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CONSTRUCTION MANAGEMENT ANALYSIS OF CIDERES HOSPITAL

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ABSTRACT

Reliable infrastructure requires effective and efficient management from the planning, structural, construction, operational and maintenance phases to the end of service life. Good management of civil infrastructure guarantees not only to save funds, but to use natural resources appropriately, thus ensuring ecological sustainability.Construction management is part of civil engineering science that focuses on managing construction projects to realize technical concepts and designs produced by other parts of civil engineering science. Construction management aims to build built physical facilities or infrastructure that is needed to support human life.

Management of construction projects is becoming increasingly complex due to the many parties that interact in it and the increasingly high demands for quality of functions, comfort, security, aesthetics and sustainability. Therefore construction management is needed to ensure the efficiency and productivity of a construction project in meeting various expectations and requirements.

This thesis analysis includes volume calculation, Needs of labor, materials and equipment, Bar chart, Cash flow, S Curve, method of CPM (Critical Path Method) is a method of identifying critical work paths or items. Forwards calculation, backwards calculation, free float and total float. Based on the calculation of cash flow to complete the construction of Cideres Hospital Kadipaten Dawuan Majalengka project until final stage more or less cost as much Rp. 9,034,000,000,00. These costs are divided into two parts, structure and architecture work ,for structures the cost as much Rp. 3,644,000,000,00 and for architecture the cost is Rp. 5,390,000,000,00. From the calculation of CPM scheduling analysis, the development of Cideres Hospitalproject takes time for 45 weeks

Keyword: Project Management, Bar Chart, S Curve, Critical Path Method.

I. INTRODUCTION

A. BACKGROUND

Project management is an attempt to use limited resources efficiently, effectively and timely in completing a project that has been determined / planned. There are three activities of the basic functions of project management including planning, implementation and control. Of the three activities are performed control over the resources on a project that includes labor (manpower), equipment (machine), material, money and method.

The goal of project management is to manage or oversee the implementation of projects such that the optimal results obtained in accordance with the terms and for the purposes of these achievements should have to pay attention to the quality of the building, the cost of which is in use and time allocation. (Agnes Dwi Yanthi Winoto, 2014).

Several methods have been developed to overcome in the project include Network Planning Methods such as Critical Path Method (CPM), barchart and S. Curve Network Planning Method is one that can be used to help decide a variety of issues, especially the planning, scheduling, and project control.Construction Management Analysis of Cideres Hospital is expected to provide a picture of the project making it easier for contractors to make decisions to optimize the performance of the project.

B. FOCUS PROBLEM

Construction management plan development project in method of work, estimated costs and method of networking of the development projects Cideres Hospital.

C. SCOPE OF PROBLEM

In order for research conducted can be more focused and in accordance with the expected, then the keyword on the things as follows:

1) The data used in this research is image data planning of Cideres Hospital.
2) Calculating Job Volume.
3) Calculating the Employment Budget Plan and Equipment
4) Employment Network Analysis Methods used in the study of this project is the Critical Path Method (CPM), Barchart and S curve.
5) Not compare the result of cost control and time of development project of Cideres Hospital.

D. FORMULATION OF THE PROBLEM

a) Analysis of calculation of the volume of work on the construction of Cideres Hospital.
b) The time duration and scheduling of work execution project Cideres Hospital construction.
c) The cost of implementing the work of the Cideres Hospital construction.
d) Method of implementation work Cideres Hospital construction.

E. VIEW and PURPOSE

1. View

The preparation of the final task is intended to gain experience, knowledge and insight about the management of building structures as well as an effort to realize all the science related to the theory gained during the lecture at the Faculty of Engineering, University of Swadaya Gunung Jati.

2. Purpose

The purpose of writing this thesis is as follows :

1) To analyze the volume of work on the Cideres Hospital Construction project.
2) To find out the duration of project implementation Cideres Hospital.
3) To know the cost of implementing the work of the Cideres Hospital.
4) To find out how the method of implementation of the work on development projects Cideres Hospital.

F. BENEFITS OF RESEARCH

1. Theoretical Uses
2. Practical Usefulness

II. REVIEW OF THE LITERATURE AND THE THEORETICAL BASIS

A. RESEARCH THAT HAS BEEN DONE BEFORE

1. The study was conducted by ItanFaizar (2015) with the title **AnalisisManajemenKonstruksiProyekRumahSakitArawinangunKabupaten Cirebon**. The objective is to re-plan Volume Calculation, Time Schedule, Cost and Method of Implementation.
2. Research conducted by Saripudin (2014) with the title of Research that is, **AnalisisManajemenPelaksanaanProyek Hotel Grand Prima Cirebon**. The goal is to set the schedule of work to plan the progress of work and maintenance on the structure of the building by Using Data Analysis Method Earned Value method to analyze the cost and time. While the method of CPM (Critical Path Method) as a corrective action to analyze the work network for the implementation of the project to be ideal.
3. The study was conducted by Opi Lasari (2016) under the title Analisis **Manajemen KonstruksiProyekPembangnanRumahSakitUmum Daerah Brebes.**Objectives namely to Analyze Job Barriers, Analyze Job Implementation, Project Delay In Project Implementation of Brebes Regional Hospital.

B. THEORRETICAL BASIS

1. Definition of Analysis

Analysis isthe description or the business know the meaning of a situation, data or material information about a decomposed state and investigated in relation to each other. (Suwardjoko Warpani, 1980: 1).

2. Definition of project management

There are several definitions of project management according to experts, among other:

a. **Soeharto** (1997) Project Management is planning, directing, controlling the resources of the company to achieve short-term goals have been determined. Further, using a project management approach and the current system of vertical and horizontal activities.

b. **Budi Santoso** (2003) Project Management is activity plan, organize, direct and control the company's organizational resources to achieve specific goals within a specific time with specific resources. Project management use of company personnel to be placed on a specific task in the project.

c. **Wulfram I. Ervianto** (2003) Project Management is all the planning, execution, control, and coordination of a project from the initial idea to the completion of the project to ensure the cost of the project is implemented on time, right cost and right quality.

3. The general principles of project management

Management is a method or process to achieve a certain goal effectively and efficiently utilizing available resources, as outlined in the management function according to George R. Terry.

a. Planning

Planning is an act of taking decision of the data, information, assumptions, or facts selected activities and will do in the future. The action forms, among others:

1) Planning of scope of the project
2) Planning of quality
3) Planning of time
4) Planning of cost
5) Planning of resource

b. Organizing

Organization formed will succeed if every member is able to cooperate with the aim of achieving a common goal. The process of forming an organization or organizational life cycles generally follow the stages as follow: (Ravianto, 2002).

a) Prestage
b) Forming.
c) Storming
d) Norming.
e) Performing

f) Adjourning

c. Actuating

Actions taken in the actuating function, among others:

1) Coordinate actuating of activities.
2) Communicate effectively.
3) Distribute tasks, authority and responsibility.
4) Provide briefing, assignment and motivation.
5) Attempted to improve the briefing as directed control.

d. Controlling

The measures include, among others:

1) Measuring the quality of results.
2) Comparing the results against quality standards.
3) Evaluate deviations.
4) Provide suggestions for improvement.
5) Prepared a report on activities.

The benefits of the control function is minimize the possibility of errors occurring in terms of quality, quantity, cost and time.

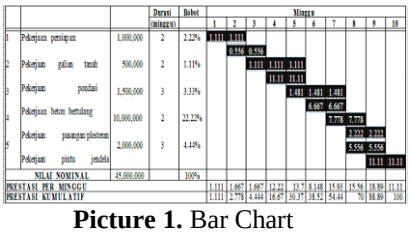
4. Scheduling techniques

Scheduling focuses on the determination or calculation of the time of the operational activities in the implementation of the project taking into account the limited resources available to be able to determine the overall project completion time (Waryono, 2001).

a. Bar Chart

Bar chart found by H.L Gantt and Fredick W. Taylor in the form of bar chart, with the length of the beam as a representation of the duration of each actyivity. Format of bar chart informative, readable and effective communication and can be made with ease and simplicity. Before it was discovered this method, there is no systematic and analytical procedur in aspects of project planning and control. (Soeharto, 1999: 236).

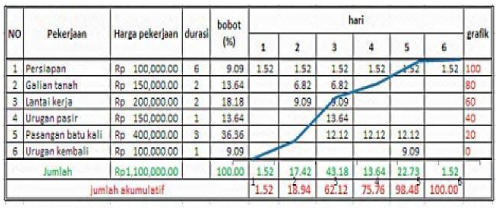
In this chart can also be determined milestone/baseline as part of the target that must be considered in order to smooth the overall productivity of the project. For the updating process, the barchart may be (Husen, 2008: 135).



Picture 1. Bar Chart

b. S Curve

The comparison of the plan S curve with the implementation S curve makes it possible to know whether the progress of project implementation is corresponding, slow, or more than planned. (Luthan & Syafriandi, 2006).



Picture 2. S Curve

c. Critical Path Methode (CPM)

On the network method known as the critical path, the path that has a series of components of activities, with the total amount of the longest time and show the fastest project completion time. Thus, the crtical path consists of a series of critical activities, starting from the first activity to the final project activity (Soeharto, 1995).

5. CASHFLOW

Cashflow is one of the planning product among other planning products in the construction planning, such as scheduling, construction method, and implementation budget (Asiyanto, 2005).

6. TIME AND COST

The overall cost of construction usually involves calculating the analysis of the five major elements according to(Dipohusodo, 1996), that is:

a) Cost of Material
b) Cost of Manpower
c) Cost of Equipment

d) Indirect Cost

7. COST BUDGET PLAN

The cost budget plan for a building or project is a calculation of the amount of costs required for materials and rewards and other costs associated with the execution of the building or project. Basically this cost budget is the most important part in organizing the building. Making a budget cost means estimating the price of an item, a building or an object (Sumber: Ibrahim, 2001).

III. METHOD AND OBJECT OF RESEARCH

A. METHOD OF RESEARCH

1. The Research Methods Used

The research method used is a method of quantitative and qualitative methods, understanding as below:

a) Quantitative method is a method that is done by collecting data and studying the literature related to planning and analysis calculations.
b) Qualitative method is a method performed by collecting field data that will be used as the data in the project.

2. The Types and Sources of Data

The data source is something that can provide information about the data. By type, data can be divided into two, namely primary data and secondary data.

a) Primary data is data created by researchers for the special purpose resolve problems that are being addressed.
b) Secondary data is data that has been collected for purpose other than resolve the problems being faced.

3. Technique of Data Collection

In the preparation of this thesis, the collection of data obtained by the authors carried out in a manner as follows:

a) Observation or direct observation to the field to observe directly the object of the research.
b) Interviews with contractors and consultants in the project.
c) Explore and examine theories or methods in the library.

4. Metode Analisis Data

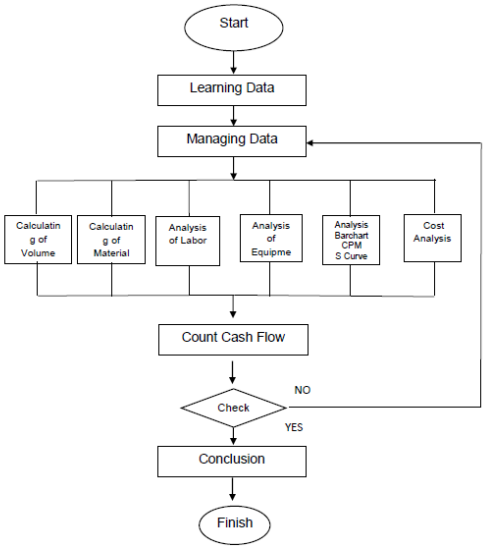
Method of data analysis is a method used to process planning results in order to obtain a conclusion. Analysis used in this research is:

a) Analysis of *Bar Chart*
b) Analysis of *S – Curve*
c) Analysis of *Critical Path Method* (CPM)
d) Analysis of needs of equipment, materials and manpower

B. LOCATION OF RESEARCH

The location to be used as case study Cideres Hospital Development Planning is located at Ciders – Kadipaten Highway No.180 Dawuan Majalengka District.

C. FLOW OF RESEARCH

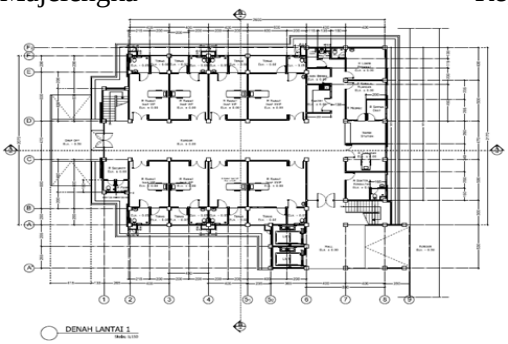


Picture 3. Flow of Research

IV. RESULT OF RESEARCH AND DISCUSSION

A. GENERAL DESCRIPTION OF THE PROJECT

To improve services in the field of health Majalengka Regional Government through APBD that has been provided will rehabilitate the building of Cideres Hospital in order to create better service in health to the people of Majelengka Region



Picture 4. Shop Drawing Project for Cideres Hospital Construction

Project Name : Cideres Hospital Construction Project
(Construction of Inpatient Building)
Project Location : Ciders – Kadipaten Highway No.180 Dawuan Majalengka District.
Project Owner : Majalengka District Goverment
Source Of Funding : Regional Expenditure Budget
Contract Type : Lump sum and Unit Price
Floor area : 676 m2 Quality
of Material : Concrete
Pile Cap : K-300
Tie Beam : K-300
Beam : K-300
Column : K-300
Plate : K-300
Quality of Reinforcement: BJTD-40
BJTP-24

B. METHOD OF IMPLEMENTATION WORK

1. Preparatory work

Situations and sizes before the implementation of the construction of the initial stage of work is preparatory work.

