

Global Project-Based Learning

ITS-SIT-IHI



Faiqoh Agustin
Manager for New Project Initiative

Program Schedule



Course Outline

Every Saturday

23 October 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Introductory Meeting

30 October 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Topic Selection

6 November 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Problem Identification

9 December 2021

- 13.00 - 15.00 PM
- 15.00 - 17.00 PM

Presentation at
GTI Consortium

27 November 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Final Presentation

20 November 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Presentation Review

13 November 2021

- 08.00 - 11.00 AM
- 10.00 - 13.00 PM

Group Work

Project Topic

A



B



C



D



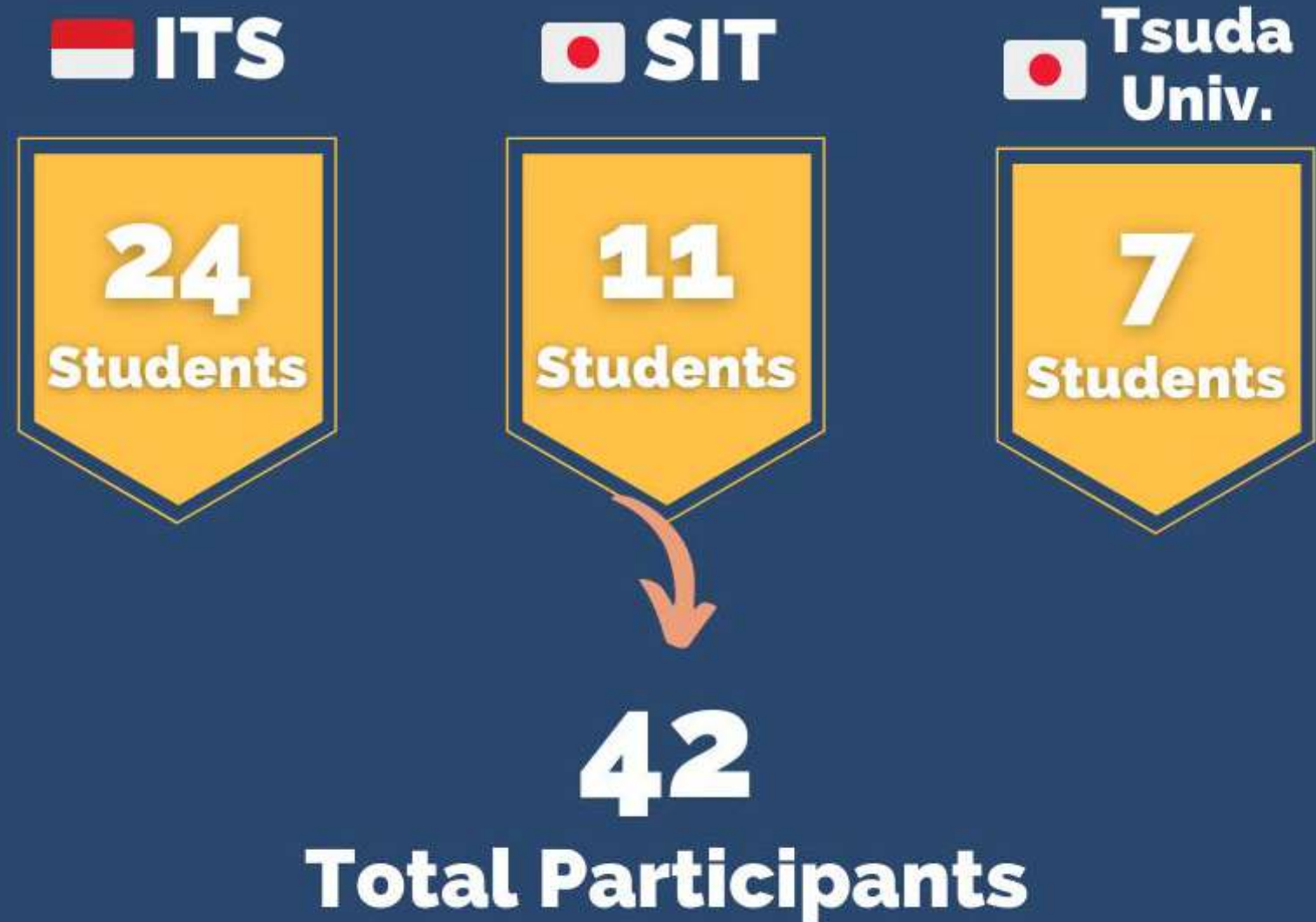
This program aims to develop, improve & evaluate these following real case study in Surabaya City:

- A. Low Carbon Society: Dependency on Grid Electricity**
- B. Smart Urban Mobility: Online Transportation System**
- C. Infrastructure & City Planning: Infrastructure for People with Disability**
- D. Disaster Prevention: Flood Threats and Water Resilience**

