

#### **Development and Conservation**

Must development be in conflict with conservation?

Lamma Island

3rd Largest Island

settlement dated back to 3,000 BC

existing villages: 200 years +

3 archaeological sites in S. Lamma

existing ecology and natural environment

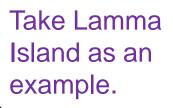
It doesn't have to.

Natural environment, local biological diversity and cultural heritage can be assets of a development.

### This is the Existing Zoning

CPA

CA





# Conventional approach would be to build on agricultural land and village land

Conventional approach always have to clear the vegetation and compensate afterwards.

> Can we avoid impacts on the local biodiversity?

### Why don't we think out of the box?

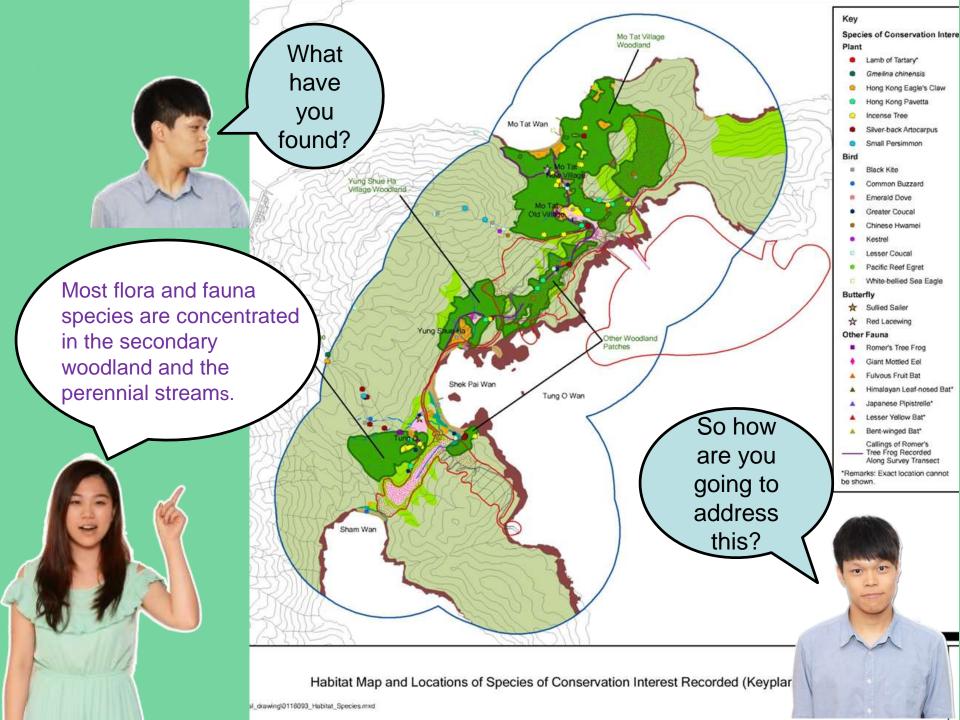
We can preserve land with high ecological value in-situ and build on lands with lower ecological value.

### We undertook comprehensive **Environmental Impact Assessments :**

Hydrodynamic Impact Assessment Water Quality Impact Assessment Sediment Impact Assessment Sediment Transport Impact Assessment Marina Fuel Storage Impact Assessment Marine Traiiic and Risk Impact Assessment Fishery Impact Assessment Marine Ecology Impact Assessment **Terrestrial Ecology Impact Assessment Birds Impact Assessment** Landscape Impact Assessment Sile Formation and Natural Terrain Risk Impact Assessment 地盤平整及地勢風險評估 Air Quality Impact Assessment Cultural Heritage Impact Assessment Archeological Impact Assessment Visual Impact Assessment Noise Impact Assessment **Utilities Impact Assessment** Traffic Impact Assessment Marine Traffic Impact Assessment and Risk Assessment Sewage Impact Assessment Drainage Impact Assessment **Construction Impact Assessment Operation Impact Assessment** 

We also undertook Social Impact Assessment

海床沉積物移動影響評估 海床沉積物影響評估 水質影響評估 海水動力影響評估 遊艇機油儲存影響評估 海上交通及風險評估 捕魚業影響評估 海洋生態影響評估 陸上生態影響評估 林木影響評估 空氣質素影響評估 古物影響評估 文物影響評估 噪音影響評估 公共設施影響評估 海上交诵影響評估及風險評估 污水排放影響評估 排水影響評估 施工期間影響評估 運作期間影響評估