2. Work of soil and foundation

3. Work of Structure

a) Work of Foundation
b) Work of Foundation Pile Cap
c) Work of Sloof
d) Work of Column
e) Work of Beam, Floor Plate and Stairs

4. Work of Architecture

a) Work of Wall, Plastering, and Wall Covering
b) Work of Granite and Ceramics
c) Work of Frames, Doors, and Windows
d) Work of Plafond
e) Work of Painting
f) Work of Roof

5. Work of Mechanical Electrical

a) Work of Installation Electrical
b) Work of Installation Water

C. Volume Calculation

Table 5. *Calculation of Volume*

VOLUME CALCULATION
Cideres Hospital Building Project
Ciders - Kadipaten Street No.180 Dawuan Majalengka

No	Job Description	Formula	Formula L	Formula W	Formula H	Σ	@	Volume of Job Volume	Volume of Job Unit
	Standard Work								
I	**Preperatory work**								
1	Site Cleaning	Σ				1.00		1.00	Ls
2	Measurement and installation work of bouwplank	L	70.00					70.00	m^1
3	Electricity and water requirements	Σ				1.00		1.00	Ls
4	Safety Fence Work	L	108.00					108.00	m^1
5	Site office & making workers basecamp	Σ	3.75					1.00	Ls
6	Mobilization and Demobilization	Σ				1.00		1.00	Ls
7	Project Safety net	L x H	93.40		14.50			1,364.30	m^2
II	**Work of Soil And Foundation**								
1	Excavation for foot plate foundation	L x W x H x @	1.00	1.00	1.20	1.20	59.00	70.80	m^3
2	Excavation for Line Foundation	L x W x H	115.30	1.00	1.20	138.36		138.36	m^3
3	Hoarding	L x W x H	104.50	1.00	1.20	125.40		125.40	m^3
4	Additional soil for floor + lean concrete	Σ x H			0.50	646.85		323.43	m^3
5	Additional Sand under the foundation + lean concrete	L x W x H	1.00	1.00	0.25	0.25	59.00	14.75	m^3
6	Additional Sand under the floor	Σ x H			0.05	646.85		32.34	m^3
7	Aanstamping t.20 cm	L x W x H			0.20		59.00	11.80	m^3
8	Masonry foundation in room	((W + (W / 2) / 2) x H) x L	27.60	0.80	1.20			19.87	m^3
9	Masonry stone foundation Rabate + Entrace	((W + (W / 2) / 2) x H) x L	52.50	0.80	1.20			37.80	m^3
10	Pile foundation, size 5x5 cm per point t. 6m	L	656.00					656.00	m^1
11	Cutting the Concrete pile Work	@					164.00	164.00	unit
III	**Concrete Work**								
a	**First Floor**								
1	Concrete work floor 1:3:5 t 5 cm under poer+sloof	L x Σ			0.05		180.00	9.00	m^3
2	Poer Concrete FP 1 (150x80x50) K-300	(L x W x H) x @	1.50	0.80	0.50	0.60	16.00	9.60	m^3
3	Poer Concrete FP 2 (100x80x50) K-300	(L x W x H) x @	1.00	0.80	0.50	0.40	20.00	8.00	m^3
4	Poer Concrete FP 3 (100x100x50) K-300	(L x W x H) x @	1.00	1.00	0.50	0.50	18.00	9.00	m^3
5	Practice Column (12x12) K-175	(L x W x H) x @	0.12	0.12	4.00	0.06	58.00	3.34	m^3
6	Pedestal Column K1a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	1.00	0.81	m^3
7	Pedestal Column K2a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	4.00	3.24	m^3
8	Pedestal Column K3a (25x25) K-300	(L x W x H) x @	0.25	0.25	4.00	0.25	2.00	0.50	m^3
9	Pedestal Column K4a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	1.00	0.81	m^3
10	Pedestal Column K5a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	3.00	2.43	m^3
11	Pedestal Column K6a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	2.00	1.62	m^3
12	Sloof Concrete (30x40) k-300	(L x W x H)	362.30	0.30	0.40			43.48	m^3
13	Sloof Concrete (15x20) k-175	(L x W x H)	59.00	0.15	0.20			1.77	m^3
14	Main Column K1a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	3.00	2.43	m^3
15	Main Column K2a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	18.00	14.58	m^3
16	Main Column K3a (25x25) K-300	(L x W x H) x @	0.25	0.25	4.00	0.25	3.00	0.75	m^3
17	Main Column K4a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	1.00	0.81	m^3
18	Main Column K5a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	15.00	12.15	m^3
19	Main Column K6a (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	6.00	4.86	m^3
20	Practice Column (12x12) K-175	(L x W x H) x @	0.12	0.12	4.00	0.06	58.00	3.34	m^3
21	Lintel Beam (12x20) K-175	(L x W x H)	65.80	0.12	0.20			1.58	m^3
22	Fin Beam (12x25) K-225	(L x W x H)	24.00	0.12	0.25			0.72	m^3
23	Beam B1 (30X40) K-300	(L x W x H)	66.50	0.30	0.40			7.98	m^3
24	Beam B2(30X40) K-300	(L x W x H)	114.70	0.30	0.40			13.76	m^3
25	Beam B3 (30X60) K-300	(L x W x H)	136.10	0.30	0.60			24.50	m^3
26	Beam B4 (30X60) K-300	(L x W x H)	62.60	0.30	0.60			11.27	m^3
27	Beam Ba (20x35) K-300	(L x W x H)	133.85	0.20	0.35			9.37	m^3
28	Hanging beam over the terrace (20x40) K-250	(L x W x H)	31.00	0.20	0.40			2.48	m^3
29	Plat Slab +0.00 S1 t= 8 cm K-175 (Wiremesh M-6)	Σ x H			0.08	795.00		63.60	m^3
30	Concrete plate base lift S1 t= 20 cm K-225	Σ x H			0.20	37.50		7.50	m^3
31	Plat Slab +4.00 S1 t= 12 K-300 (Wiremesh M-10)	Σ x H			0.12	73.36		73.36	m^3
32	Bordes and Cncrete Stairs work K-300	Σ				6.10		6.10	m^3
33	Fin Beam t = 10 K-225	Σ x H			0.10	26.20		2.62	m^3
34	Table Plat Slab t = 10 K-175	Σ x H			0.10	3.90		0.39	m^3
35	Rabat Concrete 1:3:5 t = 10	Σ x H			0.10	76.20		7.62	m^3
36	Beam Binder for Lift (20x 35) K-300	(L x W x H)	10.57	0.20	0.35			0.74	m^3
b	**Second Floor**								
1	Main Column K1b (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	4.00	3.24	m^3
2	Main Column K2b (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	22.00	17.82	m^3
3	Main Column K3b (25x25) K-300	(L x W x H) x @	0.25	0.25	4.00	0.25	5.00	1.25	m^3
4	Main Column K4b (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	2.00	1.62	m^3
5	Main Column K5b (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	18.00	14.58	m^3
6	Main Column K6b (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	8.00	6.48	m^3
7	Practice Column (12x12) K-175	(L x W x H) x @	0.12	0.12	4.00	0.06	58.00	3.34	m^3
8	Lintel Beam (12x20) K-175	(L x W x H)	65.80	0.12	0.20			1.58	m^3
9	Fin Beam (12x25) K-225	(L x W x H)	24.00	0.12	0.25			0.72	m^3
10	Hanging beam over the terrace (20x40) K-250	(L x W x H)	31.00	0.20	0.40			2.48	m^3
11	Beam B1 (30X40) K-300	(L x W x H)	66.50	0.30	0.40			7.98	m^3
12	Beam B2(30X40) K-300	(L x W x H)	114.70	0.30	0.40			13.76	m^3
13	Beam B3 (30X60) K-300	(L x W x H)	136.10	0.30	0.60			24.50	m^3
14	Beam B4 (30X60) K-300	(L x W x H)	62.60	0.30	0.60			11.27	m^3
15	Beam Ba (20x35) K-300	(L x W x H)	133.85	0.20	0.35			9.37	m^3
16	Plat Slab +8.00 S1 t= 12 K-300 (Wiremesh M-10)	Σ x H			0.12	611.33		73.36	m^3
17	Bordes and Stairs K-300	Σ				61.00		61.00	m^3
18	Fin Beam t = 10 K-225	Σ x H			0.10	26.20		2.62	m^3
19	Table Plat Slab t = 10 K-175	Σ x H			0.10	3.90		0.39	m^3
20	Beam Binder for Lift (20x 35) K-300	Σ x H	10.57	0.20	0.35			0.74	m^3
C	**Third Floor**								
1	Main Column K1c (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	4.00	3.24	m^3
2	Main Column K2c (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	22.00	17.82	m^3
3	Main Column K3c (25x25) K-300	(L x W x H) x @	0.25	0.25	4.00	0.25	5.00	1.25	m^3
4	Main Column K4c (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	2.00	1.62	m^3
5	Main Column K5c (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	18.00	14.58	m^3
6	Main Column K6c (45x45) K-300	(L x W x H) x @	0.45	0.45	4.00	0.81	8.00	6.48	m^3
7	Practice Column (12x12) K-175	(L x W x H) x @	0.12	0.12	4.00	0.06	58.00	3.34	m^3
8	Lintel Beam (12x20) K-175	(L x W x H)	65.80	0.12	0.20			1.58	m^3
9	Fin Beam (12x25) K-225	(L x W x H)	24.00	0.12	0.25			0.72	m^3
10	Hanging beam over the terrace (20x40) K-250	(L x W x H)	31.00	0.20	0.40			2.48	m^3
11	Beam B1 (30X40) K-300	(L x W x H)	66.50	0.30	0.40			7.98	m^3
12	Beam B2(30X40) K-300	(L x W x H)	114.70	0.30	0.40			13.76	m^3
13	Beam B3 (30X60) K-300	(L x W x H)	136.10	0.30	0.60			24.50	m^3
14	Beam B4 (30X60) K-300	(L x W x H)	62.60	0.30	0.60			11.27	m^3
15	Beam Ba (20x35) K-300	(L x W x H)	133.85	0.20	0.35			9.37	m^3
16	Plat Slab +8.00 S1 t= 12 K-300 (Wiremesh M-10)	Σ x H			0.12	338.58		40.63	m^3
16	Ring balk (15x20) K-300	Σ x H			0.10	34.60		3.46	m^3
17	Fin Beam t = 10 K-225	Σ x H			0.10	26.20		2.62	m^3
18	Table Plat Slab t = 10 K-175	Σ x H			0.10	3.90		0.39	m^3
19	List Plank concrete L = 60 , t 15 K-300	Σ x H			0.15	65.20		9.79	m^3
20	Beam Binder for Lift (20x 35) K-300	(L x W x H)	10.57	0.20	0.35			0.74	m^3
	Roof Elevation								
21	Main Column K2c (45x45) K-300	(L x W x H) x @	0.45	0.45	1.20	0.24	8.00	1.90	m^3
22	Main Column K3c (25x25) K-300	(L x W x H) x @	0.25	0.25	1.20	0.08	24.00	1.80	m^3
23	Main Column K5c (45x45) K-300	(L x W x H) x @	0.45	0.45	1.20	0.24	10.00	2.43	m^3
24	Main Column K6c (45x45) K-300	(L x W x H) x @	0.45	0.45	1.20	0.24	8.00	1.94	m^3
25	Beam B5 (30x40) K-300	(L x W x H) x @	170.83	0.30	0.40	20.50		20.50	m^3
26	Beam Ba (20x35) K-300	(L x W x H)	133.85	0.20	0.35			9.37	m^3
27	Beam B1 (30X40) K-300	(L x W x H)	66.50	0.30	0.40			7.98	m^3
28	DAK +14.50 S1 t=12 K-300 (Wiremesh M-10)	Σ x H			0.12	42.92		5.15	m^3
29	List Plank concrete L = 40 , t 15 K-300	Σ x H			0.15	17.00		2.55	m^3
IV	**REINFOCEMENT WORK**								
	Pile cap								
	- P1 (150x150x50)								
	- D 13 mm	Σ x @						15.18 15.00	227.76 Kg
	- D 16 mm	Σ x @						44.63 15.00	669.45 Kg
	- P2 (100X50X50)								
	- D 16 mm	Σ x @						36.38 20.00	727.60 Kg
	- D 13 mm	Σ x @						10.71 20.00	214.24 Kg
	- P3 (100X100X50)								
	- D 16 mm	Σ x @						83.66 18.00	1505.88 Kg
	- D 13 mm	Σ x @						18.30 18.00	329.47 Kg
	- P3 (50X50X50)								
	- D 16 mm	Σ x @						25.25 4.00	100.99 Kg
	- D 13 mm	Σ x @						6.24 4.00	24.96 Kg
	Sloof								
	- SL 1								
	- D 10 mm	Σ						1,455.81	1455.81 Kg
	- D 13 mm	Σ						3,767.92	3,767.92 Kg
	- SL 2								
	- D 12 mm	Σ						209.10	209.10 Kg
	- D 8 mm	Σ						69.92	69.92 Kg
a	**First Floor**								
	Column								
1	PracticeColumn								
	- D 10 mm	Σ x @						3.41 58.00	197.63 Kg
	- D 5 mm	Σ x @						5.18 58.00	300.44 Kg
2	Column K1a								
	- D 19 mm	Σ x @						71.14 4.00	284.56 Kg
	- D 10 mm	Σ x @						20.98 4.00	83.92 Kg
3	Column K2a								
	- D 19 mm	Σ x @						106.70 22.00	2,347.49 Kg
	- D 10 mm	Σ x @						20.98 22.00	461.56 Kg
4	Column K3a								
	- D 13 mm	Σ x @						16.64 5.00	83.20 Kg
	- D 12 mm	Σ x @						28.35 5.00	141.75 Kg
	- D 10 mm	Σ x @						11.11 5.00	55.53 Kg
5	Column K4a								
	- D 19 mm	Σ x @						142.27 2.00	284.54 Kg
	- D 10 mm	Σ x @						20.98 2.00	41.96 Kg
6	Column K5a								
	- D 19 mm	Σ x @						160.06 18.00	2,881.08 Kg
	- D 10 mm	Σ x @						20.98 18.00	377.64 Kg
7	Column K6a								
	- D 19 mm	Σ x @						195.62 8.00	1,564.96 Kg
	- D 10 mm	Σ x @						20.98 8.00	167.82 Kg
	Beam								
8	Lintel Beam Type 12/20								
	- D 12 mm	Σ						233.20	233.20 Kg
	- D 8 mm	Σ						122.17	122.17 Kg
9	Fin Beam								
	- D 12 mm	Σ						850.56	850.56 Kg
	- D 8 mm	Σ						81.44	81.44 Kg
10	Beam B1								
	- D 16 mm	Σ						524.68	524.68 Kg
	- D 12 mm	Σ						209.87	209.87 Kg
	- D 10 mm	Σ						268.70	268.70 Kg
11	Beam B2								
	- D 16 mm	Σ						1,270.79	1,270.79 Kg
	- D 12 mm	Σ						203.78	203.78 Kg
	- D 10 mm	Σ						461.20	461.20 Kg
12	Beam B3								
	- D 16 mm	Σ						1,945.67	1,945.67 Kg
	- D 12 mm	Σ						242.76	242.76 Kg
	- D 10 mm	Σ						676.23	676.23 Kg
13	Beam B4								
	- D 16 mm	Σ						1,093.55	1,093.55 Kg
	- D 12 mm	Σ						198.83	198.83 Kg
	- D 10 mm	Σ						310.97	310.97 Kg
14	Beam Ba								
	- D 13 mm	Σ						975.52	975.52 Kg
	- D 10 mm	Σ						111.89	820.68 Kg
	Plat								
15	Plat Slab +0.00 S1 t= 8 cm (Wiremesh M-6)								
	- Wiremesh M.6	Σ						59.00	59.00 Sheet
16	Plat Slab + +4.00 S1 t= 12 K-300 (Wiremesh M-10)								
	- Wiremesh	Σ						59.00	59.00 Sheet
17	Stairs work								
	Stairs from First floor to first Second Floor								
	- D 16 mm	Σ						48.42	48.42 Kg
	- D 13 mm	Σ						318.44	318.44 Kg
	- D 10 mm	Σ						180.86	180.86 Kg
	- D 8 mm	Σ						12.64	12.64 Kg
b	**Second Floor**								
	Column								
1	Practice Column								
	- D 10 mm	Σ x @						3.41 58.00	197.63 Kg
	- D 8 mm	Σ x @						5.18 58.00	300.44 Kg
2	Column K1b								
	- D 19 mm	Σ x @						53.52 4.00	214.08 Kg
	- D 10 mm	Σ x @						20.98 4.00	83.92 Kg
3	Column K2b								
	- D 19 mm	Σ x @						71.14 22.00	1,564.99 Kg
	- D 10 mm	Σ x @						20.98 22.00	461.56 Kg
4	Column K3b								
	- D 12 mm	Σ x @						16.64 5.00	83.20 Kg
	- D 10 mm	Σ x @						14.18 5.00	70.90 Kg
5	Column K4b	Σ x @						11.11 5.00	55.53 Kg
	- D 19 mm								
	- D 10 mm	Σ x @						106.70 2.00	213.40 Kg
6	Column K5b	Σ x @						20.98 2.00	41.96 Kg
	- D 19 mm								
	- D 10 mm	Σ x @						142.27 18.00	2,560.86 Kg
7	Column K6b	Σ x @						20.98 18.00	377.64 Kg
	- D 19 mm								
	- D 10 mm	Σ x @						160.06 8.00	1,280.48 Kg
	Beam	Σ x @						20.98 8.00	167.82 Kg
	Lintel Beam								
	- D 12 mm	Σ						233.20	233.20 Kg
	- D 8 mm	Σ						122.17	122.17 Kg
	Fin Beam								
	- D 12 mm	Σ						850.56	850.56 Kg
	- D 8 mm	Σ						81.44	81.44 Kg
8	Beam B1								
	- D 16 mm	Σ						524.68	524.68 Kg
	- D 12 mm	Σ						209.87	209.87 Kg
	- D 10 mm	Σ						268.70	268.70 Kg
9	Beam B2								
	- D 16 mm	Σ						1,270.79	1,270.79 Kg
	- D 12 mm	Σ						203.78	203.78 Kg
	- D 10 mm	Σ						461.20	461.20 Kg
10	Beam B3								
	- D 16 mm	Σ						1,945.67	1,945.67 Kg
	- D 12 mm	Σ						242.76	242.76 Kg
	- D 10 mm	Σ						676.23	676.23 Kg
11	Beam B4								
	- D 16 mm	Σ						1,093.55	1,093.55 Kg
	- D 12 mm	Σ						198.83	198.83 Kg
	- D 10 mm	Σ						310.97	310.97 Kg
12	Beam Ba								
	- D 13 mm	Σ						975.52	975.52 Kg
	- D 10 mm	Σ						111.89	820.68 Kg
	Plat								
13	Plat Slab +8.00 S1 t= 12 (Wiremesh M-10)								

