

Scope of Service

*PT Geo-Fondasi Multi Konsultan
(GFM Konsultan)*

Phase: Initiation



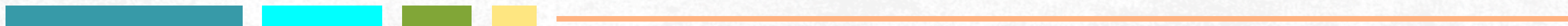
About us

GFM is a consultancy firm specializing in geo-environmental, building energy, green building, risk management, and architectural design, which is made up of several different fields to achieve a single goal, as the meaning of the Latin phrase *Differentia et Singularis*, which means the difference and uniqueness of the products and services offered.



Professional Engineer

Consultancy Service





Vision

Become an Engineering Consultant Where Uniqueness Meets Ingenuity:
Crafting Tailored Solutions for a World of Infinite Possibilities

To harness the power of Tailored Ingenuity and Diversity-Driven Innovation to design engineering solutions that are as unique as the challenges we solve.

Through **Client-Centric Collaboration**, we partner with our clients to co-create transformative outcomes that reflect their vision and goals.

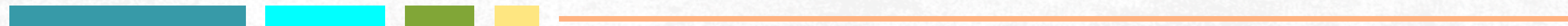
We are committed to **Sustainability Through Uniqueness**, ensuring our solutions respect and enhance the environment and communities they serve.

By striving for a **Legacy of Singular Excellence**, we aim to set new benchmarks in engineering consultancy, leaving a lasting impact through creativity, integrity, and unparalleled expertise

Mission

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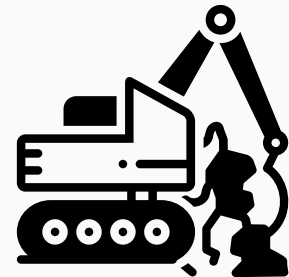


Our Service

**Engineering
Service**



**Geotechnical
Engineering Service**

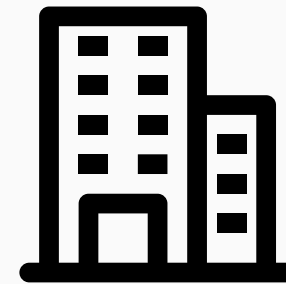


Special Service

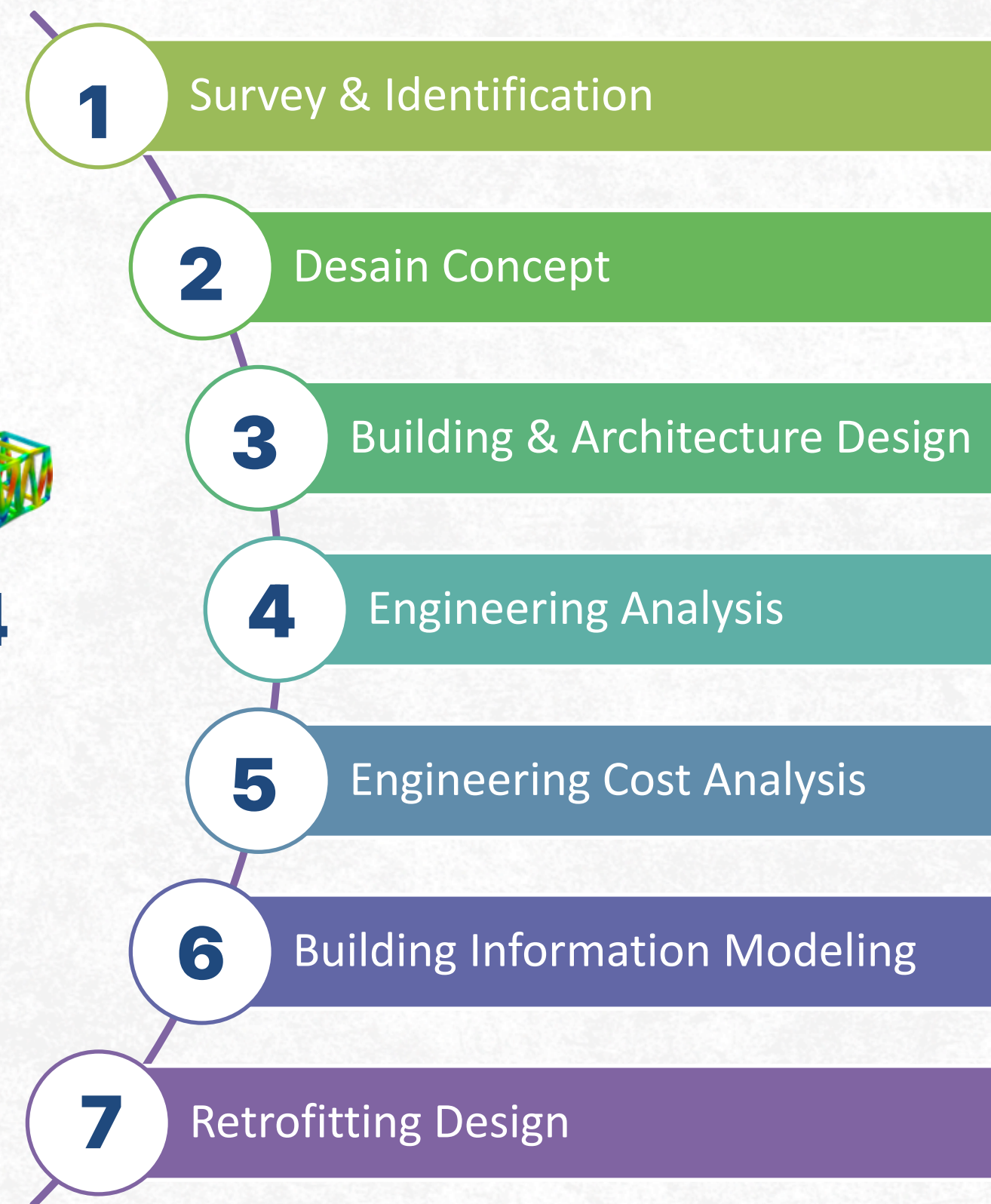
LHMS
Landslide Hazard &
monitoring System



Green Building
Clinic BIM



Engineering Service

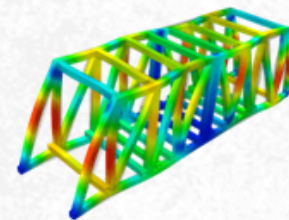


Desain Concept



Usulan ide dasar/ landasan dalam pengembangan desain berupa desain konseptual, presentasi dan konsultasi desain dan skematik desain.

Engineering Analysis

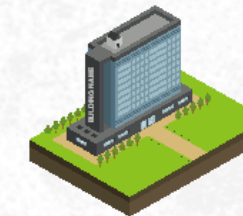


Penerapan prinsip-prinsip ilmiah yang melibatkan penggunaan model, simulasi, dan perhitungan,



Survey and Identification

Survey dan identifikasi untuk mendapatkan data langsung dilapangan secara akurat maupun evaluasi untuk perencanaan, design, dan konstruksi



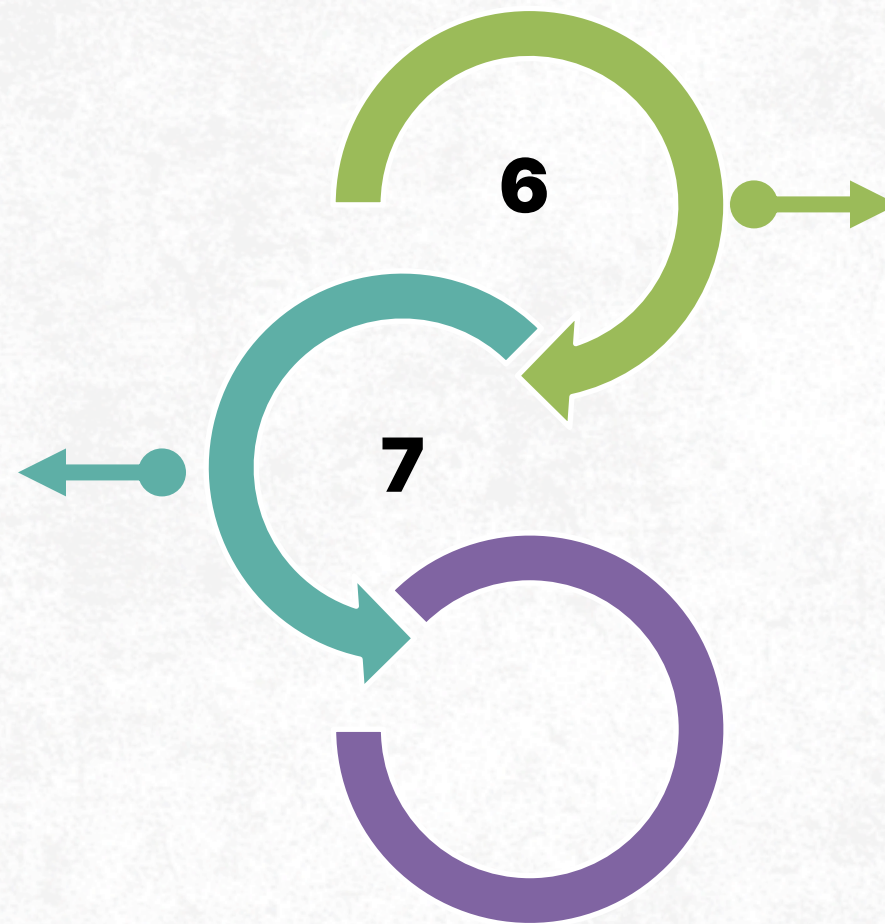
Building & Architecture Design

Pra rencana dan pengembangan struktur fisik bangunan (3D) yang mencakup tata letak, bentuk, ukuran, dan fungsi bangunan



Engineering Cost Analysis

Rekayasa biaya atau pendekatan sistematis, seperti estimasi biaya, analisis nilai, pengembangan RAB, dan nilai tambah

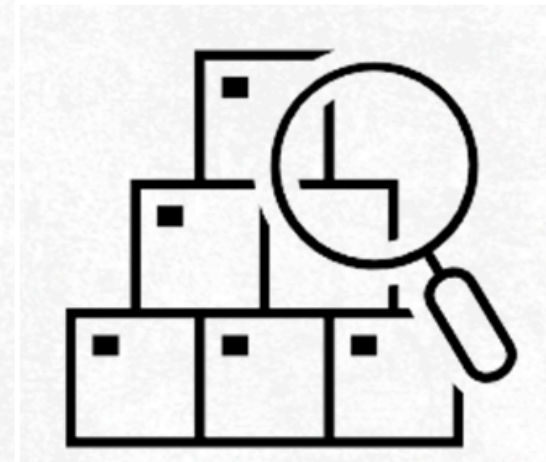


Building Information Modelling (BIM)

Metode dalam pembuatan dan permodelan digital baik dalam desain perencanaan, analisis kinerja, manajemen konstruksi , dll

Geotechnical Engineering Service

Geotechnical Invest.



