

Walking the Living Legacy: Discover the Tung O Ancient Trail

Group 1

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Chapter 1 Introduction

1.1 Scope of the study

The study focuses on the conservation and sustainable development of the Tung O Ancient Trail (TOAT).

The main objective of this study is to develop a Conservation Management Plan (CMP) that balances heritage protection, community revitalization, and responsible tourism while managing future changes to the trail's use and environment. The CMP provides a set of guiding principles and actionable strategies to safeguard the trail's heritage values and ensure alignment with the Sustainable Lantau

Blueprint and Hong Kong 2030+ vision. The study references existing Hong Kong policy frameworks and assesses the following key issues:

- a) Understanding the significance of the TOAT
- b) Assessment of existing conditions
- c) Proposed use and its compatibility in regard to cultural significance of the TOAT
- d) Establishment of Conservation Policies and Guidelines
- e) Interpretation strategy and visitor management
- f) Sustainable action plan

International charters and standards will apply throughout the adaptive reuse project.

- a) Venice Charter (1964): UNESCO - ICOMOS
- b) The Burra Charter (1999): Australia ICOMOS

1.2 Methodology

This CMP is based on desk top study of the available reports and documents, various site inspections of the physical buildings and oral history with reference to the Cultural and Historical Studies drawn by The Sustainable Lantau Office. The framework of this CMP generally follows the Burra Charter Process by adopting the format of the Conservation Plan by Dr. J. Kerr, Sydney, National Trust of Australia (NSW), 2000, and with reference to the standards and guidelines set out in The Burra Charter – the Australia ICOMOS Charter for the Conservation of Place of Cultural Significance and the Conservation Plan.

Chapter 2 Significance

2.1 Description

2.1.1 Overview

The Tung O Ancient Trail is a historic pathway that links the coastal villages of Tung Chung and Tai O on Lantau Island, Hong Kong. The trail traverses a diverse landscape, including coastal areas, hills, and agricultural land. It passes through several traditional villages that retain their cultural and architectural heritage, including San Tau, Sha Lo Wan, San Shek Wan and Sham Wat. The total length of the ancient trail is about 13 km, counting from Yat Tung Estate in the western part of Tung Chung to Tai O (東澳古道 | 綠洲 oasisrek, n.d.). The trail includes the ancient roads connecting Tung Chung in the east to Tai O in the west and its surroundings, as well as the villages in its path (Figure 1.1.1).

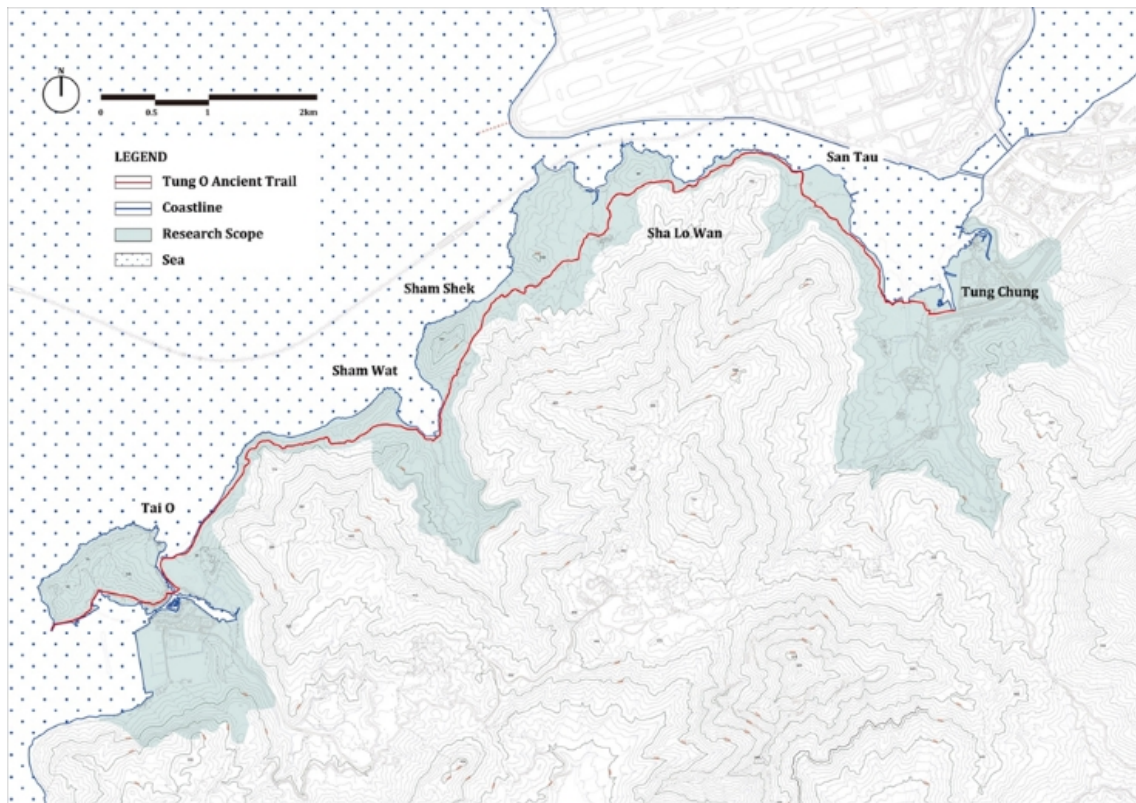


Figure 2.1.1 Tung O Ancient Trail and research scop (Edit: Jia Haowen)

The Tung O Ancient Trail links the modern urban area of Tung Chung with the traditional fishing village of Tai O. Tung Chung is more modern and urbanized, with high-rise buildings, shopping malls and advanced transport infrastructure such as the MTR and the Hong Kong International Airport. In contrast, Tai O has retained its traditional rural character and is known for its shacks, salt-making tradition and fishing culture. The villages along the way have not only retained their traditional character, but also many well-preserved tangible and intangible cultural heritages. Many village structures are preserved well, including traditional pitched-roof houses, stilt houses, composite buildings with shops and living spaces, historical village walls, irrigation ditches, and temples dedicated to different deities. Military sites like Tung Chung Fort and Battery, mining sites, and salt pans also remain. Notable monuments include Tung Chung Fort, Tung Chung Battery, and Yeung Hau Temple in Tai O. The area is rich in intangible cultural heritage, with traditional craftsmanship skills such as rice cultivation, fishing, moon cake making, shrimp paste making, and salted fish making. Festive events like the Hau Wong Festival, Hung Shing Festival, and Tai O Dragon Boat Water Parade are celebrated. The area has a long history, with archaeological sites dating back to the Neolithic period (The Sustainable Lantau Office, 2021).

The Tung O Ancient Trail traverses a variety of ecological zones, including coastal, wetland, and forest ecosystems. Along the northwestern coast, the trail features intertidal areas with mudflats, mangroves, and salt marshes, which are vital for bird species and marine life. The trail also passes through Lantau North Country Park, where subtropical forests, shrublands, and grasslands provide habitats for mammals, insects, and rare plant species. Freshwater streams and wetlands along the trail support fish, amphibians, reptiles, and riparian vegetation, which help prevent erosion and filter pollutants. Tai O, at the western end, has extensive mangrove forests and wetlands that play key roles in carbon sequestration and water filtration (Sustainable Lantau Office - Environment and Biodiversity, n.d.). However, the trail faces threats from urban

expansion in Tung Chung which could lead to habitat loss and pollution. Tourism activities can also disturb wildlife and introduce litter and noise pollution. Additionally, rising sea levels and extreme weather events due to climate change could impact intertidal and wetland ecosystems.

2.1.2 Historical Development

Tung O Area has been recorded in Ming Dynasty. Villagers of Tung Chung and fishing communities used the trail for transporting agricultural products and the old paths were paved with stone. In the 19th – 20th century, the trail was still an essential route for villagers to reach markets and neighboring communities, which also served as a patrol route for police during the colonial. In a map in 1904, there were already paths running through Tung Chung and Tai O. Then the trail gradually transferred its function from transportation into recreation (The Sustainable Lantau Office, 2021). Parts of the trail were paved in the 1970s, mainly focused on making sections of the trail more accessible for villagers. Since the 2000s, an increasing number of guidebooks and hikers have used the term “Tung O Ancient Trail” in their blogs and social media posts to describe the section of the route from Tung Chung to Tai O, and the trail was incorporated into Hong Kong's hiking trail network. In 2020, The Hong Kong Tourism Board also introduced Tung O Ancient Trail on their website. Now the trail remains a popular hiking route offering views of Lantau Island (Figure 1.2.1).

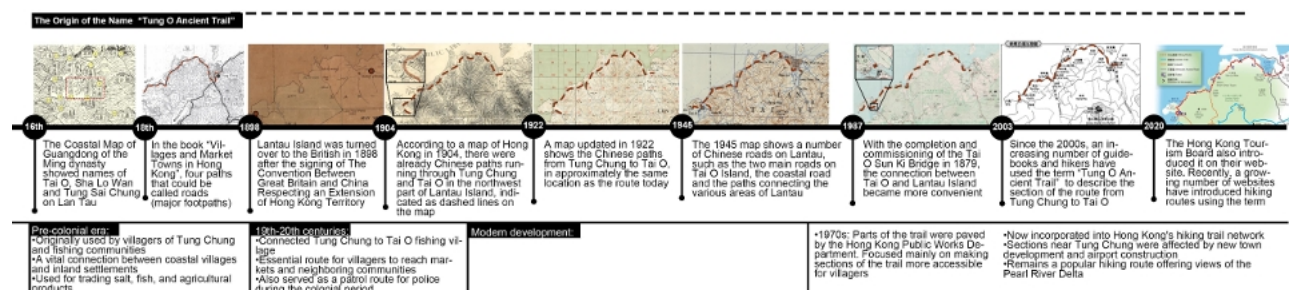


Figure 2.1.2 Historical Timeline of Tung O Ancient Trail (Edit: Jia Haowen)

2.1.3 Protection Status

The Tung O Ancient Trail has a total of 22 declared monuments and graded historic buildings (Figure 1.3.1), three of which are declared monuments and the remaining 18 are graded historic buildings. Sites of conservation importance include Sites of Special Scientific Interest, Conservation Area, Coastal Protection Area, mangrove stands, Fung Shui Woods, and butterfly hotspots (Figure 1.3.2).

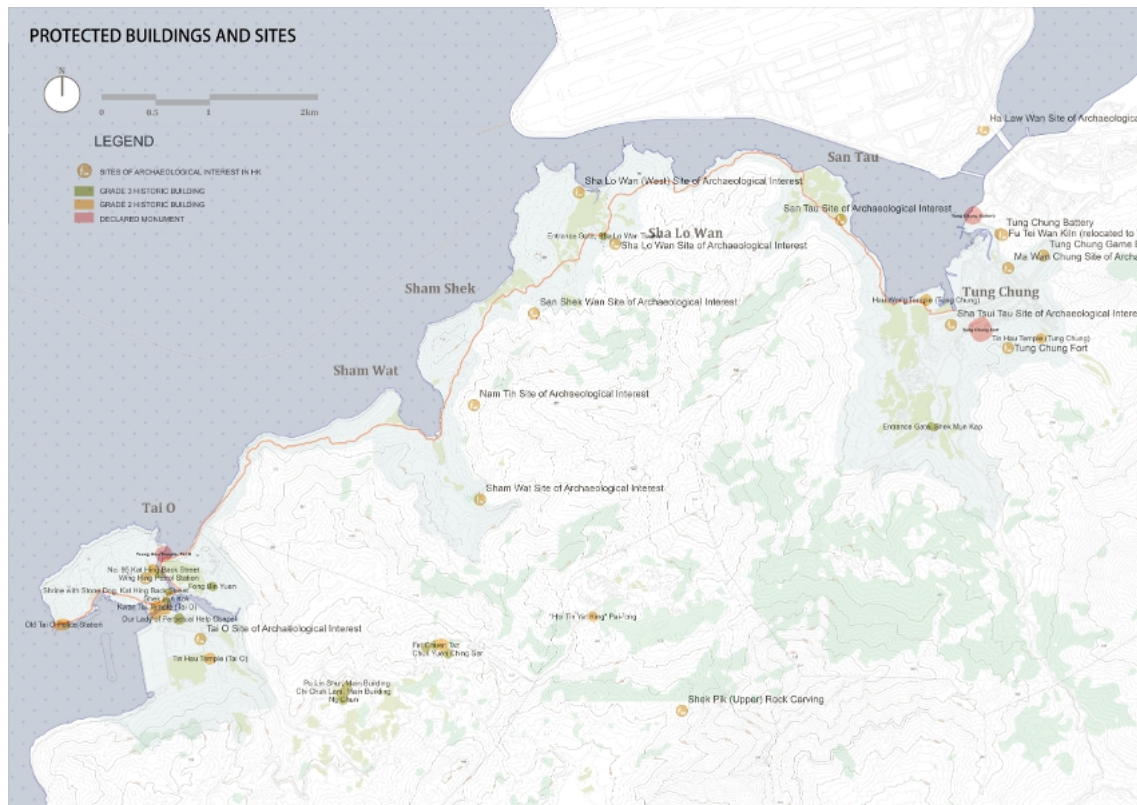


Figure 2.1.3 Declared monuments and graded historic buildings (Edit: Zhou Limao)

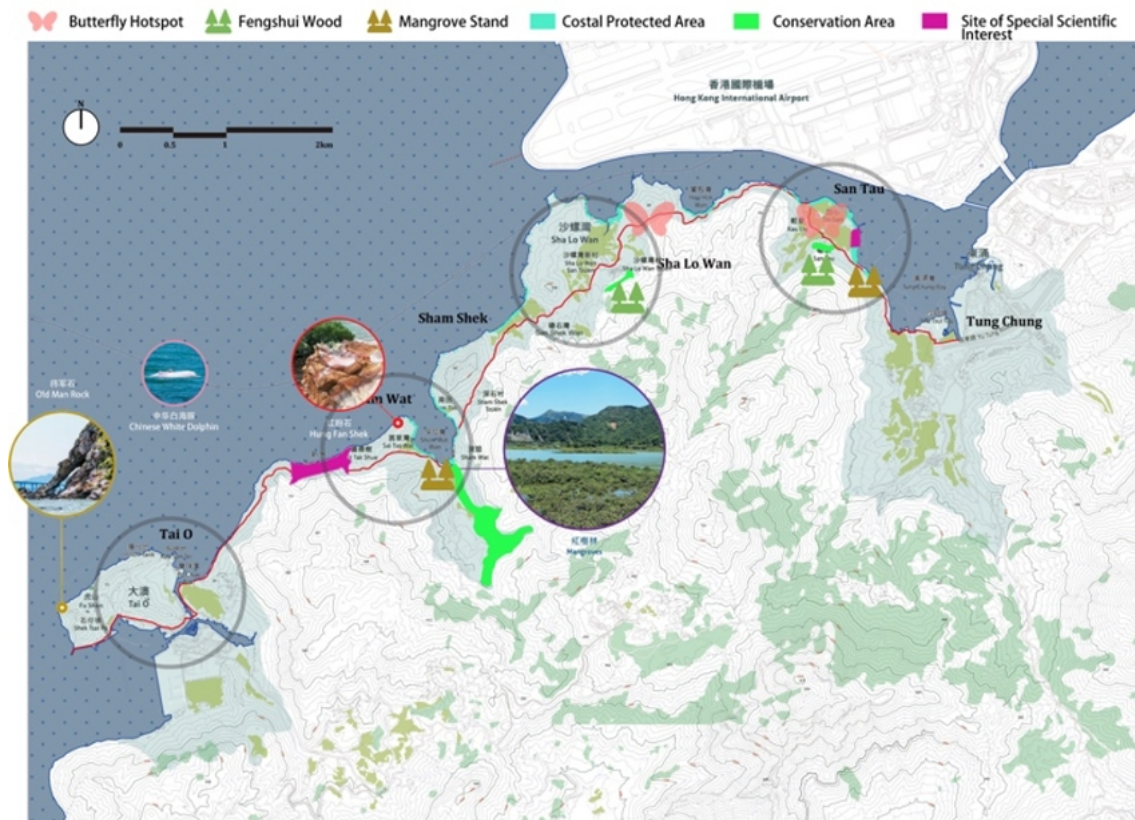


Figure 2.1.4 Sites of Conservation Importance (Edit: Zhou Limao)

2.1.4 Planning Context

2.1.4.1 Policies

a. Hong Kong 2030+ Strategy: The Tung O Trail aligns with the strategic vision outlined in the *Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030*, which aims to balance development with environmental protection. Lantau Island, particularly its western and northern parts, is designated as a conservation and recreation-oriented area. Within this framework, the trail plays a critical role in reinforcing Lantau's identity as a low-impact, nature- and culture-based recreation destination, supporting broader goals of sustainable land use, heritage conservation, and regional green tourism development.

b. Sustainable Lantau Blueprint (2017): The *Sustainable Lantau Blueprint* further strengthens this strategic direction by promoting the conservation of rural settlements, cultural assets, and natural scenery in

areas like Tung O. This contributes to creating a sustainable socio-ecological corridor that supports both local community vitality and environmental resilience.

c. Antiquities and Monuments Ordinance (Cap. 53): This ordinance provides the legal basis for protecting cultural heritage resources across Hong Kong. Along the Tung O Trail, it mandates the identification, grading, and statutory protection of heritage assets such as declared monuments, graded historic buildings, and archaeological sites. Under this ordinance, any alterations or development works near such heritage features must undergo assessment and obtain proper authorization to ensure that the historical value and integrity of these sites are maintained.

d. Policies under the Biodiversity Strategy and Action Plan (BSAP) (2016-2021): The BSAP outlines Hong Kong's policy commitments under the Convention on Biological Diversity. It emphasizes the protection of Lantau's ecosystem, ensuring minimal impact on biodiversity along the trail. It asks promoting habitat conservation, species protection, and environmentally responsible visitor management to avoid fragmentation or degradation of biodiversity.

2.1.4.2 Plans

a. Lantau Conservation and Recreation Masterplan: The Northwest Lantau Eco-Cultural Corridor is proposed to upgrade Tung O Ancient Trail and revitalize the villages along the trail (Figure 1,4,1).



Figure 2.1.5 Lantau Conservation and Recreation Masterplan (Source: Sustainable Lantau Office)

b. Lantau Trails and Recreation Plan: Two major leisure and recreation nodes (Tai O and Tung Chung)

and part of North Lantau Biking Network and Round-the-Lantau Route are along the trail (Figure 1.4.2).

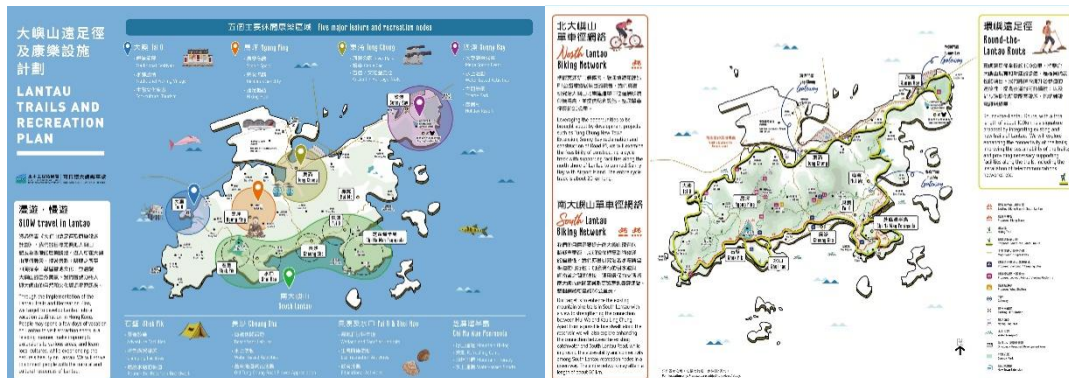


Figure 2.1.6 Lantau Trails and Recreation Plan (Source: Sustainable Lantau Office)

2.1.4.3 Land use

The trail passes through Lantau North Country Park, which is a protected area aiming to conserve the natural environment and governed by the Country Parks Ordinance (Cap. 208). There are also mangrove areas along the trail. Some areas along the trail are designated for agricultural use. The trail connects traditional villages such as Tai O, which are categorized as rural settlement (Figure 1.4.3).

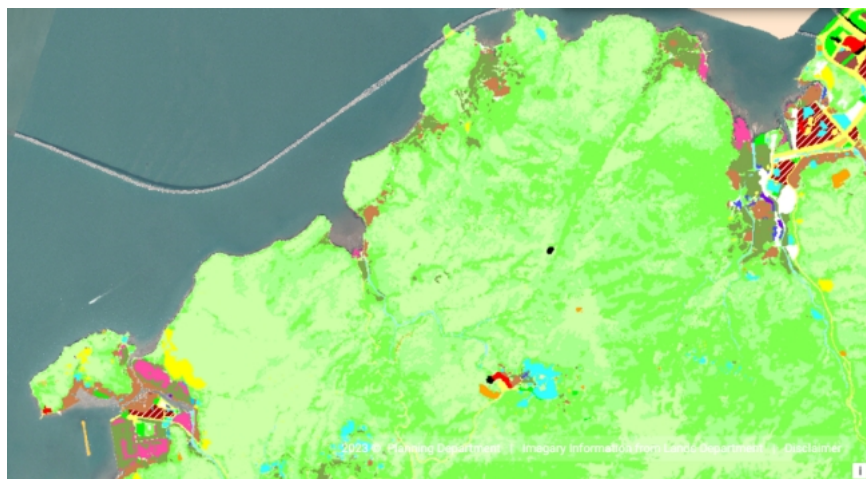


Figure 2.1.6 Land Utilize in Tung O Area (Source: Hong Kong Planning Department)

2.1.4.4 Zoning

The zoning of Tung O Ancient Trail and its surrounding areas is governed by statutory Outline Zoning Plans (OZPs). Large sections of the Tung O Trail under conservation zones such as “Conservation Area” (CA) and

“Green Belt” (GB). Certain areas are designated as “Recreation” (REC) to encourage eco-tourism and outdoor activities. Villages along the trail are zoned for “Village Type Development” (V). Sections of coastal areas are zoned as “Coastal Protection Area” (CPA) to safeguard the shoreline from development and maintain ecological integrity(Figure 1.4.4).

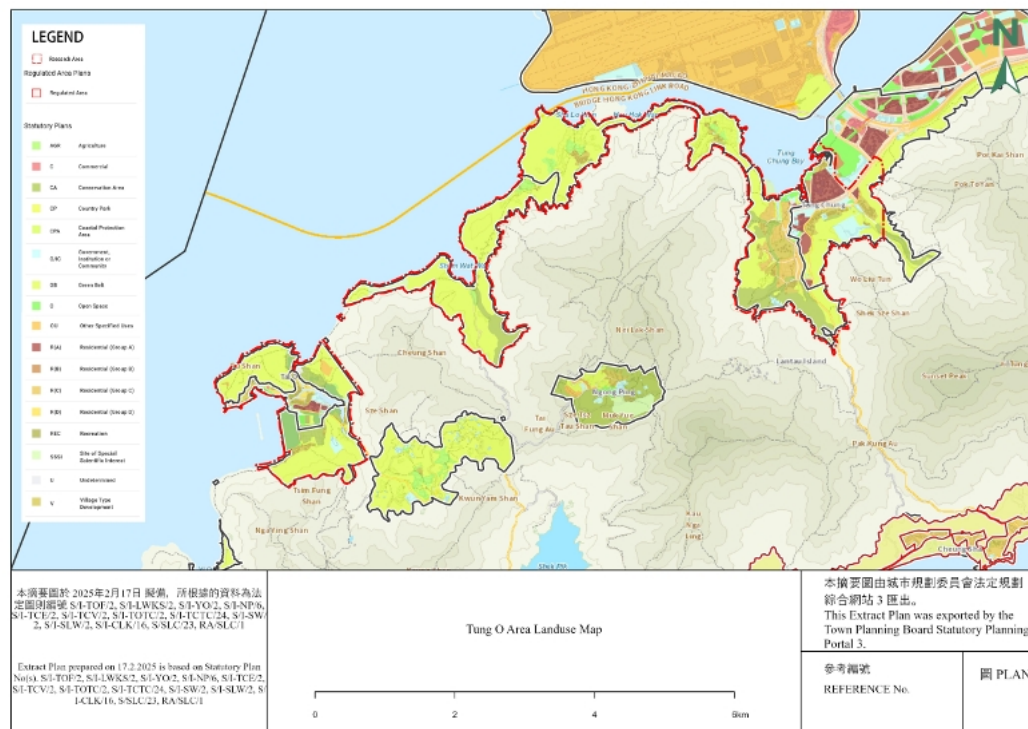


Figure 2.1.7 Outline Zoning Plans of Tung O Area (Source: Hong Kong Town Planning Board)

2.2 Statement of Significance

2.2.1 Overall SoS of the Site

The Tung O Ancient Trail holds significant heritage value as a historical, cultural, and social connector. As a vital commercial and transport link, it has long fostered economic, cultural, and social interactions among villagers and now serves as a gathering place for hikers, nature lovers, and heritage enthusiasts. The trail embodies the rich heritage of Lantau Island and Hong Kong, preserving archaeological sites, historic villages, and traditional customs that provide a living record of the region's rural past.

