

The Baroque on Lamma

Where Conservation Thrives on Development

Is development
always in
conflict with
conservation?



It doesn't have to.
Natural environment, local
biological diversity and
cultural heritage can be
assets of a development.



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Lamma Island has human habitation for 5,000 years. During Tang/Song Dynasty, it was the port of entry for foreign ships. During World War II, there was a Japanese military base here.

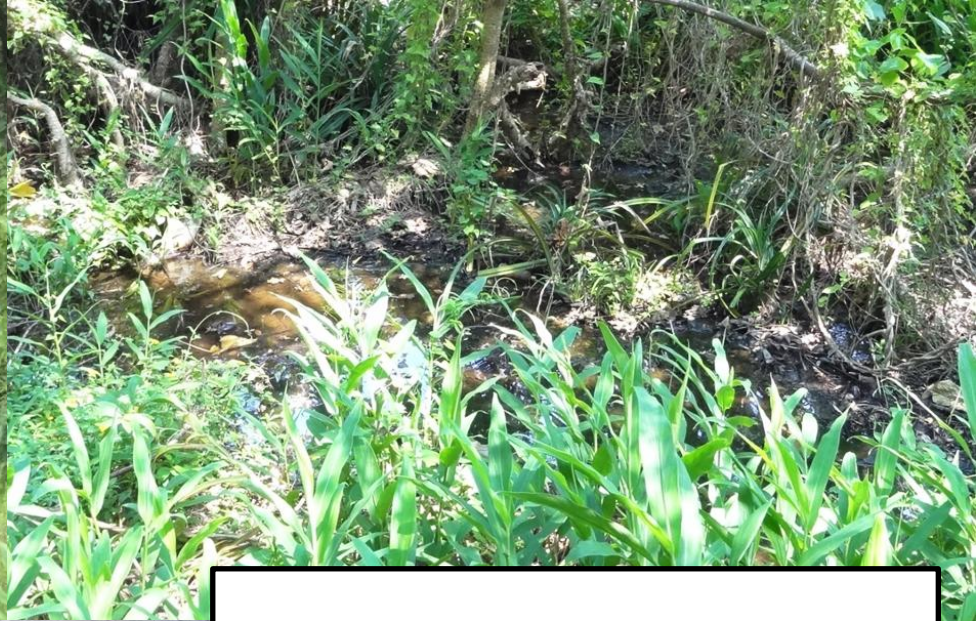
There were once more than 500 villagers in the 3 villages, but only a few aged residents remain now.

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15 06 2012



Natural environment also deteriorating:

1. The invasive species Mikania is rampant
2. natural streams are clogged
3. debris kept washed up Tung O beach

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In order to develop a conservation-based development, we have undertaken **comprehensive baseline surveys** at the early planning stage.

Hydrodynamic Impact Assessment
Water Quality Impact Assessment
Sediment Impact Assessment
Sediment Transport Impact Assessment
Marina Fuel Storage Impact Assessment
Fishery Impact Assessment
Marine Ecology Impact Assessment
Terrestrial Ecology Impact Assessment
Birds Impact Assessment
Landscape Impact Assessment
Site Formation and Natural Terrain Risk Impact Assessment
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

+ **Social Impact Assessment**

海水動力影響評估
水質影響評估
海床沉積物影響評估
海床沉積物移動影響評估
遊艇機油儲存影響評估
捕魚業影響評估
海洋生態影響評估
陸上生態影響評估
鳥類影響評估
林木影響評估
地盆平整及地勢風險評估
空氣質素影響評估
文物影響評估
古物影響評估
景觀影響評估
噪音影響評估
公共設施影響評估
交通影響評估
海上交通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

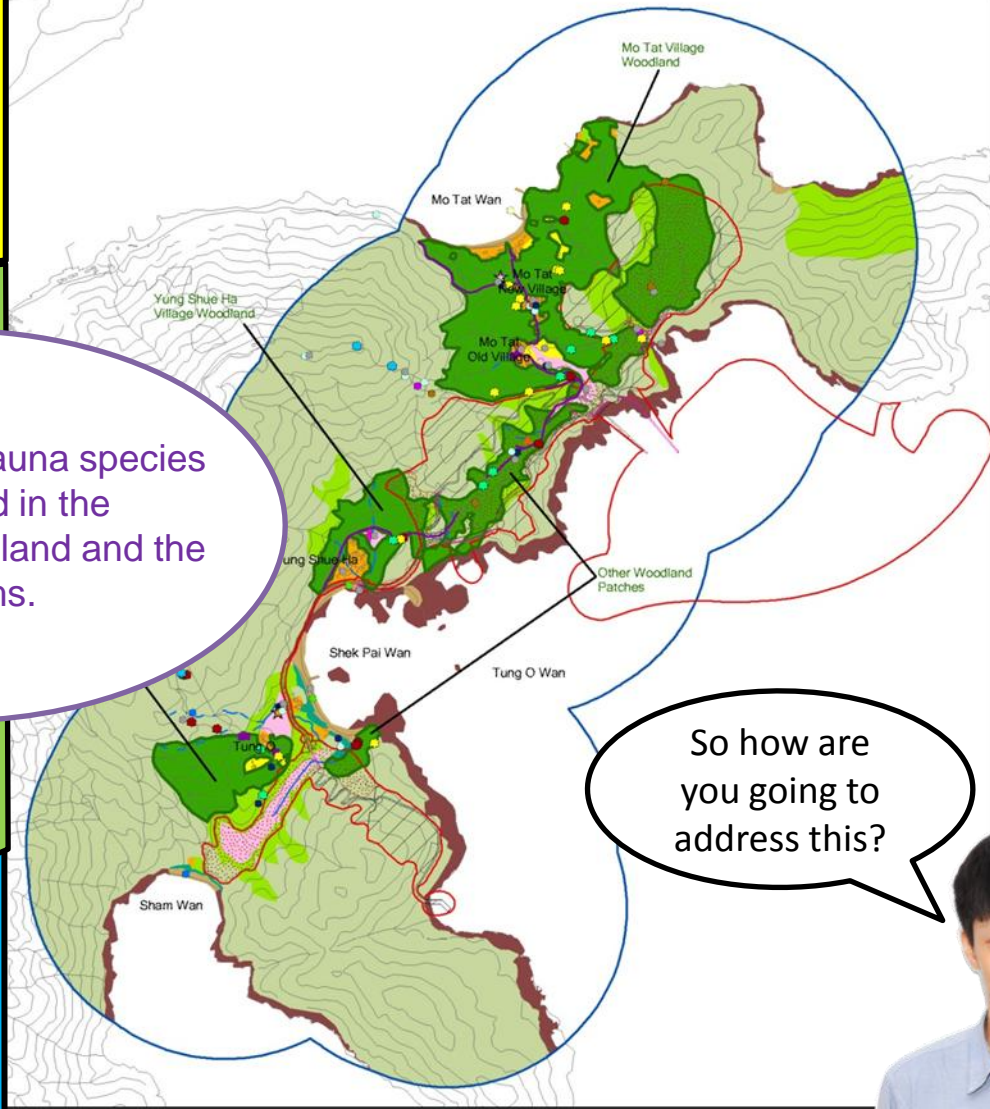
社會影響評估



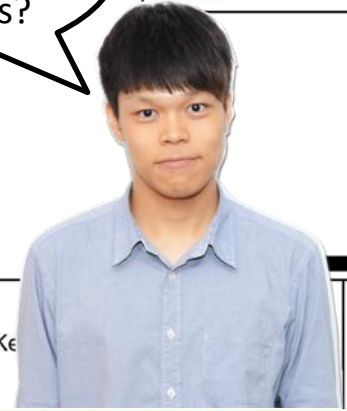


What have you found?

Most flora and fauna species are concentrated in the secondary woodland and the perennial streams.

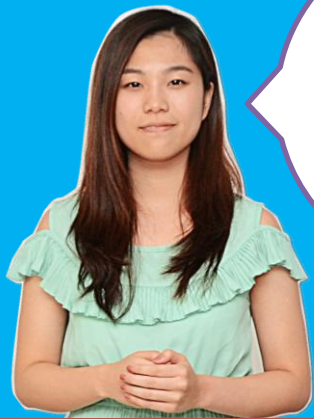


So how are you going to address this?