	- Wiremesh M.10	Σ				59.00		59.00	Sheet
14	Bordes and Stairs								
	Stairs from second floor to third floor								
	- D 16 mm	Σ				48.42		48.42	Kg
	- D 13 mm	Σ				318.44		318.44	Kg
	- D 10 mm	Σ				180.86		180.86	Kg
	- D 8 mm	Σ				12.64		12.64	Kg
C	**Third Floor**								
	Column								
1	PracticeColumn								
	- D 10 mm	Σ x @				3.41	58.00	197.63	Kg
	- D 8 mm	Σ x @				5.18	58.00	300.44	Kg
2	Column K1c								
	- D 19 mm	Σ x @				35.57	4.00	142.27	Kg
	- D 10 mm	Σ x @				20.98	4.00	83.92	Kg
3	Column K2c								
	- D 19 mm	Σ x @				53.35	22.00	1,173.74	Kg
	- D 10 mm	Σ x @				20.98	22.00	461.56	Kg
4	Column K3c								
	- D 13 mm	Σ x @				14.98	5.00	74.90	Kg
	- D 12 mm	Σ x @				7.09	5.00	35.44	Kg
	- D 10 mm	Σ x @				11.11	5.00	55.53	Kg
5	Column K4c								
	- D 19 mm	Σ x @				71.14	2.00	142.27	Kg
	- D 10 mm	Σ x @				20.98	2.00	41.96	Kg
6	Column K5c								
	- D 19 mm	Σ x @				71.14	18.00	1,280.45	Kg
	- D 10 mm	Σ x @				20.98	18.00	377.64	Kg
7	Column K6c								
	- D 19 mm	Σ x @				106.70	8.00	853.60	Kg
	- D 10 mm	Σ x @				20.98	8.00	167.82	Kg
	Beam								
8	Lintel Beam Type								
	- D 12 mm	Σ				233.20		233.20	Kg
	- D 8 mm	Σ				122.17		122.17	Kg
9	Fin Beam 12/20								
	- D 12 mm	Σ				850.56		850.56	Kg
	- D 8 mm	Σ				81.44		81.44	Kg
10	Beam B2								
	- D 16 mm	Σ				2,264.43		2,264.43	Kg
	- D 12 mm	Σ				363.26		203.78	Kg
	- D 10 mm	Σ				222.53		222.53	Kg
11	Beam B3								
	- D 16 mm	Σ				710.10		710.10	Kg
	- D 12 mm	Σ				88.60		88.60	Kg
	- D 10 mm	Σ				246.80		246.80	Kg
12	Beam B4								
	- D 16 mm	Σ				538.10		1,093.55	Kg
	- D 12 mm	Σ				54.93		198.83	Kg
	- D 10 mm	Σ				153.02		153.02	Kg
13	Beam Ba								
	- D 13 mm	Σ				276.64		276.64	Kg
	- D 10 mm	Σ				117.23		117.23	Kg
	Plat								
14	DAK +12.00 S1 t=12 K-300 (Wiremesh M-10)								
	- Wiremesh M.10	Σ				59.00		59.00	Sheet
15	Ring balk								
	- D 12 mm	Σ				411.10		411.10	Kg
	- D 8 mm	Σ				214.71		214.71	Kg
	Roof Elevation								
16	Column K2c								
	- D 19 mm	Σ				16.01		16.01	Kg
	- D 10 mm	Σ				6.30		6.30	Kg
17	Column K3c								
	- D 13 mm	Σ				4.99		4.99	Kg
	- D 12 mm	Σ				2.13		2.13	Kg
	- D 10 mm	Σ				3.33		3.33	Kg
18	Column K5c								
	- D 19 mm	Σ				26.68		26.68	Kg
	- D 10 mm	Σ				6.30		6.30	Kg
19	Column K6c								
	- D 19 mm	Σ				32.01		32.01	Kg
	- D 10 mm	Σ				6.30		6.30	Kg
20	Beam B5								
	- D 13 mm	Σ				711.36		711.36	Kg
	- D 10 mm	Σ				685.80		685.80	Kg
21	Beam Ba								
	- D 13 mm	Σ				975.52		975.52	Kg
	- D 10 mm	Σ				413.39		413.39	Kg
22	Beam B1								
	- D 16 mm	Σ				528.63		528.63	Kg
	- D 12 mm	Σ				118.72		118.72	Kg
	- D 10 mm	Σ				268.70		268.70	Kg
23	DAK +14.50 S1 t=12 K-300 (Wiremesh M-10)								
	- Wiremesh M.10	Σ				59.00		59.00	Sheet
V	**Wall,Brick And Plastering Work**								
a	**First Floor**								
1	1/2 Brick 1:5	L x H	259.68		4.00			1,038.72	m^2
2	Wall Plastering 1:5	L x H	519.36		4.00			2,077.44	m^2
3	Acian Brick Wall	L x H	519.36		4.00			2,077.44	m^2
4	Acian Column	L x H	30.78		4.00			123.12	m^2
5	Acian Beam	L x H	31.33		0.30			9.40	m^2
6	Pairs of natural Stone Bintik Bakar 40x65	L x H x @	0.40		0.65		121.23	31.52	m^2
7	Pair of natural Stone Andesit Alur	L x H x @	0.15		0.30		334.00	15.03	m^2
8	Plastering Ban 8cm	L	18.30					18.30	m
9	Frame sponing	L x H	33.26		1.20			39.92	m^2
10	Glass block	Σ				168.00		168.00	unit
11	Plestering for Covering Coral Stone	L	96.00					96.00	m
12	Gravel 1/2 ,t20 cm	L	91.70					91.70	m
13	Plastering for Retaining Wall	Σ						5.32	m^2
14	1/2 Brick for Thickening Natural Stone	L x H	9.34		4.00			37.37	m^2
b	**Second Floor**								
1	1/2 Brick 1:5	L x H	246.00		4.00			984.00	m^2
2	Wall Plastering 1:5	L x H	492.00		4.00			1,968.00	m^2
3	Acian Brick Wall	L x H	492.00		4.00			1,968.00	m^2
4	Acian Column	L x H	30.78		4.00			123.12	m^2
5	Acian Beam	L x H	31.33		0.30			9.40	m^2
6	Pair of natural Stone Andesit Alur	L x H x @	0.15		0.30		320.00	14.40	m^2
7	Frame sponing	L x H	33.26		1.20			39.92	m^2
8	Glass block	Σ				168.00		168.00	unit
c	**Third Foor**								
1	1/2 Brick 1:5	L x H	259.68		4.00			1,038.72	m^2
2	Wall Plastering 1:5	L x H	519.36		4.00			2,077.44	m^2
3	Acian Brick Wall	L x H	519.36		4.00			2,077.44	m^2
4	Acian Column	L x H	30.78		4.00			123.12	m^2
5	Acian Beam	L x H	31.33		0.30			9.40	m^2
6	Acian List Plank concrete	L x H	285.60		0.30			85.68	m^2
7	Pair of natural Stone (Andesit Alur)	L x H x @	0.15		0.30		320.00	14.40	m^2
8	Frame sponing	L x H	33.26		1.20			39.92	
9	Glass block	Σ				168.00		168.00	unit
	Roof Elevation/ DAK Floor								
10	1/2 Brick 1:5	L x H	190.38		1.20			228.46	m^2
11	Wall Plastering 1:5	L x H	190.38		1.20			228.46	m^2
12	Acian Brick Wall	L x H	190.38		1.20			228.46	m^2
13	Acian Column	L x H	7.75		1.20			9.30	m^2
14	Acian List Plank Concrete	L x H	45.70		0.30			13.71	m^2
15	Screen DAK	L x H	3812.50		0.10			381.25	m^2
16	Glass block	Σ				24.00		24.00	unit
VI	**Roof Work**								
1	Light Truss G550	L x H / Cos 30	17.55			27.00		547.15	m^2
	- Main Truss Z08,C08,W08 t.0,8 mm								
	- Reng & racing B05 t.0,5 mm								
	- Anti rust coating								
2	Metal roof cover	L x H / Cos 30	17.55			27.00		547.15	m^2
3	Metal Nok Roof	L				64.26		64.26	m^2
4	Listplank Wood Plank	L				92.62		92.62	m^2
5	Drop off roof	L x H	5.40		5.60			30.24	m^2
VII	**Plafond**								
a	**First Floor**								
1	Framework Hollo Galvanis 4/4 (Grid 60x60)	L x W	20.70	29.30				606.51	m^2
2	Plafond Gypsum cover 9mm (room)	L x W	21.60	26.30				568.08	m^2
3	Plafond GRC cover 4mm (km/wc)	L x W	19.30	2.00				38.60	m^2
4	List Plafond Profil Gypsum-7	L	512.60					512.60	m
b	**Second Floor**								
1	Framework Hollo Galvanis 4/4 (Grid 60x60)	L x W	20.70	29.30				606.51	m^2
2	Plafond Gypsum cover 9mm (room)	L x W	21.60	26.30				568.08	m^2
3	Plafond GRC cover 4mm (km/wc)	L x W	19.30	2.00				38.60	m^2
4	List Plafond Profil Gypsum-7	L	512.60					512.60	m^2
c	**Third Floor**								
1	Framework Hollo Galvanis 4/4 (Grid 60x60)	L x W	20.70	39.60				819.72	m^2
2	Plafond Gypsum cover 9mm (room)	L x W	23.07	26.30				606.74	m^2
3	Plafond GRC cover 4mm (km/wc)	L x W	19.30	2.00				38.60	m^2
4	Plafond GRC cover 4mm (concrete listplank)	L x H	113.41	1.20				136.09	m^2
5	Plafond GRC cover 4mm (roof singn)	Σ						77.50	m^2
6	List Plafond Profil Gypsum-7	L	76.20					76.20	m^2
VII	**Floor Work**								
a	**First Floor**								
1	Floor Room, Granite tile 60x60 Polised	L x W	22.70	14.00				317.80	m^2
2	Hospital Plint 8x30	L	200.00					200.00	m^2
3	Toilet Ceramics 25x25 unpolished	L x W	20.00	2.00				40.00	m^2
4	Wall Ceramics Toilet 25x40 polished t.2 m	L x H	68.00		2.00			136.00	m^2
5	Wall Ceramics Border	L	68.70					68.70	m^2
6	Terrace (Granite 60x60 polished)	L x W	23.50	2.00				47.00	m^2
7	Corridor Floor(Granite 60x60 polished)	L x W	4.70	9.43				44.32	m^2
8	Hall Floor (Granite 60x60 polished)	L x W	9.37	8.50				79.65	m^2
9	Stairs Floor (Granite 60x60 polished)	L x W	30.50	1.20				36.60	m^2
10	Stairs Step Nosing (10x60)	L						66.00	m^2
11	Wastafel And Pantry (Granite 60x60 polished)	L x W	4.50	0.87				3.92	m^2
12	Granite Imperial Red (Lift Doors)	L x H	10.00		2.00			20.00	m^2
13	Corridor Border Granite (30x60 motive or colour)	L x H	112.00	0.60				67.20	m^2
14	Granite Motive (120x120)	@					3.00	3.00	unit
15	Waterproofing (KM/WC)	L x H	19.06	2.00				38.12	m^2
b	**Second Floor**								
1	Floor Room, Granite tile 60x60 Polised	L x W	21.24	14.00				297.36	m^2
2	Hospital Plint 8x30	L						200.00	m^2
3	Toilet Ceramics 25x25 unpolished	L x W	20.00	2.00				40.00	m^2
4	Wall Ceramics Toilet 25x40 polished t.2 m	L x H	63.70		2.00			127.40	m^2
5	Wall Ceramics Border	L	64.40					64.40	m^2
6	Terrace (Granite 60x60 polished)	L x W	32.20	2.00				47.05	m^2
7	Corridor Floor (Granite 60x60 polished)	L x W	4.70	9.43				44.32	m^2
8	Hall Floor(Granite 60x60 polished)	L x W	9.37	8.50				79.65	m^2
9	Stairs Floor (Granite 60x60 polished)	L x W	30.50	1.20				36.60	m^2
10	Lift House Floor (Granite 60x60)	L x W	3.50	3.41				11.94	m^2
11	Stairs Step Nosing (10x60)	L	66.00					66.00	m^2
12	Wastafel And Pantry (Granite 60x60 polished)	L x W	4.50	0.87				3.92	m^2
13	Granite Imperial Red (Lift Doors)	L x H	10.00		2.00			20.00	m^2
14	Corridor Border Granite (30x60 motive or colour)	L x H	112.00	0.60				67.20	m^2
15	Granite Motive (120x120)	@					3.00	3.00	unit
16	Waterproofing (KM/WC)	L x H	19.06	2.00				38.12	m^2
IX	**DOOR,FRAME, LEAF DOOR & WINDOW WORK**								
a	**First Floor**								
1	Door Unit (P1) Tempered 12 mm	@						1.00	unit
2	Door Unit (P2) Tempered 12 mm	@						1.00	unit
3	Glass Unit (KT) Tempered 12 mm	@						1.00	unit
4	Door Unit (P3) Alumunium Frame+Leaf door	@						4.00	unit
5	Door Unit (P3.1)Frame+Leaf door Alumunium	@						5.00	unit
6	Door Unit (P4) Frame+Leaf door Alumunium	@						3.00	unit
7	Door Unit (P5)Frame+Leaf door Alumunium (KM/WC)	@						8.00	unit
8	Door Unit (P6)Frame+Leaf door Alumunium (KM/WC)	@						5.00	unit
9	Door Unit (P7)Frame+Leaf door Alumunium	@						1.00	unit
10	Door Unit (P8)Frame Alumunium +Leaf door	@						1.00	unit
11	Door Unit (P 1)Frame +Leaf door +Alumunium leaf window	@						8.00	unit
12	Bovenlight Unit(BV1) Alumunium Frame + Rayben Glass	@						9.00	unit
13	Bovenlight Unit(BV2) Alumunium Frame + Rayben Glass	@						2.00	unit
14	Partisi Unit (PR1) Alumunium Frame + leaf door + Glass	@						1.00	unit
15	Partisi Unit (PR2) Alumunium Frame + leaf door + Glass	@						1.00	unit
16	Partisi Unit (PR3) Alumunium Frame + leaf door + Glass	@						1.00	unit
17	Partisi Unit (PR4) Alumunium Frame + leaf door + Glass	@						1.00	unit
18	Partisi Unit (PR5) Alumunium Frame + leaf door + Glass	@						1.00	unit
19	Curtain wall Unit(J2) Curtain Wall System + Blue Glass	L x W	4.43		5.50			24.37	m^2
20	Curtain wall Unit(J3) Curtain Wall System + Blue Glass elv +	L x H	1.50		8.35			12.53	m^2
21	Curtain wall Unit(J4) Curtain Wall System + Blue Glass elv +	L x H	1.80		5.50			9.90	m^2
22	Alumunium Composit Pannel List Curtain Wall System	L x H	7.84		8.30			65.07	m^2
23	Alumunium Composit Pannel Pilar	L x H	76.7		0.60			46.02	m^2
24	Terrace Ralling Stainless	L	15.40					15.40	m
25	Stairs Ralling Stainless	L	21.00					21.00	m
c	**Third Floof**								
1	Door Unit (P2) Tempered 12 mm	@						1.00	unit
2	Glass Unit (KT) Tempered 12 mm	@						1.00	unit
3	Door Unit (P3) Alumunium Frame+Leaf door	@						4.00	unit
4	Door Unit (P3.1)Frame Alumunium +Leaf door Alumunium	@						5.00	unit
5	Door Unit (P4) Frame+Leaf door Alumunium	@						5.00	unit
6	Door Unit (P5)Frame+Leaf door Alumunium (KM/WC)	@						8.00	unit
7	Door Unit (P6)Frame+Leaf door Alumunium (KM/WC)	@						7.00	unit
8	Door Unit (P7)Frame+Leaf door Alumunium	@						1.00	unit
9	Door Unit (P8)Frame Alumunium +Leaf door	@						1.00	unit
10	Door Unit (P 1)Frame +Leaf door +Alumunium leaf window	@						7.00	unit
11	Bovenlight Unit(BV1) Alumunium Frame + Rayben Glass	@						9.00	unit
12	Bovenlight Unit(BV2) Alumunium Frame + Rayben Glass	@						2.00	unit
13	Partisi Unit (PR1) Alumunium Frame + leaf door + Glass	@						1.00	unit
14	Partisi Unit (PR2) Alumunium Frame + leaf door + Glass	@						1.00	unit
15	Partisi Unit (PR3) Alumunium Frame + leaf door + Glass	@						1.00	unit
16	Partisi Unit (PR4) Alumunium Frame + leaf door + Glass	@						1.00	unit
17	Partisi Unit (PR5) Alumunium Frame + leaf door + Glass	@						1.00	unit
18	Terrace Ralling Stainless	L	15.40					15.40	m^2
19	Sfety Ralling roof stainless	L	26.00					26.00	m^2
X	**PIPE INSTALLATION**								
a	**First Floor**								
	Clean Water Installation								
1	PVC AW 1 1/2"	L	60.00					60.00	m^2
2	devide pipe PVC AW 1"	L	62.00					62.00	m^2
3	Outlet pipe PVC AW 1/2 "	L	130.00					130.00	m^2
4	Connector pipe for Clean Water	Σ					1.00	1.00	Ls
5	Clean water Installation pipe from source to pump PVC 3"	L	70.00					70.00	m^2
6	Clean water Installation pipe from pump to torn PVC 1 1/2"	L	20.00					20.00	m^2
7	Jet Pump 750 Watt	@						1.00	unit
8	Water Heater pipe (Wavin tigris green)	L	252.00					252.00	m^2
	Grey Water Installation								
1	Grey Water pipe for Closed PVC AW 4"	L	130.00					130.00	m^2
2	Grey Water pipe for Floor Drain PVC AW 3"	L	60.00					60.00	m^2
3	Grey Water pipe for Washtafel PVC AW 2"	L	50.00					50.00	m^2
4	Connector pipe for Clean Water	Σ	1.00					1.00	Ls
5	Waste pipe Installation PVC AW 8"	L	55.00					55.00	m^2
6	Septictank (150x150x200)	@						2.00	unit
7	Control Tub (80x80x120)	@						8.00	unit
	Meidic Gas Installation								
1	Sparing Meidic Gas Installation pipe PVC AW 3/4"	L	28.00					28.00	m^2
b	**Second Floor**								
	Clean Water Installation								
1	PVC AW 1 1/2"	L	52.00					52.00	m^2
2	devide pipe PVC AW 1"	L	56.00					56.00	m^2
3	Outlet pipe PVC AW 1/2 "	L	120.00					120.00	m^2
4	Connector pipe for Clean Water	Σ					1.00	1.00	Ls
5	Water Heater pipe (Wavin tigris green)	L	228.00					228.00	m^2
	Grey Water Installation								
1	Grey Water pipe for Closed PVC AW 4"	L	170.00					170.00	m^2
2	Grey Water pipe for Floor Drain PVC AW 3"	L	100.00					100.00	m^2
3	Grey Water pipe for Washtafel PVC AW 2"	L	90.00					90.00	m^2
4	Connector pipe for grey Water	Σ					1.00	1.00	Ls
	Meidic Gas Installation								
1	Sparing Meidic Gas Installation pipe PVC AW 3/4"	L	28.00					28.00	m^2
c	**Thirld Floor**								
	Clean Water Installation								
1	PVC AW 1 1/2"	L	45.00					45.00	m^2
2	devide pipe PVC AW 1"	L	56.00					56.00	m^2
3	Outlet pipe PVC AW 1/2 "	L	120.00					120.00	m^2
4	Connector pipe for Clean Water	Σ					1.00	1.00	Ls
5	Water Heater pipe (Wavin tigris green)	L	221.00					221.00	m^2
6	Torn 2000 L	@						3.00	unit
7	Automatic Bouy	@						3.00	unit
8	Pressure pump 175 W	@						3.00	unit
9	Torn Holder	@						3.00	unit
	Grey Water Installation								
1	Grey Water pipe for Closed PVC AW 4"	L	200.00					200.00	m^2
2	Grey Water pipe for Floor Drain PVC AW 3"	L	130.00					130.00	m^2
3	Grey Water pipe for Washtafel PVC AW 2"	L	120.00					120.00	m^2
4	Rain Gutter PVC AW 3"	L	192.00					192.00	m^2
5	Connector pipe for grey Water	Σ					1.00	1.00	Ls
	Meidic Gas Installation								
1	Sparing Meidic Gas Installation pipe PVC AW 3/4"	L	28.00					28.00	m
XI	**Sanitary Work**								