The trail showcases Hong Kong's rural heritage through temples, ancestral halls, and shrines that reflect local traditions, and preserves intangible heritage such as fishing, agricultural, mining, and salt-making practices, as well as festivals and religious ceremonies. The trail's archaeological remains and diverse ecosystems provide invaluable research opportunities in history, biodiversity, and environmental conservation, supporting rare species such as the Chinese white dolphin, horseshoe crabs, and mangrove forests. The scenery of the South China Sea, lush forests, sandy beaches, and traditional villages along the trail create a visually stunning landscape that continues to inspire visitors.

2.2.2 Values

2.2.2.1 Historic Value

Although the name Tung O Ancient Trail has only existed for a few decades, the trail has been in existence for centuries as a major route for the movement of communities on Lantau Island and has significant historical value. Beginning in Tung Chung and ending in Tai O, the trail connected villages scattered across Lantau Island. For centuries, the TOAT was an important link that facilitated trade, communication and transportation between the east and west of Lantau before the development of modern infrastructure. To this day, it still plays an important role in linking the villages along the route with each other and with external transportation.

2.2.2.2 Social and Spiritual Value

In contrast to the expansion of Hong Kong's urban areas, the surrounding areas of Lantau Island remain relatively unspoiled, and the Tung O Ancient Trail serves as a social link for the local community. Although not as heavily traveled as other heritage sites, and used today mainly by hikers and eco-tourists, the trail remains an important link between villages. As the only road connecting the scattered villages on northern Lantau Island, it still plays an important role in transportation nowadays. Today, the trail has become a shared

public space, deeply rooted in the cultural memory of the community, and its preservation has enhanced the sense of identity of the local residents.

The trail passes through several local temples and shrines where ancestor worship and other spiritual practices were and are still practiced. It forms part of the wider spiritual landscape of Lantau Island, and to this day the local beliefs of Hau Wong Festival and ancestor worship are still recorded through the trail.

2.2.2.3 Aesthetic Value

Due to the abundance of species and the many types of natural landscapes in its pathway, the trail has a rich and unique landscape that has significant aesthetic value. The natural beauty of the route combined with the historic and cultural landmarks creates a sense of tranquility and harmony. The interplay between natural and man-made landscapes enhances the aesthetic appeal of the trail.

2.2.2.4 Scientific Value

The Tung O Ancient Trail passes through diverse ecosystems, including woodlands, coastal areas, and agricultural landscapes, along with several Sites of Special Scientific Interest (SSSI) and habitats of rare, protected species such as Romer's Tree Frog, Brown Fish Owl etc. . This ecological diversity offers valuable insights into Lantau Island's biodiversity and serves as a corridor for studying the interactions between various habitats and the support of endemic and rare species. Additionally, the trail is crucial for examining the impact of human activities, particularly traditional agricultural practices, on soil quality, water systems, and local ecosystems.

2.2.2.5 Integrity and Authenticity

The various components of the Tung O Ancient Trail vary markedly in scale, character and the natural or cultural features they contain. The trail itself spans a variety of environments, from rugged mountain passes to coastal sections, each with unique features that reflect the natural landscape and the human activities that

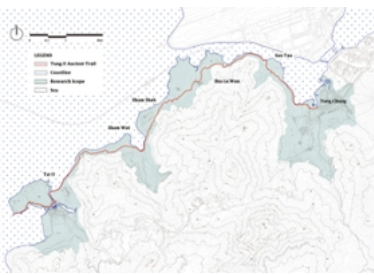
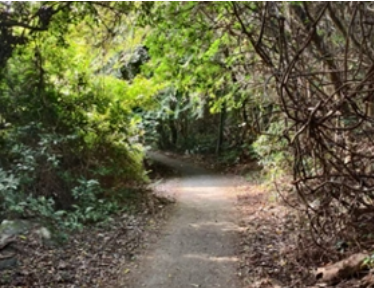
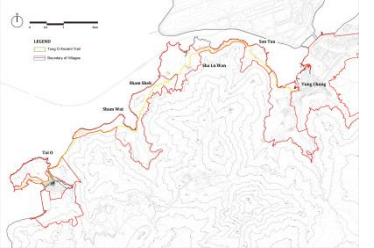
shaped the route. The preservation of these sections varies, but together they represent the historical trajectory and cultural significance of the Tung O ancient trail. Whether it is the structure of the road network that has not undergone major changes, the piers, or the adjoining villages and preserved village houses, each section illustrates the integral role that the ancient route played in connecting different communities and facilitating island-wide trade and exchange. Many of these attributes, including the surrounding natural environment and architectural elements, are still recognizable and in a relatively good state of conservation, ensuring the continued coherence and authenticity of the ancient trail.

The Tung O Ancient Trail, connecting Tung Chung and Tai O on Lantau Island, has historically served as a vital transportation and trade route. While its form has evolved due to natural and human changes, its essence remains intact. Portions of the original flagstone paths and rock formations reflect traditional building techniques used by local communities. The trail's structure and the associated temples and shrines have largely remained unchanged, preserving its primary function of facilitating the movement of people, goods, and ideas. Initially a local route for villagers, it has adapted to serve tourists and hikers while still linking various regions and cultures. Today, it remains the only pathway connecting villages along the route. The trail's authenticity is further supported by rich historical documentation and oral traditions, underscoring its significance in the cultural heritage of the area.

2.2.3 Character-defining Elements

The character-defining elements of the Tung O Ancient Trail relate to key components, including form, location, spatial configuration and cultural associations, which contribute to its heritage value. These elements reflect the historical functions and environmental context of the Lantau area.

CDE	Photo	Related Values	Level of significance
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Setting: The Tung O Ancient Trail links the towns of Tung Chung and Tai O. It reflects its historical function as a transportation route through natural terrain, serving as a crucial connection for local communities.	 Figure 2.3.1 Draw by Jia Haowen	Historical value	High
Pathway form: The layout of the trail, with its gradual ascents and descents, reflects the topographical challenges faced by early travelers. The configuration of the roads reflects the historic need for steep and rugged landscapes that accommodate the natural contours of the landscape while facilitating travel.	 Figure 2.3.2 Photoed by Weng Xintong	Historic value	Moderate
Mileposts and directional markers (new): Often carved from stone or wood, served as guideposts for travelers along the trail.	 Figure 2.3.3 Photoed by Weng Xintong	Social value	Moderate
Coastline: The coastline along Tung O Ancient trail reflect the traditional life of local residents, such as fishing and water transportation. Parts of coastline are with high biodiversity and most of the coastline lies in Coastal Protected Areas. The coastline also has good views for sightseeing.	 Figure 2.3.4 Photoed by Jia Haowen	Scientific value Asthetic value Social value	High
Old villages along the trail: Villages are key historical markers that demonstrate the road 's role in connecting rural communities. Different villages have their own cultural characteristics, which		Historic value Social value	High

together constitute and shape the overall cultural undertone of the trail.	Figure 2.3.5 Draw by Jia Haowen		
Folk beliefs and festivals: The villagers along the TOAT have several different Chinese traditional beliefs, so there are many different temples, shrines and other religious buildings in various locations. These show various folk cultural in this area.	 Figure 2.3.6 Photoed by Weng Xintong	Social value Spiritual value	Exceptional
Traditional architecture: Traditional housing and temples show unique building styles on certain sections of the trail, small stone buildings, shelters, or rest stops provide respite for travelers. These structures are both functional and architecturally interesting.	 Figure 2.3.7 Photoed by Jia Haowen	Architectural value	Low
Military facilities: Lantau Island was part of Guangdong's coastal defense during the Ming and Qing dynasties, so the military facilities left behind at that time, such as gun batteries and interrogation rooms, are of great historical and cultural value.	 Figure 2.3.8 Photoed by Jia Haowen	Historic value	Low
On going use of villagers: The daily use of villagers reflects the cultural authenticity. Until now, the TOAT is still an important transportation channel for villagers, and it still bears the important responsibility of mutual communication and external transportation for each village today.	 Figure 2.3.9 Photoed by Jia Haowen	Social value	Exceptional

Different ecosystems: Various ecosystems along the trail such as woodland, shrubland, mangrove, farmland and streams have ecological function and enrich the view along the trail. There are animal species having important functions in the balance of ecological environment. They can be scientific interest species and environmental indicator species.	 Figure 2.3.10 Photoed by Jia Haowen	Scientific value Asthetic value	Moderate
Piers: The piers serve an important role in water transportation for trading and people communication, which are used through many years. They played a role in cultural interactions between indigenous populations and Han settlers, contributing to the area's rich cultural tapestry.	 Figure 2.3.11 Photoed by Jia Haowen	Social value	High
Spiritual landscapes: The landscapes such as cemeteries, tombs and Fengshui forest along the trail are links with ancestors, showing the harmony of people and nature, deep cultural meanings and spiritual awareness.	 Figure 2.3.12 Photoed by Chan Harvey	Spiritual value	Moderate

Chapter 3 Assessment

3.1 Condition of property

3.1.1 Ecological Condition

The natural landscapes of TOAT have largely retained their original state, offering exceptional natural and geographical scenery. The trail area features dense and well-preserved vegetation, which not only enhances its aesthetic value but also provides critical ecological services to the local ecosystem. Post-1960s, As a result of the creation of reservoirs, river flows have been drastically reduced, which has become one of the major causes of agricultural decline.

The Tung O Ancient Trail area also boasts rich biodiversity. Its coastline is intricate, marked by several bays and inlets that historically supported human activities like fishing and salt production while fostering ecological diversity. Representative endemic species of conservation importance include the Chinese White Dolphin, Romer's Tree Frog, and Horseshoe Crab (including juveniles). Notably, the Chinese White Dolphin in Tai O has become a tourism highlight, with boat tours organized for sightings. These species are currently under the conservation framework of the Sustainable Lantau Office.

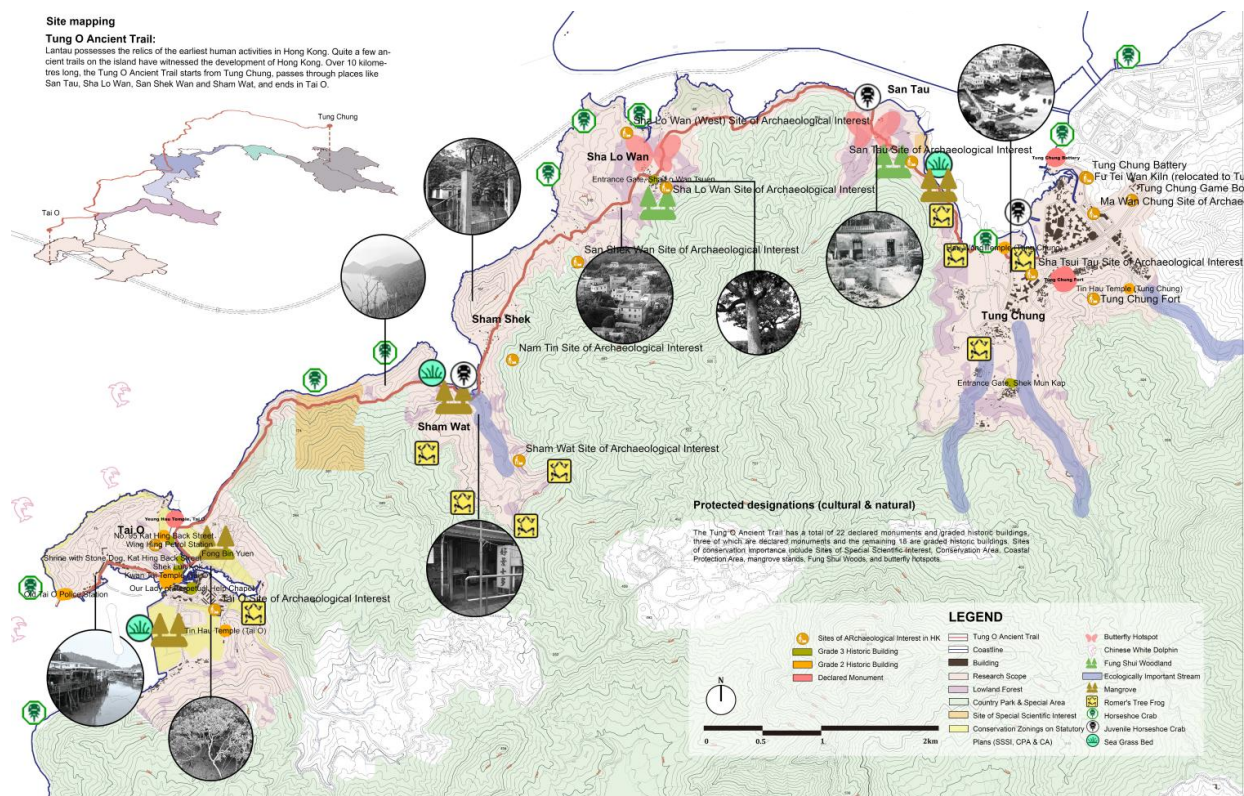


Fig.3.1.1. Ecological features in Tung O Ancient Trail (Edit: Jia Haowen)

3.1.2 Built/Urban Fabric Condition

The trail is lined with 21 declared monuments and graded historic buildings, including three declared monuments—Tung Chung Fort, Tung Chung Battery, and Tai O's Yeung Hau Temple—and 18 graded historic buildings. Archaeological sites are also widespread along the trail, spanning Sham Wat, Sham Shek, Sha Lo Wan, San Tau, and Tung Chung. Conservation efforts by the Antiquities and Monuments Office (AMO) ensure stable preservation. Temples such as the Tin Hau Temple in Tai O and the Hau Wong Temple in Tung Chung as well as stilt houses retain traditional architectural elements.

The Tung O Ancient Trail has retained its original route for centuries. Its infrastructure reflects historical usage and value. Three pavement types are observed: mud, boulder, and reworked concrete surfaces. Currently, nearly all sections are cement-paved, except for the oldest mud and boulder paths between Sham Wat and Tai O. The mud sections consist of unmodified soil surfaces, flanked by lush

vegetation and coastal scenery but lacking service facilities. Boulder-paved paths vary in width (2–5 feet), typically laid with one to three rows of stones. These sections show relatively poor pavement conditions, with occasional damage or minor repairs. In contrast, reworked concrete sections show better preservation, accompanied by scattered amenities such as stores, rest pavilions, toilets, and restaurants, particularly near Tai O and Tung Chung.

Transportation between villages along the trail relies primarily on ferries except for the trail itself. Historically, ferry routes connected villages like San Tau, Sha Lo Wan, Sham Shek, and Sham Wat for agricultural trade with Hong Kong Island and Kowloon. However, agricultural decline since the 1960s–1970s—due to reduced water flow from reservoirs, competition from imports, rising fertilizer costs, and the closure of the Yau Ma Tei waterway—led to the discontinuation of these routes. Only the piers at Tai O, Sha Lo Wan, and Tung Chung remain operational. Urban development has introduced modern infrastructure to the area. Tung Chung has undergone transformations due to airport construction, with new roads and facilities altering its historical urban fabric.

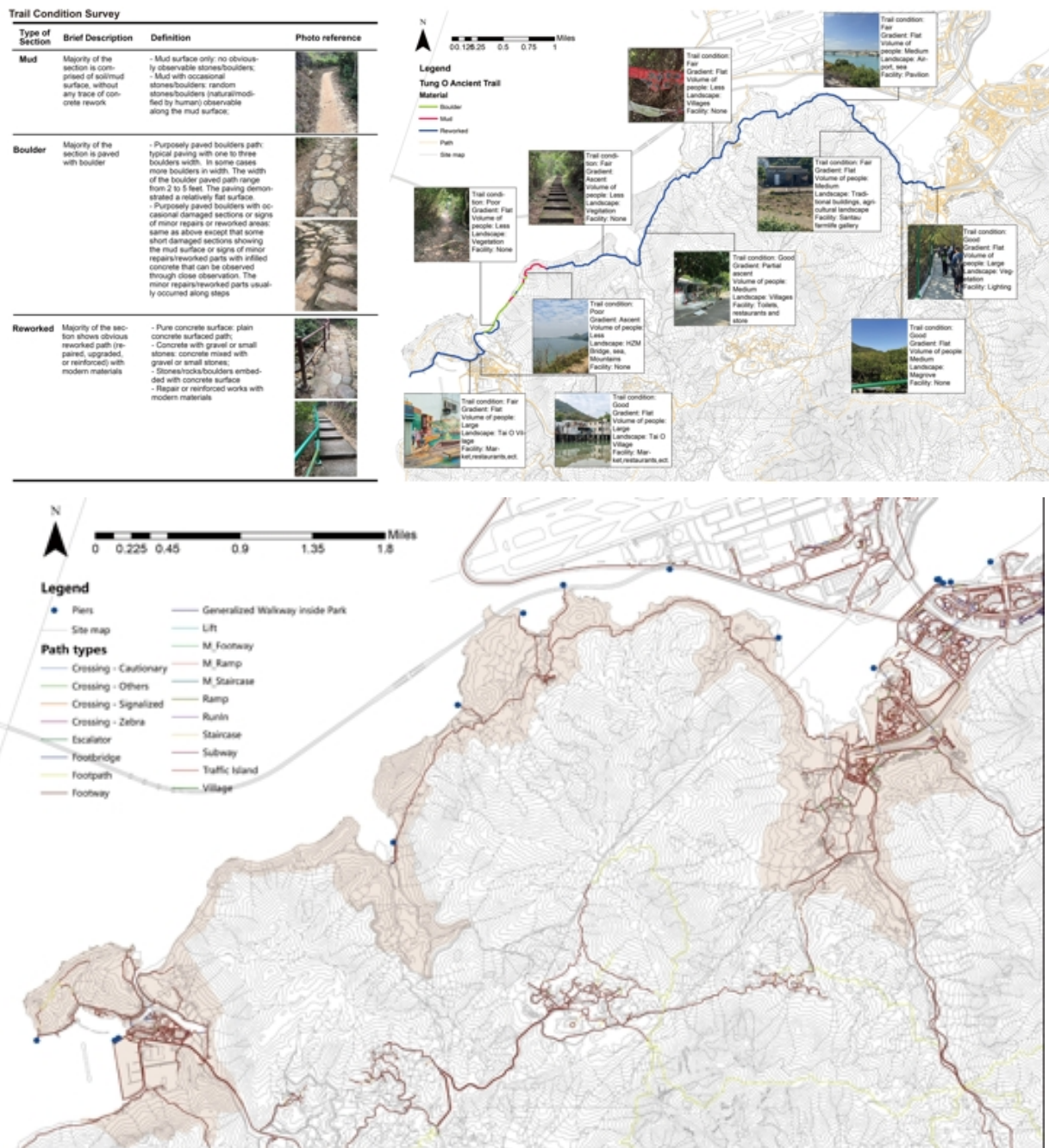


Fig.3.1.2 Tung O Ancient Trail Condition Survey (Edit: Jia Haowen)

Comparative analysis of 1963 aerial maps and 2024 spatial data reveals significant reductions in farmland area. Similarly, based on the actual area of village houses in 1973 and 2025, it can be seen that Tung Chung and Tai O, which are located at the two ends of the TOAT respectively, have increased in area, while other villages along the road have all shown a decreasing trend in area. This reflects the trend of outflow of population from the villages along the trail.

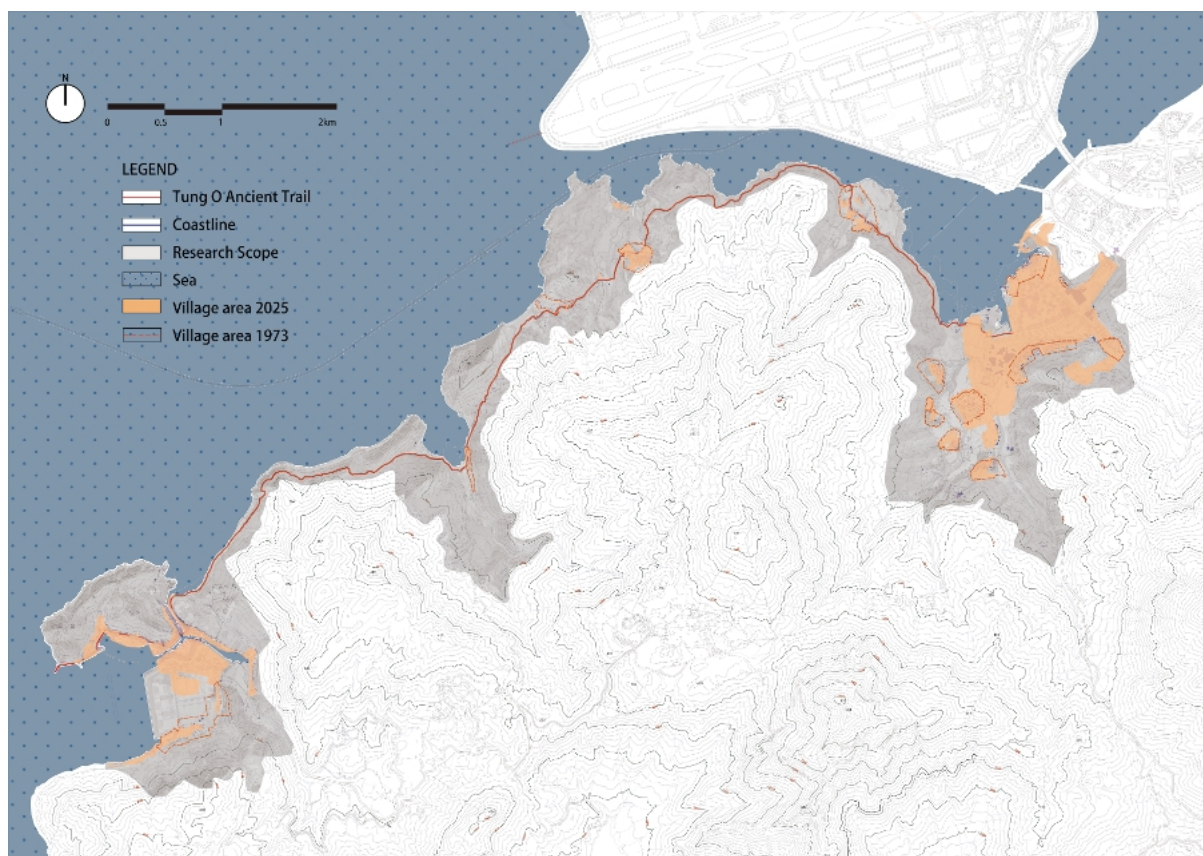


Fig. 3.1.3 Village boundary Assessment (Edit: Zhou Limao)