Habitat Map and Locations of Species of Conservation Interest Recorded (Kew)
 swing0118093_Habitat_Species.mxd

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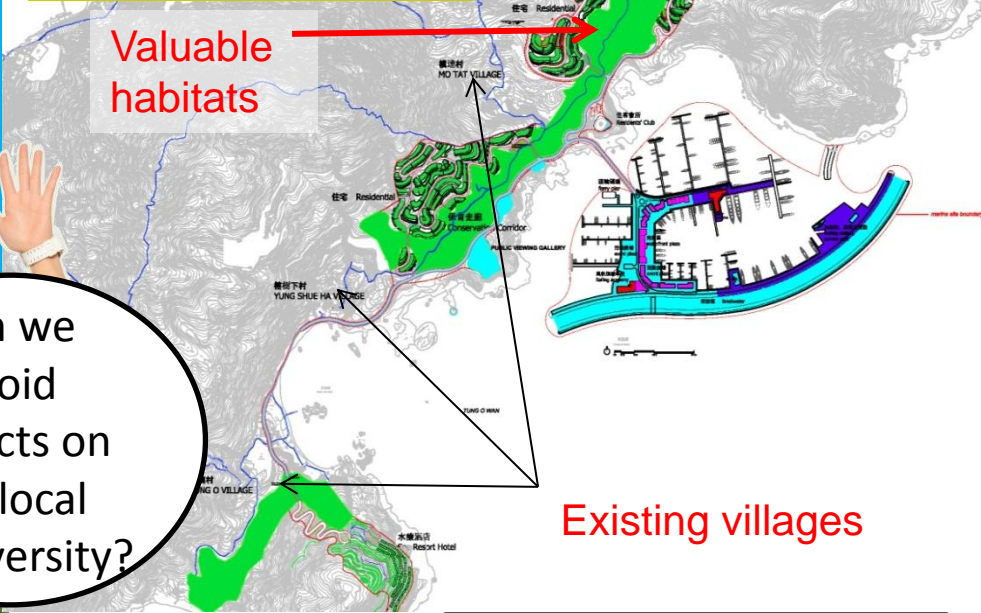


Conventional approach suggests to clear the woodland and compensate afterwards.



Can we avoid impacts on the local biodiversity?

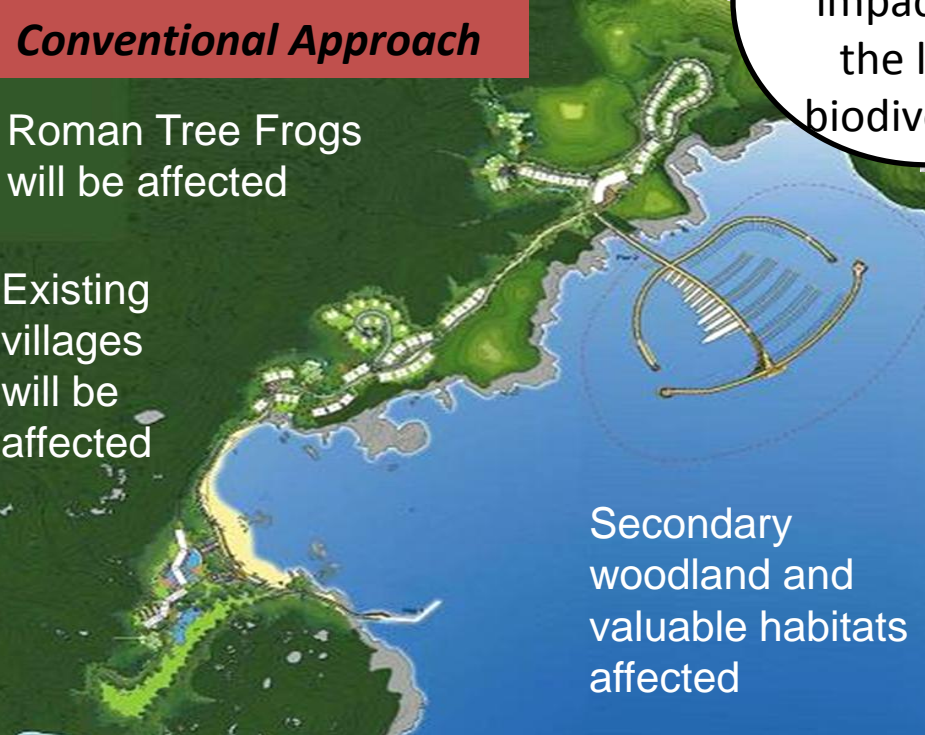
Preferred Approach



Conventional Approach

Roman Tree Frogs will be affected

Existing villages will be affected

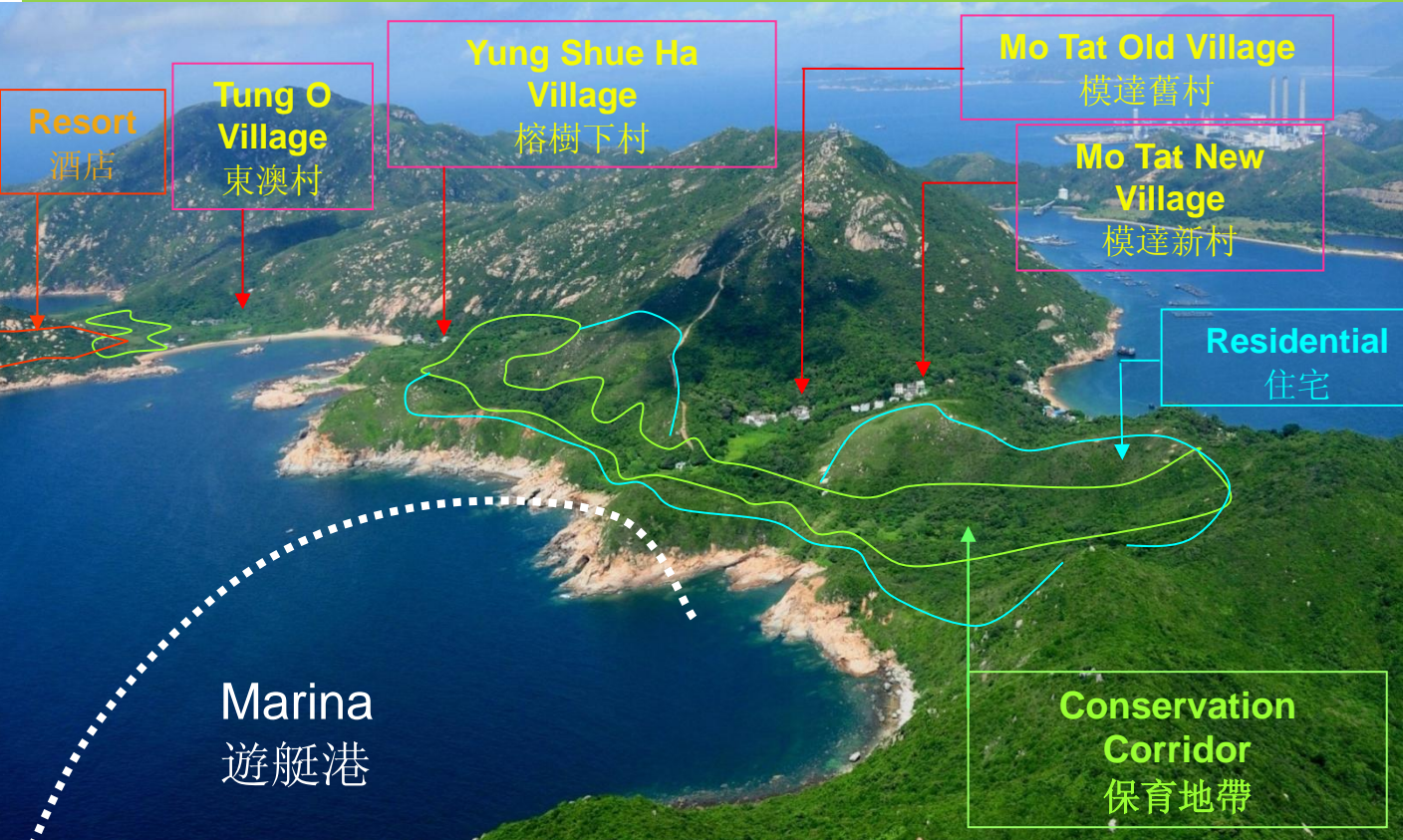


Secondary woodland and valuable habitats affected

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?