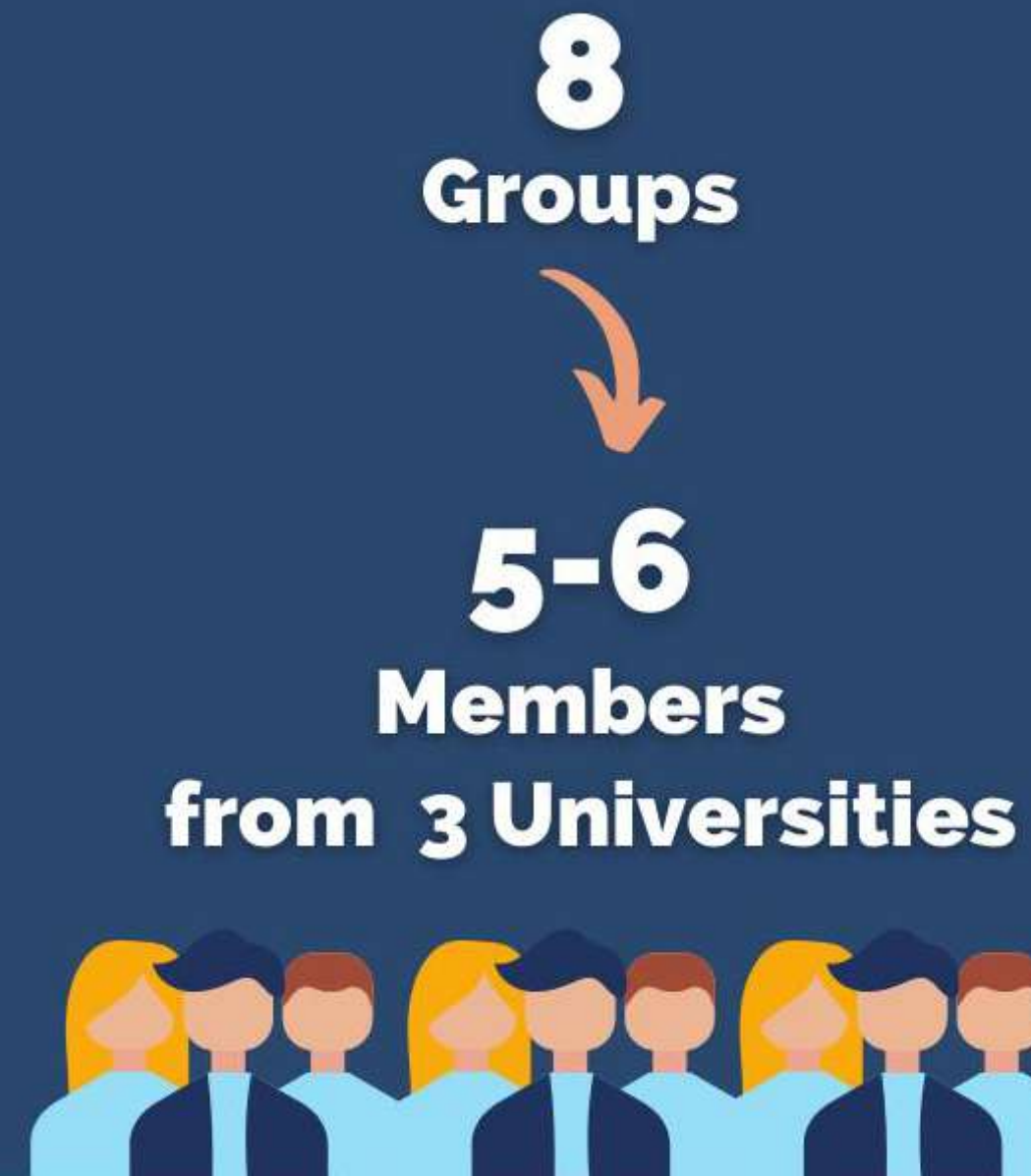
Participants & Grouping



Participants



Grouping



Speaker & Expert



Surabaya City

- **Surabaya City Water Company**
- **Surabaya City Council for Public Works**
- **Surabaya City Council for Sanitation and Green Open Spaces**
- **Surabaya City Council for Transportation**

ITS-SIT-IHI

- **ITS: 6 lecturers**
- **SIT: 5 lecturers**
- **IHI: 8 experts**



Group Work Tools



IHI SIT ITS

Global Project based Learning
23 October - 9 December 2021

TWIL – THAT'S WHAT I LEARN'T

Name: _____ University: _____
Group: _____ Day & Date: _____
Topic/Title: _____

Curiosity or Question (Fill in before you listen to the presentation of the speakers)	Identified Problems or Needs (Fill in during the presentation of the speakers)	Interesting Facts or Information (Fill in during the presentation of the speakers)
Data or Information to be Further Explored (Fill in during or after the presentation of the speakers – before you discuss with your group mates)	Initial Solution Ideas / Concepts / Designs (Fill in during or after the presentation of the speakers – before you discuss with your group mates)	
Points of Discussion with Group Member (Fill in after the presentation of the speakers)		Points of Discussion with Teaching Assistants or Lecturers (Fill in after the presentation of the speakers)

TWIL – That's What I learn

- **Curiosity or Question**
- **Identified Problems or Needs**
- **Interesting Facts or Information**
- **Data or Information to be Further Explored**
- **Initial Solution Ideas**

The tools is used after the lecture session from Surabaya city

TWIL Result



padlet.com/faiqohagustin/ie9r93udxobv9g0

That's What I Learnt (TWIL) - Topic A - Electricity

Before you put your comment, please inform your university. Without name is okay, but please provide info of university, ITS, SIT or Tsuda

Curiosity or Question	Identified Problems or Needs	Interesting Facts or Information	Data or Information to be Further Explored	Initial Solution Ideas/Concepts/Designs	Points of Discussion with Group Member
Implementation of Solar Panel Solar panel has low conversion rate (25-30%) and it requires a large areas to implement the solar panel, and for the cost yes it will be way cheaper than using the coal but its need high initial cost at first, do you think its still possible and worth it? -ITS	Balance between demand and supply Renewable energy like solar energy is highly dependent on weather condition. [SIT]	WID (Weather Information Display) WID(s) are located in the coastal areas and used to help fisherman knowing and understanding the weather before going to the sea. Also, it is using the solar cell since the coastal are doesn't have good electricity. [ITS]	Sumba Iconic Island Sumba_An Iconic Island to Demonstrate the Potential of Renewable Energy	Wind Turbin that can be put on top of the building PowerWINDows: A Proposal for Skyscraper-Compatible Wind Turbines	Japan and Indonesia Improvement Example of Solar Panels Implementation Program in Japan Both country is currently trying to move away from their bad energy sources: 1. Japan: Nuclear Power 2. Indonesia: Fossil Fuel

padlet.com/faiqohagustin/t9sw0huuda4f6noo

That's What I Learnt (TWIL) - Topic B - Online Transportation

Before you put your comment, please inform your university. Without name is okay, but please provide info of university, ITS, SIT or Tsuda

Curiosity or Question	Identified Problems or Needs	Interesting Facts or Information	Data or Information to be Further Explored
Special Route of Transportation Is there any special route of transportation in Surabaya for ambulance car/police car? [ITS]	The concern coming from citizens Time and cost become the primary concerns of citizens, so people think that the online transportation may handle these concerns. Later there will be an integration between the online transportation and public transportation. For example, the online transportation can transport to the bus station or any other public stations, and the passengers can continue using the public transportation. [ITS]	Disadvantage of online transportation There is possibility that; the more user of online transportation, less user of public transportation. On the other hand, online transportation might encourage to use public transportation [SIT]	Implementing Subways in Surabaya Surabaya Smart Subway Development as an Alternative Mode in Ahmad Yani Corridor Surabaya by TOD Concept Application

padlet.com/faiqohagustin/ytjff5pj4vs5nca

That's What I Learnt (TWIL) - Topic C : Infrastructure for People with Disability

Before you put your comment, please inform your university. Without name is okay, but please provide info of university, ITS, SIT or Tsuda

