

## DAFTAR PUSTAKA

ASHARE. 2013. "ASHRAE Standard 55-2010: Thermal Environmental Conditions for Human Occupancy." *American Society of Heating, Refrigeration and Air conditioning Engineers* ASHRAE Sta: 58.

Ernst Neufert. 2002. *Data Arsitek 2*. 33rd ed. ed. Sunarto Tjahjadi. JAKARTA: Erlangga.

Kartika, V.V., and Dhanoe Iswanto. 2020. "Pengaruh Bukaam Terhadap Kenyamanan Termal Pada Ruang Kelas Di Kampus Teknik Arsitektur Universitas Diponegoro Tembalang." *Imaji* 9: 421–30.

Santoso, Eddy Imam. 2012. "Kenyamanan Termal Indoor Pada Bangunan Di Daerah Beriklim Tropis Lembab." *Indonesian Green Technology Journal* 1(1): 13–19.

Sugini. 2014. "Kenyamanan Termal Ruang (Konsep Dan Penerapan Pada Desain." : 251.

Tantasavasdi, Chalermwat, Jelena Srebric, and Qingyan Chen. 2001. "Natural Ventilation Design for Houses in Thailand." *Energy and Buildings* 33(8): 815–24.

ASHARE. 2013. "ASHRAE Standard 55-2010: *Thermal Environmental Conditions for Human Occupancy*." *American Society of Heating, Refrigeration and Air conditioning Engineers* ASHRAE Sta: 58.

Ernst Neufert. 2002. Data Arsitek 2. 33rd ed. ed. Sunarto Tjahjadi. JAKARTA: Erlangga.

Kartika, V.V., and Dhanoe Iswanto. 2020. "Pengaruh Bukaannya Terhadap Kenyamanan Termal Pada Ruang Kelas Di Kampus Teknik Arsitektur Universitas Diponegoro Tembalang." *Imaji* 9: 421–30.

Santoso, Eddy Imam. 2012. "Kenyamanan Termal Indoor Pada Bangunan Di Daerah Beriklim Tropis Lembab." *Indonesian Green Technology Journal* 1(1): 13–19.

Sugini. 2014. "Kenyamanan Termal Ruang (Konsep Dan Penerapan Pada Desain." : 251. Tantasavasdi, Chalermwat, Jelena Srebric, and Qingyan Chen. 2001. "*Natural Ventilation Design for Houses in Thailand*." *Energy and Buildings* 33(8): 815–24

Baharuddin, M. T. Ishak, S. Beddu, M.Y. Osman, "Analisis Kenyamanan dan Lingkungan Termal pada Ruang Kuliah dengan Ventilasi Alami (Studi Kasus: Kampus II Fakultas Teknik Unhas Gowa)" in Seminar Nasional Semesta Arsitektur Nusantara 2 Arsitektur Nusantara Berkelanjutan, 2013.

Nur Laela Latifah, Fisika Bangunan 1. Jakarta: Griya Kreasi, 2015.

SNI 03-6572-2001, Tata cara perancangan sistem ventilasi dan pengkondisian udara pada bangunan gedung, 2001.

Indah Sari Zulfiana, "Kenyamanan Lingkungan Termal Ruang Gambar Fakultas Teknik Sipil dan Perencanaan Universitas Sains dan Teknologi Jayapura," *Jurnal Median*, vol. 8, no.2, pp. 82-89, 2018.

Basaria Talarosha, "Menciptakan Kenyamanan Termal Dalam Bangunan," *Jurnal Sistem Teknik Industri*, vol. 6, no. 3, pp. 148-158, 2005.

Terry S. Boutet, Controlling Air Movement. McGraw-Hill Book Company, 1987.

Qurrotul A'yun, P.C. Wati, M. C. Khafidz, "Eksplorasi Disain Ventilasi Ruang Kuliah Untuk Mencapai Kenyamanan Termal," EMARA: Indonesian Journal of Architecture, Vol. 4 No. 2, pp. 119-125, 2019.

<https://www.wunderground.com>. (2020, 18 April). Jayapura, Papua, Indonesia Weather Conditions. Diakses pada 18 April 2020, dari <https://www.wunderground.com/weather/id/jayapura>. Abreu-Harbich, Loyde Vieira de, Lucila Chebel Labaki, and Andreas

Matzarakis. 2015. "Effect of Tree Planting Design and Tree Species on Human Thermal Comfort in the Tropics." Landscape and Urban Planning 138 (June):99–109. <https://doi.org/10.1016/j.landurbplan.2015.02.008>.

Feng, Xianhui, Huan Wen, Mu He, and Yiqiang Xiao. 2023. "Microclimate Effects and Influential Mechanisms of Four Urban Tree Species underneath the Canopy in Hot and Humid Areas." Frontiers in Environmental Science 11 (February). <https://doi.org/10.3389/fenvs.2023.1108002>.

Fong, Chng Saun, Nasrin Aghamohammadi, Logaraj Ramakreshnan, Nik Meriam Sulaiman, and Parviz Mohammadi. 2019. "Holistic

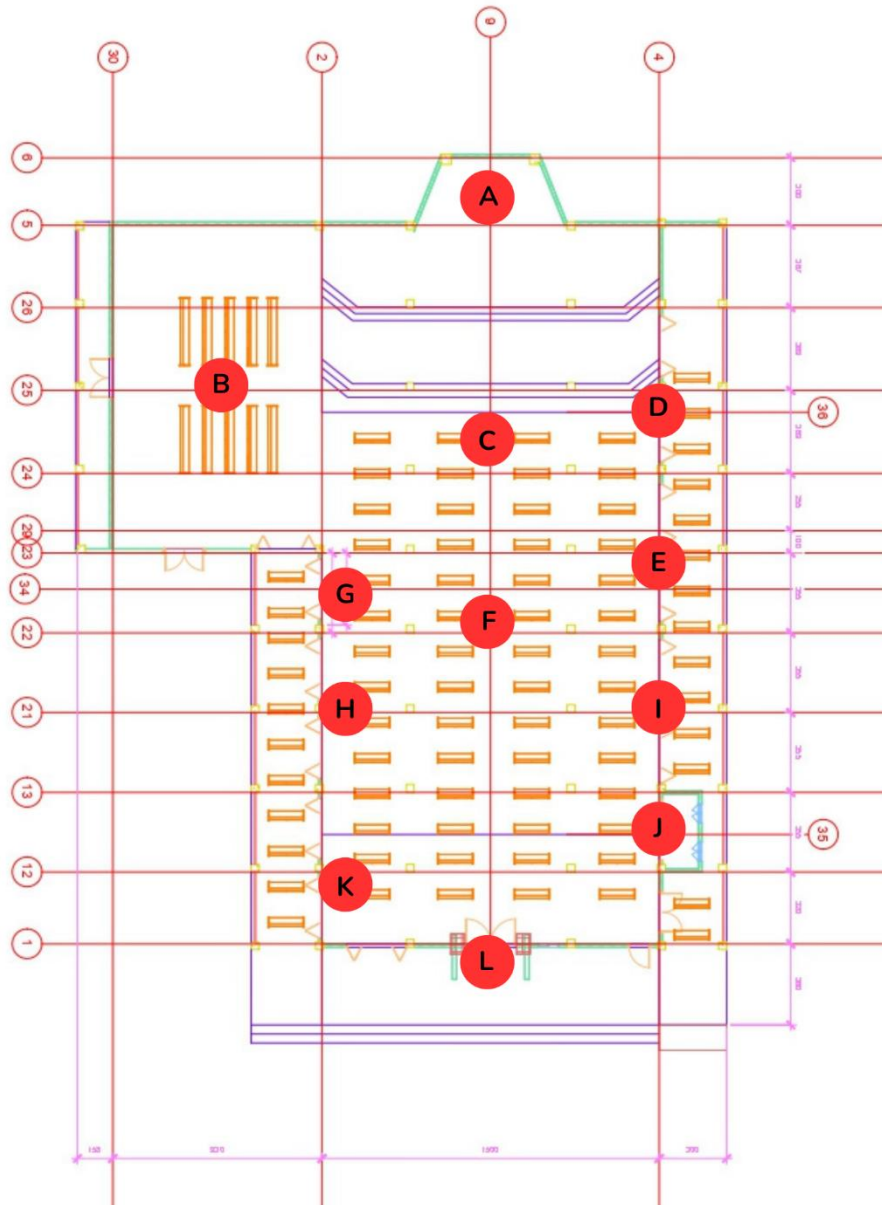
Recommendations for Future Outdoor Thermal Comfort Assessment in Tropical Southeast Asia: A Critical Appraisal." Sustainable Cities and Society 46 (April):101428. <https://doi.org/10.1016/j.scs.2019.101428>.