This opens up a lot of opportunities to create **synergy** between conservation and development.



1. **Valuable habitats** are preserved in-situ to form a 19 ha Conservation Corridor.
2. **Existing village communities** are preserved and villagers need not be evicted.
3. There is scope for **active conservation, eco-education, eco-tourism and re-farming** on abandoned agricultural land.

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Sham Wan SSSI



For example, there is a huge stretch of abandoned farmland at Tung O which can be rehabilitated and could be an ideal site for

a **Marine Ecology Centre** for green turtle and marine ecology studies

a **Nature Education and Activities Centre** for eco-education programs and activities as well as organic farming activities

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Why Marine Ecology Centre?

Sham Wan SSSI

Marine Ecology Centre

Shouldn't we just do nothing? We used to have green turtles come back to lay eggs years ago.

Ah, hardly in recent years! Stories had it that turtle eggs were food sources during the difficult period of World War II.

Hence not many eggs were left to hatch and much less survive to come back.

In fact, in a lot of countries like , **hatching and research programs** were successfully implemented to revive the green turtle population.

As Prof Cheng from Taiwan once said: “.... we know little about green sea turtles, but as we know more, we shall be able to identify at which stage of their life cycle, they need our protection the most..”

We can organize **education programs and annual releases of young green turtles**. Hopefully, they will start to return in the future.

In addition, the team of experts can also help to **restore and enhance marine ecology in southern Lamma and manage the Sham Wan SSSI**.



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How about the Romer's Tree Frogs ?



Well, the **Conservation Corridor (CC)** is set up to preserve local habitat in-situ, and so Romer's Tree Frogs are safe and will be well looked after by management of the CC.

How about under the sea?

Well, the hard substrate formed by the rock and sandbed has higher ecological value than the silty mud seabed further out.

We have moved the main deck away from these habitats to minimize impact on benthic communities there.

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We should and can do more.

Have you heard of the Eden Project in UK?

Tell me about it.

Immersive and inspiring education programs

Social and environmental projects

Research

Green operations

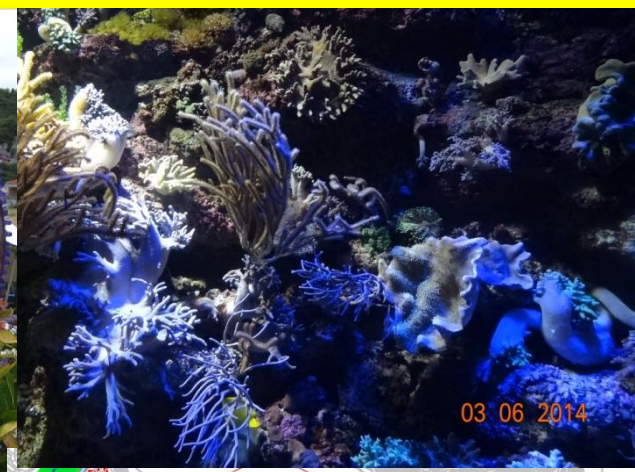


It is a very successful charity organisation that runs a world famous eco-education and activities destination. Many people from UK and abroad visit it and take part in their diverse programs. We believe there is a lot to learn from them.

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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 ha Conservation Corridor. We can learn a lot from their rich eco-education programs and with community participation we can form a strong team to develop programs suitable for HK.

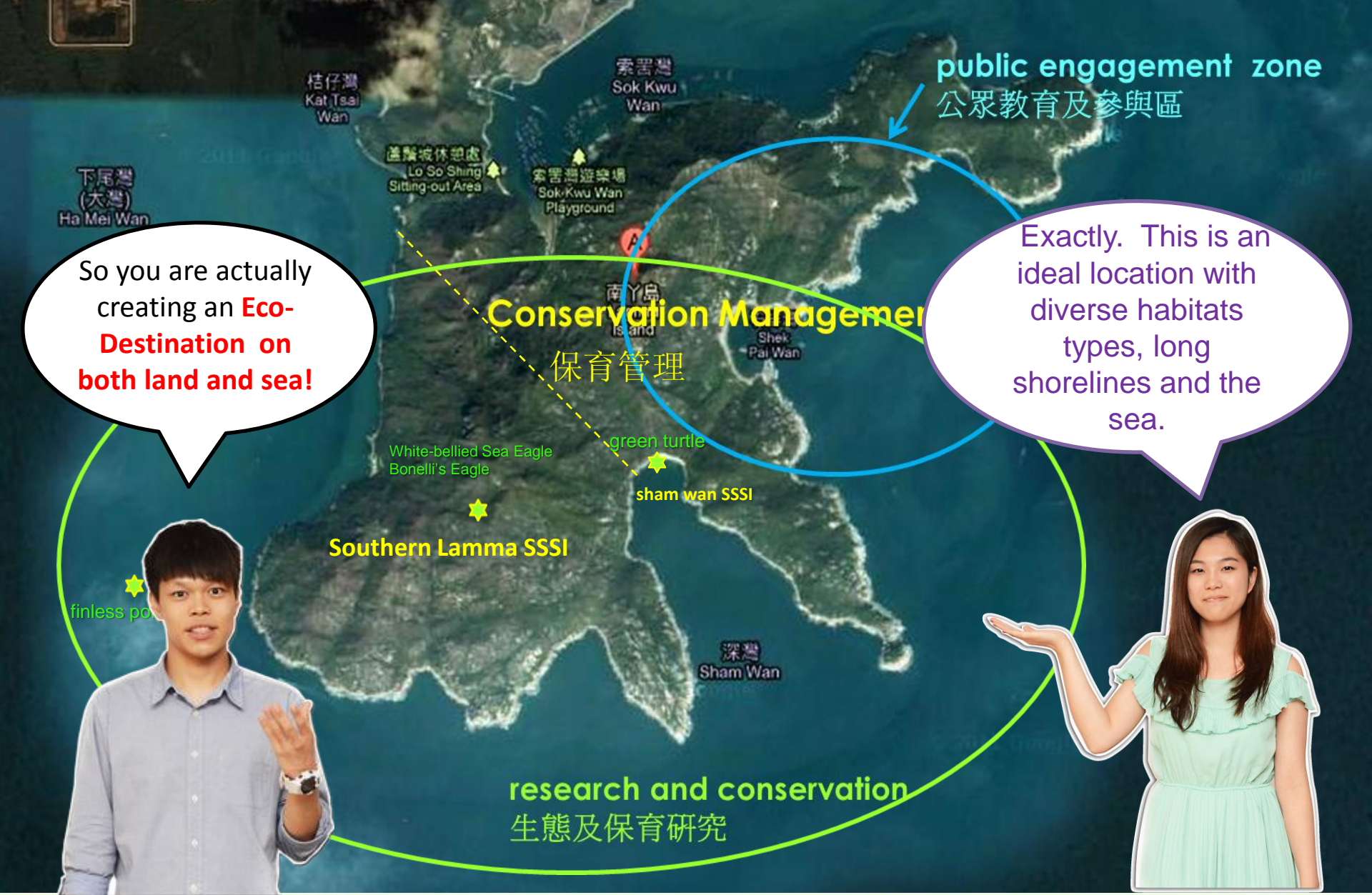


Besides, we have the sea surrounding us. The **breakwater** of the marina is going to be a big **artificial reef** that will enrich the marine ecology and fishery resources at southern Lamma.



