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COMPARATIVE ANALYSIS OF COST BUDGET PLAN CALCULATIONS USING BUILDING INFORMATION MODELING (BIM) AND CONVENTIONAL METHODS ON THE BRI BANK BUILDING CONSTRUCTION PROJECT IN MEDAN

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ABSTRACT

This research aims to analyze the comparison of work volume calculations and cost budget plans for the BRI Bank building construction project in Medan using the Building Information Modeling (BIM) method and conventional methods. The data used in this research is building volume data that was planned by redesign using Autodesk Revit. This data includes building technical data, such as building area, number of floors and volume of work. The research results show that using the BIM method with Autodesk Revit can produce more accurate work volume calculations compared to conventional methods. This has an impact on calculating the cost budget plan which is also more accurate. In addition, the BIM method has been proven to be able to increase efficiency and effectiveness in managing construction projects, especially in terms of coordination between disciplines, reducing design errors, as well as optimizing costs and time for project implementation. The results of the comparative analysis carried out turned out that the cost budget plan for implementing the BIM method was Rp. 2,976,607,161 while the total cost using the conventional method.

Key Words: Cost budged plan, Building Information Modeling, construction efficiency

ABSTRAK

Penelitian ini bertujuan untuk menganalisis perbandingan perhitungan volume pekerjaan dan rencana anggaran biaya pada proyek pembangunan gedung Bank BRI di Medan dengan menggunakan metode Building Information Modeling (BIM) dan metode konvensional. Data yang digunakan dalam penelitian ini adalah data volume bangunan yang direncanakan dengan mendesain ulang menggunakan Autodesk Revit. Data tersebut mencakup data teknis gedung, seperti luas bangunan, jumlah lantai, dan volume pekerjaan. Hasil penelitian menunjukkan bahwa penggunaan metode BIM dengan Autodesk Revit dapat menghasilkan perhitungan volume pekerjaan yang lebih akurat dibandingkan dengan metode konvensional. Hal ini berdampak pada perhitungan rencana anggaran biaya yang juga lebih akurat. Selain itu, metode BIM terbukti mampu meningkatkan efisiensi dan efektivitas dalam pengelolaan proyek konstruksi, khususnya dalam hal koordinasi antar disiplin ilmu, pengurangan kesalahan desain, serta optimasi biaya dan waktu pelaksanaan proyek. Hasil analisis perbandingan yang dilakukan ternyata rencana anggaran biaya (RAB) penerapan metode BIM sebesar Rp. 2.976.607.161 sedangkan biaya total dengan metode konvensional sebesar Rp. 3.280.583.049. Perhitungan RAB dengan metode BIM lebih kecil 9,27% dibandingkan dengan metode konvensional.

Kata Kunci: Rencana Anggaran Biaya, Building Information Modeling, efisiensi konstruksi

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1. INTRODUCTION

Infrastructure development, including buildings and roads, is one of the main indicators of a region's economic development. In Indonesia, the construction sector continues to experience significant growth in line with the increasing public need for adequate infrastructure. However, this rapid development also brings new challenges, namely the increasing complexity of projects that must be managed more effectively and efficiently. One widely adopted solution to overcome this challenge is the use of Building Information Modeling (BIM).

BIM is an approach that integrates technology and communication in the design and construction process, enabling better and more efficient project management. With BIM, the planning, design and construction processes become more integrated, which in turn can improve the quality of the final result and reduce project duration and costs. According to Eastman et al. (2008), the use of BIM can provide various benefits such as increasing interdisciplinary coordination, reducing design errors, and optimizing costs and project implementation time.

Autodesk Revit is one software that implements BIM effectively. Revit allows the creation of comprehensive and detailed 3D models, covering various aspects of a construction project, from architecture, structure, to mechanical, electrical, and plumbing (MEP) systems. The use of Revit in construction projects has been proven to increase efficiency and accuracy in calculating work volumes and cost budgets.

In Indonesia, the application of BIM is still relatively new and has not been widely applied to building projects. This research aims to fill this gap by optimizing the calculation of work volume and cost budget for the BRI Bank building construction project on Jl. Sisingamangaraja, Medan, uses the BIM method with the help of the Autodesk Revit program. Through this research, it is hoped that a clearer picture can be obtained regarding the advantages and challenges of implementing BIM in Indonesia.

Eastman (2008) shows that BIM succeeded in reducing project costs by up to 9.27% on the Georgia State University building construction project in the United States compared to conventional methods. Apart from that, another study by Marizan (2019) in Malaysia showed that the use of BIM in the Sukajadi Community Health Center planning project in Prabumulih City could increase project efficiency by up to 15%.

Another study by Migilinskas et al. (2013) in Lithuania also found that applying BIM to the Vilnius Shopping Center shopping center construction project could reduce project completion time by 20% and project costs by up to 10% compared to traditional methods. In China, research by Li et al. (2014) showed that BIM helped in improving collaboration between project teams on the construction of office buildings in Shanghai, which ultimately reduced the risk of delays and improved construction quality.

With this background, this research is focused on analyzing the comparison of work volume calculations and cost budgets for the BRI Bank building construction project in Medan with the application of BIM using Autodesk Revit and conventional methods. It is hoped that the results of this research can become a reference and benchmark for construction practitioners in Indonesia in adopting BIM technology to increase the efficiency and effectiveness of their projects.

2. DATA AND METHODS

2.1. Research Data

The data used in this research is the planned building volume data obtained by redesigning withAutodesk Revit.This data is data related to building technical data and project structures obtained directly at the BRI Bank Building Construction project location on Jl. Sisingamangaraja No. 241 Gg. Indrajid Kel. Sudirejo-II District. Medan City.

Data collection was obtained from the BRI Bank building construction contractor, the data obtained was in the form of: Drawings and structural data as well as structural cost budgets.

The following project data obtained is as follows:

- Structure Type: Multi-storey Building
- Contract Value: Rp. 18,000,000,000,-
- Building Area: 568 m²

- Number of Floors: 4 Floors
- Building Height: 19.50 m
- Borepile and Pilecap Structure
- Column Structure
- Beam Structure
- Floor Plate Structure
- Stair Structure

2.2. Research Methods

RESEARCH FLOW DIAGRAM



Figure 1. Research Flow Chart

3. RESULTS AND DISCUSSION

3.1. Foundation

1) Borepile and Pilecap Plans

*Autodesk Revit*will save all information in one place. For this matter, if changes are made to certain areas, it will change the entire model. For example, when you want to change an object in a 3D model, the plan appearance, cost budget plan, and so on will change.

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Figure 2. Foundation and Pilecap

Figure 2 shows the bore pile and pile cap floor plan modeling for the BRI Bank Building construction project using Autodesk Revit.

2) 3D Modeling of Foundations

After modeling the borepile and pilecap according to the points determined on the borepile and pilecap plan.



Figure 3. 3D Modeling of Foundations

Figure 3 shows the 3D modeling of the foundation, then the results of the 3D modeling are checked again so that the modeling really matches the results of the plans made by the consultant.

3) Details of Reinforcement and Foundation Pieces

Next, modeling is carried out for the reinforcement in the borepile and pilecap.



Figure 4. Foundation Reinforcement Details

Figure 4 shows the modeling of foundation reinforcement, then a picture of the foundation section is shown as shown in Figure 5.



Figure 5. Foundation Cut

4) Schedules Foundation

Schedules is a feature on *Autodesk Revit* which works to find out the types of components used in building models, for example to find out foundations, columns and others. In the schedule table, we can arrange it according to our needs and can create formulas, filters and calculations.

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| Pile Cap 181 | 80 x 80 x80cm | PCR1 | 0.51 m² | 2,229,554 | 1.141.532 | 13.m | 40 cm | 143.64 | 143.620.00 | 1.807.00 |
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| Pile Cap. TB1 | 80 x 80 x80cm | PCRI | 0.55 m² | 2,229,554 | 8,141,532 | 13.00 | | 1.63 #* | 143,620.00 | 1.867,08 |
| File Cap TBT | 80 x 80 x80cm | PORT | 0.51 m² | 2,229,554 | 1,141,532 | 13 m | 40 cm | 1.63.8/* | 141,620.00 | 1.867.06 |
| Pile Cap 191 | 80 x 80 x80cm | PCR1 | 055 m² | 2,229,554 | 1,141,532 | 13.00 | | 1.63 m | | 1.807.00 |
| He Cap TB1 | 80 x 30 x80cm | PORT | 0.51 +++ | 2 229 154 | 1,145,532 | 13.00 | 40 cm | 1.63.44 | 141.620.00 | 1.867.00 |
| Pile Cap. TD1 | 80 x 80 x80cm | PCR1 | 0.51 m² | 2,229,554 | 1.141.532 | 13.m | AC cm | 1.03.65 | 143 620 00 | 1,867,06 |
| Ne Cap 181.8 | | | 4.10 m* | | 0,112,253 | 104 m | | | | 54,000.40 |
| Pie Cap 182 | BO & TEO & BOCTI | PCR2 | 1.15 m² | 2 449 200 | 2 822 200 | 26 m | #0 cm | 327m ² | 143.620.00 | 3,734,32 |
| Pile Cap TB2 | 80 x 180 x 80cm | PCR2 | 1.15+** | 2 449,896 | 2,622,260 | 26 m | 40 cm | 3.27 m² | 143.620.00 | 3,734,12 |
| Hie Cap TB2 | 80 x 100 x 60cm | Pala | 1.15 m² | 2,440,206 | 2,822,260 | 26 m | 40 cm | 327 ef | 143,620.00 | 3,734,12 |
| Plié Cap. TE2 | BO a 180 x 80cm | PCRE | 1.15 m² | 2 840 500 | 2,822,780 | 26 m | 40 (21) | 3.27 m | 141400-00 | 3,734,12 |
| Pile Cap TB2 4 | | | 461m* | | 11,299,121 | 104 m | 1000 | COL- | | 54,535,40 |
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| Pile Cap. TED | 170 s 180 x 80cm | PORI | 2.45 m² | 2,209,983 | 5.556.918 | | 40 cm | 4 90 m² | 143.620.00 | 5.601,18 |
| Pile Cap 183 | 170 s 180 x 80cm | PCRI | 2.45 m ² | 2,209,983 | 5.586.918 | 39 m | #0 cm | A 90 mt* | 143,620.00 | 5.601.18 |
| Pile Cap TR3 | 170 + 180 x 80cm | PORT | 245m2 | 2,209,983 | 6.556.918 | - 39 m | 40 om | 4.90 m ² | 143,620.90 | 5,601,18 |
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| He Cap T64 | 180 × 180 x 800m | PORE. | 2.59.87 | 2,209.063 | 5.883,796 | 5,2 m | 40.01 | 6.53.64 | 143,620.00 | 7,400,24 |
| Plie Cap TD4 | 180 x 180 x 80cm | PCRI | 2.59m? | 2,209,083 | 5,883,790 | 12 m | #0 cm | 6.53 ef | 141.620.00 | 7.468.24 |
| Pile Cap 164 | 180 a 180 x 800m | PORE | 2.59 m2 | 2,209,963 | 1.881.796 | 52 m | 40 011 | 6.53 m ² | 141,620,00 | 7,468,24 |
| Pile Cap. 184 | 180 ± 180 ± 80cm | PCRE | 2.59 #7 | 2,200,963 | 5,883,796 | 52m | 40 cm | 65347 | 143.620.00 | 7,400.24 |
| Pile Cap. TB4.4 | | | - 10.32 m² | | 23,535,184 | 200 m | | | | 29.572.04 |
| Pile Cap. T85 | 200 s 180 x 100um | PCR5 | 4.65 m² | 2,449,757 | 11,464,003 | 66 m | | 8.10.07 | 143.620.00 | 9,335,30 |
| Pile Cap 185 | 260 x 180 x 100cm | PORS | 4.68 m² | 2,449,757 | tt 464 863 | 66 m | 40 cm | fi 10.er* | 143,620.90 | 0.335,30 |
| Pie Cap T80 | 200 x 180 x 100cm | PCR5 | 4.08.02 | 2,849,757 | 11,404,863 | - 65 m | 40 cm | 8.16 m ² | 143,620.00 | 0.335.30 |
| Pile Cap. T85 | 260 s 180 x 100cm | PORS | 4.65 m² | 2.449.757 | 11,464,863 | 65 m | AG cm | 8.16 m ⁴ | 141620.00 | 9,335,30 |
| Prer Cap. 185. 4 Grand total: 24 | | | 18.72 m² 47.58 m² | 9 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1 | 45,859,451 117,043,682 | 200 m 632 m | | | | 37.341.20 |