Curiosity or Question	Identified Problems or Needs	Interesting Facts or Information	Data or Information to be Further Explored	Initial Solution Ideas/Concepts/Designs	Points of Discussion with Group Member
Variation of adaptative strategies Disability people consist of many types such as eyes, legs, hands, ears, and brains. how to adapt them, respectively? [SIT]	Conditions of Pedestrian Roads in General Generally, beside the big pedestrian roads in the middle of Surabaya City, the roads are not in a good condition and can't even accommodate normal people, let alone people with disability. ITS	The government efforts The number of disabilities goes up over time and the government tries to provide infrastructure for disabilities by creating a ramp to ease mobilization from zebra cross and providing elevators to access pedestrian bridges. [ITS]	Technologies What new innovations can be of help and might possibly be applied to the pedestrian roads to be able to accommodate people with disabilities? ITS	Applying Benchmark Creating a standard design which shows what needs to be done to pedestrian roads so that they can accommodate disabled people. ITS	Discussion The first thing we discussed is that the infrastructure in Surabaya does not fully accommodate people with disabilities. Then we think about why is that happening? The answer is because of limitations such as the lack of government funds, the lack of data and standards regarding the existing condition in Surabaya, and information of the distribution of disabled people based on their characteristics in a certain geographical aspects. We all come up with a few solutions, the first one is to know the existing condition of pedestrian roads all across Surabaya, then after we mapped out the condition, we need to create a design of pedestrian roads that can accommodate

padlet.com/faiqohagustin/cnomm7m636tszeyr

That's What I Learnt (TWIL) - Topic D: Flood Threats and Water Resilience

Before you put your comment, please inform your university. Without name is okay, but please provide info of university, ITS, SIT or TU

Curiosity or Question	Identified Problems or Needs	Interesting Facts or Information	Data or Information to be Further Explored	Initial Solution Ideas/Concepts/Designs
Current Situation of Flooding Is the number of flooding increasing? due to what?	disconnectivity of drainage system in some areas.	Technology of pump for preventing the flood it already uses technology to reduce fossil energy in several pumps using solar panels [ITS]	Salt Water -> Drinking Water Why don't we get our drinking water from the ocean by taking the salt out of seawater? Possible yet the desalination of water requires a lot of energy. We need to create new technology, there's a chance that it's still possible. ITS	stormwater management case in Tokyo, Japan

Group Canvas Discussion - Poster



PROJECT TITLE:
CASE STUDY:

GROUP:

PROBLEM	VISION	BENCHMARKING	UNIQUE VALUE PROPOSITION
AFFECTED STAKEHOLDERS	EXISTING ALTERNATIVES	SOLUTION ALTERNATIVES	IDENTIFIED CHALLENGES
KEY ACTIVITIES REQUIRED	POLICY OR HIGH-LEVEL CONCEPTS REQUIRED	COST STRUCTURE	REVENUE OR BENEFIT STRUCTURE
KEY SUCCESS FACTORS		IMPLEMENTATION STRATEGY	

DESIGN SOLUTION

**ADDITIONAL INFORMATION – Problem Selection Process/
Connectivity between Problems (optional)**

LESSON LEARNED FROM THIS GPbL

Group Canvas Discussion - Poster



Group A1

Dependency on Grid Electricity Green Innovation (Green Art Science Park)

3D Models



Source: GoogleMaps

Some strategies were implied in the project such as adding some art to make it Instagram-able, adding food & beverage area and use new technology and information that can make people's curious. The location for the project located in Surabaya Park. The reason why this park can be the potential place to build the tunnel is because of the easy accessed by transportation.

In addition, the park doesn't have many trees that can block the solar panels. The location is also near the school. Therefore it will provide new insight for the young generation.



Food Court Area and Prayer Area

Outdoor dining concepts were applied in the project. In this way, energy use will be decreased because there's no need to use lamp or fan. Outdoor prayer area will also give different experience for the user.



The Outside Tunnel

On the outside surface, the flexible solar panel will be applied. LED lights will also be placed on the surface so during the night, the lights will catch the visitors attention



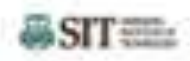
The Inside Tunnel

In the tunnel, there will be digital signage that explains information related to renewable energy. Also, an additional projector will be placed to present different vibe to the visitors.

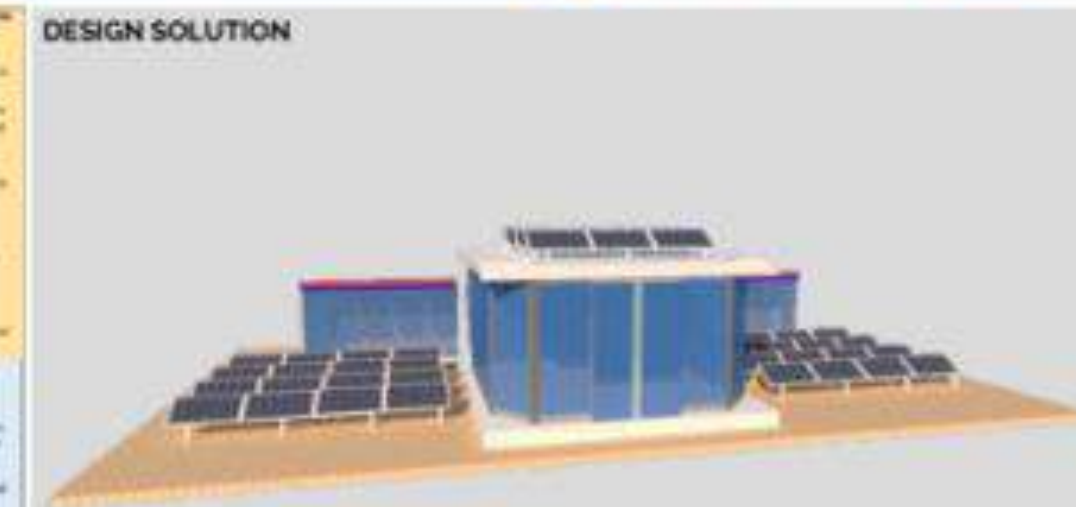
Group A2

PROJECT TITLE: Surabaya's Solar Center
CASE STUDY: Dependency on grid electricity

GROUP: 2



PROBLEMS	ISSUES	REQUIREMENTS	DESIGN SOLUTIONS
<ol style="list-style-type: none"> Site area Location and site condition Kind of the building Grid electricity dependency 	<ol style="list-style-type: none"> Building layout Flexible panels Applying solar panels Security Lighting and sound Information display 	<ol style="list-style-type: none"> Integration of solar panels on the building Integration of solar panels on the building Integration of solar panels on the building 	<ol style="list-style-type: none"> The building design The building design The building design The building design The building design The building design The building design The building design The building design The building design
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- ### ADDITIONAL INFORMATION - Problem Selection Process/ Connectivity between Problems (optional)
- The whole Surabaya bridge length is 5.5 km.
 - There are a total of 350 PSL on the bridge.
 - For now, we want to energize the first 500 m PSL along the bridge with Solar Farm.
 - For the solar farm, we'll need 44 PVs, 44 Inverter, 0 battery, land with an area of 22.3 m x 12.3 m, and a budget of Rp123 Bpa.000. The detailed calculation can be seen here: [https://bit.ly/Additional_informations](#)
 - The solar farm will be connected to the PLN (Indonesia's state-owned electricity company) since it'll be cheaper to implement.
 - Educational building a building that is built to educate the local communities regarding the solar farm.
 - There'll be fences around the solar farm to protect the community from being electrocuted and protect the well-being of the solar farm.

