	319.70	142.78	14405.28
4	35mm Panelled Glazed Door, Window & ventilator shutters + Wooden Panelling (9.5.1) + (9.7)	sq.m	59.68	2.16 sq.m					0.09						3.73		0.76	103.73	88.76	679.02	2048.58	122257.10
5	35mm Panelled Glazed Door, Window & ventilator shutters + Plywood Panelling (9.5.1) + (9.7)	sq.m		2.16 sq.m					0.05		2.58				3.73		0.76	103.73	88.76	679.02	2048.58	0.00
6	35mm Glazed Door, Window & ventilator shutters + Glass Panes (9.9)	sq.m		2.16 sq.m					0.06			1.27			2.05		0.77	94.03	73.82	564.70	2032.55	0.00
7	**Flush Door Shutter (9.20)**	sq.m	45.42	2.2 sq.m		2.20									0.55		0.55	186.36	130.64	999.37	3482.64	158173.30
Material/ Labour Consumption (DOOR, WINDOW & VENTILATOR)					0.00	45.42	0.00	0.87	2.56	0.00	0.00	0.00	0.00	100.89	130.82	4.91	37.98	9306.72	8786.46	67216.41	371029.07	458698.62

Table 3.5.e

S.No.	Description	Unit	Total Quantity	Unit Qty. (A/R)	Cement	Coarse Sand	Fine Sand	Cement Primer	Dry Distemper	Cement Paint	Pink Primer (Wood)	Red Lead Steel Primer	Enamel Paint	Sprit	Shellac	MS Tube/ ERW Tube/ GI Pipe	Welding	Mason/ Stone Mason/ Painter/ Carpenter	Blacksmith/ Fitter	Beldar	Bhisti/ Bandhani	Coolie	Sundries + Scaffolding	Water Charges @2 %	Contractor's Profit@ 15%	Rate per Unit	Amount (in Rs.)
					Tonne	Cum	Cum	Litre	kg	kg	Litre	Litre	Litre	Litre	Litre	m	cm	Day	Day	Day	Day	Day	L.S	2%	15%	Rate (in Rs.)	
RATE PER UNIT - -					10600	1580	990	250	110	22	260	280	405	250	390	947.21	2.50	1000	900	700	700	7000	1.7				
Item of Work: FINISHING																											
1	12 mm cement plaster (1:6) in Fine Sand (13.1.2)	sq.m	595.59	10 sq.m	0.04		0.15											0.67		0.11	0.93	0.75	18.43	49.74	380.53	291.74	173758.47
2	15 mm cement plaster (1: 6) in Fine Sand (13.2.2)	sq.m	291.14	10 sq.m	0.04		0.18											0.80		0.13	1.00	0.88	19.56	57.58	440.48	337.71	98321.02
3	6 mm cement plaster 1: 3 (13.16.1)	sq.m	278.94	10 sq.m	0.04		0.08											0.51		0.05	0.93	0.75	28.00	44.67	341.71	261.98	73075.86
4	Oil Bound Distempering – Internal (13.41.1)	sq.m	871.11	10 sq.m				0.70	1.50									0.97				0.50	39.39	34.46	263.65	202.13	176076.87
5	Water Proofing Cement Paint – External (13.44.1)	sq.m	290.70	10 sq.m						3.84								0.44			0.10	0.23	16.77	15.77	120.63	92.49	26885.50
6	Primer Wood Work (13.50.1)	sq.m	45.42	10 sq.m							0.75							0.24				0.25	19.24	12.89	98.57	75.57	3432.31
7	Painting with Synthetic Enamel Paint (13.62.1)	sq.m	126.54	10 sq.m							0.75		1.16					0.76				0.79	35.49	40.83	312.34	239.46	30301.52
Item of Work: MISCELLANEOUS																											

1	Hand Rail with Baluster 10.26.1/2/3)	m	54.00	5.4 m												5.67	72.00		0.24	1.03			12.48	131.21	1003.72	1425.03	76951.77
Material/ Labour Consumption					4.42	0.00	16.68	60.98	130.67	111.63	12.90	0.00	14.68	0.00	0.00	56.70	720.00	185.27	2.40	21.94	113.28	152.58	7028.50	11232.79	85930.87	658254.74	658803.31

Table 3.6 - Consolidated quantity of Material and cost of construction of Kohima District (Rural Area)

NAME OF WORK: (Plinth AREA- 342 sqm)																						
			QUANTITY										AMOUNT									
MATERIAL	UNIT	RATE	FDN	WALL	SLAB	STAIR	REINF	FLOOR	ROOF	D/W/V	FINISH	TOTAL	FDN	WALL	SLAB	STAIR	REINF	FLOOR	ROOF	D/W/V	FINISH	TOTAL
Cement (OPC/ PPC)	tonne	10600.00	3.017688	6.056267	17.20944	2.33928	0	4.517789	0	0	4.420307	37.56077	37153.48	74564.16	211880.9	28800.98	0	55622.57	0	0	54422.37	462444.4637
Coarse Sand	cu.m	1580.00	10.93727	14.622	18.28503	2.6163	0	8.675929	0	0	0	55.13653	20071.74	26833.86	33556.14	4801.355	0	15921.8	0	0	0	101184.9
Stone Agg. (40mm)/ Brick Agg. (40mm)	cu.m	1940.00	5.547012	0	0	0	0	0	0	0	0	5.547012	12499.14	0	0	0	0	0	0	0	0	12499.13761
Stone Agg. (20mm)	cu.m	1300.00	2.332873	3.372462	24.52345	3.50892	0	0	0	0	0	33.73771	3522.522	5092.249	37029.19	5298.294	0	0	0	0	0	50942.25099
Stone Agg. (10mm)	cu.m	1430.00	0.467582	1.656648	12.04661	1.72368	0	0	0	0	0	15.89452	776.6286	2751.601	20008.75	2862.938	0	0	0	0	0	26399.92086
Stone (Partly/ Fully Dressed) for Masonry	Cum	1450.00	58.55	6.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	64.99	98607.60	10846.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	94235.42
Bricks/ Blocks (including Recycled Bricks/Blocks)	1000 Nos	13000.00	0	22.63633	0	0	0	0	0	0	0	22.63633	0	341797.2	0	0	0	0	0	0	0	341797.2162
Fine Sand	cu.m	990.00	38.65179	0	0	0	0	0	0	0	16.68404	55.33583	44445.11	0	0	0	0	0	0	0	19184.73	63629.84104
Steel Reinforcement	quintal	6000.00	0	0	0	0	108.7564	0	0	0	0	108.7564	0	0	0	0	757923.3	0	0	0	0	757923.293
Chlorpyriphos for Anti Termite Treatment	Lt.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marble Stone	sq.m	450	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	77163.28	0.00	0.00	0.00	66434.17
Marble Chips	Qtls.	0	0	0	0	0	0	1.6132	0	0	0	1.6132	0.00	0.00	0.00	0.00	0.00	1559.61	0.00	0.00	0.00	1342.751
Vetrified Floor Tiles	sq.m	850.00						285.9085				285.9085	0	0	0	0	0	282270.39	0	0	0	282270.3933
Ceramic Wall Tiles	sq.m	720	0	0	0	0	0	79.95	0	0	0	79.95	0	0	0	0	0	66860.59	0	0	0	66860.586
Marble Powder	cu.m	0	0	0	0	0	0	0.01295	0	0	0	0.01295	0	0	0	0	0	0	0	0	0	0
Dark Shade Pigment	kg	54	0	0	0	0	0	5.254	0	0	0	5.254	0	0	0	0	0	329.5361	0	0	0	329.536134
Mud Phuska/ Brick Bats																						
Water Proofing Compound																						
Pipe with carrage	Mtr.	250.00							41.04			41.04	0	0	0	0	0	0	11916.99	0	0	11916.99
Door Shutter (Flush)	sq.m	2400.00								45.4176		45.4176	0	0	0	0	0	0	0	126606.1018	0	126606.1018
Wood (Frame)	cu.m	141000	0	0	0	0	0	0	0	0.8664	0	0.8664	0	0	0	0	0	0	0	141891.6	0	141891.6276

Wood (Shutter 35 mm thick)	cu.m	0	0	0	0	0	0	0	0	0	2.558131	0	2.558131	0	0	0	0	0	0	0	0	0
Glass Panes	sq.m	740.00									0		0	0	0	0	0	0	0	0	0	0
Cement Primer	Lt.	250	0	0	0	0	0	0	0	0	0	60.97757	60.97757	0	0	0	0	0	0	0	17706.36	17706.36305
Dry Distemper	kg	110	0	0	0	0	0	0	0	0	0	130.6662	130.6662	0	0	0	0	0	0	0	16694.57	16694.57088
Cement Paint	kg	22	0	0	0	0	0	0	0	0	0	111.6288	111.6288	0	0	0	0	0	0	0	2852.451	2852.450726
Pink Primer (Wood)	lt.	260	0	0	0	0	0	0	0	0	0	12.89682	12.89682	0	0	0	0	0	0	0	3894.711	3894.710672
Red Lead Steel Primer																						
Enamal Paint	lt.	405	0	0	0	0	0	0	0	0	0	14.67864	14.67864	0	0	0	0	0	0	0	6904.942	6904.942346
LABOUR																						
Mason/ Stone Mason/ Painter/ Carpenter	Day	1000	26.32723	47.03259	7.314012	1.04652	0	83.19254	0	130.8184	185.2671	480.9984	30579.08	54628.36	8495.225	1215.533	0	96628.13	0	151945.5	215187.7	558679.603
Blacksmith/ Fitter	Day	900	0	0	0	0	103.5775	0	1.5732	4.912644	2.4	112.4634	0	0	0	0	108274.8	0	1644.545	5135.432	2508.84	117563.5729
Mate	Day	800	1.544472	0	0	0	0	0	0	0	0	1.544472	1435.123	0	0	0	0	0	0	0	0	1435.123382
Beldar	Day	700	65.95528	20.31973	86.0472	12.312	103.5775	11.63126	3.078	37.98417	21.94442	362.8496	53624.94	16520.96	69960.68	10010.27	84213.7	9456.795	2502.568	30883.03	17841.91	295014.8387
Bhisti/ Bandhani	Day	700	8.266884	26.42573	38.72124	5.5404	0	15.36758	0.7524	0	113.2784	208.3526	6721.39	21485.44	31482.3	4504.622	0	12494.61	611.7388	0	92100.99	169401.1025
Coolie	Day	700	29.656	132.81	0	0	0	75.28704	0	0	152.5839	390.3416	24111.7	107985.1	0	0	0	61212.13	0	0	124058.4	317367.2776
MISCELLANEOUS AND LUMP SUM																						
Batch Mix Plant + Pump Charges	cu.m	0	0	0	0	6.156	0	0	0	0	0	6.156	0	0	0	0	0	0	0	0	0	0
Mixer + Vibrator	Day	1850	0.282652	0.414162	3.011652	0.14364	0	0	0	0	0	3.852106	607.3547	889.941	6471.363	308.65	0	0	0	0	0	8277.308211
Excavator 3D with Driver+ Hire & Running Charge	Day	0	0.138489	0	0	0	0	0	0	0	0	0.138489	0	0	0	0	0	0	0	0	0	0
Centering & Shuttering Sub-Structure	sqm	307.95	72.15194	0	0	0	0	0	0	0	0	72.15194	25807.59	0	0	0	0	0	0	0	0	25807.58998
Centering & Shuttering- Columns	sqm	804.25	0	102.1797	0	0	0	0	0	0	0	102.1797	0	95449.76	0	0	0	0	0	0	0	95449.75774
Centering & Shuttering- Slab, Beam, Chhajja,Stair etc	sqm	766.55	0	0	546.3997	64.638	0	0	0	0	0	611.0377	0	0	486485.8	57550.3	0	0	0	0	0	544036.105
Sundries + Scaffolding	L.S	1.7	1598.062	1332.893	615.2375	80.028	5480.286	15042.59	7157.205	9306.723	7028.505	47641.53	3155.453	2631.863	1214.817	158.0193	10821.1	29702.35	14132.26	18376.59	13878.13	94070.58371
													303352	750630.5	906585.2	115511	961232.8	630498.9	30808.1	484564.6	651707.3	**4834890.4**

Note: *FDN=* ***Foundation****; REINF=* ***Reinforcement;*** *D/W/V=****Door/Window/Ventilator;*** *Agg. =* ***Aggregate;*** *Cum. =* ***Cubic Metre;*** *Sqm. =* ***Square Metre;*** *Qtls. =* ***Quintal***

3.7 Computation Procedure for Analysis of Cement and Contractors Profit

Computation procedure for analysis of Cement example of Kohima District is considered.