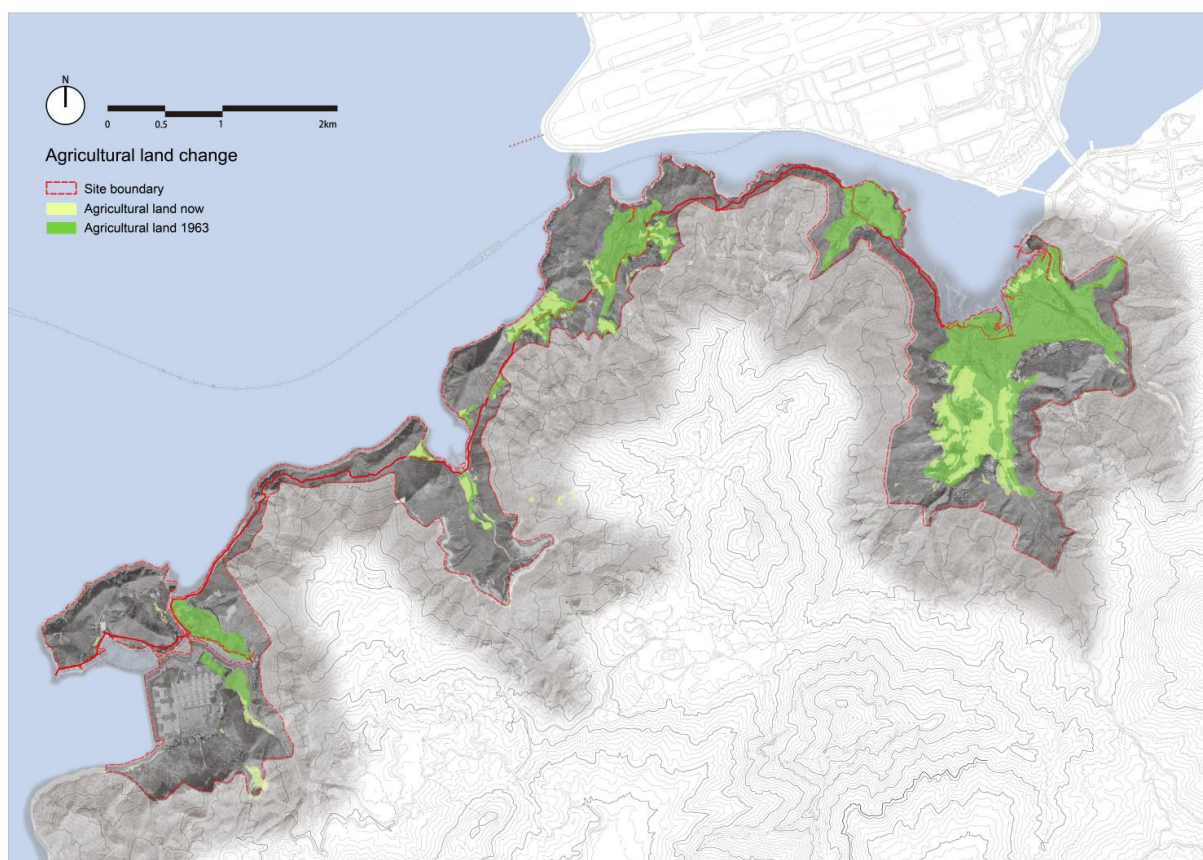


Fig.3.1.4 Agricultural land Assessment (Edit: Zhou Limao)

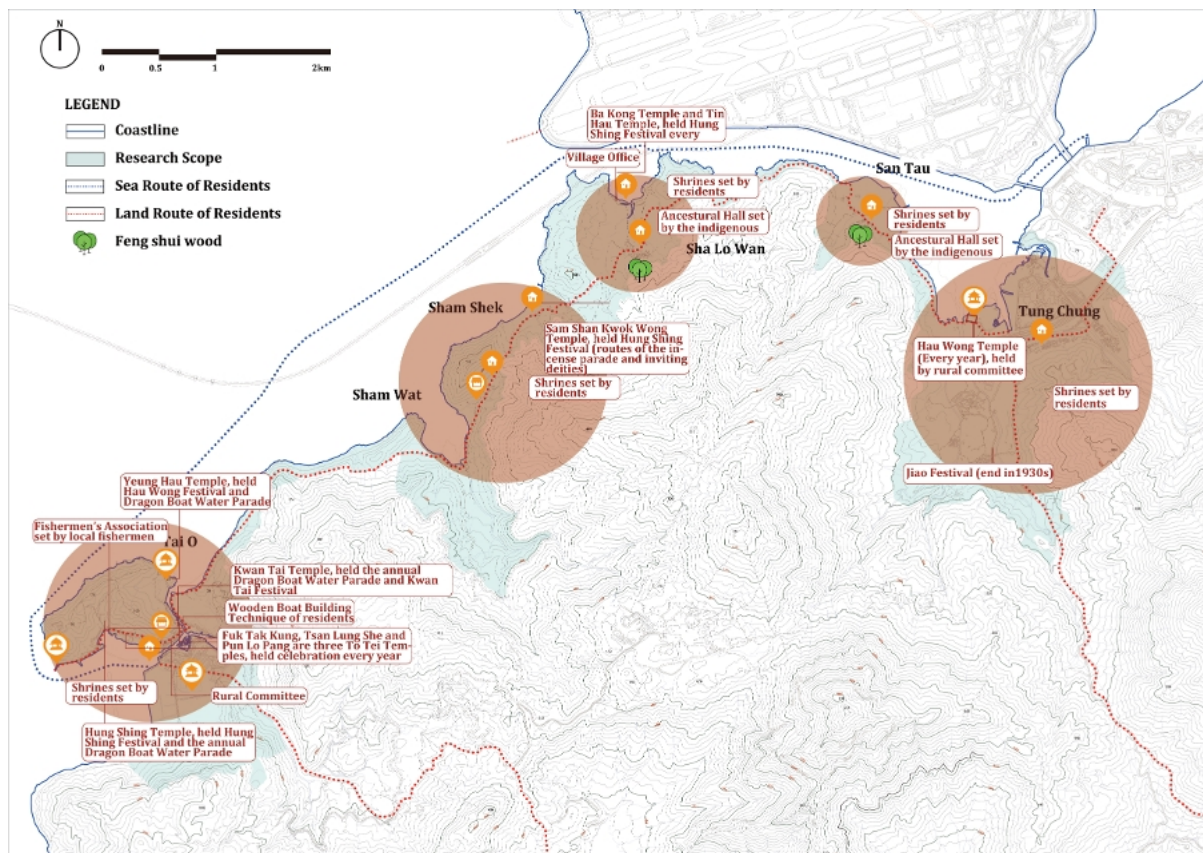
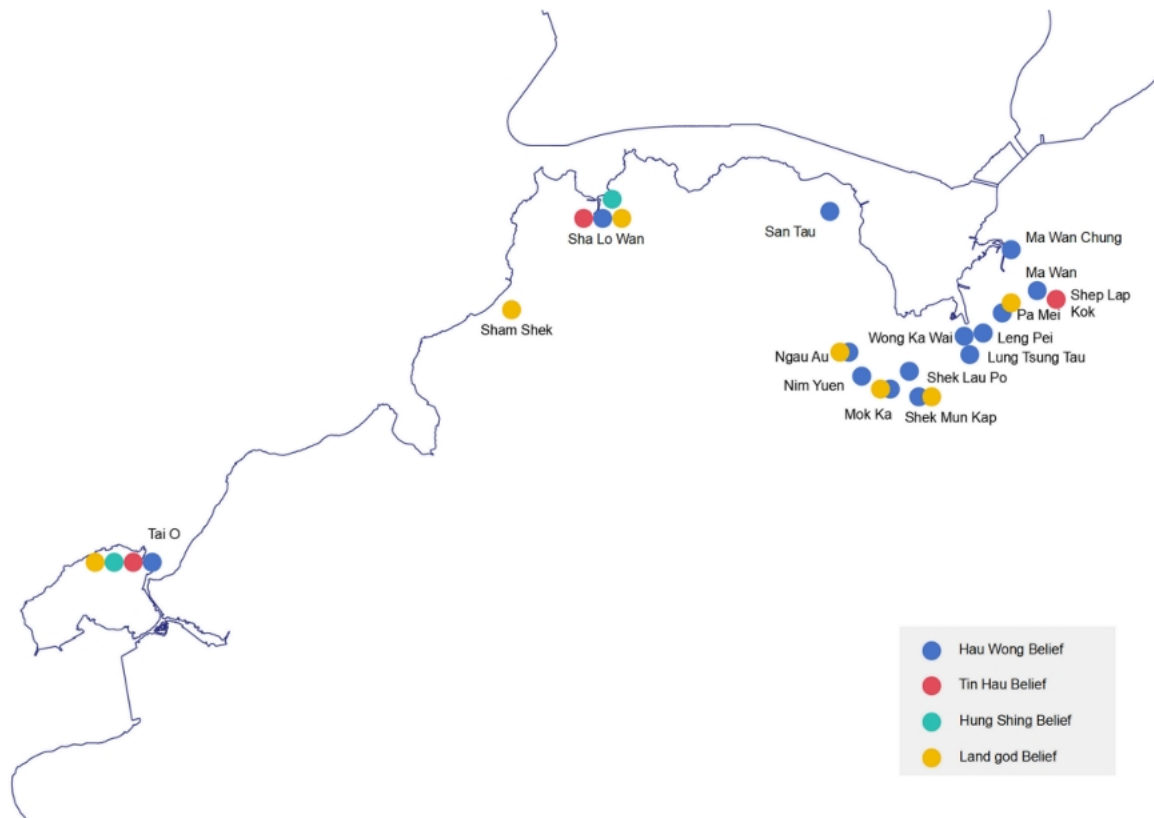
3.1.3 Social Fabric and Living Heritage Condition

The Tung O Ancient Trail serves not only as a physical link between Tung Chung and Tai O but also as a cultural corridor and famous hiking route. It facilitates trade, social interaction, and cultural exchange between residents of Tung Chung, Tai O, and neighboring villages. Visitors are drawn to the trail's natural landscapes and local heritage, with Tai O Village and the trail itself being primary destinations.

The trail plays a vital role in traditional festivals and communal activities, such as Tung Chung's Hau Wong Festival and Tin Hau Festival, Sha Lo Wan's Hung Shing Festival, and Tai O's Dragon Boat Water Parade. The Hau Wong Festival, a cornerstone of Tung Chung's communal identity, involves four days of rituals and incense offerings by villagers across the Tung Chung Valley. The Hung Shing Festival is funded collectively by villages including Tung Chung, Tai O, Sham Shek Tsuen, and Sham Kuk Tsuen, featuring Chinese opera performances (Sustainable Lantau Office, 2019). The Tai O Dragon Boat Water Parade exemplifies unity among residents and fishing organizations. Despite these traditions, social activities remain largely village-centric, with limited inter-village connectivity.

Historically, the region relied on agriculture (e.g., rice cultivation in Tung Chung) and fishing (notably in Tai O). While traditional practices persist, modernization and urbanization pose challenges to their continuity.

BELIEFS IN TOAT



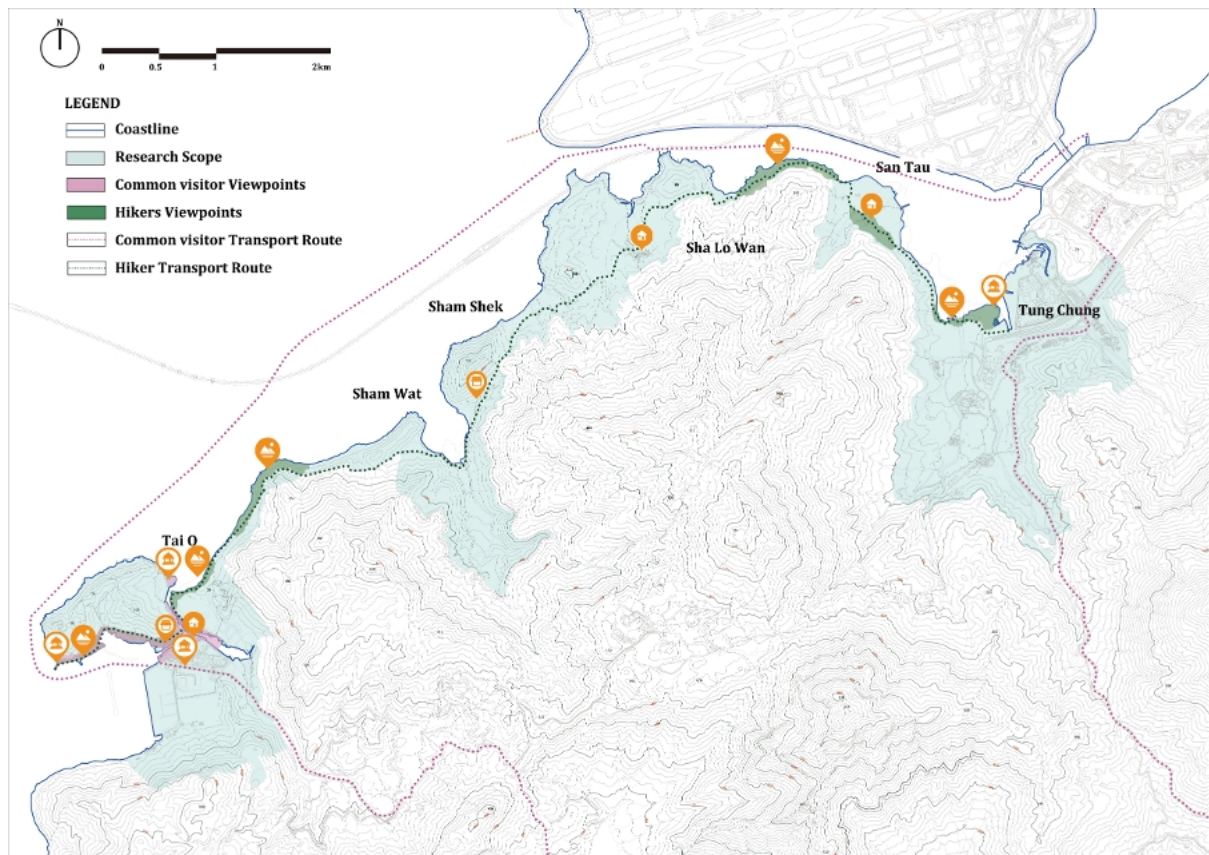


Fig.3.1.5. Social Fabric Condition (Edit:Weng Xintong and Jia Haowen)

3.2 Factors affecting property

3.2.1 Environmental Pressures

The ecosystem faces pressures from urbanization and tourism. Urban infrastructure development, including new roads and buildings, can alter the natural landscape and disrupt local biodiversity. Projects such as the Hong Kong International Airport and village relocations have further impacted the natural environment. Increased tourist activity along the Tung O Ancient Trail risks disturbing local ecosystems and historical sites if not sustainably managed.

3.2.2 Disasters and Crises

The trail area is vulnerable to natural disasters such as typhoons and heavy rainfall, which threaten traditional structures and heritage sites such as Tai O's stilt houses. Deforested hillsides are prone to

landslides triggered by intense rains, potentially burying archaeological layers. Additionally, improper development practices and human-induced crises pose risks to both built heritage and the natural environment.

3.2.3 Development Pressures

Modern infrastructure projects, notably the Hong Kong-Zhuhai-Macao Bridge and airport expansions, have significantly transformed the region. Since the 1990s, airport-related developments have replaced farmland with residential and commercial zones, altering the landscape and encroaching on historical and cultural sites.

Tourism promotion has spurred commercialization, with boardwalks and signage installed for hikers disrupting the traditional aesthetic of footpaths and exacerbating littering. While tourism generates economic benefits, it risks over-exploiting cultural resources and diluting the authenticity of traditional practices.

3.2.4 Socio-economic Pressures

The shift from traditional livelihoods (e.g., agriculture in Tung Chung and fishing in Tai O) to service-oriented economies has reshaped the region's social fabric. This transition has diminished traditional industries while forcing adaptations to new market demands.

Demographic challenges include an aging population, population outflow in villages along the central trail section, and concentration trends in economically developed areas like Tung Chung and Tai O.

These factors undermine the sustainability of traditional industries and cultural practices.

Analyses of population change in the tung o ancient trail region over the two decades 2001, 2011, 2021
 Analysis of population growth rate from 2001 to 2021

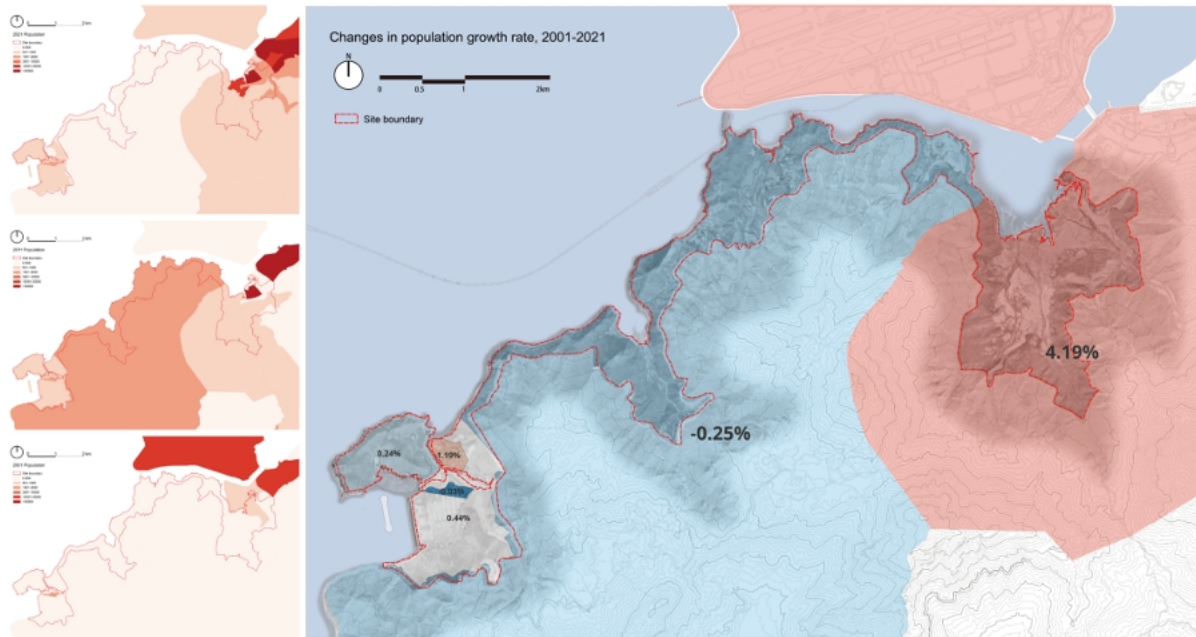


Fig.3.2.1. Analysis of demographic change (Edit: Zhou Limao)

Insufficient government resource allocation hinders comprehensive heritage conservation, leading to the priority of ecological conservation over cultural conservation.

3.3 Stakeholder concerns

3.3.1 Stakeholder mapping

Stakeholder mapping of Tung O Ancient Trail involves identifying key stakeholders, their interests, and their influence on the project.

3.3.1.1 Rightsholders

- **Local residents:** Local residents are communities with historical ties to the land and its cultural heritage. They have a strong interest in preserving their cultural heritage and ensuring their rights are recognized in any development. They can influence public perception and policy decisions through advocacy and community engagement.
- **Rural committee:** The rural committee represents the interests of local residents and manages community affairs, including heritage preservation. Their primary interest lies in the welfare of the

community and the sustainable management of local heritage sites. They can mobilize community support and advocate for local needs in discussions with authorities.

3.3.1.2 Heritage sector stakeholders

- **Lantau Conservation Fund:** This fund supports conservation projects on Lantau Island, focusing on environmental and cultural heritage. Their interest centers on funding and promoting initiatives that protect and enhance the local ecosystem and heritage. They can provide financial resources and expertise, influencing project outcomes.
- **NGOs:** Non-governmental organizations focused on environmental and cultural advocacy often play a crucial role in heritage preservation. NGOs are interested in promoting sustainable practices and protecting cultural heritage from adverse impacts. They can raise awareness, mobilize public support, and influence policy through advocacy.
- **Researchers:** Academics and researchers study the cultural, environmental, and historical aspects of the Tung O Ancient Trail. Their interest is in documenting and analyzing the significance of the trail for academic and educational purposes. While their findings can inform policy, they have limited direct influence on decision-making.

3.3.1.3 Development stakeholders

- **Civil Engineering and Development Department (CEDD):** This government agency oversees infrastructure development and compliance with environmental and heritage regulations. CEDD is focused on ensuring that development projects adhere to regulatory standards while considering heritage impacts. They have significant authority over approvals and can shape development outcomes through regulation.
- **Sustainable Lantau Office (SLO):** A government office dedicated to promoting sustainable

development practices on Lantau Island. Their interest lies in balancing development with environmental conservation and cultural heritage preservation. Their involvement in planning processes can significantly influence project direction and outcomes.

- **Investors:** Private individuals or companies looking to invest in development projects within the region. Their primary interest is in generating profit from tourism and development initiatives. They can influence project viability through funding and investment decisions.
- **Travel agencies:** Businesses that organize and promote travel experiences to tourists, including visits to the Tung O Ancient Trail. They are interested in maximizing economic benefits by attracting more visitors to the area. Their marketing strategies and partnerships can greatly influence visitor numbers and tourism trends.
- **Local stores:** Small businesses that serve the local community and tourists, providing goods and services. They seek to benefit economically from increased foot traffic and tourist spending. While they can influence local economic dynamics, their impact on broader decision-making is limited.
- **Visitors:** Visitors are tourists who come to explore the Tung O Ancient Trail for its natural beauty and cultural significance. They seek enriching experiences, enjoyment, and a connection to the local culture and environment. While they can influence tourism trends, their collective voice is less impactful in decision-making processes.



Figure 3.3.1 Stakeholder mapping of Tung O Ancient Trail (Edit: Weng Xintong)

3.3.2 SWOT Analyze of TOAT

3.3.2.1 Strengths

Rich and diverse natural landscape: The Tung O Ancient Trail traverses a mosaic of coastal, woodland, and wetland ecosystems, offering high biodiversity value and visually compelling scenery. Its natural environment provides ideal conditions for nature-based tourism and ecological research.

Strong local cultural identity: The trail passes through villages with deep-rooted Hakka and Punti traditions, reflected in local festivals, architecture, ancestral worship practices, and vernacular crafts. These cultural assets enhance the region's uniqueness and potential for heritage tourism.

Proximity to urban and transport hubs: Located near Hong Kong International Airport, Tung Chung urban area, and the proposed MTR Tung Chung West Extension, the trail enjoys relatively convenient regional connectivity. This accessibility supports the potential for low-carbon tourism and makes the area attractive to both local and international visitors.

Well-established hiking trail network: Much of the existing trail is clearly marked, of moderate difficulty, and already frequented by hiking enthusiasts. Its scenic value and walkability lower the barriers to recreational use and help promote public engagement with nature and heritage.

3.3.2.2 Weaknesses

Inadequate trail maintenance and safety risks: Several sections of the trail suffer from poor maintenance, erosion, and a lack of basic protective infrastructure such as railings or drainage. These pose safety risks, especially during the rainy season when landslides and muddy paths are common.

Ecological fragility: The surrounding environment, while rich in biodiversity, is highly sensitive to human disturbance. Without adequate regulation, increased foot traffic and tourism development could result in habitat degradation.

Underdeveloped tourism economy: Despite its potential, the trail area lacks a coherent eco-tourism or cultural tourism framework. There is limited signage, interpretive programming, or structured visitor services, resulting in low economic return for the local community.

Erosion of traditional industries and intangible heritage: Many of the traditional livelihoods such as farming, fishing, and handicrafts are in decline due to aging populations and urban migration. This threatens the transmission of local knowledge and practices tied to the trail's cultural landscape.

3.3.2.3 Opportunities

Promotion of sustainable tourism and environmental education: The trail offers a unique setting for the development of low-impact tourism models, including guided eco-tours, biodiversity walks, and school-based environmental education, aligned with broader goals such as SDG 4 and SDG 13.

Cultural tourism leveraging Hakka and village heritage: There is strong potential to develop immersive cultural experiences based on Hakka customs, architecture, and gastronomy. This could include homestays,

heritage trails, traditional craft workshops, and local culinary offerings.

Government and policy support: Initiatives such as the Sustainable Lantau Blueprint, Hong Kong 2030+, and the BSAP offer strategic and financial support for conservation, community-led tourism, and heritage revitalization. These provide a favourable policy environment for sustainable development.

Integration with regional development plans: The trail area stands to benefit from the broader economic and infrastructure development of North Lantau, including the Airport City strategy and Tung Chung New Town Extension. These initiatives can improve access, service infrastructure, and visibility if managed in alignment with conservation principles.

3.3.2.4 Threats

Pressure from urban expansion and infrastructure development: The rapid development of Tung Chung and major infrastructure projects on Lantau may encroach upon natural habitats and disrupt the ecological and cultural balance of the trail region if not carefully regulated.

Loss of cultural continuity: Continued outmigration of younger generations may lead to a decline in community capacity to maintain local traditions and contribute to heritage conservation and tourism development.

