



JAGA

LEGAZPI CITY ECO PARK COMPLEX AND DISASTER REDUCTION HUB

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4AR-1

BACKGROUND INFO

I. AREA ENVIRONMENT

- A. The site is located along the coastline of Albay gulf and is prone to flooding as seen with the lack of development within the area and street view and satellite images.

II. RESIDENTS

- A. The area is generally inhabited by informal settlers who are subject to possible natural disasters especially flooding and volcanic eruption from the Mayon volcano.

III. RESOURCES AVAILABLE

- A. Agriculture is the general industry of Albay and Legazpi is the primary port for a region that exports copra and abaca. Fishing is also a major occupation in Legazpi with its shoreline that sustains a variety of marine resources and is a source of high-value fish, including grouper, milkfish, siganid, mud crab and prawn.

PROBLEM



Imagesource:

<https://assets2.rappler.com/E01A18636A854536AFB83735DD0AEA76/img/370F98D1BF6D4C9D9CB98BCD2D67C4FC/albay-torrential-rains-march-6-2020-003.jpg>

One of the main problems of Legazpi City in general is **flooding** due to its 365 km coastline and close vicinity to the Mayon volcano. This causes the coastline areas to be left undeveloped and is therefore is currently swarmed with street dwellers and congested informal housing.

PROBLEM



Image source:
https://www.vigattintourism.com/assets/article_main_photos/optimize/1346402165628mK6Hy.jpg

The site also poses a **threat** that **commercial economic growth** due to the hazardous effects of the site such as flooding. This is evident on the “Embarcadero de Legazpi”, a mall found near the coastline along the legazpi port which has not been doing well due to constant flooding of the site.

