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## RENJANA WEDARI, INNOVATIVE GARDENS AS PUBLIC HEALING SPACE

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### ABSTRACT

Mental health has become a familiar topic for public discussion. One of the factors in the disruption of a person's mental health is the pressures and responsibilities from the environment. Indonesia is reported by UNICEF as one of 21 countries that has a large number of depressions. Social pressure in Indonesia is also one of the causes of mental disorders. Semarang as an industrial city had a large number of factories. Most factories implement a labor-intensive system that allows for high levels of worker fatigue. The idea of a public healing space is an innovative solution that can cure burnout. Research has shown that nature can reduce stress levels and anxiety. Nature is also a solution to improve mood, and increase stamina.

**Aims:** The aim of this study is to Renjana Wedari is an innovation park built as a public healing space for recreation, education, and public interaction.

**Methodology and results:** The research method is qualitative by collecting data through field observations. The data input is used to make site planning as site analysis and determine the site development. Architectural design produces a concept based on site analysis from solar orientation, wind orientation, noise, view, and circulation. The site analysis is overlaid by its orientation, which determines the site development. The results of the site development are used to define the building form, material selection, vegetation concepts, and public activity needs. The research result is designed to build a public healing space for factory workers in Semarang.

**Conclusion, significance and impact study:** The result showed that the design can fulfill the livable space in Semarang. There are several concerns for this design such as, connection with nature, open space for physical activity, design that supports tranquility, separate zones for privacy, inclusive approach, and environmental education.

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- Gardens

## INTRODUCTION

Data published on the World Population Survey website regarding depression rates among countries in 2023 shows that Ukraine is ranked first with 2,800,587 cases of depression or 6.3 percent of the total population. The United States is second with 17,491,047 instances (5.9 percent), followed by Estonia with 75,667 cases (5.9 percent). At the same time, there were 9,162,886 cases of depression in Indonesia, with a prevalence of 3.7 percent [1]. On the other hand, Indonesia's population can grow by more than 3 million people yearly, bringing it to 278,16,661 people. The number of people with depression may be higher.

According to information published on the Better World and the Ministry of Health, around 9 million Indonesians suffer from depression. As a result, there were 3.4 suicides per 100,000 people in Indonesia. It was found that around 16 million suicides among people over the age of 15 were caused by symptoms of anxiety and depression experienced by the perpetrator. Suicide is also triggered by more severe mental illnesses such as psychosis and amounts to about 400,000. In addition, 57,000 people suffering from mental health problems are forced to withdraw from their environment [2]. Indonesian teenagers also suffer from depression, which causes 19 percent of them to have suicidal thoughts. As many as 45 percent of teenagers have taken action to even harm themselves. Citing ITS documents, said Professor Christian Kieling, MD at Universidade Federal do Rio Grande do Sul. According to the doctor, the increase in depression among adolescents increases by 10-20 percent every year. Meanwhile, WHO noted that in 2019, around 300 million people worldwide experienced depression, as many as 15.6 million of them coming from Indonesia—factors causing mental health problems.

Based on the I-NAMHS research published in 2022, there are several risk factors associated with the onset of mental health disorders in young people. These factors include bullying, school and education, peer and family relationships, sexual behavior, drug use, childhood trauma, and health services [3]. Adolescents with mental health disorders have obstacles or difficulties in carrying out daily activities. The study also found that one in three Indonesian adolescents suffer from health problems between the ages of 10 and 17. This equates to 15.5 million adolescents. Mental disorders that many adolescents suffer from are anxiety disorders (a combination of social phobia and generalized anxiety disorder) 3.7%, major depressive disorder (1.0%), conduct disorder (0.9%), post-traumatic stress disorder (PTSD), and attention-concentration and hyperactivity disorder (ADHD), 0.5% each [4].