Skewed government investment priorities: Given the focus on large-scale infrastructure and economic zones, smaller-scale community and conservation initiatives may face challenges in securing sustained funding and administrative support.

Impacts of climate change and extreme weather: The area is vulnerable to sea-level rise, typhoons, and heavy rainfall, which could exacerbate erosion, damage cultural sites, and compromise visitor safety.

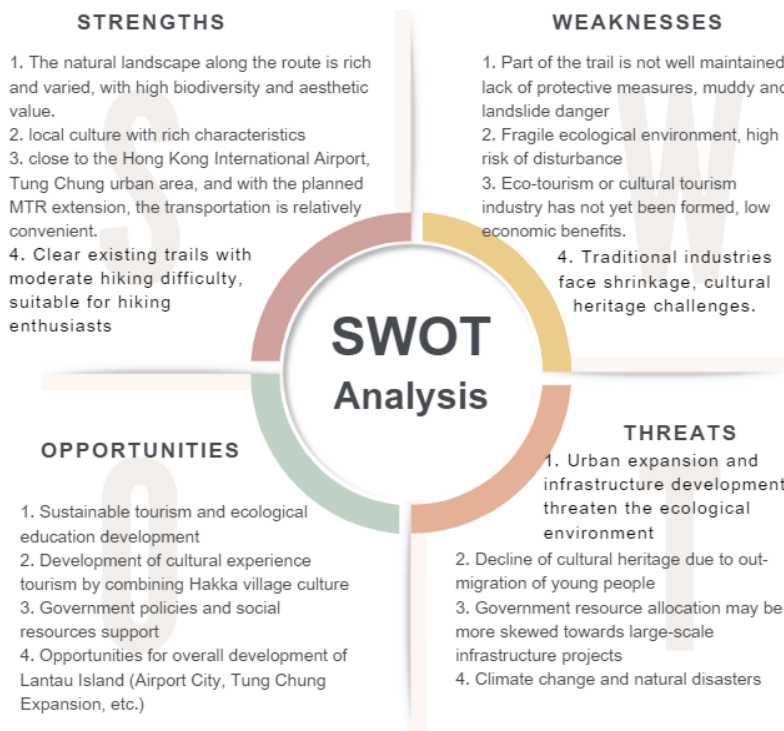


Figure 3.3.2 SWOT analysis (Edit: Weng Xintong)

3.4 Priorities for conservation / sustainable development

3.4.1 Identification of priorities, based on value identification and assessment

1. Community engagement: Villages along the trail reflect local life style and development history, the ongoing traditional activities along the trail reflect its social value. Local communities have a vested interest in the trail, both as custodians of heritage and as beneficiaries of tourism. Currently, the past function of the trail as a trade and agricultural exchange is gradually disappearing, communities along the trail are connected mainly by social activities such as traditional festivals and beliefs, which are dying out with population loss and aging. Therefore, it is vital to enhance community engagement in social connection, decision making and tradition retaining.

2. Heritage conservation: Tung O Ancient Trail is rich in built heritage and traditional culture, showing its great historic and spiritual significance. It encompasses not only the physical remnants of historical sites and artifacts but also the intangible aspects of local traditions, stories, and practices that define the identity of the

indigenous residents and the surrounding community. This priority involves implementing robust conservation measures to protect these invaluable resources from degradation caused by environmental factors, tourism pressures, and neglect. It is essential to engage local communities actively in the preservation process and develop educational initiatives.

3. Environmental conservation: The trail passes through various ecological habitats, showing important scientific and aesthetic values. The ecosystems along the trail contains rare plants and animals which contribute to biodiversity and scientific research. The sceneries of forests and coastlines also attract visitors to come for sightseeing and hiking. The overall condition of ecosystems is fair and requires close and continuous monitoring and management.

4. Sustainable tourism: Tourism is a main opportunity for the development of Tung O Ancient trail. The trail can attract visitors, contributing to the local economy while promoting cultural and environmental awareness. By promoting responsible tourism practices, visitors will gain a deeper appreciate for the unique heritage of the Tung O Ancient Trail, ultimately leading to long-term sustainability that respects both the environment and the local community's way of life.

5. Education and awareness: The trail serves as an educational resource for visitors, offering insights into local history, culture, and ecology. Currently the education facilities and information along the trail are lacking, so it is essential to develop comprehensive educational programs that provide engaging, accessible information about the trail's heritage, biodiversity, and the traditional practices of local residents.

6. Infrastructure improvement: Improving infrastructure along the Tung O Ancient Trail is crucial for enhancing accessibility, safety, and the overall visitor experience while preserving the trail's cultural and environmental integrity. This priority involves conducting thorough assessments of existing pathways, signage, and facilities to identify areas in need of upgrades or maintenance, ensuring that all improvements

respect the natural landscape and historical context. In addition, the reopening of waterways should be considered on the basis of the results of the assessment in order to establish and maintain a sustainable transportation network.

3.4.2 Risk / value matrix

1. High Risk/High Value: This quadrant identifies significant risks that threaten valuable aspects of the trail.

Risks include local population loss, ecological integrity, biodiversity, traditional practices, community connections, and the condition of piers. The most serious risk of the trail is local population loss, which poses a multifaceted risk that can undermine the cultural, social, and economic vitality of the Tung O Ancient Trail.

2. High Risk/Low Value: This section outlines risks that are considered less critical in terms of value. It includes modern infrastructure elements like new signage and small structures, as well as concerns about pathway form and the distribution of villages.

3. Low Risk/High Value: Here, the focus is on elements that hold high value but are at low risk. These include the physical state of temples and shrines, natural landscapes, traditional architecture, and accessibility.

4. Low Risk/Low Value: This quadrant contains elements that are both low in value and low in risk, including modern infrastructure, pathway form and distribution of villages.

HIGH RISK	Shared belief of villagers, Abandoned farmland	Local population loss, Ecological integrity and biodiversity, Traditional practices, Local community connection, Piers
LOW RISK	Modern infrastructure (new signage, small structures, etc.) Pathway form, The distribution of villages	Trail's physical structure, Locally practiced temple and shrines, Natural landscape, Traditional architecture, Accessibility
	LOW VALUE	HIGH VALUE

Figure 3.4.1 Risk / value matrix of Tung O Ancient Trail (Edit: Weng Xintong)

Chapter 4 Vision and Use

4.1 Proposed Conservation and Management Vision for Tung O Ancient Trail

The long-term conservation and management vision for Tung O Ancient Trail (TOAT) aims to establish a sustainable, community-based heritage and ecological corridor that integrates cultural preservation, environmental conservation, and responsible tourism development.

4.1.1 Community-Based Sustainable Development

Objective: Ensure local communities are central stakeholders in the conservation and development process, enhancing economic opportunities while preserving cultural identity.

(1) Capacity-building of community members: Provide training in heritage conservation, ecotourism management and sustainable business practices. Involve young people in heritage documentation, storytelling and environmental management projects.

(2) Governance and local participation: Create a Community Heritage Management Board, allowing villagers, NGOs, and government bodies to co-manage conservation efforts.

4.1.2 Heritage Protection and Cultural Revival

Objective: To conserve the architectural and intangible heritage of the Tung O Ancient Trail and to ensure that its historical significance is preserved and actively maintained.

(1) Conservation of historic structures: Protect the declared monuments, graded historic buildings, and archaeological sites along the trail, and choose appropriate structures to implement adaptive reuse strategies.

(2) Revitalization of intangible heritage: Support local traditions, festivals, and cultural knowledge transmission through community-based initiatives and educational programs.

(3) Archaeological and historical research: Establish a long-term research and documentation program to

enhance understanding and interpretation of Tung O's history.

4.1.3 Environmental and Ecological Conservation

Objective: Enhance the ecological resilience of the Tung O ancient trail through nature conservation, while mitigating the impacts of climate change and urbanization.

(1) Biodiversity protection and habitat restoration: Preserve mangroves, feng shui woodlands, seagrass beds, and butterfly hotspots to support endangered species like Chinese White Dolphins, Romer's Tree Frogs, and Horseshoe Crabs.

(2) Climate resilience: Strengthen flood and landslide prevention measures. Reforestation programs can be implemented to use native plant species to stabilize slopes and prevent problems such as mudslides and soil erosion.

(3) Sustainable waste management: Introduce zero-waste tourism initiatives, including eco-friendly visitor facilities and waste reduction measures.

4.1.4 Sustainable Tourism and Visitor Experience Enhancement

Objective: To develop responsible tourism models that maximize economic benefits while minimizing environmental and cultural impacts.

(1) Infrastructure improvements: Enhance inter-village route connections, functionally rate villages based on existing infrastructure and transportation accessibility, and rehabilitate or develop new routes as needed.

(2) Eco-tourism development: Promote "Leave No Trace" tourism ethics, restricting harmful activities (e.g., feeding wildlife, illegal fishing).

(3) Heritage interpretation: Design eco-friendly interpretive signage and digital self-guided tour platforms.

4.1.5 Scope of the Heritage Protection Area

The conservation area covers the same area as the study area, which is the Tung O Ancient Trail and the villages along it.

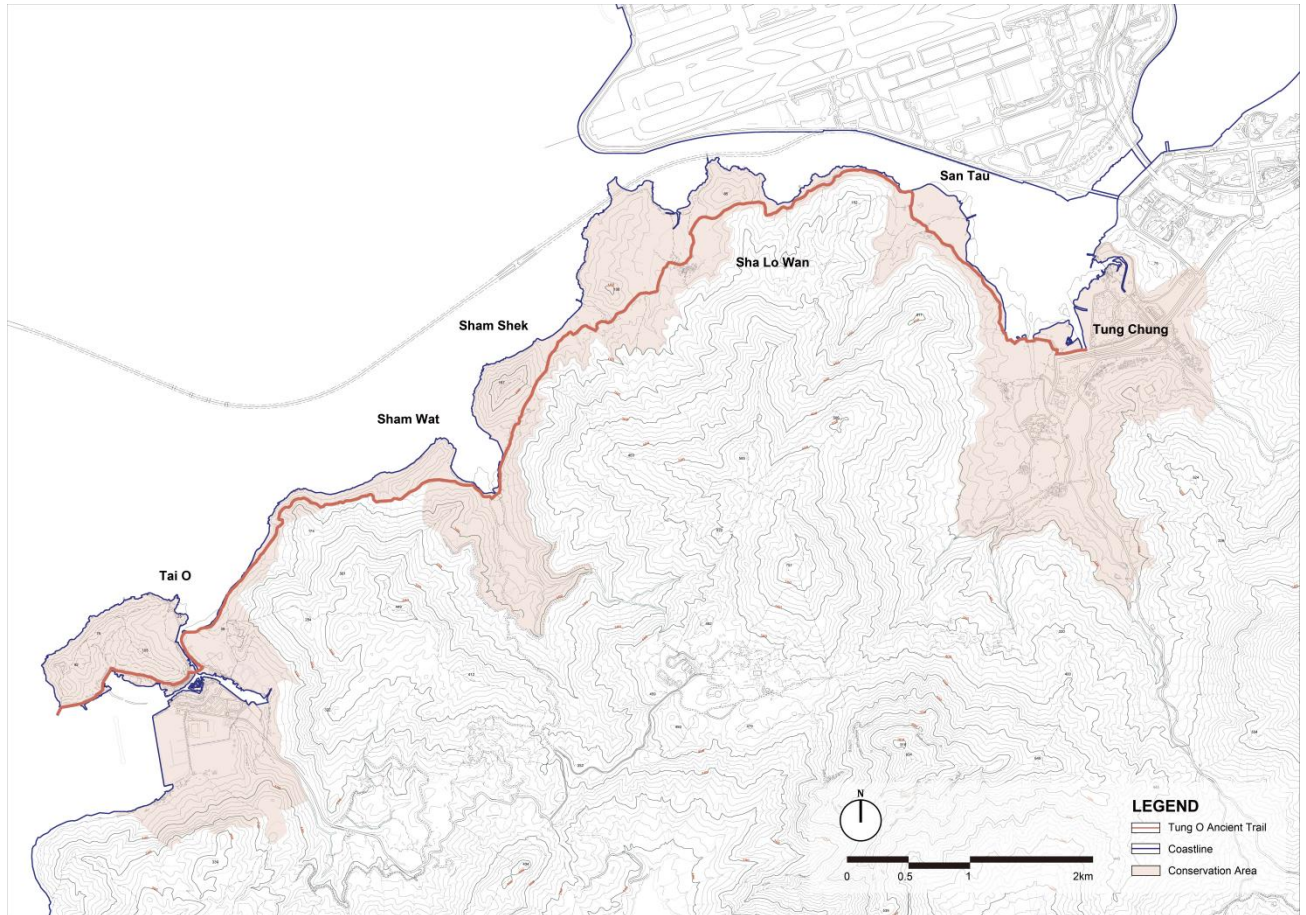


Figure 4.2.1 Scope of the heritage protection area (Edit: Jia Haowen)

4.2 Proposed Use of Tung O Ancient Trail

4.2.1 Community-Based Economic Development

Objective: Ensure local communities directly benefit from tourism by prioritizing community-run enterprises, local employment, and sustainable agriculture.

Villages along the route will be graded through the assessment, and those identified as hubs can operate special eco-huts to provide authentic village life. Villagers can form specialty bazaars to sell local food and

handicrafts produced by the community's handicraft workshops. Other villages are positioned as supply stations, which can also sell specialty goods and provide resting places for tourists. Through the establishment of organic farms to provide farm-to-table tourism, the villagers are provided with fresh experiences and income opportunities.

4.2.2 Cultural Heritage and Living Museum

Objective: To develop the Tung O Ancient Trail into a living museum, providing visitors with access to tangible and intangible heritage while supporting the preservation of historic villages, temples and traditional festive practices.

Most of the villages along the Tung O Ancient Trail are characterized by a combination of land and sea cultures, resulting in rich and special customs, festivals and architectural features. By selecting accessibility, integrity of the village layout and villagers' willingness as the main evaluation criteria, some of the villages can be selected as the main revitalization targets to play the role of a cultural tourism hub. Adaptive reuse of some historical buildings, such as transforming residential houses into farmers' exhibition halls and traditional crafts experience studios, can be carried out.

4.2.3 Sustainable Eco-Tourism

Objective: To promote ecotourism through low-impact tourism models while ensuring biodiversity conservation and climate resilience.

The Tung O Ancient Trail is rich and diverse in natural resources, which is a strong attraction for nature lovers and hiking enthusiasts. On the one hand, some themed eco-trails, such as biodiversity observation routes (mangrove forests, butterfly habitats, wetland ecosystems) can be set up to provide special experiences. In addition, nighttime eco-trails for stargazing and fireflies, or forest bathing and wellness trails for positive

thinking and yoga retreats can be set up to meet the needs of different groups of people. On the other hand, cooperation can be reached with universities or research institutes, etc. to form research bases, educational bases, etc.

4.2.4 Components of the Lantau Eco-cultural Tour

Objective: Targeting the two potential markets of Ngong Ping and the Hong Kong International Airport, through strategies such as convenient transportation and differentiated tourism products, they will be converted into the visitor groups of the Tung O Ancient Trail.

The proximity of Ngong Ping and the Hong Kong International Airport to the Tung O Loop has generated a large number of potential tourists. As a first step, transportation links should be improved by adding new routes from the airport terminal to the Sha Lo Wan terminal, as well as a trail or waterway from Ngong Ping to the Tung O Loop to increase seamless transportation links. Secondly, to attract different segments of tourists, we should develop cultural in-depth exploration for Ngong Ping tourists and flash cultural experience routes for airport transit tourists respectively.

4.3 Viability of the Proposed Use

4.3.1 Business Model Canvas

BMC of TOAT				
Key Partners:	Key Activities:	Value Propositions:	Customer Relationships:	Market Segments:
Local communities	Heritage conservation	Job opportunities	Personalized engagement	Eco-tourists and nature/hiking enthusiasts
Government agencies	Eco-tourism development	Community-driven tourism	Educational and interpretive support	Cultural travelers
NGOs and conservation organizations	Sustainable infrastructure	Culture and biodiversity conservation	Ongoing community engagement (post-visit)	Educational and institutional groups
Tourism operators	Community engagement			Local/regional visitors
Investors and funding partners	Education and awareness programs			

Key Resources: Heritage and natural sites, Local expertise and human resources, Infrastructure and facilities, Digital platforms and content, Financial and support resources	Channels: Online and social media, Travel agencies and tour operators, Local tourism hubs and visitor centers, Collaborative partnerships
Cost Structures: Conservation and heritage preservation, Infrastructure development & maintenance, Staffing and training, Marketing and outreach, Sustainable tourism development programs	Revenue Streams: Guided tour fees, Profit on sales of goods, Eco-lodges and homestays, Cultural experience workshops, Donations and sponsorships, Government and NGO grants

Fig 4.4.1 BMC of TOAT (Edit: Weng Xintong)

This business model aims to balance economic viability with cultural and ecological preservation. By integrating local stakeholders at all levels and diversifying revenue streams (including supportive funding), the program can be resilient over time. The result is a community-based eco-cultural destination that educates visitors, preserves Lantau's unique heritage and contributes to the well-being of residents, embodying sustainable tourism for present and future generations.

4.3.2 Stakeholder Mapping: Priorities and Willingness to Support

Stakeholder	Priorities & Concerns	Commitment & Willingness to Support
Indigenous Residents & Villagers	- Economic livelihood & employment - Preservation of cultural identity & traditions - Control over tourism development to prevent over-commercialization -Infrastructure improvements	High commitment – Villagers willing to participate in eco-tourism (e.g., homestays, craft markets, heritage guides) if they receive fair benefits and decision-making power. Concerns – Some villagers may not want to be disturbed by a large number of visitors.
Local Business Owners	- New economic opportunities from sustainable tourism - Development of local products (e.g., seafood, handicrafts, farm produce) - More visitors without harming traditional livelihoods	Strong interest – Willing to invest in tourism-friendly businesses if given financial and marketing support. Challenges – Need for training in tourism management & customer service.
SLO & CEDD	- Balancing heritage conservation, environmental protection, and development - Infrastructure planning and funding allocations - Ensuring policies align with Hong Kong's sustainable development goals	Institutional backing – Committed to supporting infrastructure upgrades as part of Lantau's sustainable development strategy. Government priorities fluctuate – Need for ongoing advocacy to ensure heritage conservation is prioritized over

		large-scale commercial development.
NGOs & Environmental Groups	- Biodiversity conservation & protection of cultural heritage - Community participation in conservation efforts - Promotion of responsible tourism	Active supporters – Willing to collaborate on heritage restoration, conservation programs, and training for villagers. Funding limitations – Depend on external grants and donations for long-term projects.
Researchers	- Academic research on heritage preservation and eco-tourism - Student engagement through field studies and volunteer programs	Strong interest – Researchers eager to document the trail's historical and ecological significance and develop sustainable tourism frameworks. Need for funding – Research partnerships depend on financial resources and academic grants.
Tourism Operators & Travel Agencies	- Creating unique, authentic tourism experiences - Promoting eco-tourism and heritage-based travel	Commercial interest – Travel companies willing to market the site if infrastructure is improved and logistics are efficient. Risk of over-commercialization – Need strict guidelines to prevent mass tourism impacts.
Visitors & Tourists	- Desire for eco-friendly, off-the-beaten-path experiences - Interest in cultural immersion & heritage learning	Strong demand – Tourists, especially eco-conscious and cultural travelers, show interest in authentic local experiences. Sustainability risk – Without proper visitor management, excessive foot traffic may strain the environment and local communities.

Fig 4.4.2 Stakeholder Mapping (Edit: Weng Xintong)

This map shows a high level of stakeholder engagement, with local communities, government agencies and non-governmental organizations actively supporting the project while ensuring equitable benefits. As a result, sustainable tourism empowers local people while preserving the cultural and natural heritage of TOAT. However, tourism must be managed carefully and requires regulatory and governance frameworks to maintain cultural authenticity and natural integrity, avoid over-commercialization and ensure community-based development.

4.4 Conservation design proposals

4.4.1 Conceptual design alternatives

4.4.1.1 Site selection for design

Based on the analysis in the previous chapters, Tung O Ancient Trail is made up of several villages, which

have various characteristics and traditions, and carry unique cultural heritages, ecological resources and community memories. Therefore, the conservation project of the Tung O Ancient Trail should start with the conservation and revitalization of the village, and the whole conservation theme of Tung O Ancient Trail is “community-based”.

Among these villages along Tung O Ancient Trail, our conservation project choose San Tau Village as the first design case. San Tau Village has rich historical and cultural heritage, highlighted by well-preserved traditional structures such as stone and brick houses, ancestral halls, and multiple shrines.

San Tau is also rich in ecological resources, with a variety of habitat types. Since 1984, 2.7 ha mangrove and mudflat have been designated as Site of Special Scientific Interest (SSSI) to protect the rare but vulnerable seagrass bed in San Tau. Apart from that, San Tau is one of the few horseshoe crabs breeding and nursery grounds in Hong Kong that contains both two species (Chinese horseshoe crab *Tachypleus tridentatus* and mangrove horseshoe crab *Carcinoscorpius rotundicauda*).

The village has unique communal practices such as agricultural practices represent its sociocultural legacy. Additionally, its proximity to the reclaimed Hong Kong International Airport symbolizes a blend of historical continuity and modern transformation.

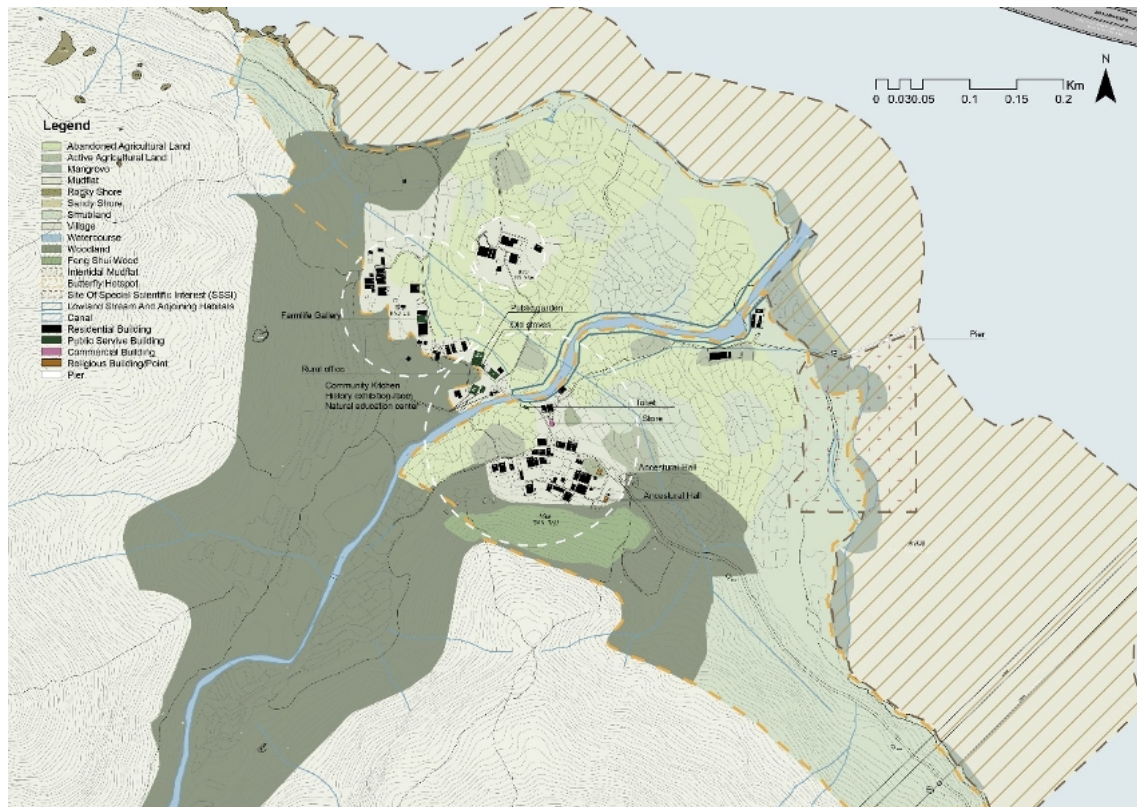


Fig. 4.4.1 Site mapping of San Tau (Draw by Jia Haowen)

The rich resources and community practice experience have provided San Tau a solid foundation in implementation design project. The village also faces issues such as population loss, abandonment of traditional dwellings and insufficient public space. The conservation design will through spatial revitalization, the social network and cultural genes of the community are rewoven, so that protection and development are no longer external "rescue actions", but the self-sustaining vitality of the community.