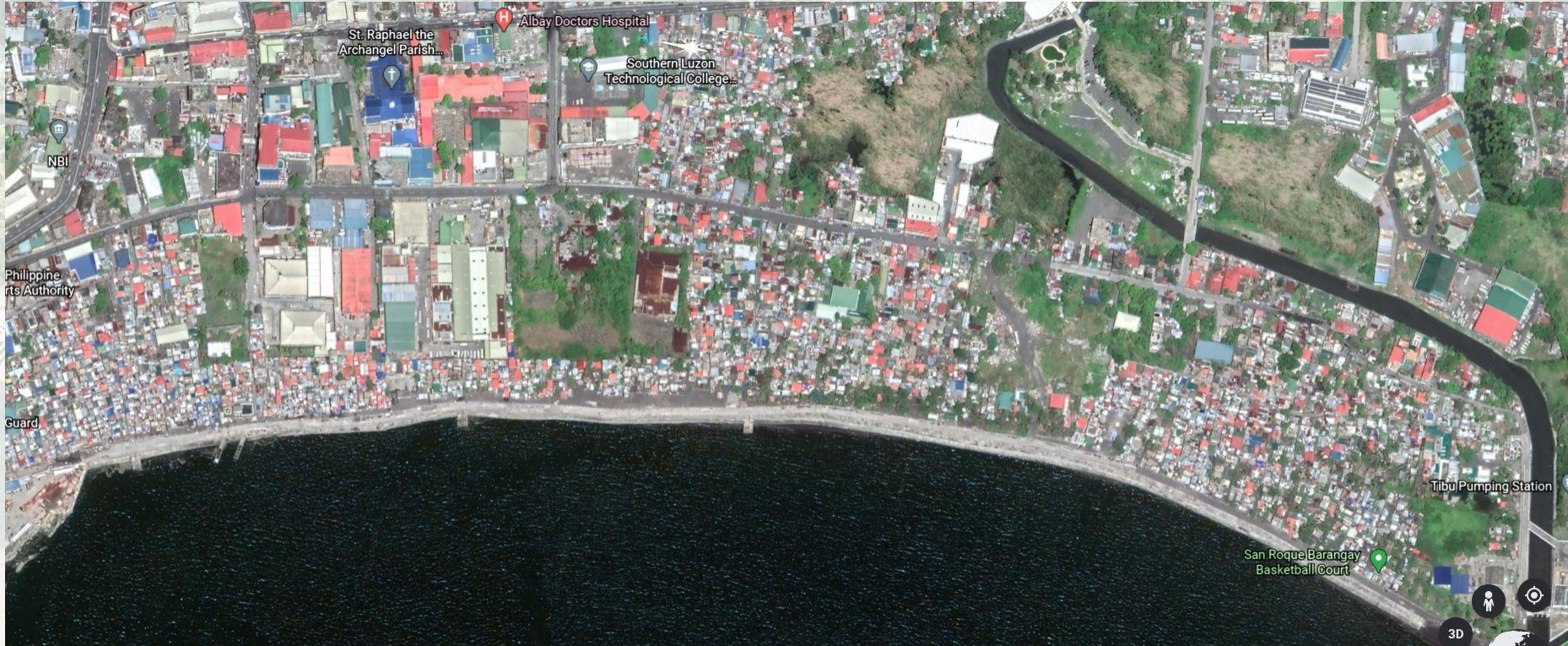
TARGET EXISTING SITE



PROPOSED AREA DEVELOPMENT



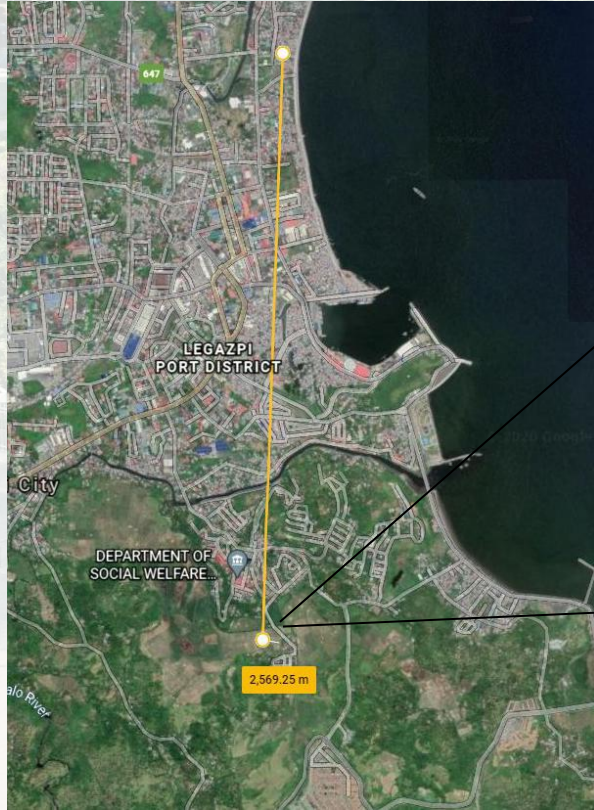
TARGET MICRO SITE



PROPOSED AREA DEVELOPMENT



PROPOSED RELOCATION SITE



THE PROPOSED RELOCATION SITE FOR DISPLACED HOUSEHOLDS IN BRGY SAN ROQUE WOULD BE SITUATED IN TOURISM HIGHWAY COR. PURO ROAD AT BRGYS BURAGUIS AND PURO RESPECTIVELY, WHICH IS APPROXIMATELY 2.5 KILOMETERS AWAY FROM THEIR ORIGINAL SITE.

EASILY ACCESSIBLE TO SCHOOLS (BURAGUIS ELEMENTARY) RESIDENTIAL, INSTITUTIONAL AND SMALL RECREATIONAL PARKS.

SUSTAINABLE SOLUTIONS

MANGROVES



PROTECTS
THE CITY
FROM THE
COASTLINE
TO PREVENT
FLOODING

AQUACULTURE



IT SERVES
AS A SHADE
FOR FISHES
AND A
PLACE
WHERE
THEY CAN
LAY THEIR
EGGS.