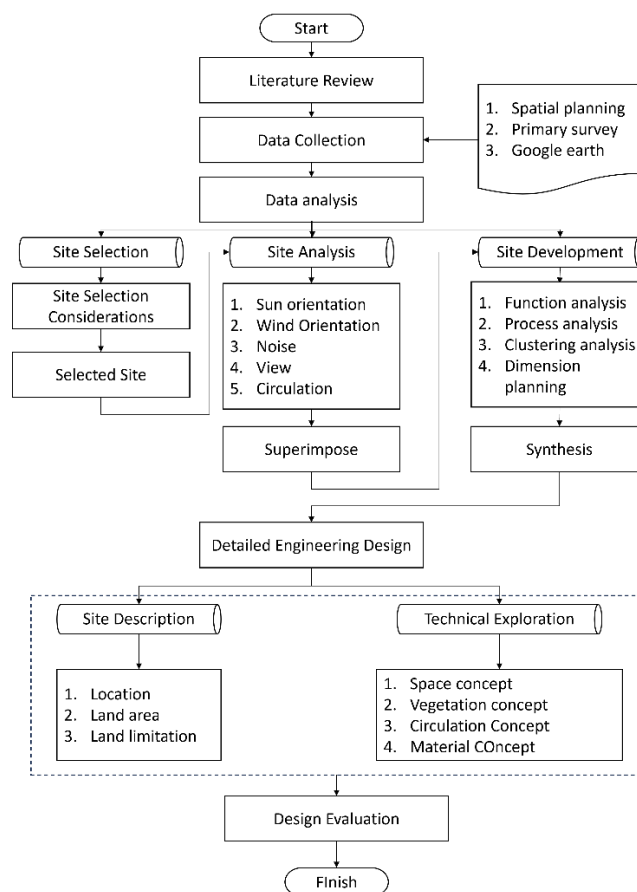
Mental healing is a significant focus that must be done. The results of the study by UNICEF showed that people of productive age in Indonesia have mental health disorders. Some symptoms of depression that appear are 48.9% anxiety disorders, 55.7% symptoms of depression, and 64.6% have poor sleep quality [5]. Growing evidence shows that connecting with nature is one of the best healing methods. It can provide many benefits to your mental and physical health. An example of the mental health benefits of nature comes from a study of 20,000 people led by the European Center for Environment and Health. It found that people who spent two hours a week in green spaces were likelier to report good health and improved mental well-being than those who did not. Public healing space is one of the ideas to realize the healing of mental health disorders. Park planning as a public healing space is at least nature-based and can be easily accessed by the public.

Parks, gardens, plazas, and urban green-blue spaces benefit the city and enhance its well-being. Their importance is particularly evident during stress, where interactions with natural environments play a vital role in safeguarding mental and physical health [6]. This concept of 'bringing nature back' has been accompanied by evidence demonstrating that nature positively impacts mental health, thereby establishing a widespread belief in the importance of ensuring psychological spaces incorporate natural features such as indoor plants, vegetation, natural materials, access to outside spaces, and views of the external environment [7]. Identifying the design elements of interior environments that affect the perception of healing and any differences in them owing to personal aspects, such as gender and age, is important and meaningful in optimizing healing spaces for individuals [8]. This study aimed to design the parks of visual and spatial exterior design aspects on the perception of healing, considering for factory workers in Semarang. Hopefully, the research outcomes can give the Government insight into public healing space.

## **2. RESEARCH METHODOLOGY**

The research used descriptive research with a qualitative approach. The research method is carried out qualitatively by collecting data through field observations. The data input is used to plan, analyze, and determine the site development [9]. The data input of this research i.e., (1) The fundamental condition of regional planning (RTRW) and green open space (RTH) designed for the needs of the community, especially workers, 2) Synchronization between the Regional Spatial Plan (RTRW) and Green Open Space (RTH) with public spaces to meet the needs of

workers. This research location was in the Candi Industrial Zone Phase V, Semarang City. Observation and documentation were used as data collection techniques. This research uses Miles and Huberman interaction model analysis, i.e. reducing, presenting, and drawing conclusions. The research results include architectural design concepts considering site analysis, material selection, vegetation concepts, and public activity needs. The detailed design process is shown in Figure 1.



**Figure 1** Research Flowchart

### 3. RESULTS AND DISCUSSION

#### 3.1 Recapitulation of Space Requirements

The solution is centered on creating a stress-relieving space program from a concept that can be implemented in an environment. This reduction is also physiologically supportive, which helps suppress individual stress levels and provides a means of healing and non-medical treatment through an architectural planning approach.

## **Public Space**

Planning on public spaces reviews the adaptation of the environment around the site, which is, in fact, in a densely industrialized area. Adapting the properties of the natural environment supports the design of these objects, which tends to positively impact the psychological state of individuals in the Candi Industrial area.

## **Regional layout**

In response to the problems in the temple industrial area, three critical resolution points are obtained to determine the facilities to be provided. These points are:

### a. Social interaction

These ongoing social interactions involve exchanging information, behaviors, and feelings between the people involved. Social interactions can range from brief encounters to deep interpersonal relationships.