- In situ Test (CPT test & N-SPT test)
- Laboratories Test
- Deformation Observation
- Geophysical Testing

Geotechnical Eng.



- Foundation design
- Design of earth retaining structures
- Slope stability
- Ground improvement design

Geo Hazard Ass.



- Geological hazard check
- Creation of geological hazard maps
- Geological hazard mitigation suggestions

Landslide Hazard and Monitoring System (LHMS)

Geo-Insight of GFM Consult

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Landslide Hazard and Monitoring System helps client or Asset Owner to maintain, inspect, and mitigate the Slope Asset. The SRMS can arrange those schedule activity.

Landslide is unpredictable and sudden disaster. The LHMS is used to create the Slope Risk Rating and to arrange the Priority Slope.

Landslide Hazard and Monitoring System create comprehensive Slope Inventory which consist of Slope Geometry, Geological Feature, Slope Construction, and also Slope Disaster Record

Landslide Hazard and Monitoring System helps client and Asset Owner to calculate cost estimation of Maintenance, Inspection and Remedial.

The Landslide Hazard and Monitoring System is not just a Program. The LHMS also helps client and Asset Owner to Build Command Center of Slope Management.



Landslide Hazard & Monitoring

System (LHMS)



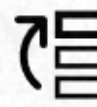
Slope Asset Inventory

Conducting slope inspection and listed to Inventory List.



Slope Asset Database

Compiling slope inventory to Digital GIS Database



Slope Risk Ranking

Scoring the Slope Hazard and creating the priority list



Slope Mitigation Strategy

Creating slope mitigation action based on Priority List

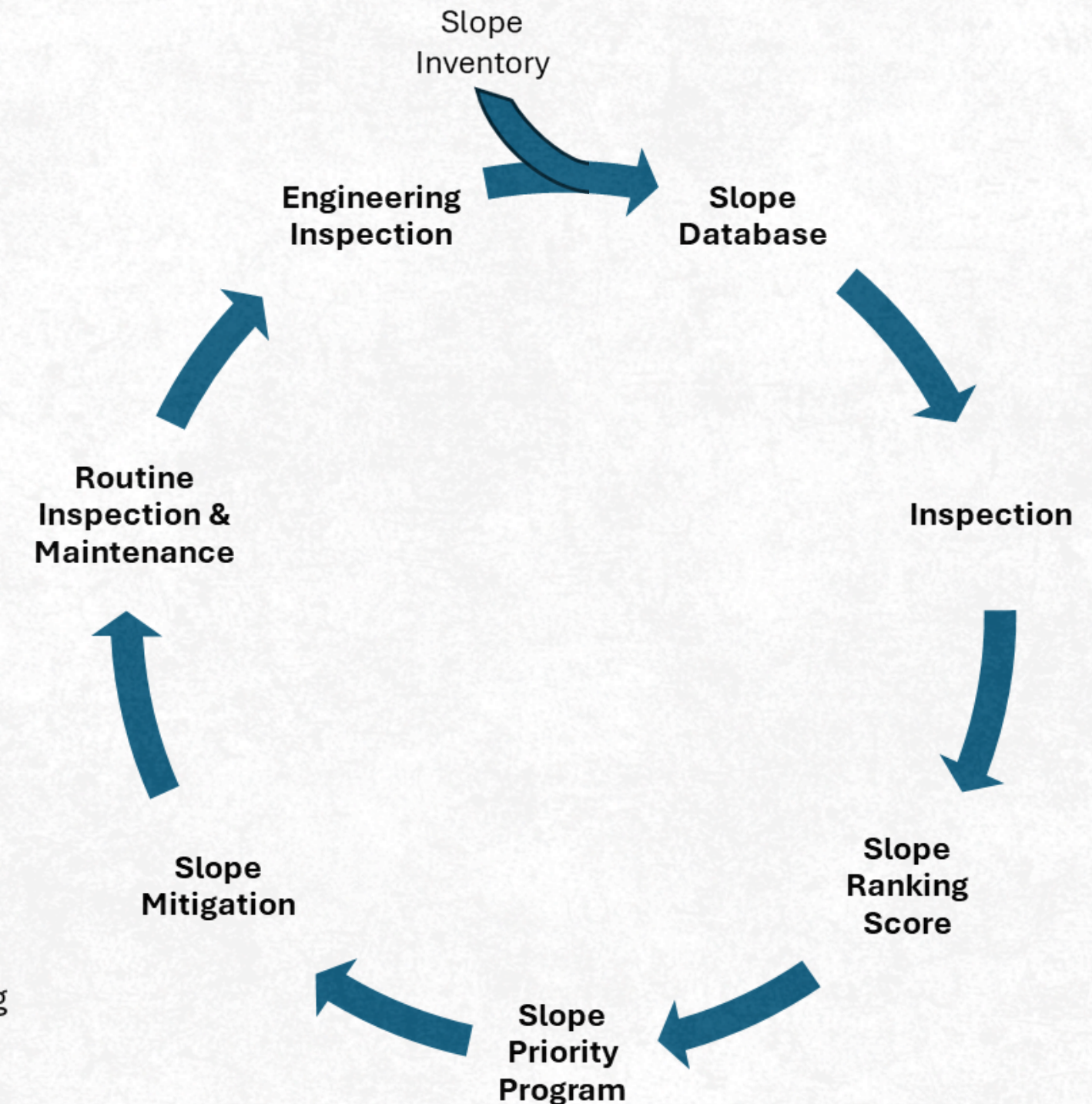


Slope Inspection

Creating slope inspection program based on Slope Hazard Ranking

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Landslide Hazard & Monitoring System - Features



SLOPE INVENTORY

Complete database of all managed slopes with essential data for monitoring.



SLOPE PRIORITY

Helps prioritize slope handling based on risk and urgency for effective resource use.



INSPECTION

Integrated inspection tracking and real-time reporting for early issue detection and resolution.



SLOPE PRESERVATION

Integrated inspection tracking and real-time reporting for early issue detection and resolution.



MITIGATION CALCULATE

Provides tailored mitigation solutions based on data analysis to reduce landslide risks.



SLOPE INFORMATION

Visualizing slope locations, inspection statuses, and mitigation actions for quick decision-making.

Landslide Hazard & Monitoring System - Features



Landslide Hazard & Monitoring System (LHMS)

Database and Slope Types in Slope Management System

Cut Slope:

Excavated slopes, slopes that are soil to soft-rock.

Fill Slope:

Artificial slopes in the form of earthen embankments

Retaining Wall:

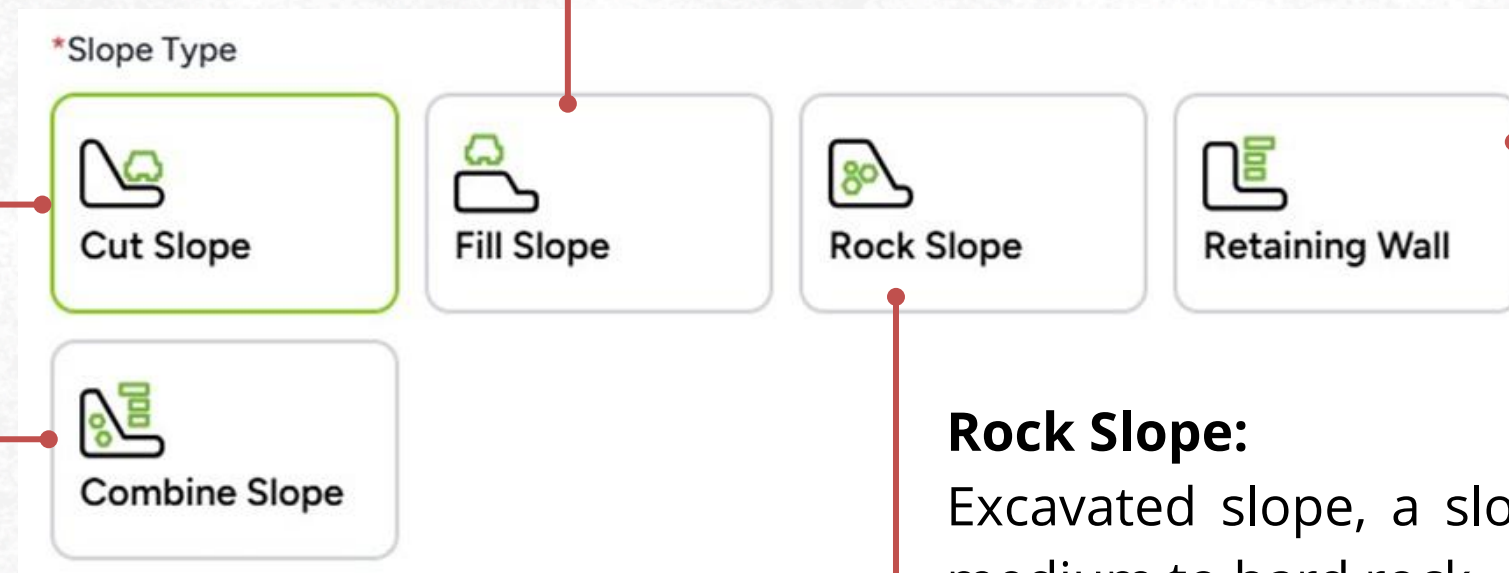
An artificial slope reinforced with retaining walls. Usually an embankment slope.

Combined Slope:

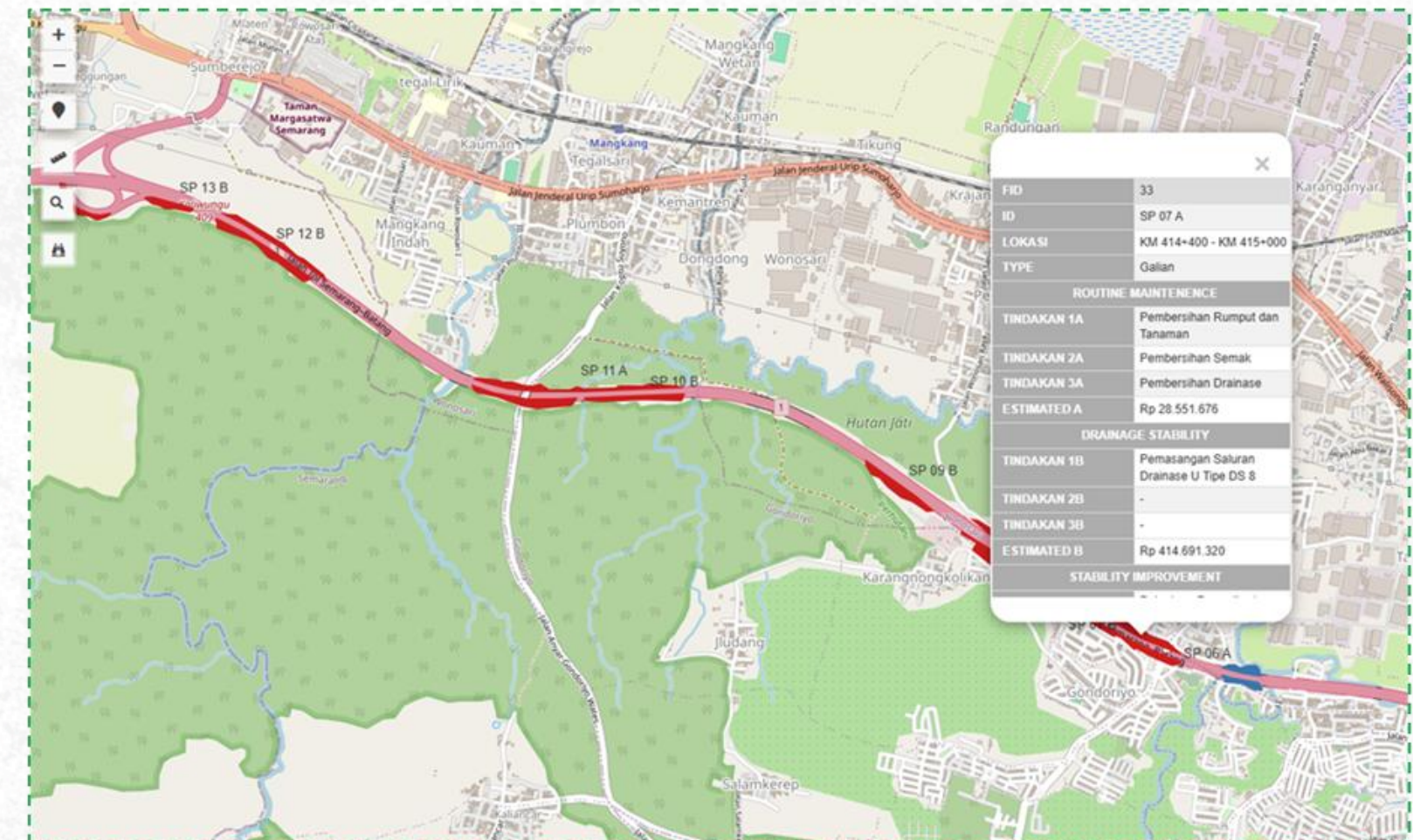
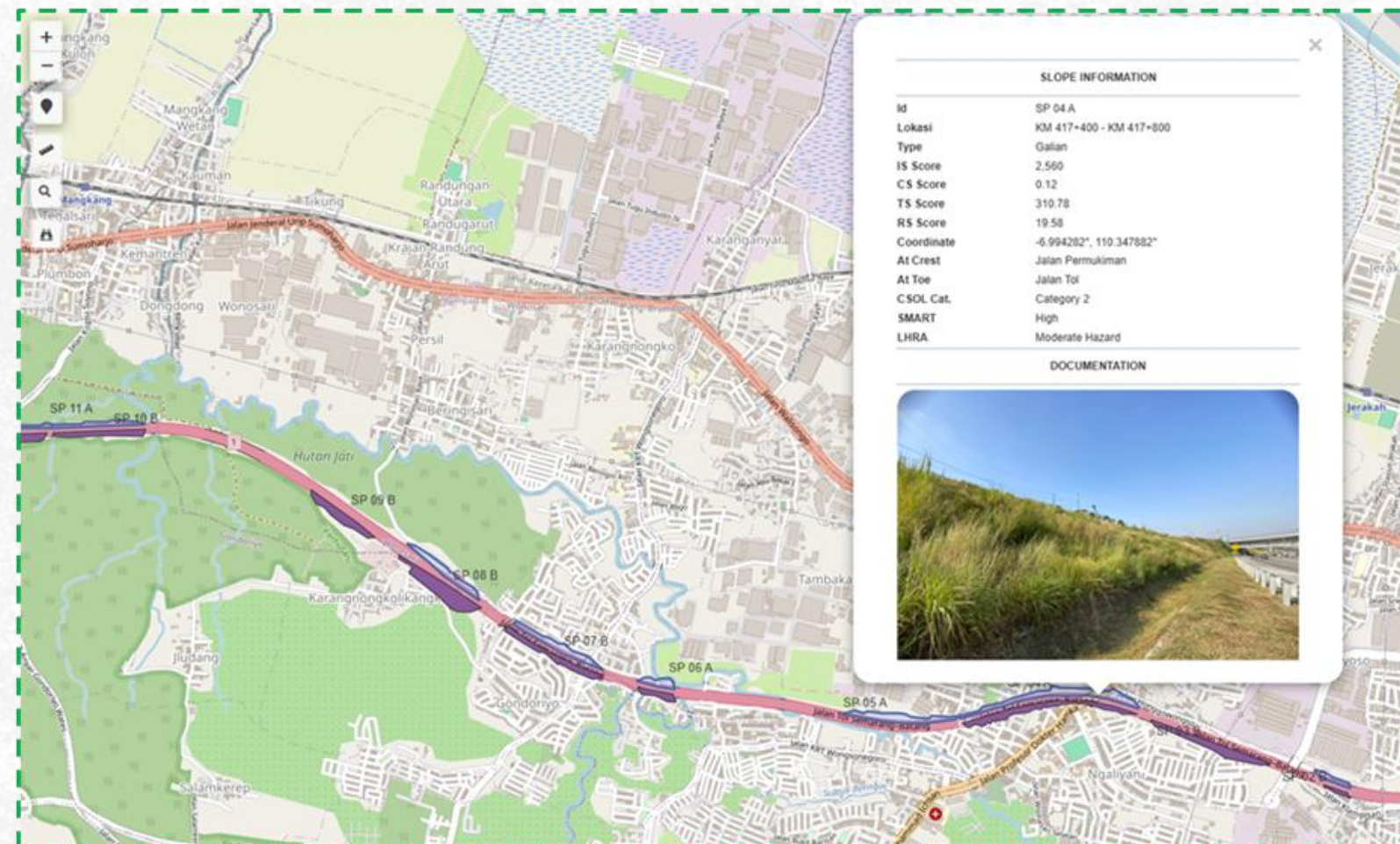
Combination slope between excavation/fill type slope and retaining wall.

Rock Slope:

Excavated slope, a slope of medium to hard rock.



Landslide Hazard & Monitoring System (LHMS)



GREEN BUILDING - BIM CLINIC

Why Digital Construction BIM?



Limited Human Resources and Cross Discipline in Asset Management



Conventional Asset Management tends to cause missing links and loss of Data



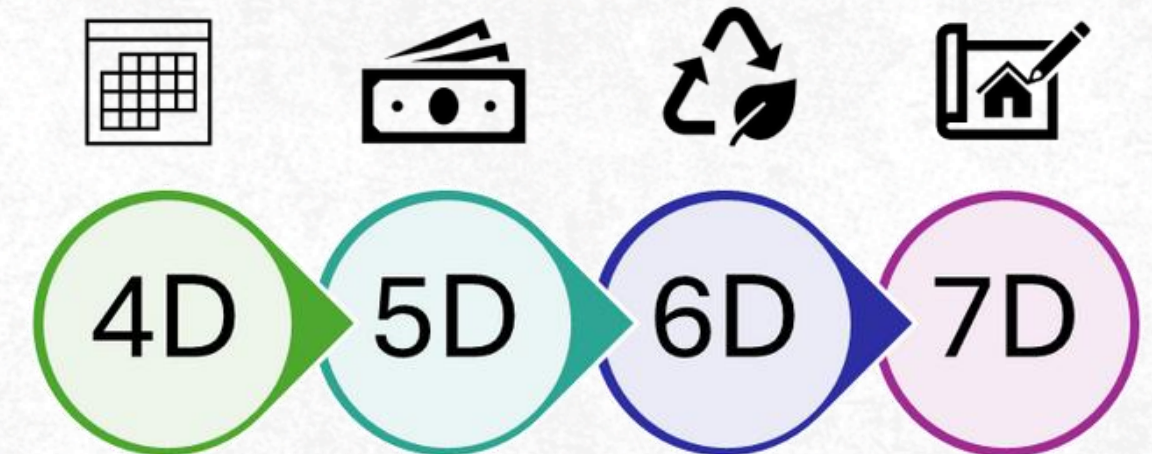
Paper-Based Database Limitation: Damaged Easily, Scattered, Decay.



Due to undocumented Initial and Routine Maintenance Databases, Conventional Asset Management tends to cause miscoordination.



Conventional Asset Management is not economical, inefficient, unreliable because it depends on "human" (not system-based solutions).



Dimension of BIM



BIM LICENSE SOFTWARE



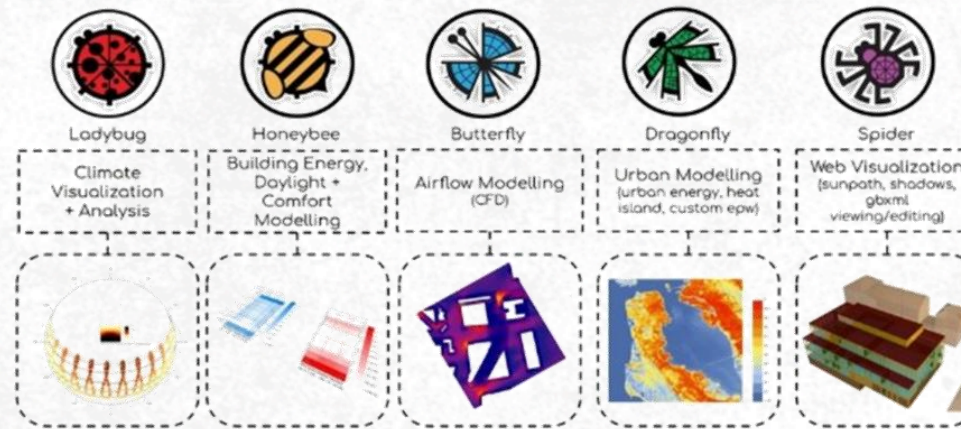
Rhinoceros 8
www.rhino3d.com



VisualARQ
BIM for Rhino



SketchUp Pro



AUTODESK
Architecture Engineering
& Construction Collection



AutoCAD
Design every detail: Accelerate 2D and 3D design documentation with new and enhanced productivity tools.



Revit
Design, document, coordinate, manage, and deliver BIM construction projects with Revit®.



Robot Structural Analysis
Structural load analysis software that verifies code compliance and uses BIM-integrated workflows to exchange data with Revit.