- ### LESSON LEARNED FROM THIS GPBL
- Surabaya has potential in building Solar Farm.
 - Solar farm is one of the solution for decreasing Surabaya's carbon emission and grid electricity dependency.
 - People awareness regarding renewable energy issues can be increased directly through learning and observing.
 - Learn how solar energy implemented across the world.
 - Get chances to share ideas and point of views with friends from different countries.

Group Canvas Discussion - Poster



Group B3

PROBLEM Traffic Jam on main road in Surabaya	VISION - Make the platform (AI) to show the capacity of the road by the sensor of the road.	BENCHMARKING - India has implemented AI to the drivers to give Warning 'Honk More, Wait More'	UNIQUE VALUE PROPOSITION - It is not yet implemented in Indonesia and overseas. - Implementation of Image Processing. - Saving time for the drivers.
AFFECTED STAKEHOLDERS - Drivers - BRIN (Badan Riset Inovasi Nasional) - Surabaya city council for transportation	EXISTING ALTERNATIVES - Google maps and Radio have been giving information about the capacity of transportation. - There are CCTVs to monitor the transportation	SOLUTION ALTERNATIVES - AI connection between traffic light cctv to running text	IDENTIFIED CHALLENGES - Implementation in Surabaya - People who break the policy
KEY ACTIVITIES REQUIRED - Research of the Image Processing - Collect data - Socialize to citizen	POLICY OR HIGH-LEVEL CONCEPTS REQUIRED - Rules of the driver prohibited entering the road at full capacity and choosing alternative roads.	COST STRUCTURE - Research funding - Implementation technology	REVENUE OR BENEFIT STRUCTURE - Breakdown the traffic jam - Support Society 5.0 - Licence to implement the system in the other region.
KEY SUCCESS FACTORS - Awareness of citizen - Support of Government and Citizen		IMPLEMENTATION STRATEGY - Socialization by promoting public transportation by public figures.	

Group B4

Suroboyo Bus 2.0

Suroboyo Bus is public transportation created for recreational purposes resulting in low passengers for daily commute. Recently the city government intended to make Suroboyo Bus as the current main public transportation because plans for the new mass transit have not been realized yet. Unfortunately, the facilities to achieve this are insufficient such as few proper bus stops and no convenient payment system. Furthermore, the application is not convenient to use for routing, scheduling, and late notification. Suroboyo Bus 2.0 will help address these problems.

UNIQUE VALUE PROPOSITION - Making Surabaya to be Smart City and Smart Mobility - Providing time efficient and consistent public transportation	IDENTIFIED CHALLENGES - Application's UI and UX not good enough - Passengers don't want to wait in shabby bus stop - Not every passengers have phone or application to check bus schedule - Payment method takes times and manually done	SOLUTION ALTERNATIVES - Optimizing feature on online facilities. - Optimizing feature on offline facilities.
AFFECTED STAKEHOLDERS - Surabaya's citizen - City council of public transportation - Private company that provide e-money - Suroboyo Bus BLU (Public Service Agency)	IMPLEMENTATION STRATEGY Change start from the offline aspect of the transportation system and continuing to the online aspect.	KEY SUCCESS FACTORS - Accessibility - Comfortability - Convenience

Online Solution

UI

- Bad UI Design
- UI is not user-friendly and intuitive to use
- Schedule is not easily accessible

System

Already Implemented

- QR Code for waiting passenger
Passenger can scan a code in the terminal that will notify the bus's driver.

To be Implemented

- Automatic routing system:** Using a particular input of terminal as "Destination" and "Start" point, the system will find the most effective route. Using Dijkstra algorithm.
- Automatic Scheduling System:** Same as above but with time in mind.
- Late Alert system:** The system will analyze how late your trip will be.

Offline Solution

Bus Stop

Current Situation

- unsafe
- not comfortable while waiting
- insufficient information

Implementation

- Build a comfortable bus stop (roof, bench, information board)
- introduce LCD display in major bus stop (shows the route, schedule, bus position)
- include advertisement in the display which will work as a revenue

Tap on Bus System

Group Canvas Discussion - Poster



Group C5

PROJECT TITLE: Go-Way: An Inclusive and Universal Pedestrian Road
CASE STUDY: Infrastructure for People With Disability **GROUP:** C5



PROBLEMS	VISION	REQUIREMENTS	UNIQUE VALUE PROPOSITION
<ul style="list-style-type: none"> 1. Lack of walking space 2. No benches 3. Absence of green area 4. Absence of street lighting 5. Absence of road sign 6. Absence of road marking 7. Absence of road barrier 8. Absence of road drainage 9. Absence of road pavement 10. Absence of road surface 	<ul style="list-style-type: none"> 1. Safe and comfortable 2. Accessible 3. Attractive 4. Sustainable 5. Affordable 6. Easy to use 7. Durable 8. Low maintenance 9. Eco-friendly 10. Socially responsible 	<ul style="list-style-type: none"> 1. Affordable 2. Accessible 3. Attractive 4. Sustainable 5. Affordable 6. Easy to use 7. Durable 8. Low maintenance 9. Eco-friendly 10. Socially responsible 	<ul style="list-style-type: none"> 1. Safe and comfortable 2. Accessible 3. Attractive 4. Sustainable 5. Affordable 6. Easy to use 7. Durable 8. Low maintenance 9. Eco-friendly 10. Socially responsible
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DESIGN SOLUTION

ADDITIONAL INFORMATION - Problem Selection Process/ Connectivity between Problems (optional)

For the problem selection process, at first, we have identified three major problems: Lack of walking space, No benches, and Absence of green area. These are the most urgent and critical problems that need to be addressed. Based on the problem selection process, we have chosen the problem of Lack of walking space as the main problem to be addressed. This is because it is the most critical and urgent problem that needs to be addressed. The presence of the other two problems will be addressed in the future.

LESSON LEARNED FROM THIS GP&L

During the process of developing the Go-Way application, we have learned many things. We have learned that it is important to have a clear vision and mission statement. We have also learned that it is important to have a good understanding of the user's needs and requirements. Finally, we have learned that it is important to have a good communication and collaboration with the user and the stakeholders.

Group C6

Ngrenbeka Tunuh

Changing6 Introducing

PROBLEMS

- Lack of walking space
- No benches
- Absence of green area
- Flood and low street

DESIGN SOLUTION

DEVELOPING A BETTER PEDESTRIAN

PROBLEMS

9.852/209.604

Most of Surabaya's disabled people located in Sawahan, Tandes, and Wauwatu District.

- High Traffic Density
- Various People and Tourist Background Visit the Place

DESIGN SOLUTION

Ngrenbeka Tunuh Application

Both would consist of steps to use the data of the Digital and Data from the Ngrenbeka Tunuh for the District. The Ngrenbeka Tunuh would be used to access the digital data. The Ngrenbeka Tunuh would be used to access the digital data.