### b. Sports

Participating in sports reduces stress and benefits physical and mental health. Exercise has many effects on the body, including producing hormones beneficial to health and the body's response to exercise. The hormones are made: (1) endorphins, (2) adrenaline, (3) norepinephrine, and many others that benefit the body.

### c. Education

Educational facilities provide visitors with an academic and learning experience. These educational venues present relevant information and promote understanding of nature, ecology, sustainability, or other related educational topics.

### d. Eat

Nutritious food provides many positive benefits to the body's health and overall well-being. Adequate nutrition supports the body's repair and recovery after injury or illness. This involves the role of vitamins, minerals, and proteins in repairing cells and tissues. Nutrients such as vitamins A, C, and E can help maintain healthy skin. Nutritious foods help protect the skin from damage caused by sun exposure and environmental factors.

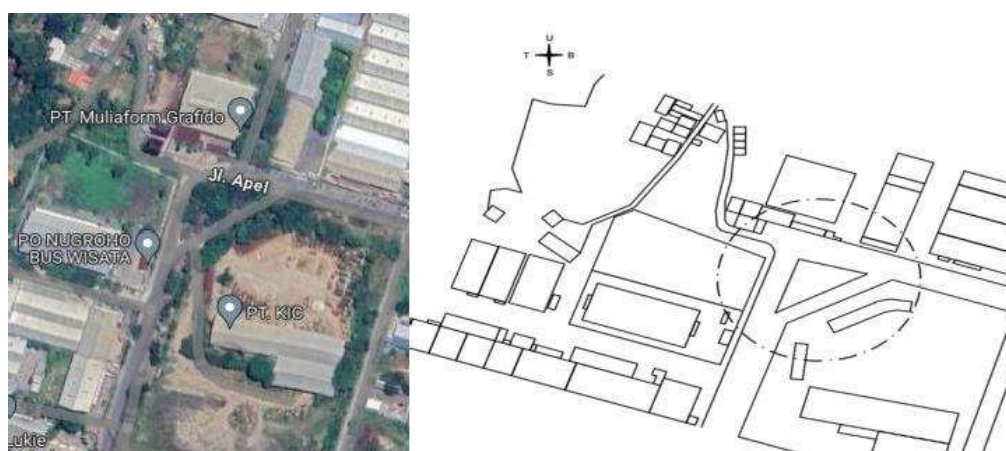
## **Key amenities include:**

- a. Sports Area: Community track with the addition of a drift track
- b. Commercial Area: Food Court

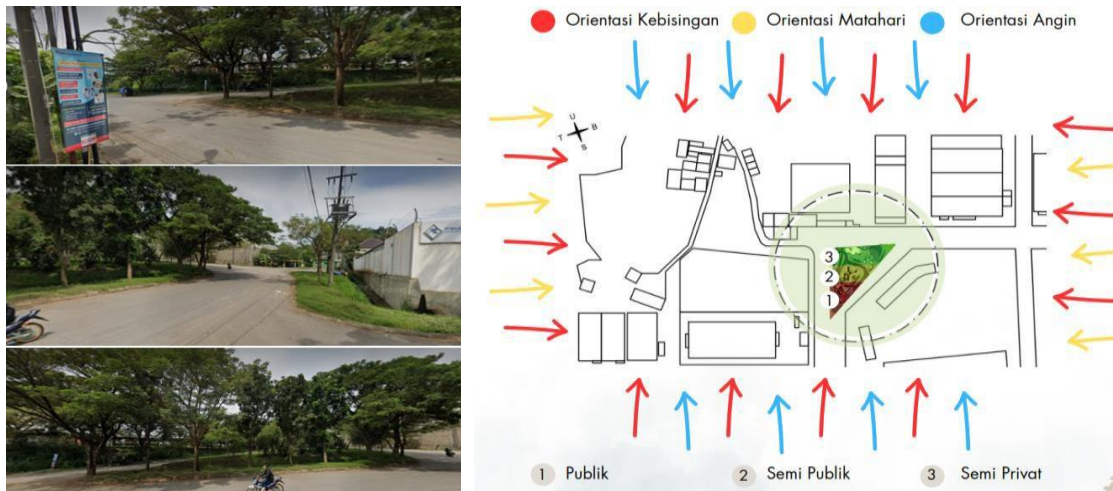
- c. Educational Area: QR on plants
- d. Public Interaction Areas: Pool, Gallery, Pavilion
- e. Supporting facilities such as
  - Parking: car, motorcycle, circulation, green space
  - Toilet
  - Composting Area
  - Solar panels
  - Automatic watering and bio pores

### 3.2 Site Description

- a. Site Criteria:
  - Located in Semarang
  - Not in the High Voltage Air Line (SUTT) area
  - Intended audience: Workers



**Figure 2** Planning Location



#### Location

Street: Jl. Apel, Ngaliyan is a one-way arterial road with a road width of  $\pm 12$  meters.