We propose to preserve existing villages and land with lush vegetation and high bio-diversity insitu, and build on hill slope on either side through land exchange

Residential

**Conservation** Corridor

保育地帶

Public Road an



Marina

遊艇港

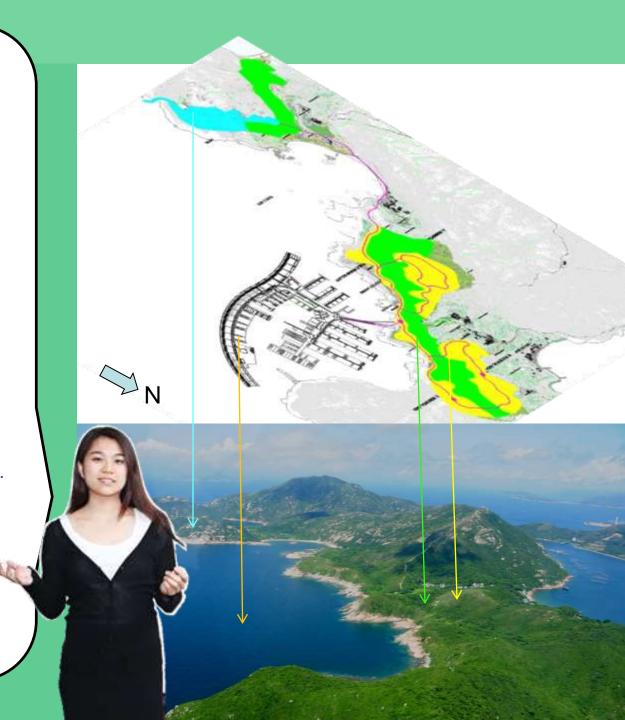
Resort

We have also moved the main deck away from rocky/sandy seabed to minimize impact on benthic communities there.

This open up a lot of opportunities to create synergy between conservation and development:

- Valuable habitats are preserved in-situ to form a 19.6 ha Conservation Corridor.
- 2. There is scope for **active conservation**, **eco-education**, **ecotourism and re-farming** on abandoned agricultural land.
- 3. Existing village communities are preserved and villagers need not be evicted.

4.



### Preserve and protect Local Habitat Diversity in-situ



#### **Arrest Local environmental degradation**



3. debris kept washed up Tung O beach

# Eco-tour, Eco-classes and researches on local biodiversity, land and sea, can be organized



### Active Conservation: Act and Reap instead of Sit and Wait ?

Sham Wan SSS

#### Marine Ecology C

Ah, hardly any in recent years! Stories had it that turtle eggs were food sources during the difficult period of Second World War. As result not many eggs were left to hatch and much less (1/1,000) survive to come back. If we don't act proactively, there will be slim chances of us seeing green turtles at Sham Wan.

In fact, there are a lot of countries doing hatching and research programs to revive the green turtle population.

Why Marine Ecology Centre?

Shouldn't we just do nothing? We used to have green turtles come back to lay eggs years ago. Why not The Eden Project formula for education, community participation/services and environmental projects, researches and green operation? http://eden-project.com.uk





immersive and Inspirational education program 實地及啟發性的教育計劃

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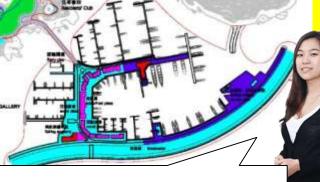


The Eden Project was planned on an abandoned mine. It has glass domes that house exotic species from all over the world! Would you do that in Lamma?

We do not propose doing exactly the same. Instead, we want to preserve HK's indigenous species in the 19.6 ha Conservation Corridor. We can learn a lot from their rich eco-education programs and with community participation. We can develop programs suitable for HK.







Besides, the breakwater of the marina is going to be a big artificial reef that will enrich the marine ecology and fishery resources at southern Lamma.



Hands-on Experience

Besides, re-farming on existing abandoned farmland utilizing fertilizer from kitchen waste composting. This creates jobs and supplies food to the community, which forms a circular economy. Our volunteers are also trying out the "natural" farming techniques at Yung Shue Ha village.

Sham Wan SSSI

There can be "green" operation and procurement policies for hotel, restaurants and yacht club to support local community and produce. Hotel can host eco-themed seminars, conferences, workshops for NGOs, guests and community in conjunction with management of Conservation Corridor.







