Clean Energy and Smart Technology
Volume 02, Number 02, April 2024
DOI : https://doi.org/10.58641/

e-ISSN : 2964-2647

WONOSOBO GELORA STADIUM DESIGN WITH A FUTURISTIC ARCHITECTURAL APPROACH

Agus Setiawan[1)*], Hermawan[2)], Adinda Septi Hendriani[3)]
[1)2)3)] Universitas Sains Al-Qur'an, Indonesia
[1)]agusset@gmail.com, [2)]hermawanarsit@gmail.com, [3)]adinda@unsiq.ac.id

*agusset@gmail.com

Submitted :18 March 2024 | **Accepted** : 30 March 2024 | **Published** : 30 April 2024

Abstract: Stadiums are the most influential supporting facilities for the sport of football in the world. Having a stadium can add pride to an area. Gelora Wonosobo Stadium is a football stadium in Wonosobo district as well as a stadium that will be used as the headquarters for the PSIW football club (Wonosobo Indonesian Football Association). The club, which has the nickname Laskar Kolodete, was previously headquartered at the Kalianget Stadium which is adjacent to the Kalianget Recreation Park and has not yet received proper stadium facilities and also cannot be called a stadium considering how it is now, therefore the Gelora Wonosobo Stadium was built which is located on Jalan Wonosobo. Kertek is opposite the Dewasni Café Restaurant, the choice of location also takes into consideration several things, namely land use, accessibility, supporting facilities for the surrounding environment and city utilities so that it will make it easier for stadium users. method of using image creation using 3D software in the field of architecture. The depiction is done in two dimensions and three dimensions.Gelora Wonosobo Stadium is a district class B type stadium which has FIFA standard facilities and has a capacity of approximately 20,000 spectators with a distribution of 400 VIP/VVIP spectator seats, 18,600 general spectator seats, 1000 disabled spectator seats which is 5% of the general spectators. The Gelora Wonosobo Stadium will adopt a modern, futuristic architectural style and without an athletics track. With the absence of an athletics track, the distance between the field and the stands will be closer, so there will be a distance between the stands and the field or a safety zone to see the less orderly behavior of the Indonesian people.

Keywords: Wonosobo Stadium, Futuristic, architecture

1. INTRODUCTION

Football is one of the most popular sports among people in all countries in the world, including Indonesia. The biggest match in the world that we often hear about is the World Cup match, which is the most prestigious, magnificent tournament, which has euphoria or an extraordinary atmosphere. Football is a sport that is not only an activity that can be healthy, but has undergone a transformation into an industry and business, in fact football has become an element that strengthens the nation's sense of nationalism. Based on the existing potential, to improve community welfare and advance the sports industry in the field of football, it is necessary to improve the planning of the football stadium in Tana Toraja which has international standard certification which can accommodate other activities that require buildings for both religious and cultural activities (Duma et al., 2023). Apart from being a sports infrastructure, this stadium also has other functions such as holding concerts, campaigns, sports events for the local community, etc. Stadiums are public facilities that must operate every day, not only when there are

Clean Energy and Smart Technology
Volume 02, Number 02, April 2024
DOI : https://doi.org/10.58641/
e-ISSN : 2964-2647

matches. This can cause large energy usage. So preventive measures are needed so that energy on earth does not run out (Pratama, 2023).

Based on the Technical Guidance published by WHO, So it is necessary to make design adjustments to building architecture, including buildings a football stadium where activities involving a group of people are carried out. In the short term, architects should respond quickly to find a solution so that existing buildings can be modified so that they can gradually become active again anticipating the impact of the pandemic. Football match activities held in stadiums are basically a activities involving a number of parties and a relatively large turnover of financial value, high economic and social value. With so many stakeholders then It is hoped that the planned events can still take place. So big The impact of the current pandemic will directly or indirectly affect it regarding current and future architectural concepts of buildings (Tjahja et al., 2021). The approach to stadium design can be various approaches, such as green architecture and high technology approaches. A futuristic approach that relies on high technology is one of the approaches that is often used in designing football stadiums (Risnandar & Susanto, 2022). According to Karyono, in developed countries currently construction is starting to occur modern stadiums, both new and new stadiums development of the old stadium. Of all activities construction in Stadium construction, the most of concern is the ecological impact of the building the. In building design, it is necessary to pay attention to environmental factors, because In this modern era, development is closely related to global warming issue. To reduce this issue, design needs to pay attention to nature conservation and environment, apart from the aesthetic side, by thinking about the rules which minimizes the consumption of natural resources and negative impacts on nature and the environment (Fahlevi et al., 2023).