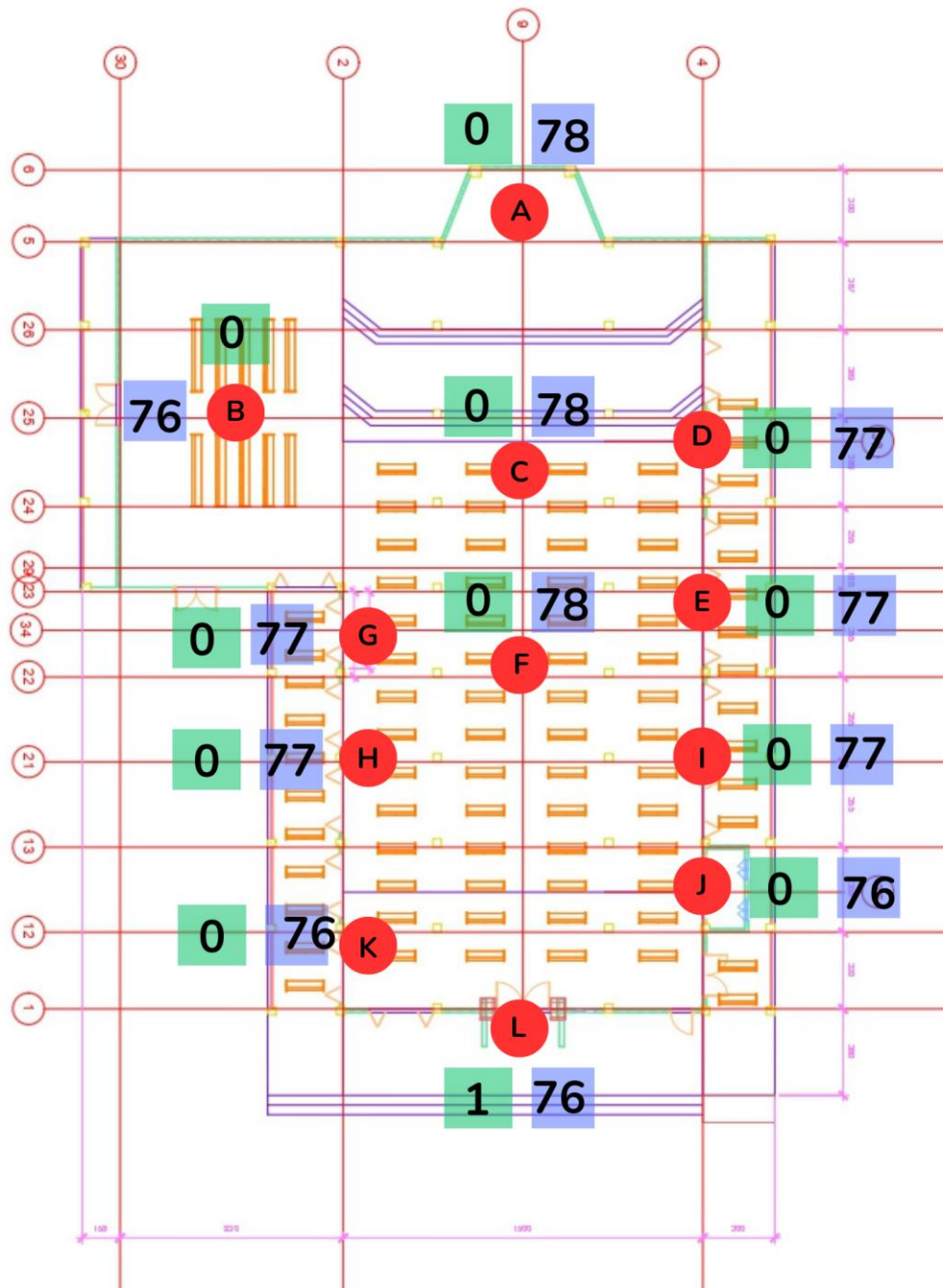
Georgi, N. J., and K. Zafiriadis. 2006. "The Impact of Park Trees on Microclimate in Urban Areas." *Urban Ecosystems* 9 (3): 195–209. <https://doi.org/10.1007/s11252-006-8590-9>. Imran, Mohammad. 2013. "Pengaruh Iklim Terhadap Bentuk Dan Bahan

Arsitektur Bangunan." *RADIAL – JuRnal PerADaban Salns, Rekayasa Dan TeknoLogi* 1 (1)



## LAMPIRAN



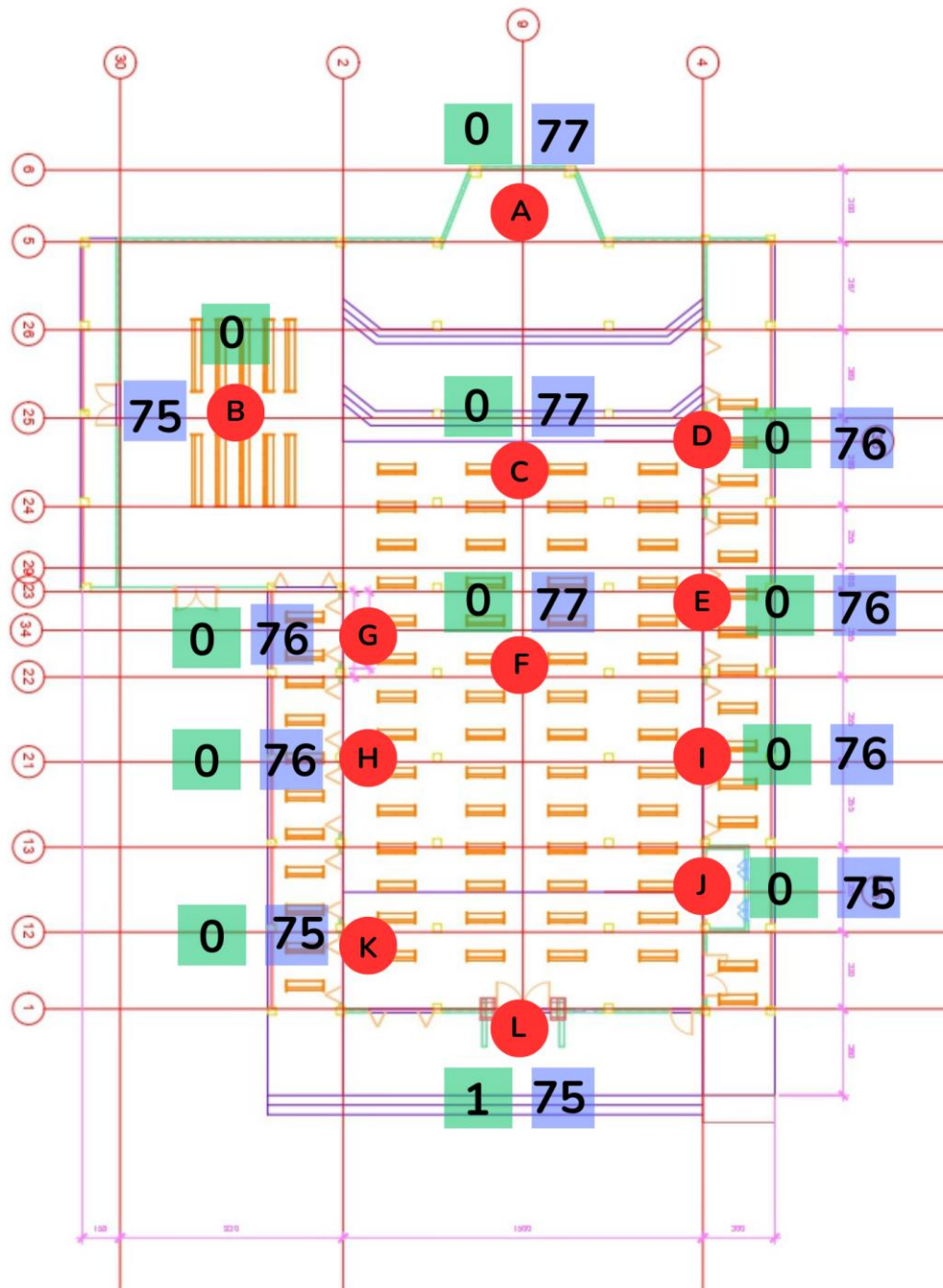


Note :

- Kelembaban
- Angin
- Titik Pengukuran

Pagi Hari pukul 09.00, Oktober 2024  
Aktivitas Ibadah Mingguan

TEMPERATURE 29,2° C

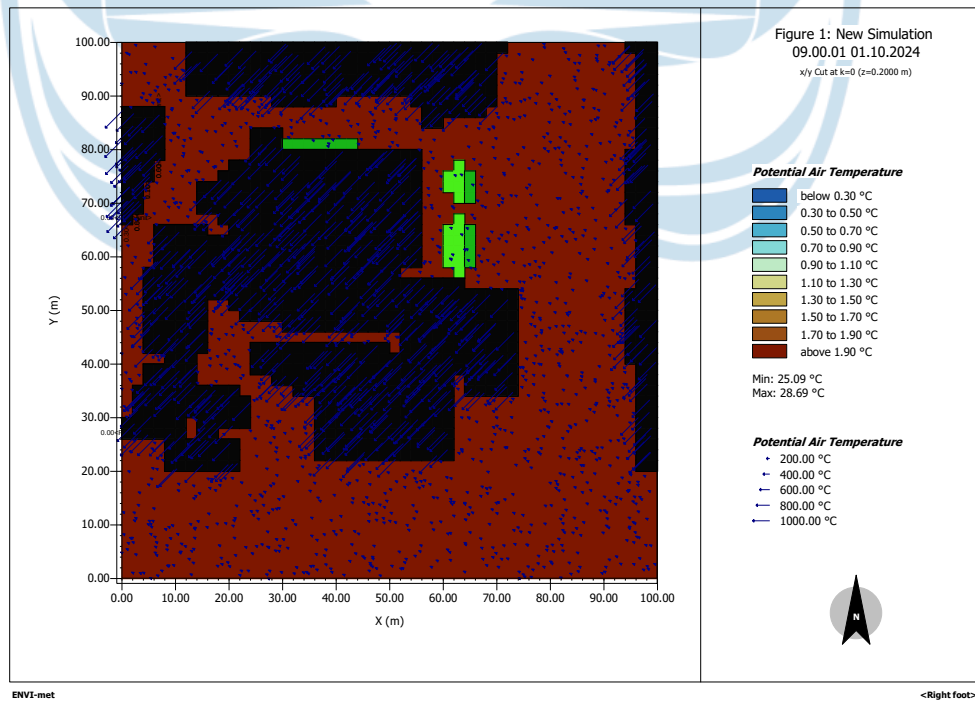
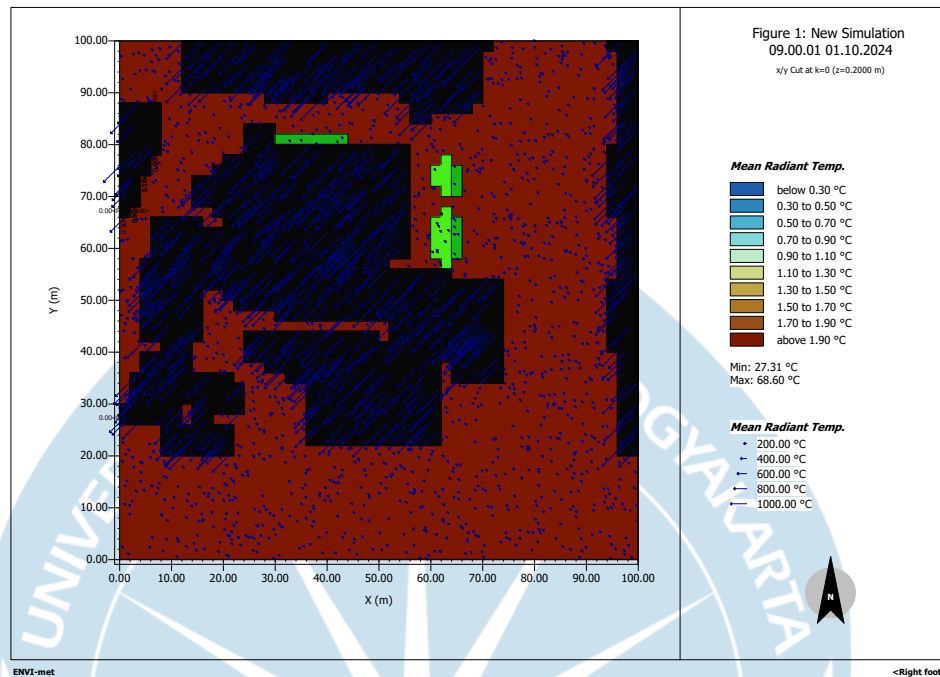