#### Besides being an artificial reef, are there any other innovative ideas for the Breakwater?

aisson for Function, Operation & Utility

Design Development:

'natural forms'

(1) Regular caisson on 5m grid

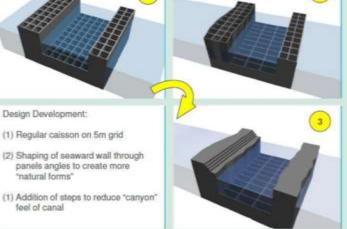
panels angles to create more

#### **Design Evolution #1**

ental elements of the as follows: Vave Caisson - 15m public access hannel, 10m deep used for: ment of coral reef

ational diving n boating

- cing caisson 10m cess for super-yachts
- (1) Addition of steps to reduce "canyon" feel of canal



2

There are immense possibilitie and many potential uses for the 1200m long 40m wide water body between the breakwater which is more than just a breakwater.

#### Leisure and recreation : ideas/examples



























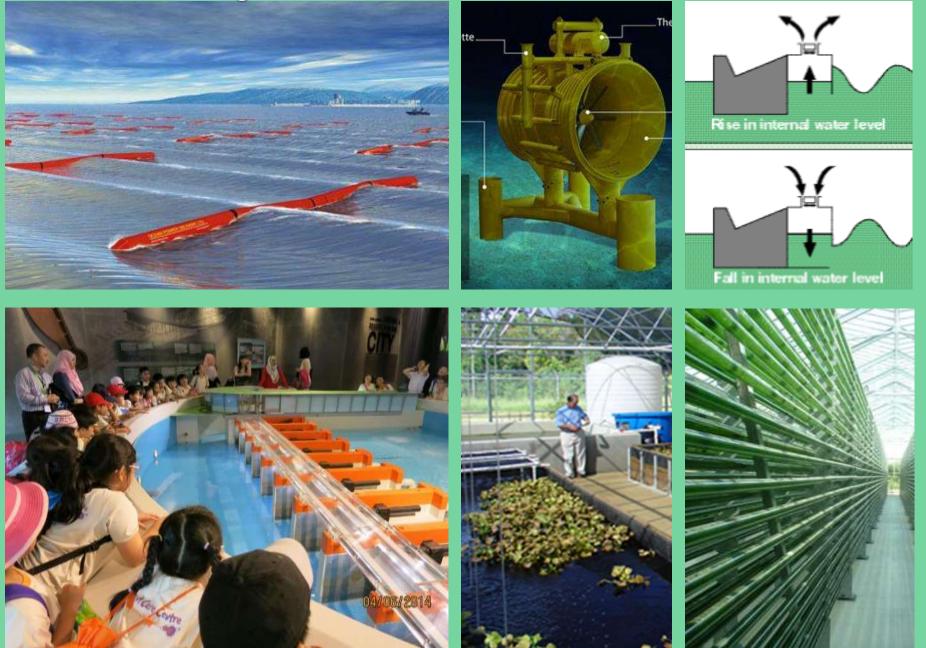




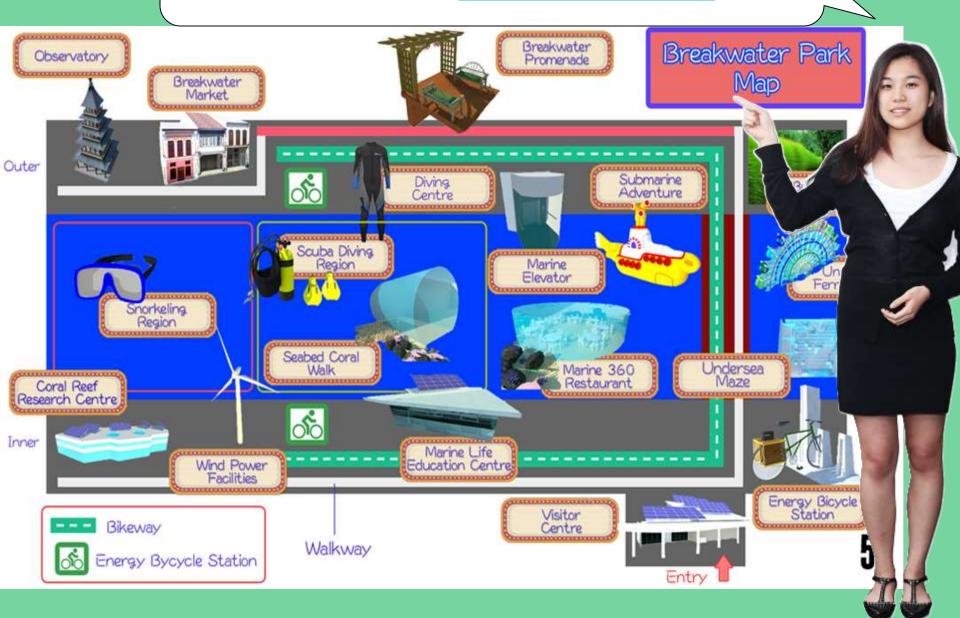




#### Renewable energies researches and demonstration too.



We have organized an idea competition for university students. Here is one of the entries. To see more please visit our website <u>http://www.bol-hk.com</u>



How about the local people?

Local communities are not forgotten: Existing villages are preserved. Indigenous villagers can share the fruit of development.

## Tung O 東澳

## Yung Shue Ha 榕樹下

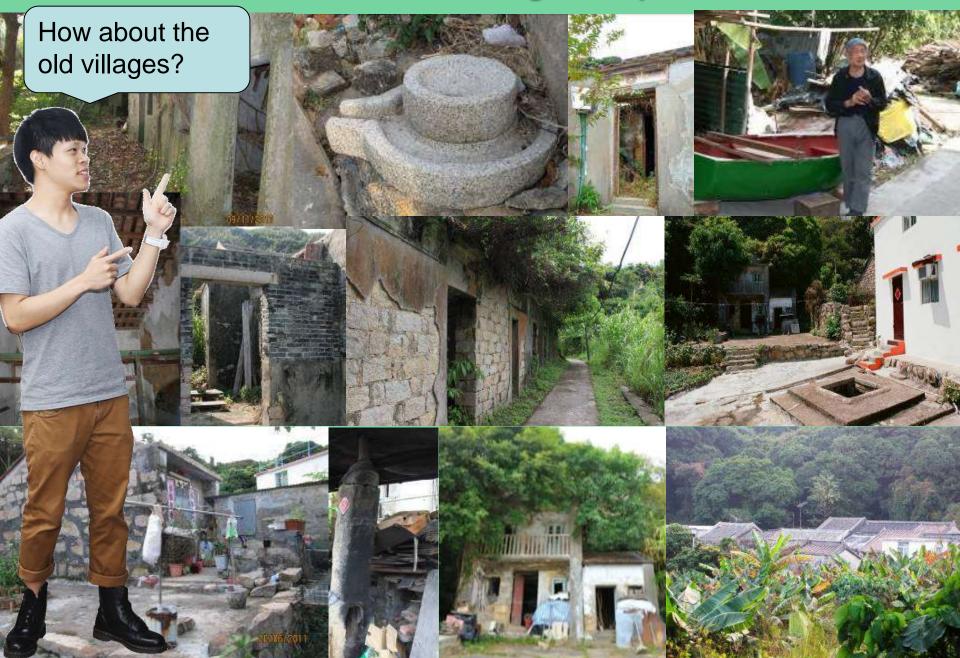
o Tat

**They are NOT** forgotten! They can stay and share the achievements!



Mo Tat New Villag 達新村

#### **Cultural Heritage are preserved in-situ**



#### **Cultural Heritage Regenerated:**



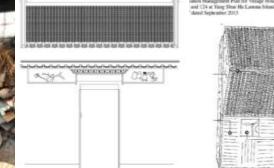




WASTER LAYOUT PLAN FOR VISITOR CENT







We have engaged a conservation consultant to study the feasibility of restoring the abandoned old village site at Yung Shue Ha and turn it into a Visitors' **Centre to display Lamma** settlement history, past way of life and to serve as a base for exploration of the **Conservation Corridor.** 



**計**SUBSTANCE December 2013



## How about the marina side?

Indeed, we have considered many alternatives but then if we are restoring the Yung Shue Ha old village, why don't we recreate the old Victoria Harbour of the same period? After all, the architectural style is a good example of passive designed buildings well suit to the low carbon theme here!

On the other hand, HK evolved from a fishing village into a metropolis, so we can also display HK's fishermen history and culture at the breakwater!



Residents

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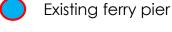
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How about

people getting to

and from here?

