



Unit Price Analysis of Building a Type 54 House The Eve Residence

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Abstract. Lack of technical knowledge of house planning and also calculations in terms of providing materials and resources which has an impact on delays in the construction process. In addition, the worst thing that could happen is that work could stop in the middle of the construction process. The aim of this research is to determine the unit price of the cost of building The Eve Residence Type 54 house by analyzing the unit price of work in 2024 based on the building volume which has been calculated based on the plan drawing. In this research, it is explained that the unit price analysis for each building is different for each region, depending on local PUPR service regulations. In building 1 show unit of The Eve Residence Type 54 Housing, the required craftsman fee is IDR. 52,000,000 and materials amounting to IDR 103,603,754 with a total amount of IDR 155,603,754

Keywords: *Price analysis, cost budget plan, The Eve Residence*

1 Introduction

1.1 Research

A house is a basic need for everyone. The need for housing is increase as the population continues to increase. Every human being needs a place to live and settle. The need for housing is adjusted to the capabilities of each individual or family. One of the most important considerations in choosing housing is cost.

As the human population increases, the desire to own a dream home also increases. To make this desire come true, both individuals and business entities (developers) are intensively building houses in various areas. However, in the stages of building a house, not everyone generally knows how much money must be prepared for building the house due to both a lack of technical knowledge of house planning and also calculations in terms of providing materials and resources has an impact on delays in the construction process. In addition, the worst thing that could happen is that work could stop in the middle of the construction process. This research was carried out by looking at several references (journals, articles, theses) from the results of previous related studies. Building materials, standard worker wages, and the cost of renting or buying equipment to finish the job are multiplied by the need for building materials,

labor, and equipment to determine the unit price of construction work. This process is known as work unit price analysis, or AHSP. building projects [3].

Thus, by examining the unit price of work in 2024 based on the building volume that has been computed based on the plan design, the research aims to ascertain the unit price of the cost of building The Eve Residence Type 54 dwelling.

2 Methodology

2.1 The Scope of Research

This research was carried out for 6 months or until the completion of the show unit type 54 The Eve Residence, starting March - August 2024. The research location was at The Eve Residence Housing Complex, Jalan Lubuk Bakung, Lrg lindung Palembang and continued at State Polytechnic of Sriwijaya, Palembang.

2.2 Research Focus

In this research, direct observations were made of the design conditions of the selected case study buildings by comparing plan drawings related to dimensions, volume, material specifications with the objects currently in progress. The objects of observation related to the observed case study are:

1. Work method
2. Technical specifications
3. Volume of work
4. Workmanship costs

After determining and finding the object of observation in relation to the physical condition of the building from the selected case study, the research variables will then be determined. Research variables are something that will be the object of research observation, and it is a factor that play a role in the events or symptoms that will be studied.

2.3 Research Flow Diagram

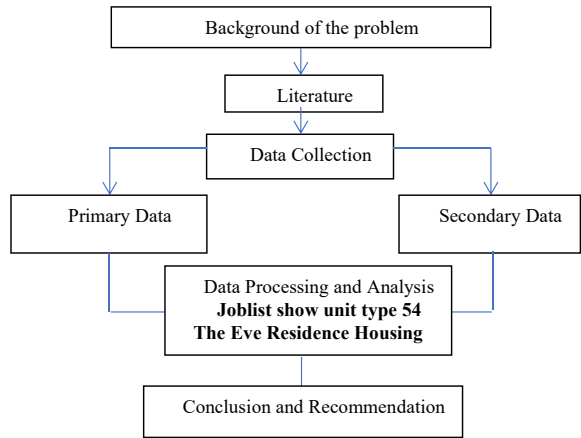


Fig. 1. A Research Flow Diagram of The Unit Price Analysis of The Eve Residence Type 54 Housing

3 Result and Discussion

3.1 Collection of primary data/house data at the location

The data taken includes work data starting from initial work to building finishing work. The description of these activities includes field cleaning, excavation work, backfilling, reinforced concrete work, wall installation, plastering work, roofing work, base painting work, painting work, door frame and door leaf work, aluminum window work, floor covering work, roof work, ceiling work, an illustration of how to compute the unit price analysis for wall work is provided in the following table:

