Backyard Trails Pilot Project

Part 1: Exploring the Urban Fringe

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WYNG FOUNDATION

PARKS & TRAILS

TrailWatch

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ABOUT WYNG FOUNDATION

Established in 2011 in Hong Kong, WYNG Foundation is a privately-funded foundation that aspires to enhance the physical, mental, social and cultural well-being of Hong Kong people. Its mission is to design, develop, support and deliver strategic initiatives to increase awareness of and contribute to cohesion, equity, resilience and diversity of the Hong Kong community. For more information about WYNG Foundation, please visit www.wyng.hk.

Table of Contents

Preface and Acknowledgements

I have always had a soft spot for the leftover spaces in cities that people use in unexpected ways—the plastic chairs on street corners, the gaps under flyovers where old men play cards, the railings with drying laundry draped over them. Hong Kongers live in an aggressively utilitarian environment with little greenery and even less space to call their own. So everyday life spills out into the nooks and crannies, and people make creative use of whatever they can find to humanise their surroundings. About ten years ago, I noticed an anonymous concrete stairway winding up a hillside behind a sports field in my neighbourhood. I must have passed it hundreds of times without giving it a second thought, but that day, I decided to climb it, and it was like entering another world. A huge broad-leafed ficus tree towered over me as I walked past dozens of ceramic Buddhas that seemed to sprout from a rock face. After a short distance, the concrete stairs gave way to a dirt track covered with the occasional car mat. At the top, I found a small grassy field where an unknown someone had built a collection of fitness machines, swing sets, and hammocks out of found materials. Neighbourhood aunties did stretches while children played badminton. I realised that I had stumbled upon an outdoor do-it-yourself (DIY) community centre. At the time, my research focus was elsewhere, but I was intrigued. I figured there had to be other places in Hong Kong like this; most urban areas backed up onto hills, after all. I was not then, and to be honest, am still not now much of a hiker, so I mentally filed it away as something to look into one day.

In 2021, TrailWatch presented me with an opportunity to collaborate with them on a project about what they had decided to call “backyard trails”. Naturally, I jumped at the chance. I had spent the previous few years researching the distribution of and public satisfaction with urban public open space. With the support of the WYNG Foundation, TrailWatch had collaborated with the University of Hong Kong School of Public Health on a study on usage of Hong Kong’s country parks and their impact on people’s psychological well-being. But “backyard trails” were an in-between space that received comparatively little attention. The term “backyard trail” is not used in government documents. There does not seem to be any official term to distinguish them from hiking trails in country parks. Green belt land, where most backyard trails are found, is only tangentially mentioned as a recreational resource in planning documents. Still, they appear to play an important role in contributing towards the well-being and quality of life of nearby residents. The Backyard Trails Pilot Project investigates not one, but eleven selected backyard trails. In doing so, we hope to document their value to the community and identify gaps where better policies and practices are needed to maintain and protect them. In this report, Part 1: Exploring the Urban Fringe, we take a qualitative look at trail conditions, facilities, and activities. In our upcoming follow-up report, Part 2: Counting Trail Users, we will report the results of our quantitative research in which motion-activated infra-red sensors were used to count trail users at selected locations.

This report would not have been possible without the contributions of many people. First and foremost, I must thank WYNG Foundation for their generous financial support for this project. I would like to thank Yeung Ha Chi, my research assistant, who did the heavy lifting for the GIS analysis, produced the many maps found in this report, and patiently waited for me to catch up to him while hiking several of these trails. I am additionally grateful to TrailWatch interns Nicole Lau, Bosco Woo, and Go Yi, who explored and meticulously documented most of the trails. Extra credit goes to Bosco Woo for assisting with historical map research and to Go Yi for researching and illustrating a beautiful series of slides on Duckling Hill. Alicia Lui, formerly of TrailWatch, did much to get this project off the ground in the first place. Teddy Law generously shared his insights on eco-trail construction and translated the executive summary, Yan-yan Yip, Paul Zimmerman, Agnes Cheng, Amandine Courret and But Ho-ming provided invaluable feedback, Bill Leverett edited the manuscript, Thanh Nguyen provided proofreading and Ching Sze Long designed the front cover. Finally, I would like to thank the Parks and Trails team including Agnes Cheng, Hazel Chan, Jason Chui, Elga Cheng and Sum Kwong and others for providing logistical and communications support to this project.

Carine Lai
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Executive Summary

Backyard trails are walking trails that traverse green belt land in close proximity to densely populated residential areas. Some are in buffer zones between urban areas and country parks, but others are in isolated green belt areas that for historical reasons were excluded from urban development. They are a significant but often overlooked part of Hong Kong's green open space system, used by nearby residents and hikers. Some backyard trails have become important community gathering spaces, especially for retirees, contributing towards their physical, mental and social well-being. They offer people an intermediate option between highly manicured and regulated urban parks, and the wilderness of country parks which are not easily accessible to everyone. However, as they are not administered as urban parks nor do they belong to country parks, they are given a low priority in open space planning and recreational policy.

In this report, "Backyard Trails Pilot Project Part 1: Exploring the Urban Fringe", we carried out a preliminary qualitative analysis of the recreational value of eleven selected backyard trails to gain a more detailed understanding of their present condition and how people are using them. These eleven trails were chosen because they were close to densely populated residential areas, and were known to have significant points of interest (i.e. historic structures), a high quality natural environment, or a high level of community usage. They were also chosen because they offered short routes that could be completed in 2 hours or less, even though some were linked to larger trail networks for long distance hikes.

Eleven backyard trails are an important green lung for potentially 1.5 million people

First, using population census data from 2016 (the most recent year available at the time), we estimated the population living within 15 minutes' walking distance of the trailheads for each of the trails. The largest population catchment was 324,000 living within 15 minutes' walk of Woh Chai Shan and Garden Hill, two small hills in the Shek Kip Mei/Prince Edward area that are entirely surrounded by dense urban development. The smallest catchment was 33,000 people living around Mount Davis in Kennedy Town and Pok Fu Lam. The eleven trails combined serve 1.5 million residents, excluding people who might travel from further away. This constitutes 20% of Hong Kong's population. Given that this is by no means an exhaustive list of backyard trails, it is reasonable to assume that the number of people who live within walking distance of any backyard trail is much larger. While being within walking distance does not guarantee that people visit them, backyard trails function as an important green lung for potentially millions of people.

Trail accessibility is generally good, but better signage and safer pedestrian facilities are needed near trailheads

The research team then used the TrailWatch app to record geotagged photographs and notes on trail surfaces, amenities, and human activities allowing us to create maps of each of the eleven trails. This information enabled the identification of problem spots or mismatches between the available facilities and actual usage. Recommendations for improvements to trail accessibility and user-friendliness were made. Trail accessibility was generally good as trailheads were located along streets or in parks in residential neighbourhoods. However, there was room for improvement. Examples of accessibility problems included trailheads with no identifying signage or unhelpful signage, lack of safe pedestrian crossings on certain streets near trailheads, pedestrian-vehicle conflict on certain trail sections, and broken connections between residential neighbourhoods and the main trail.

Resolving these issues would be a multi-departmental endeavour. Many trailheads lack any wayfinding signage and are not locally promoted. District Offices of the Home Affairs Department (HAD) should coordinate with the Hong Kong Tourism Commission, the Mass Transit Railway Corporation (MTRC), and property developers who control pedestrian footbridges, to improve wayfinding signage near trailheads and in nearby MTR stations. This would improve the perceived accessibility of backyard trails and encourage people to explore them.

The Transport Department should review pedestrian crossing facilities at Fu Yung Shan near the Chuk Lam Sim Monastery and near trailheads on Shum Wan Shan and Ping Shan. Traffic calming measures or a marked pedestrian lane should be implemented on Jat's Incline at Hammer Hill where hikers share a narrow roadway with light but fast-moving traffic.

The research team also found certain unsafe links where old village trails had deteriorated due to lack of maintenance (Tai Hang and Shau Kei Wan). This reduced the accessibility of backyard trails to certain neighbourhoods, notably Lai Tak Tsuen and Yiu Tung Estate, and in the latter case results in people using slope maintenance ladders and drainage channels. As trail maintenance funding (outside country parks) is allocated based on stakeholder demands at the district level, certain connections do not receive enough attention to be deemed a priority. However, it is not recommended to repair these links in the short term until changes are made to the works contracting process to adopt more environmentally sustainable methods.

Public engagement and more flexible procedures needed to improve cookie-cutter trail facilities

The research team also documented the presence, type and condition of trail facilities. It was found that while the government had provided amenities such as seating and shade on most of the trails, they were designed and located in a cookie-cutter way and did not necessarily match up with how people used the trails. For example, seats were usually installed at intervals facing the path to allow people to stop and rest while walking uphill. However, trail users often placed their own seats in clusters in flat clearings where they gathered to do morning exercises, as well as at natural look-out points where people can enjoy the view. When trail facilities are next replaced or updated, the HAD should conduct public engagement with trail users, bringing in urban design professionals as consultants if possible, to ensure that future facilities are designed to better meet users' needs.

Another major finding was that most of the trails explored by the research team (with the major exception of Sir Cecil's Ride) had been concretised or stone-paved by the HAD, which is responsible for building and maintaining trail facilities outside of country parks. This was often done unnecessarily even on flat sections. The over-concretisation of trails has been criticised by environmental groups as well as hikers and runners due to the environmental damage caused by the construction process, the continuing impact on water run-off and soil erosion, and the negative impact of hard surfaces on user comfort. However, solving this problem is a medium- to long-term endeavour that will require changing the way trail facilities are funded and managed.

To start off, HAD can engage environmental groups in pilot projects to carry out environmentally friendly trail repairs (using natural materials instead of hard paving) on a small scale. Doing so would require cooperation from the Lands Department to obtain authorisation for carrying out works on government land. This should be given support at the bureau level. Since it is infeasible for nonprofits to compete with for-profit companies in government tenders, alternative sources of funding such as the Community Involvement Fund, Environment and Conservation Fund, or private funding should be tapped.

In the medium term, environmental groups need to expand their capacity for building eco-trails on a larger scale by leveraging the skills of retired Agriculture, Fisheries and Conservation Department (AFCD) staff and working together with architecture and engineering firms to train skilled workers.

Informal activities contribute to community well-being, yet break the law

This report documents the diversity of recreational, community and religious activities taking place on backyard trails and the informal structures that neighbourhood residents have created to facilitate these activities. In the absence of comprehensive management by the government, people have transformed backyard trails into "common spaces" that are shared and maintained by volunteers. Part of the value to the community of backyard trails is not just providing people with access to nature but in allowing a space for spontaneous social interaction, collaboration and participation.

However, while these activities generate community benefits, the construction of informal structures or the disturbance of soil on government land is illegal under the Land (Miscellaneous Provisions) Ordinance. Some structures, such as rain shelters, are relatively benign, but others, like makeshift staircases can cause significant environmental damage. However, enforcement by the Lands Department is sporadic and carried out based on complaints rather than on objective assessment of environmental harm or risk to public safety. This also produces an antagonistic relationship between the government and trail users, especially retirees who are the most frequent users of backyard trails. A different management approach is needed to transform the relationship into something more mutually beneficial and rational.