Wonosobo Regency has a football club, namely the Wonosobo Indonesian Football Association (PSIW). This club should compete in Indonesia's third class competition, the Indonesian League. However, it turns out that PSIW has not participated and has only registered its U-17 team to take part in the 2017 Soeratin Cup. PSIW's development has only been on the right track for a long time. There has been no significant development seen from the club nicknamed Laskar Kolodete. The word "kolodete" itself is derived from the name of Kyai Kolodete, one of the founders of Wonosobo in ancient times. PSIW Wonosobo is a football club from Wonosobo, Central Java which competes in the Indonesian League, currently called League 3, PSIW Wonosobo is headquartered at the Kali Anget Stadium, Wonosobo. PSIW's existence has been recorded since 1937. At that time, the Sports Magazine published in March 1937 wrote that PSIW was registered as a member of PSSI and had its office on Jalan Garung.

One of the PSIW administrators at that time was named Moengin. Even though he was registered as a member of PSSI in 1937, the exact date of the birth of PSIW Wonosobo is still unknown. Wonosobo in general really needs a decent stadium. Even in cold areas like Wonosobo, there is great passion for football among the people. Not having a proper stadium, of course, makes it difficult for a team to achieve the desired achievements.

2. METHOD

The writing stages are as follows:1)Study of literature. Literature studies are carried out to obtain theoretical foundations, design standards and planning and design policies through books, journals, catalogs and other written materials which are used as references in the design process, 2)Compration Studies. By conducting a comparative study, it was carried out to open up insight into existing building and environmental designs in accordance with stadiums in several regions and through internet media regarding modern futuristic stadiums in Indonesia and abroad, 3)Field Study. At this stage the author conducted a direct survey in the field to determine the physical condition of the location and environmental layout, land area, and other supporting factors, 4)Analysis. The author carries out an analysis to obtain appropriate and maximum design results in a plan.

3. RESULT AND DISCUSSION

Location / Site

Based on Wonosobo Regency Regional Regulation Number 2 of 2011 concerning Wonosobo Regency Regional Spatial Planning (RTRW) for 2011-2031, the sports area development center is in the Regional Activity Center (PKW) area which is a development area to serve provincial scale activities. The area is in Kertek District, Wonosobo Regency.

Clean Energy and Smart Technology
Volume 02, Number 02, April 2024
DOI : https://doi.org/10.58641/
e-ISSN : 2964-2647

Fig 1. Existing Data

Located on Jl. Wonosobo Kertek, District. Kertek, Wonosobo Regency, Central Java with a land area of 12 ha. Site limitations are North: Rice fields, South: Jl. Raya Wonosobo Kertek, Empty Land, Dewani Resto & Café, East: Rice fields, residential areas, West: Rice fields, settlements. Based on the Regional Spatial Plan (RTRW) of Wonosobo Regency, the provisions for building intensity are as follows: Site area: 12,000 m², GSJ: 15 m from AS road to site, GSB: 7 m from site boundaries, KDB: 60% × 12,000 m² = 19,200 m², KLB: (1.60 × 12,000 m²): 19,200 m², 3 floors (maximum). So, the selected land has an area of 12,000 m², while the building area is 39,402,000 m² and the remaining 11,960,598 m² is used for circulation and 30% green open space.

