

## 2nd Floor Budget Planning Assistance (RAB) at Nurul Iman Mosque, Bahari Tiga Village

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### ABSTRACT:

*This research aims to assist the analysis of the cost budget for the continuation of the construction of the 2nd floor of the nurul iman mosque of the third nautical village so that in determining the amount of costs, material needs can be known in more detail so as to minimize the risk of spending overruns in the use of the budget. In determining costs, the analysis is calculated based on the planned work drawings. With a total budget of four hundred and fifty-four million.*

**Keywords:** Civil Engineering; RAB; Nautical Three; Working Drawing

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### 1. Introduction

Bahari Tiga is a coastal area located in South Buton where initially this area had one village with 1 mosque in the middle of the village, the change of village government with the expansion of the village so that it became three villages, namely Bahari Village 1, Bari Village 2, Bahari Village 3 so that as a result of this expansion the construction of a mosque was needed so that the construction of a mosque for the expansion village became the top priority. In the planning of the nautical mosque 3 for working drawings have been provided and have run one floor for the continuation of the second floor, a cost budget planning (RAB) is needed for determination (Isramaulana, 2016).

explained that mosques are places of worship for Muslims. In Indonesia, mosque buildings are located in almost all regions of the archipelago with various shapes, areas, and scales of services. In a residential neighborhood with a population of about 2000 people, the islamic religious worship facility needed is a mosque. According to SNI 03-1733-2004 the types of mosques are planned as follows, namely: 1. Population Group of 250 people, mushollah is needed; 2 groups of 2,500 inhabitants, provided mosques; 3. A population of 30,000, provided with a village mosque; 4. Population group of 120,000 people, provided by the sub-district mosque (Annisa et al., 2020).

that in planning the construction of this mosque, it is necessary to conduct a good study, experienced, and have an adequate background in construction knowledge. However, when built independently without the assistance of an expert, the question arises about how to make design drawings, how to calculate the cost, how to power and structure the building (Arie Wibawa & Septina Saraswati, 2016).

The mosque is the place where the five-time prayer is established continuously, whose land position is waqf, and can be used for Friday Prayers. Meanwhile, musala, langgar, and

Surau are domiciled the same as mosques, but cannot be used for Friday Prayers. Mosques are classified by area of service. The main jami mosque at the provincial level is called Masjid Raya, the main jami mosque at the district/city level is called the Great Mosque, the main jami mosque at the subdistrict level is called the Great Mosque, and the mosque at the village/village level is called the Jami Mosque (Musdinar et al., 2022).

The cost budget for the same building will be different in each region, the difference is due to the unit price of wages and the change in each area that is not the same. The cost (budget) is the sum of each of the results of the estimated volume with the unit price of the work in question. Cost budget is the price of a building that is carefully calculated, meticulous and qualified (Novita Sari et al., 2022).

In planning the construction of this musholah, it is necessary to conduct a good study, experienced, and with an adequate background of construction knowledge. However, when built independently without being accompanied by an expert, many questions arise about how to make design drawings, how to calculate costs, how to strengthen and structure the building (Muh. Sayfullah. S & Eryck, 2021).

## 2. Method

This service activity plan shows the steps taken from the beginning to the end of the service, namely as follows:

### a) working image data

For work drawing data already exists because this construction is planned for the work drawing by myself and has completed the first floor construction stage and for the second floor a RAB is needed

### b) Cost Budget Planning Analysis (RAB)

In the cost budget planning (RAB) analysis, this analysis calculates in general for the total needs budget for the second floor bangunan at the nurul iman mosque

### c) Analysis of the Implementation Budget Plan (RAP)

In this analysis, the determination of the needs of work materials and the determination of

## 3. Results and Discussion

The third nautical mosque has a size of 14.4m x 10.5 m with a total of 2 floors with the first floor already built and will proceed to the construction stage of the 2nd floor after the budget is collected. The picture of the mosque built for the first floor is as follows:



Figure 1. Model masjid lantai 1 yang dibangun

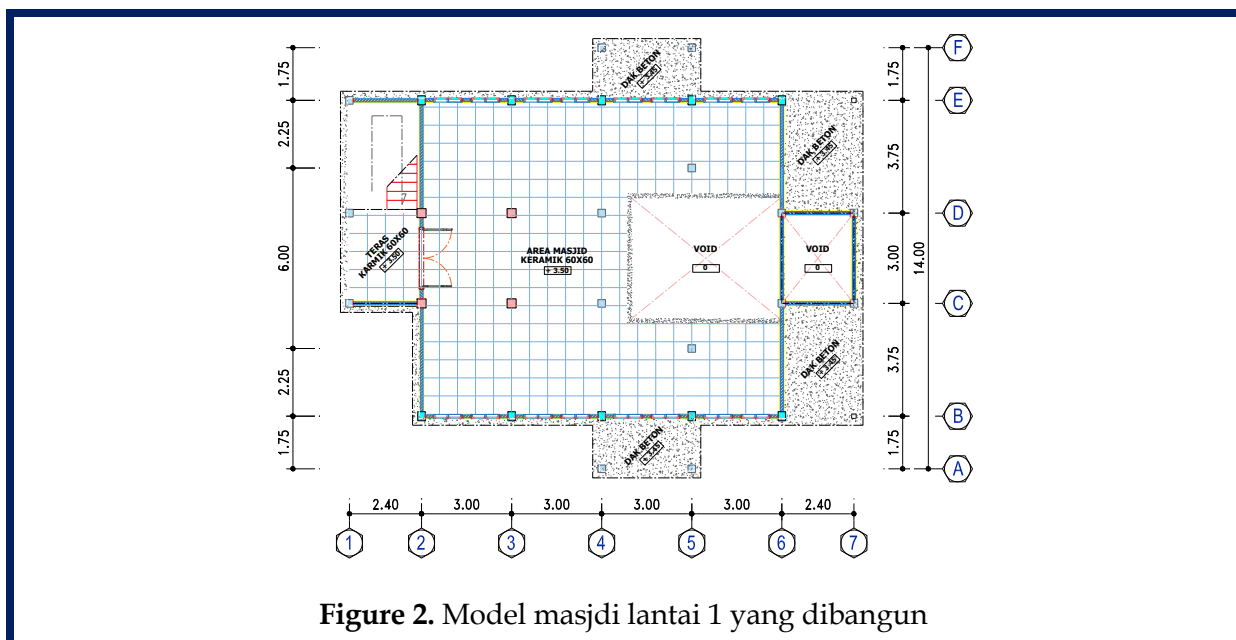


Figure 2. Model masjid lantai 1 yang dibangun

In the Planning of the Cost Budget (RAB) and the Implementation Budget Plan (RAP) obtained the results

Table 1. Calculation of Draft Budget Cost (RAB )

PEKERJAAN BETON LT.2 KE ATAS					
<b>PEKERJAAN KOLOM K1 (25x30)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	2,63	m3	1.501.153	3.948.033
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	582,84	1 kg	12.853	7.490.951
A.4.1.1.22	(K3) Pemasangan 1 m2 bekisting untuk kolom	38,5	m2	246.450	9.488.325
A.4.1.1.A1	Pembesian 1 Batang Besi Ø 6 (12m)	12	Batang	34.198	410.381
<b>PEKERJAAN KOLOM K2 (30x30)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	1,26	m3	1.501.153	1.891.453
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	289	1 kg	12.853	3.714.373
A.4.1.1.22	(K3) Pemasangan 1 m2 bekisting untuk kolom	16,8	m2	246.450	4.140.360
<b>PEKERJAAN KOLOM K3 (25x25)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	2,19	m3	1.501.153	3.287.525
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	566,96	1 kg	12.853	7.260.974
A.4.1.1.22	(K3) Pemasangan 1 m2 bekisting untuk kolom	35	m2	246.450	8.625.750
<b>PEKERJAAN KOLOM K4 (20x20)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	0,56	m3	1.501.153	840.646
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	214,82	1 kg	12.853	2.760.974
A.4.1.1.22	(K3) Pemasangan 1 m2 bekisting untuk kolom	11,2	m2	246.450	2.760.240
<b>PEKERJAAN KOLOM K5 (20x20)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	0,56	m3	1.501.153	840.646
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	214,8	1 kg	12.853	2.760.717
A.4.1.1.22	(K3) Pemasangan 1 m2 bekisting untuk kolom	11,2	m2	246.450	2.760.240
<b>PEKERJAAN BALOK RB (20x30)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	5,03	m3	1.501.153	7.550.800
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	1357,14	1 kg	12.853	17.442.642
A.4.1.1.23	(K3) Pemasangan 1 m2 bekisting untuk balok	50,34	m2	253.950	12.783.843
<b>PEKERJAAN BALOK BG (25/40)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	2,48	m3	1.501.153	3.722.860
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	616,86	1 kg	12.853	7.928.193
A.4.1.1.23	(K3) Pemasangan 1 m2 bekisting untuk balok	19,82	m2	253.950	5.033.289
<b>PEKERJAAN BALOK BA.2 (20x30)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	0,423	m3	1.501.153	634.988
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	115,3053	1 kg	12.853	1.481.962
A.4.1.1.23	(K3) Pemasangan 1 m2 bekisting untuk balok	4,23	m2	253.950	1.074.209
<b>PEKERJAAN BALOK BA.4 (20x30)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	1,851	m3	1.501.153	2.778.635
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	499,895	1 kg	12.853	6.424.900
A.4.1.1.23	(K3) Pemasangan 1 m2 bekisting untuk balok	18,51	m2	253.950	4.700.615
<b>PEKERJAAN BALOK BA.5 (20x30.55)</b>					
A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	1,896	m3	1.501.153	2.846.186
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	357,0756	1 kg	12.853	4.589.314
A.4.1.1.23	(K3) Pemasangan 1 m2 bekisting untuk balok	18,96	m2	253.950	4.814.892