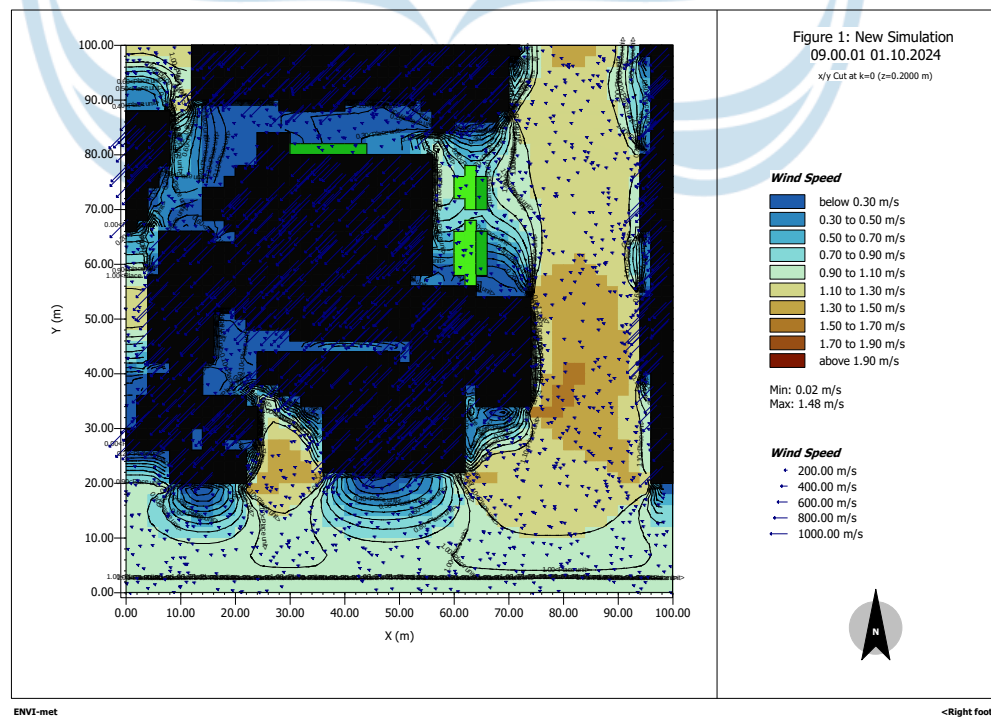
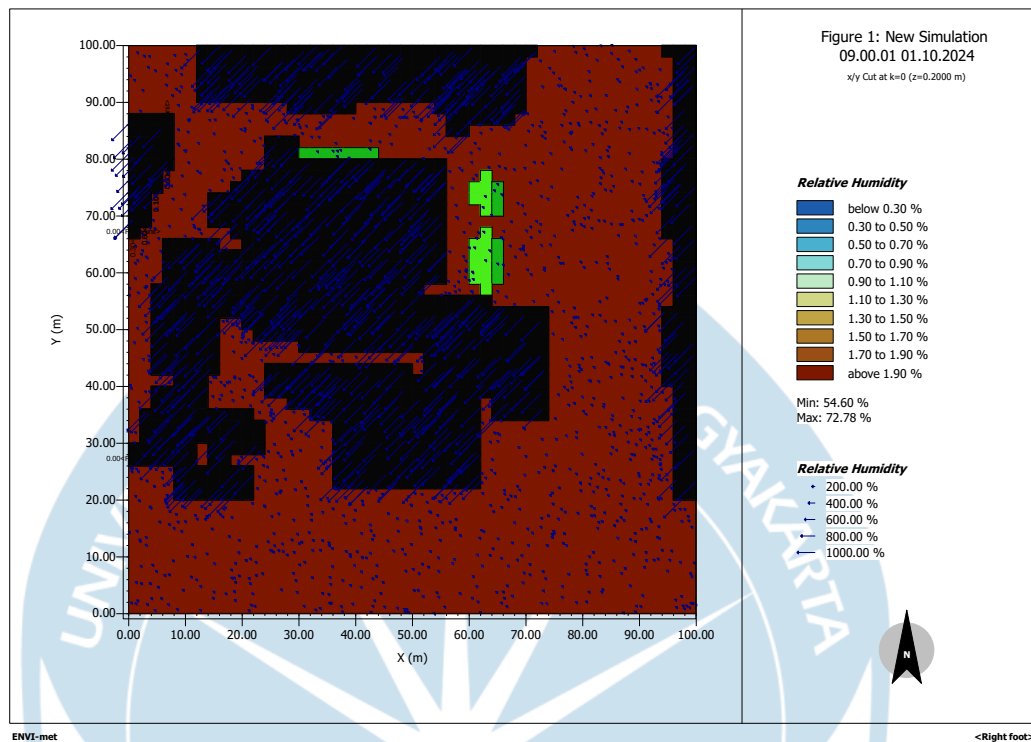
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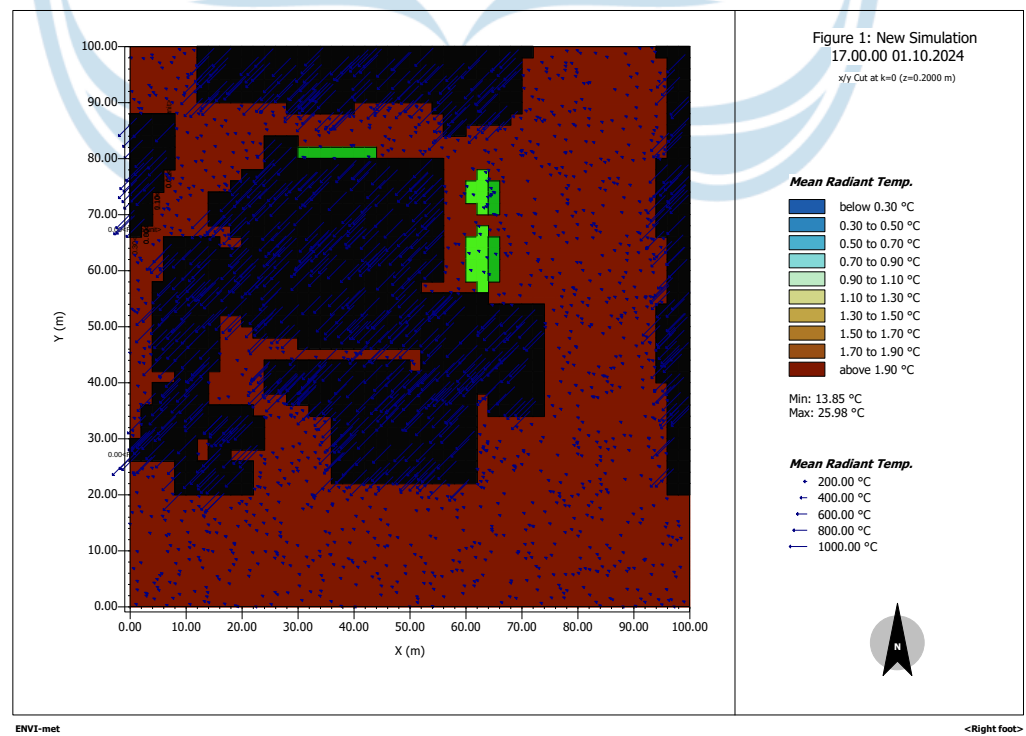
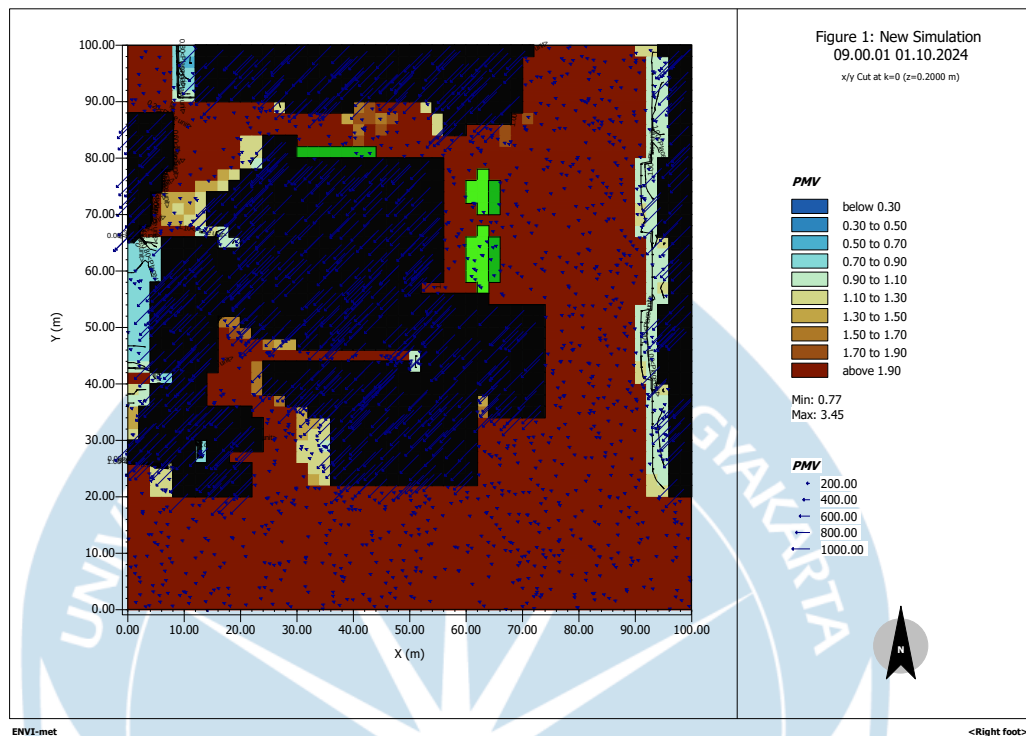
- Kelembaban
- Angin
- Titik Pengukuran