In addition to existing ones, there will be a new pier at the marina. All existing footpaths are preserved and a new road system will be built. The connectivity in both land and sea will be much improved.



- 1. New Ferry Pier
- 2. New Road Connecting Villages
- 3. Existing Footpaths
- 4. Helicopter Pad
- 5. Boat Mooring

Indeed, there are a lot for the general public to enjoy and explore, e.g. the waterfront plaza and the breakwater, the Conservation Corridor and related facilities, the coastal walk and viewing gallery, the beach etc.. They can come for sailing and diving training too.

#### Not just another rich men's garden. - It's everybody's garden.



#### Public Coastal Promenade, Viewing Gallery and Conservation Corridor

From the marina, the new road bring people to the coastal area where they enjoy panoramic view of southern Lamma and can watch in-port race of regatta event or sailing training.

Or they can choose to walk along existing footpath through the Conservation Corridor to explore the local flora and fauna species.



#### In Port Race Course

Marina

#### **Beach facilities and camping facilities**

Tung O beach was once a popular beach for swimming and camping. It now suffers from debris washed up and lack of proper facilities.

- Debris wash-up can be tackled.
- Beach facilities can be improved with provision of washing and changing facilities. Existing pier can be converted into a refreshment kiosk on water
- The rock beach at northern end of Tung O can be an ideal outdoor camp site.



How about the sea lovers?



# New career path for our next generation

There is the Sailing Academy which promotes sailing as a popular sports and provides accredited training of HK team.

Then, there is a Yacht Crew Training School providing professional training to meet the rising demand for marina management team and superyacht crew in Asia.



#### **Hosting of Events**

Monaco Boat Show

We now have facilities for hosting International/Regional regatta, boat show, and other events.

/olvo Ocean Race

Sanya 201

How about HK as a whole?

Volvo Ocean Race, Qingdao 2010

#### Or simply relax

You can do spa, massage, hiking, fishing, enjoying sea food and have leisure chats here!

## What about the buildings?

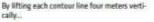
## The buildings respect and are integrated into the Natural landscape



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se natura

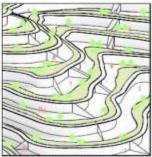








A new building envelope emerges from the slopes.



eating unique located apartments, private d breathtaking views to the scenic

Our design consultant, BIG from Denmark, came up with a simple yet effective solution to blend the buildings into the natural landscape - to follow the contour and step back at each level.

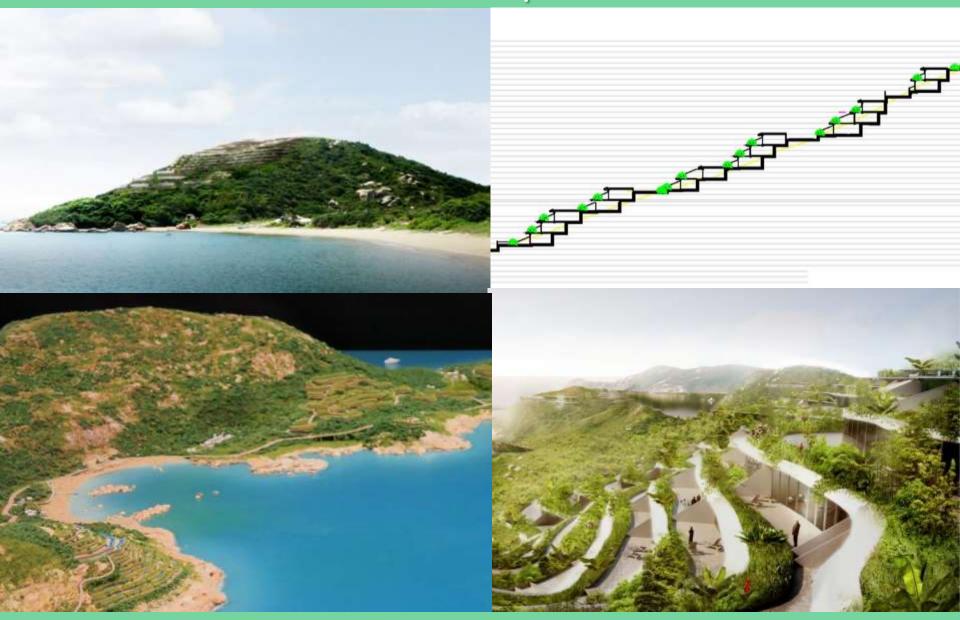




A

APARTMENTS

# Terraced approach reduce visual impact and buildings blend into the natural landscape



### A low carbon community

We are creating a low carbon community and commissioned Messrs Ove Arup and Partners to develop an **Integrated Sustainability Strategy** for the development.