**AUTODESK®
INSIGHT™**
Green Building Analysis

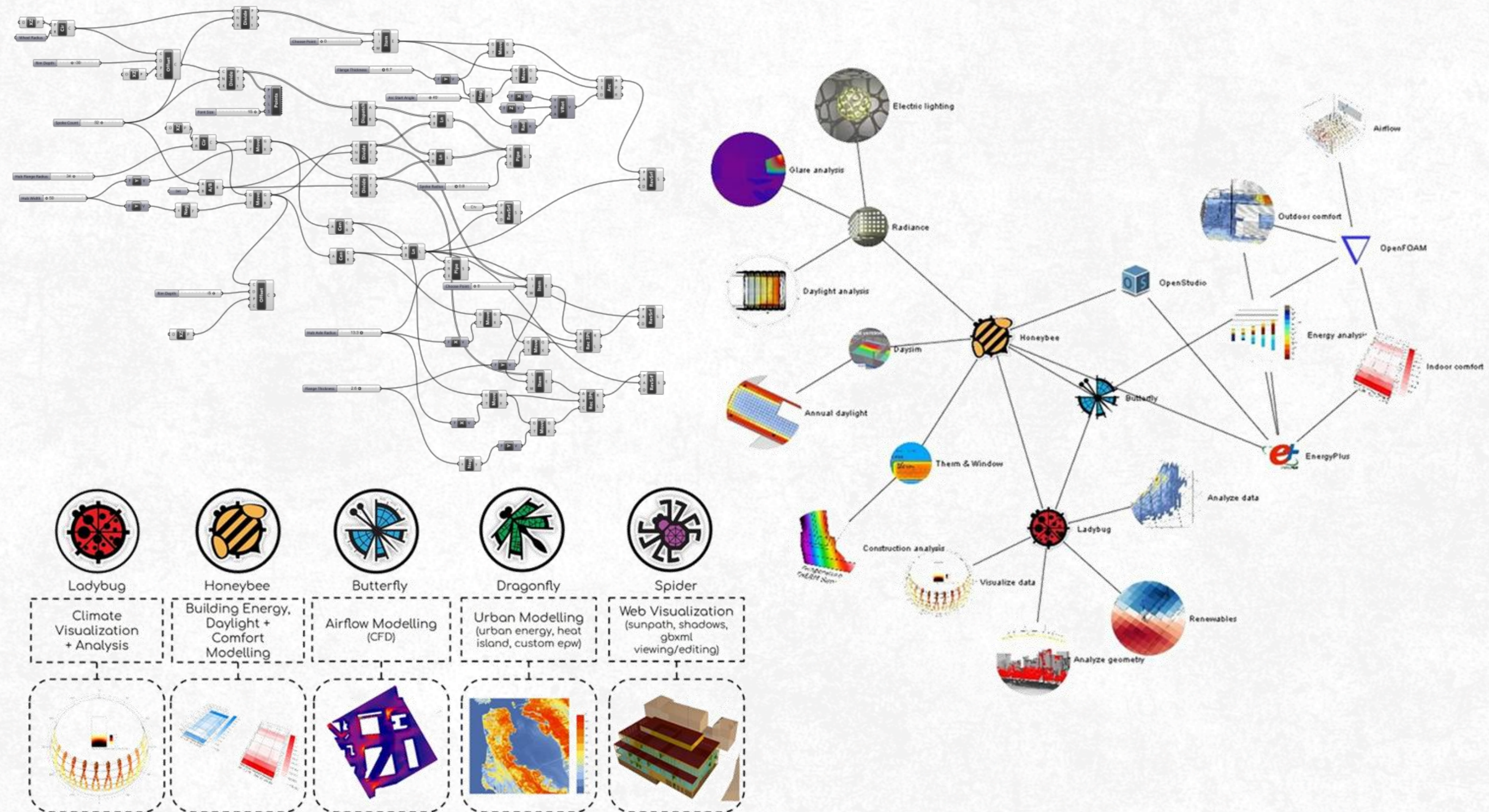


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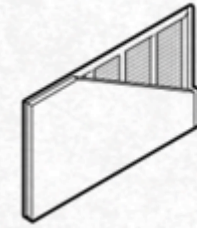
BIM – For BUILDING ENERGY ANALYSIS

Green Building and Energy Analysis Program

A rapid, effective, and efficient analysis of building energy performance, with calculations based on site climatology data.

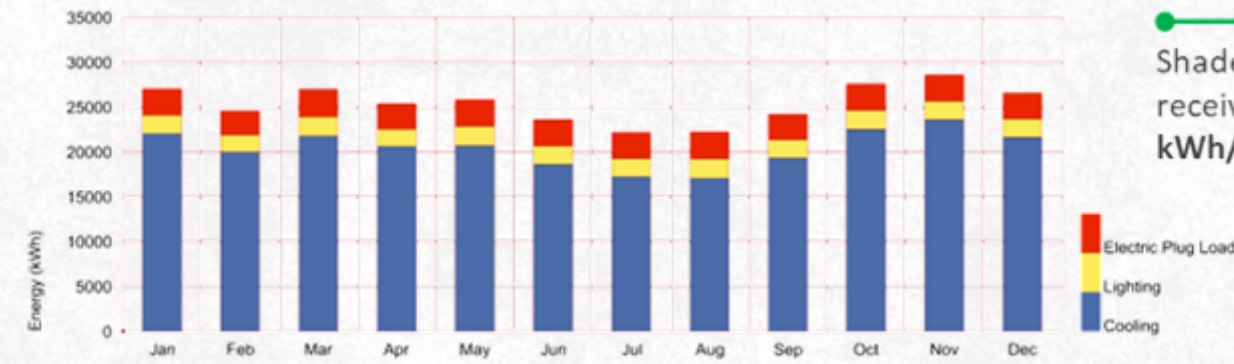


Façade Building Evaluation



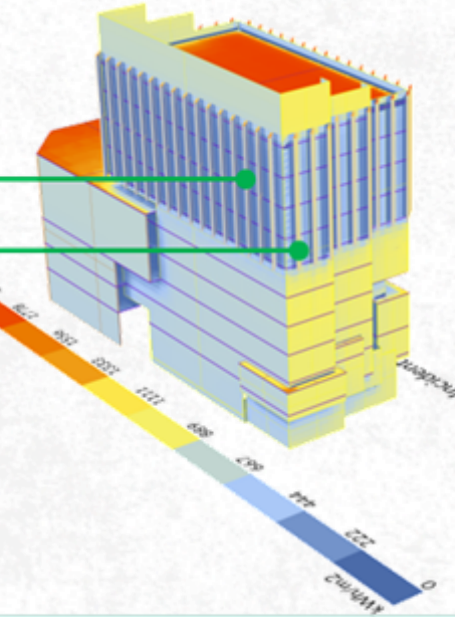
How Façade Design Influence
the Building Cooling Load