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So you are actually creating an **Eco-Destination on both land and sea!**

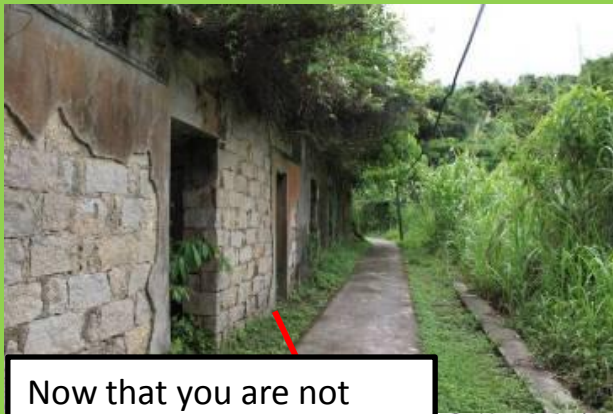
Exactly. This is an ideal location with diverse habitats types, long shorelines and the sea.

Conservation Management
保育管理

research and conservation
生態及保育研究

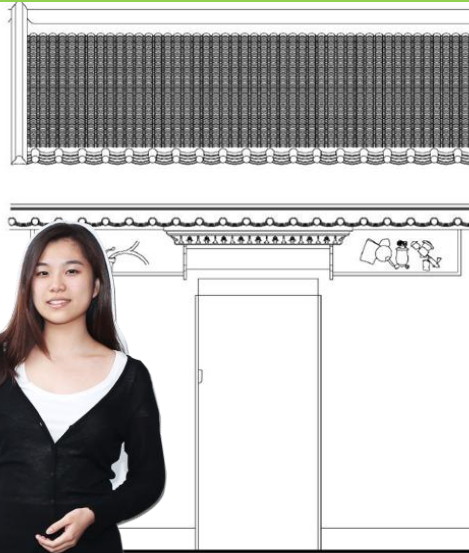
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We have engaged a conservation consultant to study the feasibility of **restoration of the abandoned old village site at Yung Shue Ha.**

Now that you are not tearing down the village houses, what are you going to do with them?



Conservation Management Plan for Village Houses at Lot 123 R.P. and 124, D.D. 9 at Yung Shue Ha, Lamma Island

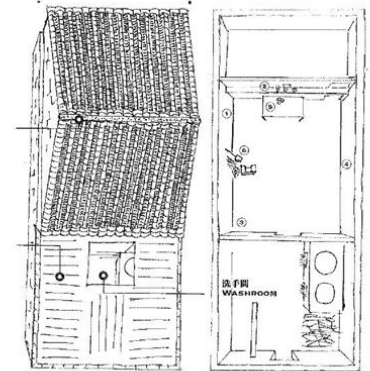


Blow-up of aerial photo 1978 (Source: Survey & Mapping Office)

SUBSTANCE LAB

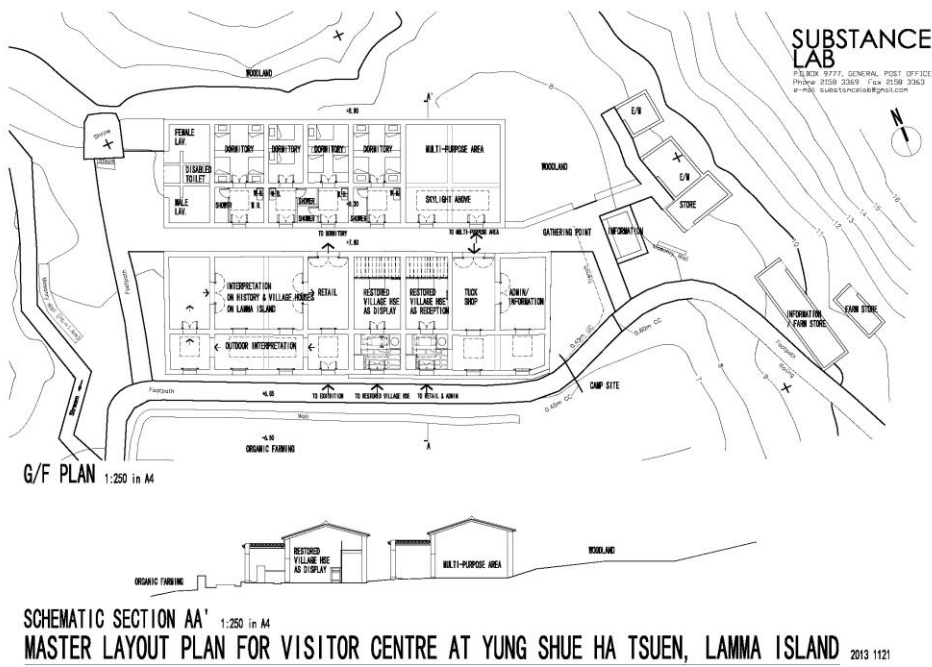
December 2013

Conservation Management Plan for Village Houses at Lot 123 R.P. and 124 at Yung Shue Ha Lamma Island dated September 2013



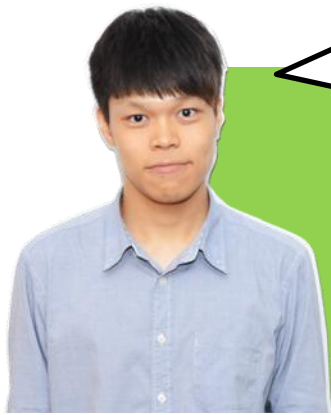
Layout plan of a stone house at Mo Tat. (Source: Cheng & Chow, 2008, p.49-50)

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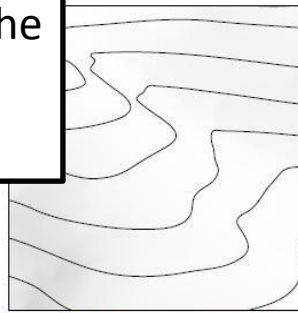


They recommended to restore the original layout and architectural style of the “old” Yung Shue Ha Village. The restored buildings can become a **Visitors’ Center to display Lamma settlement history and serve as the base to explore the Conservation Corridor.**

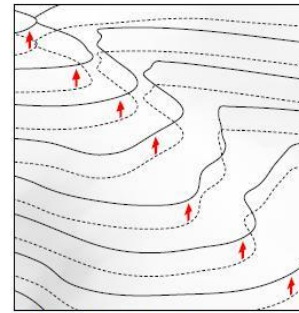




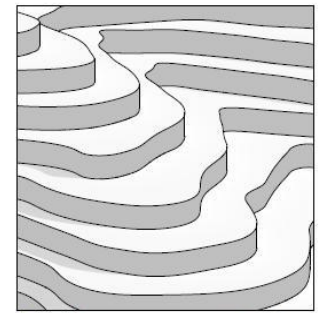
What about the residential buildings?



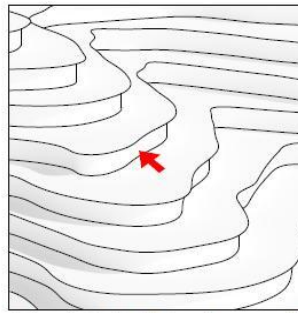
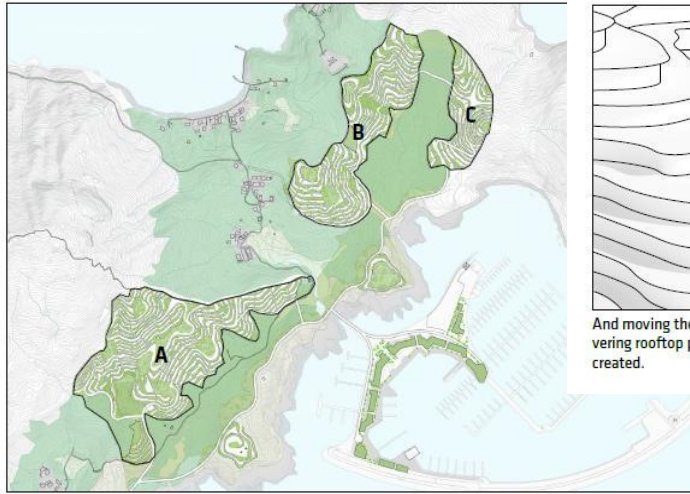
The architectural approach is based on the potentials of hilly landscape...