Example: (i) Kohima District (Urban Area):

Material (Cement) Unit Rate of Cement = Rs. 10800 per Ton

Per Sqm. Consumption of Cement = 0.10052 TonCost of Cement per Sqm.
(10800 x 0.10052) = Rs. 1085.616 Total Cost of Material from
row 1 to 45 = Rs. 15383.90

Percentage of each material, labour & misc. items (Cement) = **7.06 %**

(ii) Kohima District (Rural Area):

Material (Cement)Unit Rate of Cement = Rs. 11000 per Ton

Per Sqm. Consumption of Cement = 0.1098 Ton Cost of Cement per Sqm.
(11000 x 0.1098) = Rs. 1208.10 Total Cost of Material from
row 1 to 45 = Rs. 16257.6

Percentage (%) of each material, labour & misc. item (Cement) = **7.43 %**

Then, the Percentage of Contractor Profit is added to the Total Cost of construction.

The similar calculation procedure is adopted and incorporated for residential and non-residential projects and infrastructure projects. The state-wise information on cost of projects, the percentage of different materials, labour & machinery cost is provided separately in excel sheet.

CHAPTER 4

ANALYSIS OF SURVEY AND FINDINGS

4.0 Introduction

This chapter provides the information about analysis and key findings obtained from the construction projects surveyed across selected cities/towns/villages of Nagaland State. The analysis of the survey is supported by graphs and tables representing district-wise data for different residential buildings.

"To calculate the weight of various construction items, similar types listed in the BoQ (Bill of Quantities) are grouped under a single category. For example, Cement and Cement Primer are both considered under the single category of 'Cement'. This grouping is illustrated in the table 4.0 below."

Table 4.1 provides the details of material wise cost distribution of construction activities in Urban Area Similarly **Table 4.2** provides the details of material wise cost distribution of construction activities in Rural Area buildings surveyed in all districts of Nagaland, including the factor inputs such as labour, hiring charges, centring & shuttering and rentals for machinery and equipment's.

Table 4.3 illustrates district wise weight of cost in percentage for Urban Residential Building and **Table 4.4** provides corresponding district wise weight of cost in percentage for Rural Residential Building of construction materials, construction worker and miscellaneous items. Relevant **figures** further illustrate the district-wise distribution of construction activity weights for both urban and rural areas.

Table 4.0

Group	**Items included**
Cement	Cement and cement primer
Iron & Steel	Steel bar, G.I sheet, Standard Rolled Steel Sections (Ready-made), Pressed Steel Frame (Profile B/ C/ E), M.S Laths, M S Angle/Bar/ other sections, MS Tube/ ERW Tube/ GI Pipe, Welding
Bricks/Tiles	Bricks/Clay fly ash Brick/Flash Lime Brick, Vitrified Floor Tiles, Ceramic Wall Tiles
Timber	Door Shutter (Flush), Wood (Frame), Wood (Shutter 35 mm thick) , Ply wood
Fixtures and Fittings	Fixture & Fittings, Pipe with carriage

Others Materials	Coarse Sand with carriage, Stone Agg. (40mm)/ Brick Agg. (40mm), Stone Agg. (20mm), Stone Agg. (10mm), Rubble Stone, Marble Stone with carriage,Kota Stone with carriage, Fine Sand with carriage, Marble Powder, Dark Shade Pigment, Kerosene Oil, Cement Jali, Steel Primer, Glass Panes, Cement Primer, Dry Distemper, Pink Primer (Wood), Red Lead Primer (Steel),Enamel Paint
Weight of construction worker	Mason/ Stone Mason/ Painter/ Carpenter, Blacksmith/ Fitter, Mate Beldar, Bhisti/ Bandhani,Coolie
Miscellaneous and Lump-Sum Items	Mixer + Vibrator, Centering & Shuttering Sub-Structure, Centering & Shuttering- Columns, Centering & Shuttering-Slab, Beam, Chhajja, Staircase etc,Sundries + Scaffolding

Table 4.1 Cost distribution in Urban Area of Nagaland

District →		URBAN																	
S. No.	**MATERIAL**	**Kohima**	**Chumukedima**	**Dimapur**	**Niuland**	**Mon**	**Longleng**	**Tuensang**	**Shamator**	**Noklak**	**Kiphire**	**Tseminyu**	**Wokha**	**Mokokchung**	**Zunheboto**	**Phek**	**Peren**	**Cost of Construction activity**	**% Distribution**
1	Cement	4667302.18	2657264.81	5691922.20	4463058.62	4495933.49	4796599.85	5235417.93	6371338.54	1849956.81	9208305.92	2055479.55	1180088.69	3441076.35	1809107.07	2056173.16	3148759.27	63127784.45	**8.74**
2	Coarse Sand with carriage	1250932.88	1327982.51	1159940.24	665284.87	1605272.59	2342778.21	1790161.73	3898081.61	1354543.50	4384438.59	845881.00	329912.11	1112093.81	571199.07	929243.24	990609.16	24558355.12	**3.40**
3	Stone Agg. (40mm)/ Brick Agg. (40mm)	120725.27	75923.10	72413.14	63989.18	159729.83	127375.23	69067.26	144286.09	61284.12	197290.27	57830.37	79541.66	115433.79	42937.20	108686.81	194620.49	1691133.81	**0.23**
4	Stone Agg. (20mm)	521878.53	358271.71	574627.58	386576.85	665946.88	677874.26	696076.15	892852.76	242014.95	1277013.55	300415.08	195852.30	497537.25	237354.01	260673.33	534482.63	8319447.84	**1.15**
5	Stone Agg. (10mm)	213683.10	164872.58	272371.35	192953.98	314180.29	357279.96	354280.68	424216.02	119762.64	629154.89	193991.59	87042.50	240526.35	112451.31	117155.55	257322.20	4051244.97	**0.56**
6	Rubble Stone	691925.06	476922.43	517605.60	392476.73	600982.92	785114.67	485577.51	632595.89	157437.53	791444.45	355217.50	320883.71	470711.67	315512.20	472821.63	800586.94	8267816.41	**1.14**
7	Bricks/Clay Flyash Brick/Flyash Lime Brick	4427754.62	3333399.86	3860109.96	4296977.18	8566483.81	6618163.69	8473560.48	11443421.81	2987862.81	14448623.92	1543008.42	1527961.20	4341683.43	3019690.41	3649868.48	4147966.41	86686536.49	**12.00**
8	Fine Sand with carriage	1280942.87	1461838.49	1442169.75	1303217.86	1372866.98	1882975.44	2029772.02	4477209.48	1830898.29	6296867.60	1102070.68	649823.04	1009532.40	718572.88	1265153.12	1293505.46	29417416.37	**4.07**
9	Steel Bar	7939130.55	4635759.98	7447860.97	6058336.79	8759322.65	7764769.36	8862970.65	10249256.19	3624508.39	13629236.50	3815502.10	2088434.46	6231254.67	3203483.19	3662916.32	5707179.10	103679921.86	**14.36**
10	G.I. Sheet	286944.35	437314.86	52141.67	139283.27	171045.39	0.00	737598.96	36815.92	0.00	161123.54	215572.58	314289.43	0.00	173842.78	90286.66	674795.18	3491054.60	**0.48**
11	Marble Stone with carriage	166743.84	0.00	161449.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	147002.70	0.00	0.00	0.00	475196.07	**0.07**
12	Kota Stone with carriage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
13	Vetrified Floor Tiles	1105428.88	407527.38	1471233.81	948329.48	1748801.53	2108509.28	2021846.12	2874916.86	647299.43	1586166.71	850001.29	215728.97	1355184.42	660857.17	591985.06	969166.00	19562982.38	**2.71**
14	Ceramic Wall Tiles	229933.98	177609.15	157902.42	234234.92	275122.74	489393.77	776626.17	942048.51	225071.59	603669.14	172274.13	63534.70	345960.24	100089.44	168235.81	127276.84	5088983.56	**0.70**
15	Marble Powder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
16	Dark Shade Pigment	21238.62	1103.32	6864.52	0.00	0.00	3362.41	0.00	0.00	0.00	0.00	5698.45	0.00	0.00	0.00	0.00	1920.32	40187.64	**0.01**

17	Kerosene Oil	0.00	247.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	687.87	0.00	644.75	0.00	0.00	0.00	1580.03	**0.00**
18	Fixture & Fittings	4031228.94	2382419.92	3982553.12	2642917.83	3649476.37	4688927.85	5442190.99	5537653.41	1885055.84	8484585.15	1797333.88	1065026.10	3473409.03	1586757.41	1987835.50	3001202.49	55638573.84	**7.70**
19	Cement Jali	0.00	1332.50	0.00	0.00	268.87	207.03	0.00	0.00	0.00	576.99	0.00	0.00	3537.74	2366.02	0.00	0.00	8289.13	**0.00**
20	Pipe with carrage	93416.54	54885.05	103188.76	80544.22	65653.56	89856.89	88414.31	82483.69	26190.90	167240.78	66359.03	23608.78	76848.00	34192.56	52403.16	60357.41	1165643.63	**0.16**
21	Standard Rolled Steel Sections (Ready-made)	9146.81	0.00	15053.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23206.77	0.00	0.00	0.00	47406.62	**0.01**
22	Door Shutter (Flush)	1195757.49	750659.03	1101926.69	949487.92	884220.66	916307.63	1042263.76	699275.69	355247.24	1546363.13	569644.79	346490.96	860847.02	390348.78	527305.85	730977.02	12867123.66	**1.78**
23	Steel Primer	14197.72	2005.40	44426.83	0.00	0.00	26214.41	6553.60	21978.44	11796.48	67524.74	7208.96	0.00	27542.69	0.00	0.00	0.00	229449.29	**0.03**
24	Wood (Frame)	979182.75	728406.84	1362124.40	356769.79	701678.50	2145237.08	9106380.66	614185.97	1113851.14	3859282.88	468722.99	266452.42	1162749.99	492920.88	1287984.11	1143633.37	25789563.76	**3.57**
25	Wood (Shutter 35 mm thick)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
26	Pressed Steel Frame (Profile B/ C/ E)	5242.88	771.31	17596.67	0.00	0.00	10082.47	2520.62	8453.25	4537.11	25971.06	2772.68	0.00	10056.15	0.00	0.00	0.00	88004.19	**0.01**
27	Ply wood	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
28	Glass Panes	274418.70	170929.59	255290.91	107997.83	205024.64	312734.60	292269.08	250023.30	75661.50	308179.90	137985.87	17605.49	121005.60	83847.78	106333.63	168865.42	2888173.83	**0.40**
29	M.S Laths	471859.38	67875.16	1456516.56	0.00	0.00	887256.94	221814.24	743885.69	399265.63	2285452.84	243995.66	0.00	884941.20	0.00	0.00	0.00	7662863.29	**1.06**
30	M S Angle/Bar/ other sections	833002.17	451643.80	699755.59	411339.56	484487.44	690179.37	610498.08	604758.26	38207.54	492332.42	278214.79	108785.86	496477.79	219867.03	322000.23	361661.99	7103211.93	**0.98**
31	Cement Primer	159200.26	101048.14	168717.17	97100.93	109783.46	257460.98	133569.92	137912.15	35323.78	210428.15	86152.60	40759.32	96278.44	55150.52	71912.69	96510.03	1857308.54	**0.26**
32	Dry Distemper	150103.10	93541.71	156183.90	89887.72	101628.12	414787.89	123647.59	127667.25	32699.73	194796.34	76921.96	37731.49	89126.33	51053.63	66570.60	89340.72	1895688.05	**0.26**
33	Cement Paint	29294.72	16286.80	27035.91	20809.89	18516.54	260436.69	19766.98	18182.29	0.00	0.00	15430.82	6165.72	15855.19	8600.75	12610.44	15547.52	484540.25	**0.07**
34	Pink Primer (Wood)	61045.54	25935.99	38433.97	37102.19	27271.22	293624.79	53033.67	42689.76	14073.79	69355.40	16329.11	12443.04	26415.82	12899.20	21070.60	20775.02	772499.12	**0.11**
35	Red Lead Primer (Steel)	6335.10	0.00	4556.25	0.00	3544.87	14629.64	0.00	5897.28	0.00	21427.90	2976.85	1167.51	3891.71	428.51	3091.59	1159.08	69106.30	**0.01**
36	Enamal Paint	80949.62	31628.61	46869.73	45245.64	33256.90	99476.16	57741.14	52059.61	17162.81	88565.04	21046.41	14925.54	32213.75	15730.41	25695.32	25322.45	687889.16	**0.10**
37	MS Tube/ ERW Tube/ GI Pipe	258763.37	0.00	80863.55	0.00	168658.27	114152.22	0.00	55449.29	0.00	303815.93	0.00	233926.71	458611.87	39276.58	17327.90	136312.85	1867158.56	**0.26**