Adopt-a-trail: towards cooperative backyard trail management

This report also locates backyard trails within a broader policy context of land management and recreational policy to analyse the institutional and organisational reasons for the lack of a holistic vision for the stewardship of green belt land in Hong Kong. Green belt land is leftover land with an ambiguous planning purpose: it is an urban buffer that is periodically drawn upon as a land bank for other development needs. Therefore it has never been comprehensively managed as an ecological or recreational resource since the land might be repurposed at any time. Government departments carry out their various responsibilities separately.

The aforementioned problems and inconsistencies in trail accessibility and facilities exist because backyard trails are built and maintained using district minor works funding by the HAD. Funding is allocated based on priorities set by District Councils and District Offices based on stakeholder demands, and decisions are heavily influenced by considerations of convenience in contracting and maintenance. Trail facilities are treated as discrete pieces of infrastructure in a similar manner to other urban street furniture such as bus shelters and planter boxes.

One major consequence of a lack of comprehensive vision is the neglect of historic structures, with the wartime ruins on Mount Davis and the defunct service reservoir under Woh Chai Shan prior to its attempted demolition in 2021 serving as prime examples.

In the medium term, the government should move towards a more collaborative relationship with community groups by laying the groundwork for an “adopt-a-trail” mode of management. The government can make use of existing mechanisms such as short-term tenancies for nonprofit organisations or government land allocations to regularise informal structures for community use in certain places, ensure that they are adequately maintained, and prevent further uncontrolled construction. A similar successful approach was taken by the AFCD in the 1970s to grandfather in “morning walkers’ gardens” that had been built before the establishment of country parks. The government should also collaborate with nonprofit environmental groups to carry out eco-friendly trail repairs to address soil erosion and improve safety without resorting to concretisation. In the longer term, nonprofits can “adopt” trails and play a role in maintaining and monitoring them.

However, green belt areas with important heritage structures such as Mount Davis require more intensive management to prevent further damage through neglect and vandalism and to spotlight their educational potential. Intensive management is also necessary where the government has proposed intensive recreational or eco-tourism uses such as adventure playgrounds or glamping sites on green belt sites in South Lantau. In these cases, the government should establish eco- or heritage- parks. The AFCD, Leisure and Cultural Services Department (LCSD), or the Antiquities and Monuments Office could take up this role depending on the specifics of particular sites, but each have their drawbacks and limitations. For the best results, in the long run the government may need to establish another body under the Culture, Sports and Tourism Bureau to combine expertise in environmental and heritage conservation with recreational planning.

行政摘要

後山小徑是穿越綠化地帶的步行徑，緊鄰人口稠密的住宅區。當中有些是位處市區和郊野公園之間的緩衝區；其他則位於個別的綠化地帶，因歷史緣故而免受城市發展影響。後山小徑是香港綠色休憩空間的一個重要部分，但卻往往被忽略。居民和行山人士經常使用後山小徑，使其成為重要的社交聚會場所，並對退休人士的身心和社交健康尤為重要。後山小徑的性質介於高度規範化的市區公園和偏遠原始的郊野公園之間，為市民提供另一選擇。然而，由於它們既非市區公園，亦不屬於郊野公園，因此在休憩空間規劃和康樂發展政策下它們並非優先處理的範疇。

在這份題為《後山小徑先導計劃第一部分：探索城市邊緣》的報告中，我們對 11 條選定的後山小徑的康樂價值進行了初步的質性研究，以詳細瞭解它們的現狀和使用情況。研究以這 11 條小徑作為對象，因為它們毗鄰人口密集的住宅區，並且擁有重要的特色景點（即歷史建築）、優質的自然環境或高使用率。此外，部分路線與大型的長途遠足徑網絡相連之餘，這些小徑全都提供了可在 2 小時內完成的短途路線選擇。

11 條後山小徑是潛在 150 萬居民的重要綠肺

首先，我們採用了 2016 年（當時的最新資料）的人口普查數據，就每條山徑估算距離其入口 15 分鐘步程內的居住人口。在窩仔山和嘉頓山的 15 分鐘步程內，最大的區域有 324,000 人居住。這兩座小山均位於石硤尾 / 太子一帶，完全被密集的市區建築物包圍。最小的區域在摩星嶺附近的堅尼地城和薄扶林，居住了 33,000 人。未算上外來使用者，這 11 條小徑合共服務 150 萬居民，佔全港人口的 20%。鑑於這份清單並未詳列所有後山小徑，我們相信在這個範圍內的實際人口要比估算的數字大得多。縱使住在步行距離內的居民並不一定都是山徑使用者，但後山小徑對潛在的數百萬人而言可說是一個重要的「都市綠肺」。

山徑的整體可達度良好，但入口需設置更佳的標示和安全的行人設施

研究小組然後利用 TrailWatch 手機應用程式去拍攝地理標記照片，並記錄關於山徑鋪面、設施和活動類型的資料，以此繪製 11 條山徑的路線地圖。這些資料讓我們識別出發現問題的位置，或未能切合使用者需要的設施。我們亦就山徑的可達度和設施的便利性提出了改善建議。由於山徑的起點位於街道兩旁或住宅區的公園內，整體上便於到達，但仍有改進空間，問題包括：山徑入口欠缺標示或標示不具實際作用、山徑入口附近的某些街道不設行人過路處、某些路段出現人車爭路的情況，以及住宅區和主要山徑的連接道路中斷等。

上述問題需要各個政府部門共同合作才能解決。由於許多山徑入口欠缺指示牌，也沒有在當區進行推廣，我們建議民政事務總署（民政總署）轄下的各區民政事務處與旅遊事務署、香港鐵路有限公司（港鐵公司）和負責管理行人天橋的發展商協商，改善小徑入口附近和鄰近港鐵站的指示，以提升居民對後山小徑的認識，鼓勵他們去探索自家的後山。

運輸署應檢視芙蓉山（近竹林禪院）、沈雲山及平山山徑入口的行人過路設施。此外，雖然鑽石山扎山道的車流量偏低，但現時行山人士只能與車輛共用狹窄的馬路，我們建議當局實施交通紓緩措施，或設置行人路以減少意外。

研究小組還發現舊有的村徑，如：大坑及筲箕灣等，因日久失修而損壞，造成安全隱憂，某些地區的後山小徑的可達度也因而降低。當中以勵德邨和耀東邨的狀況尤甚，後者更出現行人取道斜坡維修樓梯和排水渠的情況。由於山徑維修的撥款（郊野公園外）是按照地區人士的需求來分配的，故此某些山徑問題不獲當局重視和優先處理。然而，我們不建議在短期內修復這些路段，直至現時的工程外判制度有所改變，並採取可持續的維護方法。

透過公眾參與及彈性程序改善死板的山徑設施

研究小組還記錄了地段是否有山徑設施，及其類型和狀況。結果發現，雖然政府在大部分山徑提供了座椅和遮蔭等設施，但這些設施的設計及位置千篇一律，未必能切合使用者的習慣。例如座椅通常被設置在山徑兩側、面向小徑，以便行人在上坡時可停下休息。然而山徑使用者卻經常在平坦的空地或觀景台上聚集一起做晨操，並堆放自己的座椅。在未來更換或更新山徑設施時，民政總署應進行公眾諮詢與山徑使用者交流，可行的話亦應邀請城市設計師作顧問，以確保這些設施的設計能照顧使用者需要。

另一個主要發現是研究小組所探索的大多數小徑（金督馳馬徑為例外）都被民政總署（負責建設和維護郊野公園以外的山徑設施的部門）以水泥或石塊鋪蓋，甚至經常不必要地以同一手法處理平坦的路段。山徑過度水泥化一直受環保組織、行山人士及跑山者批評，因施工的過程會破壞環境，再者，硬鋪面也會持續影響地表逕流及導致水土流失問題，亦對使用者的體驗造成負面影響。然而，我們需制訂中長期的策略才能解決此問題，並改變現行山徑設施的資源分配及管理模式。

首先，民政總署可邀請環保團體合作推行試點項目，以環境友善的方式進行小規模的山徑維護工作（以天然材料替代硬鋪面）。有關活動須獲地政總署授權在政府土地上施工，並應獲相關決策局支持。由於非牟利組織在政府的招標制度下難與商業機構競爭，我們建議開拓其他資金來源，如社區參與計劃、環境及自然保育基金或私人資金等。

中期而言，環保團體需要借助漁農自然護理署退休員工的技能，與建築工程公司合作培訓技術人員，以提升建設大型生態山徑的能力。

非正規活動有助建立健康社區，但有違法規

本報告記錄了在後山小徑上進行的各種康樂、社區及宗教活動，以及居民爲此而搭建的各種違建物。在政府缺乏全面管理的情況下，人們把後山小徑改造成「公共空間」與鄰里共享，並由志願者共同維護。後山小徑不僅爲居民提供親近大自然的機會，還爲自發的社交互動、社區參與及協作創造空間。

雖然這些活動有正面的社區效益，但根據《土地（雜項條文）條例》，在政府土地上建造構築物或動土均屬違法。有些建築物，例如雨棚，相對較為無害，但如臨時樓梯這類設施則可能會嚴重破壞環境。可是，地政總署一向疏於執法，而且是就市民投訴作出跟進，而非根據客觀的環境破壞或公共安全風險評估而採取行動，造成政府和山徑使用者之間的對立局面（特別是對經常使用後山小徑的退休人士而言）。我們建議採取不同的管理方式改善這種情況，重建以理性為基礎的互利關係。

認養小徑：邁向共同管理後山小徑的目標

這份報告將後山小徑納入土地管理及康樂發展政策的脈絡，從制度及行政架構的角度探討香港缺乏宏觀視野管理綠化地帶的成因。綠化地帶是剩餘的土地，其規劃目的並不明確：作為都市的緩衝區，它不時被視作土地儲備以應付其他發展需要。亦正因為這些土地隨時可能被撥作其他用途，它們不曾被納為生態或康樂資源作全面管理，政府部門亦只各自按其工作範疇履行職責。

由於這些後山小徑是由民政總署透過地區小型工程撥款建造及維護，是故出現可達度低，以及設施未能切合使用者需要等前述問題。相關撥款由區議會及民政事務處因應持分者的要求按項目優次而審批，同時也取決於外判及後續維護的便利性，而山徑設施則被視為諸如有蓋候車處或花槽等獨立基礎建設。

缺乏遠見的其中一個嚴重後果就是忽視歷史建築的價值；摩星嶺的戰時遺跡，以及於 2021 年在窩仔山險被拆卸的前深水埗配水庫便是最佳例子。

在中期階段，政府應籌劃「認養山徑」管理制度，與社區團體建立更緊密的合作關係。政府可在現行機制下，例如以短期租約或政府撥地形式將部分土地批予非牟利組織管理，藉此規範違例的社區設施，並確保它們獲得適當的維護，遏止違建亂象。漁農自然護理署（漁護署）在 1970 年代曾採取類似做法，讓那些在設立郊野公園前已建造的「晨運園」獲得相關豁免。政府亦應與環保組織合作，以環境友善的方式修復山徑，解決水土流失及安全問題，毋需一律以水泥鋪面處理。長遠來說，非牟利組織可以認養者身分維護和監察山徑情況。

就擁有重要遺跡的綠化地帶（如摩星嶺），我們建議採取更積極的管理策略。一方面防止因疏忽及破壞造成進一步損害，另一方面提升其教育潛力。若政府擬推動康樂發展或生態旅遊，例如在南大嶼的綠化地帶內興建冒險樂園或豪華營地，便應設立生態或遺產公園，做好全面管理規劃。縱然每個地點皆有其缺點和限制，但漁護署、康樂及文化事務署（康文署）或古物古蹟辦事處可根據該地的具體情況來處理。長遠而言，政府可能需要在文化體育及旅遊局下另設一個機構，將環境保育、歷史遺產保育及康樂發展規劃方面的專業知識結合，以達致最佳效果。

1. Introduction

1.1 | GREEN SPACE PROVISION IN HONG KONG

Hong Kong has a fairly low provision of urban open space at around 2.7m^2 per person, a definition that includes urban parks, communal gardens in large residential complexes, and privately-owned public space. To enhance the liveability and well-being of Hong Kong, the government plans to increase the provision of urban open space to 3.5m^2 per person in the long term.[1] The *2030+ Planning Vision and Strategy* states that the government aims to make Hong Kong a "city within nature" by enhancing and optimising blue and green spaces and upgrading recreational facilities, and to promote a "unique and diverse city" by "champion[ing] the harmonious 'Urban–Rural–Countryside–Nature' continuum".[2] Making better use of existing green and blue resources will be necessary to meet these goals.