#### Land Area

The used land area used is approximately 996 m<sup>2</sup>.

#### Land Boundary

North : Industrial buildings

East : Vacant land

South : Industrial buildings

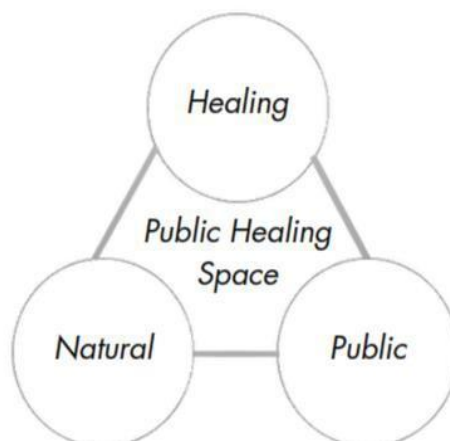
West : Industrial buildings

##### a. Land Potential

- Located in a crowded area for workers, so that the target can be achieved
- Located in a strategic location with easy access
- There is no green space or park in the neighborhood

##### b. Land Challenges




- During peak hours the highway area tends to be crowded and congested, so the user's achievement towards the site will be hindered.
- Surrounded by industrial buildings, so there needs to be a solution related to noise that might interfere








**Figure 4 Design Concept**

Healing concept: the visual form of architectural buildings that create a wave character, the use of vegetation that builds visual control, the existence of eating, jogging, educational, and public interaction activities. Natural concept: applied through the use of environmentally friendly materials, the use of bio-pores as infiltration areas, and the use of vegetation that supports the building of comfort. Public concept: formed with facilities that are accessible to everyone.

### 3.3 Technical Exploration



Space Concept	Images
<p><b>Environmental Exhibition Gallery</b>                      An environmental exhibit gallery is a space that hosts exhibition that highlight environmental and sustainability issues. The goal of the gallery is to provide information, raise awareness, and inspire positive action related to environmental conservation [10]. Here are some elements that can be found in an environmental exhibit gallery.</p>	
<p><b>Food Court</b>                      These dining areas are integrated into gardens or landscaped areas to create a more natural and relaxing dining experience. The use of vertical Gardens or Green Landscaping aims the use of vertical gardens or green landscaping around food courts can provide a natural and aesthetic feel that blends in with the garden environment. Ornamental plants and trees can be strategically placed to provide shade and coolness [11].</p>	
<p><b>Jogging Track</b>                      A special path designed for jogging or light running activities. This path can be found in parks, sports fields or other open areas designed to promote fitness and health activities [12]. On the jogging track of this area, there is a variation with the application of a floating jogging track in addition to</p>	





Space Concept	Images
<p>being a sports facility and infrastructure, it is also used as a recreational material while on a floating track. The floating track visitors can see the view of the park from above as a non-medical treatment material [13].</p>	
<p><b>Parking Area</b> The parking area in the park is an area provided specifically for visitors or park users to easily access and enjoy the park facilities. There are directions and parking arrangements.</p>	
<p><b>Restroom</b> Restroom facilities in the park are an important part of providing comfort and safety for visitors. Public restroom facilities that are accessible to park visitors. These restrooms are usually located in strategic areas for easy access, as well as facilities designed to be easily accessible to people with disabilities. This includes wide doorways, ample space for movement, and other supporting facilities.</p>	
<p><b>Public Interaction Area</b> This ongoing social interaction involves the exchange of information, behavior and feelings between the people involved. Social interaction can range from brief encounters to deep interpersonal relationships [14]. In addition, Green Landscaping aims the use of vertical gardens or green landscapes around can provide a natural and aesthetic feel that blends with the garden environment and as a means of stress reduction [15].</p>	



Space Concept	Images
<p><b>APAR</b>                      APAR (Light Fire Extinguisher) is a device designed to provide fast and effective fire extinguishing against initial fires. The use of fire extinguishers can be very important for safety in public areas such as parks.</p>	
<p><b>Solar Panels on Garden Lights</b>                      The use of solar panels on garden lights is a common way to improve energy efficiency and make garden lights more environmentally friendly.</p>	

a. Vegetation Concept

Natural elements in the form of plants play an important role in the object as one of the supporters of the healing process. These roles include the following:

Vegetation Concept	Images
<p><b>Sound-absorbing plants:</b> The use of sound-absorbing plants has an important role in the design concept of this park to reduce the noise generated by industrial activities.</p>	
<p>Heliconia</p>	
<p>Likuan Yu</p>	

Vegetation Concept	Images
Acalypha Siamensis	
<p><b>Visual control:</b> The use of plants that have aesthetic value plays an important role in this garden design concept as visual control, providing the beauty of the garden that can be seen with the naked eye .</p>	
Palm	
Topiary	
Acalypha Siamensis	
<p><b>Oxygen producers:</b> Using oxygen-producing plants acts as a natural air purifier to keep the garden environment fresh [16].</p>	

Vegetation Concept	Images
Peach Lily	
<p><b>Scent-producing:</b> The use of aroma-producing plants acts as a natural scent to keep the air free of unpleasant odors that can interfere with visitors comfort [17].</p>	
Lavender	

### 3.4 Circulation Concept

Based on different mental states, people naturally have different levels of stress, from mild to severe [18]. The basic stress level zones, circulation allows visitors to access all zones sequentially. This allows visitors to first experience the desired atmosphere and activities in each location, starting with the public zone which is for people who are not too stressed; if the atmosphere feels less calm, visitors can continue their journey to another zone that is more isolated from the previous zone [19]. It is hoped that the circulation will be able to filter visitors to a more private zone with an atmosphere that is supposed to be the most peaceful.

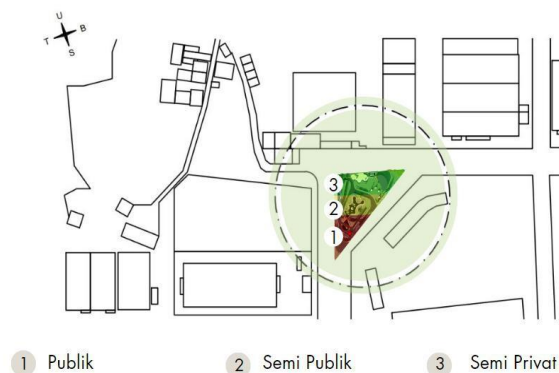


Fig. 20 Circulation

### 3.5 Material Concept

Materials with natural patterns and colors that are not eye-catching are used as object materials [20].

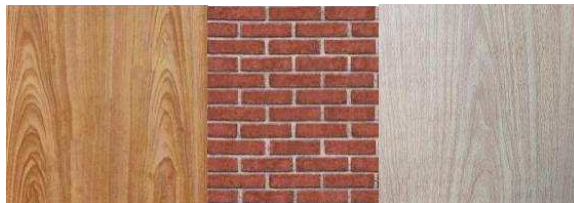


Fig. 21 Material Color

### 3.6 Design



Fig. 22 Site Plan



Fig. 23 Sequential Perspective



Fig. 24 East Side



Fig. 25 West Side



Fig. 26 Section



Fig. 27 Sequential Perspective 2

#### 4. CONCLUSION

Based on the results of the above discussion, it can be concluded that park planning for public healing space can alleviate burnout by providing an environment that supports physical and mental well-being [21]. The following are some of the conclusions that can be drawn:

- a. Connection with nature: Parks as Public Healing Spaces can provide easy and open access to nature, allowing users to connect with the green environment . This can help reduce stress and improve mood.
- b. Open space for physical activity: Planning that includes open spaces for light exercise or physical activity can help reduce fatigue and increase physical energy. Physical activity is effective in treating burnout.
- c. Design that supports tranquility: Park planning should consider designs that support

relaxation. Comfortable seating areas, water features, and calming plants can create an environment that promotes a positive state of mind.

- d. Separate zones for privacy: Providing quiet, secluded zones or corners can be helpful for individuals seeking time for introspection or meditation. This provides space for garden users who want to reflect and de-stress.
- e. Inclusive approach: It is essential to ensure that park planning takes an inclusive approach that addresses the needs of diverse groups within the community. This includes
- f. Environmental education: Parks can also be a platform for education about plant diversity. Information provided in public areas can help increase knowledge about the plants in the park environment.

Considering all of these factors in park planning, a public healing space can be created that effectively reduces burnout and improves the overall well-being of the community.

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