San Tau is made up of three small villages, about 130 villagers. San Tau preserves traditional single-hall single-courtyard dwellings constructed with stone, grey bricks, and rammed earth, supplemented by later flat-roofed stone houses. The southern stream area centers around a main entrance axis, with north-facing houses flanked by shrines on both east and west sides. Two ancestral halls anchor the front row, while the eastern sector holds the village cemetery. The northeastern stream area contains additional dwellings, a school, village office, incinerator, and another shrine. Maintaining typical vernacular settlement patterns,

the village still hosts residents. While some structures have been renovated, others lie in ruins due to extensive modifications or structural damage. There is a pier in the north of San Tau but now the pier is abandoned. Some revitalization project by social groups and villagers like the San Tau Farm life gallery and some small scale planting area.

4.4.1.2 Design concept: Community-Based Revitalization of San Tau

The revitalization of San Tau Village on Lantau Island, Hong Kong, centers on a community-based approach that empowers villagers as active agents in conserving their cultural heritage, ecological resources, and social fabric. This model prioritizes participatory governance, ensuring villagers co-lead decision-making through workshops, voting mechanisms, and collaborative platforms like the Sustainable Development Committee. By anchoring plans in local needs and traditions, the design avoids top-down interventions, instead leveraging endogenous resources—such as traditional craftsmanship, abandoned materials, and intangible cultural heritage (ICH)—to drive regeneration.

The whole community-based project combines the concepts of cultural heritage protection, community revitalization and ecological sustainability, it will be advanced in phases.

A. Phase 1: Preparatory Phase: Building Consensus and Trust

Community Mobilization and Needs Assessment. Establish an intergenerational Village Revitalization Workshop involving villagers (especially elders, indigenous families), returning youth, and local businesses (grocery stores, rural life gallery).

Conduct oral history documentation and participatory community mapping (marking abandoned houses, schools, and public spaces) to identify villagers' priorities (e.g., lack of activity spaces, loss of traditional skills).

Form a Village Sustainable Development Committee comprising villagers, NGOs (e.g., Conservancy Association), government agencies (e.g., Antiquities and Monuments Office), and professionals (architects,

ecologists), with clear roles and responsibilities.

Create a "Traditional Skills Preservation Team" led by local craftsmen to document techniques for future revitalization.

B. Phase 2: Co-Planning Phase: Participatory Design

Make participatory Design Workshops. Villagers vote on functional zones (e.g., tea area, library, craft display), preserving nostalgic elements like blackboards and desks.

Nature Education Center: Integrate local ecological knowledge (e.g., mangrove conservation, migratory bird routes) into exhibits with environmental NGOs.

Source ingredients for the community canteen from village farms, with surplus supplied to local stores.

Establish ICH workshops (e.g., bamboo weaving, saltwater folk songs) in the cultural corridor, with revenue funding maintenance.

C. Phase 3: Phased Implementation: Heritage-Driven Revitalization

Pilot Project: School Renovation & Skill Transmission

Engage youth in restoring the school under the guidance of elder craftsmen. Reuse materials (e.g., old bricks, tiles) for the cultural corridor and install solar panels to demonstrate sustainability. Organize "Open Construction Days" for villagers to participate in light tasks (e.g., mural painting, planting).

Gradual Housing Revitalization: Select 3–5 representative abandoned houses as "model units" for adaptive reuse (e.g., homestays, artisan studios) through owner-committee collaboration.

D. Phase 4: Sustainable Operation Mechanisms

Establish a village Cooperative to operate public spaces. Train "Villager Guides" to lead eco-tours and ICH demonstrations at the Nature Education Center. Host an annual Cultural Festival featuring traditional festivals (e.g., Tin Hau Festival), craft markets, and eco-tours to attract visitors and strengthen identity.

Conduct third-party evaluations biennially to refine strategies.

E. Phase 5: Resource Support & Risk Mitigation

Apply for government grants, launch crowdfunding, and seek corporate sponsorships. Partner with heritage conservation teams (e.g., University of Hong Kong) for technical support.

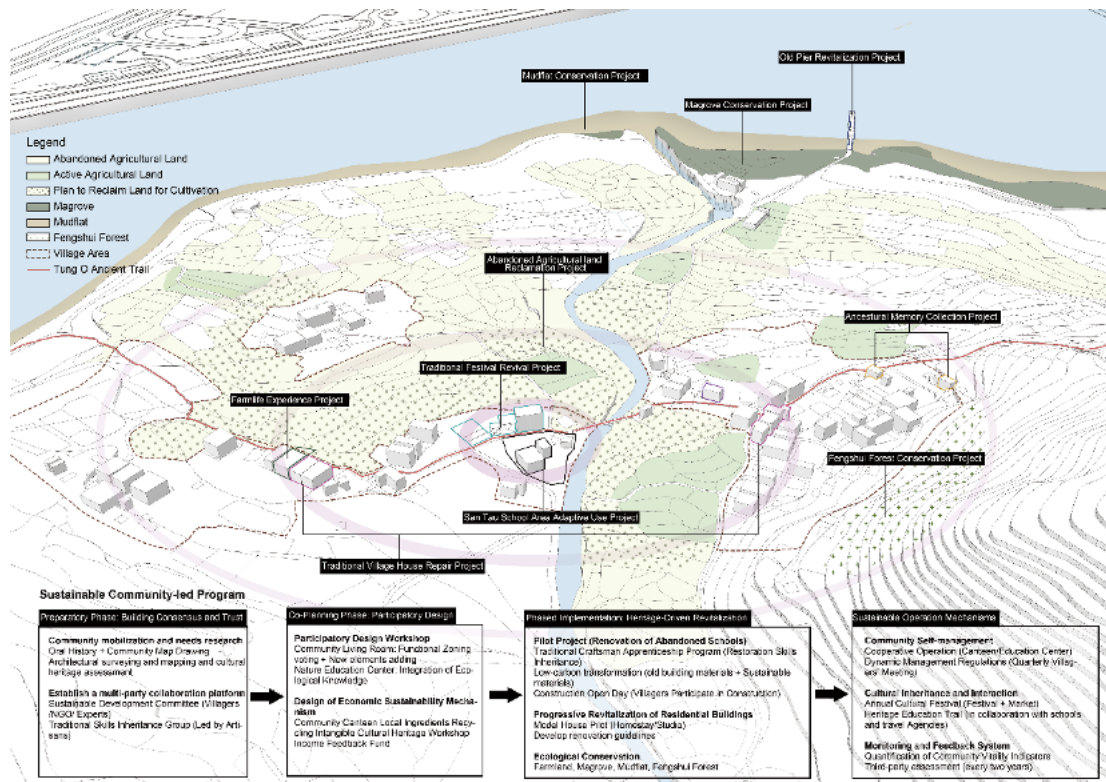


Fig. 4.4.2 San Tau community-based project (Draw by Jia Haowen)

4.4.1.3 San Tau School Adaptive Use Project

A. Brief introduction of San Tau School

San Tau Tsuen is a remote village with poor transport facilities, so it was inconvenient for village children to attend schools outside the village. After the Second World War, the villagers established a very small school in the Tse Ancestral Hall with a subsidy from the Government. In 1958, the Tse's of San Tau Tsuen applied to the District Office South to build a school so that more children in the village could go to school. With HK\$825 raised by the villagers and a subsidy from the District Office, the villagers built a new school. It was still very small. There was only one classroom, which could accommodate about 30 students. Primary one, three and four students shared the same classroom. There was only one teacher. The school was completed in 1959 and replaced the primary school in the Tse Ancestral Hall. The school is

now abandoned. The school is a one-storey building, three bays wide, with a pitched roof. It has a stepped parapet, with the plaster characters 「磡頭學校」 (“San Tau School” in Chinese) (Sustainable Lantau Office, 2021) .



Fig. 4.4.3 Old picture of San Tau school in 1960s (Source: University of Hong Kong Libraries. Special Collections)



Fig. 4.4.4 San Tau School in 2016 (Source: https://en.wikipedia.org/wiki/San_Tau)



Fig. 4.4.5 the plan for school area (

B. Attributes of San Tau School

N o	Attrib utes	Description	Condit ion	Valu e	Photo reference	Strategy
1	Steppe d parapet	A stepped parapet, with the plaster characters 「磡頭學校」 (“San Tau School” in Chinese). The parapet was one of the architectural characteristics of village schools in Hong Kong at that time, simple and eye-catching, and distinguished from other buildings in the village.	Fair	High		Retain the original appearance, clean the entire parapet and repair the cracks on the surface.
2	Pitched roof	A common pitched roof in the countryside, which is paved with plates and the interior is a wooden frame structure, which is simple and durable.	Fair	Medi um		Retain the original appearance, clean the dirt and vegetation on the roof
3	Windo ws (classr oom)	The coffered glass window, with a metal frame and a concrete sill below, ensures light in the classroom.	Good	Medi um		Retain the windows on the main façade, the other façades' windows can be changed according to the design scheme
4	Wall	The structure is good, the concrete walls are painted white, parts of the facades have peeled off, and there are stains and graffiti on the walls.	Fair	Low		Clean and repaint the wall, restore the original wall color. other materials can be added to

N o	Attrib utes	Description	Condit ion	Valu e	Photo reference	Strategy
						transform the wall
5	Door	Double iron doors ensure indoor and outdoor connectivity, and glass Windows at the top of the door ensure light and sight, which is suitable for classroom.	Good	Low		Retain the original door, clean and repaint.
6	School facilities	The bell and light on the main façade, the old desks, chairs and blackboard in the classroom. They are the features of schoolhouse.	Fair	Medium		Retain the facilities in fair condition, make use of the facilities in decoration.
7	Rainwater pipe with drain pan on the top	Located on the outer wall of the parapet wall, for roof drainage.	Poor	Medium		Clean and repaint the pipe as its original color.
8	Double pan and roll tiled roof	Located on the roof of the building adjacent to the classroom, it is a traditional Cantonese roof with a canopy under the eaves.	Fair	Medium		Clean the roof and replace the canopy with a more suitable kind.
9	Windows (office)	Same coffered glass window of school, with a metal frame and a concrete sill below, but the window on the main facade is sealed during renovations in recent years.	Fair	Medium		Keep the Windows as they are and consider whether to restore the Windows that are sealed.
10	Playground	Cement floor playground, bathroom and storage room around the playground.	Poor	Medium		Clean the grass on the playground, repair the cracks. Restore original function.

Fig. 4.4.6 Attributes of San Tau school (made by Jia Haowen)

C. Statement of significance of San Tau School

San Tau School is an example of Hong Kong's mid-20th-century rural education heritage, embodying historical, social, and architectural significance. It reflects post-war efforts to improve literacy in remote villages and symbolizes the resilience of rural communities during Hong Kong's rapid urbanization.

Historically, the school represents grassroots educational initiatives in post-war rural Hong Kong,

addressing local needs amid limited resources. Socially, it stands as a testament to communal determination to prioritize education despite isolation and scarcity. For former students and families, it anchors shared memories and village identity, fostering intergenerational connections to narratives of perseverance. Although the school is closed, it is still an important public space in the village. Architecturally, its simple, functional design—using modest materials and traditional methods—exemplifies pragmatic rural school structures. The layout reflects mid-century educational practices in small communities.

D. Existing condition survey of San Tau School

The condition survey of San Tau School including two buildings. The school building was abandoned still now, the adjacent building was used to be a office and repainted in previous years. The overall condition of the two buildings is fair, the main defect is the walls, which have mould, cracks and graffiti. The roofs have vegetation and dirt on the tiles. Some parts of windows and doors are peeling. The outdoor space has a toilet and a small storeroom, and a canopy is in front of the toilet. The playground has vegetation growing on the concrete ground, and the fence is made of iron wire in poor condition.

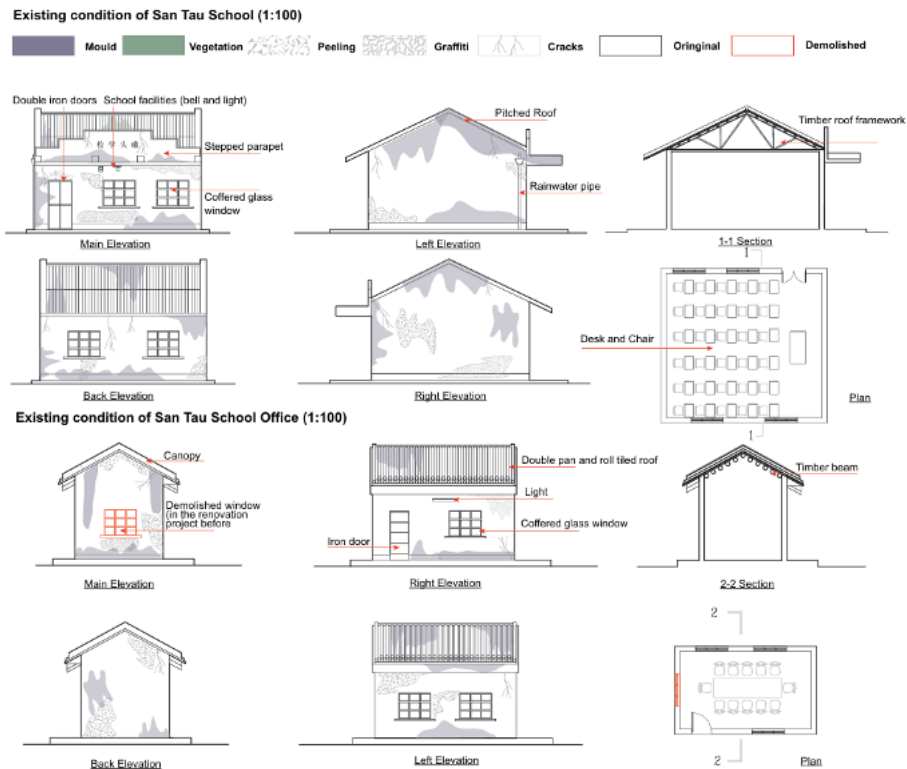


Fig. 4.4.7 condition survey of San Tau School (Draw by Jia Haowen)

5.4.1.4 Design options

Based on the design concept and the existing condition, the school area will be designed as a “community livingroom”, which combining the function of community activity room, community kitchen, dining hall, natural education and village culture exhibition. The options of the layout of those functional area and adding things will be discussed in the HIA part.



Fig. 4.4.8 design option plans (Draw by Jia Haowen)

4.4.2 Heritage Impact Assessment (HIA)

4.4.2.1 Table of proposed mitigation measures

Proposed Actional Works		Affected Attributes	Assessment	Mitigation Measures
School building	Stepped parapet restoration	Historical integrity, Aesthetics	Acceptable with mitigation	Clean surface, repair cracks, retain original plaster characters ("礮頭學校").
	Pitched roof repair	Structural stability, Heritage	Acceptable with mitigation	Remove vegetation/dirt, retain wooden frame structure, replace damaged plates.
	Retain former classroom windows on main and back facades	Architectural authenticity	Acceptable	Preserve main façade windows; other façades' windows may be modified per design needs.
	Convert one of the back facade's windows into a door	Structural integrity, Historical authenticity	Acceptable with mitigation	Reinforce door frames with materials that are consistent with the style (timber/stone), retain window design elements in adjacent areas.
	Windows addition on the back and side facades	Architectural coherence, Natural light distribution	Acceptable with mitigation	Use coffered glass windows matching original style; avoid altering load-bearing walls.
	Wood finish addition on windowsill lower space of main facade	Aesthetic continuity	Acceptable	Apply non-invasive finishes (e.g., removable wood veneer) to preserve original concrete structure.
	External wall repainting to the original appearance	Visual coherence, heritage	Acceptable with mitigation	Clean stains/graffiti, repaint in original color; allow non-intrusive material additions.
	Original door preservation on the main facade	Historical continuity	Acceptable	Retain double iron doors, clean/repaint, and preserve glass windows for sight.
	Old school facilities retention	Cultural memory, educational legacy	Acceptable with mitigation	Restore old desks, chairs, and blackboards; integrate preserved items into new décor.
	Rainwater pipe maintenance	Functional infrastructure	Acceptable	Clean and repaint pipes to original color for drainage efficiency.
	Dining room & activity room conversion	Functional adaptability	Acceptable	Repurpose existing spaces while retaining structural layout; avoid permanent alterations.

	Ancillary facilities addition (water and water supply facilities, electrical renovation, air conditioning, furniture)	Energy consumption, modern functionality	Acceptable with mitigation	Use solar-powered systems, integrate concealed wiring, and select modular furniture to minimize structural impact.
Office building	Double pan & roll tiled roof repair	Traditional craftsmanship	Acceptable with mitigation	Clean roof, replace canopy with suitable materials matching Cantonese architectural style.
	Sealed window (main facade) evaluation	Architectural consistency	Acceptable with mitigation	Assess feasibility of restoring sealed windows on main façade; retain others as-is.
	Option 1 & 2: Exhibition room development	Cultural interpretation	Acceptable	Display historical artifacts with minimal physical intervention; use QR codes for digital storytelling.
	Option 3: Ancillary facilities addition (water and water supply facilities, electrical renovation, air conditioning, furniture)	Energy consumption, Modern functionality	Acceptable with mitigation	Use solar-powered systems, integrate concealed wiring, and select modular furniture to minimize structural impact.
	Convert one of the windows on the right wall into a door	Spatial flow, Heritage compliance	Acceptable with mitigation	Use materials and designs that harmonize with the overall architectural style.
	Removal of the canopy	Traditional architectural features	Unacceptable	Reject removal; instead, repair the existing canopy with original materials (e.g., bamboo/timber).
Outdoor space	Playground revitalization	Community space utility	Acceptable with mitigation	Repair cracks, remove grass, restore original cement floor function.
	New community kitchen addition	Energy consumption, Waste	Acceptable with mitigation	Use solar-powered systems, enforce plastic-free policies, and segregate waste.
	Option 1: New community kitchen position (in front of the school main facade)	Visual prominence, Pedestrian flow	Acceptable with mitigation	Use lightweight bamboo structure; screen kitchen with native vegetation to blend with surroundings.
	Option 2: New community kitchen position (back of the school)	Privacy, Functional efficiency	Acceptable	Located near existing auxiliary narrow alley to simplify operations.
	Natural education center construction	Ecological footprint	Acceptable with mitigation	Use sustainable materials, integrate low-impact design, and limit land alteration.
	Agriculture planting experience zone	Land use, Ecological balance	Acceptable with mitigation	Implement seasonal agro-tourism, use organic farming

				practices, and control visitor density.
	New glass corridor connecting school and office	Visual harmony, Accessibility	Acceptable with mitigation	Use frameless glass to minimize visual intrusion; align corridor path with common circulation route.
	Expansion of fence area	Landscape integrity, land tenure right	Acceptable with mitigation	Replicate the original fence design (stone pillars with metal rails); avoid encroaching on others' land ownership.

Fig. 4.4.9 Table of proposed mitigation measures (Edit: Zhou Limao)

A. Key additional information

(1) Historical Authenticity

All measures involving structural modification (such as changes to doors and windows) should follow the “principle of reversibility” (such as the use of removable materials) to protect the original building features.

(2) Eco-compatibility

New facilities (e.g. glass corridors, fences) need to use low-carbon materials (e.g. solar panels, bamboo).

(3) Community participation

The conversion of kitchens and activity rooms needs to be operated through village cooperatives to ensure that profits are returned to the local community (e.g. training programs, fair profit sharing models).

(4) Dynamic monitoring

Use modern technology to regularly update protection boundaries during construction and prohibit development in sensitive areas.

4.4.2.2 Responsibilities and Funding Sources

A. Building Restoration and Maintenance (roof restoration, window preservation, wall repainting)

Main Mitigation Objectives: To preserve the original architectural features, enhance structural stability, and restore the historical visual appearance.

Responsible parties:

- Professional building restoration team with experience in cultural heritage restoration.
- Village co-operatives or implementation units of cultural conservation projects (e.g. Sustainable Lantau Office) are responsible for the day-to-day management and coordination.
- Academic institutes or conservation consultants Academic institutions or conservation consultants to provide technical supervision.

Funding sources:

- Government funds for cultural heritage conservation (e.g. Lantau Conservation Fund).
- Non-government organizations (e.g. Conservation Foundation, Green Building Support Fund).
- Funding for collaborative projects between universities and research institutes (e.g. sustainable development projects under the theme of “Rural Revitalization”).

B. Modernization and Functional Upgrading of Facilities (air-conditioning, kitchens, exhibition rooms, solar energy systems)

Main Mitigation Objectives: Modernize and sustainably operate the facilities with minimal intervention in the original structure

Responsible Entity:

- Village Cooperatives/Management Committees: responsible for operation and maintenance.
 - Specialized Engineering Contractors: responsible for installation of equipment and technical implementation.
 - Environmental Engineering Consultants/Energy Efficiency Specialists: to provide support for green energy technologies such as solar energy design
- Funding Sources: Government subsidies for green retrofits, e.g. pilot projects for low-carbon transitions Energy technical support.

Funding source:

- Government subsidies for green retrofit, e.g. pilot projects for low carbon transition.
- Community participatory crowdfunding and social enterprise investment, especially for profitable spaces such as shared kitchens.
- Corporate sponsorship/CSR programs. For example, can seek partnership support with green tech companies to sponsor solar panels.

C. Outdoor space and new construction project category (nature education center, glass linkage, agricultural experience area)

Key Mitigation Objectives: Enrich community functions while maintaining low-impact land use patterns

Responsible Entity:

- Rural cooperatives take the lead in space operation. Can be managed by local volunteers, with guidance from NGOs.
- Local designer/landscape consultant: Ensure that new build projects are integrated into the environment both materially and visually.
- Planning and approval authorities (e.g. Sustainable Lantau Office, CEDD): to gatekeep site selection and scale.

Funding:

- Rural Revitalization Program funding, including community participatory crowdfunding and foundation grants.
- Sustainable Tourism Development Fund (if combined with eco-tourism activities).

- Collaboration with schools or research institutions to develop educational experiences.

4.4.2.3 Residual Impacts and Measures

A. Visual and Cultural Landscape Changes

Items: Exterior painting, glass corridors, new kitchen, wood finishes

Despite the use of less intrusive design solutions, these modern elements, when brought together, may alter the overall ambience of the historic scene, causing a gradual deviation from the original “country school” cultural imagery of the complex. However, on the one hand, due to the subjective nature of visual perception, it is difficult to fully realize the restoration of the integrity of the original scene. On the other hand, after the change of function, it is necessary to change its use and appearance to a certain extent. Therefore, its impact cannot be completely eliminated. Changes in visual, ecological and social acceptance can be assessed regularly through the establishment of a long-term monitoring mechanism, fully listening to the views of villagers.

B. Energy and Infrastructure Maintenance Burden

Items Involved: Air Conditioning, Electricity Systems, Solar Energy Equipment, Kitchen Facilities

Although the priority given to the use of green energy technologies and energy-saving products has maximized environmental friendliness, the operation of the new facilities still requires stable technical maintenance and financial investment. In particular, the operating and replacement costs of solar systems and air conditioners may put some financial pressure on local communities in the medium to long term. Maintenance costs can be reduced by requesting government assistance or entering into partnerships with businesses to become pilot green energy stations.

C. Reconstruction of Community Functions and Cultural Roles

Projects Involved: Education Center, Exhibition Room, Community Kitchen, Agricultural Tourism Experience Area

Although the project strives for community participation and cultural re-interpretation, it is difficult to unify the differences in perceptions in the short term. The transformation of the functional space may inadvertently weaken the collective memory of the original educational use, and cause some villagers to worry about “over-tourism” or “functional drift”. It is possible to strengthen the connection between the original function and the revitalized use, and set up written explanations and volunteer explanations for visitors to deepen their understanding of the original function.

4.4.3 Detailed Design

4.4.3.1 Adaptive use of old school buildings

The design strategy of the school buildings has three steps:

1. Preservation: the first step is made repairment of the historic buildings. The preservation including Clean up the site; Repaint the walls white and restore the building to its original appearance; Repair of cracks; Removal of vegetation from the building; Examine the current building structure, broken windows and doors and repair them.