38	Welding	8672.53	0.00	2710.17	0.00	5652.63	1268358.00	0.00	1858.40	0.00	10182.48	0.00	7840.13	15370.52	1316.37	580.75	4568.57	1327110.54	**0.18**
	LABOUR																		
1	Mason/ Stone Mason/ Painter/ Carpenter	4530439.7	2563482.0	3871896.9	3191264.0	3255678.5	4035270.7	4678270.6	4026026.9	1124109.0	5395719.7	2377198.2	1299984.8	3720657.2	1761399.4	2351776.0	3543998.7	51727172.1	**7.2**
2	Blacksmith/ Fitter	1859408.8	1256155.3	1333492.5	1025214.7	1163508.0	1310689.0	2089787.0	1282864.9	330052.3	1936173.6	868198.4	592190.8	1126699.2	596376.4	613388.2	1617047.6	19001246.7	**2.6**
3	Mate	16414.1	11617.4	13163.7	10075.0	25449.5	11298.2	11079.6	16061.3	3721.2	19093.5	9792.9	8977.5	11180.3	7133.3	12363.1	17953.6	205374.0	**0.0**
4	Beldar	3617876.3	2209693.4	2925402.0	2021007.5	1938741.9	2522014.5	3221516.8	2994653.0	803013.6	4332573.2	1693173.2	1154776.4	2211793.3	1052495.8	1329427.4	2934721.4	36962879.7	**5.1**
5	Bhisti/ Bandhani	2281608.9	916698.9	1671223.8	1034701.0	730156.5	947975.9	1057068.7	1117821.0	298624.9	1621901.3	750150.5	405716.6	921584.3	506453.7	595554.4	972472.0	15829712.4	**2.2**
6	Coolie	2845930.3	1556449.1	2243376.0	2250599.7	2205679.4	2025380.1	2622842.8	2888992.9	723984.7	3594008.5	1033670.9	881220.5	1823724.4	894550.5	1281359.7	2098717.3	30970486.7	**4.3**
	MISCELLANEOUS AND LUMP SUM																		
1	Mixer + Vibrator	161398.6	55279.2	154464.5	67744.0	71412.7	95709.4	82500.8	88320.5	23396.8	132715.9	91758.2	21597.6	154844.6	35799.8	28017.8	74347.5	1339307.9	**0.2**
2	Centering & Shuttering Sub-Structure	355289.9	254616.8	265144.2	132636.5	431573.5	446716.9	166075.6	449192.8	124134.1	519943.4	207633.0	170454.6	192754.7	120894.5	269168.6	343694.5	4449923.3	**0.6**
3	Centering & Shuttering- Columns	1133089.4	545179.1	958335.1	701220.8	1351787.1	817827.4	1130568.1	808867.6	254379.4	1626459.1	400426.9	225760.9	656007.3	323433.3	387660.0	568260.8	11889262.4	**1.6**
4	Centering & Shuttering- Slab, Beam, Chhajja, Staircase etc.	4797472.7	2501969.9	4957959.5	3695867.4	3802157.5	4811213.6	5332031.5	5215064.3	1547108.2	7859654.0	1861977.6	840017.3	3650997.7	1544946.9	1280405.1	2531897.3	56230740.7	**7.8**
5	Sundries + Scaffolding	1236279.6	659716.6	1118246.7	733017.8	874317.5	1116427.7	1104817.3	1182780.3	257717.5	1329025.2	450035.5	241808.7	843206.5	373018.2	503972.7	645550.6	12669938.4	**1.8**
	Total	54421590.7	32926265.1	51965120.9	38847271.7	51045273.3	58584650.2	70230179.0	71462098.7	22599955.2	99716683.5	25048742.4	15078527.4	42500476.8	21176355.0	26529014.5	40053085.1	722185289.7	**100.0**

Table 4.2 Cost distribution in Rural Area of Nagaland

District →		RURAL																	
S. No.	MATERIAL	Kohima	Chumukedima	Dimapur	Niuland	Mon	Longleng	Tuensang	Shamator	Noklak	Kiphire	Tseminyu	Wokha	Mokokchung	Zunheboto	Phek	Peren	Total Cost of Construction Projects	% Distribution
1	Cement	2682769.0	714581.4	2213086.8	2078091.6	6808974.9	3086316.5	1116495.9	421699.5	994264.0	3406939.9	2155771.3	639047.2	3235266.3	743985.5	3759087.4	4052965.5	38109342.6	**9.5**
2	Coarse Sand with carriage	687437.7	359037.8	425423.9	684278.5	2509253.0	1202991.9	406969.0	150968.5	747139.3	1757306.3	842498.7	226409.5	867832.8	314294.6	1210265.4	1200447.0	13592553.9	**3.4**
3	Stone Agg. (40mm)/ Brick Agg. (40mm)	130447.0	38210.4	30994.5	48325.4	194616.0	74814.6	31248.4	10145.3	43303.2	101498.7	72382.5	43236.6	90582.1	26316.6	87041.5	142095.6	1165258.6	**0.3**
4	Stone Agg. (20mm)	316674.7	65028.4	236592.0	282236.5	982510.5	395052.7	146074.5	53917.4	141996.6	503737.8	415268.8	130378.9	456031.5	126258.0	418837.1	693475.3	5364070.7	**1.3**
5	Stone Agg. (10mm)	158877.6	24710.7	124208.0	133249.5	480171.7	194426.3	71846.4	25624.0	65830.1	232654.0	230232.3	53407.7	221928.4	61758.5	199105.9	349257.3	2627288.3	**0.7**
6	Rubble Stone	376476.6	244820.9	220506.3	325012.5	728451.7	506671.3	175656.6	43618.8	113289.1	489442.8	343158.1	432390.9	458242.2	128092.3	556631.6	641278.9	5783740.8	**1.4**
7	Bricks/Clay Flyash Brick/Flyash Lime Brick	1943877.9	1062565.4	1848357.6	2329529.2	12639815.6	3571338.5	1650558.4	639140.5	1759160.3	4867310.0	943198.5	489027.4	4292036.3	1137572.7	4608996.2	4869210.6	48651695.1	**12.1**
8	Fine Sand with carriage	544864.5	677464.0	598607.2	1097804.1	1802825.0	1255772.9	613028.2	199869.5	1235605.8	3291582.5	1108631.2	508072.0	736205.3	570813.4	1455336.8	1116524.8	16813007.2	**4.2**
9	Steel Bar	5041476.7	1208875.6	2751231.7	3012232.2	13540573.5	4425828.2	2086473.5	770267.5	2111045.0	5754329.3	4235290.1	1687588.4	6191999.0	1344197.5	5849197.4	7742716.3	67753322.0	**16.9**
10	G.I. Sheet	208000.5	609615.5	6585.7	314369.4	292698.0	240151.4	120896.5	0.0	0.0	0.0	40063.0	158724.9	448884.1	253292.6	34041.4	395882.3	3123205.2	**0.8**
11	Marble Stone with carriage	113568.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93758.0	0.0	62703.7	0.0	187914.3	135648.0	593592.6	**0.1**
12	Kota Stone with carriage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

13	Vetrified Floor Tiles	873156.7	143453.1	0.0	0.0	2456725.9	1525462.2	473518.7	240339.8	190440.2	361504.2	610639.1	128754.9	1732067.4	362713.7	861267.6	1353569.9	11313613.3	**2.8**
14	Ceramic Wall Tiles	232597.7	21052.5	36387.6	0.0	821545.2	233874.9	163029.9	81432.8	0.0	0.0	185978.1	0.0	337966.6	68403.5	259722.5	154168.5	2596159.8	**0.6**
15	Marble Powder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
16	Dark Shade Pigment	1051.9	0.0	5910.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6962.5	**0.0**
17	Kerosene Oil	0.0	0.0	0.0	0.0	0.0	595.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	595.2	**0.0**
18	Fixture & Fittings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
19	Cement Jali	0.0	0.0	0.0	0.0	376.4	0.0	0.0	0.0	87.1	107.5	3933.0	0.0	0.0	0.0	0.0	0.0	4504.0	**0.0**
20	Pipe with carrage	60583.3	7953.4	39821.7	33788.5	120535.8	53792.3	17968.2	6090.9	13464.1	47316.7	70428.1	7565.5	67989.5	13464.1	80477.4	97264.6	738504.3	**0.2**
21	Standard Rolled Steel Sections (Ready-made)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
22	Door Shutter (Flush)	671520.9	248835.6	472969.3	399746.8	1505038.2	637803.4	211816.1	88022.4	182624.0	422847.7	523077.0	41342.9	832757.9	159915.6	854939.8	990454.5	8243712.2	**2.1**
23	Steel Primer	3145.7	10244.6	0.0	22094.6	0.0	406.2	0.0	0.0	15728.6	14077.1	22151.2	4142.7	0.0	0.0	9038.7	14680.1	115709.5	**0.0**
24	Wood (Frame)	880884.2	268382.6	236037.4	367502.7	715090.4	905464.2	1816160.2	58282.9	572604.0	203564.1	316535.6	45228.9	1391969.7	207569.0	922727.5	1436508.4	10344511.7	**2.6**
25	Wood (Shutter 35 mm thick)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
26	Pressed Steel Frame (Profile B/ C/ E)	1209.9	3940.2	0.0	8497.9	0.0	871.1	0.0	0.0	6049.5	5414.3	8519.7	1593.4	0.0	0.0	3476.4	5646.2	45218.6	**0.0**
27	Ply wood	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
28	Glass Panes	71587.6	42201.4	108591.9	10423.1	311264.5	153101.9	59195.4	18549.4	38895.8	106304.5	141740.2	0.0	194573.2	37694.1	142611.4	217601.9	1654336.4	**0.4**
29	M.S Laths	108890.6	346740.0	0.0	747815.6	0.0	0.0	0.0	0.0	532354.2	476457.0	749732.1	140215.0	0.0	0.0	305926.2	496863.9	3904994.6	**1.0**
30	M S Angle/Bar/ other sections	214145.3	134053.3	278042.7	107625.3	768952.0	387718.9	126359.6	52523.0	0.0	338150.1	317156.9	0.0	514979.1	97692.8	518144.5	524391.1	4379934.7	**1.1**