a	**First Floor**								
1	Toilet Seat Toto	@					11.00	unit	
2	Jet Washer Toto	@					11.00	unit	
3	Washtafel + Accessoris	@					10.00	unit	
4	Mirror 6 mm + Wahtafel 40x60	@					10.00	unit	
5	Kitchenzinc tub stainless	@					1.00	unit	
6	Shower Head Toto	@					9.00	unit	
7	Tap Water Hot and cool	@					9.00	unit	
8	Tap Water 1/2"	@					2.00	unit	
9	Spoelhook/Sloof Sink Toto	@					1.00	unit	
10	Floor Drain Installation Work	@					11.00	unit	
b	**Second Floor**								
1	Toilet Seat Toto	@					10.00	unit	
2	Jet Washer Toto	@					10.00	unit	
3	Washtafel + Accessoris	@					10.00	unit	
4	Mirror 6 mm + Wahtafel 40x60	@					10.00	unit	
5	Kitchenzinc tub stainless	@					1.00	unit	
6	Shower Head Toto	@					9.00	unit	
7	Tap Water Hot and cool	@					9.00	unit	
8	Tap Water 1/2"	@					1.00	unit	
9	Spoelhook/Sloof Sink Toto	@					1.00	unit	
10	Floor Drain Installation Work	@					10.00	unit	
11	Balkon Floor Drain Terrace Installation Work	@					8.00	unit	
c	**Third Floor**								
1	Toilet Seat Toto	@					10.00	unit	
2	Jet Washer Toto	@					10.00	unit	
3	Washtafel + Accessoris	@					10.00	unit	
4	Mirror 6 mm + Wahtafel 40x60	@					10.00	unit	
5	Kitchenzinc tub stainless	@					1.00	unit	
6	Shower Head Toto	@					9.00	unit	
7	Tap Water Hot and cool	@					9.00	unit	
8	Tap Water 1/2"	@					1.00	unit	
9	Spoelhook/Sloof Sink Toto	@					1.00	unit	
10	Floor Drain Installation Work	@					10.00	unit	
11	Balkon Floor Drain Terrace Installation Work	@					8.00	unit	
12	Roof Drain Dak Installation Work	@					17.00	unit	
XII	**Electrical Work**								
a	**First Floor**								
1	Lighting installation work	@					93.00	point	
2	Contact box installation work	@					61.00	point	
3	LED Panel SPL 30x30 12 W	@					15.00	unit	
4	LED Panel Grilled Louver 60x60 30 W	@					9.00	unit	
5	Down Light LED Lamp 3" 6W	@					55.00	unit	
6	Down Light LED Lamp 3" 3W	@					14.00	unit	
7	Hotel Switch Installattion work	@					2.00	unit	
8	Philips double Switch	@					27.00	unit	
9	Philips single Switch	@					5.00	unit	
10	Philips electric socket	@					40.00	unit	
11	Philips electric socket TV	@					8.00	unit	
12	Philips electric socket AC	@					13.00	unit	
13	Tray Cable work 20x50 cm	L	52.00				52.00	m'	
14	Grounding System Max 2 Ohm + Box Control	@					1.00	point	
15	Installation Cable from LP-LT.1 ke LP-LT 2NYY 4x10 mm2	L	3.00				3.00	m'	
16	Installation Panel								
a1	**PP-Lt.1 /LP -Lt.1**								
	- Panel Box (800x600x250)	@					1.00	unit	
	- Busbar + Wiring material	@					1.00	lot	
	Input								
	- MCCB 3P/25 KA 30 A	@					1.00	unit	
	- MCCB 3P/25 KA 20 A	@					1.00	unit	
	- MCCB 3P/25 KA 32 A (Backup)	@					1.00	unit	
	- Pilot Lamp Tlmq+MCB 1P 2A	@					3.00	unit	
	Output								
	- MCB 1P 6A	@					12.00	unit	
	- MCB 1P 14A	@					10.00	unit	
	- MCB 3P 6A (Backup)	@					3.00	unit	
	- Devide Cable in Tray (NYA Cable 3x3.25 mm2)	L	360.00				360.00	m'	
b1	**SDP**								
	- Panel Box (800x600x250)	@					1.00	unit	
	- NYFGBY 4x50 mm	L	30.00				30.00	m'	
	- BC Cable 16 mm2	L	30.00				30.00	m'	
	Busbar + Wiring material	@					1.00	Lot	
	- Busbar Grusounding								
	- NYA 6 mm2								
	- NYY 4x10 mm2								
	Input								
	- MCCB 3P/40 KA / 50 A	@					1.00	unit	
	- Pilot Lamp Tlmq+MCB 1P 2A	@					3.00	set	
	Output								
	- MCCB 3P/25 KA 30 A	@					3.00	unit	
	- MCCB 3P/25 KA 32 A (Backup)	@					3.00	unit	
17	Terminal Box	@					1.00	unit	
18	Ceilling Speaker 3 W	@					12.00	unit	
19	Ceilling Installation Speaker	@					12.00	unit	
20	Testing and Comissioning Sytem	Σ				1.00	1.00	Ls	
b	**Second Floor**								
1	Lighting installation work	@				92.00	92.00	point	
2	Contact box installation work	@				61.00	61.00	point	
3	LED Panel SPL 30x30 12 W	@					13.00	unit	
4	LED Panel Grilled Louver 60x60 30 W	@					9.00	unit	
5	Down Light LED Lamp 3" 6W	@					55.00	unit	
6	Down Light LED Lamp 3" 3W	@					13.00	unit	
7	T LED Lamp Philips 2x18 W	@					2.00	unit	
8	Hotel Switch Installattion work	@					2.00	unit	
9	Philips double Switch	@					27.00	unit	
10	Philips single Switch	@					4.00	unit	
11	Philips electric socket	@					40.00	unit	
12	Philips electric socket TV	@					8.00	unit	
13	Philips electric socket AC	@					13.00	unit	
14	Tray Cable work 20x50 cm	L	52.00				52.00	m'	
15	Installation Cable from LP-LT.1 ke LP-LT 2NYY 4x10 mm2	L	3.00				3.00	m'	
16	Installation Panel								
a1	**PP-Lt.2 /LP -Lt.2**								
	- Panel Box (800x600x250)	@					1.00	unit	
	- Busbar + Wiring material	@					1.00	lot	
	Input								
	- MCCB 3P/25 KA 30 A	@					1.00	unit	
	- MCCB 3P/25 KA 20 A	@					1.00	unit	
	- MCCB 3P/25 KA 32 A (Backup)	@					1.00	unit	
	- Pilot Lamp Tlmq+MCB 1P 2A	@					3.00	set	
	Output								
	- MCB 1P 6A	@					12.00	unit	
	- MCB 1P 14A	@					10.00	unit	
	- MCB 3P 6A (Backup)	@					3.00	unit	
	- Devide Cable in Tray (NYA Cable 3x3.25 mm2)	L	360.00				360.00	m'	
17	Terminal Box	@					1.00	unit	
18	Ceilling Speaker 3 W	@					12.00	unit	
19	Ceilling Installation Speaker	@				12.00	12.00	point	
20	Testing and Comissioning Sytem	Σ				1.00	1.00	Ls	
c	**Third Floor**								
1	Lighting installation work	@				96.00	96.00	point	
2	Contact box installation work	@				64.00	64.00	point	
3	LED Panel SPL 30x30 12 W	@					13.00	unit	
4	LED Panel Grilled Louver 60x60 30 W	@					9.00	unit	
5	Down Light LED Lamp 3" 6W	@					58.00	unit	
6	Down Light LED Lamp 3" 3W	@					13.00	unit	
7	T LED Lamp Philips 2x18 W	@					3.00	unit	
8	Hotel Switch work	@					2.00	unit	
9	Philips double Switch	@					29.00	unit	
10	Philips single Switch	@					4.00	unit	
11	Philips electric socket	@					43.00	unit	
12	Philips electric socket TV	@					8.00	unit	
13	Philips electric socket AC	@					13.00	unit	
14	Tray Cable work 20x50 cm	L	52.00				52.00	m'	
15	Installation Cable from LP-LT.1 ke LP-LT 2NYY 4x10 mm2	L	3.00				3.00	m'	
16	Installation Panel								
*	**PP-Lt.3 /LP -Lt.3**								
	- Panel Box (800x600x250)	@					1.00	unit	
	- Busbar + Wiring material	@					1.00	lot	
	Input								
	- MCCB 3P/25 KA 30 A	@					1.00	unit	
	- MCCB 3P/25 KA 20 A	@					1.00	unit	
	- MCCB 3P/25 KA 32 A (Backup)	@					1.00	unit	
	- Pilot Lamp Tlmq+MCB 1P 2A	@					3.00	unit	
	Output								
	- MCB 1P 6A	@					12.00	unit	
	- MCB 1P 14A	@					10.00	unit	
	- MCB 3P 6A (Backup)	@					3.00	unit	
	- Devide Cable in Tray (NYA Cable 3x3.25 mm2)	L	360.00				360.00	m'	
17	Lightning rod								
	- BC Cable 50 mm2	L					72.00	m'	
	- Rod Protection	@					3.00	unit	
	- Installation and accessories	@				3.00	3.00	point	
18	Terminal Box	@					1.00	unit	
19	Ceiling Speaker 3 W	@					12.00	unit	
20	Ceiling Installation Speaker	@				12.00	12.00	point	
21	Testing and Comissioning Sytem	Σ				1.00	1.00	Ls	
XIII	**Painting Work**								
a	**First Floor**								
1	Plafond paint , 3x Catilac Paint	L x W	20.70	29.30			606.51	m^2	
2	Out Door Wall Painting, 3x ICI Wheater Shield	L x H	125.97		4.00		503.88	m^2	
3	In Door Wall Painting, 3X Washable ,Catilac	L x H	279.61		4.00		1,118.44	m^2	
4	Column and beam painting 3x, Washable ICI Wheather shield	L x H	488.71		0.45		219.92	m^2	
5	Coating Nature Rock	L x H	11.64		4.00		46.56	m^2	
b	**Second Floor**								
1	Plafond paint , 3x Catilac Paint	L x W	20.70	29.30			606.51	m^2	
2	Out Door Wall Painting, 3x ICI Wheater Shield	L x H	125.97		4.00		503.88	m^2	
3	In Door Wall Painting, 3X Washable ,Catilac	L x H	209.68		4.00		838.72	m^2	
4	Column and beam painting 3x, Washable ICI Wheather shield	L x H	488.71		0.45		219.92	m^2	
5	Coating Nature Rock	L x H	3.60		4.00		14.40	m^2	