2. Reconstruction: in this step will first introduce new materials on the buildings. The new materials should have characteristics like lightweight, locally accessible and less damaging. According to the condition of the site, materials such as wood, glass and steel frame construction are chosen. The wood is used on the exterior façade of school building, glass and steel frame are used as the corridor connecting the two buildings, which can create a coherent space and convenient circulation.

Then to meet the new functions of buildings, the introduction of new facilities is necessary, facilities such as kitchenware, air conditioning, furniture and cleaning equipment are required. Some facilities like

kitchenware and air conditioning need making holes on the walls, which is acceptable in HIA.

Last do an alteration of space layout, including addition of a rear door to increase the connectivity between the front and back of the building and addition of glass corridor to optimize the flow and increase the connection between buildings.

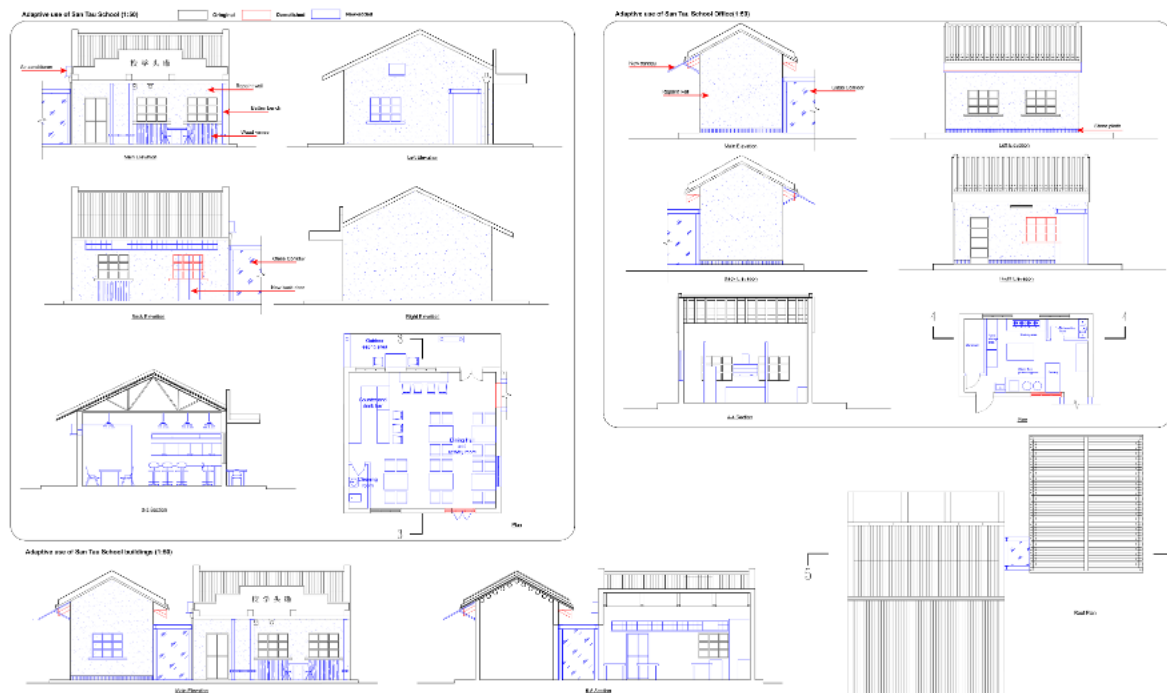


Fig. 4.4.10 design of old buildings (Draw by Jia Haowen)

4.4.3.2 Design of Natural Education Center

The design of natural education center is for making good use of San Tau natural resources and continuing the function of education of San Tau School. The center has a exhibition room to show the knowledge of San Tau's ecology, and a classroom for natural lectures. To responding the community-based theme, the education center applies the architectural features of local village houses and harmonize with the village style, and applies local accessible, environmentally friendly and sustainable materials in construction. The community can participate in the process of material preparation, on-site construction and later revitalization. The architectural feature of the building is referred to the flat roof village house in San Tau, and also transmit the features like glass tile for lighting and the timber roof structure. The façades use wood as the main

materials to show the natural characteristic.

New-adding Building - Natural Education Center

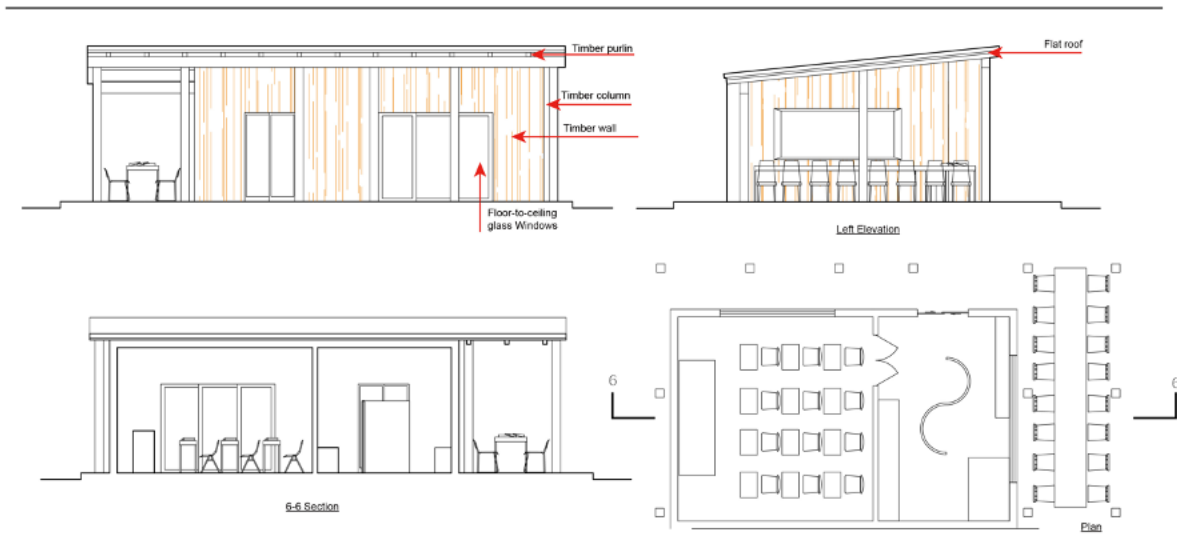


Fig. 4.4.11 design of natural education center (Draw by Jia Haowen)

4.4.3.3 Design of cultural corridor

The cultural corridor will become an example for passing on the traditional building techniques, showing the hand-made crafts by villagers and showing the village culture. It refers the traditional village house's timber roof structure and makes a modern translation. Materials come from discarded bricks, tiles, and wood in the village, which are collected by the villagers. And the traditional wooden structure is built by experienced masters in the village, which is a good chance for preserving the old technique. The content of the interior display space will be changed regularly, with the theme of village characters' stories and village history and culture. Villagers would participate in the construction process, so from the material collection process to construction process to the maintenance process will lead by villagers. The corridor offers a place for rest and display. The entrance of the corridor links the stove and public garden opposite the school and enhance the wholeness of the area.

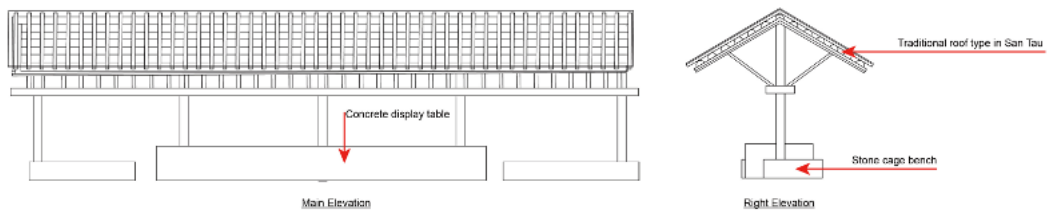


Fig. 4.4.12 design of corridor (Draw by Jia Haowen)

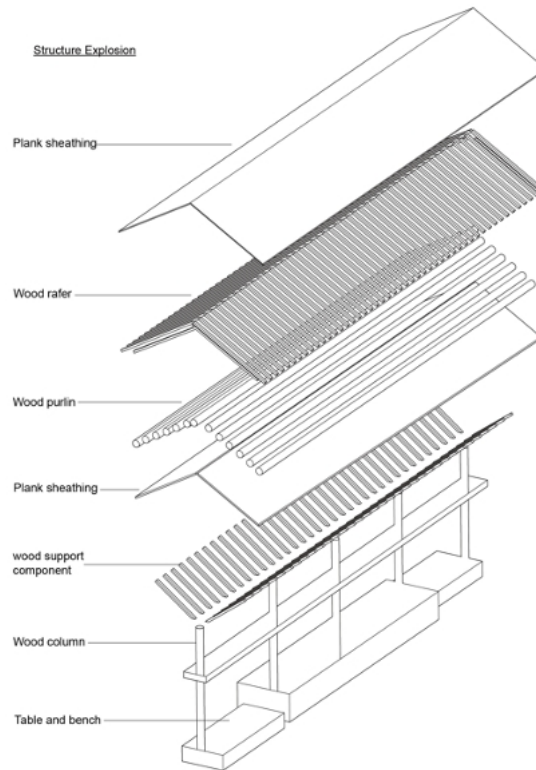


Fig. 4.4.13 exploded analysis of corridor (Draw by Jia Haowen)

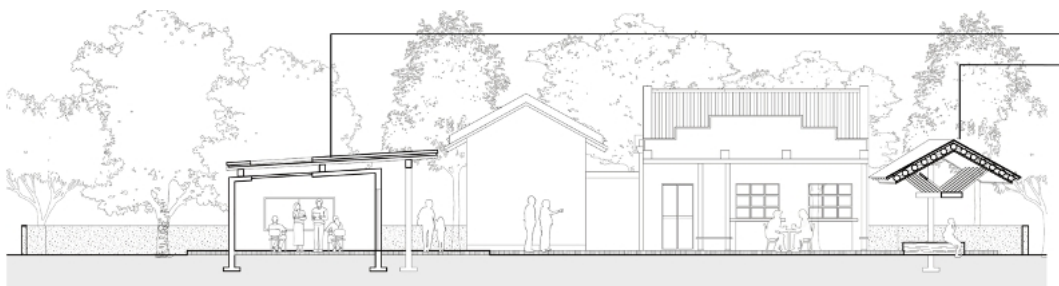


Fig. 4.4.14 section of the two new buildings (Draw by Jia Haowen)

4.4.3.4 Design plan

The revitalization of San Tau School will be the pilot project in San Tau and link the separate public spaces as a whole. The fence around school is removed and make the playground more open and convenient for

villagers holding festivals on the playground.



Fig. 4.4.15 master plan of the design (Draw by Jia Haowen)



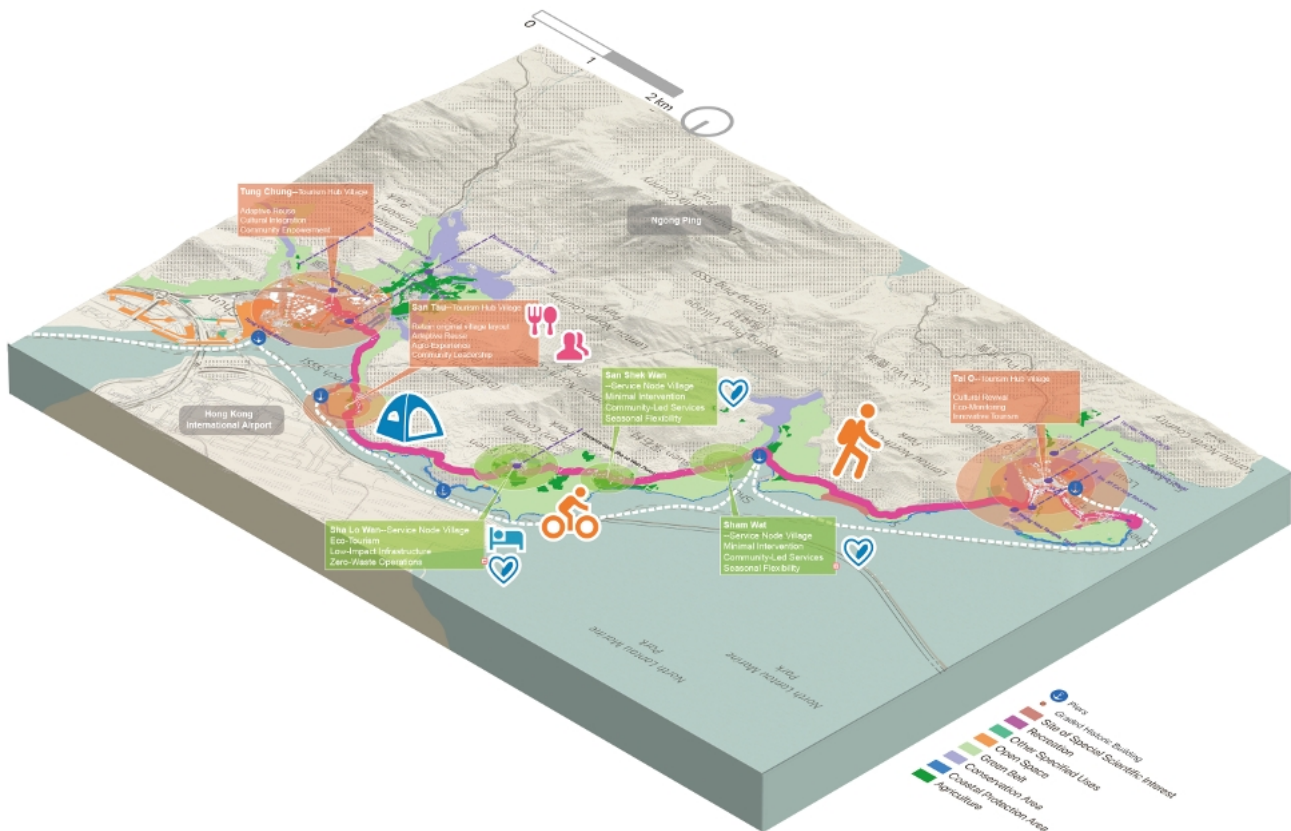
Fig. 4.4.16 effecting drawings (Draw by Jia Haowen)

Chapter 5 Policies and Guidelines

5.1 Policies and Guidelines for TOAT region

The Tung O Ancient Trail (TOAT) embodies both tangible heritage—historic villages, traditional livelihoods, and ancient footpaths—and intangible values, from biodiversity hotspots to enduring cultural practices. However, rapid urbanization, shifting visitor demands, and environmental pressures necessitate a holistic strategy to safeguard this irreplaceable legacy while fostering sustainable development.

This chapter outlines a comprehensive framework of policies and guidelines designed to harmonize connectivity, cultural and natural conservation, tourism, and community vitality along the TOAT. The chapter seeks to transform the TOAT into a sustainable, community-based heritage and ecological corridor that integrates cultural preservation, environmental conservation, and responsible tourism development. The following guidelines provide actionable steps to realize this vision, ensuring the TOAT remains a cherished resource for generations to come.



5.1.1 Transport Infrastructure and Connectivity

Policy 1: Establish and maintain a sustainable transportation network to ensure accessibility to and along the Tung O Ancient Trail (TOAT) and its surrounding areas.

Guideline 1.1: Strengthen ferry services connecting Tung Chung, Sha Lo Wan, and Tai O by increasing service frequency and adjusting schedules to align with resident and tourist needs, including extended operating hours during holidays or major events.

Guideline 1.2: Develop dedicated cycling routes along suitable trail sections as part of the North Lantau Biking Network to enhance multi-modal connectivity between walking, cycling, and public transport.

Guideline 1.3: Establish direct transportation links between Hong Kong International Airport Terminal and Sha Lo Wan Pier, as well as between Ngong Ping and the Tung O Area, to improve regional accessibility.

Policy 2: Deliver a high-quality cycling experience on the TOAT Cycling Route through optimized design and services.

Guideline 2.1: Develop complementary and alternative cycling routes to broaden connectivity across North Lantau and expand the cycling network.

Guideline 2.2: Continuously monitor user feedback and route usage patterns to refine cycling infrastructure and service quality, publishing annual reports on improvements.

Policy 3: Enhance accessibility by diversifying route options for visitors and residents.

Guideline 3.1: Improve subsidiary routes, such as historic paths and seasonal trails, to accommodate villagers, tourists, and organized events.

Guideline 3.2: Conduct a comprehensive trail audit to identify underutilized paths, culturally significant detours, and coastal access points for strategic development.

Guideline 3.3: Prohibit new route development in ecologically sensitive areas, ensuring alignment with environmental protection laws and zoning regulations.

Policy 4: Provide modern, low-impact infrastructure to serve trail users while protecting natural and cultural resources.

Guideline 4.1: Develop a trail network equipped with wayfinding signage, rest stations, and interpretive panels highlighting cultural and ecological narratives, adhering to UNESCO design standards.

Guideline 4.2: Install bilingual signage displaying difficulty ratings, estimated trekking times, and emergency contact information, ensuring compliance with accessibility legislation.

Guideline 4.3: Launch a Digital Trail Map mobile application with real-time updates on trail closures, weather conditions, and safety alerts, integrated with GPS and user feedback mechanisms.

Guideline 4.4: Upgrade village infrastructure, including fire protection systems, medical facilities, sewage management, and waste disposal solutions, in consultation with local stakeholders.

Policy 5: Improve walking conditions along the trail while preserving historical integrity.

Guideline 5.1: Retain original road surfaces and landscapes, applying only minimal protective measures such as erosion-resistant coatings, to avoid altering historical features.

Guideline 5.2: Replace modern pavements with permeable materials to maintain natural drainage patterns, prioritising locally sourced and sustainable resources.

Guideline 5.3: Assign clear responsibilities for trail maintenance and improvements to designated authorities, with quarterly audits to ensure accountability.

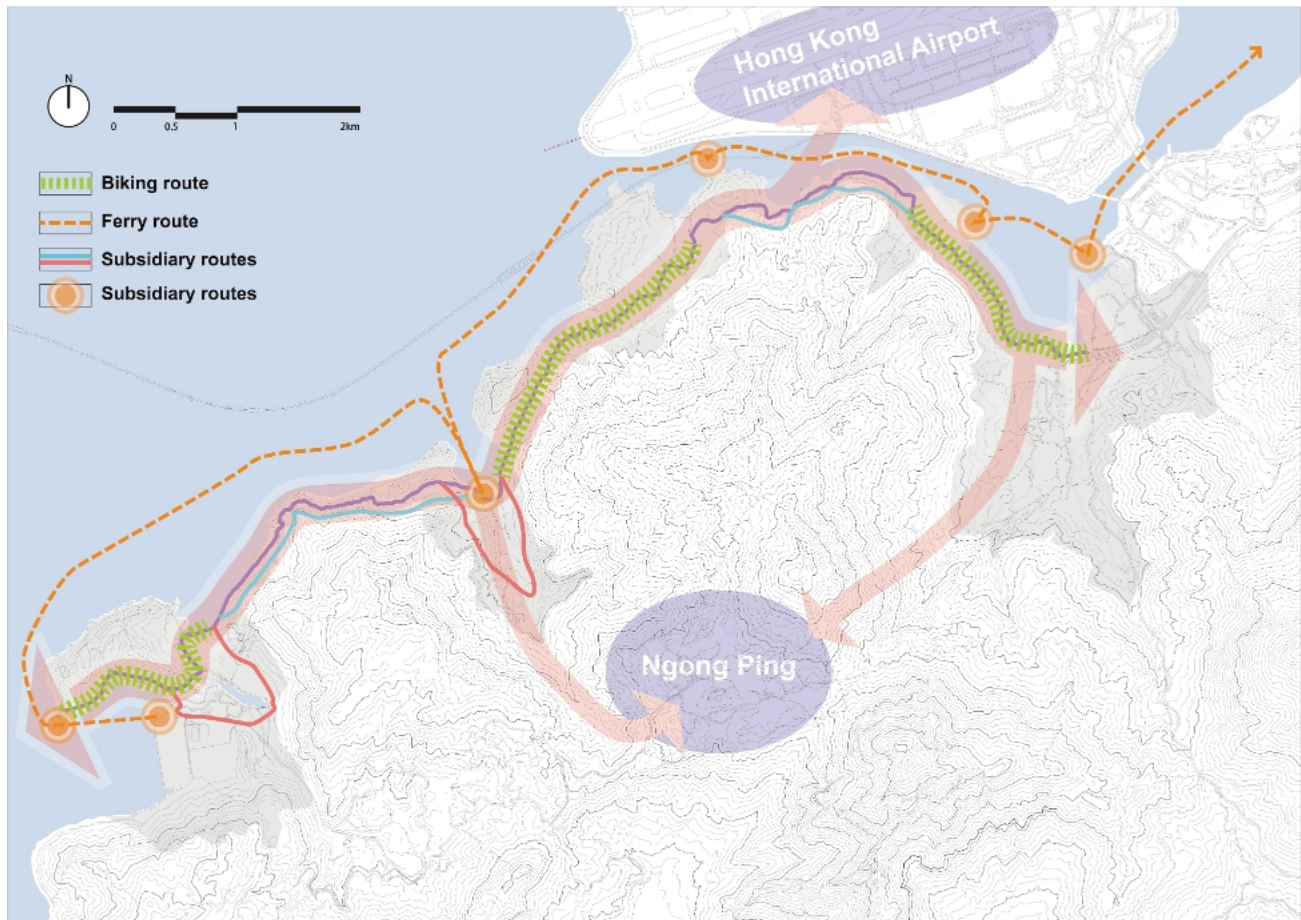


Figure 5.1.2 Policies on Transport Infrastructure and Connectivity (Edit: Zhou Limao)

5.1.2 Heritage Conservation

Policy 6: Prioritize the TOAT as a core axis for protecting ecological and heritage values.

Guideline 6.1: Prevent human interference, such as unauthorized path widening or slope cutting, through regular patrols and community education campaigns.

Policy 7: Ensure physical modifications to historic buildings strictly adhere to guidelines set by the Antiquities and Monuments Office (AMO).

Guideline 7.1: Require AMO approval for all restoration projects, with mandatory heritage impact assessments submitted to the Partnership Board.

Policy 8: Protect undesignated heritage areas with cultural significance.

Guideline 8.1: Preserve sites with monument legibility, including shrines, pavilions, and traditional settlement patterns, through zoning adjustments and public interpretation programmes.

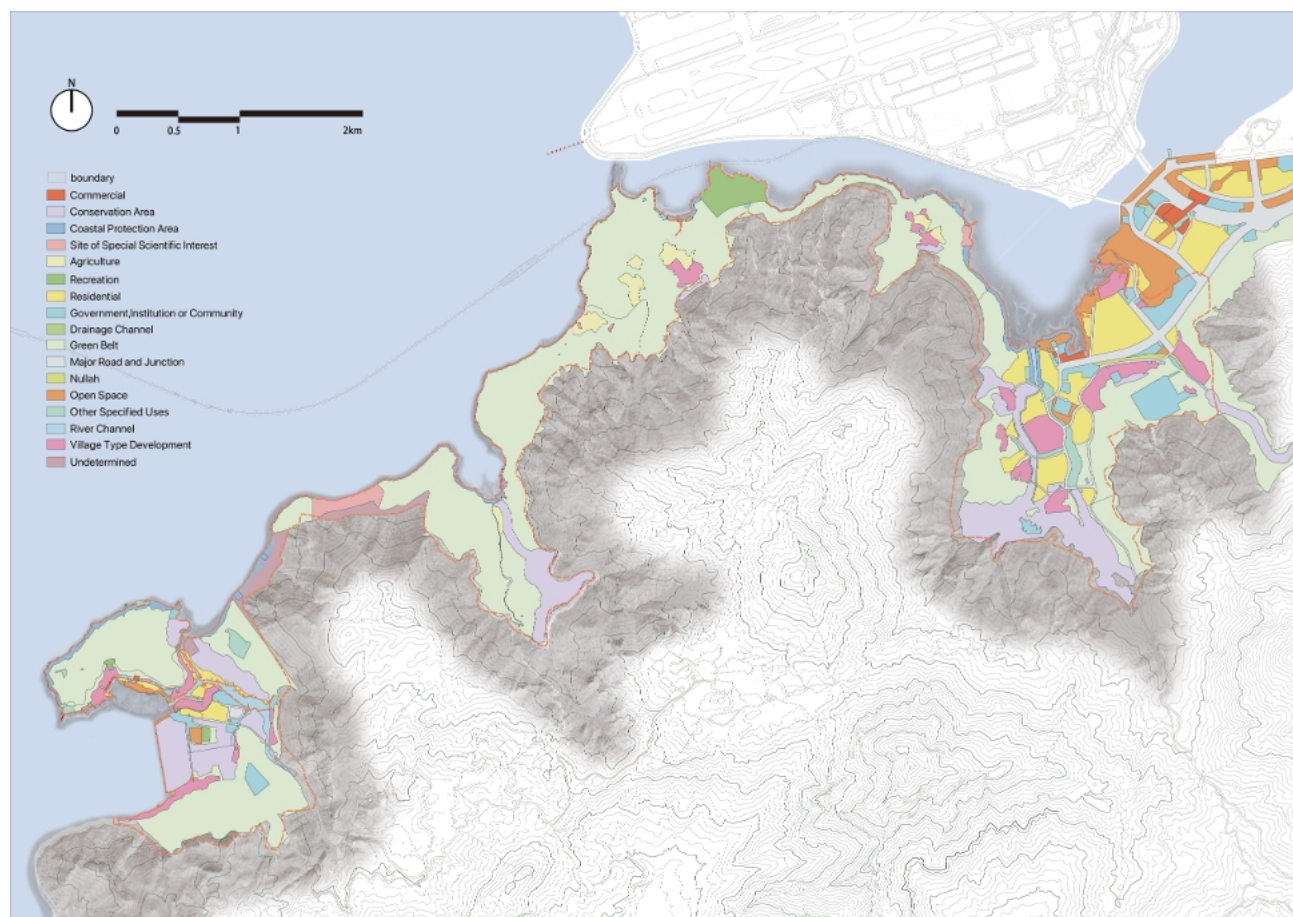


Figure 5.1.2 Proposed Zoning (Edit: Zhou Limao)

5.1.3 Ecological Conservation

Policy 9: Safeguard the TOAT's ecological value and landscape for future generations.