31	Cement Primer	70902.1	31516.8	64391.3	59228.3	157922.4	88506.7	26740.2	10995.5	18159.1	77928.0	87864.3	0.0	116441.6	22598.4	104337.2	137133.7	1074665.6	**0.3**
32	Dry Distemper	66816.6	29175.6	59608.0	54828.5	146191.1	81931.9	24753.8	10178.7	16810.1	72139.0	78450.2	0.0	107791.7	20919.6	96586.5	126946.6	993127.9	**0.2**
33	Cement Paint	21355.5	5077.3	2701.3	8657.6	25943.3	13722.4	4124.9	745.7	0.0	855.7	19817.7	0.0	18138.9	3503.0	16557.8	22091.9	163293.1	**0.0**
34	Pink Primer (Wood)	55914.3	7166.0	41367.0	14815.3	50902.6	29021.8	10663.7	3184.5	7039.4	27076.7	15846.1	0.0	23246.3	5309.4	22378.8	33128.0	347060.1	**0.1**
35	Red Lead Primer (Steel)	1112.5	0.0	2092.5	0.0	3034.0	2910.1	0.0	0.0	0.0	0.0	1641.5	0.0	2810.8	898.3	3246.8	2533.3	20279.9	**0.0**
36	Enamel Paint	105964.6	8738.9	50446.5	18067.1	62075.1	35458.6	11456.1	3883.4	8584.4	33019.7	20014.7	0.0	28348.5	6474.8	27290.7	40399.1	460222.3	**0.1**
37	MS Tube/ ERW Tube/ GI Pipe	204469.3	0.0	0.0	0.0	94725.9	0.0	0.0	0.0	47362.9	32345.4	154911.5	0.0	339626.9	120140.1	124760.9	198115.7	1316458.7	**0.3**
38	Welding	6852.9	0.0	0.0	0.0	3174.8	0.0	0.0	0.0	1587.4	1084.1	6230.3	0.0	11382.7	4026.5	4181.4	6639.9	45159.9	**0.0**
	LABOUR																		
1	Mason/ Stone Mason/ Painter/ Carpenter	2744291.9	802920.3	1457297.6	1481829.8	4926198.9	2447044.3	988165.3	291978.0	546296.5	1692928.5	1869596.5	341973.2	3547595.1	656065.8	3544886.2	4552604.1	31891672.0	**7.9**
2	Blacksmith/ Fitter	1071929.4	890708.3	431187.8	759471.8	1774704.0	960652.2	360256.5	90240.7	209027.3	727503.7	710151.2	328195.3	1434899.2	396270.7	980051.9	1758656.4	12883906.3	**3.2**
3	Mate	13472.1	5962.5	5700.2	6730.5	30570.7	11102.0	3998.9	1202.8	2575.8	9716.0	10395.7	4640.4	10669.2	3095.3	10062.0	15205.8	145100.0	**0.0**
4	Beldar	2093316.2	1105851.4	1108494.4	1235469.4	2667455.3	1667398.9	717724.2	206645.9	484829.7	1689364.2	1503495.5	600264.3	2439380.0	556646.1	2046877.8	3243917.6	23367131.0	**5.8**
5	Bhisti/ Bandhani	923340.4	263732.6	592084.9	449126.0	1117213.6	659534.7	263845.5	73845.5	162547.0	590956.1	675935.5	140773.9	1063404.8	157756.0	1067572.4	1361317.0	9562985.8	**2.4**
6	Coolie	1573158.7	483182.1	931058.4	846538.9	3378150.8	1529177.4	544399.8	199622.2	356007.6	1165083.5	774959.3	178936.9	1940647.1	370591.0	1963211.2	2485534.9	18720259.8	**4.7**
	MISCELLANEOUS AND LUMP SUM																		
1	Mixer + Vibrator	109203.7	8684.4	70772.4	29600.2	108354.0	46026.2	17121.3	6010.4	12874.7	50460.5	93699.7	8476.9	82845.8	13735.6	142349.2	155401.6	955616.3	**0.2**
2	Centering & Shuttering Sub-Structure	243376.8	144992.6	89980.6	158694.0	517374.5	243474.2	50374.1	34354.7	85924.9	307372.6	166179.3	127364.3	159975.2	47879.9	216201.1	294361.0	2887879.8	**0.7**

3	Centering & Shuttering- Columns	645258.8	190281.1	356541.1	319282.2	2070559.3	502039.8	153783.4	59158.0	130770.3	805804.0	435675.7	105242.4	643876.9	130770.3	643615.6	808356.2	8001015.1	**2.0**
4	Centering & Shuttering- Slab, Beam, Chhajja, Staircase etc.	2832865.2	213189.8	1748505.8	1536781.7	6095286.0	2581038.1	1075252.1	390157.9	782355.0	2620800.3	2379229.0	457112.7	3376701.9	638984.1	3323519.9	3863040.2	33914819.7	**8.5**
5	Sundries + Scaffolding	552637.2	184456.1	396358.0	263417.6	1415178.7	728522.5	237334.5	94910.2	103834.7	499658.4	466769.7	37591.5	827753.2	164806.6	802510.0	890333.6	7666072.5	**1.9**
	Total	28659483.0	10607402.7	17041942.6	19245162.4	71324433.0	30480016.6	13777289.7	4337606.4	11740468.0	32784641.0	22901007.1	7067698.4	38309550.8	8974505.9	37464984.5	46626367.4	401342559.5	**100.0**

Table 4.3 Weight in percentage for Urban Residential Building.

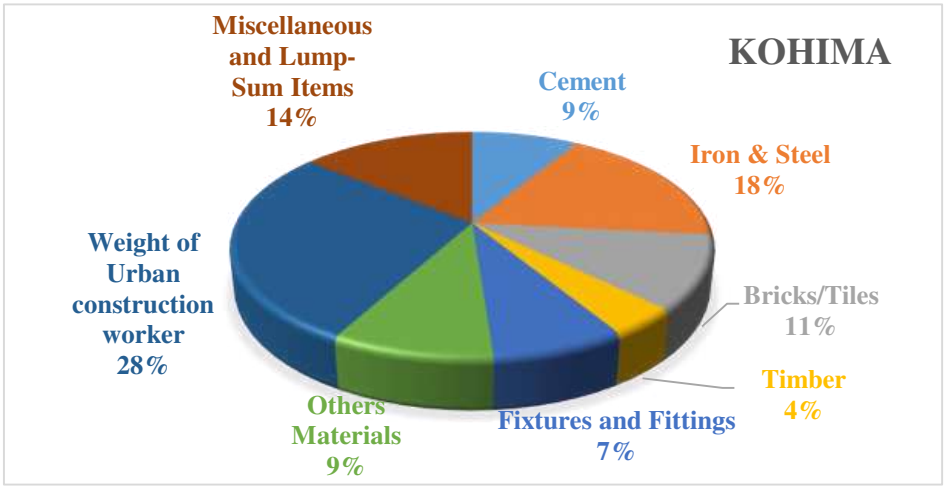
S.No.	Items	District			
		Kohima	Chumukedima	Dimapur	Niuland
1	Cement	8.63	8.12	11.01	11.54
2	Iron & Steel	18.03	16.99	18.81	17.01
3	Bricks/Tiles	10.59	11.90	10.56	14.11
4	Timber	4.00	4.49	4.74	3.36
5	Fixtures and Fittings	7.58	7.40	7.86	7.01
6	Others Materials	9.21	13.04	9.47	8.71
7	Weight of Urban construction worker	27.84	25.86	23.21	24.54
8	Miscellaneous and Lump-Sum Items	14.12	12.20	14.34	13.72
		100.00	100.00	100.00	100.00

S.No.	Items	District			
		Mon	Longleng	Tuensang	Shamator
1	Cement	8.84	8.63	7.48	8.94
2	Iron & Steel	18.79	18.32	14.86	16.37
3	Bricks/Tiles	20.75	15.73	16.05	21.35
4	Timber	3.11	5.23	14.45	1.84
5	Fixtures and Fittings	7.28	8.16	7.87	7.86
6	Others Materials	10.19	12.97	8.67	15.54
7	Weight of Urban construction worker	18.26	18.52	19.48	17.25
8	Miscellaneous and Lump-Sum Items	12.80	12.44	11.13	10.84
		100.00	100.00	100.00	100.00

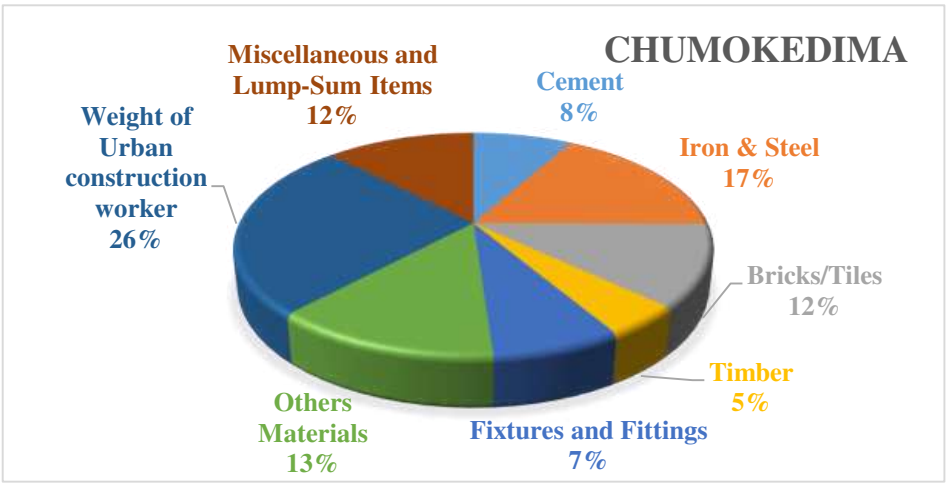
S.No.	Items	District			
		Noklak	Kphire	Tseminyu	Wokha
1	Cement	8.19	9.23	8.27	7.87
2	Iron & Steel	17.99	16.96	18.19	18.26
3	Bricks/Tiles	17.08	16.69	10.24	11.99
4	Timber	6.50	5.42	4.15	4.07
5	Fixtures and Fittings	8.46	8.68	7.44	7.22
6	Others Materials	17.49	14.58	12.82	11.86
7	Weight of Urban construction worker	14.53	16.95	26.88	28.80
8	Miscellaneous and Lump-Sum Items	9.76	11.50	12.02	9.95
		100.00	100.00	100.00	100.00

S.No.	Items	District			
		Mokokchung	Zunheboto	Phek	Peren
1	Cement	8.13	8.58	7.80	7.90
2	Iron & Steel	19.11	17.18	15.43	17.19
3	Bricks/Tiles	14.22	17.85	16.62	13.09
4	Timber	4.76	4.17	6.84	4.68
5	Fixtures and Fittings	8.35	7.65	7.69	7.64
6	Others Materials	9.40	10.48	13.00	11.17
7	Weight of Urban construction worker	23.10	22.75	23.31	27.93
8	Miscellaneous and Lump-Sum Items	12.94	11.32	9.31	10.40
		100.00	100.00	100.00	100.00

The certain Weight in percentage for various types of construction Materials based on cost composition in Urban Area is presented in ***Table 4.3*** and below ***figures.***



(Fig. 4.3.a)



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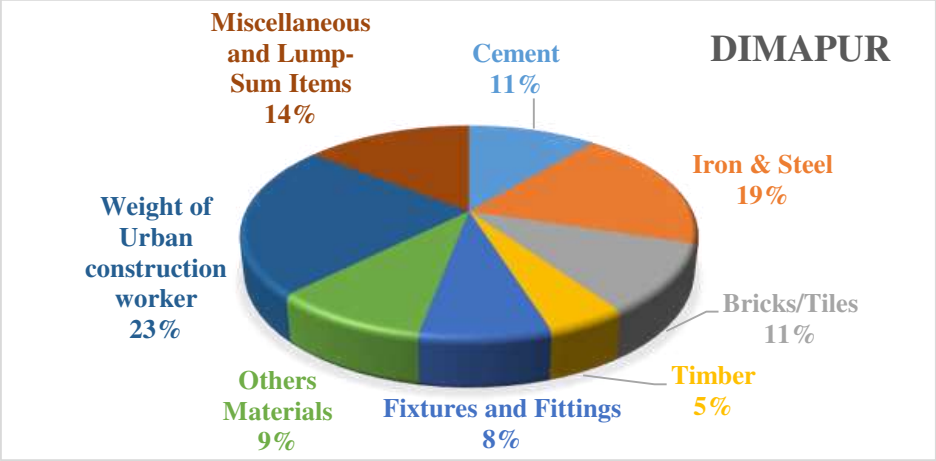