Figure 6. Foundation Schedules display

Figure 6 displays the foundation schedule resulting from Autodesk Revit modeling. This schedule contains the item name, volume, size, cost, and total cost.

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3.2. Column Structure

1) Column Plan

The columns in the BRI Bank Building project are divided into several types, namely:

- Column K1 55x55 cm
- Column K2 55x55 cm
- Column K3 35x55 cm
- Column K4 40x40 cm

Figure 7 shows the floor plan modeling of the ground floor columns in the BRI Bank Building construction project using Autodesk Revit.



Figure 7. Ground Floor Columns

2) 3D Modeling of Column Structures

Next, 3D modeling of the column structure is carried out according to the points determined on the ground floor column plan.



Figure 8. 3D Modeling of Column Structures

Figure 8 shows the 3D modeling of the column, then the results of the 3D modeling are checked again so that the modeling really matches the planning results made by the consultant.

3) Details of Reinforcement and Column Structure Pieces

Then after the column structure modeling is complete and it is checked whether it complies with the specified dimensions. So, proceed with reinforcement modeling.



Figure 9. Column Structure Reinforcement Modeling

Figure 9 shows the 3D modeling of column structure reinforcement. Reinforcement must be done according to the planned column types, namely types K1, K2, K3 and K4.



Figure 10. Column Structure Cut

Figure 10 shows the cuts and reinforcement in the column structure.

4) Schedules Column

Schedules on the completed column structure work.

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|-----------------------------------|------------|-----------------------------------------------------------------------------------------------------|---------------|--------|----------------------|-----------|------------|
| A | 8 | c | D | E | F | G | н |
| Family | Type | Base Level | Top Level | Length | Volume | Cost | Jumiah |
| M. Concrete-Rectangular-Column | 15 x 30 cm | Larta Dasar | Lartai Dasar | 160 cm | 0.07 m² | 3,960,550 | 286.60 |
| M. Concrete-Rectangular-Column | 55 x 30 cm | Lanta Dasar | Lorday Datian | 160 cm | 0.07 m ^a | 3,980,550 | 256,600 |
| M_Concrete-Rectangular-Column K3 | 35 x 55 cm | Lantai Dasat | Larta 1 | 380 cm | 0.73 m ² | 4,569,719 | 3,342,74 |
| M_Concrete Rectangular-Column K1 | 35 x 55 cm | Lanta: Datar | Cantai 1 | 380 cm | 0.73 m ^p | 4,569,719 | 3,342,74 |
| M_Concrete-Rectangular-Column K3 | 35 x 55 cm | Lantai Desar | Eartal T | 380 cm | 0.73 m ^a | 4,569,719 | 3,342,74 |
| M. Concrete-Rectangular-Column K3 | 35 x 55 cm | Lanta: Dissar | Lantai 1 | 380 cm | 0.73 m ² | 4,569,719 | 3.342.74 |
| M_Concrete-Rectangular-Column K3 | 35 x 55 cm | Lantai Dabar | Larta: 1 | 380 cm | 0.73 m ^e | 4,569,719 | 3,342,74 |
| M_Concrete-Rectangular-Column H3 | 35 x 55 cm | Lantai Distar | Lantai 1 | 380 cm | 0.73 m ^a | 4,569,719 | 3,342,74 |
| M_Concrete-Square-Column K4 | 40 x 40 cm | Lantai Dasar | Lante 1 | 380 cm | 0.61 m ^a | 4,643,411 | 2,623,19 |
| M_Concrete-Square-Column K4 | 40 x 40 cm | Lanta Dasar | Lantai 1 | 380 cm | 0.61 m ^a | 4,643,411 | 2,823,19 |
| M_Concrete-Square-Column K4 | 40 x 40 cm | Lantar Desar | Lattai 1 | 380 cm | 0.61 m ^a | 4,643,411 | 2,823,19 |
| M_Conziete-Square-Column K4 | 40 x 40 cm | Lartai Dasat | Larta 1 | 380 cm | 0.61 m ^a | 4,643,411 | 2,823,19 |
| M_Concrete-Square-Column K4 | 40 x 40 cm | Lanta/ Dunar | Earts 1 | 380 cm | 0.61 m ^e | 4,643,411 | 2,823,19 |
| M_Concrete-Square-Column K4 | 40 x 40 cm | Lantai Desar | Lettal T | 380 cm | 0.61 m ^a | 4,643,411 | 2,823,19 |
| M. Concrete-Square-Column (K1) | 55 x 55 cm | Lanta: Dasar | Lortai 1 | 380 cm | 1.15 m ² | 5,718,301 | 0.573,25 |
| M_Concrete-Square-Column (K1) | 55 x 55 cm | Lantai Dabar | Lortai 1 | 380 cm | 1.15 m ^a | 5,718,361 | 6.573,25 |
| M_Concrete-Square-Column (K1) | 55 x 55 cm | Lantai Distar | Lantai 1 | 380 cm | 1.15 m ^e | 5,718,301 | 6,573,25 |
| M_Concrete-Square-Column (K1) | 55 x 55 cm | Lantar Dasar | Lante 1 | 380 cm | 1.15 m ^a | 5,718,301 | 0.573,25 |
| M_Concrete-Square-Column (K1) | 55 x 55 cm | Lantas Dissar | Lortai 1 | 380 cm | 1.35 m ^a | 5.718,301 | 0.573,25 |
| M_Concrete-Square-Column (K1) | 55 x 55 cm | Lantar Dasar | Lettai 1 | 380 cm | 1.15 m ^a | 5,718,301 | 6,573,25 |
| M_Concrete-Square-Column (K2) | 55 x 55 cm | Lantai Dasat | Lartai 1 | 380 cm | 1.15 m ^a | 4,760,771 | 5,472,50 |
| M_Concrete-Square-Column (K2) | 55 x 55 cm | Lanta/ Datar | Eantai 1 | 360 cm | 1.15 m ^a | 4,760,771 | 5,472.50 |
| M_Concrete-Square-Column (K2) | 55 x 55 cm | Lantai Dasar | Lantai 1 | 360 cm | 1.15 m ^a | 4,760,771 | 5,472,50 |
| M_Cencrete-Square-Column (K2) | 55 x 55 cm | Lantai Desar | Lantai 1 | 380 cm | 1.15 m ^a | 4,760,771 | 5,472,50 |
| M_Concrete-Square-Column (K2) | 55 x 55 cm | Lantai Dasari | Lartai 1 | 380 cm | 1.15 m ^e | 4,760,771 | 5,472,50 |
| M_Concrete-Square-Column (R2) | 55 x 55 cm | Lantai Dieser | Eattal 1 | 380 cm | 1.15 m ^a | 4,760,771 | 5,472.50 |
| Lantai Dasar 20 | | | | | 21.00 m ^a | | 109.843.43 |

Figure 11.Column Structure Schedules Display

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Figure 11 displays the column structure schedule resulting from Autodesk Revit modeling. This schedule contains the item name, volume, size, cost, and total cost.

3.3. Beam Structure

1) Beam Plan



Figure 12. Beam Plan

Figure 12 shows the modeling of the beam structure plan for the BRI Bank Building construction project using Autodesk Revit.

2) 3D Modeling of Beam Structures

Next, 3D modeling of the beam structure is carried out according to the points determined on the structural plan.



Figure 13. 3D Modeling of Beam Structures

Figure 13 shows the overall beam structure starting from the ground floor to the roof floor.

3) Details of Reinforcement and Cutting of Beam Structures

The following is a detailed view of the reinforcement and cuts in one type of beam.



Figure 14. Reinforcement of G1 Beam Structure

Figure 14 modeling of G1 beam structural reinforcement. In the process of modeling reinforcement in beam structures, field reinforcement and support reinforcement must be taken into account. So that there are no mistakes in reinforcing the beam structure.



Figure 15. G1 Beam Structure Section (a) Support Reinforcement (b) Field Reinforcement

Figure 15 shows a section of beam G1 and the reinforcement in the beam.

4) Schedules Beam Structures

Display schedules on the completed beam structure.