In the countryside, a system of protected country parks covers 40% of Hong Kong's total land area. They provide an invaluable ecological, hydrological and recreational resource, receiving between 11 and 13 million visitors annually.[3] Besides urban and country parks, there is a third category of green open space on the urban periphery that plays an important but under-recognised role. This consists of green belt hillsides that form a buffer between built-up areas and country parks and "play pertinent landscape, ecological and environmental roles, serving microclimatic amelioration, fresh air flushing effect, and [act] as a pleasant green backdrop which constitutes the premier international image of the city."[4] This project focuses on the "backyard trails" that traverse these peripheral green spaces within easy walking distance to densely built-up residential areas.

1.2 | THE BENEFITS OF GREEN SPACE

A growing body of research has found that green and blue open spaces have a positive impact on human well-being, including physical and mental health. According to a 2016 review of evidence by the World Health Organisation (WHO), green open space has been linked to health benefits including improved mental health and cognitive function, reduced cardiovascular illness, reduced prevalence of Type 2 diabetes, lower mortality, improved immune system functioning, and improved pregnancy outcomes.[5] Green open spaces provide urban dwellers with spaces for physical activity, relaxation and stress reduction, social bonding, and learning pro-environmental behaviour.[6] They also provide environmental benefits such as reduced exposure to air pollution, noise buffering and reduction of the urban heat island effect.[7] Forest Research, a UK Government agency, has estimated that visits to woodlands provide £185 million annually in savings to the National Health Service for mental health services (2020 prices).[8]

A 2019 study by the Hong Kong University Faculty of Medicine and TrailWatch found that people who visit country parks had better self-reported health than non-visitors. Those who visited country parks frequently also had a higher rating of self-reported happiness and life satisfaction.[9] However, many people cannot visit country parks frequently. The average reported travel time was 1 hour each way, and about 46% of the respondents had not visited one at all in the past year. Among non-visitors, besides lack of interest (25%), the main obstacles to visiting included lack of time (28%), lack of companions (19%), health problems (10%), and inconvenient transport (8%).[10]

While urban parks are important, they do not provide the same level of contact with nature that the countryside does. Most urban parks in Hong Kong are relatively small (Local Open Spaces—the most common and accessible neighbourhood parks—are generally less than 1 ha[11]), highly manicured, over-managed, and often include substantial areas of hard paving. Backyard trails offer residents a more natural environment and may therefore be able to provide some of the same benefits as country parks whilst being more accessible. Besides being close to residents, many routes are gentle and suitable for beginners, families with young children, and the fit elderly. Given the increasing popularity of hiking and the resulting environmental pressures (such as soil erosion) placed on country park trails, encouraging people to explore backyard trails could potentially alleviate the pressure on country parks by spreading people out.

Some backyard trails become vibrant co-created community spaces for group exercise, social gathering, religious worship and other activities. These unique activity patterns are a characteristic of backyard trails that may provide users with benefits that cannot be found in country parks. Some backyard trails feature sites of worship and historical structures, giving them cultural, historical, and educational value as well as landscape and recreational value. They contribute towards public space, urban liveability, and promoting human well-being in diverse ways.

2. Project Objectives and Methods

2.1 | OBJECTIVES

The objectives of the Backyard Trails Pilot Project are to promote physical and mental well-being through building better awareness and usage of under-recognised green spaces in the community. In order to do so, this project will select, map and promote a number of backyard trails that provide strong examples of recreational, community, historical or natural value. The trails will be promoted through TrailWatch and other related channels to encourage members of the public to explore them.

Part 1 of the project—covered in this report—focuses on qualitatively observing trail conditions on the selected trails in order to identify any problems with accessibility, connectivity, trail facilities, and safety in order to provide recommendations for improvements in public open space policy, administration or maintenance. It will also map and photograph trail user activities to document the diverse ways in which the trails contribute to people's recreational practices and well-being, as well as identify conflicting activities or those that may be harmful to the environment.

Part 2, which will be published in Spring 2023, focuses on counting trail users at selected points of the trails included in this study over a period of several days. This will produce estimates of the approximate number of users and their preferred circulation patterns. This will help to quantify the recreational value of backyard trails to nearby communities and inform recommendations for improvements to trail facilities.

To place backyard trails into a broader context, this project will examine the administrative and policy landscape behind the management of green belt land, on which most backyard trails are located. This will inform the analysis of problems in existing trail facilities and help to shape the proposed recommendations.

2.2 | TRAIL SELECTION

Initially, around 40 backyard trails were identified using TrailWatch's prior knowledge as well as map-based searches for walking trails in green belt areas on the urban fringe, including Open Street Map, the Lands Department's GeoInfo Map, and Google Maps. User-uploaded photos on Google Maps were taken as a preliminary indicator that a trail was well-used. After the initial search, the list was narrowed down to 10–12 case studies for this pilot project. The following criteria were considered when selecting the case studies:

1. Trailheads located within 15 minutes walking distance of a substantial residential population, preferably 40,000 people or more (see Section 2.3, "population catchment estimate" below). A few exceptions were made for trails that were located somewhat farther away from densely populated areas, but which had attractions to draw visitors from a wider area.
2. Trails that include significant points of interest, such as attractive viewsheds, landscape features, heritage features, religious sites etc. Local stories and character were also considered.
3. Trails that provide access to a high quality natural environment. While most green belt areas have landscapes that have been significantly disturbed by human activity, trails with higher landscape or biodiversity value were prioritised over those with low value (i.e. mostly shotcreted slopes). However, a few exceptions were made for trails that saw heavy usage despite having a poor natural environment.
4. Trails that have an observable level of community use and ownership, e.g. by morning walkers. Signs of community use include informally built recreational amenities, spontaneous greening, or clear activity nodes.
5. Trails that offer relatively short routes of 2 hours or less even if there might be options to hike further such as by entering a country park. There should be the option to walk shorter segments and return to the urban area, preferably without doubling back on the same route.
6. Trails that offer routes suitable for people of all ages, although there may be some challenging segments.
7. Broad geographical coverage with trails in Kowloon West, Kowloon East, Hong Kong Island and the New Territories.

The eleven selected trails are listed in Table 1.

2.3 | POPULATION CATCHMENT ESTIMATE

To inform the trail selection process, the approximate number of people living within 15 minutes' walk of all confirmed trailheads was calculated. 15 minutes was a reasonable assumption for how far people might be willing to walk to a backyard trail. Hong Kong Planning Standards and Guidelines (HKPSG) guidelines state that local open spaces (small urban playgrounds and sitting-out areas with basic passive recreational facilities) should be located within 400m or 5 minutes' walk of residences. HKPSG guidelines also recommend that major public transport stations and interchanges should preferably be located within 500m (6 minutes) of major housing, employment and cultural activity centres, and planners should consider the provision of walking facilities at up to a distance of 1,000m (12 minutes).[12] It is assumed that people would be willing to walk a little further to reach large green spaces where they might spend at least an hour.

Trailheads were defined as the point where a pedestrian-only walking trail connects to a road. In cases where trails are connected to public parks, the trailhead was defined as point where the trail meets the park boundary. Trailheads were first identified on maps, then confirmed through Google Street View or site visits.

Table 1: List of backyard trails studied

	Name	Location
Hong Kong Island		
1	Sir Cecil's Ride & Mount Parker Lower Catchwater 金督馳馬徑及柏架山下引水道	Causeway Bay to Shau Kei Wan
2	Mount Davis 摩星嶺	Kennedy Town
Kowloon		
3	Woh Chai Shan (Bishop Hill) & Garden Hill 窩仔山(主教山)及嘉頓山	Sham Shui Po/Shek Kip Mei
4	Shum Wan Shan & Ping Shan 沈雲山及平山	Jordan Valley/Ngau Tau Kok
5	Hammer Hill 斧山	Diamond Hill/Choi Hung
New Territories		
6	Tuen Mun Trail 屯門徑	Tuen Mun
7	Kam Shan Country Trail 葵涌金山郊野徑	Kwai Chung
8	Fu Yung Shan 芙蓉山	Tsuen Wan
9	To Fung Shan 道風山	Sha Tin
10	Duckling Hill, Lin Yuen & Po Hang Paths 鴨仔山、蓮苑徑及寶坑徑	Tseung Kwan O
11	Wu Tip Shan 蝴蝶山	Fanling

QGIS, an open-source Geographic Information Systems software, was used to draw isochrone areas (i.e. catchment areas) showing all destinations reachable by the pedestrian network[13] within 15 minutes' walk of each trailhead for each trail. Based on Naismith's rule, an average walking speed of 5km/h for horizontal distances and 0.6km/h for vertical distances was assumed.[14] This was equivalent to 1.25 km on flat land and, with a reduction of 83.3m in distance for every 10m change in elevation. This method has some limitations as Naismith's Rule is based on the walking speed of a reasonably fit individual and does not account for individual differences due to age, disability or fitness level. It does not account for increased fatigue over time. Additionally, when adjusting walking speed for slope, the estimates do not distinguish between uphill and downhill travel.

The population living within isochrone areas was estimated using Small Street Block Group (SSBG) data, the smallest available census tracts, from the 2016 census. When only part of an SSBG fell within an isochrone area, the population was estimated based on the proportion of residential and mixed use building footprints included within the isochrones. This produced more accurate estimates than simply calculating the proportion of the total land area covered as this allowed non-residential buildings and unpopulated land to be excluded. However, this method could not account for differing development densities within the same SSBG area.