Group Canvas Discussion - Poster



Group D7

Group Discussion Canvas

PROBLEM Drainage and pumping stations are easily clogged. Lack of human resources and advance facilities to monitor drainage minimization process	VISION No clogged in the drainage and pumping station in next 5 years.	BENCHMARKING Local Government, Industrial and machinery company, Business investment	UNIQUE VALUE PROPOSITION Automatic drainage machine and remote monitoring
AFFECTED STAKEHOLDERS People who live in city Biology such as Animal, fish and plant, Government.	EXISTING ALTERNATIVES Clogged cleaner by human, Water gates equipment, controlling water technologies.	SOLUTION ALTERNATIVES Improve machine to turn rubbish into smaller one, apply low impact development system, enhanced the size of drainage, use of camera to monitor water level	IDENTIFIED CHALLENGES We don't know the size of drainage systems, Drainage is public property, so we need to ask government permission. Funding (CSR company)
KEY ACTIVITIES REQUIRED Conduct discussion to ensure the benchmarking object about solution improvement and challenge that we identified	POLICY OR HIGH-LEVEL CONCEPTS REQUIRED Advancing design solution of Automatic shredder machine and IoT system financial agreement	COST STRUCTURE Benchmarking fee source from financial agreement, 40% material cost, Variable 50% cost (engineering cost, project management cost), 10% human resources	REVENUE OR BENEFIT STRUCTURE Service delivery, time we take to payback the first investment, business agreement
KEY SUCCESS FACTORS Efficiency (Rubbish Collected Manhour Spend) %	IMPLEMENTATION STRATEGY <ul style="list-style-type: none"> Short term strategy: Set up core project team and Tie up with ITS, city council to conduct pilot project Long term strategy: Educate citizens to stop throw rubbish into river. 		

Group D8

FLOOD PREVENTION AND WATER RESILIENCE

D8

PROBLEM

Rainfall in Surabaya and the climate change problems cause high volumes of water flow, causing flood problems and affecting the water quality in rivers. Besides that, limited water sources and challenges in infrastructure and governance are also the main problems in water provision.

VISION

Expanding the solution that has already been applied with new techniques to achieve the demand of clean water supply in Surabaya.

BENCHMARKING

- In Singapore, collecting rainwater has been done using reservoirs and channels. Both Surabaya and Singapore have similar climates.
- In Chennai, India, collecting rainwater has been done using storage and temple ground. Both Surabaya and Chennai have similar economic and infrastructure capacity.

UNIQUE VALUE PROPOSITION

Increased the water quality and quantity and at the same time, helped in reducing flood potential in Surabaya due to the high volumes of water flow.

AFFECTED STAKEHOLDERS

- The people in the community
- The government
- Perum Jasa Tirta 1
- Water Company "Surya Sembada"

EXISTING ALTERNATIVES

- Collecting rainwater
- Rainwater harvesting using reservoir and basin

SOLUTION ALTERNATIVES

- Rainwater harvesting or collecting rainwater through rooftop catchments, using Recharge pit/Recharge trench

IDENTIFIED CHALLENGES

The challenges that we facing now is low rainfall rate in Surabaya in dry season (April - October) approximately 30-40mm of rain

KEY ACTIVITIES REQUIRED

- Developing the infrastructure in Surabaya
- Developing community-level infrastructure
- Using filters on the roof as a way to collect clean rainwater
- The government provide a private vendor to install the system to make it easier for the community

POLICY OR HIGH-LEVEL CONCEPTS REQUIRED

- Policy for government and commercial building to install rain harvesting technologies in their rooftop
- Partnership with a federal-level government and city agencies involved in water management.

COST STRUCTURE

The cost for installing rain harvesting system in 300 sq approximately 400-1000 US dollar, depends on how large is the harvesting area

REVENUE OR BENEFIT STRUCTURE

- Using renewable energy (rainwater) can cut the cost
- Implement water bill
- With the policy for government and commercial buildings to install rain harvesting, the residents that take advantage of the policy will get reduced water bill.

KEY SUCCESS FACTORS

- Considering feasibility study to make the rainwater harvesting giving benefits for Surabaya government and civilization.
- Maintenance of the rain harvesting system to ensure it still reliable

IMPLEMENTATION STRATEGY


- Research for the potential place in Surabaya to build rainwater harvesting sites.
- Collaborate with governmental sector to help on developing system in terms construction and financial perspective
- Make a socialization about the regulations and make a supervisor team that can monitor if the regulations to install the rainwater system is already applied in the certain of time

Documentation of Program




Recording... You are viewing ITS - Taly's screen

Surabaya City Council for Public Works



Surabaya City Council for Public Works
Dinas Pekerjaan Umum Bina Marga dan Pematusan




1. In charge in planning, monitoring, constructing, and maintaining **pavements, bridges, and drainage** development
2. Manage **land acquisition** and **utilization**

Source:
The Surabaya Mayor Regulation No. 49 of 2015 on Organizational Structure, Duties, and Functions of The Surabaya City Council for Public Works

44 Participants

Leave

Recording... You are viewing Wawan Aries Widodo's screen




GLOBAL PROJECT BASED LEARNING
23 October – 9 December 2021

WATER RESILIENCE

Sustainable Water Drinking Supply

Dr. Wawan Aries Widodo, ST., MT.
Chairman of the Supervisory Board of PDAM Surya Sembada



Recording... You are viewing Wawan Aries Widodo's screen

Surabaya City Council for Sanitation and Green Open Space




Surabaya City Council for Sanitation and Green Open Space
Dinas Kebersihan dan Ruang Terbuka Hijau




1. In charge in carrying out public works duties on **waste and wastewater**
2. Manage **green open space, public street lighting, urban aesthetic**
3. Maintain **streets and pedestrian lanes** cleanliness
4. Manage **garbage and heavy equipment**

Source:
1. Surabaya Municipality Regency Regulation No. 14 of 2015
2. Surabaya Mayor Regulation No. 10 of 2015