Table 1. example of unit price analysis calculation

No	Brick Wall Installation	Volume (per 1 m2)	Unit	Volume	Unit Price ()	Total Price ()
1	Brick	24	Piece	8000	1.400	11.200.000
2	Portland Cement	11,5	Kg	39	86.000	3.354.000
3	Coarse Sand	0,043	m3	25	28.000	700.000

No	Brick Wall Installation	Volume (per 1 m ²)	Unit	Volume	Unit Price ()	Total Price ()
4	Construction Worker	0,320	Member	85	8.000	680.000
5	Bricklayer	0,100	Member	166	50.000	8.300.000
6	Construction manager	0,010	Member	102	22.000	2.244.000
7	Foreman	0,015	Member	234	58.500	13.689.000

from of the table above, it is explained that in every 1 m² of brick wall installation, 24 bricks are needed with a unit price of 1400, with 11.5 kg of cement with a unit price of . 1,170, and tidal sand of 0.043 m³ with a unit price of . 86,000.

Apart from that, the wage price is also explained with the need for 0.32 OH workers, the unit price is . 100,000, a bricklayer who needs 0.100 OH, the unit price is . 150,000, Head craftsman with a requirement of 0.010 OH, the unit price is . 150,000 to a Foreman with a need of 0.015 OH, the unit price is . 160,000.

3.2 Overall Unit Price Analysis

From the calculations of all analyzes and direct observations in the field, the quantity of all materials used in the process is obtained. The following table 2 is the overall price of materials and construction process of the show unit for The Eve Residence Type 54 Housing .