A.4.1.1.07	Membuat 1 m3 beton mutu f'c = 19,3 MPa	0,8704	m3	1.501.153	1.306.604
A.4.1.1.17	Pembesian 1 kg dengan besi polos atau besi ulir	85,95	1 kg	12.853	1.104.672
A.4.1.1.24	(K3) Pemasangan 1 m2 bekisting untuk lantai	10,88	m2	569.675	6.198.064
	<b>TOTAL PEKERJAAN BETON</b>				<b>274.924.853</b>
	<b>PEKERJAAN DINDING</b>				
	<b>PEKERJAAN PASANGAN BATA DAN PLESTERAN</b>				
A.4.4.1.17	Pemasangan 1m2 dinding conblock HB20 campuran 1SP : 4PP	107,45	m2	430.667	46.275.169
A.4.4.2.04	Pemasangan 1 m2 plesteran 1SP : 4PP tebal 15 mm	214,9	m2	74.133	15.931.182
	<b>PEKERJAAN PASANGAN BATA DAN PLESTERAN</b>				
A.4.4.2.27	Pemasangan 1 m2 acian	214,9	m2	42.275	9.084.898
	<b>TOTAL PEKERJAAN DINDING</b>				<b>71.291.248</b>
	<b>PEKERJAAN PENUTUP LANTAI DAN DINDING</b>				
	<b>PEKERJAAN KERAMIK</b>				
A.4.4.3.68	Pemasangan 1 m2 Lantai Keramik Ukuran 60cm x 60cm	108	m2	258.820	27.952.560
A.4.4.3.16	Pemasangan 1 m' plint ubin PC abu-abu ukuran 15 cm x 20 cm	38,8	m	393.180	15.255.384
	<b>TOTAL PEKERJAAN PENUTUP LANTAI DAN DINDING</b>				<b>43.207.944</b>
	<b>PEKERJAAN PLAFON</b>				
	<b>PLAAFON LT. 2</b>				
A.4.6.1.20	Pemasangan 1 m2 rangka langit-langit (60 x 60) cm. kayu kelas II atau III	108	m2	84.897	9.168.822
A.4.5.1.05	Pemasangan 1 m2 langit-langit tripleks ukuran (120 x 240) cm, tebal 3 mm, 4 mm &	108	m2	52.945	5.718.060
A.4.5.1.09	Pemasangan 1 m' list langit-langit kayu profil	61,6	m	73.145	4.505.732
	<b>TOTAL PEKERJAAN PLAFON</b>				<b>19.392.614</b>
	<b>PEKERJAAN KUSEN DAN PINTU</b>				
	<b>PLAAFON LT. 2</b>				
A.4.6.1.01	Pembuatan dan pemasangan 1 m3 kusen pintu dan kusen jendela, kayu kelas I	0,87	m3	12.593.750	10.956.563
A.4.6.1.06	Pembuatan dan pemasangan 1 m2 pintu dan jendela kaca, kayu kelas I atau II	20	m2	569.320	11.386.400
	<b>SUB TOTAL</b>				<b>408.816.659</b>
	<b>PROFIT &amp; RESIKO 11%</b>				<b>44.969.833</b>
	<b>TOTAL</b>				<b>453.786.492</b>

In budget planning, the Total Cost of the Budget for the Continuation of implementation is Rp. 454,000,000 as for the Implementation budget plan, which is as follow.