c	**Third Floor**								
1	Plafond paint , 3x Catilac Paint	L x W	20.70	29.30			606.70	m^2	
2	Out Door Wall Painting, 3x ICI Wheater Shield	L x H	125.97		4.00		503.88	m^2	
3	In Door Wall Painting, 3X Washable ,Catilac	L x H	279.61		4.00		1,139.00	m^2	
4	Column and beam painting 3x, Washable ICI Wheather shield	L x H	488.71		0.45		219.92	m^2	
5	Coating Nature Rock	L x H	3.60		4.00		14.40	m^2	
6	Plafond painting , 3x Catilac Paint (sign roof)	L x W	20.70	12.17			252.20	m^2	
7	Out Door Wall Painting, 3x ICI Wheater Shield (roof)	L x H	557.11		4.00		228.46	m^2	
8	Concrete listplank 3x ICI Wheater Shield	L x H	279.05		0.40		111.62	m^2	
9	Concrete dak Aquaproof	L x W	113.50	2.98			338.63	m^2	
XIV	**Non Standartd Work**								
I	**Air Conditioning**								
a	**First Floor**								
1	Drain pipe AC 5/8" pvc s/d gravel	L	36.00				36.00	m'	
2	Ceiling Exhause Fan 30x30	@					11.00	unit	
3	Switch Exhause Fan	@				11.00	11.00	point	
4	Exhause air PVC-AW pipe 4"	L	33.00				33.00	m'	
b	**Second Floor**								
1	Drain pipe AC 5/8" pvc s/d gravel	L	36.00				36.00	m'	
2	Ceiling Exhause Fan 30x30	@					11.00	unit	
3	Switch Exhause Fan	@				11.00	11.00	point	
4	Exhause air PVC-AW pipe 4"	L	33.00				33.00	m'	
c	**Third Floor**								
1	Drain pipe AC 5/8" pvc s/d gravel	L	36.00				36.00	m'	
2	Ceiling Exhause Fan 30x30	@					11.00	unit	
3	Switch Exhause Fan	@				11.00	11.00	point	
4	Exhause air PVC-AW pipe 4"	L	33.00				33.00	m'	
II	**Nurse Call System**								
a	**First Floor**								
1	Central Nurse call wiring Installastion Type JNS-12 COMMAX	@					1.00	unit	
2	Substation wiring Istallation on bed	@					8.00	unit	
3	Push on Toilet wiring Istallation	@					8.00	unit	
b	**Second Floor**								
1	Central Nurse call wiring Installastion Type JNS-12 COMMAX	@					1.00	unit	
2	Substation wiring Istallation on bed	@					8.00	unit	
3	Push on Toilet wiring Istallation	@					8.00	unit	
c	**Third Floor**								
1	Central Nurse call wiring Installastion Type JNS-12 COMMAX	@					1.00	unit	
2	Substation wiring Istallation on bed	@					8.00	unit	
3	Push on Toilet wiring Istallation	@					8.00	unit	
III	**MATV**								
a	**First Floor**								
1	Brach Spliter	@					9.00	unit	
2	C5 Wiring Istallation	@				9.00	9.00	point	
3	TV Outlet	@					9.00	unit	
b	**Second Floor**								
1	Brach Spliter	@					9.00	unit	
2	C5 Wiring Istallation	@				9.00	9.00	point	
3	TV Outlet	@					9.00	unit	
c	**Third Floor**								
1	Brach Spliter	@					9.00	unit	
2	C5 Wiring Istallation	@				9.00	9.00	point	
3	TV Outlet	@					9.00	unit	
IV	**Alarm Fire System**								
a	**First Floor**								
1	Steel Pipe Installation 2.5 " + Accessories	L	100.00				100.00	m'	
2	Hydrant Valve	@					1.00	unit	
3	Push Button FE	@					1.00	unit	
4	Alarm Bell	@					1.00	unit	
5	Alarn Control	@					1.00	unit	
6	Sprinkler	@					18.00	unit	
7	FHC (Hydrant Box) 125 x 75 cm	@					1.00	unit	
b	**Second Floor**								
1	Steel Pipe Installation 2.5 " + Accessories	L	100.00				100.00	m'	
2	Hydrant Valve	@					1.00	unit	
3	Push Button FE	@					1.00	unit	
4	Alarm Bell	@					1.00	unit	
5	Alarn Control	@					1.00	unit	
6	Sprinkler	@					18.00	unit	
7	FHC (Hydrant Box) 125 x 75 cm	@					1.00	unit	
c	**Third Floor**								
1	Steel Pipe Installation 2.5 " + Accessories	L	100.00				100.00	m'	
2	Hydrant Valve	@					1.00	unit	
3	Push Button FE	@					1.00	unit	
4	Alarm Bell	@					1.00	unit	
5	Alarn Control	@					1.00	unit	
6	Sprinkler	@					18.00	unit	
7	FHC (Hydrant Box) 125 x 75 cm	@					1.00	unit	
V	**Lift Procurement**								
1	Installation and Procurement based on factory standard	Σ				1.00	1.00	Ls	
	- Elevator type VGB-24(1600)-2S60-3/3								
	- Finishing Stainless steel Hairline								
	- Stop Opening : 3/3								
2	Accessories ARD	Σ				1.00	1.00	Ls	
3	Elevator Cost Installation	Σ				1.00	1.00	Ls	