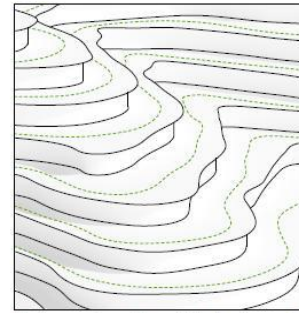
By lifting each contour line four meters vertically...



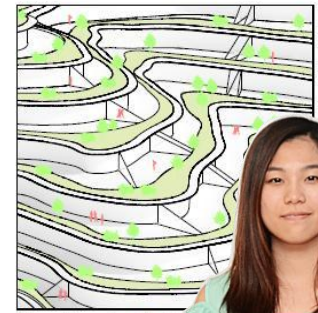
A new building envelope emerges from the slopes.



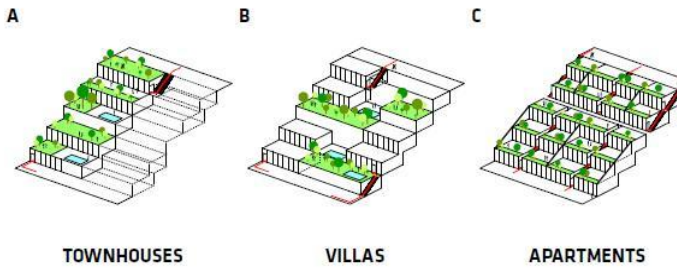
And moving the facades inwards a new cantilevering rooftop providing natural sun shading is created.



The two meter contours of the landscape define a new zone of green.



All creating unique locations, terraces and breathtaking surroundings of Lamna I.



TOWNHOUSES

VILLAS

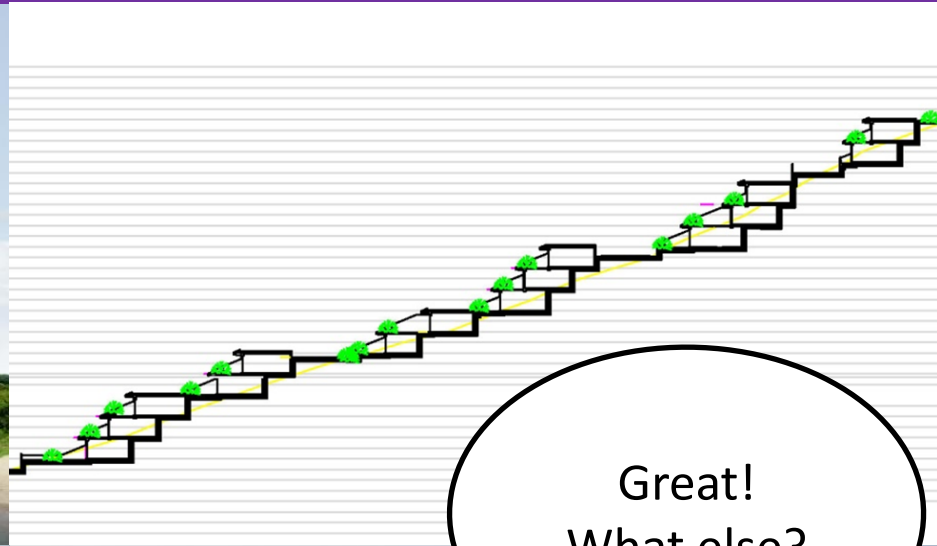
APARTMENTS

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.



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Great!
What else?

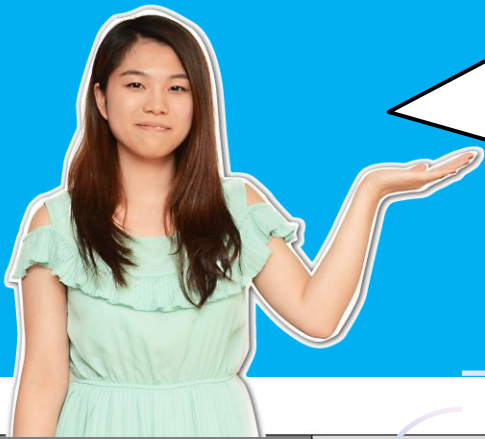


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We are creating a low carbon community at The Baroque on Lamma. We commissioned Messrs Ove Arup and Partners to study and recommend an **Integrated Sustainability Strategy** for the development.

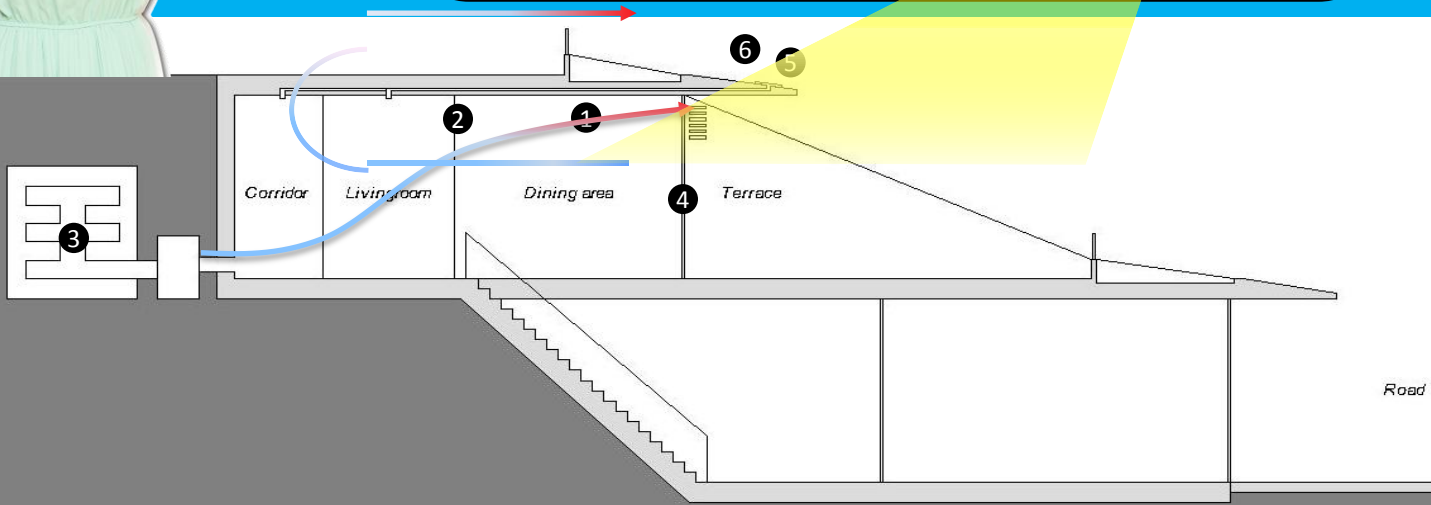
So what are the recommendations?

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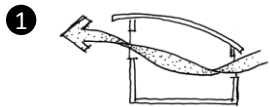


First, we reduce energy consumption in the first place by **adopting passive design measures:**

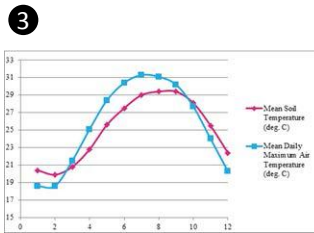
- Natural ventilation
- Reduce use of air conditioning
- Utilize geothermal mass
- Minimize solar gain
- Natural daylight



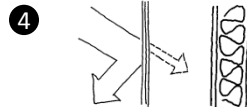
NATURAL VENTILATION



NATURAL VENTILATION



HEATING / COOLING / LIGHTING



HIGH PERFORMANCE FACADE



OVERHANGSHADING



FIBER-OPTIC DAYLIGHT

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



Second, we maximize the capture of renewable energies.

PV panels along the inner breakwater structure can provide power for the site.



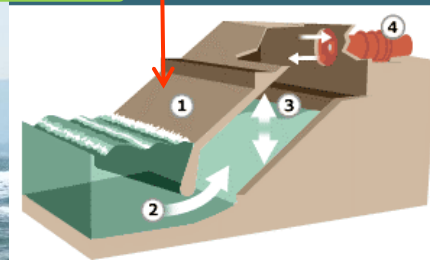
Solar Energy



Tidal & Wave Energy

Wind Energy

Different wind capturing turbines to capture wind energy onsite.