Tabel 2. Overall Unit Price Analysis

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
1	Brick	piece	8000	1.400	11.200.000
2	Coarse sand	m ³	39	86.000	3.354.000
3	Woodsheet Board	sheet	25	28.000	700.000
4	Gelam Wood	Bar	85	8.000	680.000
5	Bone steel 8 ti	member	166	50.000	8.300.000
6	Bone steel 6 a	member	102	22.000	2.244.000
7	Cement	sack	234	58.500	13.689.000
8	Split coral 1-2 cm	m ³	10		3.800.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
				380.000	
9	Nail 2 in	kg	14	18.000	252.000
10	Nail 1 in	kg	1	20.000	20.000
11	Hek	knot	8	70.000	560.000
12	Lath 3/4 untuk spanduk	bar	6	12.000	72.000
13	Thread	roll	6	10.000	60.000
14	Board 25	cubic	1	1.550.000	1.550.000
15	Rooster	Pc (Piece)	35	20.000	700.000
16	Rooster venthole	Pc (Piece)	9	25.000	225.000
17	Tie wire	Kg	12	20.000	240.000
18	Nail 4 in	Kg	2	18.000	36.000
19	Pipe 4 in rucika D Brand	Bar	2	170.000	340.000
20	Elbow 4 in	Pc (Piece)	1	18.000	18.000
21	Pipe 2,5 in rucika D Brand	Bar	3	140.000	420.000
22	Elbow 2,5	Pc (Piece)	3	12.000	36.000
23	Pipe Glue	Can	1	57.000	57.000
24	Pipe ½	Bar	14	27.000	378.000
25	Tembesu Wood 80x210	Set	3	400.000	1.200.000
26	Tembesu Wood Door 80x210	Set	3	1.000.000	3.000.000
27	Tembesu 90x210	Set	1	500.000	500.000
28	Tembesu Wood Door 90x210	Set	1	1.100.000	1.100.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
29	Light steel 7575 Banteng Brand	Bar	40	97.000	3.880.000
30	Lath Banteng Brand	Bar	42	33.000	1.386.000
31	Bolt drilling tool	Kg	3,5	75.000	262.500
32	Gypsum screw 1"	Box	4	60.000	240.000
33	Black sand tile roof, Metro Brand 0,30	Chip	117	55.000	6.435.000
34	Top Nock	Chip	13	30.000	390.000
35	Dynabolt 10 "	Pc (Piece)	15	2.000	30.000
36	White concrete nails	Box	4	25.000	100.000
37	Steel	Bar	28	39.000	1.092.000
38	Prohex	Pc (Piece)	4	4.000	16.000
39	Nock L	Chip	10	30.000	300.000
40	Listplank	Chip	10	43.000	430.000
41	Orange bucket	Pc (Piece)	10	10.000	100.000
42	Black sealant	Pc (Piece)	2	30.000	60.000
43	Canal C75 Trass Brand	Bar	4	68.000	272.000
44	Hollow 1x3 inch	Bar	1	295.000	295.000
45	Hollow galvanic 2x4	Bar	68	14.000	952.000
46	Hollow galvanic 4x4	Bar	15	19.000	285.000
47	Steel scrap	Piece	1	25.000	25.000
48	Cable 1x2,5 NYA	Roll	5	245.000	1.225.000
49	Hanging fitting	Pc (Piece)	1	7.000	7.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
50	Flat Plugs	Pc (Piece)	1	7.000	7.000
51	Calciboard	Chip	4	55.000	220.000
52	Gypsum screw 2"	Box	1	80.000	80.000
53	Calciboard screw	Box	1	80.000	80.000
54	Cable NYM 3x4	m2	2	34.000	68.000
55	Sealer	Peal	2	700.000	1.400.000
56	Sandpaper 240	m'	7	8.000	56.000
57	Roll foam	Pc (Piece)	2	30.000	60.000
58	Brush	Pc (Piece)	2	15.000	30.000
59	Gypsum	Chip	22	58.000	1.276.000
60	Gypsum wrap	Pc (Piece)	4	15.000	60.000
61	Cornice	Sack	1	65.000	65.000
62	Pipe 5/8	Bar	15	7.000	105.000
63	Elbow 5/8	Pc (Piece)	20	500	10.000
64	Switch Panasonic series	Pc (Piece)	5	25.000	125.000
65	Ankle Panasonic series	Pc (Piece)	4	16.000	64.000
66	Double stop contact	Pc (Piece)	2	32.000	64.000
67	Single stop contact	Pc (Piece)	5	16.000	80.000
68	MCB 10 A Shukaku Brand	Pc (Piece)	2	25.000	50.000
69	White T Box 5/8	Pc (Piece)	12	1.500	18.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
70	MCB Box	Pc (Piece)	1	25.000	25.000
71	Inbox Panasonic Brand	Pc (Piece)	25	3.000	75.000
72	Lamp Cap	Pc (Piece)	13	28.000	364.000
73	Granite ceramic for	Box	8	101.952	815.616
74	Outdoor Lamp Cap	Pc (Piece)	2	70.000	140.000
75	Elbow 1/2 in	Pc (Piece)	17	3.000	51.000
76	T Steel 1/2 in	Pc (Piece)	5	3.000	15.000
77	Elbow drat	Pc (Piece)	5	3.000	15.000
78	Gypsum List	Bar	40	17.000	680.000
79	Fiber container	Pc (Piece)	1	275.000	275.000
80	Cornice	Sack	2	65.000	130.000
81	Gypsum coat	Pail	1	320.000	320.000
82	Stainless faucet	Pc (Piece)	4	65.000	260.000
83	Granite 65x65 cm	Pc (Piece)	1	130.000	130.000
84	Granite 60x60 cm Levine Brand	box (1,44)	42	108.000	4.536.000
85	granite 60x60 cm Essenza Brand	box (1,44)	2	198.000	396.000
86	Ceramic 40x40 cm	Box	5	61.180	305.900
87	Shukaku lamp 9 watt	Pc (Piece)	1	19.000	19.000
88	Shukaku lamp 11 watt	Pc (Piece)	9	21.000	189.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
89	Shukaku lamp 13 watt	Pc (Piece)	5	28.000	140.000
90	Stop contact for AC	Pc (Piece)	2	62.500	125.000
91	Impra wood stain in brown (wood base coat)	Can (1 liter)	1	96.900	96.900
92	Impra wood filler	Can	1	52.250	52.250
93	Ultra lasur natural doff (wood finishing coat)	Can (1 liter)	3	128.500	385.500
94	Impra melamine system (woodstain after coat)	Can	2	99.000	198.000
95	Impra wood stain candy brown (wood base coat)	Can	4	95.000	380.000
96	Thinner	Gallon	1	138.000	138.000
97	Door handle Evamob Brand	Set	4	291.600	1.166.400
98	Door hinge Solid Brand	pair (isi 2)	6	82.530	495.180
99	Window	Set	8	812.500	6.500.000
100	Floor drain Brezio Brand	Pc (Piece)	1	105.000	105.000
101	Corner bathtub	Pc (Piece)	1	308.000	308.000
102	Closet Tidy Brand	Pc (Piece)	1	769.000	769.000
103	Stop valve Onda Brand	Pc (Piece)	1	108.000	108.000
104	Pantry faucet Tidy Brand	Pc (Piece)	1	174.950	174.950
105	Jet washer for closet	Pc (Piece)	1	75.650	75.650
106	Sikatop 107 waterproof	Sack	1	365.000	365.000
107	Grout	Bungkus	2	15.000	30.000
108	Pantry Zink	Pc (Piece)	1	220.000	220.000
109	cat vinilex putih interior	peal (25 kg)	2		1.524.000