Guideline 9.1: Conserve geological attributes by restricting development in protected zones and allowing natural processes to continue unimpeded.

Guideline 9.2: Promote research and monitoring initiatives, such as biodiversity surveys and climate impact studies, to inform sustainable management practices.

Policy 10: Protect critical ecological nodes through zoning adjustments.

Guideline 10.1: Expand Coastal Protection Areas (CPA) to cover the entire coastline and designate Conservation Areas (CA) for all rivers, excluding man-made facilities from protected zones.

Guideline 10.2: Develop non-sensitive, non-private areas into public recreational zones with controlled access to balance conservation and tourism.

Guideline 10.3: Dynamically monitor protected area boundaries using GIS technology, updating zoning maps biannually to reflect ecological sensitivity.

Policy 11: Protect rare species and habitats through targeted conservation measures.

Guideline 11.1: Conduct ecology-focused educational activities, such as guided nature walks, without disrupting local ecosystems.

Guideline 11.2: Ban development activities threatening rare species, enforcing penalties for non-compliance through environmental legislation.

Guideline 11.3: Establish ecological corridors to reconnect fragmented habitats, collaborating with NGOs to secure funding and implementation.

Policy 12: Enhance climate resilience while protecting ecological integrity.

Guideline 12.1: Implement adaptation measures (slope stabilization, coastal protection, drainage upgrades).

Guideline 12.2: Set up environmental monitoring stations to track ecological health.

Guideline 12.3: Create habitat management plans for mangroves, Fung Shui woods, and butterfly hotspots.

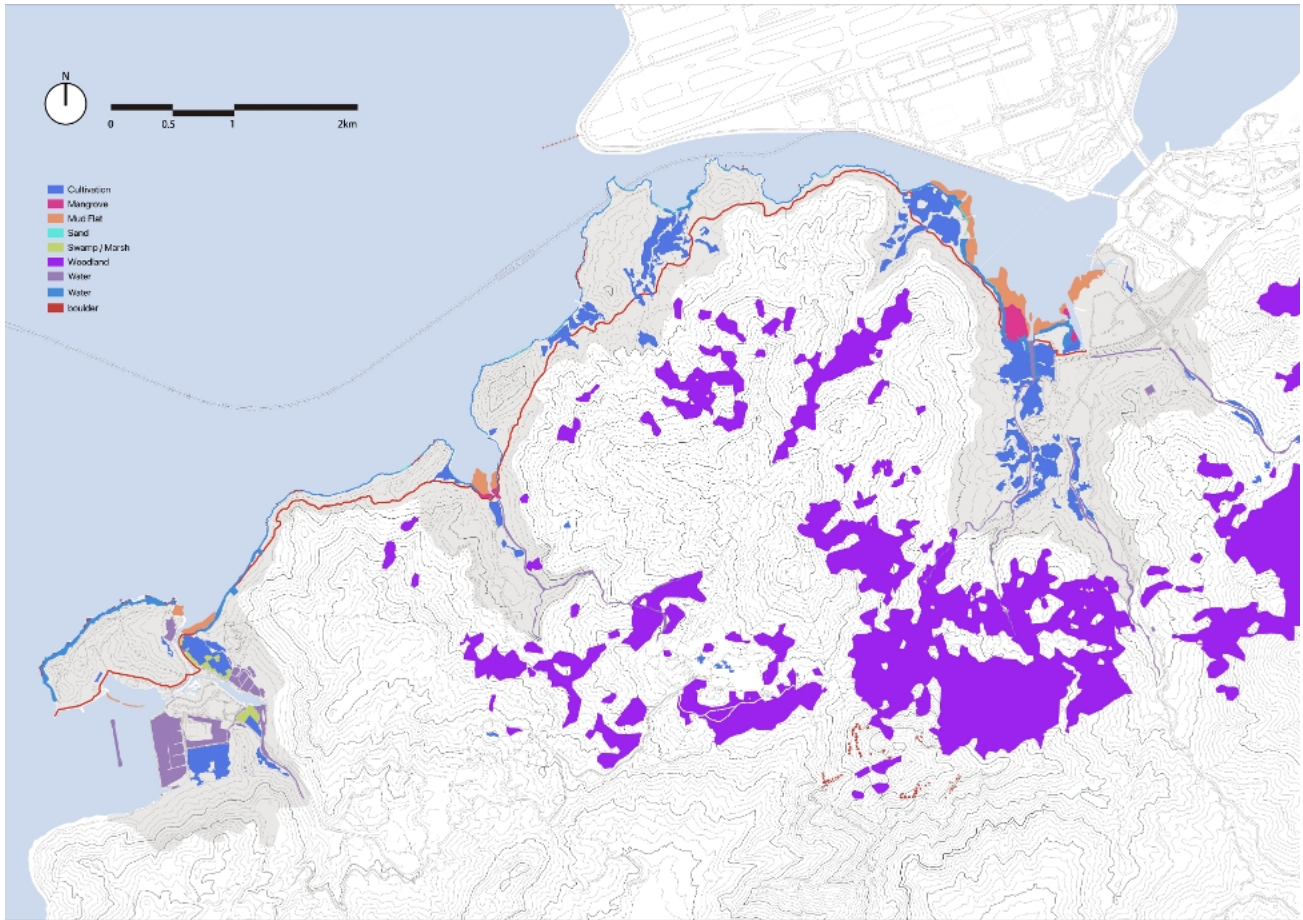


Figure 5.1.3 Critical ecological nodes (Edit: Zhou Limao)

5.1.4 Sustainable Tourism

Policy 13: Balance heritage protection with eco-tourism opportunities to ensure long-term sustainability.

Guideline 13.1: Develop cultural immersion routes for Ngong Ping visitors, integrating augmented reality (AR) tools to enhance storytelling.

Guideline 13.2: Create express cultural routes for airport transit tourists, offering multilingual audio guides and shuttle services.

Guideline 13.3: Design specialized eco-trails, such as mangrove and wetland routes, with observation decks and interactive signage for nature enthusiasts.

Guideline 13.4: Introduce nighttime stargazing trails and wellness trails focused on mindfulness, partnering with local wellness practitioners.

Policy 14: Deliver high-quality visitor experiences through accessible interpretation and engagement.

Guideline 14.1: Invest in facilities such as visitor centres and interactive exhibits, ensuring compliance with universal design standards.

Guideline 14.2: Conduct annual visitor surveys to assess learning needs and preferences, adapting services based on feedback.

Policy 15: Integrate new technologies to improve learning and engagement opportunities.

Guideline 15.1: Develop AR/VR experiences and interactive apps in collaboration with tech firms, piloting prototypes in 2026.

Guideline 15.2: Consult stakeholders, including local communities, before deploying technologies to ensure cultural sensitivity.

5.1.5 Community Engagement

Policy 16: Engage communities in planning and decision-making processes to foster inclusivity.

Guideline 16.1: Organize quarterly town hall meetings and workshops to gather input on trail management and development projects.

Policy 17: Involve local residents and visitors in research and stewardship initiatives.

Guideline 17.1: Foster collaboration between government agencies, NGOs, and villagers through joint conservation task forces.

Guideline 17.2: Establish an annual TOAT Research Award to recognize outstanding contributions to heritage or ecological studies.

Guideline 17.3: Train villagers as certified Trail Guardians, providing stipends for monitoring trail conditions and guiding visitors.

Policy 18: Clarify stakeholder rights and obligations in zoning.

Guideline 18.1: Balance interests of environmental groups, developers, and villagers.

Guideline 18.2: Protect private land ownership in rural areas.

Guideline 18.3: Preserve existing/restorable farmland for agricultural use to ensure food security.

5.1.6 Adaptive Reuse and Community Revitalization in Villages

5.1.6.1 San Tau

Policy 1 Formerly a predominantly agricultural village, most of the agricultural land and a large number of houses in San Tau are now in a state of abandonment. The existing layout of San Tau, including its compact residential clusters, open farmland spaces, village paths, and traditional alignments with feng shui woodlands and water sources, must be retained without significant restructuring.

Policy 2 In carrying out any adaptive reuse project, attention should be paid to preserving the original agricultural culture and the village pattern without making too many changes, so as to maintain its cultural coherence.

Policy 3 Attention should be paid to the importance of community leadership, giving full play to the initiative of local residents and prioritizing the wishes of villagers.

Guidelines:

The village of San Tau will be defined in the revitalization plan as the main part of the rural life experience area, which will include a restaurant serving local specialties, a workshop for tourists to experience local handicrafts, and a small piece of farmland to be used as a base for tourists to experience farming. All of these will be based on the original buildings and facilities, with minimal modifications.

Provide training in heritage interpretation, customer service, and business management for San Tau residents, with

emphasis on youth and women participation.

The process of transformation should maintain close contact with the villagers' committee. After the completion of the transformation project, the main body of the operation should be the local villagers and the income should be owned by the villagers. Ensure fair revenue-sharing and transparent community governance (e.g., rotating co-ops or community trust models).

Policy 4 Convert the former village school into a community-run restaurant selling local specialties, preserving its historical structure and incorporating heritage elements into the design (e.g., preserving blackboards, school furniture, etc.).

Policy 5 Retrofit the village office into a craft workshop space that supports visitor participation in local traditions (e.g., grass weaving, fishnet-making, Hakka snacks), while maintaining the original layout and walls.

Policy 6 A selected plot of historically cultivated farmland will be reactivated as a seasonal agro-experience zone, designed for immersive visitor engagement (e.g., rice planting, herb picking, composting), under the guidance of experienced villagers or partnering NGOs.

Guidelines:

When adaptive reuse is undertaken, the addition of new interiors should be reversible and non-intrusive to existing traditional structures and fabrics. New additions should be constructed in materials distinguishable from the original (e.g., steel or glass) and placed at the rear or side to avoid visual conflict.

Interpretive materials for each building's original function (e.g., education, governance, etc.) should be prominently featured to retain memory value.

The design and operation of the plot should be compatible with the surrounding landscape and not damage existing ecology. Also, any added facilities (e.g., shelter, wash station) should be constructed with light materials and traditional vernacular forms.

Partner with agricultural NGOs and elder villagers to deliver guided farm activities and promote sustainable rural education.

Policy 7 The pier at San Tau village has an important transportation value, which can greatly enhance the efficiency of exchanges with other villages, and also serves as a historical witness to the trade exchanges on Lantau Island in the last century. The pier should be revitalized to restore its access to other villages and enhance water connectivity.

Guidelines:

Conduct structural assessment and engineering reinforcement of the San Tau pier, ensuring safe docking for small ferries or eco-tour boats. Pier restoration must maintain its original scale, materials (e.g., timber/stone), and rhythm within the waterfront landscape.

Use the pier as both a transportation point and a heritage storytelling node, with signage and QR-linked interpretation platforms.

5.1.6.2 Sha Lo Wan, San Shek Wan and Sham Wat

Policy 1 Sha Lo Wan, San Shek Wan and Sham Wat, situated strategically along the Tung O Ancient Trail, shall be revitalized and managed as eco-friendly support stations. These villages will provide hikers and visitors with basic amenities such as refreshments, shaded rest areas, local snacks, water refill points, and essential cultural interaction opportunities. The planning and implementation must prioritize minimal intervention, heritage sensitivity, and community-led operations.

Policy 2 Any new structures (e.g. covered gazebos, composting toilets, vending stalls) must follow the requirements below. First, be constructed of lightweight, locally compatible materials (e.g. wood, bamboo, canvas). Second, it should be both clearly recognizable and in harmony with traditional fabrics. Third, it should be easily dismantled or relocated to accommodate future road use patterns or seasonal needs.

Guidelines:

Identify and retrofit existing vacant or semi-used village buildings (e.g., ancestral halls, former shops, village kitchens, open pavilions) into: 1. Rest kiosks and sitting areas for hikers; 2. Beverage/snack points offering locally made herbal drinks, traditional cakes, or tea; 3. First-aid or emergency response shelters (where feasible). All adaptive reuse should follow the principles of reversibility, minimal architectural intervention, and compatibility with original building character.

Each supply station should be plastic-free and offer: Water refill stations (gravity-fed or solar-powered where possible). Zero-waste packaging and disposal systems. Compost bins and recycling points, co-managed by village volunteers or NGOs.

Policy 3 The main parties operating the supply stations should be local villagers, and the profits from the operation should go to the local communities.

Policy 4 The supply depot should minimize or avoid the impact on the normal life of local villagers and the impact on the original local environment.

Policy 5 The installation of the supply station should meet the basic needs of tourists and give clear guidance.

Guidelines:

Train interested villagers in trail tourism etiquette, basic first aid, eco-hospitality, and food hygiene. Village-based cooperatives or trust groups should manage supply station income, with clearly defined roles and transparent accounting mechanisms.

Trail-side signage must clearly guide hikers to the support stations without disturbing private village paths or residents' areas. Designate clear supply station zones within each village to concentrate visitor activity and minimize disruption to daily life.

The supply stations should include rest zones with shaded seating, bicycle parking, and basic information boards (e.g., next village distance, trail safety tips).

5.2 Visitors and access

5.2.1 Managing Visitors and Access

5.2.1.1 Overall Objectives

1. **Safeguard Cultural and Natural Integrity:** Protect the villages alongside the trail as well as their lifestyles, and ecologically sensitive areas (e.g., **Conservation Area**, Coastal Protection Area, Sites of Special Scientific Interest) from over-tourism and degradation.
2. **Sustainable Tourism:** Provide enriching visitor experiences that foster appreciation for the trail's heritage values, including its historical, social, cultural and ecological significance.
3. **Community Integration:** Ensure tourism benefits local communities, helps preserve tangible and intangible heritage, as well as promotes local economic development and employment.
4. **Resilient Infrastructure Development:** Develop Adaptive design and low-impact facilities to meet the needs of tourists visiting and residents living services, to address the problems of trash, noise, and habitat degradation associated with tourism pressures, and to mitigate the loss of the local population.

5.2.1.2 Principles and Guidelines/Actions

A. Principles

1. **Carrying Capacity:** Limit visitor numbers and density in ecologically sensitive areas and culturally significant villages using real-time monitoring.
2. **Community-Led Governance:** Empower villagers through establishing a **Community Heritage Management Board** to co-manage tourism activities (e.g., homestays, guided tours) and revenue sharing.
3. **Heritage First:** Prioritize the conservation of tangible and intangible heritage when tourism expansion and community development are at risk of compromising the preservation and maintenance of heritage.

4. **Education and Interpretation:** Use bilingual signage, digital apps, and trained guides (local residents preferred) to convey the trail's history and heritage value.

B. Actions

1. Visitor Flow Management:

- Introduce a **ticketing system** for peak seasons (e.g., weekends, festivals) to control overcrowding.
- Restrict access to ecologically sensitive areas during breeding seasons of rare species or extreme weather.

2. Infrastructure Improvements:

- Install suitable number of street lights, resting spots, and signboards to meet the basic safety and service needs at the road sections where infrastructure is lacking such as Sham Wat, San Shek Wan, etc.
- Build **eco-friendly rest stations** with composting toilets and water refill points near villages (Sha Lo Wan, Sham Wat) and make use of local building materials.

3. Community Engagement:

- Train villagers as **heritage interpreters** and **eco-guides** to lead cultural walks and biodiversity tours.
- Develop **local craft markets** in Tai O and Tung Chung to sell traditional products like shrimp paste and mooncakes, and revive these declining traditions as tourist attractions.
- Encourage villagers to operate **agro-tourism hubs** such as rice cultivation workshops in Tung Chung, salt-pan tours in Tai O.

4. Technology Integration:

- Launch a **digital trail map application** with real-time updates on GPS tracking, trail conditions, weather alerts, and cultural events.
- Use **QR codes and AR facilities** at heritage sites and graded historic buildings for self-guided storytelling.

- Deploy smart environmental sensors in ecologically sensitive areas to monitor noise levels, footfall density, and habitat disturbances.

5.2.1.3 Indicators for managing visitors and access

Indicators	Key Monitoring Indicators	Measurement Method	Frequency
Heritage assets and visitor attractions	Physical condition of key heritage structures (e.g. temples, mangroves, coastline etc.)	Visual inspection and photographic surveys by trained local volunteers (e.g. retired villagers or youth) under guidance of the AMO or conservation NGOs.	Annually
	Status and upkeep of interpretive elements (e.g. signage, trail markers)	Simple checklist-based audits conducted by eco-tourism NGO or collaborating university students	Biannual
Visitor Volumes	Number of visitors passing through key nodes (Ma Wan Chung, San Tau, Tai O)	Manual counting on selected weekends and public holidays by trained village youth or volunteers	Quarterly
	Observation of peak-time congestion or crowding at sensitive sites	Simple crowd monitoring (photos at specific time slots), documented by NGO interns or village committee members	Peak seasons only
Capacity development	Tourism-related skills training	Train local residents who are willing to participate in the program in basic tourism-related skills, such as interpretation, tour guiding, first aid, etc. Guidance can be provided by NGOs or the government.	Annually
	Usage and impact of newly established facilities (e.g. rest stops, eco-toilets, craft workshops)	Visitor logbooks, operator feedback, and physical maintenance reports collected by village cooperatives	Biannual
Participatory governance	Inclusion of community voices in decision-making, such as feedback surveys or planning votes	Short surveys or suggestion boxes managed by heritage NGO interns or community co-op managers	Every 18 months
Protection of sensitive	Signs of soil erosion, trampling, or vegetation	Fixed-point photography by trained local youth or NGO volunteers; simple	Biannual

environments	loss	comparison against baseline photos	
Protection of wildlife	Sightings of key indicator species like egrets, horseshoe crabs	Fieldwork monitoring by research organizations or university teams	Every 5 years
	Presence of visitor-related disturbances in wildlife habitats (e.g. littering, loud noises, off-trail movement)	Spot-check observations by NGO field staff or village eco-rangers during weekends and holidays	Monthly (during peak season)
Climate change adaption	Monitoring of coastal flooding or trail washout events	Post-event documentation (photos and brief report) by villagers or hiking group leaders; submitted to District Council	After major weather events
Accessibility	Availability and clarity of directional signage, maps, and transport connections (e.g. ferry)	Visual audit by youth volunteers or tourism students, with basic feedback from visitors (paper slips or QR surveys)	Biannual
Local community opinion	Inclusion of villagers in planning meetings or development decisions	Short interviews or paper surveys conducted by village committees, supported by District Office or NGOs	After each key planning cycle (minimum annually)
Disaster risk management, crises- and emergency response	Presence and visibility of basic emergency facilities (e.g. signage, escape routes, muster points)	Visual inspections by community safety group or fire services liaison volunteers	Biannual
Respect of rights	Transparency in benefit distribution (e.g. tourism income, rental use of village space)	Annual open review meetings hosted by community trust or co-op, with financial summaries	Annually
Intangible cultural heritage	Visibility and appreciation of ICH by visitors	Setting up introduction boards and guided tours, and conducting presentations at the workshops by villagers who are willing to participate. Simple visitor feedback forms (paper or QR code) collected at kiosks or workshops; observations recorded by tour operators or cultural docents	Biannual
	Number and continuity of traditional cultural practices and community events (e.g. Hau Wong Festival, local ancestral rituals)	Documented by village elders, community-based NGOs, or cultural research teams (photos, videos, short written logs); may be supported by university students or school clubs	Annually

Visitors' financial contribution	Average spending per visitor at community-run facilities (e.g. local food stalls, workshops, farm tours)	Simple sales logs collected voluntarily by local vendors or cooperatives; supported by periodic NGO survey sampling	Quarterly
	Number of visitors participating in paid local experiences	Booking or participation records maintained by experience providers or village officers	Monthly (during tourist seasons)
Local jobs, employment, and career opportunities	Number of local residents employed in tourism-related services (e.g. food, guiding, transport, farm-based tourism)	Community self-reporting through village committee or co-op registration; supported by NGO or District Office verification	Annually
	Number and type of new livelihood initiatives started by villagers as a result of tourism	Short interviews or participatory mapping conducted by local NGOs or university students as fieldwork	Annually
Visitor facilities, infrastructure, and services	Condition and availability of basic visitor infrastructure (e.g. resting spots, toilets, water refill points, signage)	Visual condition checklist maintained by village-based caretakers or volunteers	Biannual
	Visitor satisfaction with available services and amenities	Basic visitor feedback forms placed at rest stops or exit points (QR or paper); collected by local youth or NGOs	Quarterly

Fig 5.2.1 Indicators for managing visitors and access (Edit: Weng Xintong)

5.2.1.4 Zoning for Visitor Management and Access

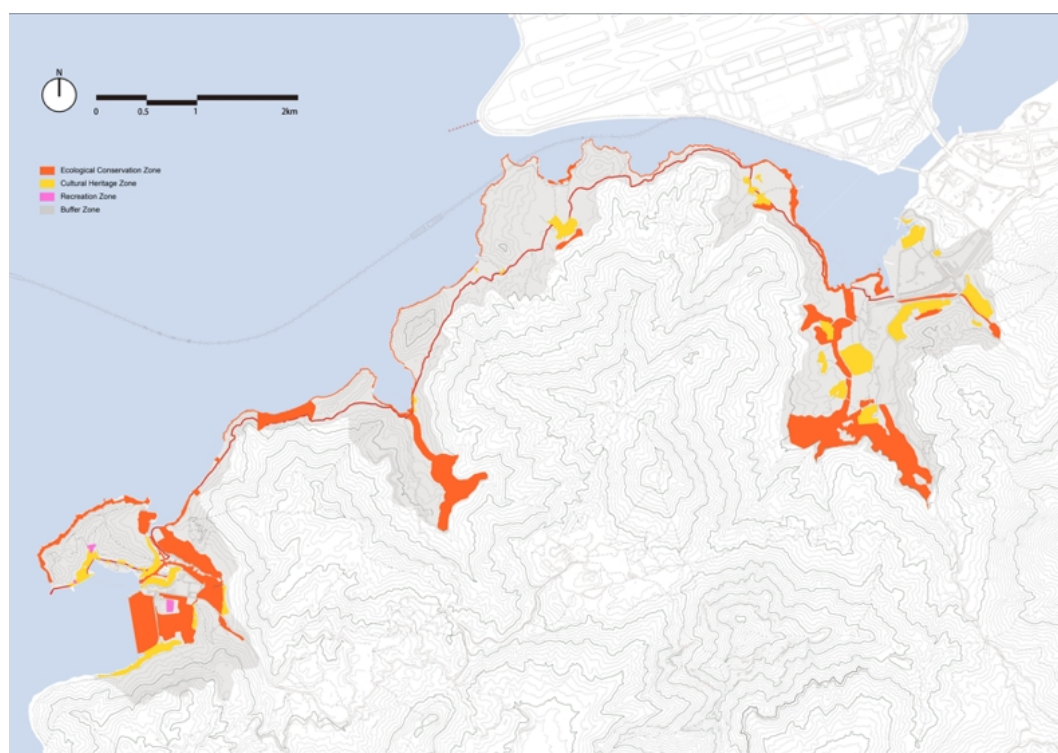
Zone	Description	Visitor Regulations
Ecological Conservation Zone	Ecologically sensitive areas, including conservation area, coastal protection area, sites of special scientific interest, nullah, and river channel.	Restricted access during ecologically and biologically sensitive and extreme weather conditions. No littering allowed.
Cultural Heritage Zone	Including village-type development areas, temples and shrines, graded historic buildings and declared monuments.	Limited group sizes for village tours. Prohibit commercial photography without permits.