User

The division of activities, nature of activities and activity actors in the planning for the Wonosobo Gelora Stadium are: Group activities for players and team officials such as grass fields, reserve benches, players' changing rooms, trainers' rooms, official rooms, warm-up rooms, briefing rooms, lavatories, massage rooms, special parking areas are private, Groups of official match activities such as the referee's room, lavatory, grass field, hall are private, Spectator activity groups such as spectator parking, spectator main hall, VIP VVIP room, lavatory are also private, Groups of activities per journalist such as special parking lots, journalists' rooms, press conference rooms, lavatories, monitoring rooms and private TV broadcasts, Stadium management activity groups such as parking lots, offices and staff rooms, meeting rooms, security rooms, building utility service rooms, halls are private, Groups of public visitor activities such as parking lots and complementary facilities are private, Groups of complementary facility activities such as parking lots, souvenir shops and public restrants, Match committee activity group, Parking spaces are public, coordination spaces are private

Building Utilities

Lighting during the day using natural lighting, natural lighting is also very good for stadium fields, lighting at night uses LED lights with FIFA standards 1500-2000 lux. The building's electricity needs can be met from PLN and a generator as a backup if the power supply goes out. The clean water network comes from PDAM with artesian well reserves, a reservoir is needed to accommodate PDAM water with an up-feed system with towers available at every water storage point. The drainage system uses goetex for water filtering and stripdrain to channel water from the field to the riols. Waste management can involve solid, gas or radioactive substances with special methods and expertise for each type of substance. The ventilation system for spectator activities uses natural ventilation, while for indoor activities it uses natural ventilation and air conditioning. Lightning rods are used for safety in the event of rain or lightning. To anticipate the presence of roots in the building and to avoid victims, security measures are needed such as hydrant boxes, fire extinguiser, detectors, alarms, camera systems, communications.

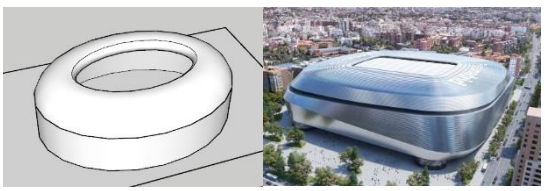
Fig 2. Mass composition & santiago bernabeu stadium

The concept of shape and mass of the building in the design of the Gelora Wonosobo Stadium was planned using a futuristic architectural approach, the basic form adopts a circular shape and there will be many curved arches.

Clean Energy and Smart Technology
Volume 02, Number 02, April 2024
DOI : https://doi.org/10.58641/
e-ISSN : 2964-2647

Planning Results

The planning results of this scientific work can be seen in the following image:

Fig 3. Planning result

4. CONCLUSION

Gelora Wonosobo Stadium is a type B stadium in Wonosobo Regency with a jump capacity of 20,000 spectators and adopting a futuristic facade design, this building is the headquarters of PSIW Wonosobo. The stadium was planned using a futuristic approach that is in line with current developments. The people of Wonosobo really like football so the stadium was made more magnificent. A fururistic approach can accommodate people's desires so that people can feel satisfied.

5. REFERENCES

Duma, N., Kasim, N. N., Mastutie, F., & Tahang. (2023). PERANCANGAN STADION SEPAK BOLA DI TANATORAJA DENGAN PENDEKATAN ARSITEKTUR KONTEMPORER. *Jurnal FASAD*, *4*(2), 1–9.

Fahlevi, F. R., Artayani, M., Sofyan, A., & Amir, A. (2023). PERANCANGAN STADION GELORA 45 KABUPATEN KOLAKA DENGAN PENDEKATAN GREEN ARCHITECTURE 1Faridh. *Jurnal FASAD*, *1*(1), 269–283.

Pratama, Y. (2023). Penerapan Konsep Green Architecture pada Perancangan Stadion Sepak Bola Standar Internasional di Deli Serdang. *Jurnal Ilmiah Mahasiswa Arsitektur Dan Perencanaan*, *7*(1), 115–120.

Risnandar, S. Y., & Susanto. (2022). Perancangan Stadion Sepak Bola Kabupaten Subang Dengan Arsitektur HIGH-TECH. *Mesa : Jurnal Teknik*, *6*(1), 1–7.

Clean Energy and Smart Technology
Volume 02, Number 02, April 2024
DOI : https://doi.org/10.58641/

e-ISSN : 2964-2647

Tjahja, T. S., Lianto, F., Priyomarsono, N. W., & Winata, S. (2021). PENYESUAIAN PERENCANAAN AREA KOMPETISI DI STADION SEPAKBOLA UNTUK MENGATASI DAMPAK PANDEMI. *Jurnal Muara Sains, Teknologi, Kedokteran, Dan Ilmu Kesehatan*, *5*(2), 453–466.