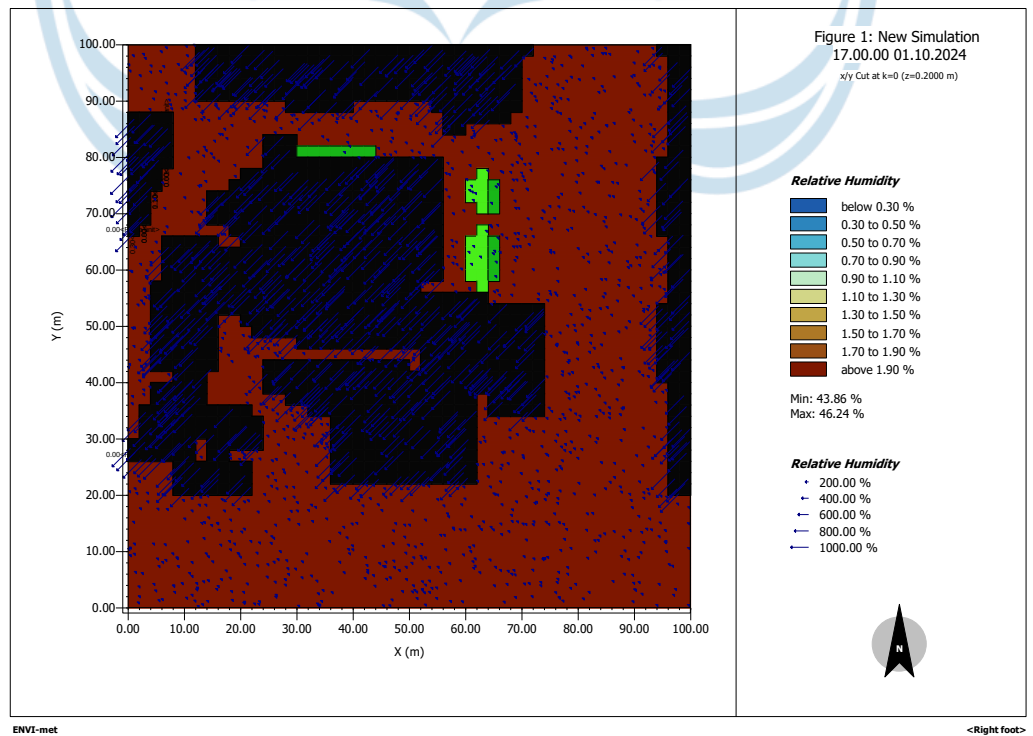
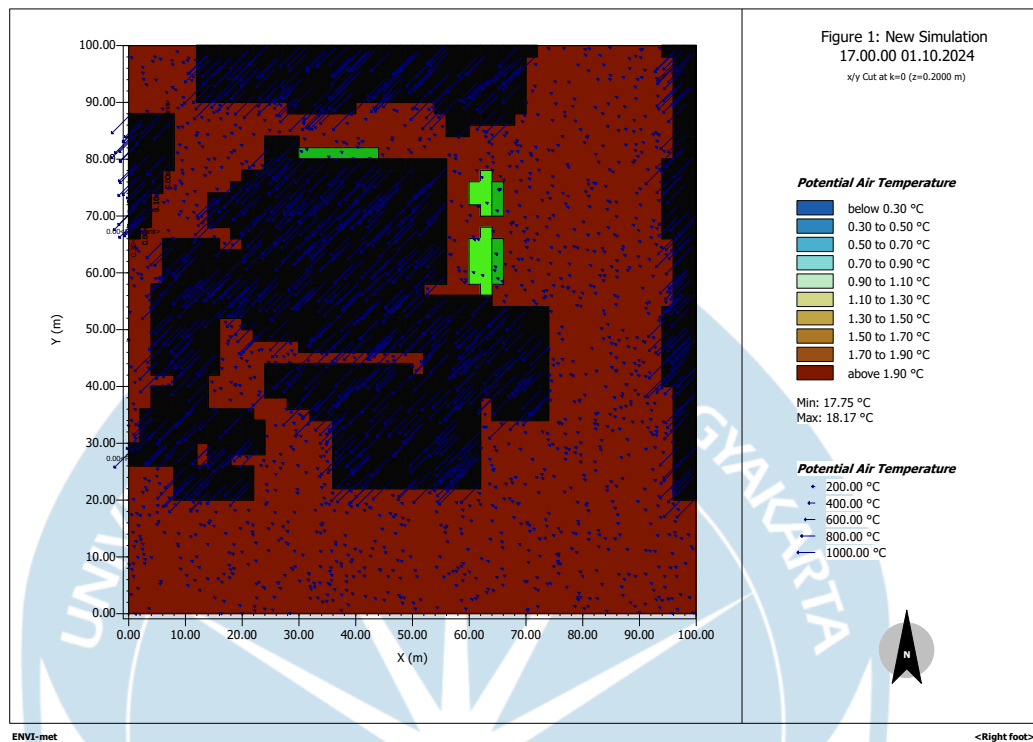
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Aktivitas Ibadah Mingguan

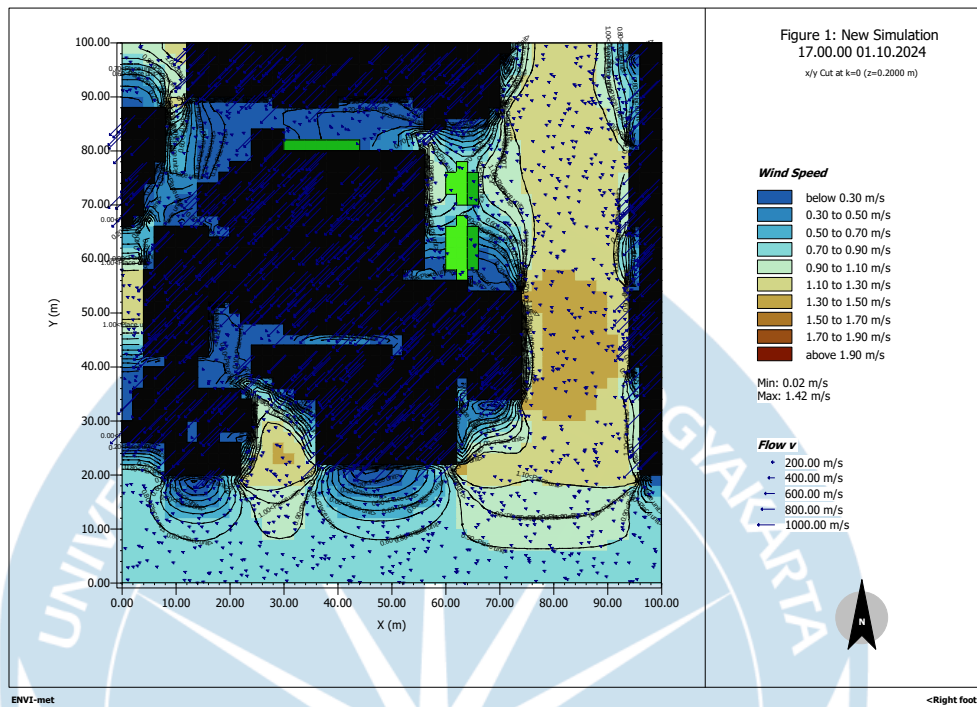
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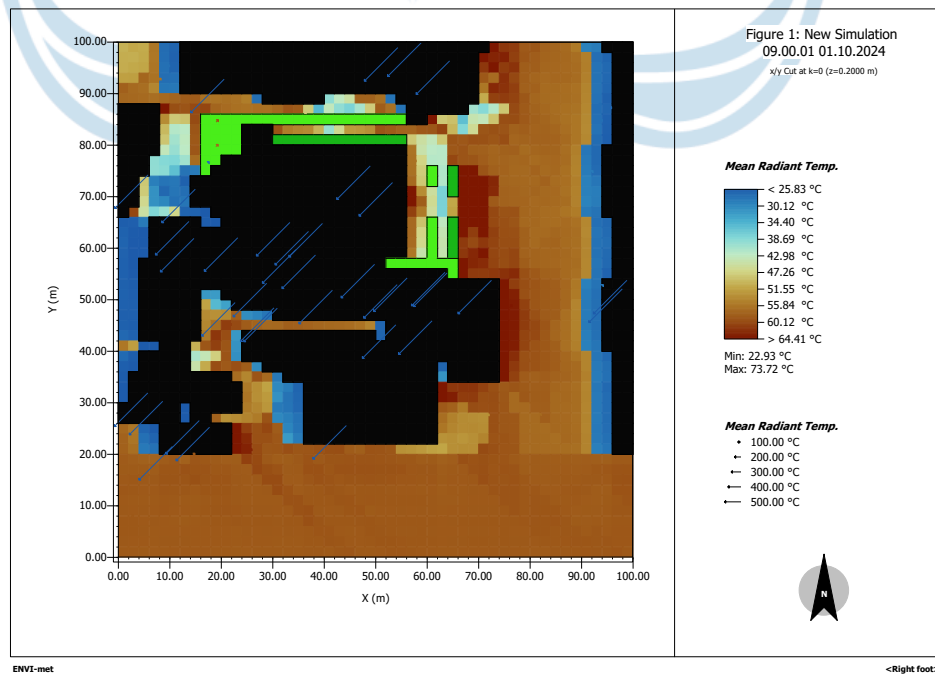