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

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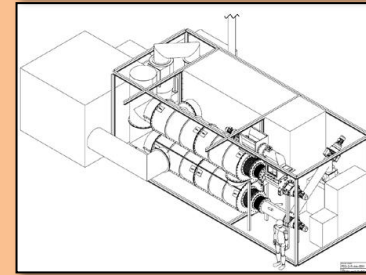
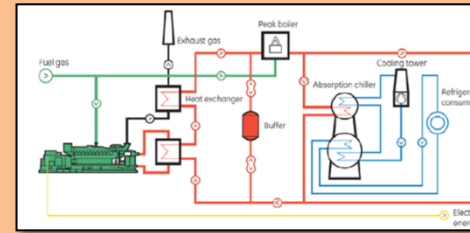
Wasted kitchen oil will be collected from marina area and hotel and converted to bio-diesel either on-site or off-site to be reused as clean fuel for tri-generation plant for district heating and cooling in the project site.

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

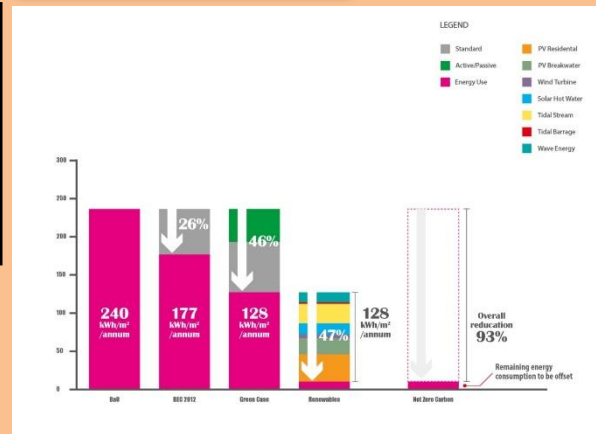
The Mikania is an invasive species and their fast growing nature is a threat to local biodiversity. We are currently studying the possibility of turning it into an energy source.

Wasted oil from yachts can be another energy source.

All in all, we can substantially reduce our reliance on fossil fuels.



Third, we are looking into other means.



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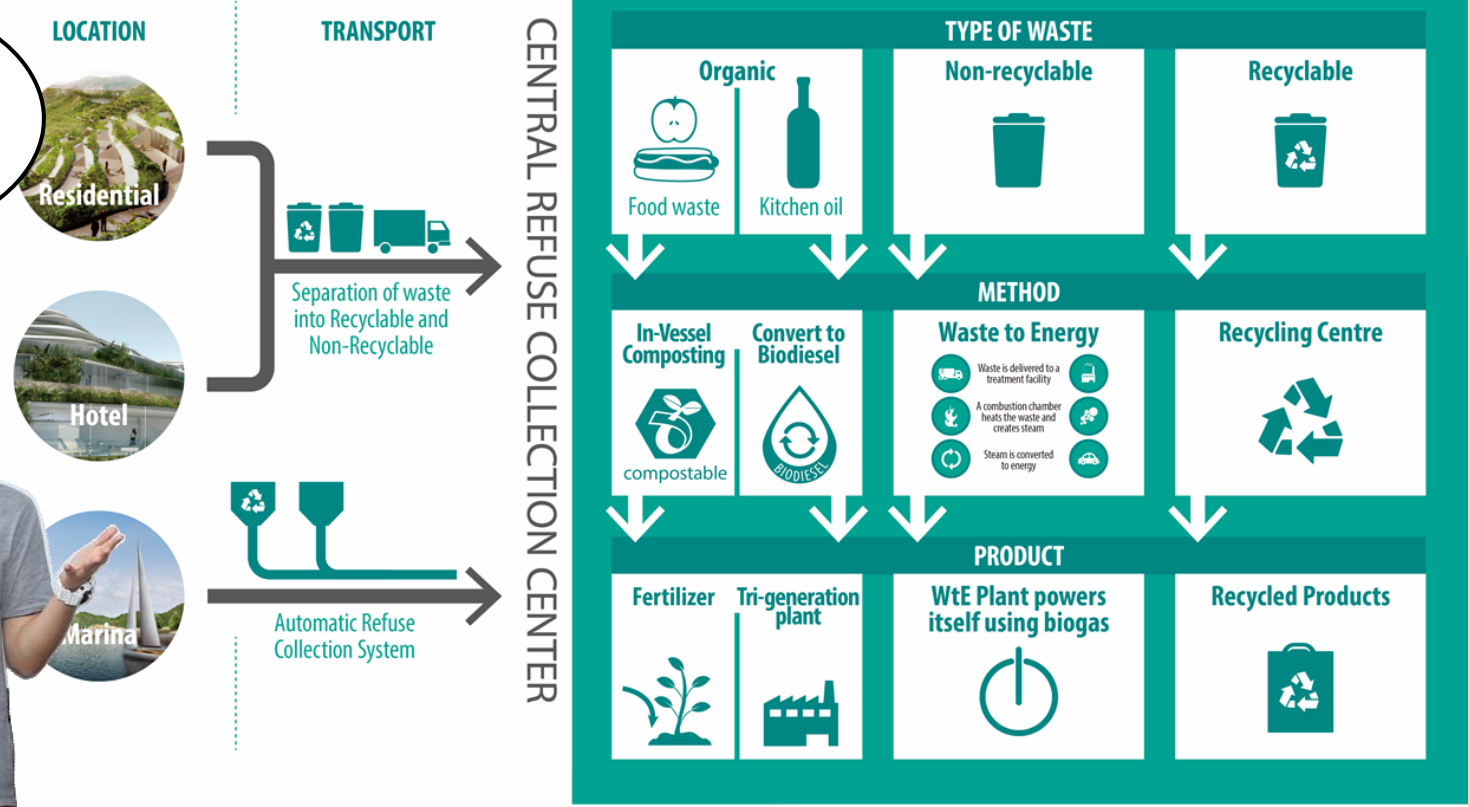
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There are three main processes:

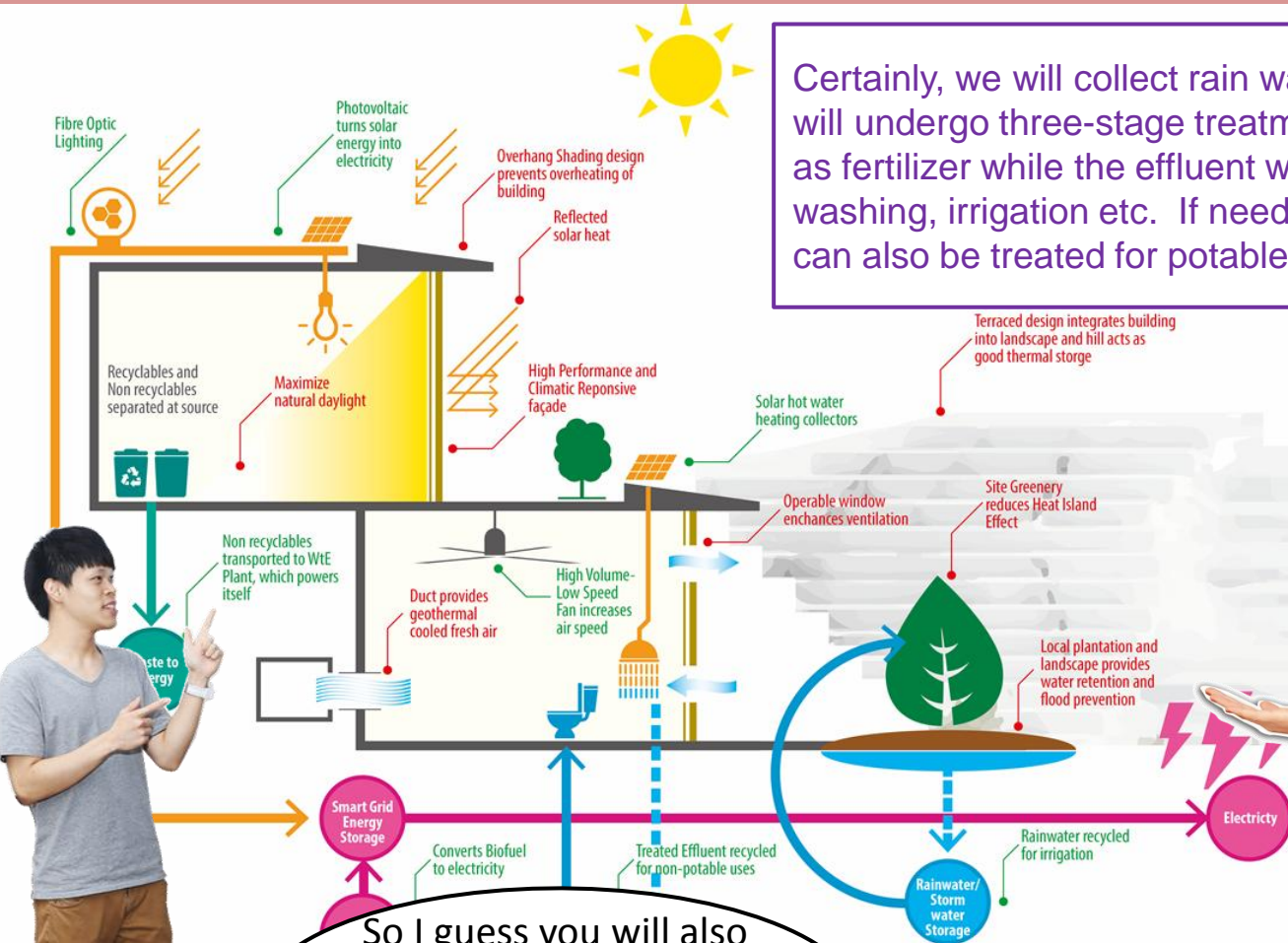
1. Recyclable waste will be sorted for recycling;
2. Organic waste will be composted for fertilizer, fish food or other uses such as energy cubes;
3. Where possible, non-recyclable and non-organic waste will be incinerated for energy, and so can yachts' waste oil.