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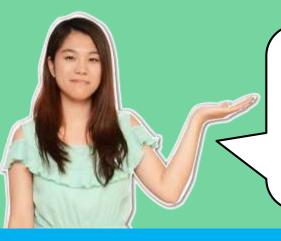


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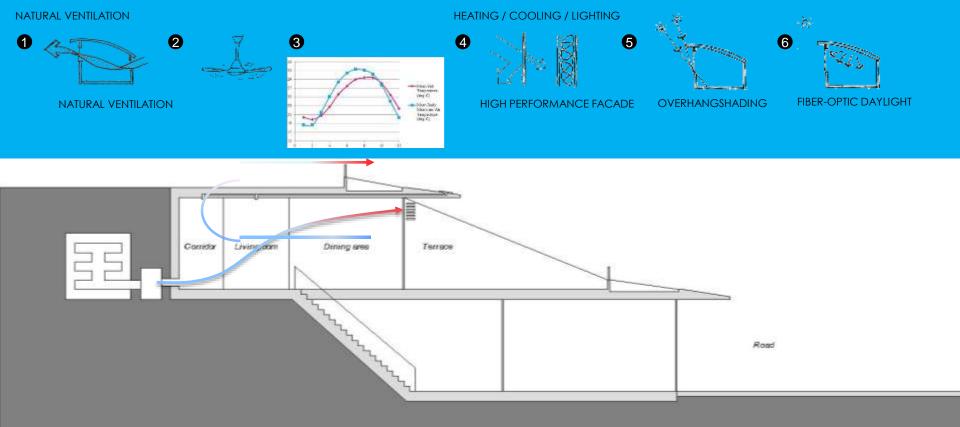
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## First, we reduce energy consumption by **adopting passive design measures**:

- Natural ventilation
- Reduce use of air conditioning
- Utilise geothermal mass
- Minimise solar gain
- Natural daylight



### **Renewable energies**

Solar panels along the overhanging eave of residential building can provide sufficient hot water for the residences.

Second, we maximise the capture of renewable energies.

PV panels along the inner breakwater structure can provide

nower for the site

**Solar Energy** 

#### **Tidal & Wave Energy**



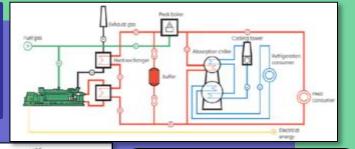
- Wave capture chamber set into rockface.
- Tidal power forces water into chamber.
- (3) Air alternately compressed and decompressed by "oscilating water column".
- (4) Rushes of air drive turbine, creating power.

Wind Energy **Different wind** capturing turbines to capture wind energy onsite.



## All in all, we can reduce fossil fuel reliance to less than 10%

Wasted kitchen oil will be collected from marina area and hotel and converted to bio-diesel either on-site or off-site to be reused as clean fuel for tri-generation plant for **district heating and cooling** in the project site.