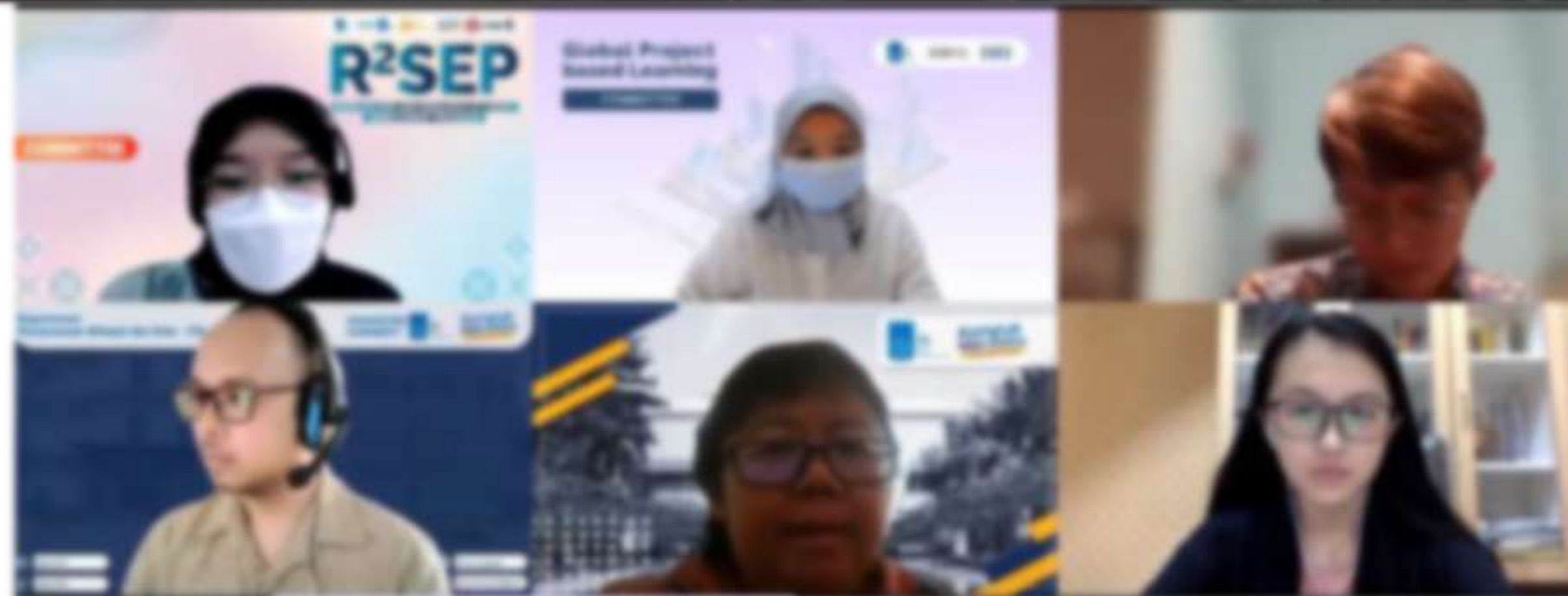
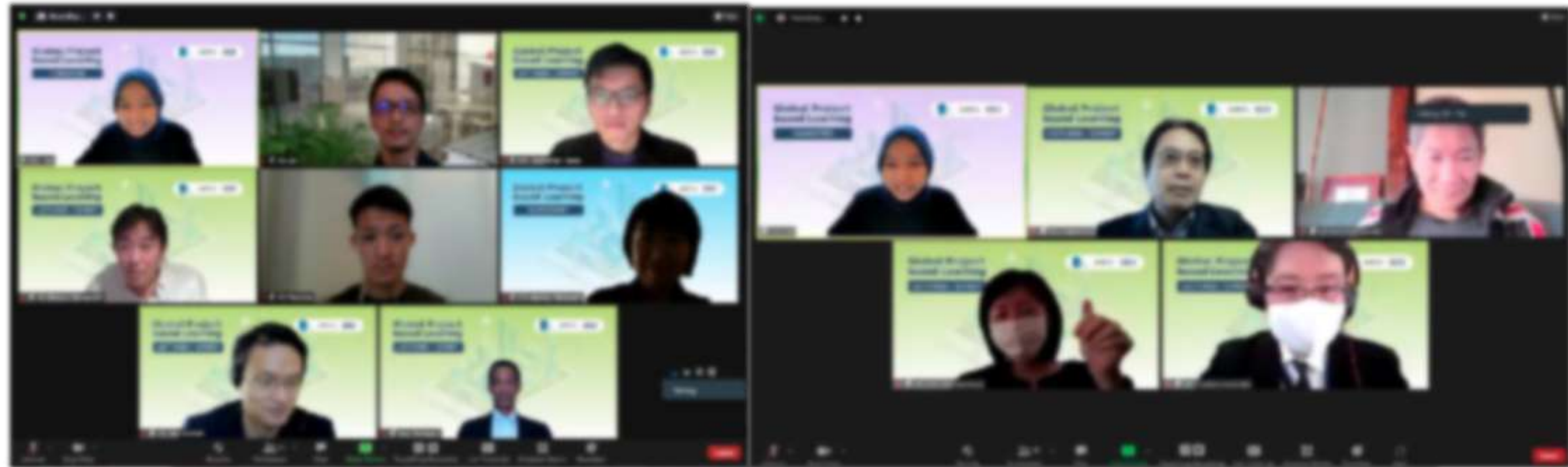
Global Project based Learning LECTURER / EXPERT



dishub TELECONFERENCE



Documentation of Program



Documentation of Program

This screenshot shows a Zoom meeting interface. The main window displays the HOMER Grid v4 1.8.7 (Evaluation Edition) software. The software interface includes a 'Design' tab, a 'Results' tab, and a 'Generic flat plate PV' component configuration. A table lists component costs:

Capacity (kW)	Capital (Rp)	Replacem (Rp)	O&M (Rp/year)
5	16100	16100	100
10	30000	30000	180
1000	2130000	2130000	1500
2000	3470000	3470000	3000

The software also shows a graph of 'Per Unit Total Cost' and various system parameters. The Zoom interface includes a video grid on the right, a chat window at the bottom, and a 'Recording...' indicator at the top left.

This screenshot shows a Zoom meeting interface. The main window displays a Miro board titled 'Standart idelines for Pedestrian Street in Indonesia'. The board contains a grid of images and text. Below the Miro board, a Google Docs document is open, titled 'GDC - GROUP DISCUSSION CANVAS'. The document contains a table with the following structure:

PROBLEM	VISION	BENCHMARKING	UNIQUE VALUE PROPOSITION
1. Disability people don't have enough space to move			
AFFECTED STAKEHOLDERS	EXISTING ALTERNATIVES	SOLUTION ALTERNATIVES	IDENTIFIED CHALLENGES
KEY ACTIVITIES REQUIRED	POLICY OR HIGH-LEVEL CONCEPTS REQUIRED	COST STRUCTURE	REVENUE OR BENEFIT STRUCTURE
KEY SUCCESS FACTORS		IMPLEMENTATION STRATEGY	

The Zoom interface includes a video grid on the right, a chat window at the bottom, and a 'Recording...' indicator at the top left.

Documentation of Program

Zoom Meeting - Room 1 (A1, A2, B3, B4) | You are viewing A1 Moe Nishimuta's screen | Remaining: 03:09:51

Recording

energy and other explanation related to the renewable energy resource

3D Models

Some strategies were implied in the project such as adding some art to make it Instagram-able, adding food & beverage area and use new technology and information that can make people's curious. The location for the project located in Surabaya Park. The reason why this park can be the potential place to build the tunnel is because of the easy accessed by transportation.