2.4 | PART 1: QUALITATIVE OBSERVATIONS

This report focuses on qualitative observations gathered between January and May of 2022. Eleven selected trail areas were explored by the research team with GPS tracking enabled through the TrailWatch App. Interns and staff explored as many branches of the trail network as feasible, excluding routes inside country parks and on difficult terrain. Using an observation checklist, they documented trail features, facilities and points of interest using geotagged photographs uploaded to TrailWatch.

2.4.1 Trail conditions

Observations concerning the condition of the trails were collected in order to create maps of each trail area, identifying recommended routes and highlighting points of interest for trail walkers. The process also helped to identify route segments that were challenging, in poor condition, or missing connections to the street level pedestrian network. Absent or poorly maintained trail facilities were also documented to enable recommendations for improvements. Observations were made of the following trail elements:

1. Accessibility and connectivity, including ease of access to trailheads, wayfinding, directional signage, or any unsafe or blocked trail segments.

2. Trail environment and points of interest, including trail surface materials, natural environment and biodiversity, viewsheds, heritage features and other attractions.

3. Officially provided facilities on the trails and near trailheads, including shelter and seating, informational signage, recreation, waste collection, drinking fountains, refreshment kiosks.

2.4.2 Trail activities

To better assess the existing recreational value of the trails, the research team also documented evidence of community usage. This included any observed human activities other than walking, such as when trail users stopped to engage in any passive or active recreation. The nature of the activity, the number of people engaged in it and the approximate age group of the participants was recorded. However, one-time site visits which took place mainly on weekday mornings could not be expected to capture the full range of recreational activities.

Traces of community activity, such as informal interventions to alter space for passive or active recreational purposes, were also documented. These included but were not limited to evidence of gardening, religious worship, do-it-yourself (DIY) seating, shelters, exercise equipment, signage erected by members of the public, and unofficial trail reinforcement and maintenance works. Traces such as these are indicative of a sense of community ownership.

2.5 | PART 2 PREVIEW: QUANTITATIVE OBSERVATIONS

As well as qualitative observations, quantitative trail user counts were also conducted on ten of the eleven selected trails to obtain estimates of how many people are currently utilising backyard trails. These results will be reported in the follow-up report, “Backyard Trails Pilot Project Part 2: Counting Trail Users”.

Trail user counts were carried out using battery-powered electronic people-counters mounted on trees beside walking paths near trailheads and at key points on main routes. The sensors were attached using velcro straps and cable ties so as not to damage the trees. The counters used a combination of radar motion sensors and low-resolution infra-red cameras to detect and count human presences passing within 2m of the devices, at a confidence level greater than 85%.

Statements of no objection were obtained from District Offices of each relevant district prior to the commencement of data gathering since the sensors were going to be strapped to trees on government land.

Two rounds of data gathering took place. The first was from July to August 2022. The second round took place in December 2022 to February 2023. Sensors were left in place for several days to allow data to be collected over both weekdays and at least one weekend. Sensors were installed on the same trails in approximately the same positions to collect comparable data to measure seasonal variations in trail use. Please refer to the upcoming Part 2 report for further details.

3. Policy Context

3.1 | DEFINING GREEN BELTS

Backyard trails are mainly found on green belt land that belongs neither to urban parks nor to country parks. "At present, this valuable community asset has been taken largely for granted and hardly managed."[15] They are often left out of consideration in recreation and conservation planning, falling into an administrative grey area where a mish-mash of different government departments carry out different functions.

"Green Belt" is a zoning designation found on hillsides on the urban fringe that frequently serve as buffer zones between built-up areas and country parks. On Hong Kong Island and in Kowloon, Green Belt zones are found on leftover hillsides[16] that remain undeveloped due to their steepness or their role in housing waterworks such as service reservoirs. In the New Territories, Green Belt zones cover significantly larger areas consisting of "foothills, knolls, spurs, and woodland, including diverse features such as burial grounds, agricultural land, fung shui woodland, archaeological sites, villages and various urban uses".[17]

The purpose of green belts as originally envisioned in the UK was to prevent urban sprawl by limiting development within certain areas outside the city boundaries. However, in the Hong Kong context, their role has been described as "loosely defined", "flexible", and "ambivalent",[18] functioning more as a "transition zone" than a space of conservation. They were introduced to Hong Kong's statutory zoning system in 1947 by Sir Patrick Abercrombie who was appointed as a consultant by the colonial government to develop a plan for the city's postwar development. He marked out Green Belts on the urban fringes intending them to provide passive recreational space for the public, but under the development pressures of the 1960s and 1970s, they became a catch-all category for marginally developable land that could be readily drawn on to meet a wide variety of needs, including low-density housing, village relocation, and institutional uses.[19]

Over time, policymakers tightened up development criteria for Green Belt zones while introducing more powerful tools for conservation starting with the establishment of Country Parks in 1977, followed by new zoning categories for Conservation Areas (CAs), Coastal Protection Areas (CPAs), and Sites of Special Scientific Interest (SSSIs) in the 1990s.[20] Of these categories, Green Belt land has the weakest level of protection. Table 2 below contrasts the land uses that may be permitted in Green Belt zones versus CPA or SSSI zones. Column 1 uses are permitted as-of-right, while Column 2 uses may be built after obtaining approval from the Town Planning Board (TPB).

Currently, the official planning intent of Green Belts is:

a) For urban area: The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone.

b) For rural area/New Town: The planning intention of this zone is primarily for defining the limits of urban and suburban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. There is a general presumption against development within this zone.[21]

However, unlike designated Country Parks which are overseen by the Agriculture, Fisheries and Conservation Department (AFCD), or urban parks which are administered by the Leisure and Cultural Services Department (LCSD), there is no government entity charged with implementing either the conservation or recreational functions of Green Belts. They consist mainly of government land[22] which has neither been sold nor allocated to any government department for any purpose. They are essentially treated as land banks that may be repurposed for a wide range of uses in a "piecemeal manner regardless of conservation and landscape worth".[23]

Throughout the 1990s and 2000s, Green Belt zones continued to be subject to strong development pressures, especially from small house applications in the New Territories. One study found that between 1990 and 2005, the TPB approved 62% of development applications on Green Belt land, comprising 767 approvals with the most common uses being small houses (249 cases), utilities (92 cases), open storage (55 cases) and houses (46 cases).[24] In 2018, the government reported to LegCo that of the 210 sites it had identified for potential housing development during land use reviews over the past several years, 77 were located on Green Belt land, and that between 2013 and 2017, 318 ha of Green Belt had been rezoned for other uses.[25] The 2021 Chief Executive Policy Address stated that the Planning Department would conduct a further review of Green Belt sites focusing on steeper slopes and sites further away from built-up areas to identify more land for development.[26] One year later, this was followed by the announcement that 225 ha of Green Belt land had been shortlisted for the development of 70,000 housing units.[27]

Table 2: Permitted development in Green Belt and other conservation zones

Zone	Column 1 uses (permitted as-of-right)	Column 2 uses (may be developed with permission from TPB)
Green Belt	Agricultural Use Barbecue Spot Country Park Government Use (Police Reporting Centre only) Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Tent Camping Ground Wild Animals Protection Area	Animal Boarding Establishment Broadcasting, Television and/or Film Studio Burial Ground Cable Car Route and Terminal Building Columbarium (within a Religious Institution or extension of existing Columbarium only) Crematorium (within a Religious Institution or extension of existing Crematorium only) Field Study/Education/Visitor Centre Firing Range Flat Golf Course Government Refuse Collection Point Government Use (not elsewhere specified) Helicopter Landing Pad Holiday Camp House (other than rebuilding of New Territories Exempted House or replacement of existing domestic building by New Territories Exempted House permitted under the covering Notes) Marina Marine Fuelling Station Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Pier Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Religious Institution Residential Institution Rural Committee/Village Office School
Conservation Area	Agricultural Use (other than Plant Nursery) Country Park Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Wild Animals Protection Area	Barbecue Spot Field Study /Education/Visitor Centre Government Refuse Collection Point Government Use (not elsewhere specified) Holiday Camp House (Redevelopment only) Pier Public Convenience Public Utility Installation Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Tent Camping Ground Utility Installation for Private Project
Coastal Protection Area	Agricultural Use (other than Plant Nursery) Barbecue Spot Country Park Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Wild Animals Protection Area	Field Study/Education/Visitor Centre Government Use Holiday Camp House (Redevelopment only) Pier Public Convenience Public Utility Installation Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Tent Camping Ground Utility Installation for Private Project
Site of Special Scientific Interest	Wild Animals Protection Area	Agricultural Use Field Study/Education/Visitor Centre Government Use Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Public Utility Installation Tent Camping Ground Utility Installation for Private Project

3.2 | URBAN FRINGE PARKS—AN ABANDONED PLAN

Green Belts are deliberately left out of recreational open space planning by the Planning Department. The HKPSG directs the Planning Department not to count Green Belts towards open space quotas because they "do not readily lend themselves to the formulation of any standards."[28] Only spaces that are managed by a specified "responsible agent" can be included.[29]

Over three decades ago when the colonial government formulated Metroplan, a strategic planning document to guide Hong Kong from 1990 to 2011, it proposed to create 15 urban fringe parks to provide the public with an intermediate option between the less accessible country parks and small, overcrowded urban parks.[30] The vast majority were never built. As Table 3 shows, some of the proposed urban fringe park areas have seen piecemeal minor works to provide passive recreational amenities such as seating, shelters, and barbecue sites, but none of the higher intensity facilities such as water sports centres or adventure playgrounds were built. Some of the sites were repurposed for transport infrastructure and low-density residential development. Today, the concept of "urban fringe park" still exists in the HKPSG as a holdover from the Metroplan, but with no path to implementation.