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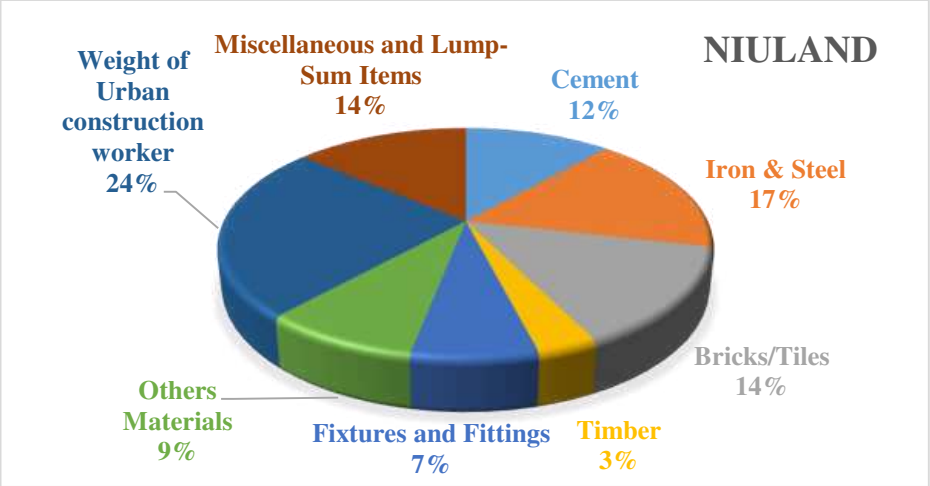
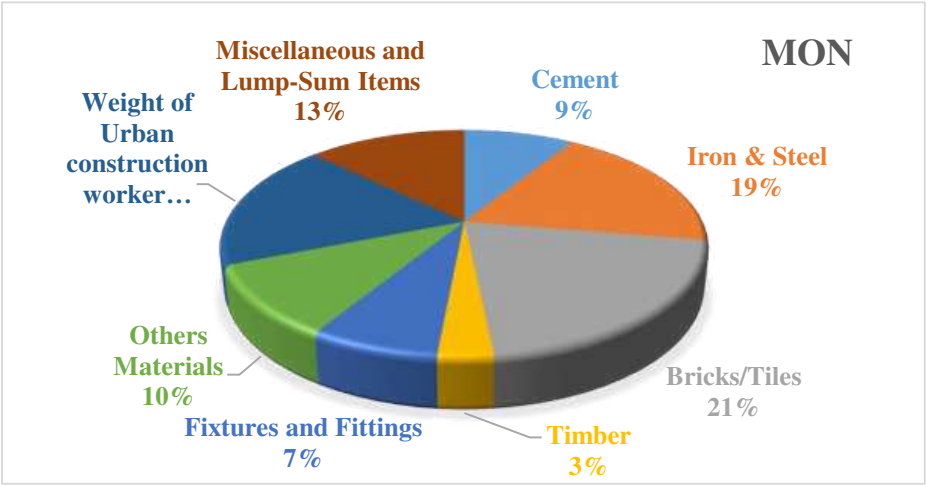


(Fig. 4.3.d)



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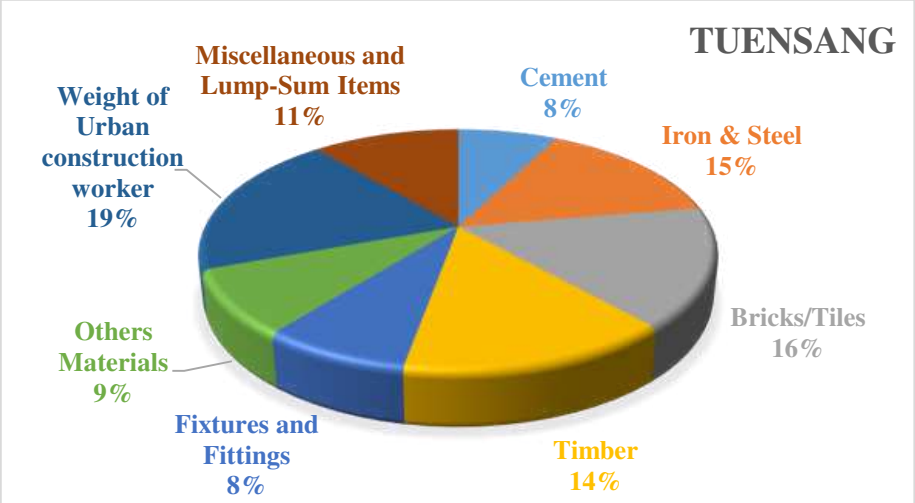
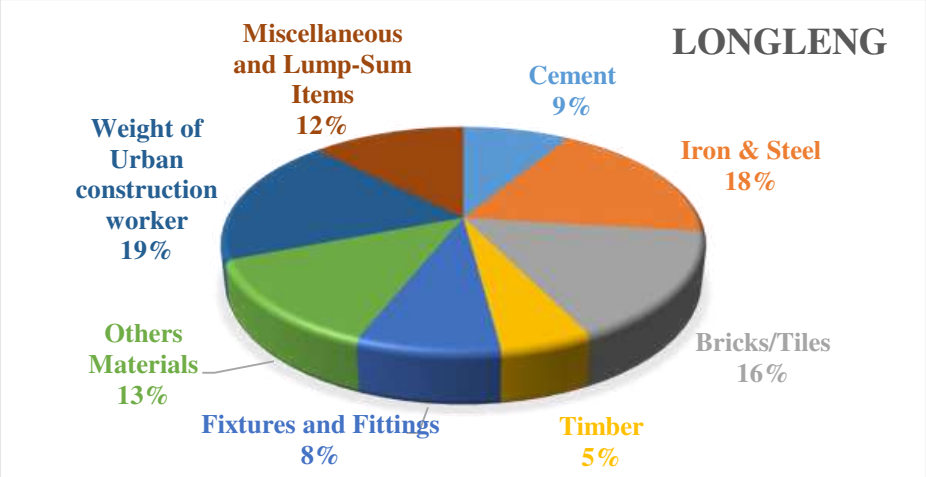


(Fig. 4.3.f)



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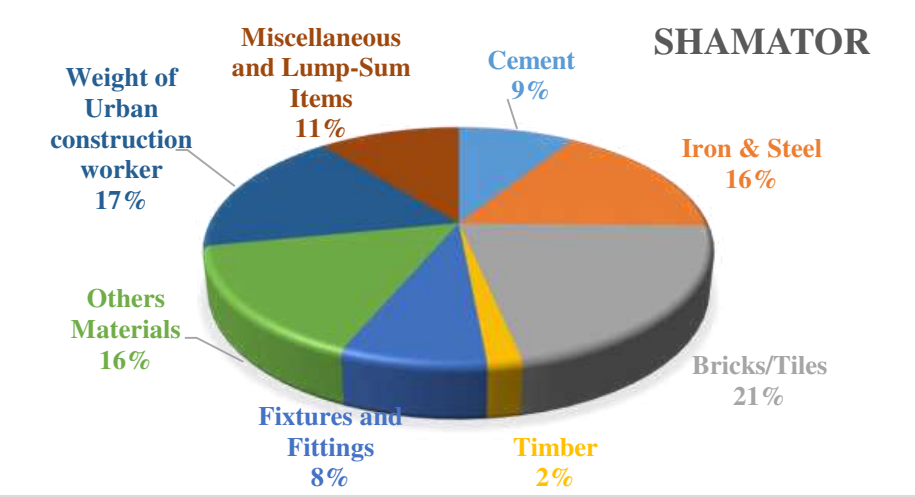
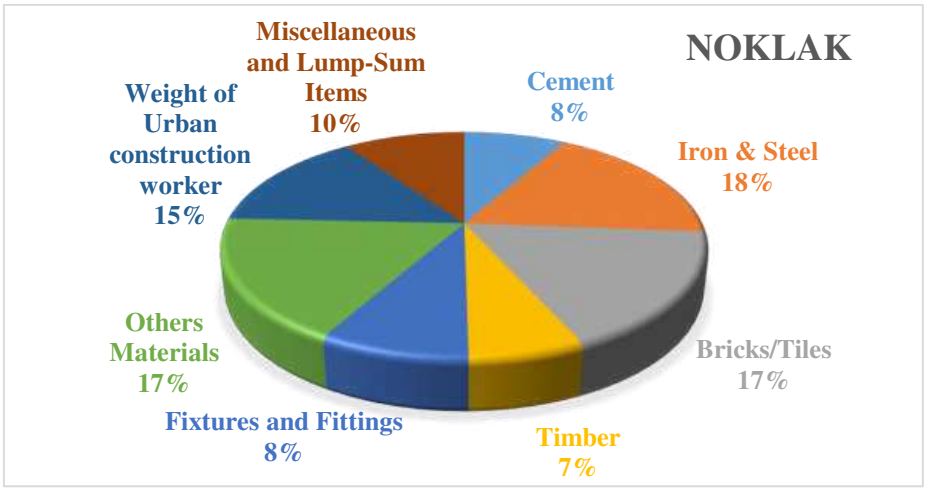
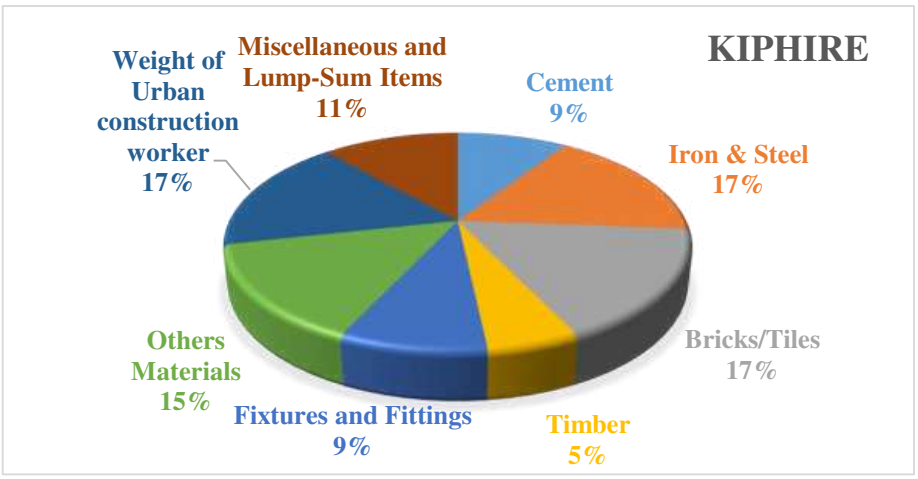


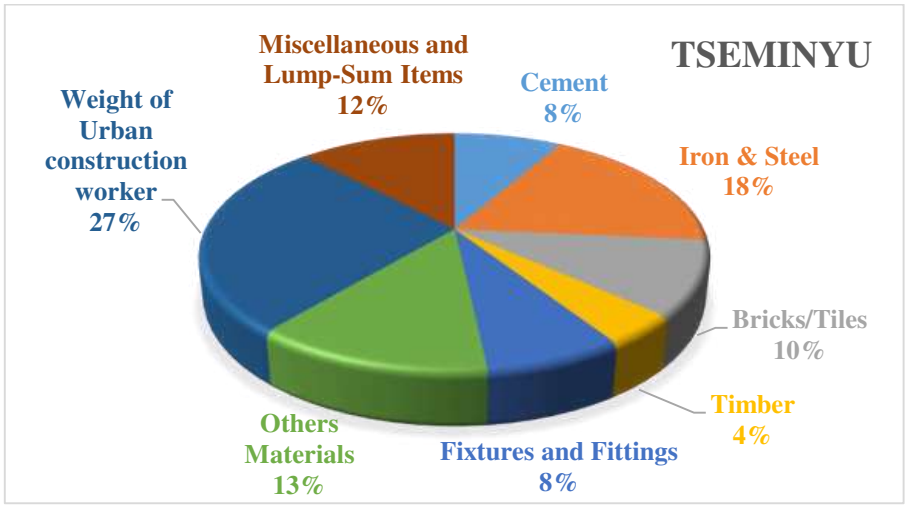
(Fig. 4.3.h)