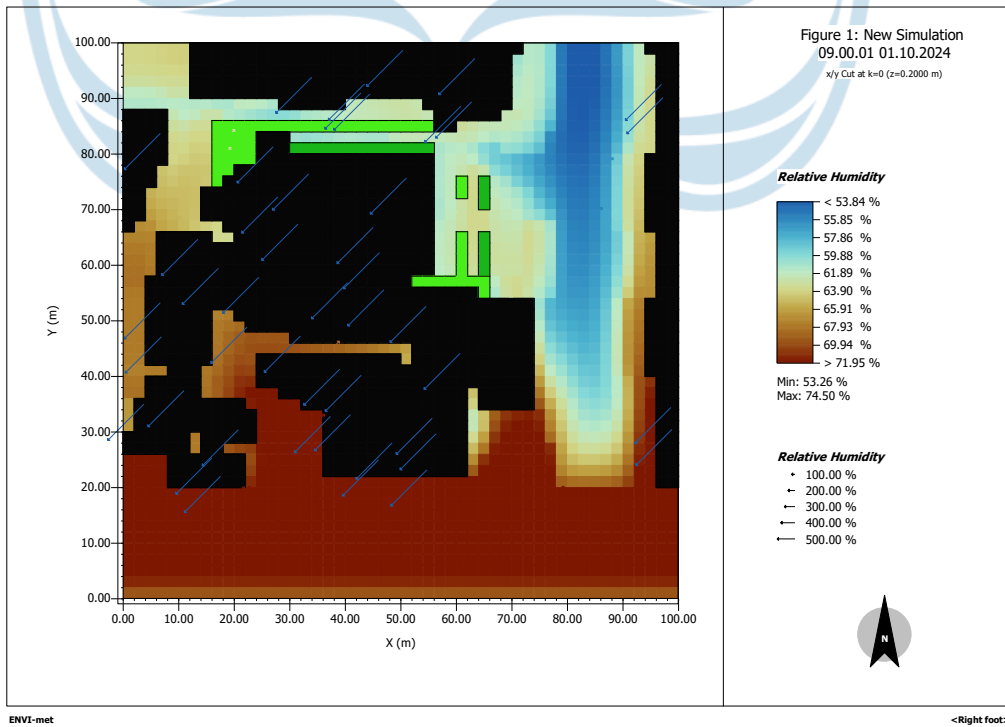
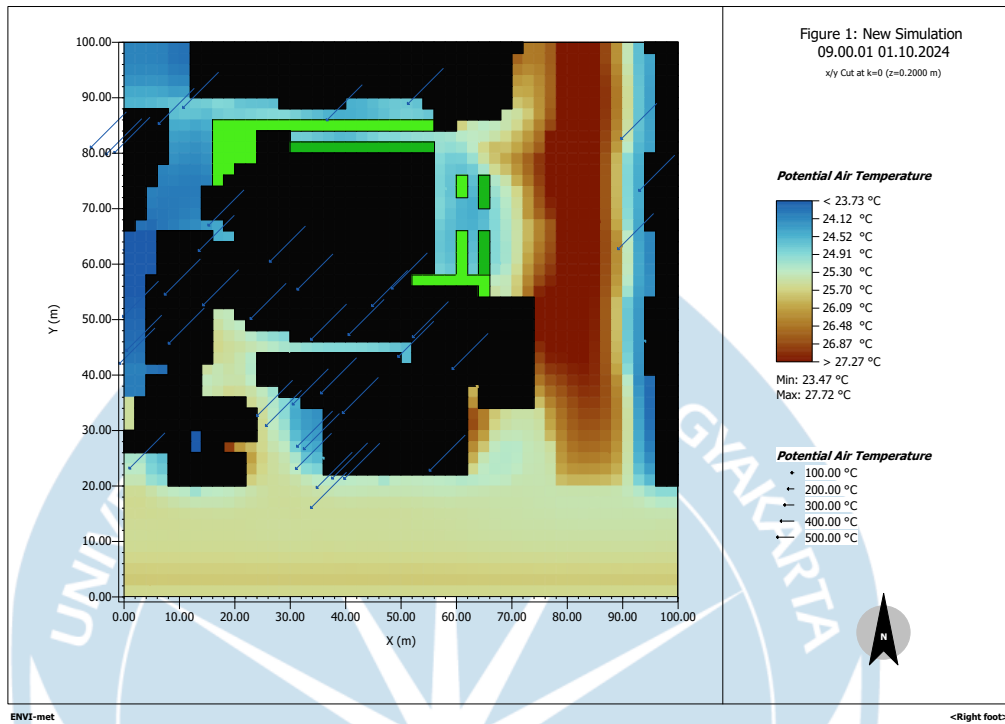


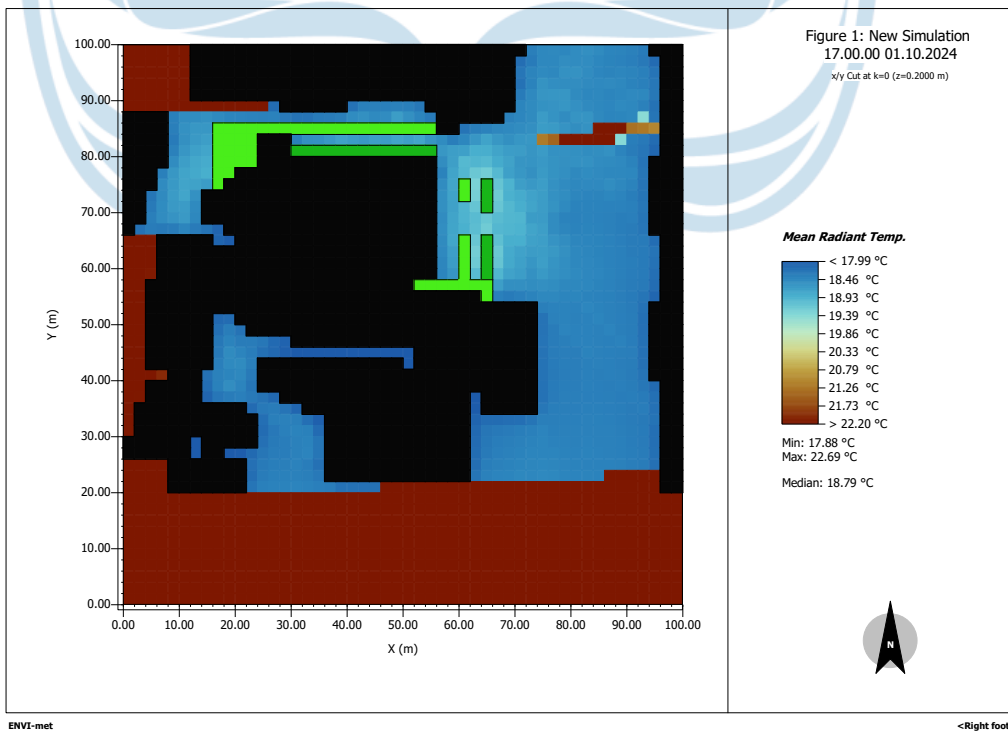
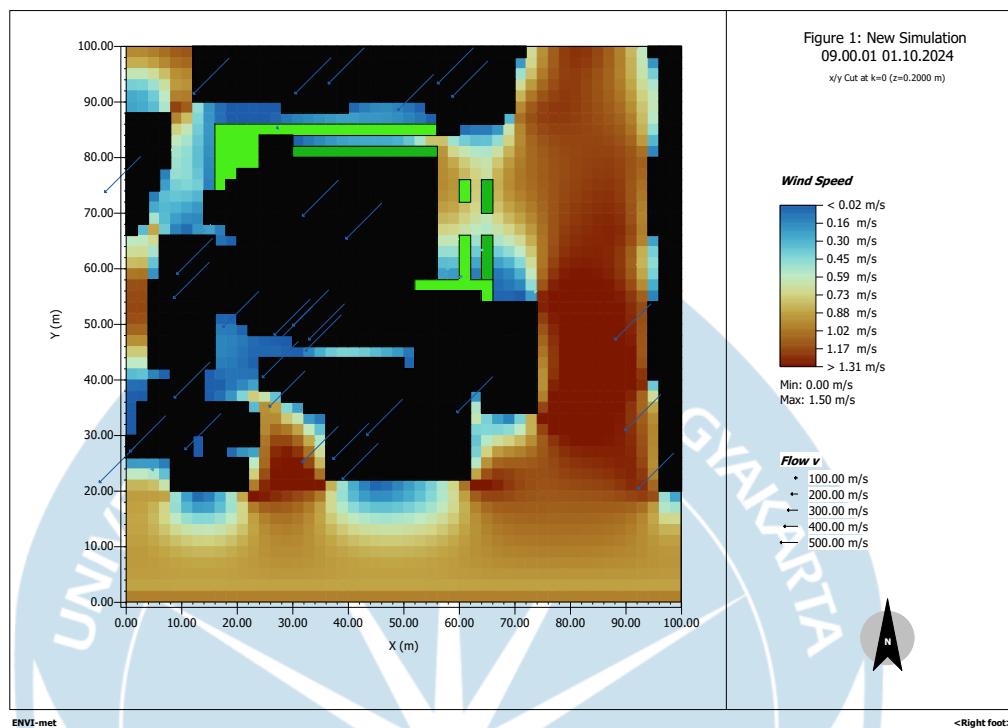


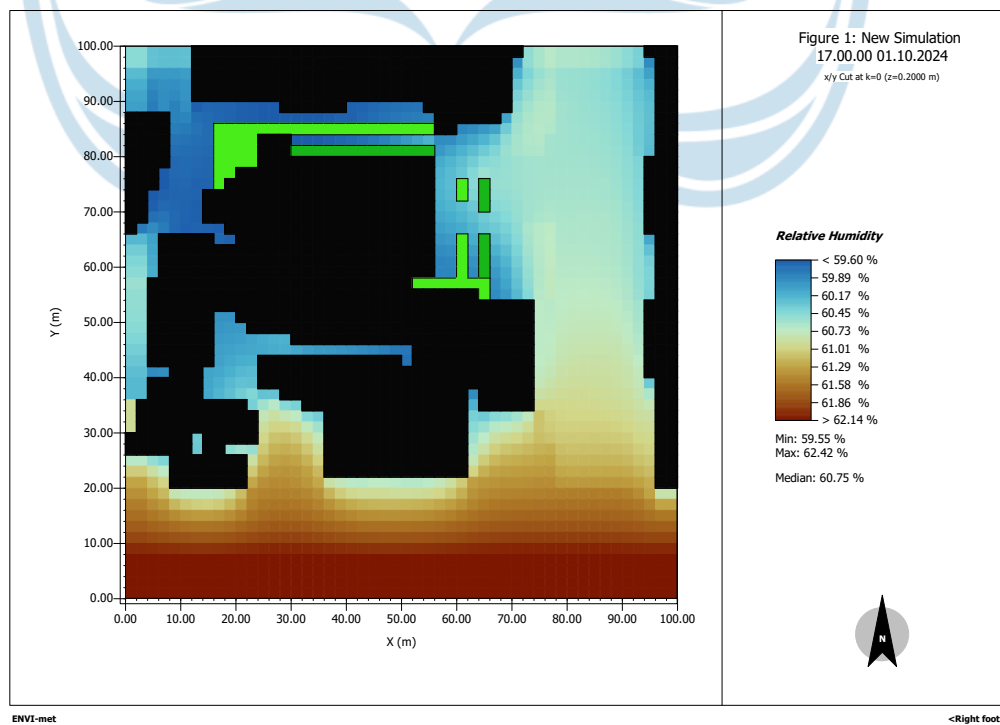
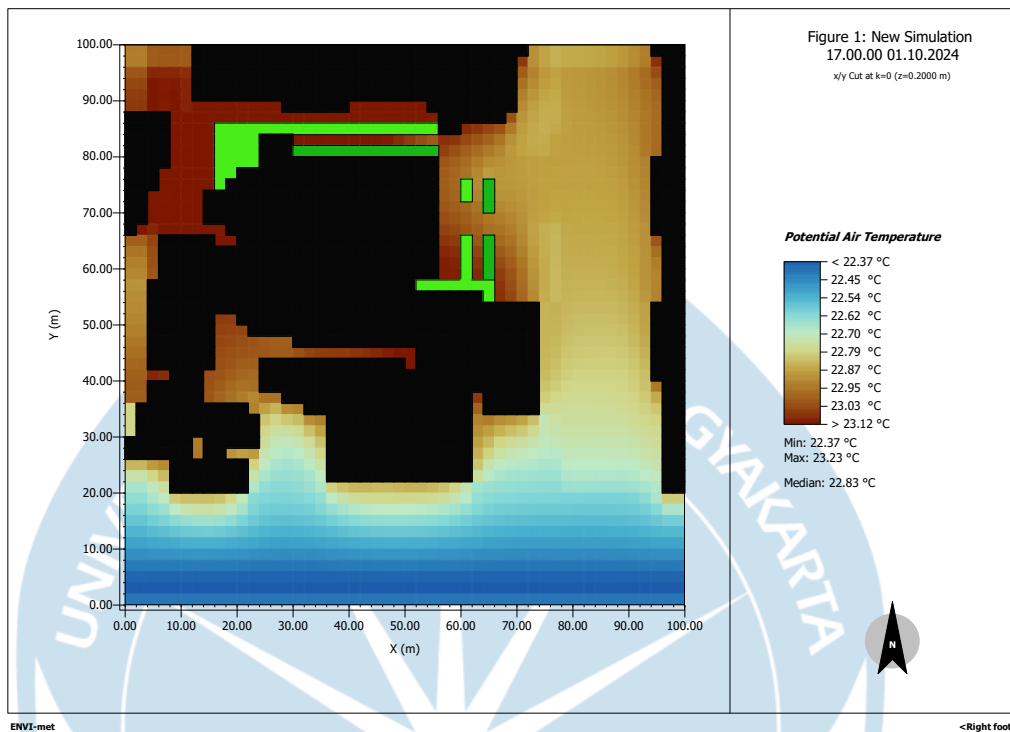