Source: GoogleMaps

In addition, the park doesn't have many trees that can block the solar panels. The location is also near the school. Therefore it will provide new insight for the young generation.

Food Court Area and Prayer Area
Outdoor dining concepts were applied in the project. In this way, energy use will be decreased because there's no need to use lamp or fan. Outdoor prayer area will also give different experience for the user.

The Outside Tunnel
On the outside surface, the flexible solar panel will be applied. LED lights will also be placed on the surface so during the night, the lights will catch the visitors attention

The Inside Tunnel
In the tunnel, there will be digital signage that explains information related to renewable energy. Also, an additional projector will be placed to present different vibe to the visitors.

Participants: 31 | Chat | Share Screen | Record | Breakout Rooms | Reactions | Leave Room

Zoom Meeting - Room 2 (C3, C4, D1, D8) | You are viewing D8 AN's screen | Remaining: 01:31:54

Recording

FLOOD PREVENTION AND WATER RESILIENCE

PROBLEM
Rainfall in Surabaya and the climate change problems cause high volumes of water flow, causing flood problems and affecting the water quality in rivers. Besides that, limited water sources and challenges in infrastructure and governance are also the main problems in water provision.

VISION
Expanding the solution that has already been applied with new techniques to achieve the demand of clean water supply in Surabaya.

BENCHMARKING
• In Singapore, collecting rainwater has been done using reservoir and channels. Both Surabaya and Singapore have similar climates.
• In Chennai, India, collecting rainwater has been done using storage and temple ground. Both Surabaya and Chennai have similar economic and infrastructure capacity.

UNIQUE VALUE PROPOSITION
Increased the water quality and quantity and at the same time, helped in reducing flood potential in Surabaya due to the high volumes of water flow.

AFFECTED STAKEHOLDERS
• The people in the community
• The government
• Perum Jasa Tirta 1
• Water Company "Surva Sembada"

EXISTING ALTERNATIVES
• Collecting rainwater
• Rainwater harvesting using reservoir and boom

SOLUTION ALTERNATIVES
• Rainwater harvesting or collecting rainwater through rooftop catchments, using Recharge pit/Recharge trench

IDENTIFIED CHALLENGES
The challenges that we facing now is low rainfall rate in Surabaya in dry season (April - October) approximately 30-40mm of rain

KEY ACTIVITIES REQUIRED
• Developing the infrastructure in Surabaya
• Developing community-level infrastructure
• Using filters on the roof as a way to collect clean rainwater
• The government provide a private vendor to install the system to make it easier for the community

POLICY OR HIGH-LEVEL CONCEPTS REQUIRED
• Policy for government and commercial building to install rain harvesting technologies in their rooftop
• Partnership with a federal-level government and city agencies involved in water management.

COST STRUCTURE
The cost for installing rain harvesting system in 300 sq approximately 400-1000 US dollar, depends on how large is the harvesting area

REVENUE OR BENEFIT STRUCTURE
• Using renewable energy (rainwater) can cut the cost
• Implement water bill
• With the policy for government and commercial buildings to install rain harvesting, the residents that take advantage of the policy will get reduced water bill.

KEY SUCCESS FACTORS
• Considering feasibility study to make the rainwater harvesting giving benefits for Surabaya government and utilization.
• Maintenance of the rain harvesting system to ensure it still reliable

IMPLEMENTATION STRATEGY
• Research for the potential place in Surabaya to build rainwater harvesting sites.
• Collaborate with governmental sector to help in developing system in terms construction and financial perspective
• Make a socialization about the regulations and make a supervisor team that can monitor if the regulations to install the rainwater system is already applied in the certain of time

Participants: 52 | Chat | Share Screen | Record | Breakout Rooms | Reactions | Leave Room

Zoom Meeting - Room 1 (A1, A2, B3, B4) | You are viewing B4 - Damara's screen | Remaining: 01:31:26

Recording

Add a heading - Adobe Acrobat Reader DC (32-bit)

Suroboyo Bus 2.0

Suroboyo Bus is public transportation created for recreational purposes resulting in low passengers for daily commute. Recently the city government intended to make Suroboyo Bus as the current main public transportation because plans for the new mass transit have not been realized yet. Unfortunately, the facilities to achieve this are insufficient such as few proper bus stops and no convenient payment system. Furthermore, the application is not convenient to use for routing, scheduling, and late notification. Suroboyo Bus 2.0 will help address these problems.

UNIQUE VALUE PROPOSITION
• Making Surabaya to be Smart City and Smart Mobility
• Providing time efficient and convenient public transportation

IDENTIFIED CHALLENGES
• Applications UI and UX not good enough
• Passengers don't want to wait or standby bus stop
• Not every passengers have phone or application to check bus schedule
• Payment method takes times and manually done

SOLUTION ALTERNATIVES
• Optimizing feature on online facilities
• Optimizing feature on offline facilities

AFFECTED STAKEHOLDERS
• Surabaya's citizen
• City council of public transportation
• Private company that provide economy
• Suroboyo Bus BCU (Public Service Agency)

IMPLEMENTATION STRATEGY
Change start from the offline aspect of the transportation system and continuing to the online aspect.

KEY SUCCESS FACTORS
• Accessibility
• Comfortability
• Convenience

Online Solution
• Bad UI Design
• UI is not user-friendly and intuitive to use
• Schedule is not easily accessible

Offline Solution
• Current Situation
• Unclear
• Not comfortable while waiting
• Inefficient information

Implementation
• Build a comfortable bus stop (roof, bench, information board)
• Introduce a LED display in major bus stop (shows the route, schedule, bus position)
• Include advertisement in the display which will work as a revenue

System
• QR Code for online payment

Tap on Bus System
• Easy and quick to use

Participants: 32 | Chat | Share Screen | Pause/Stop Recording | Breakout Rooms | Reactions | Leave Room

Zoom Meeting - Room 2 (C3, C4, D1, D8) | You are viewing C3 Aulia Nirmala's screen | Remaining: 02:13:38

Recording

Original Sound: On

PROJECT TITLE: Go-Way: An Inclusive and Universal Pedestrian Road CASE STUDY: Infrastructure for People With Disability GROUP: C5

PROBLEM
There is no proper accessibility for the disabled people to go to the public places. In Surabaya, the disabled people can't go to the public places without any proper facilities. The disabled people can't go to the public places without any proper facilities. The disabled people can't go to the public places without any proper facilities.

VISION
Make sure the accessibility of people with physical disabilities in Surabaya. Make sure the accessibility of people with physical disabilities in Surabaya. Make sure the accessibility of people with physical disabilities in Surabaya.