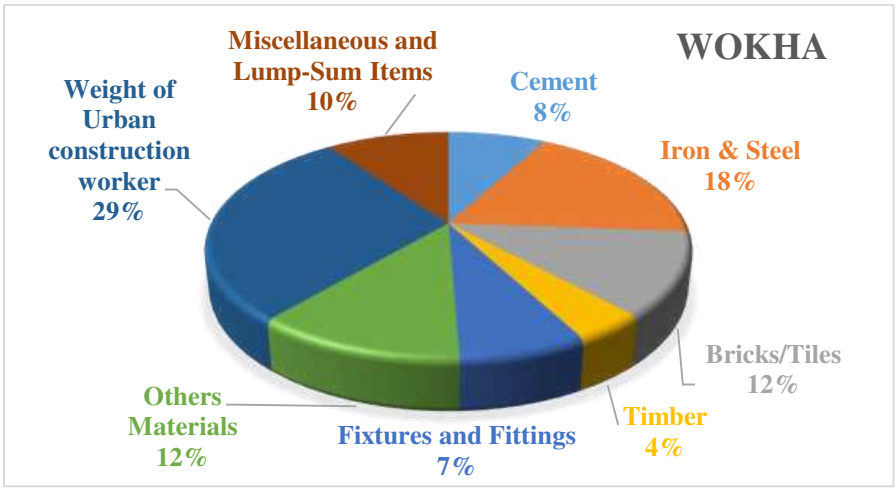
(Fig. 4.3.i)



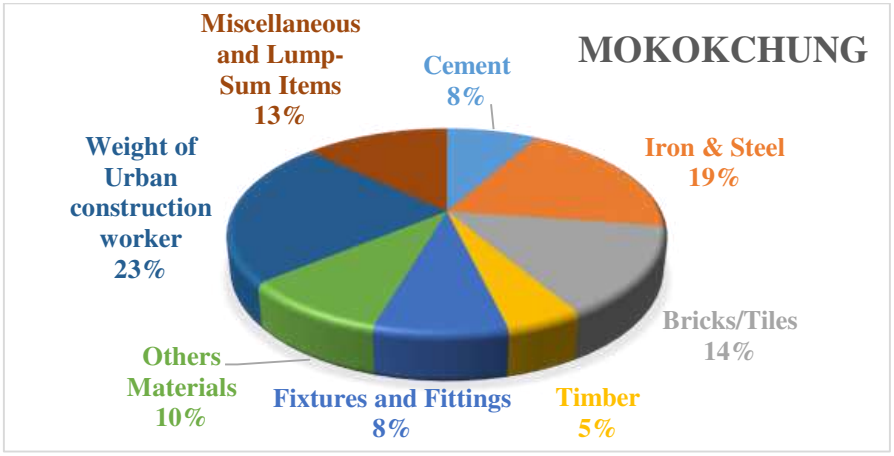
(Fig. 4.3.j)



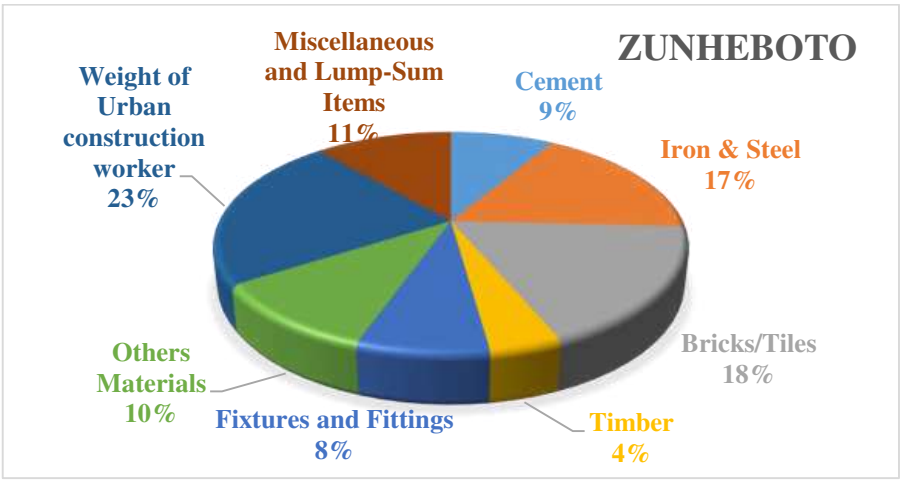
(Fig. 4.3.k)



(Fig. 4.3.l)



(Fig. 4.3.m)



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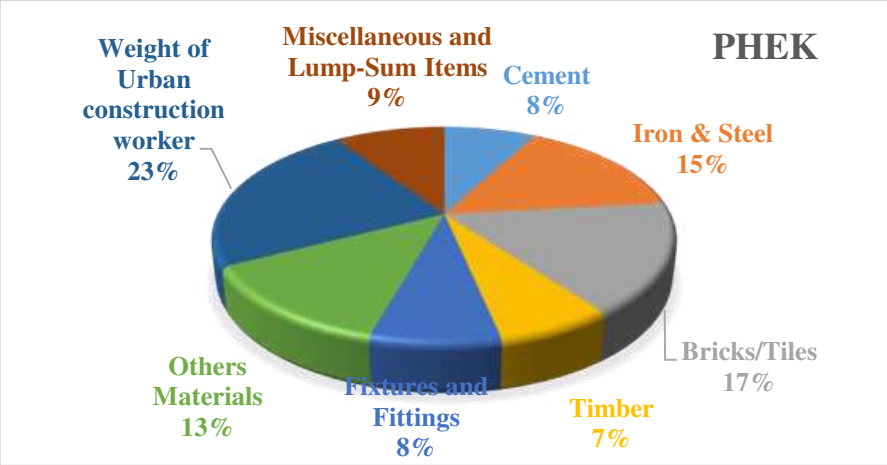
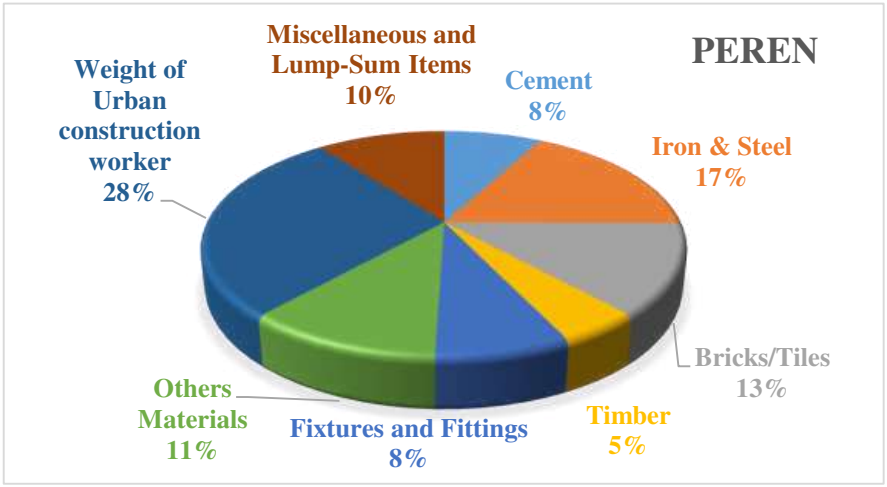


(Fig. 4.3.o)



(Fig. 4.3.p)

Table 4.4 Weight in percentage for Rural Residential Building.

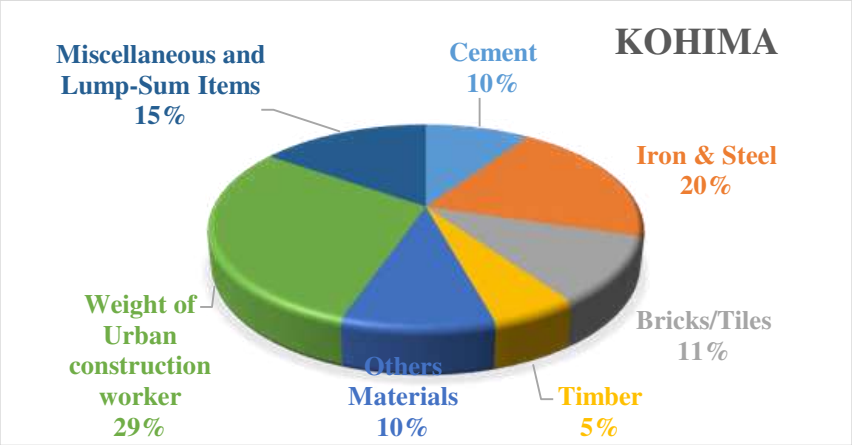
S.No.	Items	District			
		Kohima	Chumukedima	Dimapur	Niuland
1	Cement	9.44	6.78	13.00	10.84
2	Iron & Steel	20.19	21.71	17.81	21.77
3	Bricks/Tiles	10.64	11.57	11.06	12.10
4	Timber	5.42	4.88	4.16	3.99
5	Others Materials	9.65	14.58	11.79	14.47
6	Weight of Rural construction worker	29.38	33.49	26.56	24.83
7	Miscellaneous and Lump-Sum Items	15.29	6.99	15.62	11.99
8	Total	100.00	100.00	100.00	100.00

S.No.	Items	District			
		Mon	Longleng	Tuensang	Shamator
1	Cement	9.58	10.17	8.13	9.74
2	Iron & Steel	20.61	16.58	16.94	18.97
3	Bricks/Tiles	22.32	17.49	16.60	22.15
4	Timber	3.11	5.06	14.72	3.37
5	Others Materials	10.59	13.37	11.58	12.38
6	Weight of Rural construction worker	19.48	23.87	20.89	19.91
7	Miscellaneous and Lump-Sum Items	14.31	13.46	11.13	13.48
8	Total	100.00	100.00	100.00	100.00

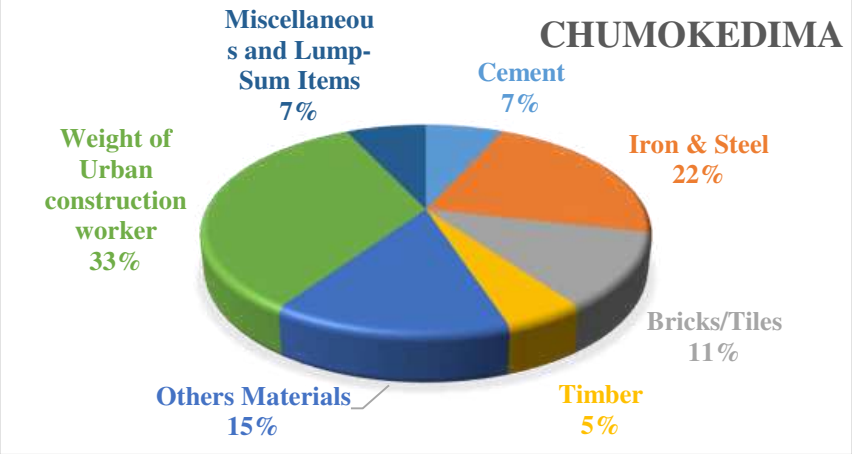
S.No.	Items	District			
		Noklak	Kphire	Tseminyu	Wokha
1	Cement	8.47	10.39	9.50	9.04
2	Iron & Steel	22.98	20.16	24.07	28.13
3	Bricks/Tiles	16.61	15.95	7.60	8.74
4	Timber	6.43	1.91	3.67	1.22
5	Others Materials	21.00	20.60	15.49	19.89
6	Weight of Rural construction worker	15.00	17.92	24.21	22.56
7	Miscellaneous and Lump-Sum Items	9.50	13.07	15.46	10.41
8	Total	100.00	100.00	100.00	100.00

S.No.	Items	District			
		Mokokchung	Zunheboto	Phek	Peren
1	Cement	8.49	8.33	10.08	8.74
2	Iron & Steel	19.60	20.27	18.26	20.10
3	Bricks/Tiles	16.61	17.48	15.29	13.68
4	Timber	5.81	4.09	4.74	5.21
5	Others Materials	8.97	14.87	12.28	10.61
6	Weight of Rural construction worker	27.24	23.85	25.66	28.78
7	Miscellaneous and Lump-Sum Items	13.29	11.10	13.69	12.89
8	Total	100.00	100.00	100.00	100.00