AQUAPONICS FARMING FACILITY



FACILITY FOR
INTEGRATING
THE GROWTH
OF CROPS
WITH THE
NUTRITION
THEY GET
FROM THE FISH
THROUGH
AQUACULTURE

VERTICAL FARMING



MINIMIZE
LABOR SINCE
THE
CONVEYOR
BELT ALLOWS
EQUAL
SUNLIGHT
DISTRIBUTION
AND LET THE
WORKERS
FOCUS ON THE
CROPS

ECO PARKS



THE PRESENCE
OF ECO PARKS
IS A MUST FOR
SUSTAINABILITY
AND
RECREATION

DISASTER REDUCTION COMPOUND



DEVELOP A
COMPOUND
WHERE THE
AFFECTED
CAN STAY
TEMPORARILY
AFTER A
NATURAL
DISASTER

SUSTAINABLE SOLUTIONS

AGRIVOLTAICS



USES SOLAR PANELS AS SHADE TO LESSEN THE EVAPORATION OF WATER FROM SOIL AT THE SAME TIME HARVEST SUNLIGHT ENERGY

E BIKE CARTS



USED FOR TRANSPORTING GOODS AND A MORE SUSTAINABLE ALTERNATIVE OVER GASOLINE POWERED VEHICLES

FOOTFALL HARVESTING



GENERATE HIGH AMOUNT OF POWER DUE TO THE WEIGHT OF THE PERSON. THE DEVICE PROVIDES AN OUTPUT OF 450 MJ PER STEP

VAN GOGH PATH



LIGHT EMITTING BICYCLE PATH WHICH EMITS LIGHT AT NIGHT FOR TRAFFIC INTERACTION

SMART RUBBISH BINS



DEVICE WHICH SORTS AND COMPRESSES THE RECYCLABLE AUTOMATICALLY.

SUPERTREE GROVE



FOR RAINWATER HARVESTING, SOLAR PANEL AND POLLUTION ABSORBER

SUSTAINABLE SOLUTIONS

WASTE TO ENERGY PLANT



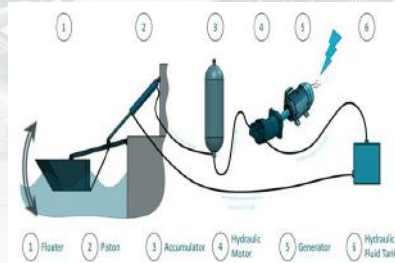
GARBAGE IS
TURNED INTO
SYNTHETIC
GAS THAT
CAN BE
TURNED INTO
ELECTRICITY

WATER TREATMENT FACILITY



HARVESTING
RAINWATER FACILITY
THAT PURIFIES
COLLECTED WATER.
THE WATER TANKS
HAS THE CAPACITY
OF 150 GALLONS AND
CAN BE DISTRIBUTED
TO 5,000 KM .

ECO WAVE POWER



CONVERTING
WAVE
CURRENT
INTO ENERGY

WATER-PRODUCING BILLBOARD



TRAPS THE
HUMIDITY IN THE
AIR AND EXTRACTS
THE WATER
VAPOUR TO
PRODUCE AROUND
96 LITERS OF
DRINKING WATER A
DAY

CITY CONTRIBUTION

The **50 meter offset mangroves** from the shoreline shall serve as the **protection** from flooding for the whole city of Legazpi. The integration of disaster reduction compounds provides a strategy for natural disasters and the use of solutions such as aquaponics farming for efficient production of vegetation, water treatment facility for rainwater harvesting, and gather energy using footfall harvesting and eco wave power to provides further sustainability for the city.

CURRENT STATUS ALONG LEGAZPI BOULEVARD



LEGAZPI CITY

LEGAZPI CITY - ECO PARK COMPLEX AND
DISASTER REDUCTION HUB

Regional
Government Center

2D

JAGA HUB

LEGAZPI CITY - ECO PARK COMPLEX AND
DISASTER REDUCTION HUB

THE PROJECT SEEKS TO DEVELOP AN ECO RESERVE
THAT AIMS TO IMPROVE THE LAYOUT OF SPRAWLED
AREAS IN SAN ROQUE AND UPLIFT THE SOCIO -ECO-
NOMIC AND DISASTER REDUCTION IN LEGAZPI.

Regional
Government Center



SOURCES

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<https://www.ecowavepower.com/our-technology/competitive-advantages/>

<https://www.theguardian.com/sustainable-business/2015/apr/16/ten-quirky-ideas-for-making-our-cities-more-sustainable>