BENCHMARKING
• Accessibility one of the innovation of universal design for people with disabilities. It is a design process that aims to make products, services, and environments usable by as many people as possible without any special adaptation or design.

UNIQUE VALUE PROPOSITION
• Accessible one of the innovation of universal design for people with disabilities. It is a design process that aims to make products, services, and environments usable by as many people as possible without any special adaptation or design.

AFFECTED STAKEHOLDERS
• Community (people with disabilities)
• Government (Suroboyo Bus Surabaya)
• Private (Public Service Agency)

EXISTING ALTERNATIVES
• The existing crossing bridge on the approach has an elevator (road crossing)

SOLUTION ALTERNATIVES
• Signal and barrier installed on crosswalk on the people with physical disabilities can show when to cross the road.
• Led light under each tactile block and crosswalk to show when to cross the road.
• Built tactile block sections (tactile) to improve pedestrian safety.

IDENTIFIED CHALLENGES
• Vertical that passing the street without an aid.
• People with no ability to see the road.
• People with no ability to hear the road.
• People with no ability to feel the road.
• People with no ability to smell the road.

KEY ACTIVITIES REQUIRED
• Consistent design in pedestrian street
• Consistent design in pedestrian street
• Consistent design in pedestrian street

POLICY OR HIGH-LEVEL CONCEPTS REQUIRED
• High awareness of people with disabilities
• Comfortable area for people with disabilities

KEY SUCCESS FACTORS
• High awareness of people with disabilities
• Comfortable area for people with disabilities

IMPLEMENTATION STRATEGY
• Evidence of benefit to improve quality of life for people with disabilities
• Evidence of benefit to improve quality of life for people with disabilities

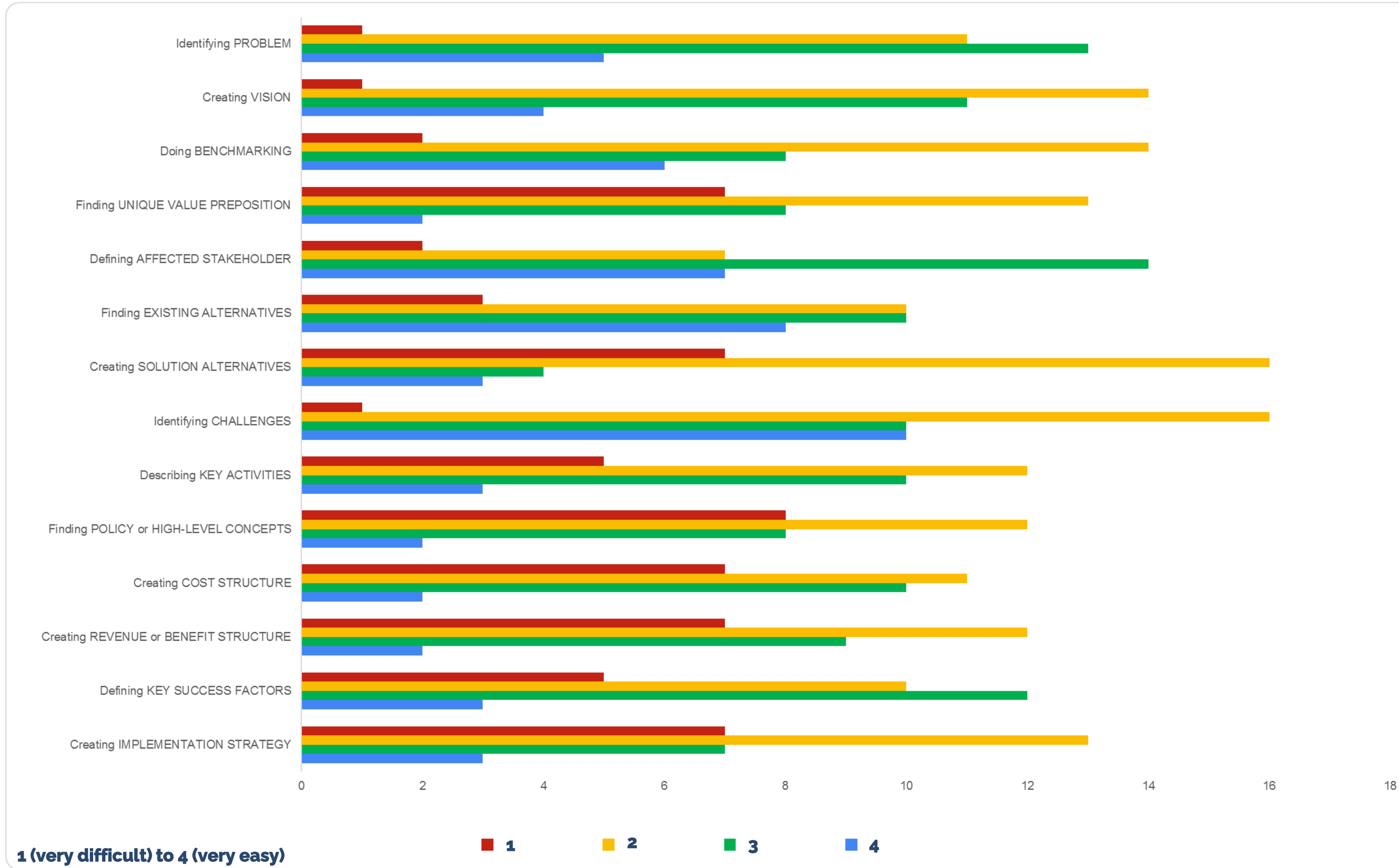
DESIGN SOLUTION
GO-WAY
RAMP
TACTILE BLOCK
GO-WAY

ADDITIONAL INFORMATION - Problem Selection Process/ Connectivity between Problems (optional)
For the problem selection process, at first, we have observed three places virtually using Google Maps: Pedestrian surrounding Dr. Soetomo Hospital, Neighborhood in Darmo Region, and Disabled People's facility in Bungkul Park. Then we analyzed which one the most urgent to solve and needed to make the boundary of our project so the solution will be well achieved. Based on the SAKET analysis we used, we have chosen The Pedestrian surrounding Dr. Soetomo Hospital by considering the site condition, the size of the pedestrian itself, in it is disability friendly, the existence of the concrete, and other infrastructure that are already available in that place. For further information, it has been included within our PowerPoint file.

LESSON LEARNED FROM THIS GPbL
Instead of improving our teamwork skills, we have learned more of problems that we have figured out during the problem and study area selection process. We recognized that many places in Surabaya are needed to be developed in their existing infrastructure so people from all conditions feel comfortable using the service facilities. It makes our eyes widely open and forces our brains to create innovative solutions as contributions.

Participants: 52 | Chat | Share Screen | Record | Breakout Rooms | Reactions | Leave Room

Result of Canvas Framework



TERIMA KASIH
ありがとう
THANK YOU