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| A Concrete-Rectangular Beam The Beam 16 x 40 cm Lattel Desar 160 cm 0.06 cm Concrete-Rectangular Beam Teo Beam 67 16 x 56 cm Lattel Desar 166 cm 0.06 cm Concrete-Rectangular Beam Teo Beam 67 16 x 56 cm Lattel Desar 166 cm 0.06 cm Concrete-Rectangular Deam Teo Beam 67 16 x 56 cm Lattel Desar 166 cm 0.05 cm Concrete-Rectangular Deam Teo Beam 07 16 x 66 cm Lattel Desar 0.66 cm 0.11 cm Concrete-Rectangular Beam Teo Beam 16 x 66 cm Lattel Desar 136 cm 0.11 cm Concrete-Rectangular Beam Teo Beam 16 x 60 cm Lattel Desar 360 cm 0.11 cm Concrete-Rectangular Beam Teo Beam 16 x 60 cm Lattel Desar 360 cm 0.11 cm Concrete-Rectangular Beam Teo Beam 16 x 40 cm Lattel Desar 260 cm 0.13 cm Concrete-Rectangular Beam Teo Beam 16 x 40 cm Lattel Desar 260 cm 0.13 cm | 4,196,979 | 444.2 |
| a Concrete-Rectangular Beam, Te Beam, 67 45 x 50 cm, Lantal Desar 4 Concrete-Rectangular Beam, Te Deam, 67 45 x 50 cm, Lantal Desar 40 cm, 18 Rectangular Beam, Te Deam, 67 45 x 50 cm, Lantal Desar 40 cm, 19 cm, 0 13 m 4 Concrete-Rectangular Beam, Te Deam, 67 45 x 50 cm, Lantal Desar 40 cm, 19 cm, 0 13 m 4 cm, 19 cm, 0 13 m 4 cm, 19 cm, 0 28 m 4 cm, 19 cm, 0 28 m 4 cm, 19 cm, 0 28 m 4 cm, 19 cm, 0 28 m 4 cm, 19 | 4, 196, 979 | 234.1 |
| A Concrete-Rectangular Beam Te Deam D* 16.8 x 50 cm Lantat Deam 166 cm 0.09 m* Concrete-Rectangular Beam Te Deam D* 16.8 x 50 cm Lantat Deam 0.01 m* Concrete-Rectangular Beam Te Deam D* 16.8 x 50 cm Lantat Deam 0.01 m* Concrete-Rectangular Beam Te Deam D* 16.8 x 50 cm Lantat Deam 0.01 m* Concrete-Rectangular Beam Te Deam D* 16.8 x 50 cm Lantat Deam 10.7 m 0.11 m* Concrete-Rectangular Beam Te Beam BJ 20.8 x 40 cm Lantat Deam 100 cm 0.11 m* Concrete-Rectangular Beam Te Beam BJ 20.8 x 40 cm Lantat Deam 20.8 m* 0.28 m* Concrete-Rectangular Beam Te Beam BJ 20.8 x 40 cm Lantat Deam 251 cm 0.13 m* Concrete-Rectangular Beam Te Beam BJ 20.8 x 40 cm Lantat Deam 253 cm 0.01 m* Concrete-Rectangular Beam Te Beam BJ 20.8 x 40 cm Lantat Deam 250 cm 0.13 m* Concrete-Rectangular Beam </td <td>4,160,246</td> <td>101.3</td> | 4,160,246 | 101.3 |
| 4 Concrete-Rectangular Deam Tele Same DF 15 × 56 cm Latrata Deam 0 + 13 m² 6 Concrete-Rectangular Deam Tele Same DF 15 × 56 cm Latrata Deam 0 + 0.03 m² 6 Concrete-Rectangular Deam Tele Same DF 15 × 56 cm Latrata Deam 0 + 0.03 m² 6 Concrete-Rectangular Deam Tele Same DF 15 × 56 cm Latrata Deam 0 + 0.01 m² 6 Concrete-Rectangular Deam Tele Same DF DEA D | 4 166 246 | 508.2 |
| Concrete-Rectangular Deam Tei Deam D7 16 × 56 cm Lanta Deam 53 cm 0.03 m² Concrete-Rectangular Deam Tei Deam D7 16 × 56 cm Lanta Deam 64 cm 0.10 m² Concrete-Rectangular Deam Tei Deam D7 16 × 56 cm Lanta Deam 16 cm 0.10 m² Concrete-Rectangular Deam Tei Deam D7 16 × 56 cm Lanta Deam 170 cm 0.11 m² Concrete-Rectangular Deam Tei Deam D4 20 × 40 cm Lanta Deam 181 cm 0.21 m² Concrete-Rectangular Deam Tei Deam D4 20 × 40 cm Lanta Deam 251 cm 0.21 m² Concrete-Rectangular Deam Tei Deam D4 20 × 40 cm Lanta Deam 258 cm 0.13 m² Concrete-Rectangular Deam Tei Deam D4 20 × 40 cm Lanta Deam 258 cm 0.13 m² Concrete-Rectangular Deam Tei Deam D4 20 × 40 cm Lanta Deam 258 cm 0.13 m² Concrete-Rectangular Deam Tei Deam D1 26 × 40 cm Lanta Deam 258 cm 0.13 m² Concrete-Rectangular Deam Tei Deam D1 26 × 40 cm Lanta Deam 268 cm 0.13 m² Concrete-Rectangular Deam Tei Deam D1 26 | 4,168,246 | 558.4 |
| 4 Concrete-Rectangular Deam Diff 15 × 50 cm Lattat Datari 64 cm 0.04 m² 6 Concrete-Rectangular Deam Diff 15 × 50 cm Lattat Datari 170 cm 0.11 m² 6 Diff Diff 15 × 50 cm Lattat Datari 170 cm 0.11 m² 6 Diff Diff 10 × 10 cm Lattat Datari 170 cm 0.11 m² 6 Diff Diff 10 × 10 cm Lattat Datari 310 cm 0.25 m² 6 Diff Diff Diff 20 × 40 cm Lattat Datari 258 cm 0.13 m² 4 Diff Diff Diff 20 × 40 cm Lattat Datari 258 cm 0.13 m² 4 Concrete-Rectangular Deam Diff 20 × 40 cm Lattat Datari 258 cm 0.13 m² 4 Concrete-Rectangular Deam Diff 258 cm 0.13 m² 4 Concrete-Rectangular Deam Diff 258 cm 0.13 m² 4 | 4,160,246 | 120.2 |
| A. Concrete-Rectangular Deam Difference Lantas Datas Tide S cm D 10 mm Concrete-Rectangular Biasm Tide S cm Lantas Datas Tide S cm D 10 mm Concrete-Rectangular Biasm Tide Biasm Tide S cm Lantas Datas Tide S cm D 20 mm Concrete-Rectangular Biasm Tide Biasm Tide S cm Lantas Datas Tide S cm D 20 mm Concrete-Rectangular Biasm Tide Biasm | 4,160,246 | 169.2 |
| Concrete-Rectangular Disk Disk Tis is is on Lantal Data TYO s.m. 0.11 mm Concrete-Rectangular Biasmini BL 20 a 40 s.m. Lantal Data 205 s.m. 0.25 mm Concrete-Rectangular Biasmini BL 20 a 40 s.m. Lantal Data 205 s.m. 0.25 mm Concrete-Rectangular Biasmini BL 20 a 40 s.m. Lantal Data 205 s.m. 0.01 mm Concrete-Rectangular Biasmini BL 20 a 40 s.m. Lantal Data 205 s.m. 0.01 mm Concrete-Rectangular Biasmini BL 20 s.40 s.m. Lantal Data 206 s.m. 0.11 mm Concrete-Rectangular Diam The Biasmini BL 20 s.40 s.m. Lantal Data 206 s.m. 0.11 mm Concrete-Rectangular Diam The Biasmini BL 20 s.40 s.m. Lantal Data 200 s.m. 0.11 mm Concrete-Rectangular Diam The Biasmini BL 20 s.40 s.m. Lantal Data 200 s.m. 0.16 mm Concrete-Rectangular Diam The Biasmini BL 20 s.40 s.m. Lantal Data 200 s.m. | 4,100,246 | 429.4 |
| A Concrete-Factaregute Heam Bit 20 x 40 cm Lantat Gasar 200 m 0.20 mm Concrete-Factaregute Heam Te Brann Bit 20 a 40 cm Lantat Gasar 265 cm 0.11 mm Concrete-Factaregute Heam Te Brann Bit 20 a 40 cm Lantat Gasar 265 cm 0.11 mm Concrete-Factaregute Heam Te Brann Bit 20 a 40 cm Lantat Gasar 255 cm 0.13 mm Concrete-Rectaregute Beam Te Brann Bit 20 a 40 cm Lantat Gasar 250 cm 0.13 mm Concrete-Rectaregute Beam Te Geam Bit 20 a 40 cm Lantat Gasar 250 cm 0.13 mm Concrete-Rectaregute Beam Te Geam Bit 20 a 40 cm Lantat Gasar 250 cm 0.13 mm Concrete-Rectaregute Beam Te Geam Dit 25 x 50 cm Lantat Gasar 250 cm 0.13 mm Concrete-Rectaregute Beam Te Beam Bit 26 x 50 cm Lantat Gasar 260 cm 0.96 mm Concrete-Rectaregute Beam Te Beam Bit 26 x 50 cm Lantat Gasar 260 cm 0.44 mm Concrete-Rectaregute Beam Te | 4,160,246 | 459.8 |
| Converte Restangular Baam The Blaam BL 20 a 40 arm Lantat Datar 380 arm B. 20 m² Converte Flancingular Harm The Blaam 20 a 40 arm Lantat Datar 285 arm 0.00 m² Converte Flancingular Blaam The Blaam 20 a 40 arm Lantat Datar 280 arm 0.13 m² Converte Flancingular Deam The Blaam 20 a 40 arm Lantat Datar 280 arm 0.13 m² Converte Flancingular Deam The Blaam 20 a 40 arm Lantat Datar 280 arm 0.13 m² Converte Flancingular Deam The Blaam 25 a 40 arm Lantat Datar 280 arm 0.13 m² Converte Flancingular Deam The Blaam 25 a 40 arm Lantat Datar 280 arm 0.16 m² Converte Flancingular Deam The Blaam 28 a 40 arm Lantat Datar 280 arm 0.16 m² Converte Flancingular Deam The Blaam 28 a 40 arm Lant | 3 622 866 | 1.028.7 |
| 4. Concrete Restangute Heam Te Baan B4 20 a 48 em Lantat Dasar 285 em 0.01 m² 4. Concrete Restangute Heam Te Baan B4 20 x 40 em Lantat Dasar 285 em 0.13 m² 6. Concrete Restangute Baan Te Baan B4 20 x 40 em Lantat Dasar 285 em 0.13 m² 6. Concrete Restangute Baan Te Bean B4 20 x 40 em Lantat Dasar 285 em 0.13 m² 6. Concrete Restangute Baan Te Bean B4 20 x 40 em Lantat Dasar 285 em 0.13 m² 6. Concrete Restangute Baan Te Bean B4 20 x 40 em Lantat Dasar 285 em 0.13 m² 6. Concrete Restangute Baan Te Bean B1 26 x 40 em Lantat Dasar 280 em 0.13 m² 6. Concrete Restangute Baan Te Bean B1 26 x 60 em Lantat Dasar 800 em 0.16 m² 6. Concrete Restangute Baan Te Bean FD2 30 x 60 em Lantat Dasar 800 em 0.16 m² 6. Concrete Restangute Baan Te Bean FD2 30 x 60 em Lantat Dasar 800 em 0.73 m² 6. Concrete Restangute Baan Te Bean FD2 30 x 60 em Lantat Dasar 800 em 0.44 m² 6. Concrete Restan | 3 822 366 | 901.8 |