Fantastic! So how do you deal with the wastes?



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Certainly, we will collect rain water for reuse. Waste water will undergo three-stage treatment. The slug will be used as fertilizer while the effluent will be used for flushing, washing, irrigation etc. If needed, the rainwater collected can also be treated for potable use.

So I guess you will also have plan for fresh water and waste water, right?

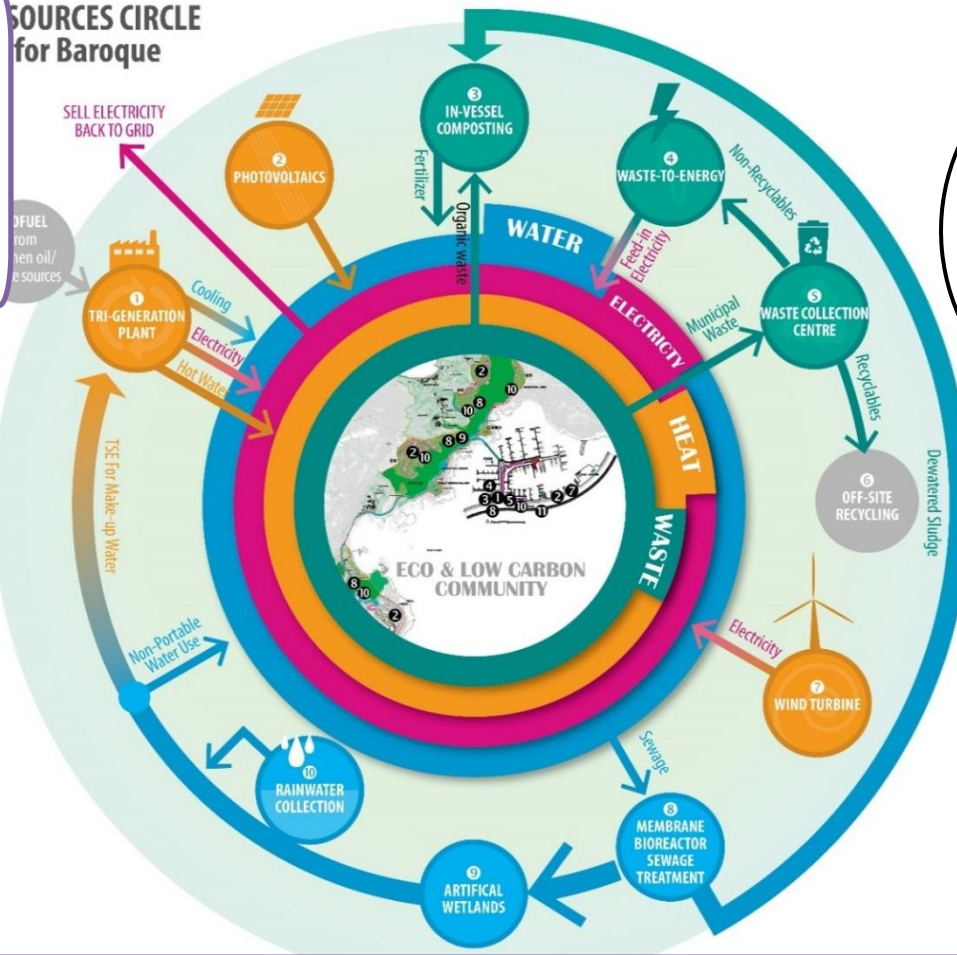


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So this is a summary of our integrated sustainability strategy.

SOURCES CIRCLE for Baroque



Wow! You are not only promoting eco-education and eco-tourism, you are actually showcasing a low carbon community!

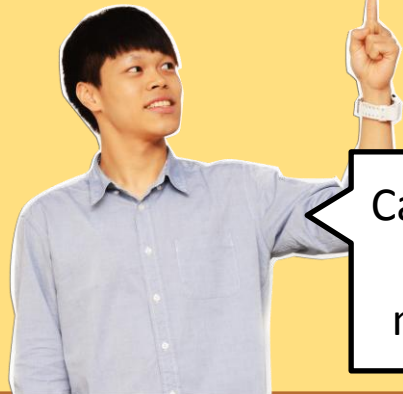
Yes. We will become a platform for **research and tests** of low carbon technologies by institutes and SMEs. The breakwater, in particular, offers unique opportunities for seawater related technologies.

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Market Place @ Marina

Restaurants, fast foods, shops, kiosks, clinics, community halls, offices, boutique hotel, hostels, police & fire services, outdoor event spaces etc .



Can we go to the marina?

Sure. The waterfront plaza at the marina will become the "town center" and "market place". Everyone can come by boat, ferry or from other parts of Lamma. We are also considering to recreate the old HK harbor-front here!