Monthly Peak Cooling Load in
November: 23.000 kWh/floor

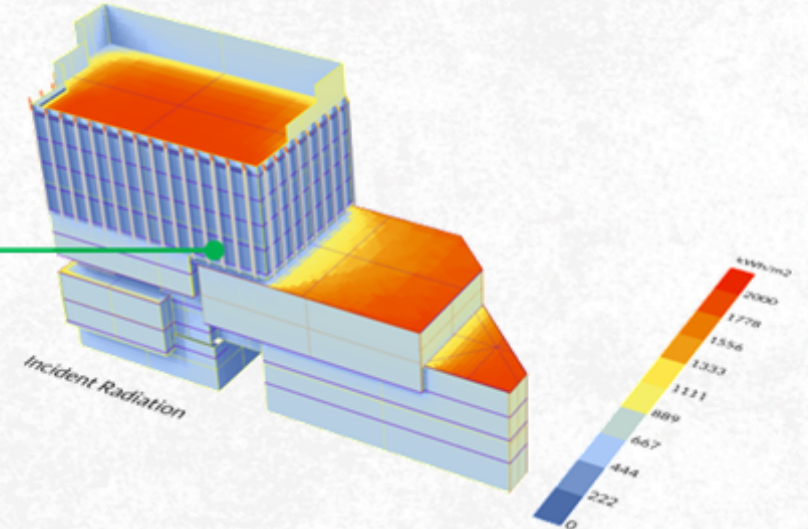


Shaded North Side
receives: 222 – 444
kWh/m²

Shaded West Side
receives: 444 – 667
kWh/m²

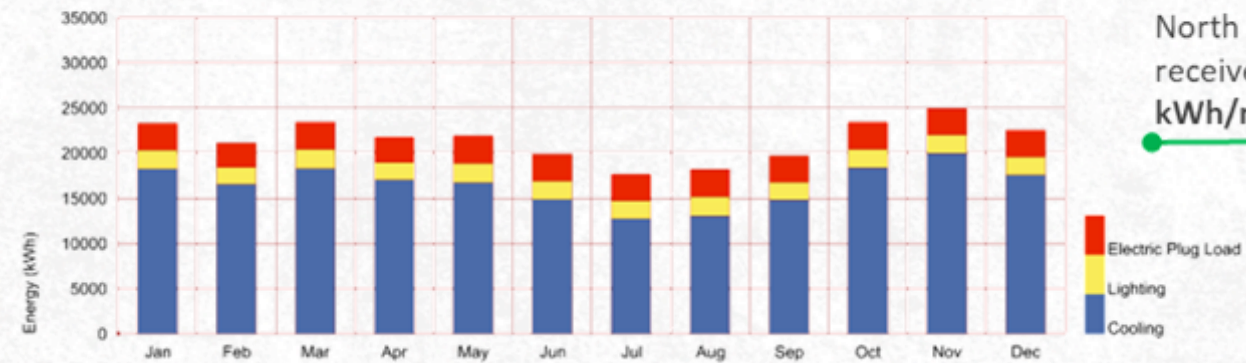


Shaded South
Side receives :
222 - 447
kWh/m²



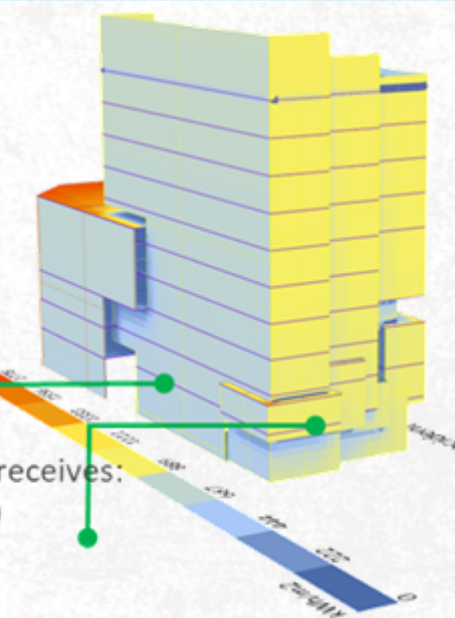
With Vertical Shading

Monthly Peak Cooling Load in
November: 20.000 kWh/floor

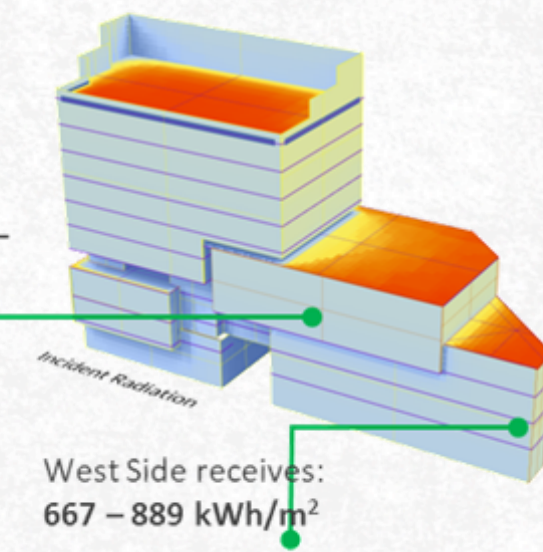


North Side
receives: 667 – 889
kWh/m²

West Side receives:
889 – 1100
kWh/m²



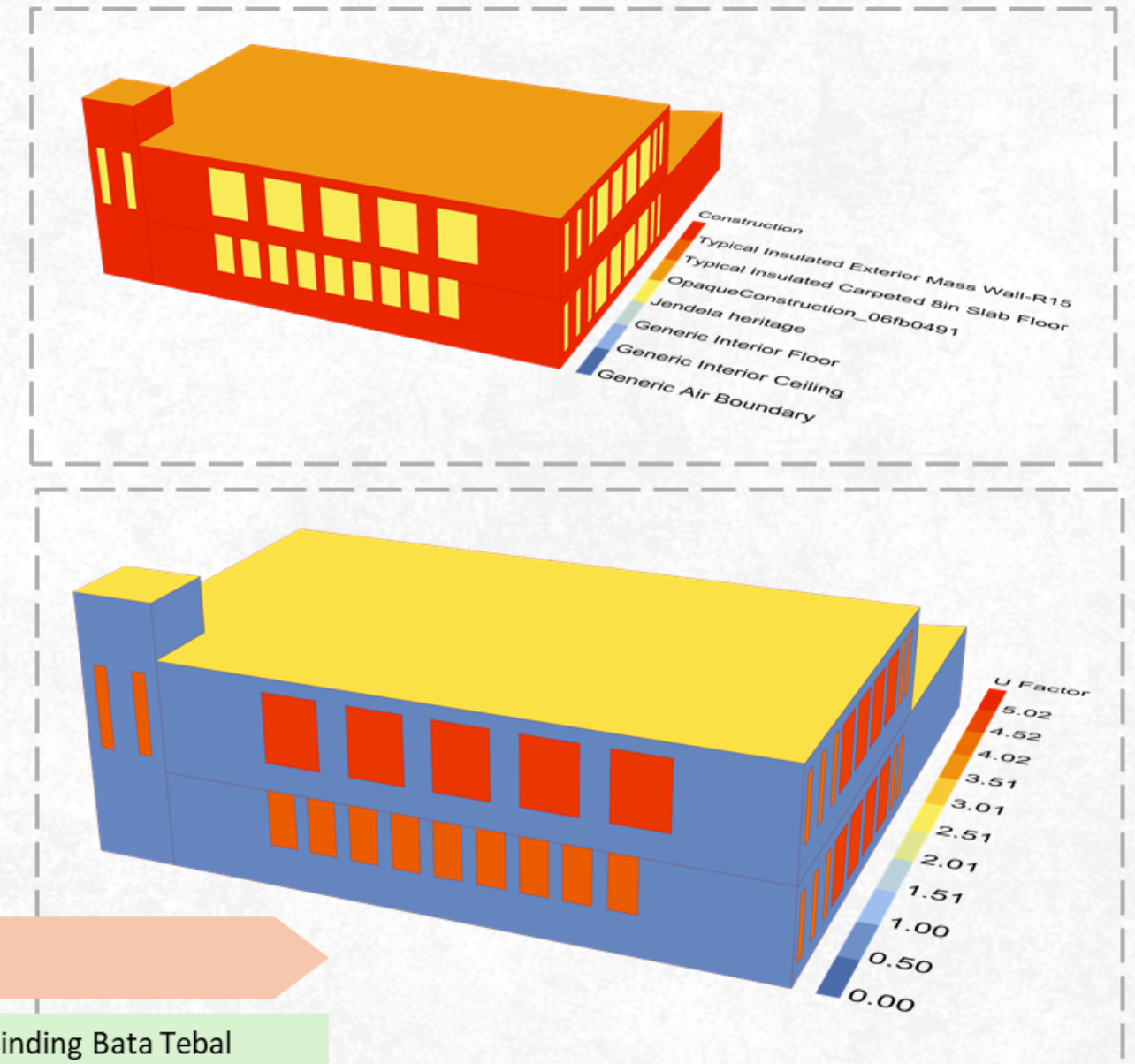
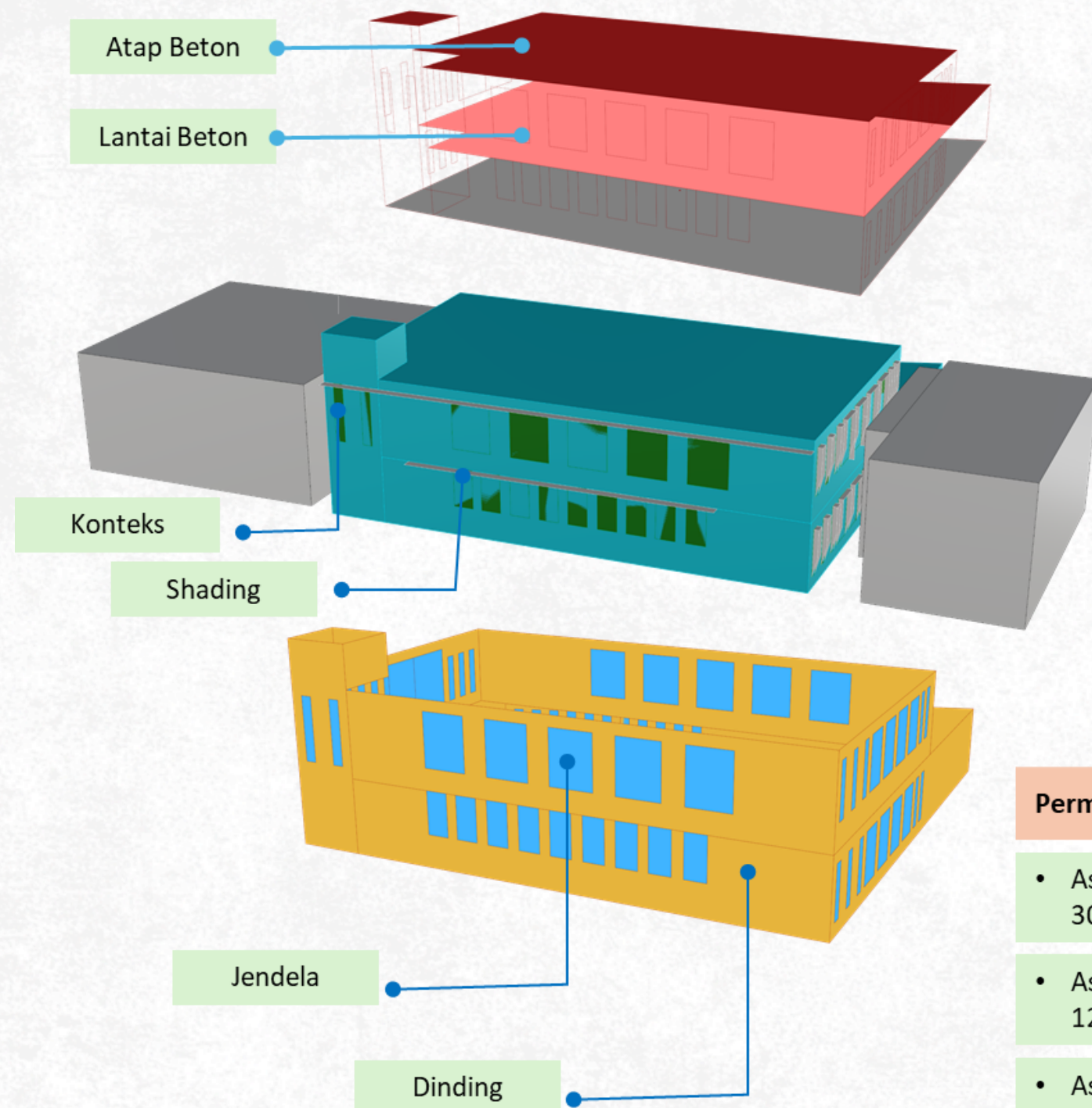
South Side
receives: 444 –
667 kWh/m²