| 4. Concrete Rectangular Hamm Tu Blaam B4 20 a 40 err Lamtat Dawar 255 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B4 20 x 40 err Lantat Dawar 285 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B4 20 x 40 err Lantat Dawar 285 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B4 20 x 40 err Lantat Dawar 285 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B4 20 x 40 err Lantat Dawar 285 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B1 26 x 60 err Lantat Dawar 280 err 0 13 m² 6. Concrete Rectangular Baam, Tu Blaam B1 26 x 60 err Lantat Dawar 600 err 0 16 m² 6. Concrete Rectangular Baam, Tu Blaam B1 26 x 50 err Lantat Dawar 600 err 0 44 m² 6. Concrete Rectangular Baam, Tu Blaam P52 30 a 60 err Lantat Dawar 800 err 0 44 m² 6. Concrete Rectangular Baam, Tu Blaam P52 30 a 60 err Lantat Dawar 980 err 0 44 m² 6. Concrete Rectangular Baam, Tu Blaam P52 30 a 60 err Lantat Dawar 986 err | 3 822 966 | 400.0 |
| 4 Commente Restampute Beam The Beam B4 20 × 40 cm Lantet Genar 288 cm 0.13 m² 4 Concrete Rectampute Beam Tie Beam B4 20 × 40 cm Lantet Genar 286 cm 0.13 m² 4 Concrete Rectampute Beam Tie Beam B4 20 × 40 cm Lantet Genar 286 cm 0.13 m² 4 Concrete Rectampute Beam Tie Beam B5 28 × 40 cm Lantet Genar 286 cm 0.13 m² 6 Concrete Rectampute Beam B5 28 × 40 cm Lantet Genar 800 cm 0.56 m² 6 Concrete Rectampute Beam B1 26 × 60 cm Lantet Genar 800 cm 0.75 m² 6 Concrete Rectampute Beam B1 26 × 60 cm Lantet Genar 800 cm 0.75 m² 6 Concrete Rectampute Beam Tie Beam B1 26 × 60 cm Lantet Genar 800 cm 0.73 m² 6 Concrete Rectampute Beam Tie Beam B1 26 × 60 cm Lantet Genar 295 cm 0.44 m² 6 Concrete Rectampute Beam Tie Beam FC2 30 × 60 cm Lantet Genar 295 cm 0.44 m² 6 Concrete Rectampute Bea | 3,622,968 | 281.1 |
| 4 Concrete-Rectangular Deam, Tie Beam, B4 20 × 40 cm. Lantai Deam 288 cm. 0, 13 m ² 4 Concrete-Rectangular Deam, Tie Deam, B4 20 × 40 cm. Lantai Deam 288 cm. 0, 13 m ² 4 Concrete-Rectangular Deam, Tie Deam, B4 20 × 40 cm. Lantai Deam 288 cm. 0, 13 m ² 4 Concrete-Rectangular Deam, Tie Deam, B4 20 × 40 cm. Lantai Deam 288 cm. 0, 13 m ² 4 Concrete-Rectangular Deam, Tie Deam, B1 28 × 40 cm. Lantai Deam 800 cm. 0, 96 m ² 4 Concrete-Rectangular Deam, Tie Deam, B1 28 × 60 cm. Lantai Deam 800 cm. 0, 96 m ² 4 Concrete-Rectangular Beam, Tie Deam, B1 26 × 60 cm. Lantai Deam 800 cm. 0, 96 m ² 4 Concrete-Rectangular Beam, Tie Beam, FG3 30 × 60 cm. Lantai Deam 800 cm. 0, 44 m ² 4 Concrete-Rectangular Beam, Tie Beam, FG3 30 × 60 cm. Lantai Deam 286 cm. 0, 44 m ² 4 Concrete-Rectangular Beam, Tie Beam, FG3 30 × 60 cm. Lantai Deam 286 cm. 0, 44 m ² 4 Concrete-Rectangular Beam, Tie Beam, FG3 30 × 60 cm. Lantai Deam 286 cm. | 3,622,966 | 483.7 |
| 4 Opticipate-Reserve Deam The Deam B4 20 # 46 cm Lantai Deam 286 cm 0.13 m² 4 Concrete-Rectangular Baam The Deam B1 26 x 46 cm Lantai Deam 286 cm 0.13 m² 4 Concrete-Rectangular Deam The Deam B1 26 x 46 cm Lantai Deam 286 cm 0.16 m² 5 Concrete-Rectangular Deam The Deam B1 26 x 46 cm Lantai Deam 600 cm 0.96 m² 6 Concrete-Rectangular Deam The Deam B1 26 x 46 cm Lantai Deam 600 cm 0.95 m² 6 Concrete-Rectangular Deam The Deam B1 26 x 46 cm Lantai Deam 600 cm 0.73 m² 6 Concrete-Rectangular Deam The Deam FG2 36 a 60 cm Lantai Deam 600 cm 0.73 m² 6 Concrete-Rectangular Deam The Deam FG2 36 a 60 cm Lantai Deam 295 cm 0.44 m² 6 Concrete-Rectangular Deam The Deam FG2 36 a 60 cm Lantai Deam 295 cm 0.44 m² 6 Concrete-Rectangular Deam The Deam FG2 36 a 60 cm Lantai Deam 295 cm 0.44 m² 6 Concrete-Rec | | 453.7 |
| A Concrete-Rectangular Deam Te Beam 54 20 x 40 cm Lantai Osara 286 cm 0 10 m ² Concrete-Rectangular Deam Te Beam 51 25 x 40 cm Lantai Osara 800 cm 0 96 m ² Concrete-Rectangular Deam Te Beam 51 25 x 40 cm Lantai Osara 800 cm 0 96 m ² Concrete-Rectangular Deam Te Beam 51 25 x 40 cm Lantai Osara 800 cm 0 95 m ² Concrete-Rectangular Deam Te Beam 51 25 x 50 cm Lantai Osara 800 cm 0 73 m ² Concrete-Rectangular Deam Te Beam 51 25 x 50 cm Lantai Osara 800 cm 0 73 m ² Concrete-Rectangular Deam Te Beam 51 25 x 50 cm Lantai Osara 900 cm 0 73 m ² Concrete-Rectangular Deam Te Beam 51 26 x 50 cm Lantai Osara 900 cm 0 73 m ² Concrete-Rectangular Deam Te Beam 51 26 x 50 cm Lantai Osara 900 cm 0 73 m ² Concrete-Rectangular Deam Te Beam 52 30 a 50 cm Lantai Osara 900 cm 0 74 m ² Concrete-Rectangular Deam Te Beam 52 30 a 50 cm Lantai Osara 900 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 752 30 a 50 cm Lantai Osara 900 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 44 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 398 cm 0 47 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 0 41 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 0 41 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 0 41 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 0 41 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 1 41 m ² Concrete-Rectangular Deam Te Beam 753 30 x 50 cm Lantai Deam 396 cm 1 41 m ² Concrete-Rectangular Deam Te Beam 754 30 x 70 cm Lantai Deam 396 cm | 3,622,966 | |
| A. Concrete-Rectangular Deam. The Deam B3 25 x 46 cm Lantal Deam 286 cm 0.16 m² Concrete-Rectangular Deam. The Deam D1 25 x 56 cm Lantal Deam 600 cm 0.96 m² Concrete-Rectangular Deam. The Deam D1 25 x 56 cm Lantal Deam 600 cm 0.95 m² Concrete-Rectangular Deam. The Deam D1 25 x 56 cm Lantal Deam 600 cm 0.95 m² Concrete-Rectangular Deam. The Deam D1 25 x 56 cm Lantal Deam 600 cm 0.95 m² Concrete-Rectangular Deam. The Deam D1 25 x 56 cm Lantal Deam 600 cm 0.95 m² Concrete-Rectangular Deam. The Deam D1 26 x 66 cm Lantal Deam 800 cm 0.75 m² Concrete-Rectangular Deam. The Deam FG3 30 x 60 cm Lantal Deam 295 cm 0.44 m² Concrete-Rectangular Beam. The Deam FG3 30 x 50 cm Lantal Deam 395 cm 0.44 m² Concrete-Rectangular Beam. The Deam FG3 30 x 50 cm Lantal Deam 395 cm 0.44 m² Concrete-Rectangular Beam. The Deam FG3 30 x 50 cm Lantal Deam 395 cm 0.41 m² Concrete-Rectangular Beam | 3.622.956 | 453.7 |
| d. Concrete Rectanguite Deam Tie Deam B1 25 x 50 cm Lantai Deam 800 cm 0.95 m² d. Concrete Rectanguite Deam Tie Deam B1 25 x 50 cm Lantai Deam 600 cm 0.75 m² d. Concrete Rectanguite Beam Tie Deam B1 25 x 50 cm Lantai Deam 600 cm 0.95 m² d. Concrete Rectanguite Beam Tie Deam B1 25 x 50 cm Lantai Deam 800 cm 0.96 m² d. Concrete Rectanguite Beam Tie Beam B1 25 x 50 cm Lantai Deam 800 cm 0.73 m² d. Concrete Rectanguite Beam Tie Beam FG2 30 e 00 cm Lantai Beam 280 cm 0.41 m² d. Concrete Rectanguite Beam Tie Beam FG2 30 e 00 cm Lantai Deam 280 cm 0.44 m² d. Concrete Rectanguite Beam Tie Beam FG2 30 e 00 cm Lantai Deam 290 cm 0.44 m² d. Concrete Rectanguite Beam Tie Deam FG2 30 e 00 cm Lantai Deam 376 cm 0.63 m² d. Concrete Rectanguite Beam Tie Deam FG2 30 e 00 cm Lantai Deam 376 cm 0.63 m² d. Concrete Rectanguite Beam Tie Deam FG2 30 e 00 cm Lantai Deam 376 cm 0.63 m² d. C | 3.622.986 | |
| Concrete-Rectangular Deam Term Diame D1 25 x 50 cm Lantal Disar B00 cm 0.75 m ² Concrete-Rectangular Beam Term Diame B1 25 x 50 cm Lantal Disar B00 cm 0.16 m ² Concrete-Rectangular Beam Term Disare B1 25 x 50 cm Lantal Disare B00 cm 0.16 m ² Concrete-Rectangular Beam Term Disare B1 25 x 10 cm Lantal Disar B00 cm 0.75 m ² Concrete-Rectangular Beam Term Disare P12 38 x 80 cm Lantal Disar B00 cm 0.44 m ² Concrete-Rectangular Beam Term P12 38 x 80 cm Lantal Disar 298 cm 0.44 m ² Concrete-Rectangular Beam Term P12 38 x 80 cm Lantal Disar 298 cm 0.44 m ² Concrete-Rectangular Beam Term Beam P03 306 x 60 cm Lantal Disar 397 cm 6.63 m ² Concrete-Rectangular Beam Term Beam P03 30 x 50 cm Lantal Disar 315 cm 0.47 m ² Concrete-Rectangular Beam Term Beam P03 30 x 50 cm Lantal Disar 315 cm 0.47 m ² Concret | 3,512,364 | 565.4 |