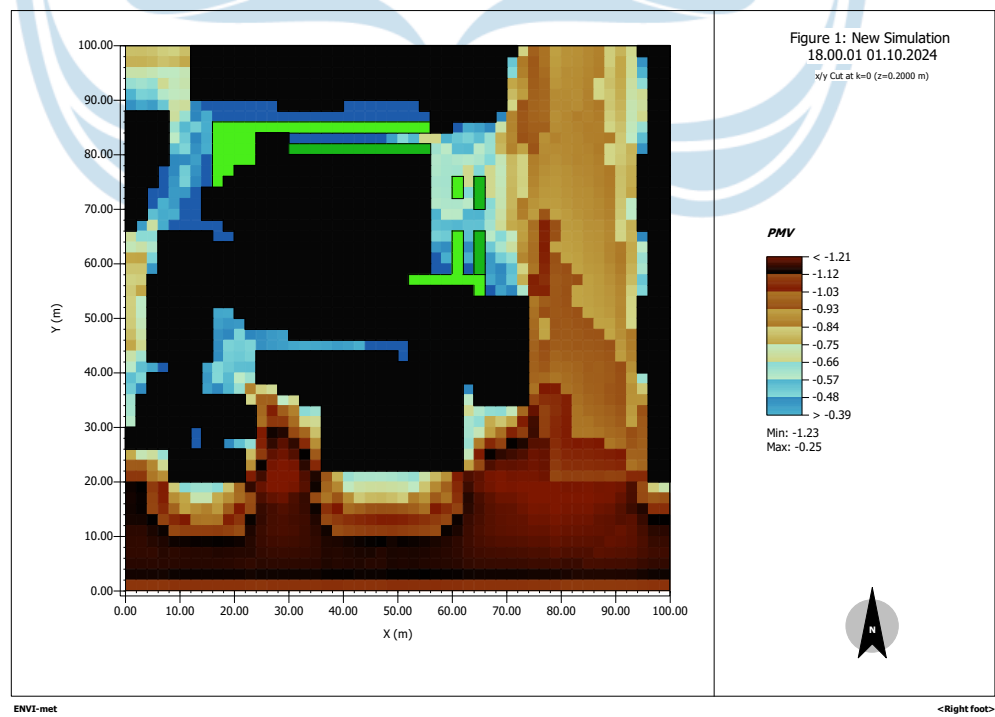
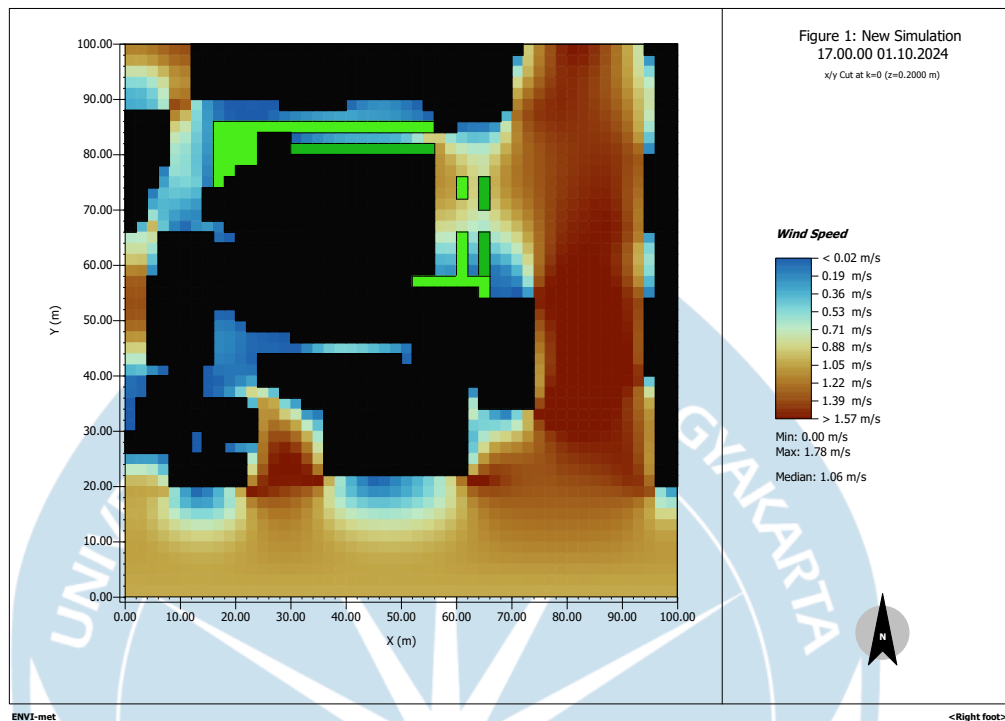
Redesain pukul 09.00 AM dan 17.00 PM



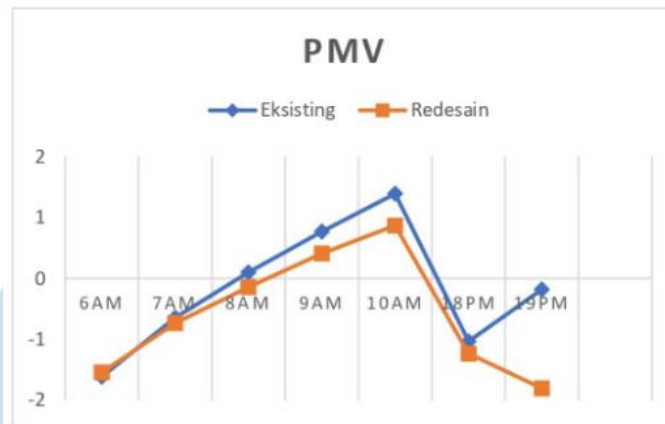




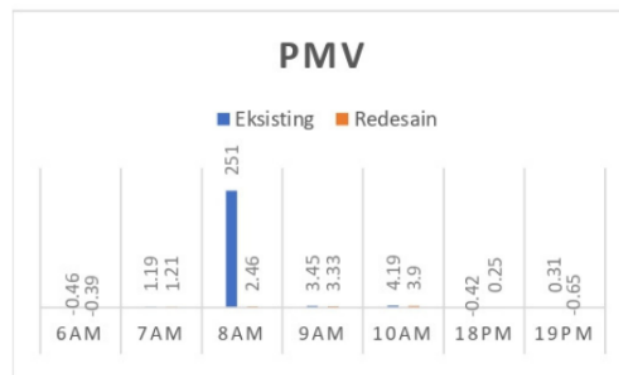




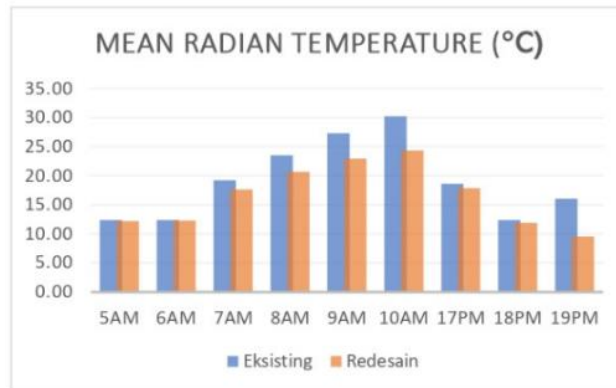
| PMV (MIN) |       |       |       |      |      |       |       |
|-----------|-------|-------|-------|------|------|-------|-------|
|           | 6AM   | 7AM   | 8AM   | 9AM  | 10AM | 18PM  | 19PM  |
| Eksisting | -1.61 | -0.64 | 0.1   | 0.77 | 1.39 | -1.03 | -0.18 |
| Redesain  | -1.54 | -0.73 | -0.14 | 0.41 | 0.87 | -1.23 | -1.8  |



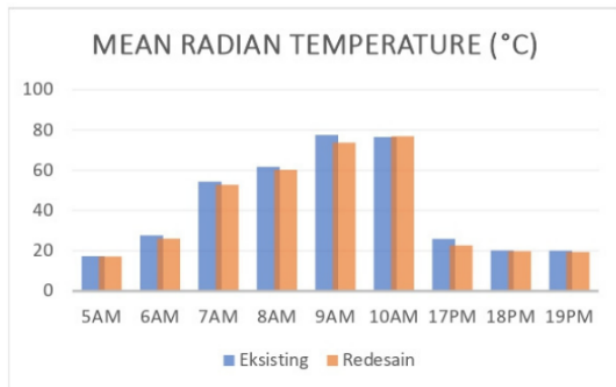
| PMV (MAX) |       |      |      |      |      |       |       |
|-----------|-------|------|------|------|------|-------|-------|
|           | 6AM   | 7AM  | 8AM  | 9AM  | 10AM | 18PM  | 19PM  |
| Eksisting | -0.46 | 1.19 | 251  | 3.45 | 4.19 | -0.42 | 0.31  |
| Redesain  | -0.39 | 1.21 | 2.46 | 3.33 | 3.9  | 0.25  | -0.65 |