Third, we are looking

**Non-recyclable waste** generated onsite can be incinerated to produce energy.

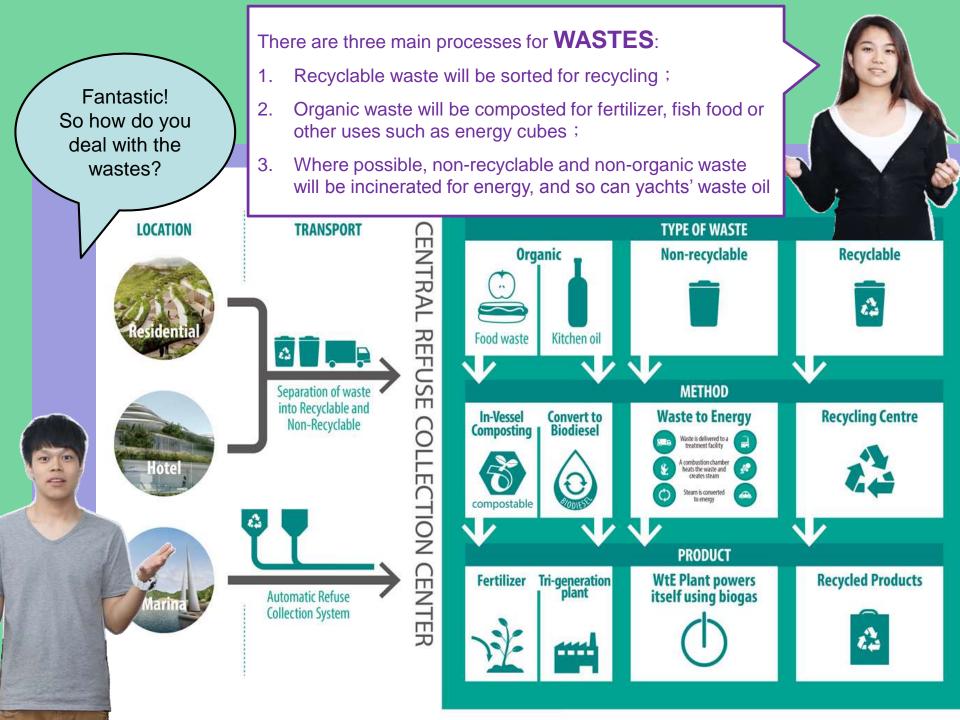
The **Mikania** is an invasive species and their fast growing nature is a threat to local biodiversity.

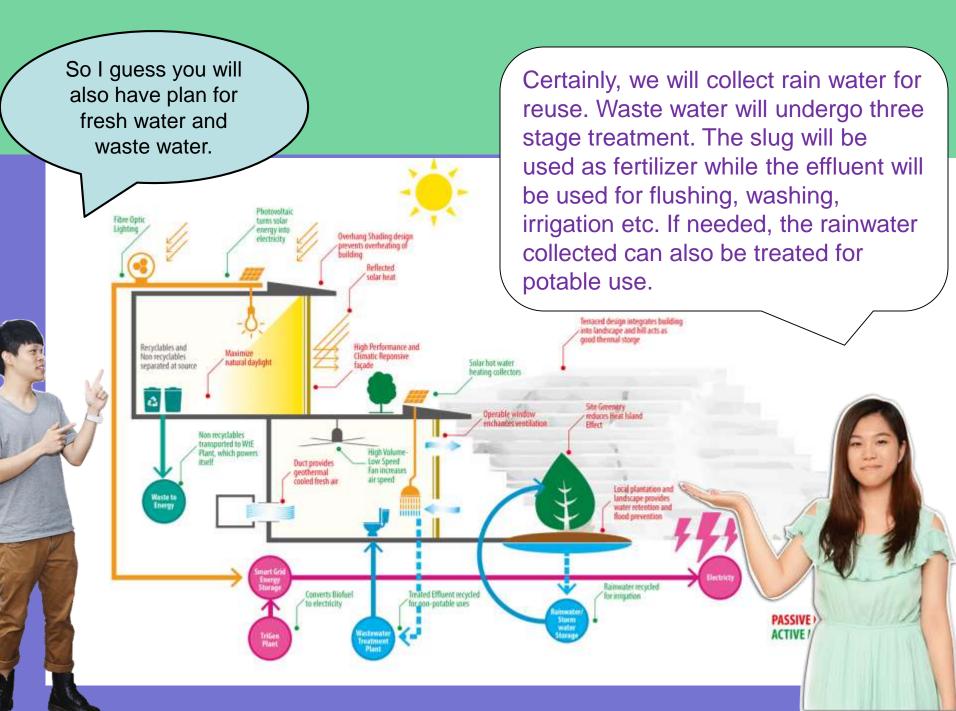
We are currently studying the possibility of turning it into an energy source.