| Concrete-Rectangute Deam The Diame B1 26 s 45 cm Lanta/ Data 600 cm 0.06 m/s Concrete-Rectangute Beam The Diame B1 26 s 45 cm Lanta/ Data 600 cm 0.06 m/s Concrete-Rectangute Beam The Diame B1 26 s 45 cm Lanta/ Data 800 cm 0.06 m/s Concrete-Rectangute Beam The Diame B1 26 s 45 cm Lanta/ Diame 800 cm 0.44 m/s Concrete-Rectangute Beam The Diame FG3 30 s 45 cm Lanta/ Diame 295 cm 0.44 m/s Concrete-Rectangute Beam The Beam FG3 30 s 45 cm Lanta/ Diame 295 cm 0.44 m/s Concrete-Rectangute Beam The Beam FG3 30 s 45 cm Lanta/ Diame 295 cm 0.44 m/s Concrete-Rectangute Beam The Beam FG3 30 s 45 cm Lanta/ Diame 295 cm 0.44 m/s Concrete-Rectangute Beam The Beam FG3 30 s 45 cm Lanta/ Diame 395 cm 0.44 m/s Concrete-Rectangute Beam The Beam FG3 30 s 45 cm Lanta/ Diame 395 cm 0.41 m/s Concrete-Rectangute Beam | 5,246.045 | 3,124.3 |
| A_Concrete Pectangular Binam The Binam The Binam The Binam The Binam The Binam Binam <td>3,246.043</td> <td>2,374.4</td> | 3,246.043 | 2,374.4 |
| Concernet Feature Baser Te Baser M1 26 a 60 cm Lantas Dasar B00 cm 0.73 m² Concernet Feature Baser Te Baser FG3 30 a 60 cm Lantas Dasar 286 cm 0.44 m² Concernet Feature Baser Tis Baser FG3 30 a 60 cm Lantas Desar 286 cm 0.44 m² Concernet Feature Baser Tis Baser FG3 30 a 60 cm Lantas Desar 286 cm 0.44 m² Concernet Feature Baser Tis Baser FG3 30 a 60 cm Lantas Desar 286 cm 0.44 m² Concernet Feature Baser Tis Baser FG3 30 a 60 cm Lantas Desar 286 cm 0.44 m² Concernet Feature Baser Tis Baser FG3 30 a 60 cm Lantas Desar 378 cm 0.51 m² Concernet Rectangular Baser Tis Desar FG3 30 a 60 cm Lantas Desar 378 cm 0.41 m² Concernet Rectangular Baser Tis Desar FG3 30 a 60 cm Lantas Desar 378 cm 0.41 m² Concernet Rectangular Baser Tis Desar FG3 30 a 60 cm Lantas Desar 370 cm 0.41 m² Concernet Rectangular Baser Tis Desar FG3 30 a 60 cm <t< td=""><td>3,246,043</td><td>3.128.3</td></t<> | 3,246,043 | 3.128.3 |
| A Commente Renkampular Basam FG2 30 a 60 mm Lantat Gasam 296 mm 0.44 mm Commente Renkampular Basam Tie Basam FG2 30 a 60 mm Lantat Gasam 296 mm 0.44 mm Commente Restampular Basam Tie Basam FG2 30 a 60 mm Lantat Gasam 296 mm 0.44 mm Commente Restampular Basam Tie Basam FG2 30 x 50 mm Lantat Gasam 296 mm 0.44 mm Commente Restampular Basam Tie Basam FG2 30 x 50 cm Lantat Gasam 395 cm 0.53 mm Commente Restampular Basam Tie Busam FG2 30 x 50 cm Lantat Gasam 395 cm 0.53 mm Commente Restampular Basam Tie Busam FG2 30 x 50 cm Lantat Gasam 395 cm 0.53 mm Commente Restampular Basam Tie Busam FG2 30 x 50 cm Lantat Gasam 395 cm 0.41 mm Commente Restampular Basam Tie Busam FG2 30 x 50 cm Lantat Gasam 370 am 0.41 mm Commente Restampular Basam Tie Busam FG3 30 x 50 cm Lantat Gasam 370 am 0.41 mm Commente Restampular< | 3,234,043 | 2,143.2 |
| A_Converse Restorange Basem The Beam Field 30 a 60 ord Lantai Gasar 286 ord 0.44 m² A_Converse Flavorange Basem The Beam Field 30 a 60 ord Lantai Gasar 285 ord 0.44 m² A_Converse Flavorange Basem The Beam Field 30 a 50 ord Lantai Gasar 285 ord 0.44 m² Converse Flavorange Beam Field Side 50 ord Lantai Gasar 378 ord 0.63 m² Converse Flavorange Beam Field Side 50 ord Lantai Gasar 315 ord 0.41 m² Converse Flavorange Beam Field 30 a 50 ord Lantai Gasar 315 ord 0.41 m² Converse Flavorange Beam Beam Field 30 a 50 ord Lantai Gasar 370 ord 0.41 m² Converse Flavorange Beam Field 30 a 50 ord Lantai Gasar 370 ord 0.41 m² Converse Flavorange Beam | 3,246,343 | 2,378,4 |
| 4. Concrete Restangular Beam, Tie Beam FG2 30 n 65 em Lamai Deaar 285 em -0.44 m² 4. Concrete Restangular Beam, Tie Beam FG2 30 x 50 em Lamai Deaar 295 em 0.44 m² 4. Concrete Restangular Beam, Tie Beam FG2 30 x 50 em Lamai Deaar 378 em 0.63 m² 4. Concrete Restangular Beam, Tie Beam FG2 30 x 50 em Lamai Deaar 378 em 0.63 m² 4. Concrete Restangular Beam, Tie Beam FG2 30 x 50 em Lamai Deaar 315 em 0.47 m² 6. Concrete Restangular Beam, Tie Beam FG2 30 x 50 em Lamai Deaar 315 em 0.47 m² 6. Concrete Restangular Beam, Tie Beam FG2 30 x 60 em Lamai Deaar 315 em 0.47 m² 6. Concrete Restangular Beam, Tie Beam FG2 30 x 60 em Lamai Deaar 315 em 0.41 m² 6. Concrete Restangular Beam, Tie Beam FG3 30 x 60 em Lamai Deaar 370 em 1.41 m² 6. Concrete Restangular Beam, Tie Beam FG4 30 x 60 em Lamai Deaar 870 em 1.41 m² Concrete Restangular Beam, Tie Beam FG4 30 x 70 em Lamai Deaar 870 em 1.41 m² | 35,646,200 | 1,648,7 |
| 4 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 295 cm 0.53 m ² 5 Concrete-Rectangular Beam Te Deam FG2 30 × 50 cm Lanter Deam 375 cm 0.53 m ² 6 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 355 cm 0.47 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 36 cm 0.48 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 36 cm 0.44 m ² 5 Concrete-Rectangular Deam Te Deam FG2 30 × 50 cm Lanter Deam 36 cm 0.44 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 50 cm Lanter Deam 40 cm 0.44 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 40 cm 1.44 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 40 cm 1.44 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.41 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.40 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.40 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam Te Deam FG1 30 × 70 cm Lanter Deam 400 cm 1.30 m ² 5 Concrete-Rectangular Deam | 3,848,260 | 1,688,7 |
| 4 Concrete-Rectangular Beam, Tie Beam FG2 30 x 50 cm Lantei Desar 378 cm 6.53 m² 4 Concrete-Rectangular Beam, Tie Beam FG2 30 x 50 cm Lantei Desar 355 cm 6.53 m² 4 Concrete-Rectangular Beam, Tie Beam FG2 30 x 50 cm Lantei Desar 355 cm 6.53 m² 4 Concrete-Rectangular Beam, Tie Beam FG2 30 x 50 cm Lantei Desar 315 cm 0.47 m² 4 Concrete-Rectangular Beam, Tie Beam FG2 30 x 60 cm Lantei Desar 315 cm 0.41 m² 5 Concrete-Rectangular Beam, Tie Beam FG2 30 x 60 cm Lantei Desar 315 cm 0.41 m² 5 Concrete-Rectangular Beam, Tie Beam FG2 30 x 60 cm Lantei Desar 370 nm 0.41 m² 5 Concrete-Rectangular Beam, Tie Beam FG1 30 x 60 cm Lantei Desar 470 nm 1.41 m² 5 Concrete-Rectangular Beam, Tie Beam FG1 30 x 70 cm Lantei Desar 670 nm 1.41 m² 5 Concrete-Rectangular Beam, Tie Beam FG1 30 c 70 cm Lantei Desar 670 nm 1.41 m² 5 </td <td>3,848,200</td> <td>1,888,7</td> | 3,848,200 | 1,888,7 |
| A Concrete-Rectangular Deam. Te Deam PG2 30 × 50 cm. Lantai Dasar 355 cm. 0.53 m ² Concrete-Rectangular Baan. Tin Deam PG3 30 × 50 cm. Lantai Dasar 315 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Deam PG3 30 × 50 cm. Lantai Dasar 315 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Deam PG3 30 × 50 cm. Lantai Dasar 315 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Deam PG3 30 × 50 cm. Lantai Dasar 316 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Deam PG3 30 × 50 cm. Lantai Dasar 316 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Baan PG3 30 × 50 cm. Lantai Dasar 316 cm. 0.47 m ² Concrete-Rectangular Baan. Tin Baan PG3 30 × 50 cm. Lantai Dasar 316 cm. 1.00 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 50 cm. Lantai Dasar 316 cm. 1.00 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 470 um. 1.41 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 470 um. 1.41 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 470 um. 1.41 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 470 um. 1.41 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 470 um. 1.41 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Tin Baan PG1 30 × 70 cm. Lantai Dasar 400 cm. 1.30 m ² Concrete-Rectangular Baan. Ti | 3.645.200 | 1,568.7 |