Table 5. *Bar Chart Volume Of Structure*

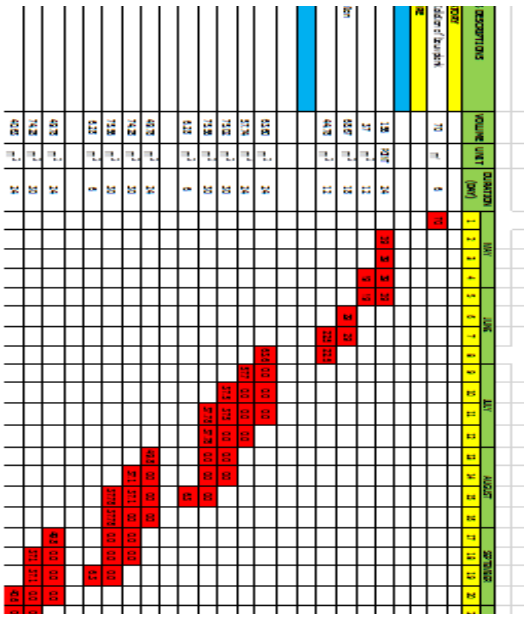


Table 6. *Bar Chart Volume Of Architecture*

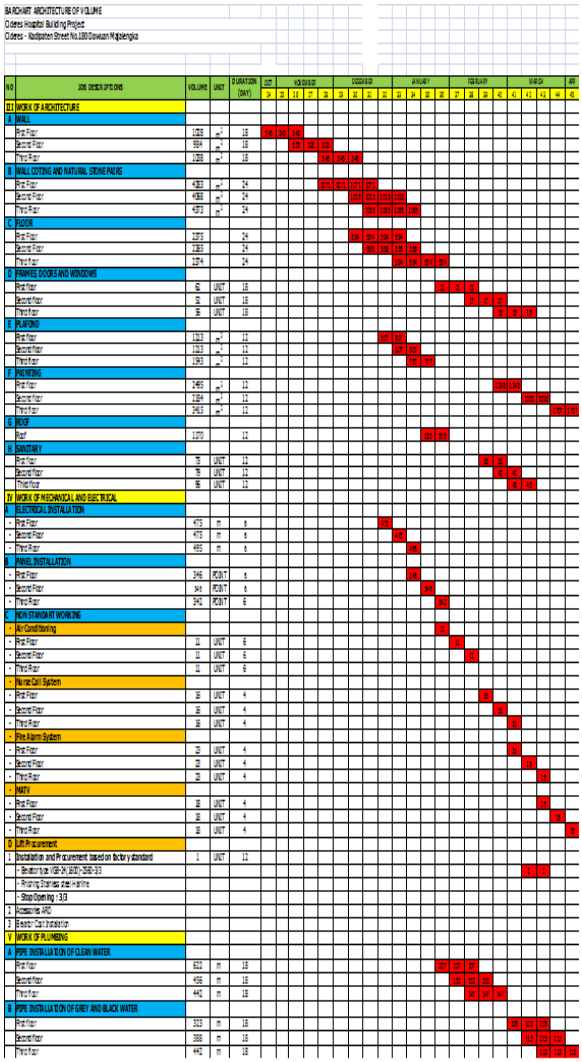


Table 7. *Bar Chart Labor Needs of Structure*

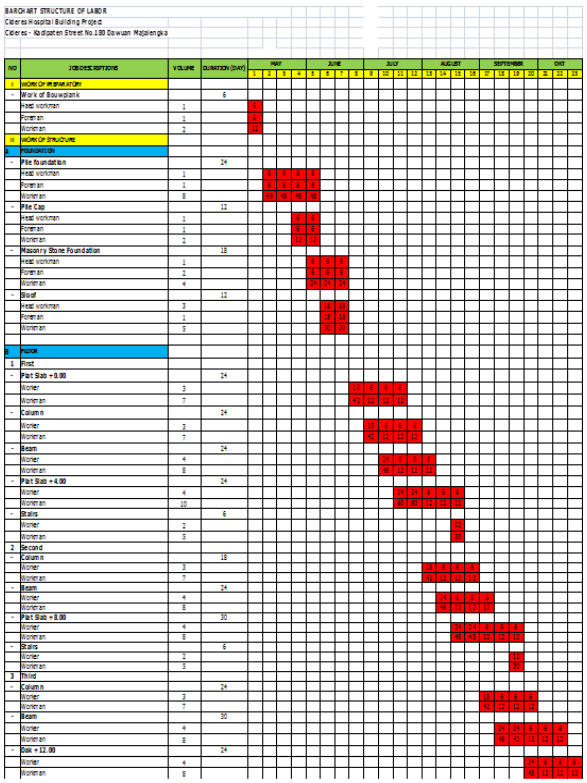
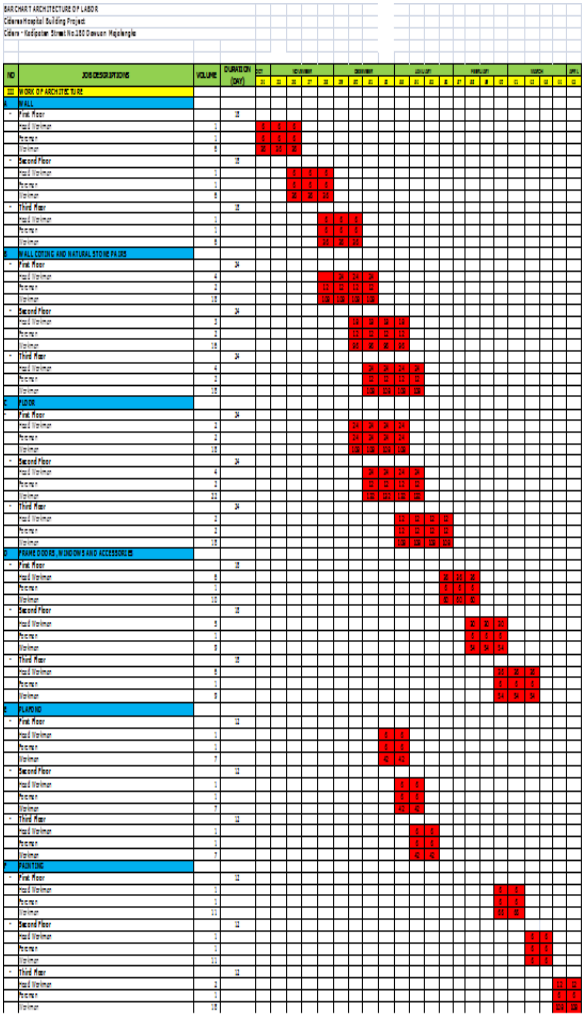
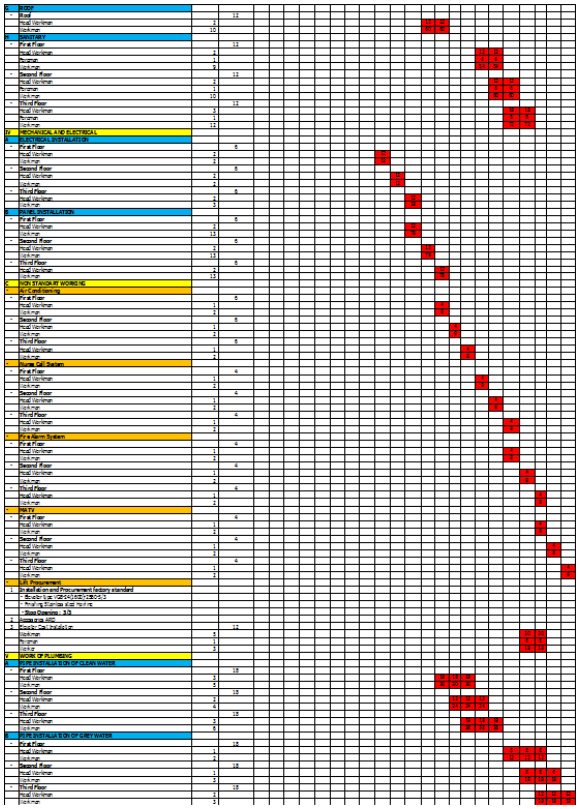