West Side receives:
667 – 889 kWh/m²

With No Shading

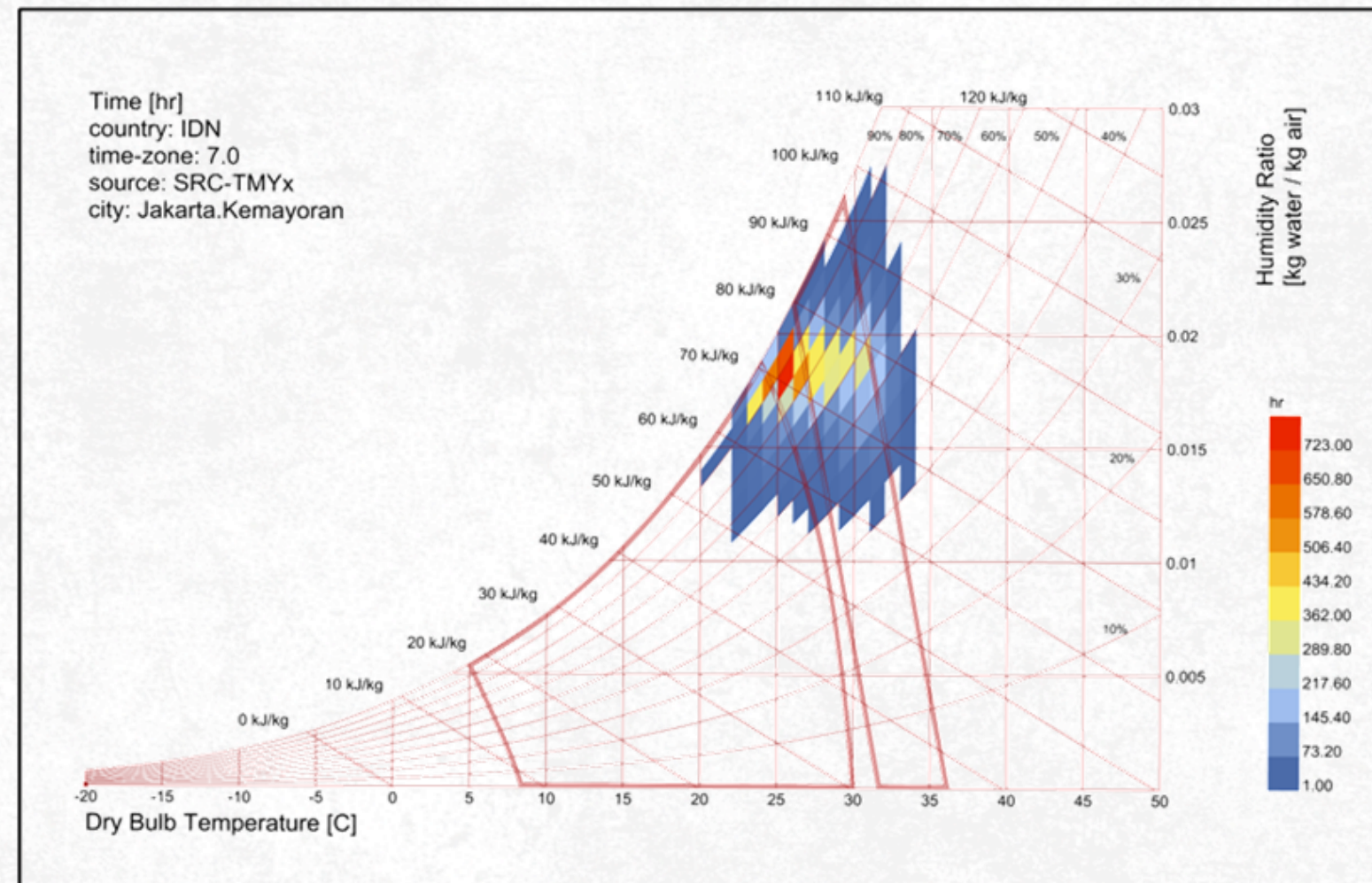
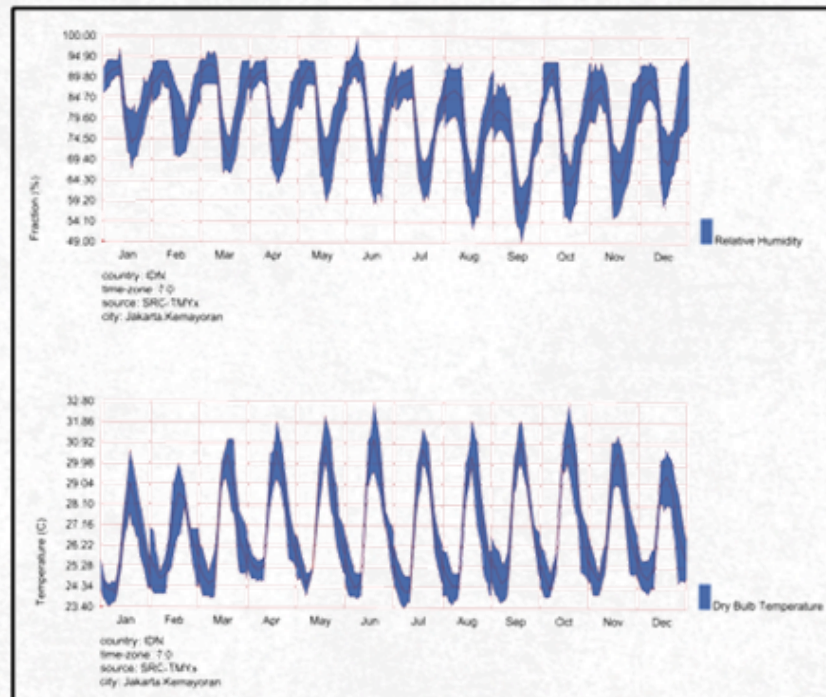
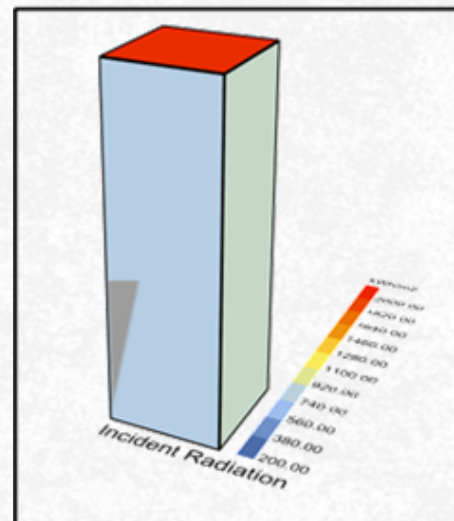
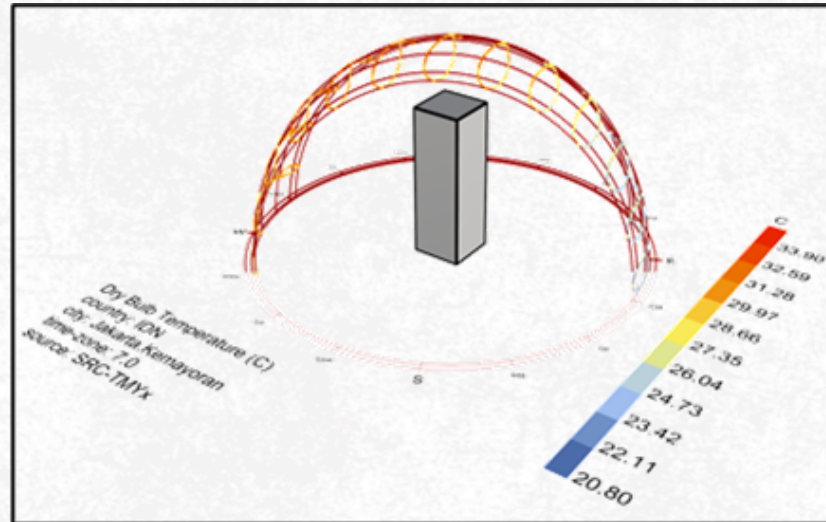
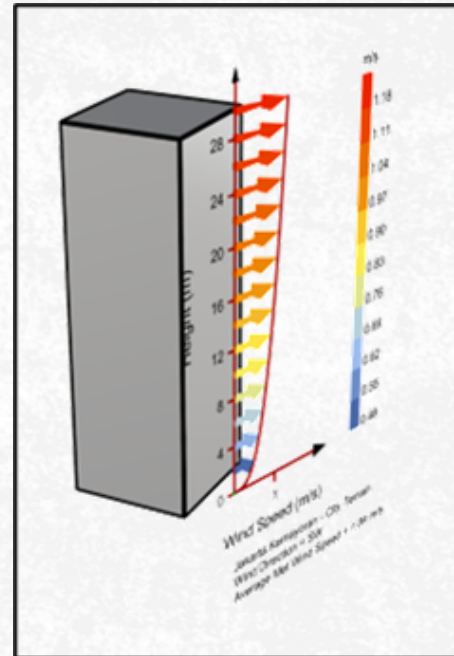
Façade Building Evaluation



Permodelan Energi Bangunan

- Asumsi bangunan dengan dinding Bata Tebal 30cm, dengan U-value 0,8 W/m²-K
- Asumsi Jendela dengan kaca single glazing tebal 12mm, dengan U-value 5.2 W/m²-K
- Asumsi Atap dengan beton 30cm, dengan U-value 1,5 W/m²-K

Building Energy Efficiency Conservation Analysis



OUTPUT:

- HVAC Evaluation
- Lighting Evaluation
- HVAC Effectiveness
- Mechanical System Evaluation

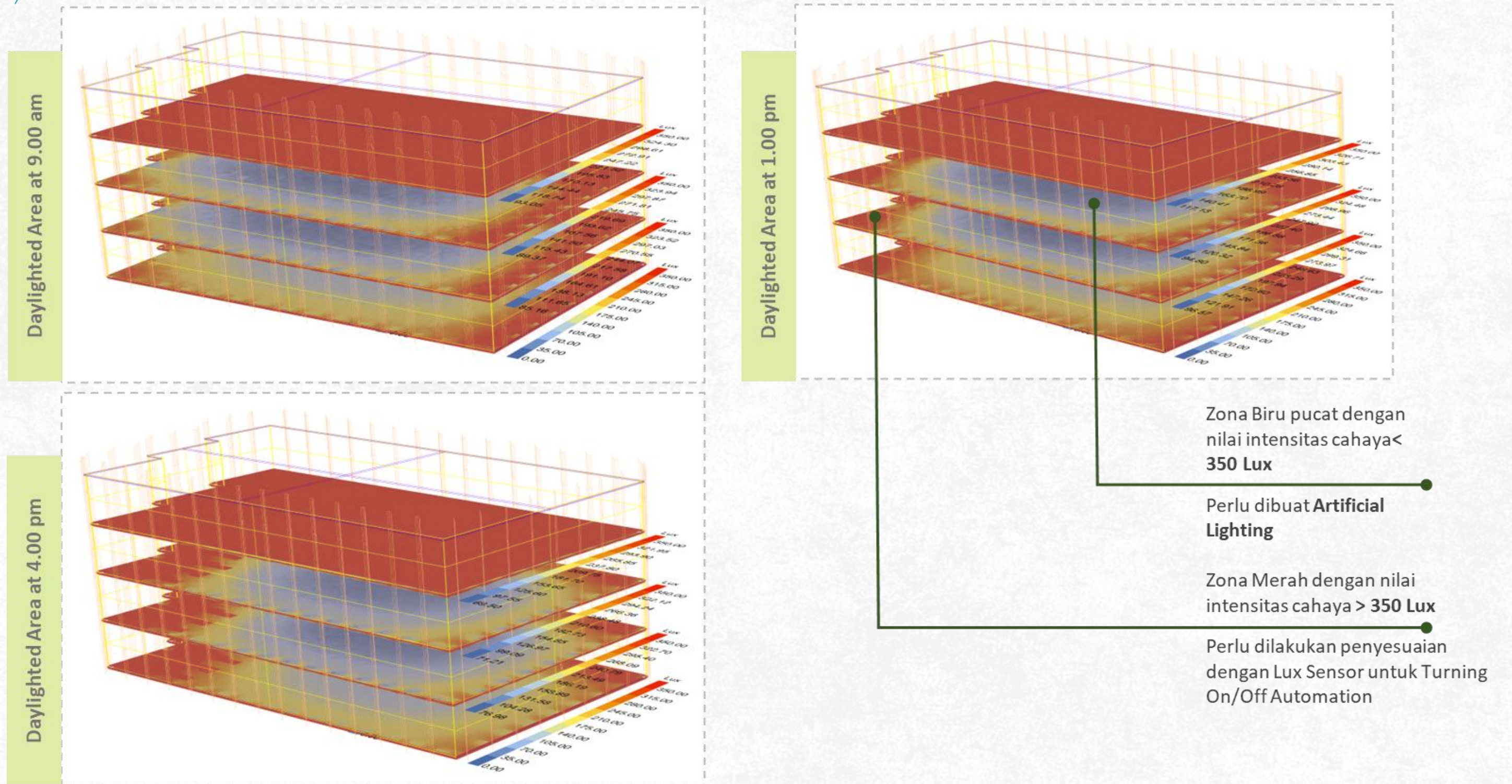
Input data Iklim: untuk perhitungan Energi Bangunan

Psychrometric Chart: untuk panduan memahami karakteristik Termodinamik

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Building Energy Efficiency Conservation Analysis