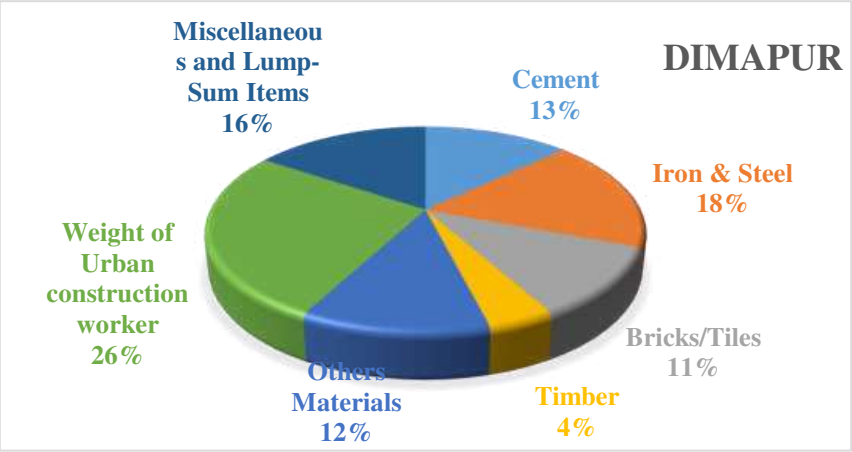
The certain Weight in percentage for various types of construction Materials based on cost composition in Rural Area is presented in ***Table 4.4*** and below ***figures.***



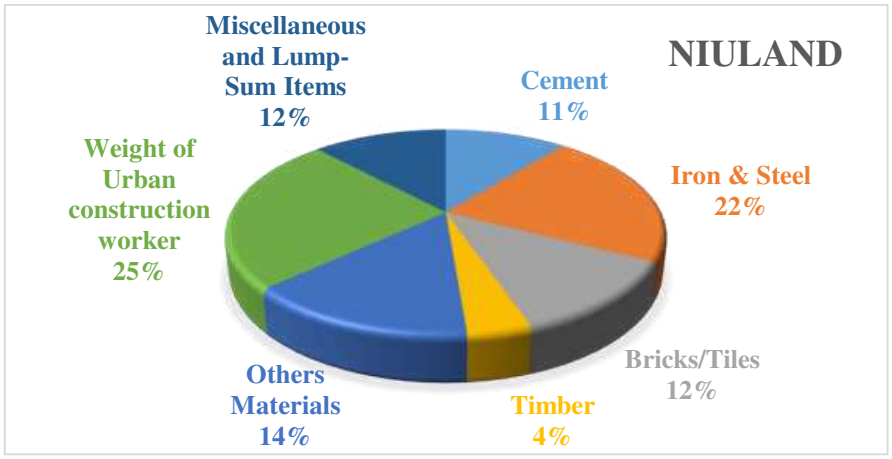
(Fig. 4.4.a)



(Fig. 4.4.b)



(Fig. 4.4.c)



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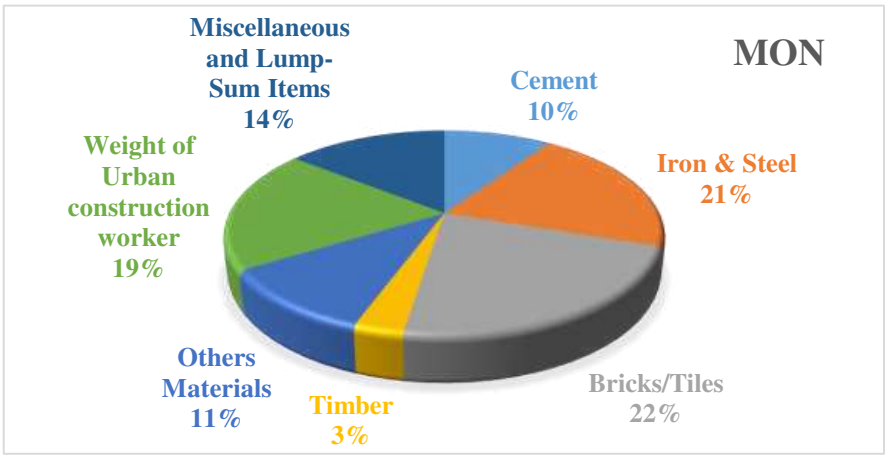
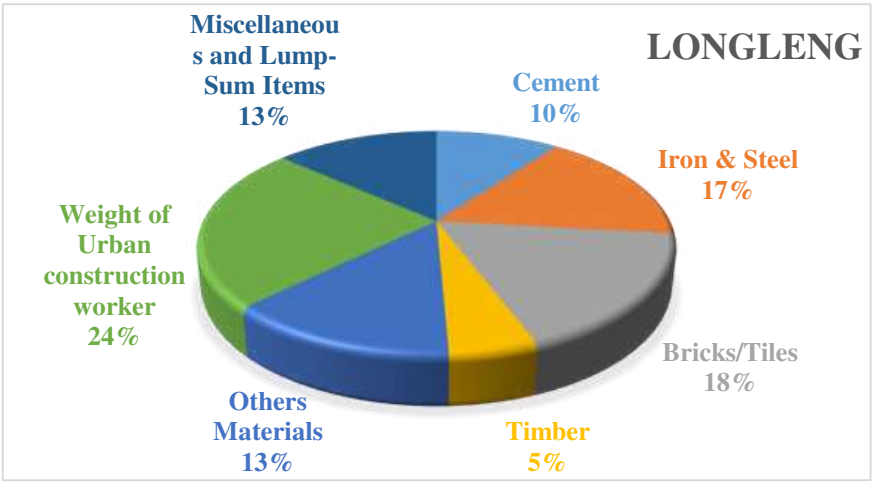
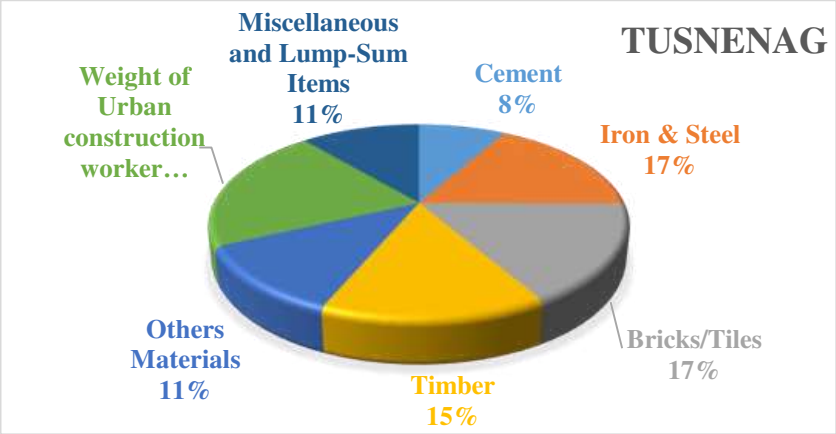


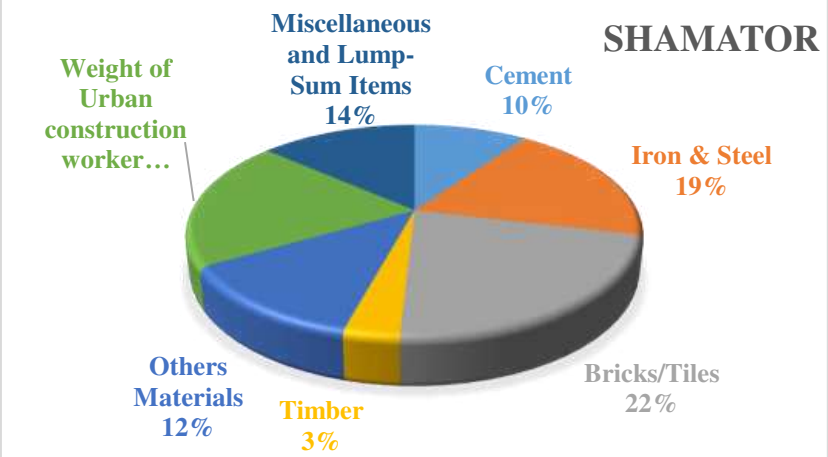
(Fig. 4.4.e)



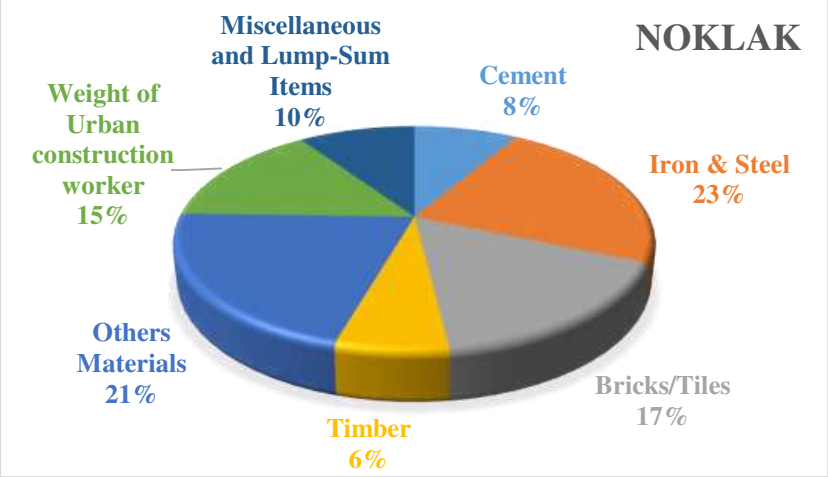
(Fig. 4.4.f)



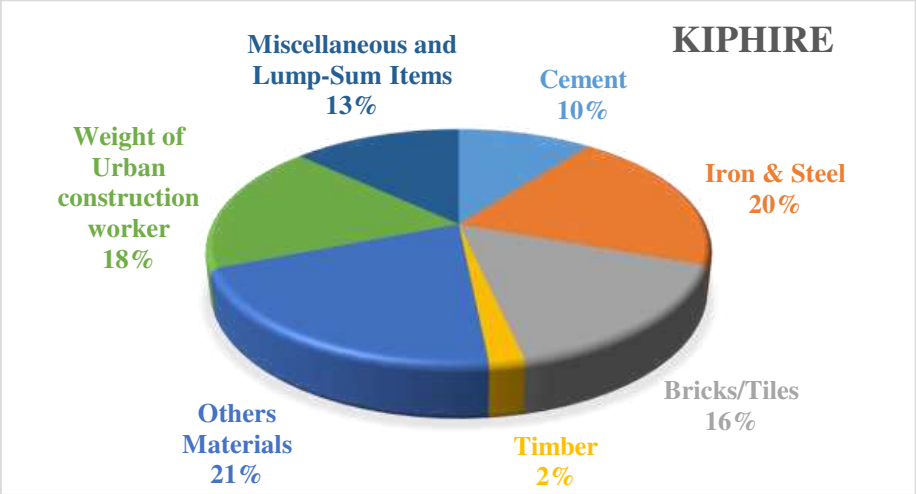
(Fig. 4.4.g)



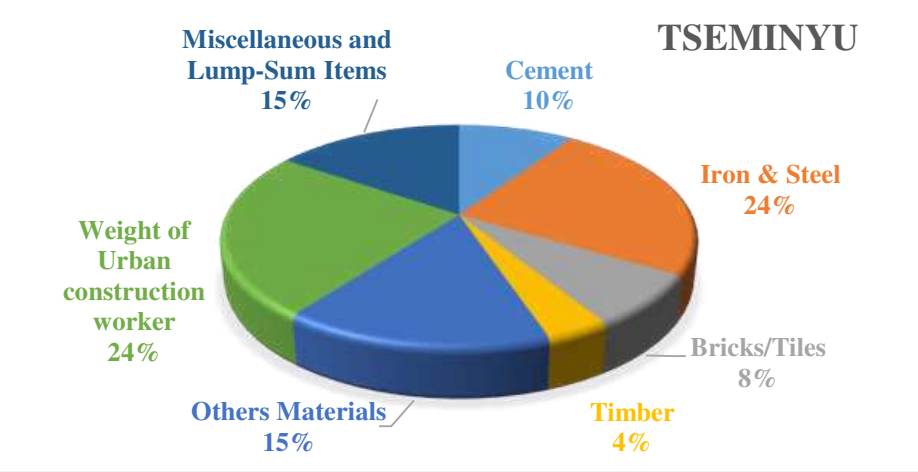
(Fig. 4.4.h)