Table 8. *Bar Chart Labor Needs of Architecture*





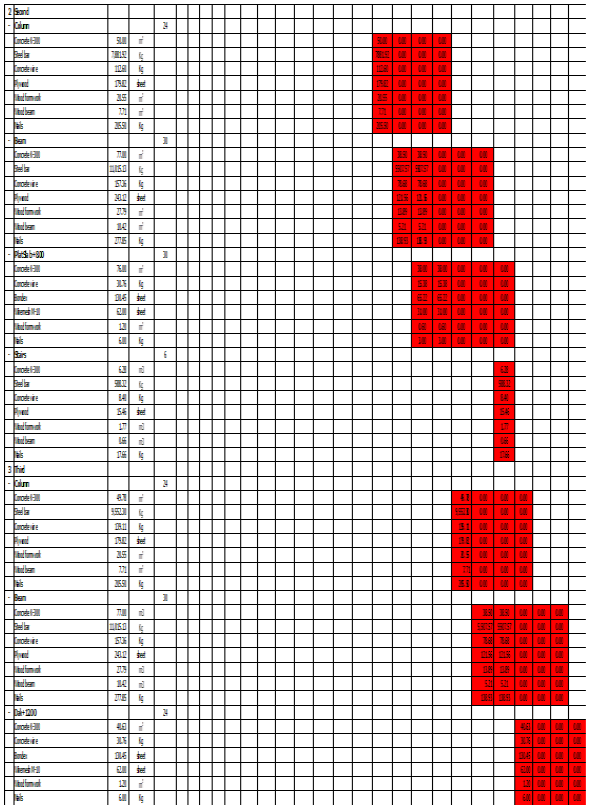


Table 9. *Bar Chart Material Needs of Structure*

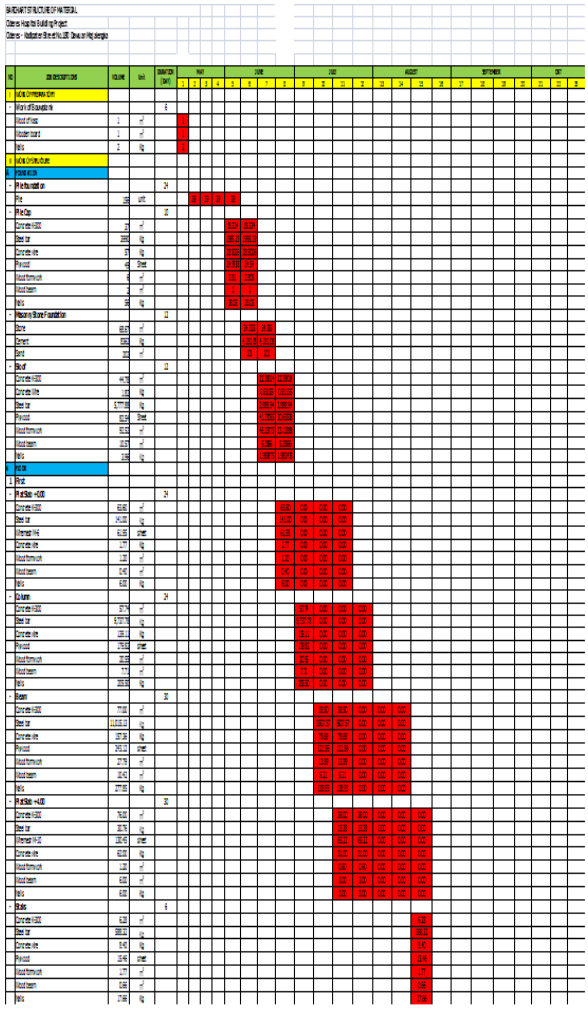
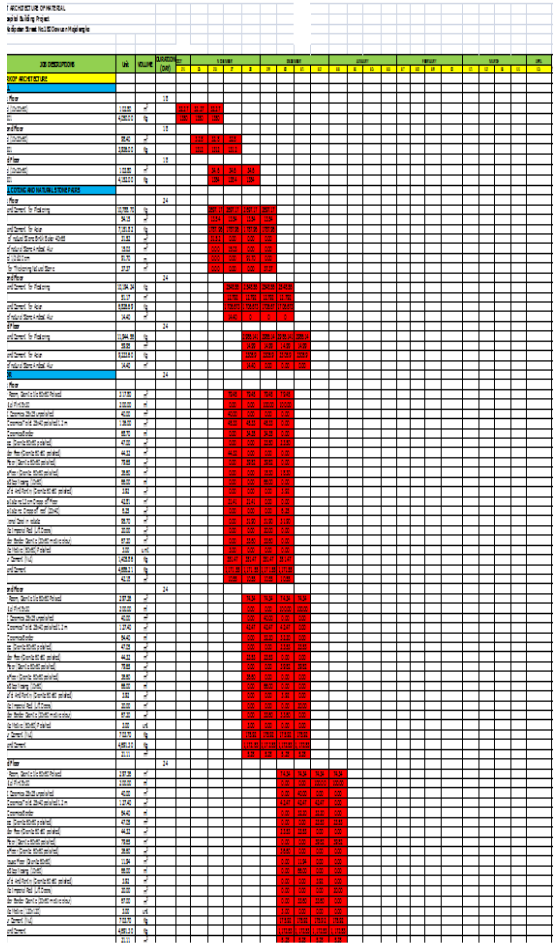
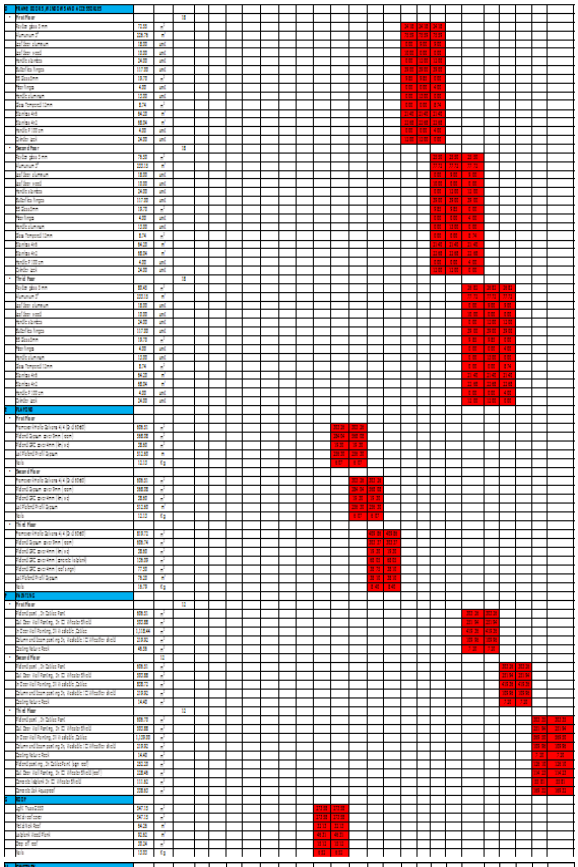
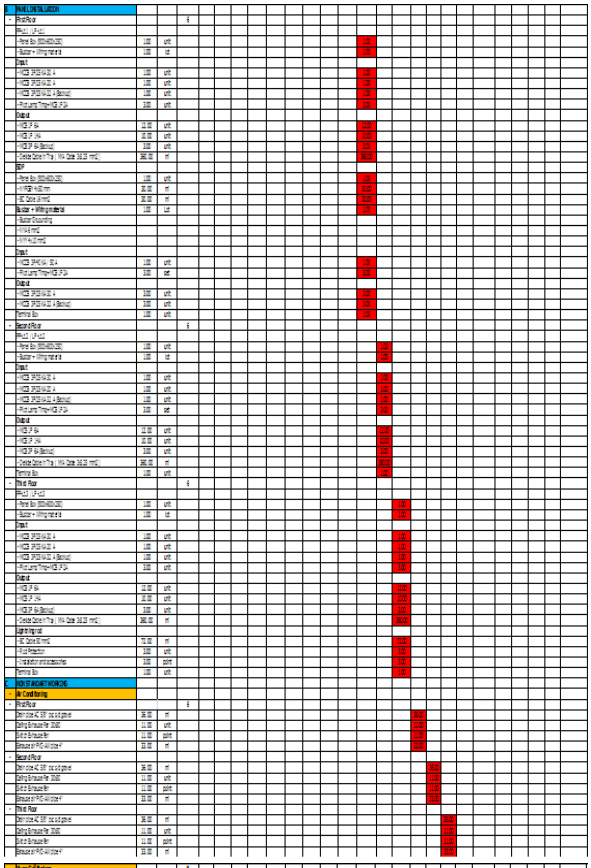
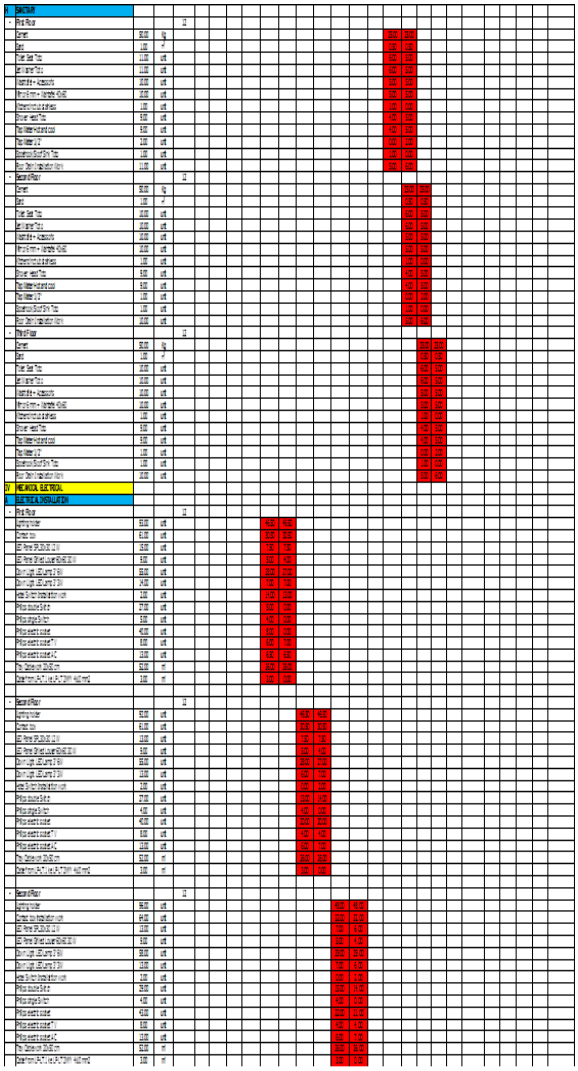


Table 10. *Bar Chart Material Needs of Architecture*









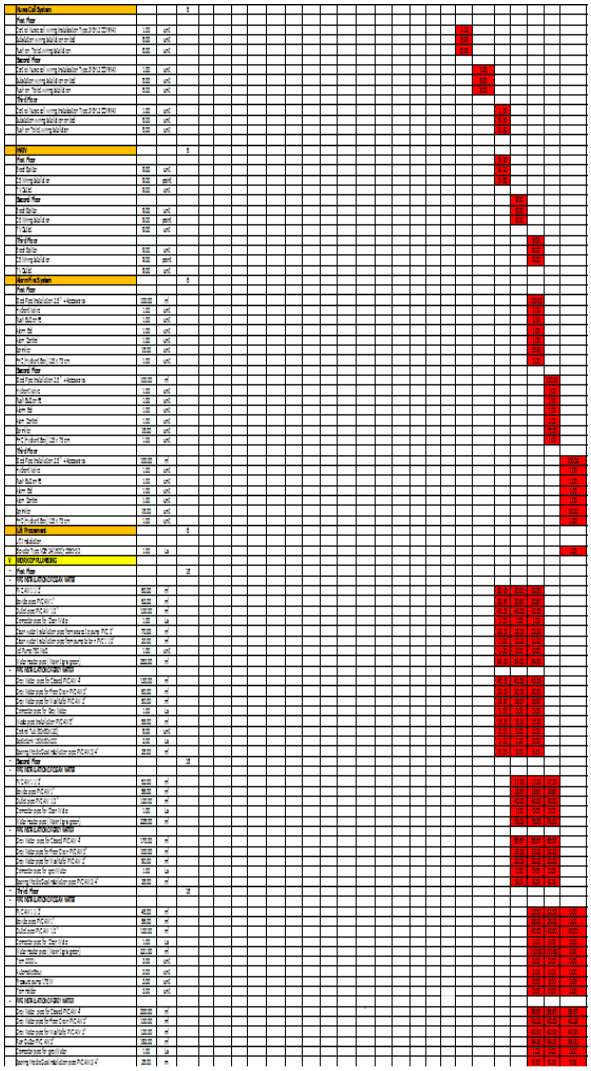
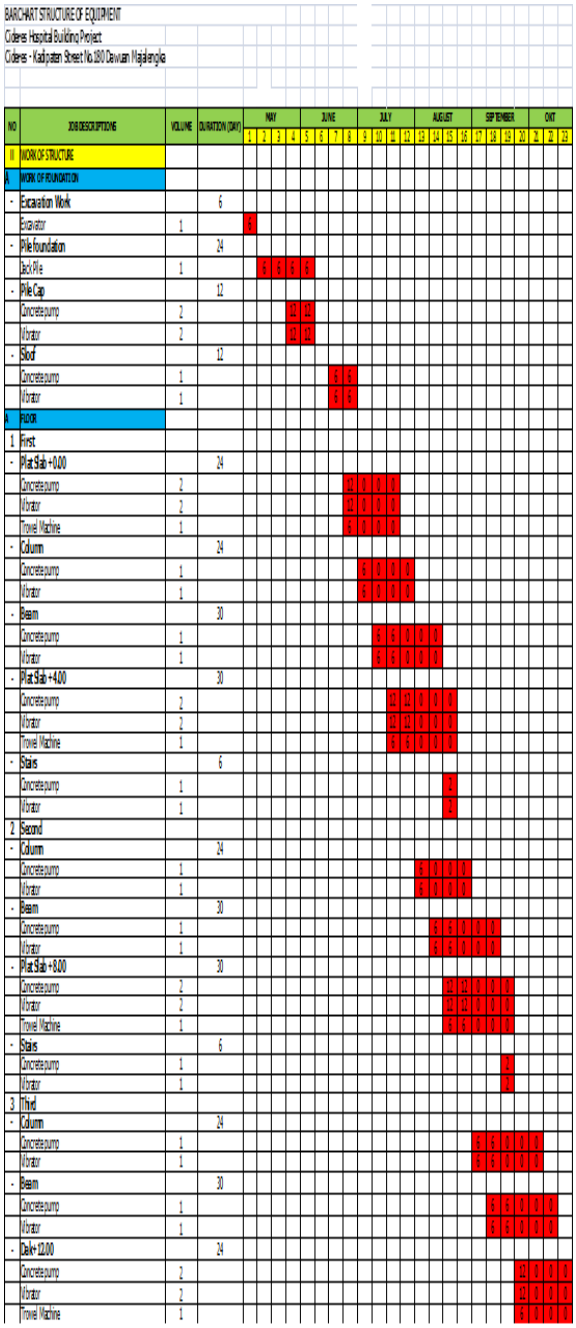


Table 11. *Bar Chart Equipment Needs*



D. PLANNING TIME AND COST

In determining the activities to be carried out to complete the construction project of Cideres Hospital to pay attention to the factors that usually influence the project implementation.