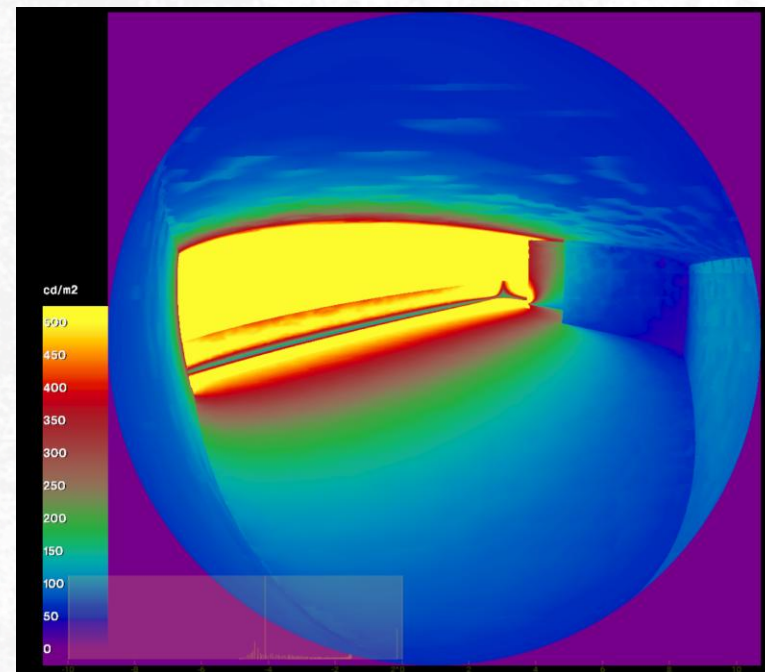


Building Analysis

GLARE ANALYSIS

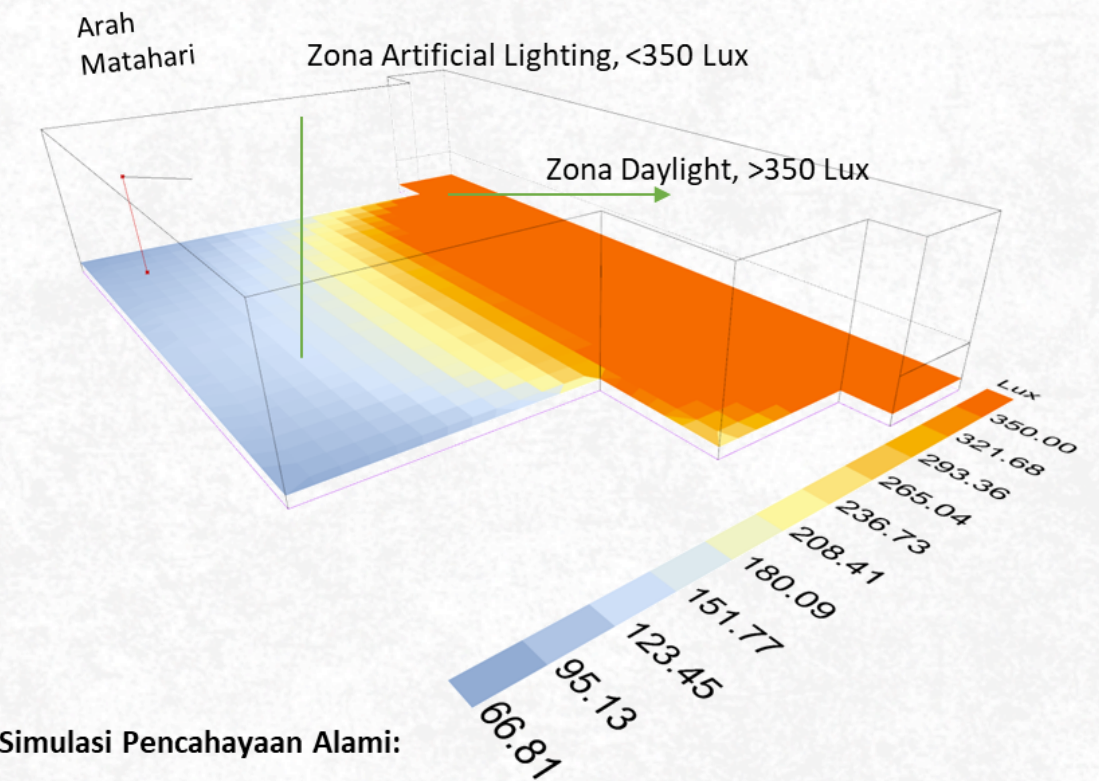
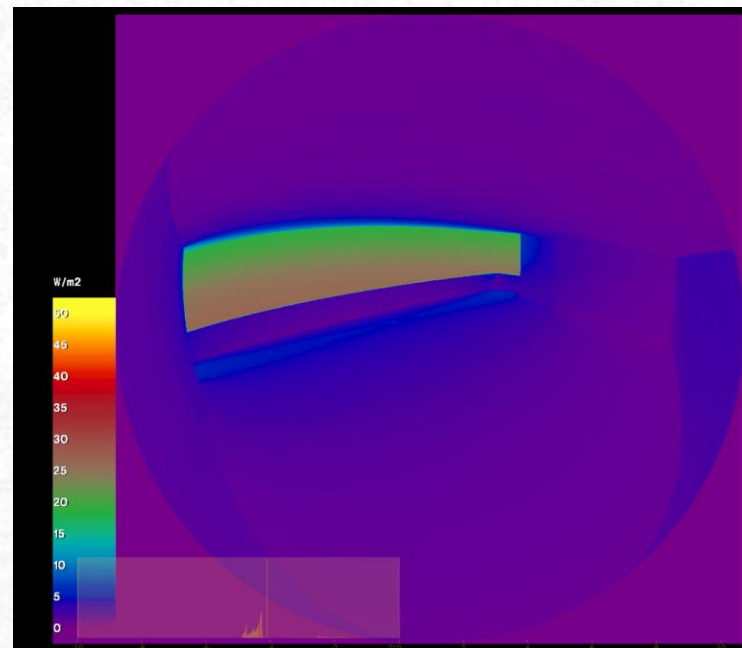
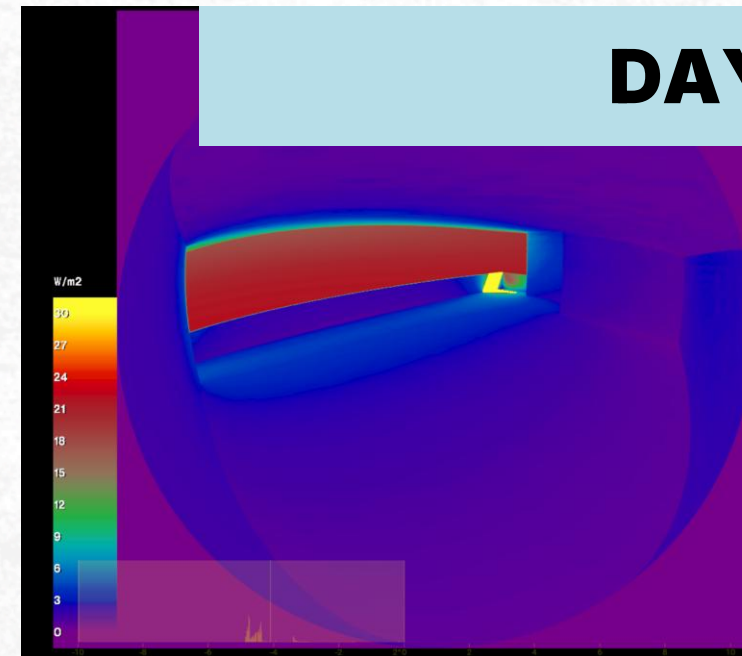


Glare Analysis is conducted to assess the level of visual discomfort (glare) within a room resulting from changes in the façade and lighting conditions



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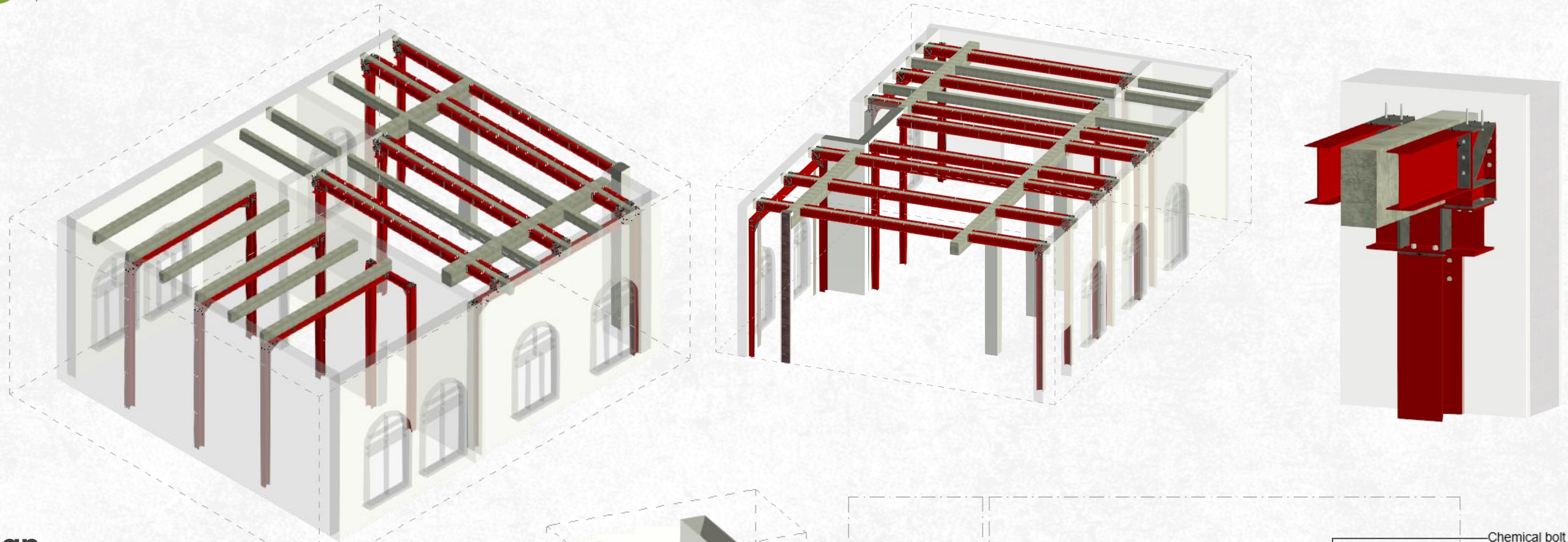
DAYLIGHT ANALYSIS