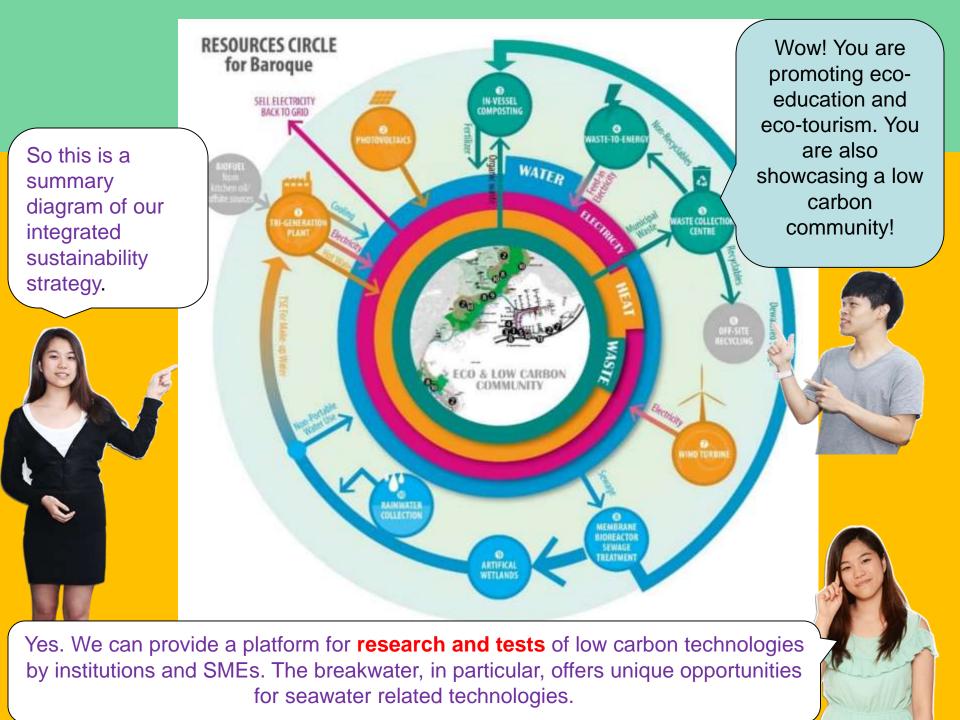
Wasted oil from yachts can be another energy source.











So you are creating an Eco-destination on both land and sea, and a **low** carbon settlement with a circular economy.

## You are Right!

Lamma Island

Public Engagement and Education Zone

> ing 0 Wan 東漢灣

Managed by Community Trust

Southern Lamma SSSI

sham Wan SSSI

**Research and Conservation** 

It brings many benefits to Lamma Island and Hong Kong:

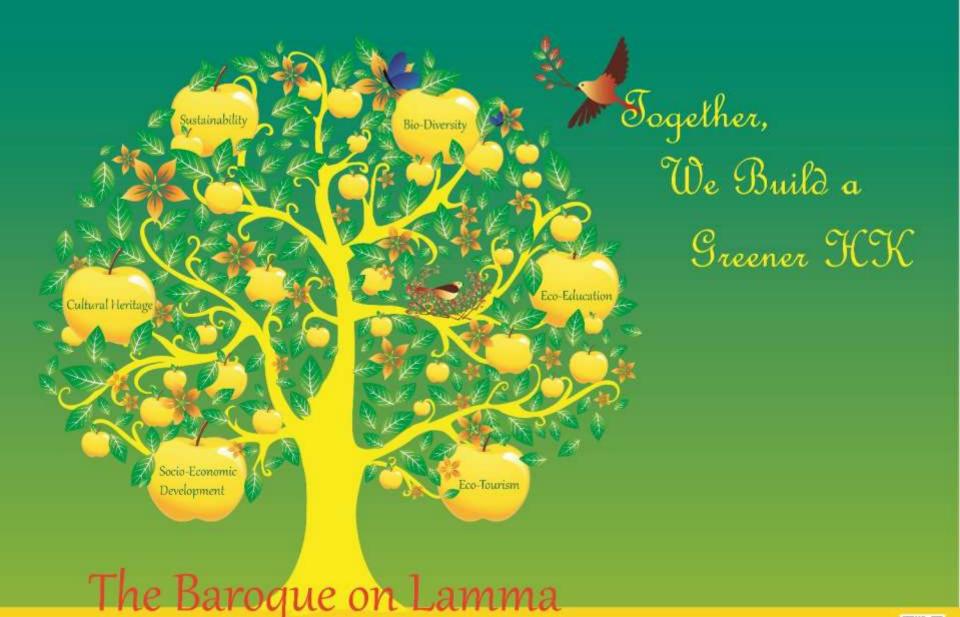
- offers vibrant community activities, cultural heritage and colourful lifestyle
  experiences
  - a variety of events/activities on land, on water and in water
- diverse employment and business opportunities
- preserve and enhance ecology and bio-diversity of Lamma
- showcases how development can co-exist with conservation.

Wow! I hope it can be built asap!

# Let's Revitalize Lamma and Energize HK with this win-win-win solution



#### **Together we build a Greener Hong Kong**



#### A Low Carbon Eco-Destination







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