| 4 Concrete-Rectanguiar Deam. Tie Deam PG2 36 × 50 cm. Lantal Osaar 315 cm. 0.47 m² 4 Concrete-Rectanguiar Beam. Tie Deam PG2 36 × 50 cm. Lantal Osaar 315 cm. 0.47 m² 4 Concrete-Rectanguiar Beam. Tie Deam PG2 36 × 50 cm. Lantal Osaar 315 cm. 0.41 m² 4 Concrete-Rectanguiar Beam. Tie Beam PG2 36 × 50 cm. Lantal Osaar 370 sm. 0.41 m² 4 Concrete-Rectanguiar Deam. Datoit 00 36 × 50 cm. Lantal Osaar 370 sm. 0.41 m² 4 Concrete-Rectanguiar Deam. Datoit 00 36 × 50 cm. Lantal Osaar 370 sm. 0.41 m² 4 Concrete-Rectanguiar Deam. Tie Beam PG1 36 × 50 cm. Lantal Osaar 470 cm. 1.41 m² 4 Concrete-Rectanguiar Beam. Tie Beam PG1 36 × 70 cm. Lantal Osaar 670 cm. 1.41 m² 4 Concrete-Rectanguiar Beam. Tie Beam PG1 36 × 70 cm. Lantal Osaar 670 cm. 1.30 m² 4 Concrete-Rectanguiar Beam. Tie Beam PG1 36 × 70 cm. Lantal Osaar 670 cm. 1.30 m² 4 Concrete-Rectanguiar Beam. Tie Beam PG1 36 × 70 cm. Lantal Osaar 670 cm. 1.30 m² | 3.645.200 | 1.687.6 |
| A. Concrete Rectangular Deam. The Deam PG2 36 % 50 cm Lattuit Deam 315 cm 0.47 m² Concrete Rectangular Deam. The Deam PG2 30 % 50 cm Lattuit Deam 370 cm 0.41 m² Concrete Rectangular Deam. The Deam PG2 30 % 50 cm Lattuit Deam 370 cm 0.41 m² Concrete Rectangular Deam. The Deam PG2 30 % 50 cm Lattuit Deam 370 cm 0.41 m² Concrete Rectangular Deam. The Deam PG2 30 % 50 cm Lattuit Deam 370 cm 0.41 m² Concrete Rectangular Deam. The Deam PG1 30 % 50 cm Lattuit Deam 370 cm 0.41 m² Concrete Rectangular Deam. The Deam PG1 30 % 50 cm Lattuit Deam 370 cm 1.41 m² Concrete Rectangular Deam. The Deam PG1 30 % 70 cm Lattuit Deam 370 cm 1.41 m² Concrete Rectangular Deam. The Deam PG1 30 % 70 cm Lattuit Deam 370 cm 1.41 m² Concrete Rectangular Deam. The Deam PG1 30 % 70 cm Lattuit Deam 570 cm 1.30 m² Concrete Rectangular Deam. The Deam PG1 30 % 70 cm Lattuit Deam 570 cm 1.30 m² Concret | 5.645.200 | 1.007.0 |
| A Concrete Rectangular Beam Tri Beam FG2 30 = 60 mm Lamas Dasas 270 mm 0.41 m ² 4. Concrete Rectangular Deam Babo 100 20 × 00 cm Lamas Dasas 400 cm 0.41 m ² 5. Concrete Rectangular Deam Babo 100 20 × 00 cm Lamas Dasas 400 cm 0.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 4. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.41 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.40 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Dasas 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Basa 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 20 × 00 cm Lamas Basa 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 30 × 00 cm Lamas Basa 400 cm 1.30 m ² 5. Concrete Rectangular Beam Tri Beam FG1 30 × 00 cm Lamas Basa 40 | 3.545.200 | 1.675.1 |
| Concrete-Rectanguist Deam Tail Pears PGZ 30 a 66 cm Lamme Deam 270 cm 0.41 m² Concrete-Rectanguist Deam Deam Deam Deam Deam A 6 cm Lamme Deam A 6 cm B 4 1 m² Concrete-Rectanguist Hearn Deam Deam Deam Lamitat Deam A 6 cm B 4 m² Concrete-Rectanguist Hearn Deam Concrete-Rectanguist Deam 1 m² Concrete-Rectanguist Hearn Th Deam FG Deam 1 m² Concrete-Rectanguist Hearn Th Deam FG Deam 1 m² Concrete-Rectanguist Hearn Th Deam FG Deam 1 m² Deam 1 m² Concrete-Rectanguist Hearn Th Deam FG Deam Lamita Deam Deam 1 D P² Concrete-Rectanguist Hearn Th Deam Lamita Deam Deam Deam 1 D P² | 3.545.200 | 4.676.4 |
| Concrete Rectangute Deam. Basist 00 30 × 00 cm Larma Deam 40 cm 6 de m Concrete Rectangute Mean. Make 00 30 × 00 cm Larma Deam 30 cm 8 de m Concrete Rectangute Mean. Make 00 30 × 00 cm Larma Deam 30 cm 8 de m Concrete Rectangute Mean. Make 00 30 × 00 cm Larma Deam 60 cm 14 mm Concrete Rectangute Mean. The Beam PG1 30 × 00 cm Larma Deam 600 cm 14 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 600 cm 14 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 600 cm 1 30 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 600 cm 1 30 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 600 cm 1 30 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 600 cm 1 30 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm Larma Deam 800 cm 1 30 mm Concrete Rectangute Mean. The Beam PG1 30 × 70 cm | 3.646.360 | 3.4255.8 |
| Concrete Restangate Barn 11 Barn 201 30 × 00 sin Lanta Dasa Mit um It 01 m² Concrete Restangate Barn 11 Barn 21 30 × 70 sin Lanta Dasa 870 sin 1.4 m² Concrete Restangate Barn 11 Barn 21 30 × 70 sin Lanta Dasa 870 sin 1.4 m² Concrete Restangate Barn 11 Barn 21 30 × 70 sin Lanta Dasa 870 sin 1.4 m² Concrete Restangate Barn 11 Barn 12 30 × 70 sin Lanta Dasa 870 sin 1.4 m² Concrete Restangate Barn 11 Barn 12 30 × 70 sin Lanta Dasa 890 sin 1.4 m² Concrete Restangate Barn 11 Barn 161 30 × 70 sin Lanta Dasa 890 sin 1.30 m² Concrete Restangate Barn 11 Barn 161 30 × 70 sin Lanta Dasa 800 sin 1.30 m² Concrete Restangate Bern 11 1.4 m² 30 × 70 sin Lanta Dasa 620 sin 1.30 m² Concrete Restangate Bern 11 1.4 m² 30 × 70 sin Lanta Dasa 620 sin 1.30 m² Concrete Restangate Bern 11 1.4 m² 30 × 70 sin Lanta Dasa 630 sin 1.30 m² Concrete | 3,846,200 | 9,435,8 |
| Converte Residencial Hours Till Bearn FG1 30 a 70 mm Larias Danas H70 mm 1.4 mm Commente Residencial Bearn FG 50 a 70 mm Larias Danas H70 mm 1.4 mm Commente Bearn FG 50 a 70 cm Larias Danas H70 mm 1.4 mm Commente Bearn FG 50 a 70 cm Larias Danas H70 mm 1.4 mm Commente Bearn FG 50 a 70 cm Larias Danas H70 mm 1.4 mm Commente Bearn FG 50 a 70 cm Larias Danas H20 mm 1.30 mm Commente Bearn FG 50 a 70 cm Larias Danas H20 mm 1.30 mm Commente Bearn FG 30 a 70 cm Larias Danas H20 mm 1.30 mm Commente Bearn FG 30 a 70 cm Larias Danas H20 mm 1.30 mm Commente | 3.080.056 | 166.6 |
| L'emeretra flactangulari Daam (° 14 m²) Concrete flactangulari Daam (° 16 Denne (° 15) Concrete flactangulari Deam (° 16) Concrete flactangulari Baam (° 16) Concrete flac | 37. 1948 (D., 1710-0) | 3007,3 |
| A Concrete-Rectanguist Deam, Yie Beam PG1 30 x Y0 cm Larris Deam 600 cm 1.4 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 635 cm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 635 cm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 635 cm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 630 cm 1.30 m² Concrete-Rectanguist Meam, Yie Beam, PG1 36 x Y0 cm Laris Deam 630 cm 1.30 m² Concrete-Rectanguist Meam, Yie Beam, PG1 36 x Y0 cm Laris Deam 800 cm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 800 cm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 600 rm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 600 rm 1.30 m² Concrete-Rectanguist Beam, Yie Beam, PG1 36 x Y0 cm Laris Deam 600 rm 1.30 m² Concrete-Rectanguist | 3,646,200 | 4 100 0 |
| Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 600 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 600 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 600 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 600 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 600 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide Beam, Tre Beam PG1 30 x 70 cm Landar Danae 800 cm 1.30 m² Concrete Reclampide B | 3.545.990 | 5.062.5 |