The lack of an overall responsible agent was recognised as an obstacle in the Planning Department's 2003 Stage II review of Metroplan, which concluded that "no adequate measures were devised to implement such schemes",[31] and largely abandoned them. The objectives were scaled down to simply improving access to existing hillside amenities on the urban fringe.[32]

Figure 1: Location of proposed urban fringe parks
Source: Metroplan (1990), redrawn by Carine Lai

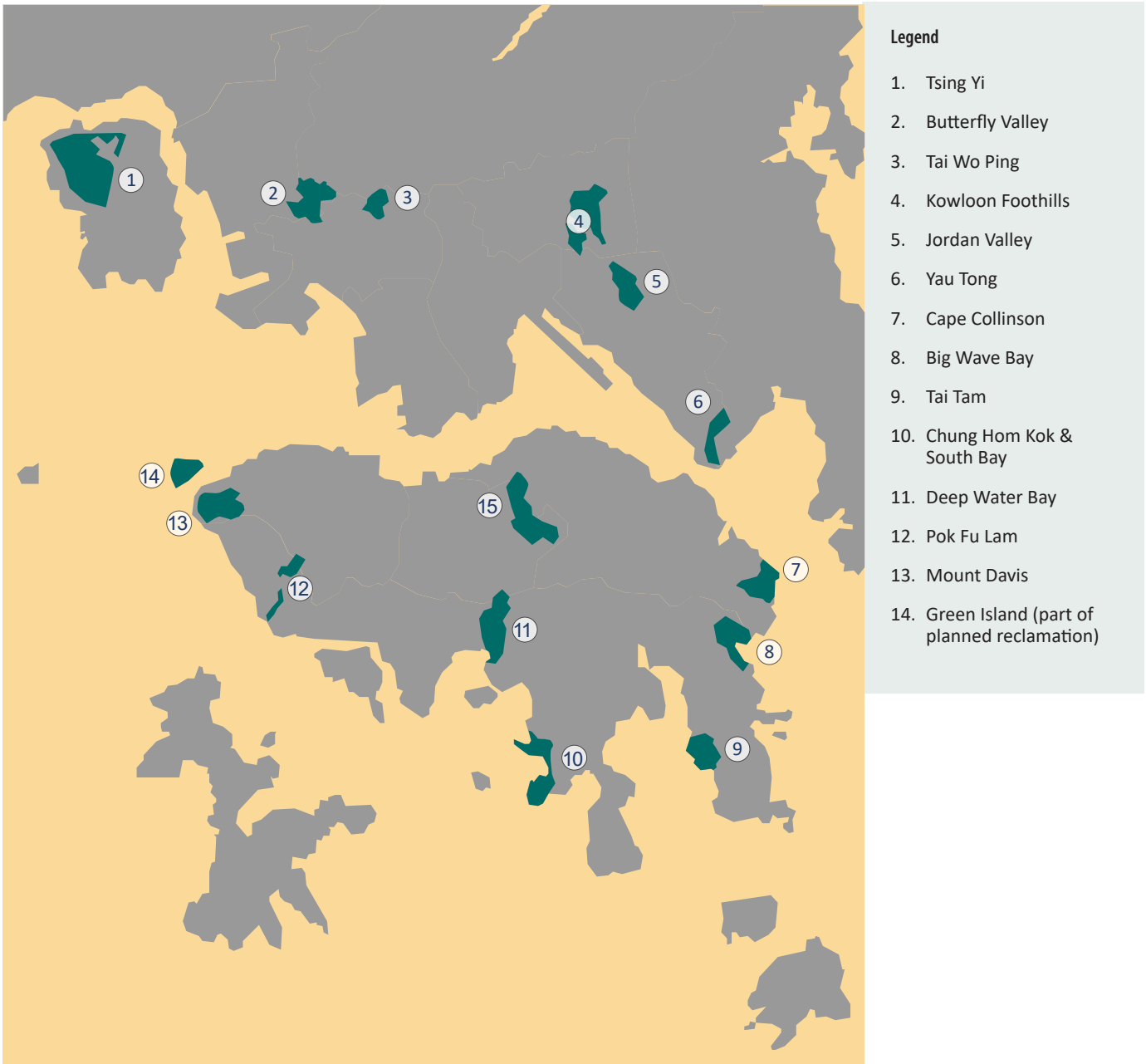


Table 3: Proposed urban fringe parks in 1990 Metroplan[33]

Location	Original Concept	Current status
1. Tsing Yi (174 ha)	An exposed hilltop with panoramic views, mainly for low intensity, passive recreational uses such as hiking trails, barbecue areas, camping and an education centre. Former agricultural land may be suitable for allotments or community farm. Sensitive regrading and landscaping of slopes at the major city gateways from the border and the new airport at Chek Lap Kok would be essential.	Walking trails, pavilions and picnic areas provided by Kwai Tsing HAD through District Minor Works Scheme. Not managed as a park.
2. Butterfly Valley, Lai Chi Kok (48 ha)	A well-wooded valley north of Lai Chi Kok, adjacent to Kam Shan Country Park and close to the Kowloon Reservoirs and MacLehose Trail. Proposed uses include hiking trails and barbecue areas together with camping and two specialist sports centres for rural adventure sports and water sports.	No proposed recreational facilities were built. Bisected by Tsing Sha Highway which opened in 2008–9.
3. Tai Wo Ping, Shek Kip Mei/ Kowloon Tong (38 ha)	A partially wooded valley on site of former quarry and squatter settlement adjacent to Lion Rock Country Park and proposed new housing area. Proposed uses include hiking, barbecue and picnic areas together with a specialist sports centre together with landscape reinstatement. Former agricultural land and squatter settlements may be suitable for city farm and allotments.	No recreational facilities were built. Two low density residential developments permitted adjacent to the site: Dynasty Heights (completed 1998), and a development under construction at time of writing.
4. Kowloon Foothills (75 ha)	An attractive undulating valley and knoll with panoramic views, adjacent to Ma On Shan Country Park and high density residential area. Proposed uses include an arboretum, adventure playground and a specialist sports centre. Former agricultural land and squatter settlements may be suitable for city farm and allotments.	Trail paving, seating and pavilions provided by Wong Tai Sin HAD through District Minor Works scheme. Not managed as a park. No other proposed recreational facilities were built.
5. Jordan Valley (66 ha)	A former controlled tip, redeveloped housing estate and exposed hillside close to high density residential areas. Principally, an outdoor "fun" activity centre with innovative recreational facilities offering scope for private sector investment.	Part of site developed into Jordan Valley Park (LCSD) after closure and restoration of landfill. Remainder of site (not managed as a park) used as morning trail with basic facilities.
6. Yau Tong (79 ha)	A headland overlooking the Lei Yue Mun Gap and comprising a major city landmark. Close to Lei Yue Mun village, residential and industrial areas. Low intensity, passive recreational uses proposed with theme gardens such as celestial and rhododendron gardens, together with a specialist sports centre, hilltop restaurant and amenities for visitors, particularly for use during Chinese festivals.	Wilson Trail Section 3 constructed 1994–96 with private sponsorship. Not managed as a park. No other proposed recreational facilities were built.
7. Cape Collinson, Chai Wan (49 ha)	A coastal site east of Chai Wan adjacent to Shek O Country Park with panoramic views. Predominantly a semi "wilderness" area from which to enjoy sea vistas and rocky coastline.	Paved trails (Leaping Dragon Walk and Cape Collinson Path) provided. Not managed as a park.
8. Big Wave Bay (52 ha)	A valley behind a popular swimming beach at the eastern end of the Hong Kong Trail providing a moderate sized recreation node with camping facilities, holiday cabins, refreshments, barbecue and picnic areas and a cycle park.	Picnic and BBQ area managed by LCSD provided. No other proposed recreational facilities were built. Most of the site is still occupied by Tai Long Wan Village.
9. Tai Tam (56 ha)	A rehabilitated quarry site overlooking scenic Tai Tam Bay, providing an informal, low-intensity recreation area and suitable for development as a public water sports activity centre.	No recreational facilities were built.
10. Chung Hom Kok & South Bay (108 ha)	Attractive headlands and valleys behind popular swimming beaches with lookout points and other low intensity recreational facilities such as camping, barbecue and picnic areas.	BBQ area at Chung Hom Kok Park (LCSD) & children's playground at Chung Hom Kok Beach (LCSD), no other proposed recreational facilities were built.
11. Deep Water Bay Valley Slopes (78 ha)	An outstanding well-wooded valley, the lower part of which comprises a private golf club to be retained. The hillsides offer good scope for both bush walks and nature/ fitness trails. The possibility of extending the Deep Water Bay beach should also be investigated.	Golf club existing. Area on north part of site designated as SSSI. Not managed as a park.
12. Pok Fu Lam (34 ha)	A valley close to residential areas and former reservoir adjacent to Pok Fu Lam Country Park, mainly for passive, low intensity recreational uses. Opportunities for fishing and water sports and the Pok Fu Lam Reservoir. Former agricultural land and squatter settlements may be suitable for a city farm and allotments.	Pok Fu Lam village existing. Access to Pok Fu Lam Reservoir restricted. Walking trails from village to Waterfall Bay interrupted by construction of Cyberport.
13. Mt. Davis (83 ha)	A hill with panoramic views overlooking the western harbour, mainly for low intensity leisure facilities.	Jockey Club Mount Davis Youth Hostel existing since 1981 (renovated 2012). BBQ area provided by HAD. Not managed as a park.
14. Green Island (35 ha)	Wooded knolls (formerly islands) within new reclamation area with outstanding views. Close to MTR station and residential areas. A major recreation node with innovative facilities and fun park, possibly with a maritime or water theme. Opportunity for private sector involvement.	Proposed reclamation did not go ahead; island remains undeveloped.
15. Mt. Butler (123 ha)	A large area of undulating hills, including a rehabilitated former quarry, overlooking Causeway Bay and Quarry Bay. Generally, a low intensity passive recreation area with hiking trails and lookout points but with a number of innovative activity nodes including sports such as horse riding. Allotments and city farm proposed on former agricultural terraces near Tai Hang and Braemar.	Network of hiking trails provided by HAD. Other proposed recreational facilities were not built. Not managed as a park.

3.3 | AD-HOC MANAGEMENT

Today, Green Belt areas are under the jurisdiction of multiple departments carrying out disparate objectives. By default the main responsibility falls to District Offices under the Home Affairs Department (HAD), which handles district management and government services at the local level. Trail amenities such as paving, rain shelters, and wayfinding signage are funded through HAD using District Minor Works funding allocated by District Councils. This funding is considerable—HKD341 million was allocated for all 18 districts for the financial year 2023/24 with a HKD50 million per project cap[34]—but trail works compete with other priorities like street furniture and urban greening.

However, there is no holistic vision for the stewardship of green belt land. HAD's focus is not on conserving and facilitating enjoyment of green belts as a whole, but on building and maintaining discrete pieces of infrastructure where decisions are driven by the government tender process and ease of maintenance. HAD's departmental mission does not include many issues affecting green belts such as environmental conservation, heritage preservation, tree management or soil erosion. Therefore, the facilities it builds often do not take environmental sustainability into account.

Resources are allocated to trails, or not, on a case-by-case basis based on local stakeholder demands channelled by District Councillors. Therefore, while some backyard trails are well-maintained and promoted as destinations, others have been allowed to fall into disrepair or disappear entirely. Trail connections are sometimes severed when Green Belt zoned land is reallocated for development or affected by site formation and slope works, and there is no formal obligation for any government department or private developer to reestablish them or provide an alternative route afterwards. HAD will only do so if there is substantial public pressure.

A patchwork of government departments have a variety of different responsibilities on Green Belts:

- LCSD is responsible for the maintenance of any public pleasure grounds such as sitting-out areas located within trail areas.
- The Water Supplies Department (WSD) is responsible for the maintenance of water catchments, service reservoirs, and other water infrastructure.
- Lands Department is responsible for the maintenance of registered man-made slopes and the removal of illegal structures on government land.
- The Civil Engineering and Development Department carries out slope stabilisation works including erosion control planting.
- Highways Department (HyD) is responsible for the maintenance of any vehicular access roads which cut through Green Belt areas.
- The Food and Environmental Hygiene Department (FEHD) is tasked with rubbish collection, leaf sweeping and pest control on trails maintained by HAD.

Responsibilities for tree management are very complicated, and despite being spelled out in a Development Bureau circular issued in 2015,[35] the Tree Management office of the Development Bureau is still called upon to adjudicate jurisdictional disputes between departments.[36] While the Lands Department is the primary department responsible for maintaining vegetation on unallocated government land, other departments including WSD, HAD, LCSD, and the Civil Engineering and Development Department can all be involved depending on specified responsibilities in and around various facilities or work sites.