Simulasi Pencahayaan Alami:
22 Juni – Jam 14:00

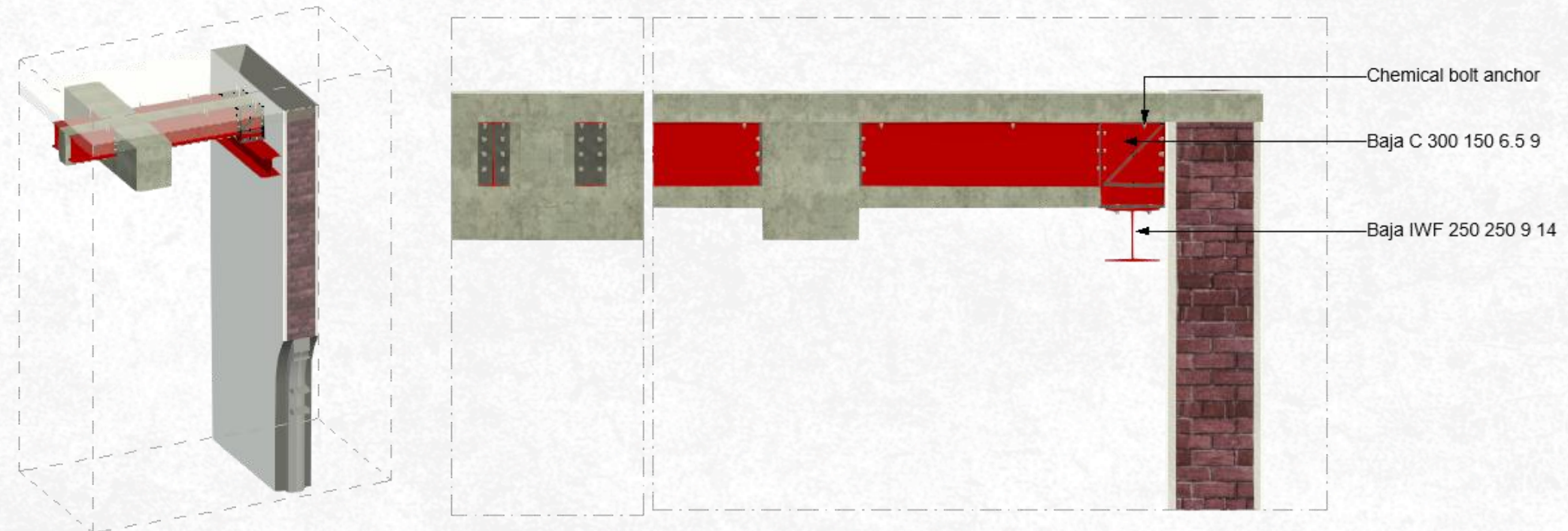
Used to determine the type of glass or aperture in designing or planning optimal lighting conditions, considering both natural and artificial illumination

Structure Design with BIM



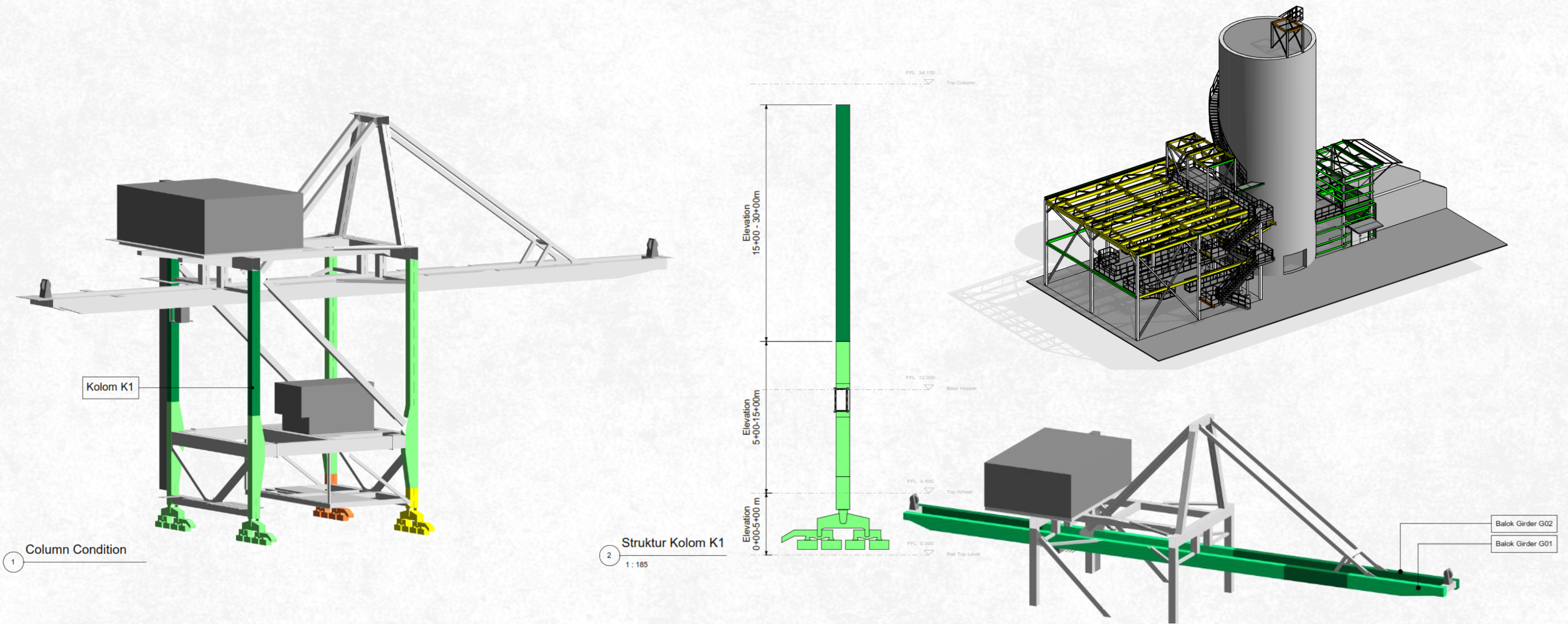
Retrofitting Design

The application of BIM in the retrofit design of heritage buildings has proven to be highly effective, particularly in achieving a high degree of detail and accuracy.



Corrosion Calculation & Mapping

BIM technology can be utilized to map and analyze corrosion in steel structures. Accurate calculations derived from the model can serve as a reliable basis for estimating the structural maintenance budget.



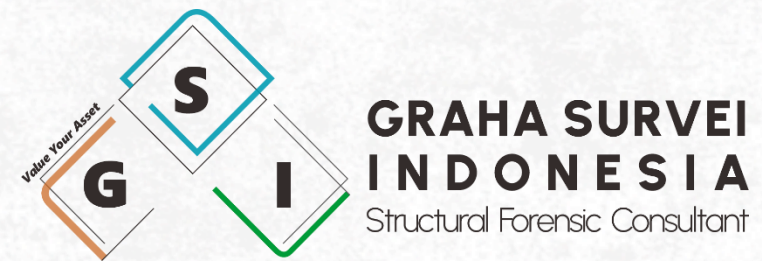
No	Description	Color Grade
1	Severe	
2	Poor	
3	Fair	
4	Good	
5	Very Good	

Kondisi Korosi Struktur Balok Girder G02

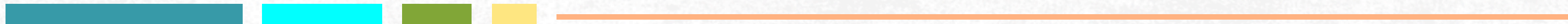
No. Element	Location	Coating Area	Coating Area'	Corrosion Condition												GM	WCS	WS	Over All Condition	Action Perbaikan
				CS 01 (Good)			CS 02 (Fair)			CS 03 (Poor)			CS 04 (Severe)							
				(%)	(m2)	(m2)'	(%)	(m2)	(m2)'	(%)	(m2)	(m2)'	(%)	(m2)	(m2)'					
Girder 2-1	Balok Girder Segmen 0+00 - 0+10 m	57.91	28.95	90%	52.12	26.06	10%	5.79	2.90	0%	0.00	0.00	0%	0.00	0.00	11	1540	140	Very Good	Action Type 1
Girder 2-2	Balok Girder Segmen 0+10 - 0+20 m	119.45	59.73	95%	113.48	56.74	5%	5.97	2.99	0%	0.00	0.00	0%	0.00	0.00	11	1320	120	Very Good	Action Type 1
Girder 2-3	Balok Girder Segmen 0+30 - 0+40 m	119.45	59.73	50%	59.73	29.86	50%	59.73	29.86	0%	0.00	0.00	0%	0.00	0.00	11	3300	300	Good	Action Type 1
Girder 2-4	Balok Girder Segmen 0+40 - 0+50 m	119.45	59.73	67%	80.03	40.02	33%	39.42	19.71	0%	0.00	0.00	0%	0.00	0.00	11	2552	232	Good	Action Type 1
Girder 2-5	Balok Girder Segmen 0+50 - 0+60 m	119.45	59.73	67%	80.03	40.02	33%	39.42	19.71	0%	0.00	0.00	0%	0.00	0.00	11	2552	232	Good	Action Type 1
Girder 2-6	Balok Girder Segmen 0+40 - 0+50 m	119.45	59.73	90%	107.51	53.75	10%	11.95	5.97	0%	0.00	0.00	0%	0.00	0.00	11	1540	140	Very Good	Action Type 1
Girder 2-7	Balok Girder Segmen 0+60 - 0+70 m	119.46	59.73	90%	107.51	53.75	10%	11.95	5.97	0%	0.00	0.00	0%	0.00	0.00	11	1540	140	Very Good	Action Type 1
Girder 2-8	Balok Girder Segmen 0+70 - 0+85 m	88.79	44.39	90%	79.91	39.95	10%	8.88	4.44	0%	0.00	0.00	0%	0.00	0.00	11	1540	140	Very Good	Action Type 1



Our Client



Professional Engineer
Consultancy Service



Our Project

1. **Jasa Analisa *Geotechnic Quay Wall* dan Warf PT Kldeco Jaya Agung**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Graha Survei Indonesia

2. **Jasa Penanganan Longsor Jalan Tol Cinere – Serpong**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Waskita Karya

3. **Jasa Penanganan Longsor Jalan Tol Semarang KM 430 C/A**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Jasamarga Tollroad Maintenance

4. **Jasa Penanganan Pendampingan Teknis Pelaksanaan perkuatan lereng Jalan Tol Semarang - Batang**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Jasamarga Tollroad Maintenance – PT Jasamarga Toll Semarang - Batang

5. **Jasa Pengujian Slake Durability**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Adhi Karya

6. **Jasa Analisa *Geotechnic* untuk Pembangunan jalan akses di IKN**

- Tahun Pelaksanaan = 2025
- Pemberi Kerja = PT Bangun Cipta – Panca Karya KSO

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PT Geo-Fondasi Multi Konsultan

- Office 1 = Jl. Temugiring 2 Villa Mas Cluster, No 1 Rt 003/004, Banyumanik, Banyumanik, Kota Semarang
- Office 2 = Jl. Indraprasta No.74, Pendrikan Kidul, Kec. Semarang Tengah, Kota Semarang, Jawa Tengah 50131
- Contact = 082 135 057 849
- Email = malik@gfm-consult.com
- Ig = [Gfm.consult](https://www.instagram.com/Gfm.consult)