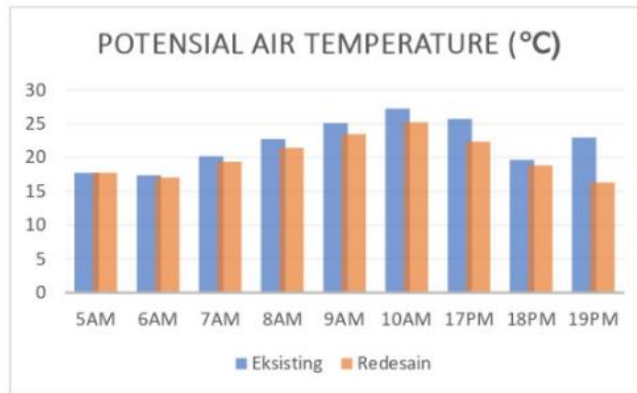
| MEAN RADIANT TEMPERATURE (MIN) |       |       |       |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting                      | 12.40 | 12.38 | 19.24 | 23.52 | 27.31 | 30.19 | 18.65 | 12.41 | 16.07 |
| Redesain                       | 12.20 | 12.29 | 17.66 | 20.65 | 22.93 | 24.32 | 17.88 | 11.91 | 9.55  |



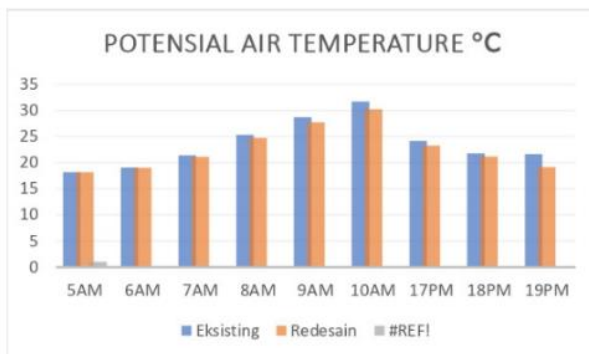
| MEAN RADIANT TEMPERATURE (MAX) |       |       |       |       |       |       |       |       |       |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting                      | 17.26 | 27.61 | 54.28 | 61.61 | 77.48 | 76.5  | 25.98 | 20.2  | 20.09 |
| Redesain                       | 17.17 | 26.05 | 52.77 | 60.28 | 73.72 | 76.87 | 22.69 | 19.77 | 19.37 |



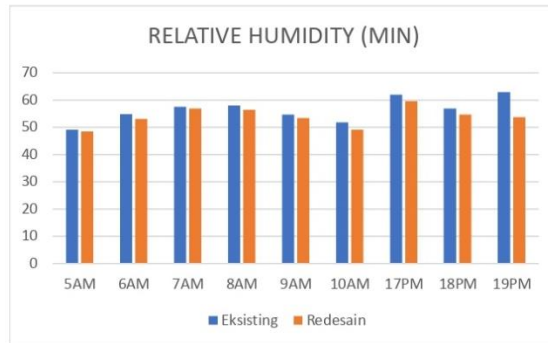
| POTENSIAL AIR TEMPERATURE (MIN) |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                 | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting                       | 17.76 | 17.41 | 20.23 | 22.78 | 25.09 | 27.24 | 25.75 | 19.66 | 22.96 |
| Redesain                        | 17.75 | 17.06 | 19.39 | 21.43 | 23.47 | 25.22 | 22.37 | 18.87 | 16.31 |



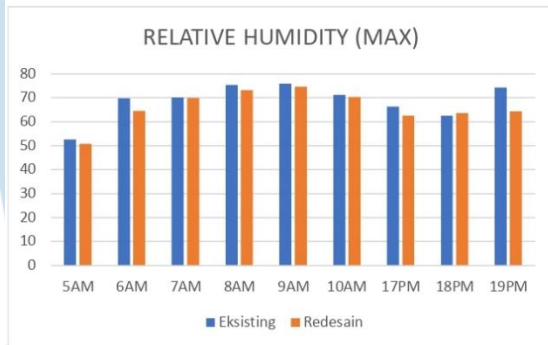
| POTENSIAL AIR TEMPERATURE (MAX) |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                 | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting                       | 18.18 | 19.06 | 21.41 | 25.33 | 28.69 | 31.69 | 24.17 | 21.77 | 21.61 |
| Redesain                        | 18.17 | 18.98 | 21.11 | 24.7  | 27.72 | 30.19 | 23.23 | 21.18 | 19.16 |



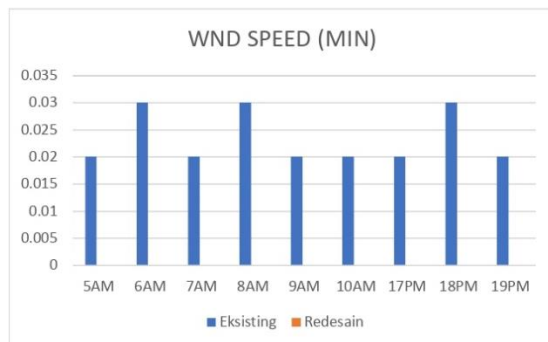
| RELATIVE HUMIDITY (MIN) |       |       |       |       |       |       |       |       |       |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting               | 49    | 54.68 | 57.45 | 57.86 | 54.6  | 51.65 | 61.86 | 56.75 | 62.83 |
| Redesain                | 48.42 | 53.03 | 56.78 | 56.37 | 53.26 | 48.97 | 59.55 | 54.51 | 53.56 |



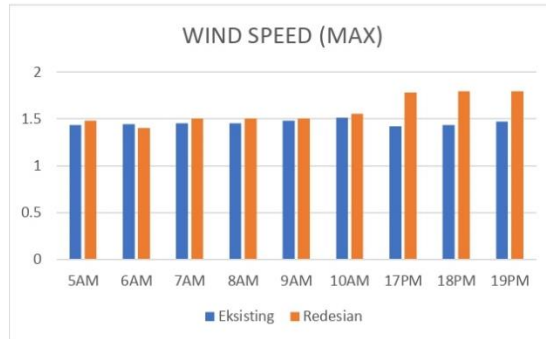
| RELATIVE HUMIDITY (MAX) |       |       |       |       |       |       |       |       |       |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                         | 5AM   | 6AM   | 7AM   | 8AM   | 9AM   | 10AM  | 17PM  | 18PM  | 19PM  |
| Eksisting               | 52.49 | 69.75 | 70.07 | 75.27 | 75.78 | 71.14 | 66.24 | 62.44 | 74.13 |
| Redesain                | 50.79 | 64.47 | 69.82 | 73.03 | 74.5  | 70.21 | 62.42 | 63.61 | 64.27 |



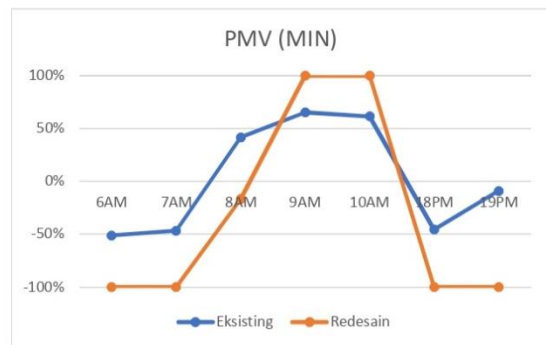
| WIND SPEED (MIN) |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|
|                  | 5AM  | 6AM  | 7AM  | 8AM  | 9AM  | 10AM | 17PM | 18PM | 19PM |
| Eksisting        | 0.02 | 0.03 | 0.02 | 0.03 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02 |
| Redesain         | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |



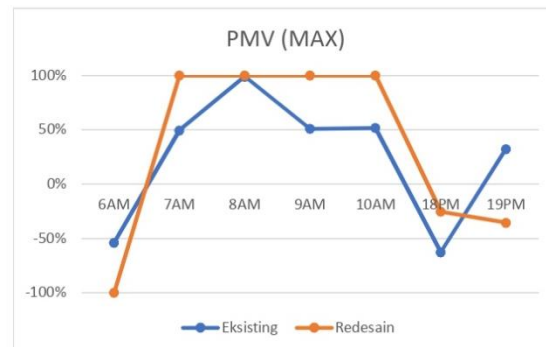
| WIND SPEED (MAX) |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|
|                  | 5AM  | 6AM  | 7AM  | 8AM  | 9AM  | 10AM | 17PM | 18PM | 19PM |
| Eksisting        | 1.43 | 1.44 | 1.45 | 1.45 | 1.48 | 1.51 | 1.42 | 1.43 | 1.47 |
| Redesian         | 1.48 | 1.4  | 1.5  | 1.5  | 1.5  | 1.55 | 1.78 | 1.79 | 1.79 |



| PMV (MIN) |       |       |       |      |      |       |       |
|-----------|-------|-------|-------|------|------|-------|-------|
|           | 6AM   | 7AM   | 8AM   | 9AM  | 10AM | 18PM  | 19PM  |
| Eksisting | -1.61 | -0.64 | 0.1   | 0.77 | 1.39 | -1.03 | -0.18 |
| Redesain  | -1.54 | -0.73 | -0.14 | 0.41 | 0.87 | -1.23 | -1.8  |

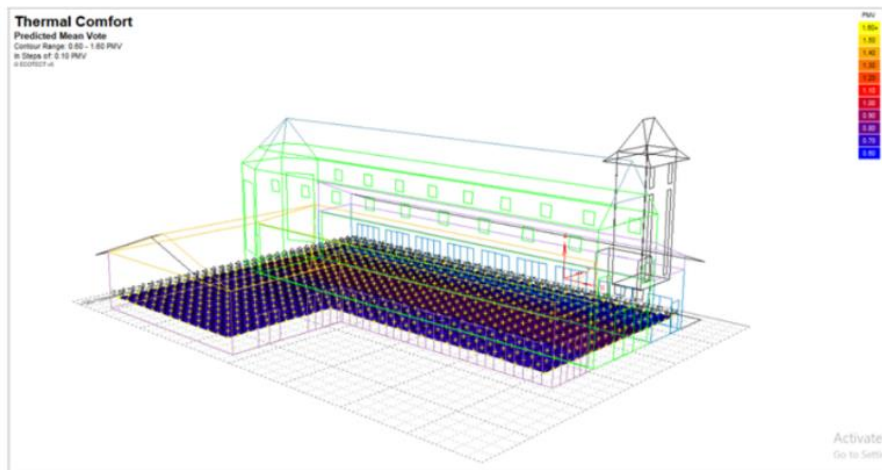


| PMV (MAX) |       |      |      |      |      |       |       |
|-----------|-------|------|------|------|------|-------|-------|
|           | 6AM   | 7AM  | 8AM  | 9AM  | 10AM | 18PM  | 19PM  |
| Eksisting | -0.46 | 1.19 | 251  | 3.45 | 4.19 | -0.42 | 0.31  |
| Redesain  | -0.39 | 1.21 | 2.46 | 3.33 | 3.9  | 0.25  | -0.65 |



| OKTOBER 9 AM     |            |                 | Temp 29,2°C  |
|------------------|------------|-----------------|--------------|
| Titik Pengukuran | Kelembaban | Kecepatan Angin | Temp Efektif |
| A                | 78         | 0               | 29°C TE      |
| B                | 76         | 0               |              |
| C                | 78         | 0               |              |
| D                | 77         | 0               |              |
| E                | 77         | 0               |              |
| F                | 78         | 0               |              |
| G                | 77         | 0               |              |
| H                | 77         | 0               |              |
| I                | 77         | 0               |              |
| J                | 78         | 0               |              |
| K                | 76         | 0               |              |
| L                | 76         | 1               |              |

| OKTOBER 17 PM    |            |                 | Temp 29,2°C  |
|------------------|------------|-----------------|--------------|
| Titik Pengukuran | Kelembaban | Kecepatan Angin | Temp Efektif |
| A                | 77         | 0               | 28.6°C TE    |
| B                | 75         | 0               |              |
| C                | 77         | 0               |              |
| D                | 76         | 0               |              |
| E                | 77         | 0               |              |
| F                | 77         | 0               |              |
| G                | 76         | 0               |              |
| H                | 76         | 0               |              |
| I                | 76         | 0               |              |
| J                | 75         | 0               |              |
| K                | 75         | 0               |              |
| L                | 75         | 1               |              |