Due to the lack of overall vision, backyard trails and their environs are subject to threats such as over-concretisation, environmental damage, lack of maintenance, neglect of heritage structures, and redevelopment.

3.4 | RECENT DEVELOPMENTS IN RECREATION POLICY

In her 2017 Policy Address, the Chief Executive announced her intention to promote green tourism as part of Hong Kong's tourism strategy.[37] The same year, AFCD commissioned a consultancy to study ways to enhance the recreational potential of country parks and special areas. This was followed in 2019 by a public consultation on proposals to build or improve recreational facilities in country parks including enhanced visitor centres, cultural heritage museums, tree top adventure facilities, and glamping sites in order to promote green tourism.[38] In doing so, the government essentially transplanted some of the ideas for urban fringe parks proposed decades ago into country parks.

While the general public generally responded positively to the suggestions, environmental groups criticised the government's lack of clarity in assessing or communicating the likely environmental impacts to the public. Concerns about overloading the environmental carrying capacity of the affected areas were not sufficiently addressed, and some environmental groups also expressed concerns that bringing in private operators would over-commercialise a free and inclusive public asset.[39] They urged the government to locate the development of eco-tourism facilities on private land in country park enclaves or just outside the boundaries of country parks.[40] Hence, it is appropriate at this juncture to re-examine the role that green belt areas should play in meeting Hong Kong's recreational and green tourism needs.

4. Historic Significance

Until fairly recently, the historic value of backyard trails has been underappreciated in comparison to grander heritage buildings in urban areas or traditional buildings in less spoiled rural areas. Sitting on the urban periphery, green belts have changed dramatically and were used to site necessary but unattractive infrastructure. However, the history of backyard trails is essentially the story of the city's development—of how these hillsides became urban backyards. Several of the hills studied in this project were originally coastal but gradually became surrounded by reclaimed land. Many have had their slopes carved into and drastically reshaped. Some still house important historic structures, while others now have few visible remnants of the past.

Many of the trails themselves are visible on maps and aerial photographs from the 1910s and 1920s but are likely much older. They originated in village paths and trade routes, early colonial recreational routes, water works, and defensive emplacements. Other paths are more recent, having been created by residents for the purposes of recreation once urban development started encroaching on hillsides. In the 1960s and 70s, groups of recreational hikers seeking relief from city life explored nearby hillsides, established new routes, and built "morning walkers' gardens" with garden plots, rain shelters, and other facilities.[41]

This section will focus on three case studies to illustrate the historic significance of backyard trails.

1. Woh Chai Shan and Garden Hill, sites of historic water supply infrastructure, the 1953 Shek Kip Mei Fire, and the first major public housing resettlement estates in Hong Kong.

2. Mount Davis, site of early 20th Century military fortifications and bombardment during World War II.

3. Duckling Hill, village trade routes turned into recreational hiking trails after development of the New Town.

Woh Chai Shan/Garden Hill and Mount Davis were chosen because they have historic structures that showcase different aspects of Hong Kong's urban history, but they are not the only ones—Mount Parker retains the ruins of support structures for the Tai Koo Sugar Refinery cable car that ran from the early late 19th and early 20th Centuries. Shum Wan Shan is the site of a former urban reservoir where a dam dating from the 1950s remains. Duckling Hill, which has no remaining major historic structures, was chosen because it is very typical of a New Town backyard trail in its development from rural village to industrial centre to suburban commuter town with a strong community of backyard trail users. All of the backyard trails included in this study feature some interesting history, but could not all be included due to space constraints.

4.1 | WOH CHAI SHAN AND GARDEN HILL

Woh Chai Shan and Garden Hill were two small hills on either side of a valley around the coastal villages of Un Chau, Tin Liu and Ma Lung Hung (now in Shek Kip Mei) that were gradually engulfed by urban growth during the 20th Century. The surrounding land was levelled and the coast was reclaimed to provide developable land, but the hills left undeveloped due to their steepness and their role in housing essential water infrastructure.

A map published by the British War Office in 1924 (surveyed in 1904) (see Figure 2) shows Sham Shui Po laid out in a grid pattern, but Cheung Sha Wan had not yet been reclaimed and the hills were surrounded by agricultural land. The map shows the Edwardian era service reservoir on Woh Chai Shan (completed 1904) which is now listed as a Grade I historical building (see Figure 3). It was part of a system of underground reservoirs built in the early 1900s to serve the rapidly growing population of Kowloon whose demand for water had outstripped the ability of wells to supply it. They were located on top of hills so that gravity would provide water pressure[42] and were capped to keep the water clean and insulate the reservoir walls from heat expansion and contraction.

In the postwar period, the area was settled by large numbers of refugees and immigrants. By 1951, it was reported that 4,000 people lived in wooden huts in Woh Chai Upper and Lower Villages and another 7,000 in Shek Kip Mei Village.[43] The squatters were repeatedly plagued by fires, flash floods, and forced evictions. Humanitarian relief work became an area of contention as the colonial government battled with Communist and Kuomintang-affiliated groups for influence. The infamous Shek Kip Mei fire of 1953, which rendered 50,000 people homeless, and the Tai Hang Tung fire of 1954, which destroyed the homes of another 20,000 people, accelerated the government's decision to carry out squatter clearance and public housing construction on a large scale.[44]

Figure 4, an aerial photo from 1963 shows Woh Chai Shan surrounded by H-block resettlement estates built on the site of the 1953 and 1954 fires. The photo also shows site formation works on the northern side of the hill, which has been cut away and reinforced with shotcrete. Some informal housing remained on the eastern and northern slopes of Woh Chai Shan until the 1970s, seen circled. As residents were relocated into public housing, Woh Chai Shan became an informal recreational site that received little official attention especially after the reservoir was decommissioned in 1970.

Woh Chai Shan has no official name on the Lands Department's GeoInfo Map and is known by several names including Bishop Hill or Mission Hill (主教山), Shek Kip Mei Hill (石硤尾山), or Hundred Steps (百步梯). Garden Hill, which is confusingly also sometimes called Shek Kip Mei Hill, is also unnamed on the Lands Department map. It derives its unofficial name from the Garden Bakery at its base. In Figure 6, an aerial photo taken in 1963, the 7-story Garden Bakery, a Grade II historic building built in 1958

Figure 2: 1904 map of Woh Chai Shan and Garden Hill

Source: UK War Office, 1924. UK National Archives

Figure 3: Woh Chai Shan (Bishop Hill) Ex–Service Reservoir in 2020

Source (both): Hong Kong Reminisce, 2020 Wikimedia Commons

After being decommissioned in 1970, the architectural value of the reservoir was forgotten until the WSD ordered it demolished in December 2020 owing to concerns about the roof's structural stability. Both the WSD and the Antiquities and Monuments Office (AMO) assumed it to be an "ordinary water tank". When the Romanesque arches were exposed, a local resident physically blocked the demolition equipment. Other residents and civil society groups quickly brought attention to the case and the Antiquities and Monuments Office (AMO) was summoned to the site. The next day, Commissioner for Heritage Ivanhoe Chang apologised for the mistake, and the reservoir was granted Grade 1 historic building status within three months.

Figure 4: Aerial Photo of Woh Chai Shan, 1963

Source: Hong Kong Map Service, 1963

Figure 5: Lands Department notice on Woh Chai Shan

An existing Lands Department notice on Woh Chai Shan still still warns against the construction and purchase of squatter huts.

Source: Carine Lai, January 2022

can be seen.[45] This was the second iteration of the bakery, which has been on site since 1938. It is currently being redeveloped into a 25-story commercial, office, and cookery school building.[46] The photo also shows the reclamation of Cheung Sha Wan in progress as well as extensive informal settlements on the eastern side where Pak Tin Estate is now located.

The larger Shek Kip Mei Service Reservoir on Cornwall Street in north Shek Kip Mei replaced the Woh Chai Shan reservoir in 1970. This was supplemented by the construction of Shek Kip Mei Service Reservoirs No. 2 and No. 3 on Garden Hill in the 1990s, shown in Figure 7. Garden Hill has been greatly altered by development and now consists mainly of sparsely vegetated, very steep shotcreted slopes. Moreover, the

Figure 6: Aerial photos of Garden Hill, 1963

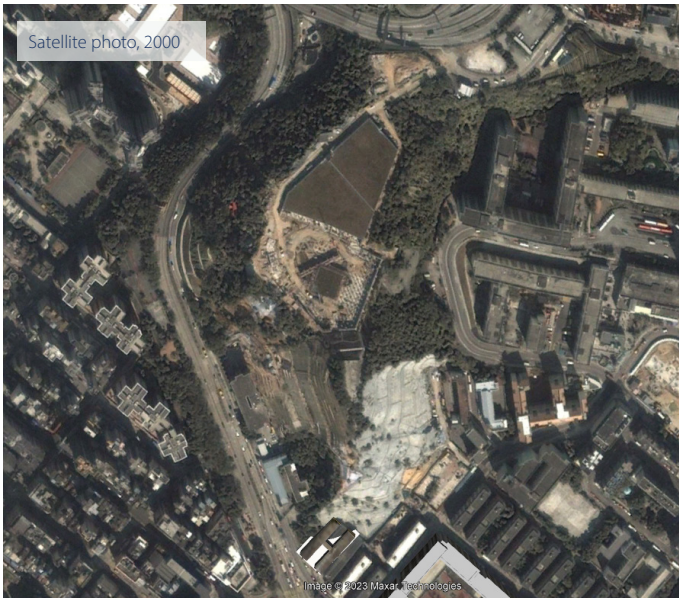
Source: Hong Kong Map Service, 1963

grassy reservoir caps have been closed to public access for many years despite being judged suitable for recreational use. In 2022, the Little Sai Wan Cricket Club was granted a short-term tenancy to convert them into a sports field.[47, 48] However, this does not necessarily mean that the space will be opened to the general public. The WSD maintains a list of about 100 capped service reservoirs that are available for other government departments (including LCSD) and private organisations to request for recreational use. The limiting factor appears to be the number of organisations willing to take up the management of these spaces.

The sparse vegetation and limited accessible space make it less desirable for recreational walking than Woh Chai Shan, but it has nevertheless become popular with young people and photographers for its panoramic sunset views of Sham Shui Po towards Stonecutters Bridge.