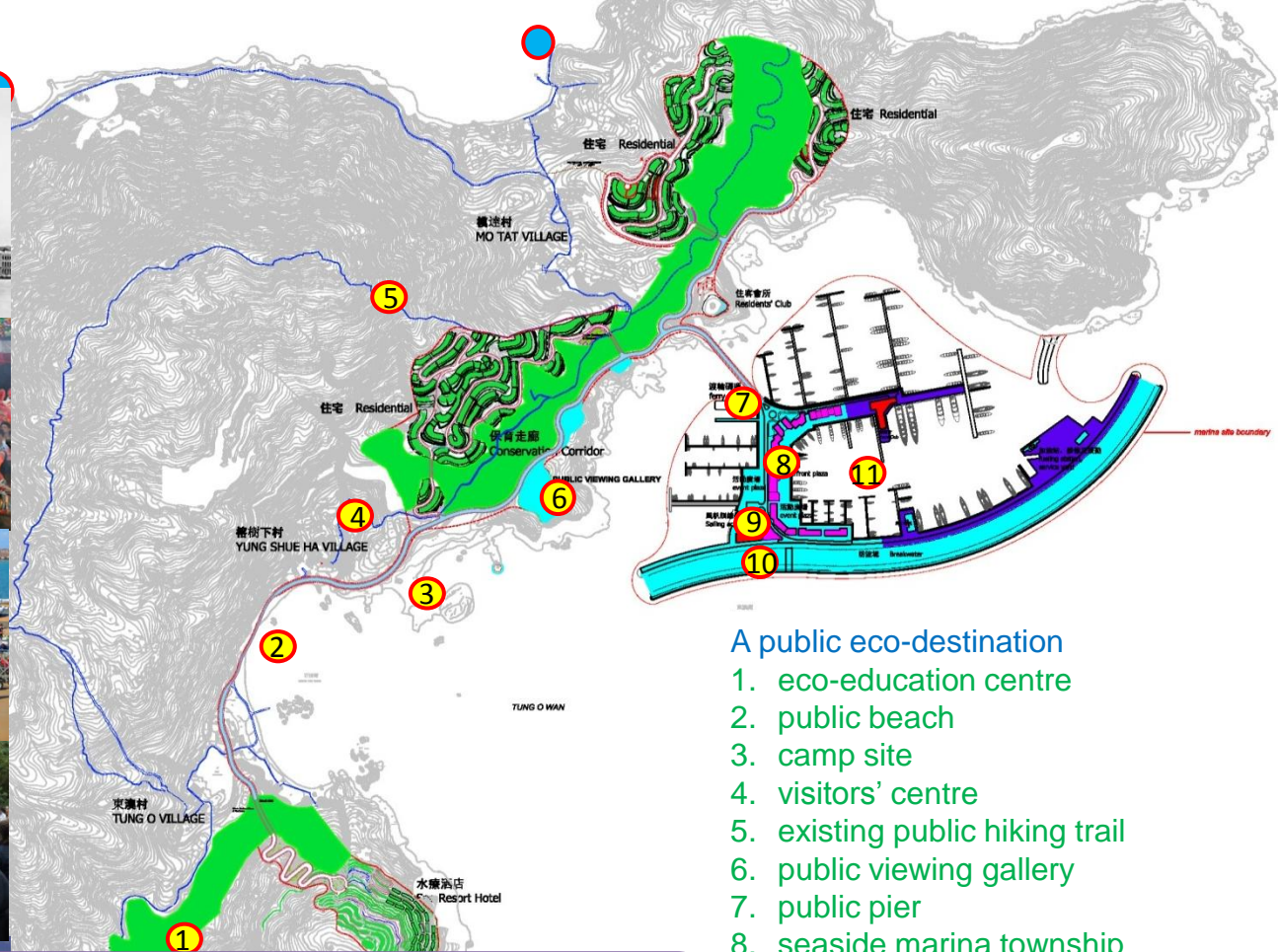
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So this is not just another rich men's garden after all!



Not at all. There is **a lot for the general public to enjoy** and explore, e.g. the marina and the breakwater, the Conservation Corridor and related facilities, the coastal walk and viewing gallery, the beach, etc.. They can come for sailing training too.




A public eco-destination

1. eco-education centre
2. public beach
3. camp site
4. visitors' centre
5. existing public hiking trail
6. public viewing gallery
7. public pier
8. seaside marina township
9. sailing academy
10. water activities centre
11. visiting yachts berths

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Revitalize Lamma. Energize HK



How can locals benefit from the project?



No local villagers will be displaced.

They can stay to share the economic revitalization.

There will be job and business opportunities. Communal facilities and amenities will be much improved, as will the public transport.

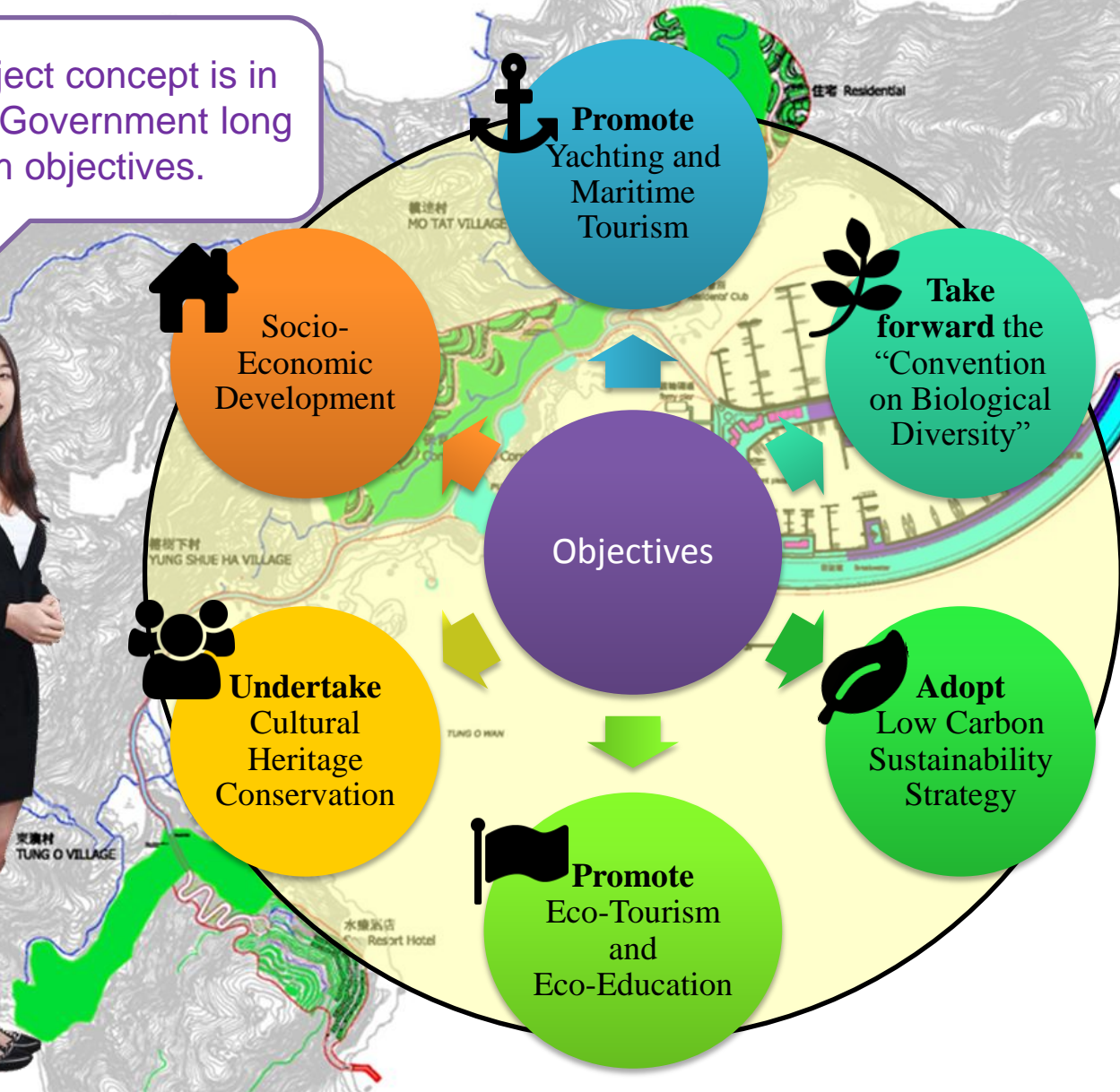
HK will have a world class **Eco-destination and a showcase low carbon community.**



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Our project concept is in line with Government long term objectives.

Fantastic!



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A Low Carbon Eco-Destination

 **Marina**
500 Berths
Yacht Club,
Sailing Academy

 **Spa-resort Hotel**
120 keys

 **Residentials**
850 units

 **19 ha Conservation Corridor:**
Conserve local biological
diversity and cultural heritage

We hope this will be a **prototype** that can evolve into a planning model that helps **to build a better and greener Hong Kong.**



The following consultants have helped to develop this **“think out of the box” idea for HK:**

AGC Design Ltd

Bjarke Ingels Group (BIG)

BMT Asia Pacific Ltd

Ove Arup & Partners

Eden Ventures Ltd in association with Waters Consulting Limited, Urban Design & Planning Consultants Limited and Bright Green Solutions

Environmental Resources Management (ERM)

Larry Tam & Associates

Mott MacDonald HK Ltd

Rider Levett Bucknall

Townland

URS Scott Wilson

Urbis Ltd

Capella Hotel Group

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