| Concrete Rectangular Hearn Ter Bearn FG1 30 e 70 mm Larna Dease 838 mm 1.30 m² Concrete Rectangular Deam Ter Bearn FG1 30 e 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Deam Ter Bearn FG1 30 x 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Deam Ter Bearn FG1 30 x 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Deam Ter Bearn FG1 30 x 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 mm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 cm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 cm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 cm Larna Dease 630 mm 1.30 m² Concrete Rectangular Bearn Ter Bearn FG1 30 x 70 cm Larna Dease 630 mm 1.31 m² Concrete Recta | 3,048,300 | 4.410.6 |
| A. Concrete Rectanguity Deam. To Deam PG1 50 × 70 cm Larena Dasas 620 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Dean. Tin Deam PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclanguity Mean. Te Bean PG1 30 × 70 cm Larena Dasas 600 cm 1.30 m² Concrete Reclangu | 3 Bab 200 | 4.617.6 |
| Concrete Rectanguist Manner PC1 30 × 75 dyr Lemis Chais MD om 1.30 m² Concrete Rectanguist Barner PC1 30 × 75 dyr Lemis Chais MD om 1.30 m² Concrete Rectanguist Barner PC1 30 × 75 dyr Lemis Chais MD om 1.30 m² Concrete Rectanguist Barner PC1 30 × 75 dyr Lemis Chais MD om 1.30 m² Concrete Rectanguist Bean PC1 30 × 75 dyr Lemis Chais 600 rm 1.30 m² Concrete Rectanguist Dean PC1 30 × 75 dyr Lemis Chais 600 rm 1.30 m² Concrete Rectanguist Bean PC1 30 × 75 dyr Lemis Chais 800 cm 1.30 m² Concrete Rectanguist Bean PC1 30 × 75 cm Lemis Chais 800 cm 1.31 m² Concrete Rectanguist Bean PC1 30 × 75 cm Lemis Chais 800 cm 1.31 m² Concrete Rectanguist Bean PC1 30 × 75 cm Lemis Chais 800 cm 1.31 m² Concrete Rectanguist Bean PC1 30 × 75 cm Lemis Chais 8 | 3 545 200 | 4.645.8 |
| Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.30 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.31 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.31 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.31 m² Converse Restamplate Baser, Tie Bearn PC1 30 a 70 ser. Laris Danae ND ser. 1.43 m² <td>3.545.200</td> <td>4.615.6</td> | 3.545.200 | 4.615.6 |
| L'Emerante Restangular Blazam, Tia Beam PG1 10 e 70 em Lamas Dasas 100 em 130 m² L'Oncortes Rectangular Dean, Tia Beam PG1 20 × 70 em Lamas Dasas 100 em 130 m² L'Oncortes Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 130 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 130 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 130 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 130 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 131 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 131 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² L'Oncorte Rectangular Blazam, Tis Beam PG1 20 × 70 em Lamas Dasas 100 em 143 m² | 31.35-4 (4. 3759) | 4.6110.9 |
| A Concrete Rectangular Deam, Tie Beam PG1 00 × 70 cm, Larma Gause 600 rm, 1.00 m², L'onicréte Rectangular Beam, Tie Beam PG1 00 × 70 cm, Laria Danie 600 rm, 1.30 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.30 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.31 m², L'onicréte Rectangular Deam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.31 m², L'onicréte Rectangular Deam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.31 m², L'onicréte Rectangular Deam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.31 m², L'onicréte Rectangular Deam, Tie Beam PG1 30 × 70 cm, Laria Danie 600 rm, 1.31 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 600 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 600 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 600 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 600 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 800 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 800 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 800 rm, 1.43 m², L'onicréte Rectangular Beam, Tie Beam PG1 30 × 70 rm, Laria Danie 800 rm, 1.77 m², | 3,646,200 | 4 6 16 8 |
| Loncorte Rectanglate Beam Tri Beam FG1 30 × 79 cm Lartie Danae 500 cm 1.30 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 50 m 1.31 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Lartie Danae 500 cm 1.43 m ² Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Loncorte Rectanglate Beam Tri Beam FG1 30 × 70 cm Loncorte Beam Beam FG1 70 m ² | 3 646 200 | 4.615.0 |
| L'Omorete-Restangale Biann. Te Bean FOT 30 a 75 un Laria Dana 100 un 1.30 m ² Comorete-Restangale Biann (Barn FOT) 30 a 70 un Laria Dana 100 un 1.30 m ² Comorete-Restangale Dean (Barn FOT) 30 x 70 cm Laria Dana 100 un 1.31 m ² Concrete-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.31 m ² Concrete-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.31 m ² Concrete-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.31 m ² Concrete-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.31 m ² Concrete-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.43 m ² Loncorte-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.43 m ² Loncorte-Restangale Bean (Boan FOT) 30 x 70 cm Laria Dana 100 un 1.71 m ² | 3,545,200 | 4.615.8 |
| L'Oncomente Rectanguée Bearn, Tie Bearn POT 36 a 75 cm Lamas Gause 600 cm 1,31 m ² L'Oncomete Rectanguée Dearn, Tie Bearn POT 36 a 75 cm Lamas Gause 600 cm 1,31 m ² L'Oncomete Rectanguée Bearn, Tie Bearn POT 36 a 75 cm Lamas Gause 805 cm 1,31 m ² L'Oncomete Rectanguée Bearn, Tie Bearn POT 36 a 75 cm Lamas Gause 800 cm 1,41 m ² L'Oncomete Rectanguée Bearn, Tie Bearn POT 36 a 75 cm Lamas Gause 600 cm 1,43 m ² L'Oncomete Rectanguée Bearn, Tie Bearn POT 36 a 75 cm Lamas Gause 600 cm 1,41 m ² L'Oncomete Rectanguée Bearn, Tie Bearn POT 36 a 70 cm Lamas Gause 600 cm 1,41 m ² L'Oncomete Rectanguée Bearn, Tie Dearn POT 36 a 70 cm Lamas Gause 600 cm 1,41 m ² L'Oncomete Rectanguée Béarn, Tie Dearn POT 36 a 70 cm Lamas Gause 800 cm 1,71 m ² | 3.845.200 | 4.610.8 |
| Loncrate-Bectanguiar Beam, Tie Beam PG1 30 x 70 cm. Landa Dasar 630 cm. 1.31 m² Concrate-Rectanguiar Beam, Tie Beam PG1 30 x 70 cm. Landa Dasar Edit Strand S | 3 5.45 200 | 4.8116.8 |
| L'Oncrette Rectangular Deam. Tre Deam FG1 20 x 70 cm. Larias Daoar 020 cm. 1.30 m² Conserte Rectangular Bears. Te Bears FG1 20 x 70 cm. Larias Daoar 800 cm. 1.83 m² Conserte Rectangular Bears. Te Bears FG1 30 x 70 cm. Larias Daoar 600 cm. 1.83 m² Concrette Rectangular Bears. Te Deam FG1 30 x 70 cm. Larias Daoar 600 cm. 1.81 m² Concrette Rectangular Deam. Te Deam FG1 30 x 70 cm. Larias Daoar 600 cm. 1.81 m² Concrette Rectangular Bears. Te Deam FG1 30 x 70 cm. Larias Daoar 600 cm. 1.72 m² | 3,646,200 | 4.636.9 |
| Concernets Nextamplar Bears, Tie Bears PG1 30 a 70 cm. Lawar Danae 600 cm. 1.43 m² Concernets Rectamplar Deam, Tie Deam PG1 30 a 70 cm. Lawar Danae 600 cm. 1.43 m² Concernets Rectamplar Deam, Tie Deam PG1 30 a 70 cm. Lawar Danae 800 cm. 1.72 m² Concernet Rectamplar Deam, Tie Deam PG1 30 a 70 cm. Lawar Danae 800 cm. 1.72 m² | 3.545.200 | 4.610.0 |
| Concerts Rectangular Beam Te Beam PG+ 30 a 70 cm Lenter Danae 600 cm 1.43 nP Concerts-Rectangular Beam Te Beam PG+ 30 x 70 cm Lenter Danae 800 cm 1.72 nP Concerts-Rectangular Beam Te Beam PG+ 30 x 70 cm Lenter Danae 800 cm 1.72 nP | 3.668.200 | 6.0407.8 |
| Loncoste Reclanguar Boarn. Tie Deam FCH 30 x 79 cm Lanuar Dasar 800 cm 1 79 m² Cancoste Reclanguar Boarn. Tie Beam FCH 30 x 70 cm Lanuar Dasar 820 cm 1 7.77 m² | 3 646 200 | 6.062.6 |
| Cuncrele Restangular Beam Tie Beam FC11 30 x 70 sm Lawia Danar 820 sm 1.72 m ² | 3,545,200 | 5.062.5 |
| | 3.545.200 | 4, 104.0 |
| | 3 Mail 200 | 6,104.0 |
| Concrute Rectangular Beam To Beam FG1 30 v 70 cm Lantas Danas 700 cm 1.47 m ² | 3.5145.000 | 6.011.4 |
| A Concente Reschanguter Deam. Tie Deam PG1 20 x 70 cm Laintei Daoar 700 cm 1 47 m² | 3,545,200 | 5.211.4 |