Figure 7: Construction of Shek Kip Mei Service Reservoirs No. 2 and No. 3, 1993-2000

Source: Original source unknown, hosted on Hong Kong Historic Maps, 1993



Source: Google Earth, 2000

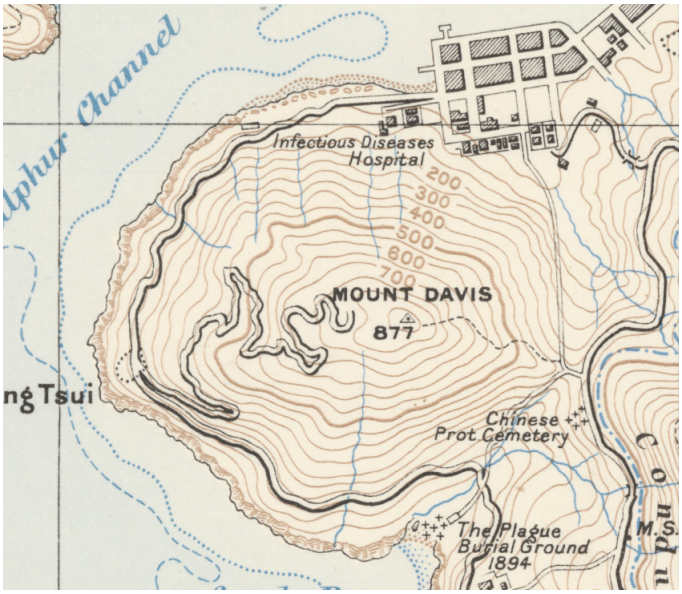
4.2 | MOUNT DAVIS

Kennedy Town, which is overlooked by Mount Davis, was established in 1886 with the reclamation of Belcher Bay. It was an area for undesirable land uses such as slaughterhouses, cattle, sheep and pig depots. Included was the Tung Wah Plague Hospital at the northern base of the hill, built in response to the 1894 outbreak of bubonic plague. It served various roles in vaccination and infectious disease control[49] before being demolished after World War II.[50]

Mount Davis played a significant role in Hong Kong's military history. A coastal defence battery consisting of five guns was first built on the hill in 1912, two of which were relocated to Stanley in 1935.[51] Figure 8 from 1913 shows Mount Davis Path which was built to transport the heavy equipment to the top of the hill. The path still exists today.

Figure 9, an aerial photo taken in 1924 shows the location of the gun emplacements (the light circular patches), as well as the barracks (the rectangular buildings). The fortifications also included an underground bunker that served as the headquarters of the British military's Coastal Defence Western Fire Command during World War II.[52] During the Japanese invasion of Hong Kong in December 1941, the Mount Davis guns fired at targets on land as far away as Castle Peak Road across the harbour, and then eastwards across Hong Kong Island as Japanese troops advanced.[53] Under heavy shelling, one of the guns and the command bunker were destroyed. After the British surrender on 25 December 1941, British troops destroyed the two remaining guns before the Japanese military took possession of the fort and incarcerated them as prisoners of war.[54] Ruins of the military structures can still be seen on Mount Davis, which were granted Grade II historic building status in 2009.[55]

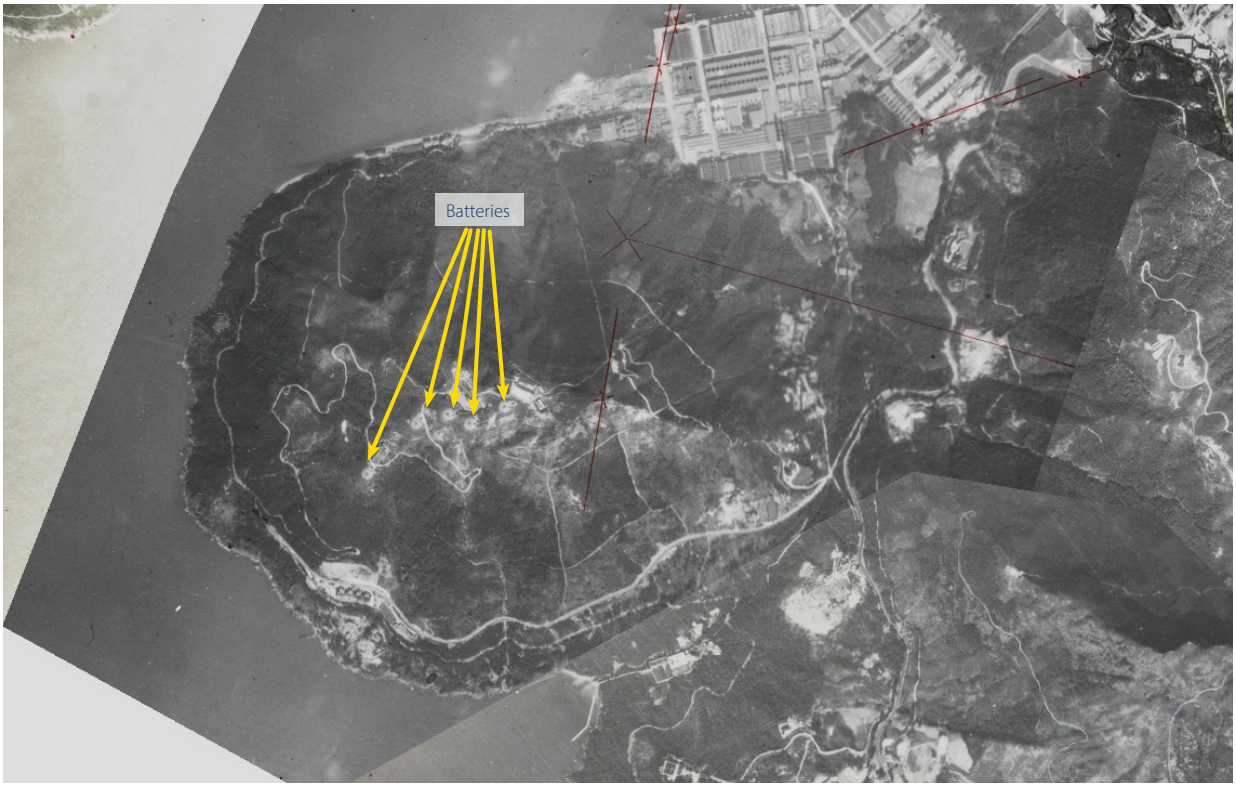
Figure 8: Mount Davis, 1913



Source: UK War Office, 1913. National Library of Australia.

After the war, the north side of Mount Davis was settled by squatters, many of whom were Kuomintang supporters who fled mainland China after their defeat in 1949.[56] After physical clashes broke out between pro-Communist union members and the Nationalist refugees in 1950, the colonial government cleared out the squatters (most relocated to Tiu Keng Leng (Rennie's Mill)), but allocated two areas for temporary housing. The first was Kung Man Tsuen, a "permitted area" where the government worked with the private sector to build about 250 cottages, which were sold or leased to people meeting certain employment requirements.[57]

Figure 9: Aerial photo of Mount Davis, 1924



Source: National Collection of Aerial Photography, UK, 1924

Figure 10: Mount Davis Battery ruins

Source: Minghong, Wikimedia Commons, 2008

Source: Wikimedia Commons

Figure 11: Ruins of barracks on Mount Davis

Source: TrailWatch, 2022

Figure 12: Map of northern side of Mount Davis, 1965

Source: Hong Kong and New Territories Survey Sheets, 1965, Hong Kong Map Service

The second, Hoi Pong Tsuen, was an "allowed area" where people were allowed to build their own shelters according to certain physical standards. Hoi Pong Tsuen was cleared in the aftermath of Typhoon Ellen in 1983–4, while Kung Man Tsuen remained until 2000.[58] The site of Kung Man Tsuen is currently being redeveloped into public housing.

An aerial photo from 1963 (Figure 13) also shows the two service reservoirs on Mount Davis under construction, which appear to have been completed by 1969–1970 according to the map in Figure 14. Kwun Lung Lau, one of Hong Kong's earliest public housing estates, (labelled "Sai Wan Estate" on Figure 14) was completed in 1967.

Mount Davis was one of the proposed but unimplemented urban fringe parks in the 1990 Metroplan. Existing government recreational facilities on the hill are fairly minimalistic, including a barbecue site near the summit managed by the HAD and concrete sports pitches on the roof of the Kennedy Town Service Reservoir managed by LCSD. The YHA Jockey Club Mt. Davis Youth Hostel was built near the top of the peak on the site of military ruins in 1981. Thanks to growing public interest in war history and support by voluntary groups such as the Friends of Mount Davis, some explanatory plaques have been installed next to the war relics. Seating areas and trail markers funded by the Lions Club of Mount Davis Centennial can also be found. Nowadays, Mount Davis is frequently used by war games enthusiasts. It is also used as a hang-out spot by University of Hong Kong students.

Figure 13: Aerial photo of Mount Davis, 1963

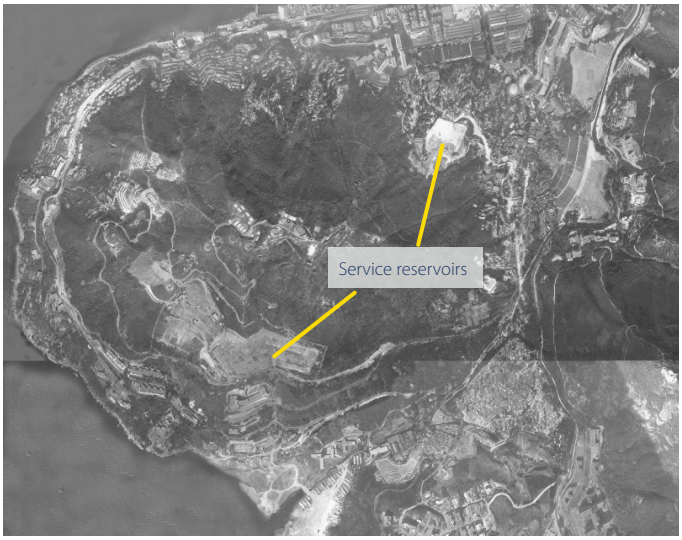
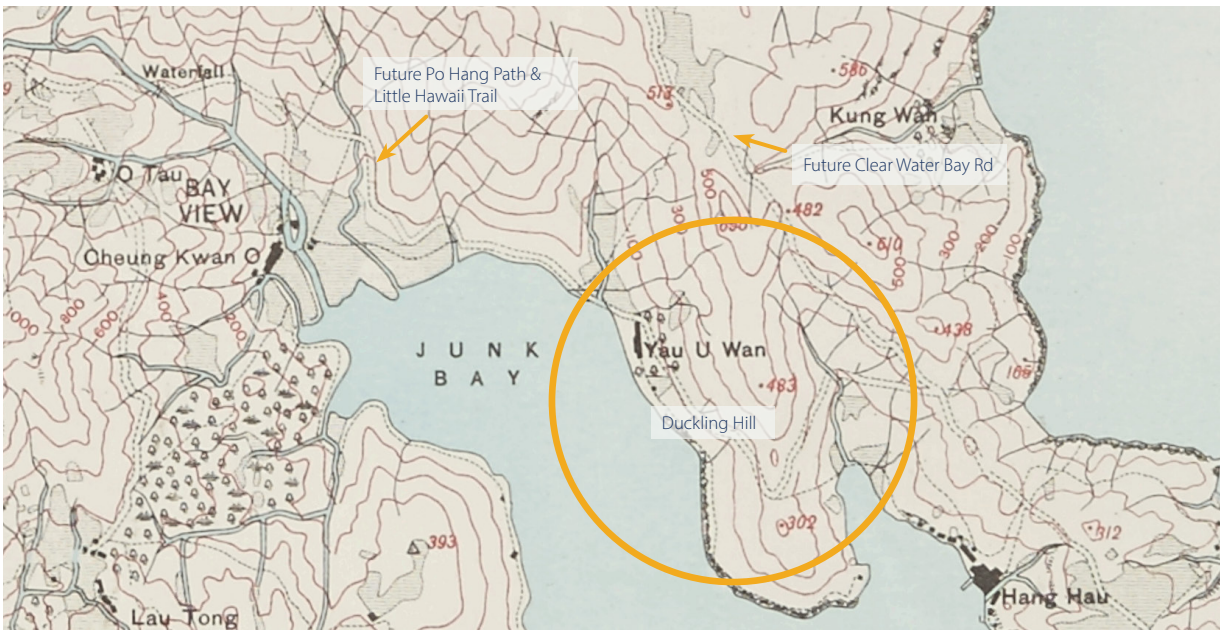