1. **Draw up of cost budget plan**
2. **Draw up of project scheduling**

a. Analysis of bar chartAndAnalysis of S curve. Based on the planning and calculation results the if using the analysis with method is as follows.

b. Analysis of CPM

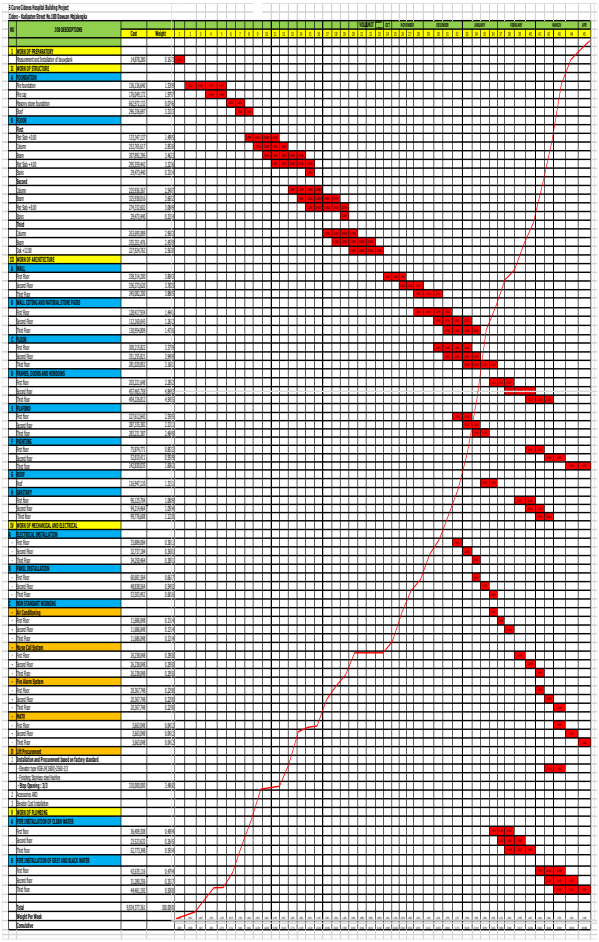
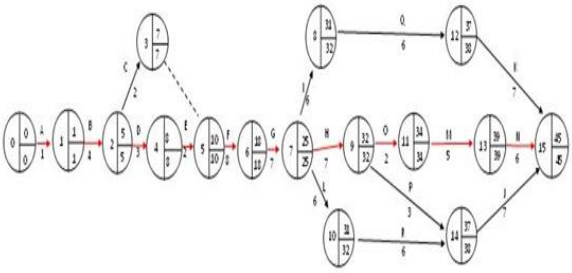


Table 12. *Data of CPM*

NO.	ITEM OF WORK	DURATION	CODE OF ACTIVITY	PREVIOUS ACTIVITIES
I	**WORK OF PREPARATORY**	1	A	-
II	**WORK OF STRUCTURE**			
A	**FOUNDATION**			
-	Pile foundation	4	B	A
-	Pile cap	2	C	B
-	Masonry stone foundation	3	D	B
-	Sloof	2	E	D
B	**FLOOR**			
-	First floor	8	F	E
-	Second floor	7	G	F
-	Third floor	7	H	G
III	**WORK OF ARCHITECTURE & MEP**			
A	WALL	6	I	G
B	WALL COTING AND NATURAL STONE PAIRS	7	J	P,R
C	FLOOR	7	K	Q
D	FRAMES, DOORS AND WINDOWS	6	L	G
E	PLAFOND	5	M	O
F	PAINTING	6	N	M
G	ROOF	2	O	H
H	SANITARY	3	P	H
I	ELECTRICAL INSTALLATION	6	Q	I
L	PLUMBING	6	R	L



Picture 5. Critical Path

Table 13. *Forward Calculation*

FORWARD CALCULATION

Event Number	Activity	EETi	Duration	EETj	Description
1	A	0	1	1	-
2	B	1	4	5	-
3	C	5	2	7	
4	D	5	3	8	-
5	DUMMY	7	0	7	The Largest Value is 10
	E	8	2	10	
6	F	10	8	18	-
7	G	18	7	25	-
8	I	25	6	31	-
9	H	25	7	32	-
10	L	25	6	31	-
11	O	32	2	34	-
12	Q	31	6	37	-
13	M	34	5	39	-
14	P	32	3	35	
	R	31	6	37	-
15	J	37	7	44	The Largest Value is 45
	N	39	6	45	
	K	37	7	44	

Table 14. *Backward Calculation*

BACKWARD CALCULATION

Event Number	Activity	EETi	Duration	EETj	Description
14	J	45	7	38	-
13	N	45	6	39	-
12	K	45	7	38	-
11	M	39	5	34	-
10	R	37	6	31	-
9	O	34	2	32	
	P	37	3	34	-
8	Q	38	6	32	
7	I	32	6	26	The Smallest Value is 25
	H	37	7	30	
	L	33	6	27	
6	G	25	7	18	-
5	F	18	8	10	-
3	DUMMY	10	0	10	-
4	E	10	2	8	-
2	C	7	2	5	5
	D	8	3	5	
1	B	5	4	1	-
0	A	1	1	0	-

Table 15. *FF and TF Calculation*

CALCULATION OF FREE FLOAT AND TOTAL FLOAT

Activity	Event EETi	Event LETi	Duration	Event EETj	LETj	FF	TF
A	0	0	1	1	1	0	0
B	1	1	4	5	5	0	0
C	5	5	2	7	10	0	3
D	5	5	3	8	8	0	0
E	8	8	2	10	10	0	0
F	10	10	8	18	18	0	0
G	18	18	7	25	25	0	0
H	25	25	7	32	32	0	0
I	25	25	6	31	32	0	1
J	37	38	7	45	45	1	1
K	37	38	7	45	45	1	1
L	25	25	6	31	32	0	1
M	34	34	5	39	39	0	0
N	39	39	6	45	45	0	0
O	32	32	2	34	34	0	0
P	32	32	3	37	38	2	3
Q	31	32	6	37	38	0	1
R	31	32	6	37	38	0	1

E. CASHFLOW

Table 16. *Total Cash Flow Work of Structure*

PROJECT : Cideres Hospital Building
LOCATION : Ciders - Kadipaten Street No.180 Dawuan Majalengka
PERIOD : MAY 2016 - APRIL 2017

WORK OF ARCHITECTUR

PERIOD		PRICE OF MATERIAL	PRICE OF LABOR	TOTAL COST PER WEEK	TOTAL COST PER MONTH	CUMULATIVE
MAY 2016 - APRIL 2017						
October	24	100,184,400	7,421,400	107,605,800	107,605,800	107,605,800
November	25	198,584,400	7,421,400	206,005,800		313,611,600
	26	313,237,395	14,842,800	328,080,195		641,691,795
	27	260,084,542	7,421,400	267,505,942	1,109,365,561	909,197,737
	28	270,729,119	37,044,504	307,773,623		1,216,971,361
Desember	29	259,317,509	29,623,104	288,940,613		1,505,911,973
	30	214,735,862	88,377,156	303,113,018		1,809,024,991
	31	174,612,508	113,914,584	288,527,092	1,208,287,032	2,097,552,083
	32	223,611,409	104,094,900	327,706,309		2,425,258,392
January	33	313,751,657	132,647,760	446,399,417		2,871,657,809
	34	286,215,117	105,555,744	391,770,861		3,263,428,670
	35	212,268,972	39,817,764	252,086,736	1,304,478,612	3,515,515,405
	36	139,799,279	74,422,320	214,221,599		3,729,737,005
February	37	124,610,779	32,331,264	156,942,043		3,886,679,048
	38	158,703,049	53,525,220	212,228,269		4,098,907,317
	39	65,671,900	42,596,232	108,268,132	715,326,365	4,207,175,449
	40	162,496,912	75,391,008	237,887,920		4,445,063,369
March	41	109,855,709	60,912,768	170,768,477		4,615,831,846
	42	105,383,379	49,619,220	155,002,599		4,770,834,445
	43	101,631,559	28,008,624	129,640,183	566,777,525	4,900,474,628
	44	80,894,259	30,472,008	111,366,267		5,011,840,895
April	45	352,671,526	26,347,272	379,018,798	379,018,798	5,390,859,692
TOTAL		1,161,808,452	4,229,051,240	5,390,859,692	5,390,859,692	

Table 17. *Total Cash Flow Work of Architecture*

PROJECT : DEVELOPMENT PROJECT OF BOARDING HOUSE
LOCATION : JL. KH. CAL PARANG UTARA NO. 17 KELURAHAN MAMPANG PRAPATAN, SOUTH JAKARTA
PERIOD : JANUARY 2017 - FEBRUARY 2018

WORK OF ARCHITECTUR

PERIOD		PRICE OF MATERIAL	PRICE OF LABOR	TOTAL COST PER WEEK	TOTAL COST PER MONTH	CUMULATIVE
UGUST 2017 - FEBRUARY 201						
August	31	67,585,500	7,421,400	75,006,900		75,006,900
	32	67,585,500	7,421,400	75,006,900	399,516,504	150,013,800
Sepetembe	33	124,270,500	11,100,852	135,371,352		285,385,152
	34	103,030,500	11,100,852	114,131,352		399,516,504
	35	213,356,900	28,404,432	241,761,332		641,277,836
	36	215,864,600	26,607,672	242,472,272	1,227,515,916	883,750,108
October	37	317,826,800	57,090,096	374,916,896		1,258,667,004
	38	307,681,800	60,683,616	368,365,416		1,627,032,420
	39	492,551,075	108,813,348	601,364,423		2,228,396,843
	40	516,858,350	154,888,524	671,746,874		2,900,143,717
November	41	387,519,100	134,585,136	522,104,236	2,325,759,855	3,422,247,953
	42	414,293,950	116,250,372	530,544,322		3,952,792,275
	43	352,986,250	134,757,000	487,743,250		4,440,535,525
	44	546,123,340	188,323,884	734,447,224	2,338,686,038	5,174,982,749
Desember	45	376,465,490	148,021,776	524,487,266		5,699,470,015
	46	463,235,290	128,773,008	592,008,298		6,291,478,313
	47	387,723,520	115,273,872	502,997,392		6,794,475,705
January	48	453,419,775	94,658,004	548,077,779	2,222,960,733	7,342,553,484
	49	282,508,920	91,056,672	373,565,592		7,716,119,076
	50	640,712,870	157,607,100	798,319,970		8,514,439,046
February	51	456,527,800	105,008,904	561,536,704		9,075,975,750
	52	459,633,400	105,907,284	565,540,684	1,673,503,764	9,641,516,434
	53	373,184,800	107,789,976	480,974,776		10,122,491,210
	54	43,429,700	24,021,900	65,451,600		10,266,177,111
TOTAL		8,128,735,791	2,137,441,320	10,266,177,111	10,266,177,111	

V. CONCLUSIONS AND SUGGESTION

A. CONCLUSION

1. Based on the calculation of cash flow to complete the construction of Cideres Hospital Kadipaten Dawuan Majalengka project until final stage more or less cost as much Rp. 9,034,000,000,00. These costs are divided into two parts, structure and architecture work ,for structures the

cost as much Rp. 3,644,000,000,00 and for architecture the cost is Rp. 5,390,000,000,00

2. From the calculation of CPM scheduling analysis, the development of Cideres Hospitalproject takes time for 45 weeks.
3. By using the CPM method can be known the critical paths that occur in the project is Preparatory - Pile foundation - Work of Masonry stone - Fisrt floor - second floor - Third floor - Roof - Sanitary and Work of Floor.

B. SUGGESTION

1. In planning the scheduling of the project completion time, not only analyzing based on the calculation of the weight of work alone but greatly influenced by the experience in the field.
2. The CPM method is helpful to overcome the probability of project completion time.
3. More detailed studies are needed to get the right costing and scheduling.

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