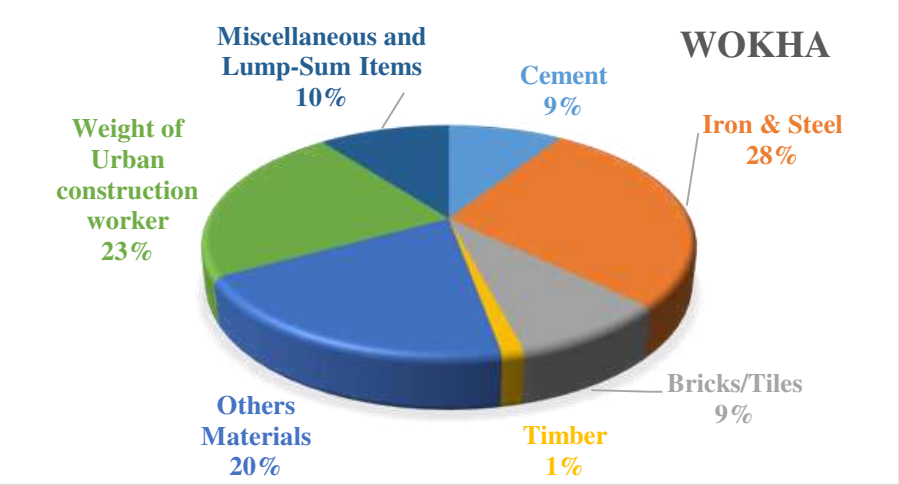
(Fig. 4.4.i)



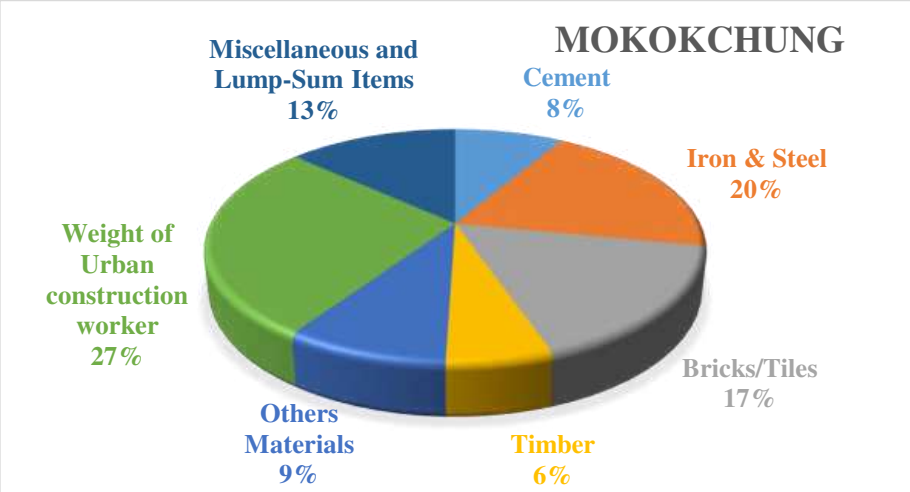
(Fig. 4.4.j)



(Fig. 4.4.k)



(Fig. 4.4.l)



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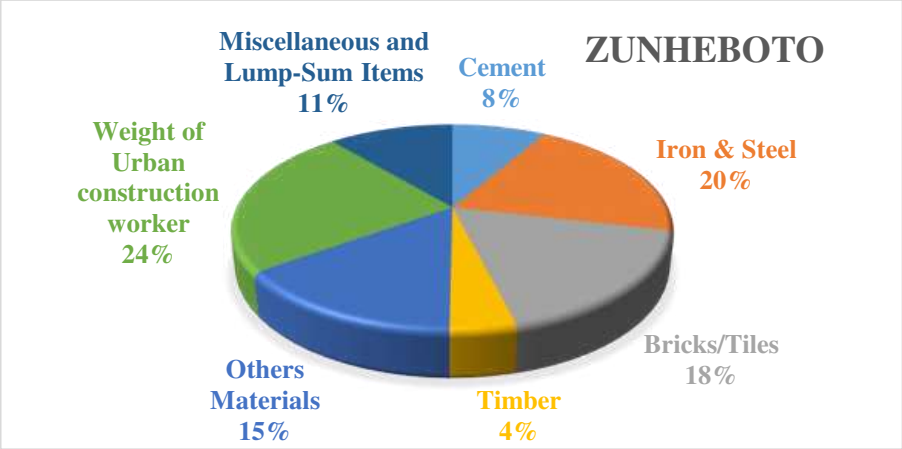

(Fig. 4.4.n)

(Fig. 4.4.o)


PEREN
Miscellaneous and Lump-Sum Items 13%
Cement 9%
Iron & Steel 20%
Weight of Urban construction worker 29%
Bricks/Tiles 14%
Others Materials 10%
Timber 5%

(Fig. 4.4.p)

CHAPTER 5

CONCLUSION

This report contains the field survey data collected from the 16 representative district in Nagaland state of India. The chapter-2 give the detailed report including photos of surveyed sites (cities/town/village) by CSIR-CBRI under the scope of work and as per SLA. This report focuses on the cost wise weight of construction materials used in Urban and Rural area, including the factor inputs such as labour, hiring charges, centering & shuttering and rentals for machinery and equipment's. The report covers only Residential buildings (Houses, Rural Houses, Housing Complex and Multi-Storeyed) Construction.

During the field survey it is observed that, significant amount of construction activity is going on in the state and a huge amount is spent in the construction sector.

The report provides not only the data on bill of quantities, specifications and estimation on materials and labour requirements but also provides the data on construction materials cost variation from the surveyed locations in 16 districts. The field survey findings infer that, there is a significant variation in the consumption of materials, construction and labour cost within different regions of the states.

Table 5.1 Consolidated data of weight in % for construction cost of residential buildings in Urban area.

S.No.	Materials, Labour, Miscellaneous Items	Cost Percentage (%)
1	Cement	**8.9**
2	Iron & Steel	**17.4**
3	Bricks/Tiles	**15.5**
4	Timber	**5.3**
5	Fixtures and Fittings	**7.9**
6	Others Materials	**11.8**
7	Weight of Urban construction worker	**20.9**
8	Miscellaneous and Lump-Sum Items	**12.2**
	Total	**100.0**

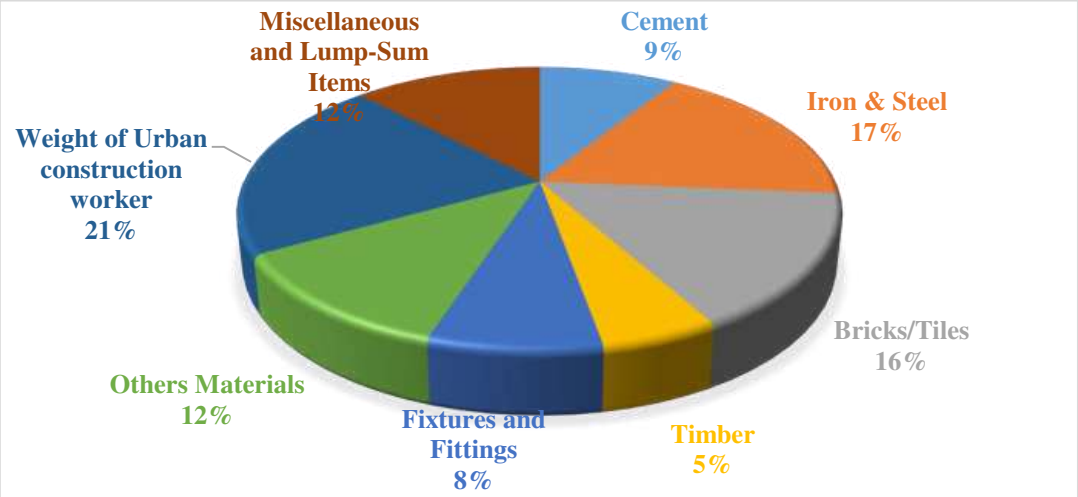

Fig. 5.1

The percentage cost consolidated data grouped in 8 items of materials, labour and miscellaneous etc., for 16 districts is given in ***Table 5.1*** and ***Fig. 5.1***. The consolidated data of major materials indicated that Iron & steel products are the highest percentage, followed by bricks & tiles and cement respectively. The Construction worker cost component is about 21%.

Table 5.2 Consolidated data of weight in % for construction cost in residential buildings in Rural area.

S.No.	Materials, Labour, Miscellaneous Items	Cost Percentage (%)
1	Cement	**9.6**
2	Iron & Steel	**20.3**
3	Bricks/Tiles	**16.4**
4	Timber	**4.4**
5	Others Materials	**13.5**
6	Weight of Rural construction worker	**22.6**
7	Miscellaneous and Lump-Sum Items	**13.1**
	Total	**100.0**

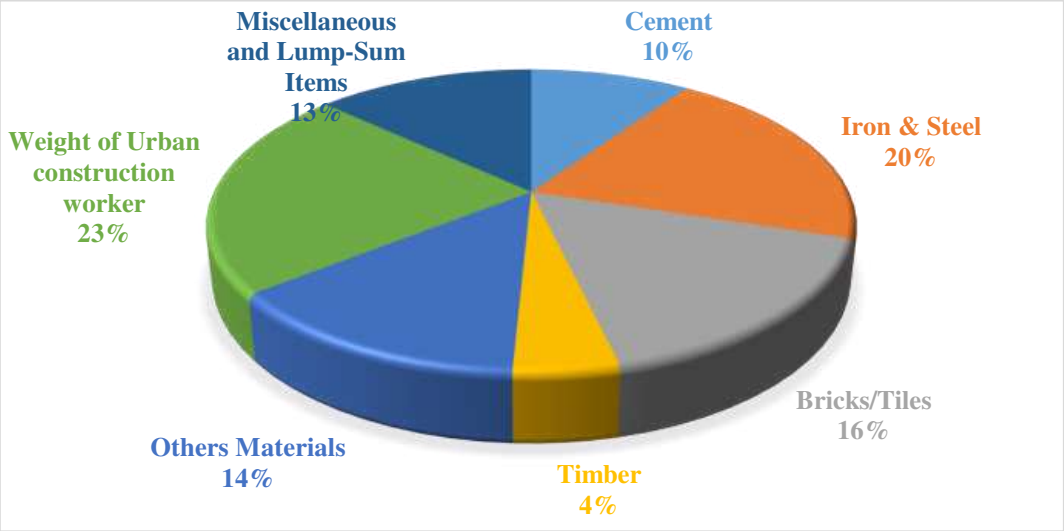

Fig. 5.2

The percentage cost consolidated data grouped in 7 items of materials, labour and miscellaneous etc., for 16 districts is given in ***Table 5.2*** and ***Fig. 5.2***. The consolidated data of major materials indicated that Iron & steel products are the highest percentage, followed by bricks & tiles and cement respectively. The Construction worker component is about 23%.

Construction workers: Labour costs constitute the largest share in both urban and rural construction projects. Rural construction workers, represented by the weight of the rural construction worker, are higher at 22.6% compared to 20.9% in urban areas.

Materials: Iron & Steel and Bricks/Tiles are the dominant material costs in both settings, with rural areas showing slightly higher percentages (20.3% and 16.4%, respectively) than urban areas (17.4% and 15.5%). Cement costs are marginally higher in rural construction (9.6%) compared to urban (8.9%).

Timber and Fixtures: Timber accounts for a smaller percentage in rural areas (4.4%) than in urban (5.3%). Fixtures and Fittings are only accounted for in urban data, contributing 7.9% to the total cost.

Miscellaneous and Other Materials: Miscellaneous and lump-sum items along with other materials form a notable portion of costs, with rural areas having a slightly higher combined percentage (26.6%) compared to urban areas (24.0%).

Conclusion

The data indicate that rural construction projects generally incur slightly higher labor costs due to the limited availability of local skilled workers, such as masons, carpenters, and blacksmiths. Additionally, materials like iron and steel, bricks, and cement tend to be more expensive in rural areas because of increased transportation (carriage) charges compared to urban. These differences highlight variations in sourcing, labour availability, and construction practices between rural and urban settings. Recognizing these factors is essential for accurate budgeting and effective planning of construction projects across different regions.

In urban areas like Kohima and Dimapur, material prices are generally lower compared to other parts of the state, as building construction is relatively easier in these districts. However, similar to other regions of Nagaland, the unavailability of construction workers remains a significant challenge that affects overall project execution.

----------END OF REPORT----------