Recreation Zone	Recreation areas, rest stations, places of activity and public spaces in certain villages.	Encourage responsible hiking according to self-physical conditon. Encourage participation in community activities and follow local customs and traditions.
Buffer Zone	Transitional areas between villages and natural habitats, including agricultural areas.	Monitor for encroachment on agricultural land or illegal activities. Promote agro-tourism in agricultural areas.

Fig 5.2.2 Zoning for Visitor Management and Access (Edit: Zhou Limao)

Implementation & Monitoring

- **Annual Audits:** Assess zoning effectiveness through ecological surveys and stakeholder feedback.
- **Dynamic Signage:** Update trail maps and regulations based on real-time data (e.g., pedestrian flow, festival dates).
- **Community Forums:** Host annual meetings with villagers, NGOs, and government agencies to refine strategies.



5.2.2 Interpretation

5.2.2.1 Overall Objectives in Interpretation

A. Enhancing Public Awareness and Appreciation of the Cultural, Ecological and Historical

Through in-depth interpretation content, the project focuses on enhancing visitors' overall awareness and emotional resonance of the TOAT's rich cultural heritage, ecological diversity as well as its historical background. On the one hand, an in-depth exploration of cultural values should be conducted. By demonstrating the close connection between the TOAT and the traditional villages and historical sites, visitors will understand the evolution of the function of the road, such as its role from a trade route to a cultural connector. On the other hand, ecological knowledge can be popularized with the help of explanation. By introducing the rich ecosystems along the route, including wetlands, mangroves, and Fengshui forests, tourists will be able to recognize the complexity and importance of the natural environment in a more in-depth manner, and enhance their awareness of environmental protection. In addition, the storytelling of the explanation should be improved, so as to integrate the historical sites and ecological landscapes into vivid narratives, so that tourists can have stronger emotional resonance during the visit.

B. Long-term Objectives to Support Cultural Heritage and Ecological Conservation

Interpretation is not only for the purpose of information transfer, but is also an important tool for realizing cultural heritage and ecological conservation, and therefore should focus on the cultivation of conservation awareness. This means that through the content of the interpretation, tourists will not only understand the historical and cultural values of the TOAT, but will also recognize the environmental threats and cultural vulnerabilities it faces, thus enhancing conservation awareness. Interpretation can also carry out the concept of sustainable tourism, by introducing the sustainable tourism model of the TOAT, so that tourists can understand how to enjoy the beautiful attractions while minimizing the negative impacts on the environment.

C. Encourage community-led interpretation and knowledge transfer

Promote the transmission of traditional knowledge and local culture by empowering local residents, especially older villagers, to become cultural interpreters. The training and participation of local residents should be emphasized in the preliminary preparatory work. Provide villagers with training in interpretation skills, ecological knowledge and cultural heritage, and encourage them to become official “cultural interpreters” or “ecological interpreters”. In this way, tourists have more direct access to traditional stories, practices and techniques. Moreover, the design of the interpretation should be fully participated by villagers, who should be invited to make suggestions on the content of the interpretation and the design of the routes by organizing regular community discussions, so as to ensure that the content of the interpretation is more relevant to the local reality and to avoid over-commercialization.

5.2.2.2 Principles and Guidelines

A. Sustainable Tourism Interpretation

Principle 1 Interpretation activities should be educational in nature, helping tourists to understand the importance of heritage sites, in particular their unique values in terms of history, culture and ecology.

Guideline 1 Through active participation and experience, tourists should be made aware of the impact of their actions on the environment and the community, and be encouraged to adopt sustainable tourism behaviors, such as low-impact tourism and eco-tourism.

Principle 2 Respect for local culture and traditions: All interpretation should reflect respect for local culture and traditions and ensure accuracy.

Guideline 2 Any form of cultural plagiarism or misinterpretation should be avoided in the interpretation process, especially when demonstrating traditional handicrafts, religious ceremonies and festivals, to ensure that they are recognized and supported by the local community.

Principle 3 Interpretation should incorporate the concepts of environmental protection and heritage preservation, and

emphasize the ecological impact of tourists' behaviour.

Guideline 3 It is recommended that instructions related to litter-free travel be set up to encourage tourists to minimize the negative impacts of their personal behaviors on the environment.

B. Interpretation Content Development

Principle 4 The content of the interpretation should highlight the value of the TOAT as a “living heritage”, explaining that it is not only a historical site, but also a cultural and ecological resource for sustainable development.

Guideline 4 Visitors should be made aware of modern interpretations of local traditional activities, such as festivals and community interactions, to stimulate interest and participation in heritage conservation.

Guideline 5 Orientation tours hosted by local community members (e.g. docents, old villagers, etc.) should be organized on a regular basis to enable visitors to better understand the culture and history of the Dong'ao Ancient Trail through face-to-face interactions and explanations. In addition, specific explanations can be set up during traditional festivals and events, such as the Hau Wong Festival or the Dragon Boat Water Parade.

Principle 5 Set up interactive interpretation and experiential activities to encourage visitors to deepen their understanding through interactive and hands-on activities.

Guideline 6 Through traditional agricultural experiences (e.g. rice paddy planting, straw weaving, etc.) visitors can experience first-hand their connection to the land, or set up ecological interpretation points to provide interactive experiences of plant and animal observation and identification.

Principle 6 Interpretation content should be presented in a variety of forms to ensure that the needs of different groups of visitors are met.

Guideline 7 In-depth scientific explanations can be provided for highly educated tourists and academic teams, and concise and interesting storytelling can be provided for leisure tourists. In addition, a variety of interpretation methods can be provided, including but not limited to text, pictures, video, audio, etc., to ensure that the needs of different

groups of visitors are met.

C. Visitor Behavior Guidance and Community Engagement

Principle 7 Visitors' behavior should be appropriately guided to conform to conservation requirements and codes of conduct.

Guideline 8 Develop and prominently display codes of conduct at interpretive sites, including not disturbing wildlife, not trampling on grass, not littering, etc. Timely guidance on visitor behavior can be provided through local community guides and interpreters.

Principle 8 Interpretation should fully reflect the cultural attributes along the TOAT and be led by community participation.

Guideline 9 Encourage villagers to act as cultural interpreters or activity hosts in festivals or tourism activities to enhance tourists' understanding and recognition of local culture. Regularly organize activities involving both villagers and tourists, such as cultural bazaars and traditional handicrafts demonstrations, which can promote cultural exchanges and bring economic benefits to the community.

D. Monitoring and Evaluation of Interpretation

Principle 9 Conduct regular review of the interpretation content to ensure its scientificity, accuracy and timeliness, and update the new heritage research results, conservation policies or visitors' feedback in time.

Guideline 10 set up a visitor feedback mechanism to collect visitors' opinions and suggestions on interpretation services through questionnaires, online ratings or on-site interviews. Based on the evaluation results, continuously adjust and improve the interpretation content, service forms and infrastructure.

Guideline 11 Organize annual meetings between the community, the government, NGOs and other relevant parties to evaluate the community's participation in the interpretation activities and the effectiveness of the interpretation, and to ensure that the interpretation work can be consistently dovetailed with the needs of community development.

5.2.2.3 Interpretation Themes

Walking the Living Heritage: Exploring the Interwoven Journey of People, Nature, History and Future along Tung O Ancient Trail.

The TOAT is not only a historical path, but also a continuously evolving cultural and ecological scene. Through the interpretation of the relics, traditional villages, and natural ecology along the path, visitors will understand how this place has become a connecting link between the past and the present, between nature and humanity.

Sub-Theme A: Memory of the Road: from Trade Paths to Cultural Paths

Tells the story of the ancient roads that served as important transportation links between villages, carrying economic activities such as fishing, farming, and salting. Through explanation and tours, the evolution from ancient times to the present day can be shown: from farming and trading paths, to police patrol paths, to today's hiking and cultural corridors.

Key sites: Tung Chung Fort, Ma Wan Chung Agricultural Products Trading Market, Old Village Ferry, Historic Stone Steps Section.

Sub-Theme B: Harmony between Man and Nature

Interpret the rich ecosystems along the trail (wetlands, mangroves, butterfly ecology, fung shui forests) and show how traditional societies utilized and respected natural resources. Guide visitors to recognize the connection between today's ecological conservation and traditional wisdom, such as how villagers rely on Fengshui forests to regulate climate and protect water sources.

Key sites: mangrove area, butterfly hotspot, Ham Tin wetland ecological area.

Sub-Theme C: Spiritual World and Local Beliefs

Reveal the strong local beliefs along the TOAT, including the beliefs of protective deities such as Hau Wong, Hung Shing and Tin Hau and their role in community cohesion. To introduce religious festivals, such as the Hau Wong

Festival and dragon boat water parade, and how they sustain community identity.

Key sites: Hau Wong Temple in Tai O, Hung Shing Temple site in Sha Lo Wan.

Sub-Theme D: Living Heritage and Future Imagination

Demonstrate how the community can continue the spirit of the ancient road through sustainable agriculture and eco-tourism to create a “living heritage”. It highlights the fact that the TOAT is not only a witness to the past, but also a testing ground for the community's self-renewal and sustainable development today.

Key sites: San Tau Village Traditional Farmland Rehabilitation Project

5.2.2.4 Interpretation Strategy

A. Interpretation Content Strategy

Integration of cultural and ecological contents: The content of the interpretation should be centered on the dual core of “cultural heritage and natural ecology”, showing the TOAT as a historical scene of interaction between human beings and nature, and highlighting the connection between the culture of the villages along the way, the rituals of beliefs, the trade activities, and the richness of the ecosystem.

Multi-layered Interpretation: Interpretation information is divided into basic information (suitable for tourists with quick browsing) and advanced knowledge (providing in-depth learning content for cultural enthusiasts, students and researchers).

Local Voices and Multi-language Integration: Develop a trilingual interpretation system in Cantonese, Putonghua and English, utilizing materials such as villagers' oral narratives, videos of traditional festivals and old photos, so as to strike a balance between the original local culture and the understanding of international tourists.

Dynamic updating and seasonal content: The interpretation content should be flexibly adjusted according to festivals (Hau Wong Festival) and seasonal changes (mangrove migratory bird observation season) to keep the content fresh and relevant.

B. Interpretation Platforms Strategy

On-site physical platforms: Small-scale interpretation kiosks/interpretation boards installed at key nodes (e.g. Tung Chung Fort, San Tau, Hau Wong Temple, etc.). Each interpretation point combines stories + questions to guide visitors to explore and enhance the sense of interaction.

Digital and Smart Interpretation: Develop TOAT Official App, integrating GPS guide, audio commentary, multi-language support and AR experience (e.g. restoration of trade scenes on the ancient road). QR Codes and NFC sensor points are set up along the ancient road, so that visitors can scan them to get detailed illustrations, audio and video content.

C. Interpretation Infrastructure Strategy

Facility configuration of key nodes: set up thematic interpretation nodes (e.g., cultural story nodes, ecological observation nodes, faith ritual nodes). Each node is equipped with a guided map, multi-language concise introduction and in-depth exploration (access to more detailed explanations through code scanning or electronic devices).

Combination of leisure and education: Setting up “interpretive rest areas” in Sham Wat, San Tau Village, etc., which are combined with simple resting pavilions, ecological observation platforms, and small-scale exhibitions, and become a space for both learning and resting. It will be a space for both learning and resting.

Environmentally friendly and sustainable design: All new interpretation facilities are made of environmentally friendly materials to minimize visual disturbances. All new interpretation facilities are made of environmentally friendly materials to minimize visual disturbances, and follow the principle of removability to minimize the impact on the existing landscape.

D. Interpretation Route Strategy

Interpretation Route	Theme Positioning	Target Group	Key Sites
Heritage Walk	Villages and History	Culture lovers, parent-child	Tung Chung Fort → Hung Shing Temple in Sha Lo Wan → Historical

		tourists, Ngong Ping tourists	Stone Steps → Yeung Hau Temple in Tai O
Eco Walk	Natural Ecology and Species Conservation	Eco-photographers, nature lovers	Butterfly hotspot → Fung Shui Forest → Salt pans → Mangrove forests
Living Heritage Route	Community Life and Festival Experience	Experiential tourists, airport transit tourists, farm life enthusiasts	Sam Tau Village Farmland Experience → Village Crafts Workshop → Hau Wong Temple Festival Site (season-specific)
Night Experience	Starry sky, nature healing	Night Tourism Enthusiasts, Wellness Tourists	Nighttime Ecological Stargazing Site → Beach Sea Viewing Meditation Area

Fig 5.2.2.4 Interpretation Route Strategy (Edit: Weng Xintong)

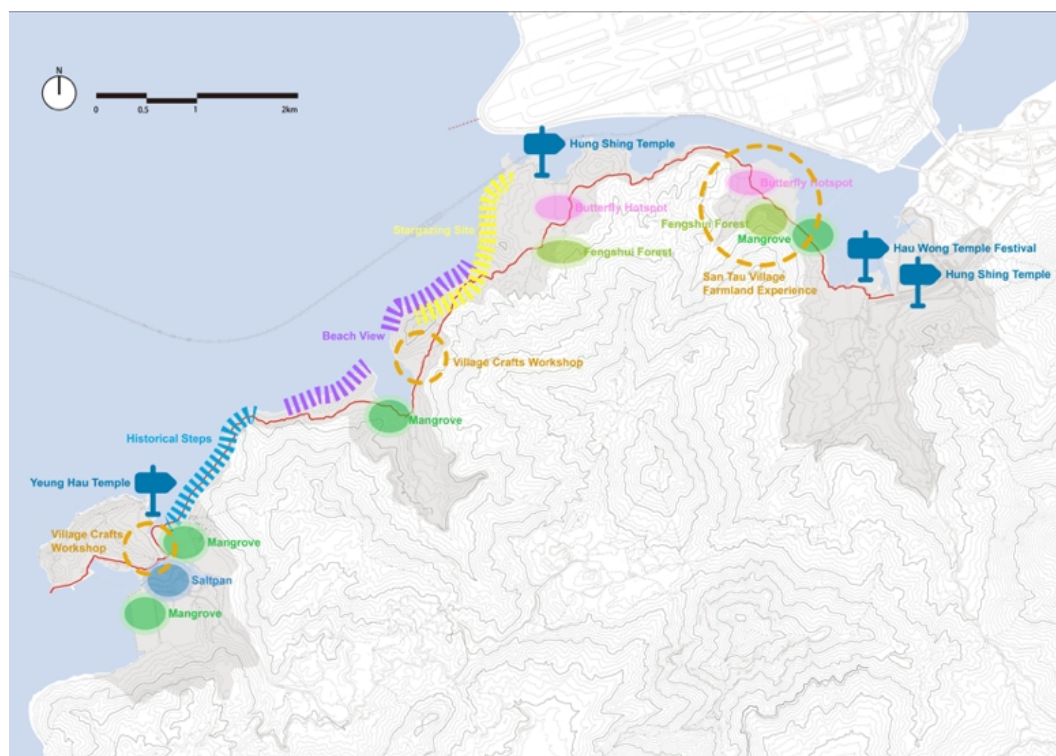


Fig. 5.2.5 Interpretation Services point (Edit: Zhou Limao)

5.3 Social and environmental resilience

5.3.1 Introduction

5.3.1.1 Statement of OUV and identify attributes

A. Cultural Value

The Tung O Ancient Trail is an important ancient road connecting Tai O and Tung Chung, with a history dating back to the Qing Dynasty. Over the centuries, there has not been any significant change in its road network structure, and it has been serving as an important link between the villages along the route. The villages along the ancient road (e.g. Sha Lo Wan, Sham Kuk, Shan Tan, Tung O Village, etc.) reflect the settlement form and lifestyle of the Hakka and fishing and farming cultures in the southern part of the New Territories, and traces of traditional temples, stone huts, and cultivated land are commonly found along the road section, which reflect the local historical mode of living and vernacular beliefs. Therefore, it is an important research channel in the related fields.

B. Ecological Value

The old road runs through a number of ecologically sensitive areas, including mangrove wetland, intertidal zone and mountain scrub, with rich flora and fauna species. The route is also part of the South Lantau Coastal Protection Corridor with good ecological continuity. Its rich and continuous habitat resources are home to a number of endangered and endemic species (e.g. mudskipper, water pine, egret, etc.).

C. Social Value

At present, the TOAT is still one of the important channels for local residents to communicate with the outside world and each other, and is regarded by local villagers and hiking enthusiasts as an important living space, recreational route and cultural inheritance place. The centuries-old cultural and trade exchanges can help strengthen the sense of community identity and are an important resource for environmental education and eco-tourism.

D. Attributes

Road network structures and jetties of the ancient roads ; Slate sections paved in the Qing Dynasty, stone bridges along the roads with aqueduct systems; Traditional village architecture (e.g. ancestral halls, temples, stone houses, etc.); Traditional agricultural landscape and farmland pattern; Mangrove forests, intertidal zones and other ecological environments; Ritual points along the road used for traditional festivals (e.g. God's Birthday, Autumn Festival).

5.3.1.2 Sustainability Ps (SWOT)

	Strengths	Weaknesses	Opportunities	Threats
People	Rich in local culture and local memories. Potential to promote community participatory management. Suitable for low-intensity recreational activities such as hiking and guided tours.	Lack of systematic visitor management mechanisms. Community exodus, aging affect heritage vitality.	Developing ecological and cultural guided education to strengthen community identity. Establishing community-led conservation and interpretation networks.	Large-scale development projects threaten traditional ways of life. Over-tourism brings cultural dilution and community disruption.
Planet	Diverse ecosystems, e.g. mangroves, intertidal zones, secondary forests. Maintained in good pristine condition.	Lack of regular ecological monitoring and maintenance. Some of the trail's amenities are outdated and may be ecologically disruptive.	Establishment of eco-education trails and restoration of ecological barriers. Collaboration with universities or NGOs for ecological census and rehabilitation.	Erosion and ecological degradation due to climate change and extreme weather. Ecological damage due to illegal development/tourist misbehavior.
Prosperity	Potential for sustainable tourism (low carbon hiking, guided economy). Can drive small local economies, e.g., lodging, agricultural sales.	Lack of systematic business model and management mechanism. Insufficient investment and resource allocation.	Developing a community-oriented cultural ecotourism industry chain. Creating small-scale social enterprises to promote employment and the return of young people.	In the absence of regulation, commercialization could lead to over-consumption of heritage. Real estate pressures and policy changes could undermine conservation drivers.

5.3.2 Review of Current Heritage Management Policies Addressing the 3Ps (People, Planet, Prosperity)

5.3.2.1 People (Social Sustainability):

Existing Measures:

Community engagement in traditional festivals (e.g., Hau Wong Festival, Dragon Boat Water Parade) fosters cultural identity.

Heritage walks led by trained community volunteers enhance visitor understanding of intangible heritage.

Gaps:

No formalised community-led governance structure (e.g., Heritage Management Board) for inclusive decision-making.

Limited emphasis on the participation of youth and women in heritage preservation and tourism activities.

Insufficient methods of interpretive infrastructure to educate visitors on cultural diversity and heritage significance (SDG 4.7).

5.3.2.2 Planet (Environmental Sustainability):

Existing Measures:

Protection of critical ecosystems (mangroves, Feng Shui woodlands) under the Sustainable Lantau Office (SLO) framework.

"Leave No Trace" tourism guidelines to minimize ecological disruption (SDG 12.b).

Gaps:

Climate resilience strategies (e.g., flood prevention, landslide mitigation) are underdeveloped (SDG 13.1).

No real-time environmental monitoring system for biodiversity hotspots or visitor density.

Degraded streams and coastal habitats require restoration (SDG 6.6, 14.2).

5.3.2.3 Prosperity (Economic Sustainability):

Existing Measures:

Eco-tourism initiatives (e.g., agro-tourism, craft markets) generate income for villagers (SDG 8.9).

Partnerships with NGOs (e.g., Lantau Conservation Fund) support small-scale enterprises.

Gaps:

Over-reliance on tourism; lack of diversified livelihoods (e.g., sustainable agriculture, green tech).

Inequitable revenue distribution; no transparent community benefit-sharing mechanism (SDG 10.4).

5.3.3 Priorities for Future Action

Dimension	Priority Actions	Linked SDGs
People	1. Establish a Community Heritage Management Board to ensure participatory governance. 2. Train youth and women as cultural interpreters and eco-guides. 3. Develop multilingual AR-enhanced interpretive tools to promote cultural diversity.	SDG 4.7, 5.5, 11.4
Planet	1. Implement climate resilience measures (e.g., slope stabilization, mangrove restoration). 2. Deploy IoT sensors for real-time monitoring of ecosystems and visitor impact. 3. Restore degraded streams using nature-based solutions.	SDG 13.1, 14.2, 15.1
Prosperity	1. Launch a community cooperative for fair tourism revenue distribution. 2. Develop agro-tourism value chains (e.g., organic rice, salt-pan products). 3. Attract green-tech investments (e.g., solar energy, rainwater harvesting).	SDG 8.3, 8.9, 9.4

Fig. 5.3.2 Priorities for Future Action (Edit: Zhou Limao)

5.3.4 Actions and Responsible Parties

5.3.4.1 People-Oriented Actions:

Action	Responsible Parties	Timeline	SDG Alignment
Formulate a Community Heritage Management Charter with voting rights for indigenous residents.	Village Committees, NGOs (e.g., Green Lantau Association), SLO	Short-term (1 year)	SDG 11.4, 16.7
Train 50 villagers (prioritizing women/youth) in heritage interpretation and digital storytelling.	SLO, AMO, UNESCO HK Association	Medium-term (2 – 3 years)	SDG 4.4, 5.5
Install AR-enhanced signage at 10 key heritage nodes (e.g., Tung Chung Fort, Hau Wong Temple).	Tourism Board, Tech Partners	Long-term (3 – 5 years)	SDG 9.c, 11.4

Fig. 5.3.3 People-Oriented Actions (Edit: Zhou Limao)

5.3.4.2 Planet-Oriented Actions:

Action	Responsible Parties	Timeline	SDG Alignment
Restore mangroves and install biodegradable boardwalks to prevent habitat disruption.	Agriculture, Fisheries and Conservation Department, WWF-HK	Short-term (1 year)	SDG 14.2, 15.1
Deploy IoT-enabled environmental sensors to monitor air quality, soil erosion, and visitor density.	CEDD, Lands Department	Medium-term (2 – 3 years)	SDG 9.4, 13.3
Implement slope stabilization using native vegetation and geotextiles in landslide-prone areas.	CEDD, SLO	Long-term (3 – 5 years)	SDG 15.3, 13.1

Fig. 5.3.4 Planet-Oriented Actions (Edit: Zhou Limao)

5.3.4.3 Prosperity-Oriented Actions:

Action	Responsible Parties	Timeline	SDG Alignment
Launch the "TOAT Green Fund" to finance community-led eco-tourism startups.	HK Monetary Authority, Social Enterprises	Short-term (1 year)	SDG 8.3, 17.16

Establish a farm-to-table network linking Tai O' s salt pans and Tung Chung' s organic farms to local markets.	Tourism Development Board	Medium-term (2 – 3 years)	SDG 2.3, 12.3
Retrofit heritage buildings with solar panels and rainwater harvesting systems.	CLP Group, Architectural Services Department	Long-term (3 – 5 years)	SDG 7.2, 9.4

Fig. 5.3.5 Prosperity-Oriented Actions (Edit: Zhou Limao)

By embedding the SDGs into TOAT's conservation strategy, this plan ensures a holistic approach to safeguarding heritage while fostering social equity, ecological resilience, and inclusive economic growth.

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