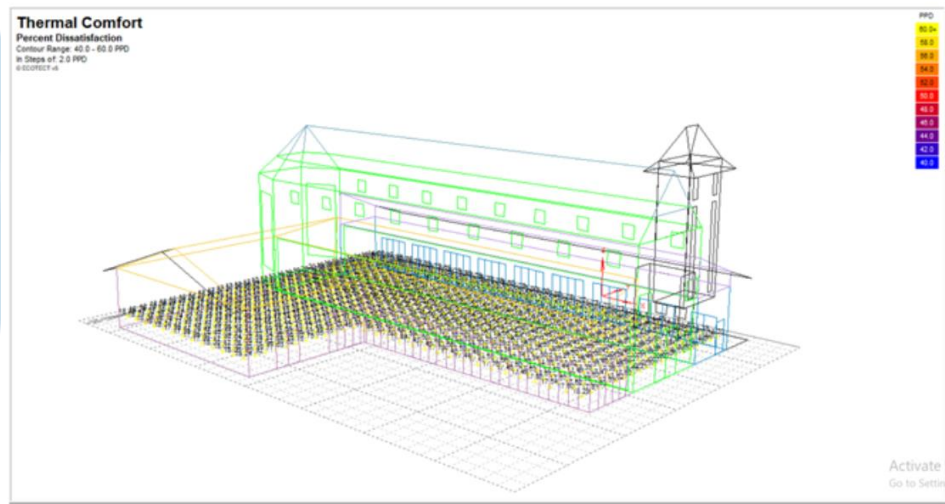
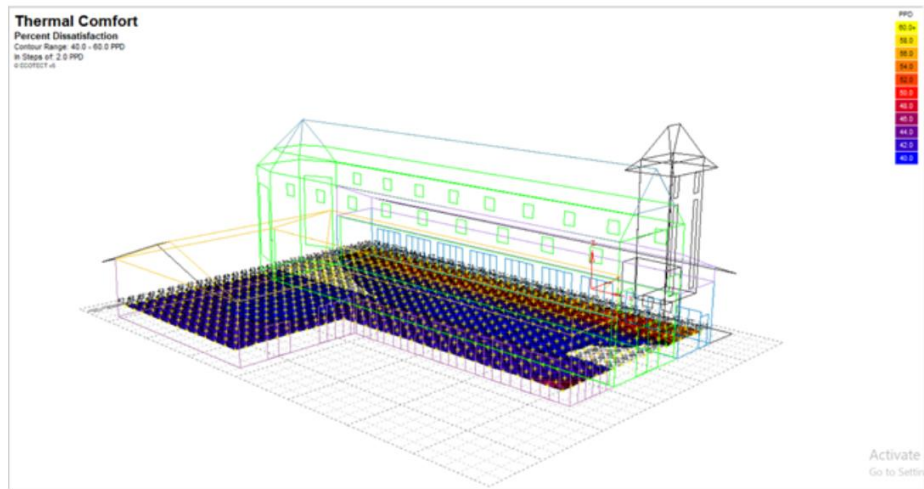


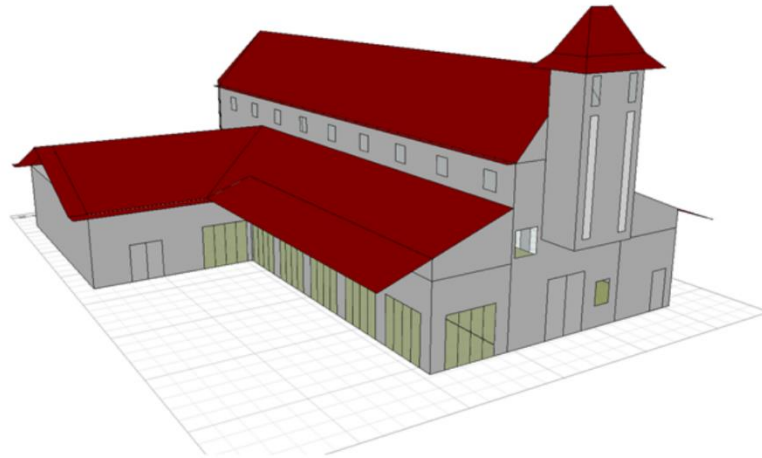
| PMV 9AM                         |           |
|---------------------------------|-----------|
| Titik Pengukuran                | Nilai PMV |
| A                               | 1.25      |
| B                               | 1.83      |
| C                               | 1.81      |
| D                               | 1.55      |
| E                               | 1.55      |
| F                               | 1.82      |
| G                               | 1.85      |
| H                               | 1.86      |
| I                               | 1.56      |
| J                               | 1.51      |
| K                               | 1.87      |
| L                               | 1.28      |
| CONTOUR RANGE : 0.60 - 1.60 PMV |           |

| PMV 17 PM                       |           |
|---------------------------------|-----------|
| Titik Pengukuran                | Nilai PMV |
| A                               | 0.84      |
| B                               | 0.77      |
| C                               | 0.86      |
| D                               | 0.84      |
| E                               | 0.84      |
| F                               | 0.85      |
| G                               | 0.77      |
| H                               | 0.77      |
| I                               | 0.64      |
| J                               | 0.66      |
| K                               | 0.77      |
| L                               | 0.84      |
| CONTOUR RANGE : 0.60 - 1.60 PMV |           |

| PPD 9AM                         |           |
|---------------------------------|-----------|
| Titik Pengukuran                | Nilai PPD |
| A                               | 39.35     |
| B                               | 41.61     |
| C                               | 21.24     |
| D                               | 53.4      |
| E                               | 52.35     |
| F                               | 42.76     |
| G                               | 42.61     |
| H                               | 42.24     |
| I                               | 53.95     |
| J                               | 51.11     |
| K                               | 43.43     |
| L                               | 40.32     |
| CONTOUR RANGE : 14.0 - 34.0 PPD |           |

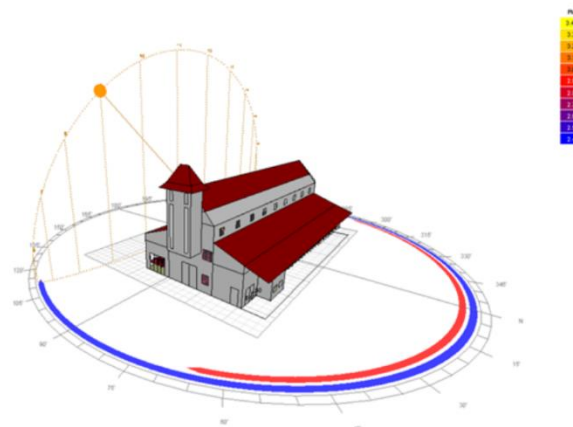
| PPD 17 PM                       |           |
|---------------------------------|-----------|
| Titik Pengukuran                | Nilai PPD |
| A                               | 21.08     |
| B                               | 17.18     |
| C                               | 21.09     |
| D                               | 18.48     |
| E                               | 18.88     |
| F                               | 21.18     |
| G                               | 17.34     |
| H                               | 17.33     |
| I                               | 19.06     |
| J                               | 19.31     |
| K                               | 17.48     |
| L                               | 20.84     |
| CONTOUR RANGE : 14.0 - 34.0 PPD |           |





| MATERIAL                     | VALUE UNITS | VOLUME<br>m3 | WEIGHT<br>kg | COST<br>€ | GREENHOUSE<br>kg | EMBODIED<br>Wh | MAINTENANCE<br>Wh |
|------------------------------|-------------|--------------|--------------|-----------|------------------|----------------|-------------------|
| Void                         | 630.359 m2  | 0.000        | 0.000        | 0.00      | 0.000            | 0              | 0                 |
| ConstructionLine             | 38.978 m    | 0.000        | 0.000        | 0.00      | 0.000            | 0              | 0                 |
| ConcSlab_Tiles_OnGround      | 648.413 m2  | 0.000        | 0.000        | 0.00      | 0.000            | 0              | 0                 |
| Plaster_Insulation_Suspended | 275.200 m2  | 58211.938    | 3685.370     | 0.00      | 0.000            | 0              | 0                 |
| Plaster_Joints_Suspended     | 418.830 m2  | 87954.219    | 5344.246     | 0.00      | 0.000            | 0              | 0                 |
| SolidCore_PineTimber         | 13.103 m2   | 524.104      | 288.257      | 0.00      | 0.000            | 0              | 0                 |
| FramedPlasterboard           | 275.430 m2  | 19280.119    | 9440.040     | 0.00      | 0.000            | 0              | 0                 |
| BrickPlaster                 | 635.523 m2  | 82617.938    | 155703.031   | 0.00      | 0.000            | 0              | 0                 |
| StainlessSteel               | 4.752 m2    | 7.128        | 57.024       | 0.00      | 0.000            | 0              | 0                 |
| SingleGlazed_TimberFrame     | 51.518 m2   | 0.000        | 0.000        | 0.00      | 0.000            | 0              | 0                 |
| ClayTiledRoof                | 782.482 m2  | 103287.594   | 24851.621    | 94680.29  | 1901.431         | 0              | 0                 |
| TOTALS                       |             | 351883.062   | 199569.641   | 94680.29  | 1901.431         | 0              | 0                 |

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