Figure 16. Beam Structure Schedules Display

Figure 16 displays the beam structure schedule resulting from Autodesk Revit modeling. This schedule contains the item name, volume, size, cost, and total cost.

3.4. Floor Plate Structure

1) Floor Plate Plan

The floor plate structure itself has a thickness of 12 cm.



Figure 17. Floor Plate Plan

Figure 17 shows the modeling of the floor plate structure plan for the BRI Bank Building construction project using Autodesk Revit.

2) 3D Modeling of Floor Plate Structures

Next, 3D modeling of the floor plate structure is carried out according to the points determined on the structural plan.



Figure 18. 3D Modeling of Floor Plate Structures

Figure 18 shows the 3D modeling of the floor plate structure, then the 3D modeling results are checked again so that the modeling really matches the planning results made by the consultant.

3) Floor Plate Reinforcement Details

The reinforcement in this floor plate is in accordance with the planned reinforcement.



Figure 19. Reinforcement of Floor Plate Structures

Figure 19 modeling of the floor plate structure. The process of modeling reinforcement in beam structures must pay attention to dimensions because this will have an impact on the costs incurred.

4) Schedules Floor Plate Structure

Display schedules on the finished floor plate and modeled via Autodesk Revit.

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| | | | <schedule< th=""><th>Floor></th><th></th><th></th><th></th></schedule<> | Floor> | | | |
|----------------------|--------------|--------------------|----------------------------------------------------------------------------|---------------------|-----------------------|-----------|---------------|
| Α | B | C | D | E | F | G | н |
| Family and Type | Level | Area | Function | Structural Material | Volume | Cost | Jumlah |
| Floor: Generic 120mm | Lantai Dasar | 638 m# | Interior | K250 | 64.53 m* | 4.006.572 | 258,551,687 |
| Lantai Dasar: 1 | | | | 2. V. | 64.53 m ^a | | 258,551,687 |
| Floor: Generic 120mm | Lantai 1 | 472 m [#] | Interior | K250 | 56.65 m* | 4,006,572 | 226,988,430 |
| Floor: Generic 200mm | Lantai 1 | 25 m² | Interior | K250 | 5.09 m ^a | 4,591,346 | 23,346,994 |
| Lantai 1.2 | | | - | | 61.74 m ⁴ | | 250,335,425 |
| Floor: Generic 120mm | Lantai 2 | 425 m ^a | Interior | K250 | 50.98 m* | 4,006,572 | 204,254,796 |
| Floor: Generic 200mm | Lantai 2 | 25 m² | Interior | K250 | 5.09 m* | 4,591,346 | 23,346,994 |
| Lantai 2-2 | | | | | 56.06 m ^a | | 227.601.791 |
| Floor: Generic 120mm | Lantai 3 | 451 m ^a | Interior | K250 | 54.16 m ⁴ | 4,006,572 | 217,008,917 |
| Lantai 3: 1 | | | | | 54.16 m ^a | | 217,008,917 |
| Floor: Generic 120mm | Dak Atap | 221 m [±] | Interior | K250 | 26.50 m* | 4,006,572 | 106,177,964 |
| Dak Atap: 1 | | | | | 26.50 m [#] | | 106,177,964 |
| Grand total: 7 | | | | | 263.00 m [#] | | 1,059,675,783 |

Figure 20. Display Schedules for Floor Plate Structure

Figure 20 displays the plate structure schedules resulting from Autodesk Revit modeling. This schedule contains the item name, volume, size, cost, and total cost.

3.5. Stair Structure

1) Stair Structure Plan

Stair structure modeling in Autodesk Revit, stairs are not included in the structural tools but are included in the architectural tools.



Figure 21. Stair Structure Plan

Figure 21 shows the modeling of the stair structure plan for the BRI Bank Building construction project using Autodesk Revit.

2) 3D Modeling of Stair Structures

Next, 3D modeling of the stair structure is carried out according to the points determined on the structural plan.



Figure 22. 3D Modeling of Stair Structures

Figure 22 shows the 3D modeling of the stair structure, then the results of the 3D modeling are checked again so that the modeling really matches the results of the plans made by the consultant.

3) Reinforcement of Stair Structures

The process of reinforcing the stair structure must be made yourself because there are some reinforcements that are not provided in the Autodesk Revit libraries. Therefore, the modeling of the stair structure must be depicted directly.



Figure 23. Reinforcement of Stair Structures

Figure 23 shows the 3D modeling of the stair structure reinforcement, then the 3D modeling was checked again so that the modeling really complies with the planning results made by the consultant.

4) Schedules Stair Structure

Following are the results of the completed staircase structure modeling which are then displayed in the form of schedules in Autodesk Revit.

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| 🕒 30 Kalom Lt. | Dasiar |) ID LL 1 | 0 3 | ID LL 2 | 0 10 LL 3 | ų. | 5 | checkule S | bructutal Co | lenn I | 🗌 Schedule S | ructural Baksk | E Sched | ule Roor | Stair 5 |
|-------------------------------|--------------|-----------|------------------|------------------|----------------|--------------------------------------------------------------------------------------------------------------------|------------------|------------|--------------|---------------------|---------------------|---------------------|---------------------------------------------|-----------|--------------------------|
| | | | | | | <st< th=""><th>air Sch</th><th>edule></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></st<> | air Sch | edule> | | | | | | | |
| A | В | ¢ | D | E | F | G | H | L. | 1 | ж | L | M | N | 0 | p |
| Family | Base Level | Tap Level | Total Anak Tangg | a T. Anak Tangga | L. Anak Tangga | L. Tangga | P. Bordes | L Bordes | Tehai Bordes | Vol. Bordes | Vol. Plat Tangg | a Vol. Anak Tangga | Volume Total | Cost. | Juntah Harga |
| Cast-In-Place Stair | Lantai Deser | Lartai 1 | 22 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m² | 1.65 m² | 2.36 m² | 4,538,403 | 11.699.444 |
| Cast-In-Place Stair | Lavtai Dasar | Lantai 1 | 22 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m* | 1.66 m ⁴ | 2.36 m ⁴ | 4,538,403 | 10,699,444 |
| Lantai Datar 2 | _ | 9 | 2 | 9 | | | <u>0</u> 3 | - | | 2 | | <u> </u> | 4.72 m ² | | 21,398,888 |
| Cast-In-Place Stair | Latta 1 | Lavtai 2 | 22 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m² | 0.65 m ⁴ | 2.36 m ⁴ | 4,538,403 | 10,699,444 |
| Cast In Place Star | Larta 1 | Lantai 2 | 77 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m ⁴ | 1.65 m ⁴ | 2.36 m ³ | 4,538,403 | 10.699,444 |
| Larta 1:2 | | | | | | | | | | | | | 4.72 m | | 21,338,888 |
| Cast-In-Place Stair | Lantai 2 | Lantai 3 | 22 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 #* | 1.66 m ³ | 2.36 m ² | 4,538,403 | 11.699.444 |
| Cast-In Place Star | Larta 2 | Lantai 3 | 22 | 17.3 cm | 30 cm | 115 cm | 150 cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m² | 0.66 m ^a | 2.36 m ⁴ | 4,538,403 | 10,699,444 |
| Lanta 2.2 | | | | | | | 11 m m m m m m m | | | | | | 4.72 m ² | | 21,398,888 |
| Cast-In-Place Stair | Lantai 3 | Dak Atap | 22 | 17.3 cm | 30 cm | 115 cm | 150-cm | 240 cm | 30 cm | 1.08 m ⁴ | 0.62 m ^a | 1.65 m ² | 2.36 m ³ | 4,538,403 | 10,699,444 |
| Lantai 3; 1 Grand total: 7 | | | | | | | n noessan | | | | | | 2.36 m ⁴ 16 50 m ⁴ | | 10,699,444 74,896,907 |

Figure 24. Stair Structure Schedules Display

Figure 24 displays the ladder structure schedule resulting from Autodesk Revit modeling. This schedule contains the item name, volume, size, cost, and total cost.

3.6. Whole Structure Modeling

The following is the modeling of the entire structure that has been completed using Autodesk Revit.



Figure 25. 3D Modeling of Entire Structure

Figure 25 shows the 3D modeling the entire structure that has been completed is carried out via Autodesk Revit, then the completed 3D modeling is checked again so that the modeling really matches the planning results made by the consultant.

3.7. Cost and Volume Budget Using Autodesk Revit

The following are the results of evaluating budget plan calculations for structural work by calculating volume and costs, as can be seen in Table. 1 and Table. 2 below.

| Ctrans at used | Volume (m ³) | | | | | | |
|----------------|--------------------------|----------------|--|--|--|--|--|
| Structure | Revit | BoQ Consultant | | | | | |
| Bore Pile | 832 m | 832 m | | | | | |
| Pile Cap | 47.58 | 46.14 | | | | | |
| Column | 82.93 | 87.02 | | | | | |
| Beam | 300.30 | 345.44 | | | | | |
| Platform | 263.00 | 295.45 | | | | | |
| Ladder | 16.50 | 18.06 | | | | | |

Table 1. Volume Structure Using Autodesk Revit

Table 1 shows the differences in structural volume calculations using *Autodesk Revit* smaller, namely 16.50 m3 when compared to the consultant's calculation, namely 18.06 m³. *Autodesk Revit* has advantages in the volume calculation process, namely a very short time and faster than conventional. Because when modeling is created, the volume of the modeling will automatically be calculated. If there is a change in size or dimensions in the modeling, then you only need to change the elements according to the changes, then the volume will automatically change.

| Structure — | Cost Budget (Rp) | | | | | | |
|-------------|------------------|---------------|--|--|--|--|--|
| Structure — | Revit | Consultant | | | | | |
| Bore Pile | 119,491,840 | 119,491,840 | | | | | |
| Pile Cap | 112,043,682 | 108.774.911 | | | | | |
| Column | 416,682,155 | 437,705,937 | | | | | |
| Beam | 1,193,817,594 | 1,351,732,370 | | | | | |
| Platform | 1,059,675,783 | 1,190,805,539 | | | | | |
| Ladder | 74,896,107 | 81,963,560 | | | | | |
| Grand Total | 2,976,607,161 | 3,290,474,157 | | | | | |

Table 2. Budget Cost Structure Using Autodesk Revit

Table 2 shows that the cost budget plan calculation occurred in optimization due to differences due to differences in structural volume calculations using Autodesk Revit, which is equal to Rp. 2,976,607,161,-while the total costs previously calculated by the planning consultant using conventional methods were Rp. 3,280,583,049,-.

Using Autodesk Revit can also minimize the occurrence of errors due to data input errors. However, Autodesk Revit also has weaknesses that need to be considered, such as the ability to use the application when modeling and requiring qualified technological devices. At the time of modeling, you also have to really pay attention, that is, the model must really match the plans that have been made previously so that there are no differences in terms of structure, dimensions and volume.

4. CONCLUSION

Based on the results of the cost budget plan comparative analysis for the structural work for the construction of the BRI Bank Building on Jl. Sisingamangaraja No. 241 Gg. Indrajid Kel. Sudirejo-II District. Medan City, it can be concluded that the RAB calculation using Autodesk Revit results in a total cost of Rp. 2,976,607,161,- while the total costs previously calculated by the planning consultant using conventional methods were Rp. 3,280,583,049,- Evaluation carried out using Autodesk Revit can optimize costs that are 9.27% smaller than the total costs calculated conventionally.

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5. ACKNOWLEDGMENTS

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