**Table 2.** Calculation of Draft Implementation Budget (RAP)

DESKRIPSI	SATUAN	HRG SATUAN	VOLUME	BIAYA
Semen PC	Kg	1.700	17.793,48	30.248.910
Pasir beton	m3	340.000	21,05	7.156.597
Kerikil (maks 30 mm)	m3	340.000	25,18	8.562.084
Air	Liter	1.000	6.981,14	6.981.136
Besi beton (polos/ulir)	kg	10.300	7.428,55	76.514.025
Kawat beton	Kg	15.000	106,60	1.599.031
Kayu kelas III	m3	55.000	10,01	550.792
Paku 5 cm - 12 cm	kg	17.000	145,06	2.465.952
Minyak bekisting	Liter	1.500	72,53	108.792
Balok kayu kelas II	m3	5.000.000	3,92	19.615.950
Plywood tebal 9 mm	Lembar	55.000	87,63	4.819.430
Kayu dolken Ø 8-10/400 cm	Batang	55.000	1.053,04	57.917.200
HB-20 Hollow Block tebal 20 cm	buah	3.000	1.343,13	4.029.375
Pasir pasang	m3	350.000	88,26	30.892.470
Besi angker diameter 8	Kg	75.000	30,09	2.256.450
Plint ubin PC 15 x 20 cm	buah	69.000	205,64	14.189.160
Tripleks	Lembar	55.000	40,50	2.227.500
Paku tripleks	kg	69.000	3,24	223.560
List kayu profil	m	55.000	64,68	3.557.400
Paku 5 cm - 7 cm	kg	17.000	0,62	10.472
Balok kayu kelas I	m3	7.000.000	0,96	6.699.000

Paku 10 cm	Kg	17.000	1,09	18.488
Lem kayu	Kg	60.000	6,87	412.200
Papan kayu kelas I atau II	m <sup>3</sup>	55.000	0,48	26.400
Kayu kaso 5/7	m <sup>3</sup>	55.000	1,76	96.822
Paku 7 cm - 10 cm	kg	17.000	27,00	459.000
Keramik 60cm x 60cm	bh	10.000	334,80	3.348.000
Semen warna	Kg	87.000	162,00	14.094.000
Besi Ø 6	Batang	27.398	12,60	345.215

#### 4. Conclusion

In the budget planning, the total cost of the budget is four hundred and forty-five million of all needs and hopefully can be realized young and so that it can be used for proposals in submitting budgets either in the district office or others so that mosque buildings can be built.

#### Daftar Pustaka

- Annisa., Ilham., Gaos, Yogi Sirodz., & Wiradinata, Irvan. (2020). Perencanaan Masjid Sumedang. *Jurnal Aplikasi Ipteks*.  
<http://jurnal.unpad.ac.id/dharmakarya/article/view/26357>.
- Arie Wibawa, B., & Septina Saraswati, R. (2016). Perencanaan Pembangunan Masjid Al-Ikhwan Kelurahan Karangayu, Semarang. *E-DIMAS: Jurnal Pengabdian Masyarakat*.  
<http://journal.upgris.ac.id/index.php/e-dimas/article/view/1034>.
- Iramaulana, A. (2016). Rencana Anggaran Biaya Untuk Sumur Resapan Masjid Besar Kota Banjarbaru. *INFO-TEKNIK*, 15(2), 239–254.  
<https://doi.org/10.20527/INFOTEK.V15I2.226>
- Muh. Sayfullah. S, M. W. O. R. Zain. H., & Eryck, M. F. (2021). Perencanaan Design Musholah Al-Fatah SDN 20 Lakudo Desa Madongka Kecamatan Lakudo Kabupaten Buton Tengah. *Jurnal Pengabdian Pada Masyarakat MEMBANGUN NEGERI*, 5(1), 184–188. <https://doi.org/10.35326/PKM.V5I1.1176>
- Musdinar, I., Sihing, S., Mawantu, Y., Kurniawan, D., & Broto, S. (2022). Penyusunan RAB Renovasi Masjid Al-Hasanah di kel. KREO Selatan, kec. Larangan kota Tangerang. *AMMA : Jurnal Pengabdian Masyarakat*, 1(06).  
<https://journal.mediapublikasi.id/index.php/amma>
- Novita Sari, S., Tiara Ramadhanti, A., & Triwuryanto. (2022). Perhitungan Rancangan Anggaran Biaya Embung Desa Kalirejo, Kulon Progo DIY. *JOMPA ABDI: Jurnal Pengabdian Masyarakat*, 1(2). <https://jurnal.jomparnd.com/index.php/jpabdi>