No	Material	Unit	Volume	Unit Price (Rp)	Total Price (Rp)
				762.000	
110	Nippon elastex white exterior wall coat	peal (20 kg)	1	988.808	988.808
111	Gray Vinilex coat	can (5 kg)	1	164.500	164.500
112	Cream Vinilex coat	Can (5 kg)	1	171.800	171.800
113	Ceramic 30x60 cm	Box (0,9m2)	2	85.000	170.000
114	Paper insulation	Pc (Piece)	4	5.000	20.000
115	Faucet stopper 1/2 inch	Pc (Piece)	1	12.000	12.000
116	Plastic faucet	Pc (Piece)	1	20.000	20.000
117	Pipe 2 in abu"	Pc (Piece)	4	40.000	160.000
118	L drat	Pc (Piece)	5	3.000	15.000
119	Elbow 2 in	Pc (Piece)	1	8.000	8.000
120	T steel 2 in	Pc (Piece)	1	10.000	10.000
121	Nippon elastex exterior wall coat (white)	Can (4 kg)	2	231.300	462.600
122	Vinilex interior wall coat (white)	Can (5 kg)	2	160.600	321.200
123	Dop 4 in drat	Pc (Piece)	1	35.000	35.000
124	Water tank King Brand 1200 liter	Pc (Piece)	1	1.240.000	1.240.000
125	Ball float	Pc (Piece)	1	75.000	75.000
126	Toilet door	Pc (Piece)	1	1.200.000	1.200.000
total material					103.603.754

The previous table explained the overall unit price of the Show Unit of the Eve Residence house which includes 126 items with a total price of . 86,000 ranging from the construction's materials that includes in the process of wall installation, plastering work, roofing work, base painting work, painting work, door frame and door leaf

work, aluminum window work, floor covering work, roof work, ceiling work, utility works (electrical and mechanical), and the is last sanitation work. It can be shown that the most efficient price point could be determined with a detailed calculation of each item.

4 CONCLUSION

4.1 The table below shows the necessary expenses for artisans and materials in the building 1 show unit of The Eve Residence Type 54 Housing:

Tabel 3. the required costs for craftsmen and materials

No	Item	Total Price
1	Craftsman wages or cost	52.000.000
2	Material	103.603.754
	Total	155.603.754

the Unit Price Analysis of Type 54 The Eve Residence House is also faced with challenges such as competitive prices with competitors, especially housing developers in Palembang. However, there is still room for further improvement and development to ensure that the goals are achieved and sustainable in the future.

4.2 In calculating the work analysis, guidelines are needed from the Public Works regulations that applies in the city where the building is resided for standardized price.

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