Figure 14: Map of Mount Davis, 1969

Sources: Top—Hunting Surveys, Government of Hong Kong, 1963.
Bottom—British Government's Ministry of Overseas Development (Directorate of Overseas Survey), 1969, National Library of Australia

Figure 15: Map of area around Duckling Hill, 1908



Source: Major H S King RE (GSGS 2100), 1908, British Library

4.3 | DUCKLING HILL

In the 19th Century, Duckling Hill was part of a network of trails linking agricultural and fishing villages in Sai Kung to market towns. A map from 1908 (Figure 15) shows the villages of Tseung Kwan O, Hang Hau and Yau Yue Wan before Junk Bay (Yau Yue Wan) was reclaimed. A number of paths are shown, including the route that would become Clear Water Bay Road, as well as part of what would become Po Hang Path and the Little Hawaii Trail. The latter path was used to bring agricultural produce to Kowloon City via Tseng Lan Shue for sale.[59]

In the lead-up to World War II, Duckling Hill was incorporated into the Gin Drinker's Line, a set of defensive pillboxes, bunkers and trenches built by the British military in 1936–38 stretching from Kwai Chung to Sai Kung. It was intended to defend Hong Kong against the Japanese army for weeks or months, but was critically undermanned and breached within days when Japan invaded in 1941. As shown in Figure 16, Japanese maps from this era carefully marked the positions of pillboxes (red circles), searchlights (white circles), barbed wire (Xs), and trenches (zigzags). Today, the pillbox on Duckling Hill has been demolished, but others in the vicinity (i.e. on Razor Hill) remain.[60] During the war, the East River Column, a Communist-affiliated Chinese guerilla resistance group was based in Sai Kung due to its remoteness and inaccessibility. They were active around Hang Hau and High Island, successfully recruiting local fishermen to harass Japanese shipping and help allied soldiers escape.[61]

After the war, the Clear Water Bay Film Studio was built on the northeast side of Duckling Hill in 1959. It was at the time considered the largest private film studio in the world, producing over 1,000 movies by the time it closed down in 2003. The complex was listed as a Grade 1 historical structure in 2014.[62]

Clear Water Bay Road was paved in 1967 to support growing industries in the area. By the early 1970s, Junk Bay had

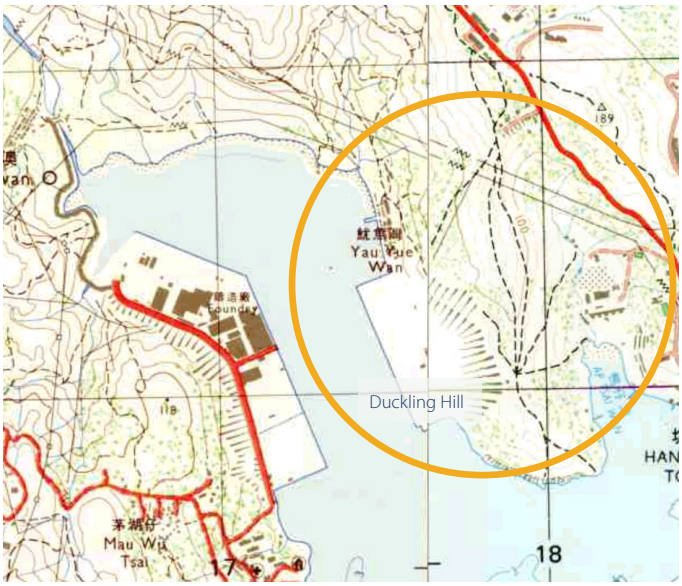
Figure 16: Japanese map of British defensive positions, 1941

Source: Unknown, hosted on Hong Kong Historic Maps, 1941

Figure 17: Reclamation for shipbreaking industry, Yau Yue Wan, 1973

Source: Original source unknown, hosted on Hong Kong Historic Maps, 1973

Figure 18: Map of Duckling Hill and Junk Bay, 1985



Geographic Branch, Headquarters British Forces, Hong Kong Series: L885, 1985, Government Records Service, 1985

become a shipbreaking centre. As shown in Figure 17, land was reclaimed on both sides of the bay to create berths for old ships to be taken apart and the metal was salvaged in foundries on shore.[63]

Tseung Kwan O New Town was built in the late 1980s and 1990s on reclaimed land as shown in Figures 18 to 20. The "head" of Duckling Hill, where Hang Hau is now located, was blasted away for use as reclamation fill. Yau Yue Wan Village had to be relocated.

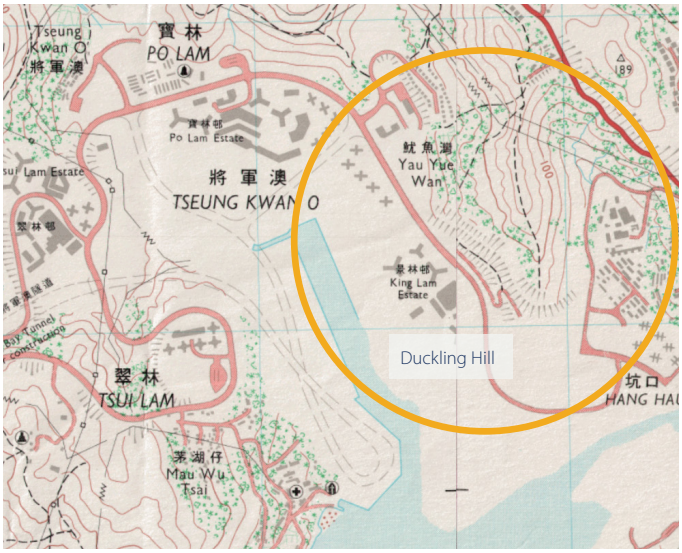
While hiking activities had been increasing in the area since the 1960s, the development of Tseung Kwan O turned Duckling Hill into a backyard trail. Residents who moved in before many public facilities were completed turned to the hillside for recreation. Many New Town backyard trails acquired communities of users in this way.

4.4 | FAILURES OF HERITAGE CONSERVATION ON BACKYARD TRAILS

There are significant heritage structures on some of these hills such as the ex–service reservoir on Woh Chai Shan and the ruins of the Mount Davis Battery. However, few efforts were made towards their recognition or preservation until relatively recently. The former service reservoir on Woh Chai Shan was forgotten until the WSD's attempt to demolish it in 2020 drew public attention and revealed deficiencies in the government's heritage assessment procedures: the WSD had labelled it as an ordinary "water tank" in its communications with the Antiquities and Monuments Office, a designation that excluded it from further scrutiny.[64] As a result, the Development Bureau revised its guidance for structures outside the established list of heritage sites.[65] Once the reservoir was revealed, however, swift action was taken to grade and preserve the site, which was probably facilitated by the fact that it remains under the management of a single government department.[66]

Unlike the service reservoir, there is no specific government department with authority over the Mount Davis wartime ruins. The government has paid little attention to them and

Figure 19: Map of Duckling Hill and Junk Bay, 1987-1991



Source: The Territory of Hong Kong (HM20C), Survey and Mapping Office, Hong Kong Government, 1988-1991.

Figure 20: Aerial photo of Duckling Hill, 1993

Source: Original source unknown, hosted on Hong Kong Historic Maps, 1993

other World War II relics for a number of economic and political reasons: for the postwar colonial government, the wartime defensive structures represented an embarrassing defeat; for the post-1997 government, Britain's role was de-emphasised in the broader narrative of Chinese resistance against the Japanese invasion.[67] Furthermore, there was no economic incentive to preserve structures with little potential for revenue generation. Starting in the 1990s, academic researchers and history enthusiasts played a major role in promoting public interest in wartime history and bringing attention to the neglected ruins.[68] In 2005, a group of hikers affiliated with the Lions Club International founded the Friends of Mount Davis to clean up the trails and to promote the site's heritage.[69] The HAD erected some interpretation panels near some of the ruins and the Mount Davis Battery was confirmed as a Grade II historical building by the Antiquities and Monuments Office in 2009.[70] However, while several organisations now host guided tours, very little has been done to maintain the site. The ruins continue to be damaged by littering and graffiti.[71] Wargaming activities have littered the ground with thousands of plastic pellets. The explanatory signage has become corroded.

The absence of management on Mount Davis contrasts with the preservation of the Jubilee Battery (the fourth coastal battery on the western base of Mount Davis) which is within the University of Chicago Yuen Campus. The area is kept clean and a safe pedestrian path has been provided to allow public access. The interpretive panels are more detailed and informative. The condition of wartime ruins in country parks, such as the outdoor brick stoves which were built to feed refugees in Tai Tam Country Park near Quarry Bay, also compares favourably to that on Mount Davis. Although AFCD's interventions appear minimal, the interpretive panels are more informative and better maintained, and the presence of a managing body deters vandalism. Historic structures in green belt areas which do not belong to a private landowner or any specific government body tend to be neglected. In these instances, there is a clear need for comprehensive management (see Section 8).

In spite of some irresponsible behaviour (i.e. graffiti), trail users have also had a positive influence on appreciation for the historic significance of backyard trails. In addition to the Lions Club's role in promoting the wartime ruins on Mount Davis and the morning walkers whose quick thinking protected the Sham Shui Po Ex-Service Reservoir from demolition, trail walkers also rediscovered three lost 19th Century City of Victoria boundary stones in late 2021.[72] Bottom-up activities can further raise awareness and in some cases motivate the government to better preserve sites of historical significance.

Figure 21: Corroded interpretive panel on Mount Davis

Source: Go Yi, 2022

5. Population Catchment Areas

5.1 | CATCHMENT AREA SIZE

15-minute walking distance catchment areas from the trailheads of each trail area were calculated using the methodology described in Section 2. The population of each catchment area was estimated using 2016 census data. According to these estimates, the 11 trails included in this study collectively serve about 1.5 million people.

Woh Chai Shan & Garden Hill had the largest catchment population by far, with 324,000 people living within 15 minutes' walk. (The two hills were treated as a single trail system as they are in close proximity). The second largest, with 251,000 people, was Shum Wan Shan and Ping Shan, a pair of hills in Jordan Valley, Kwun Tong.

Both of these cases are residual hills that are entirely surrounded by urban development, providing rare access to semi-wild environments in highly built-up urban areas. As Figure 22 shows, these two trail areas (1 and 2 on the map) are in the midst of very high population densities, with many of the surrounding small street block groups exceeding densities of 172,000 residents per km^2.

The next largest catchment population is the extensive trail network comprising Sir Cecil's Ride and the Mount Parker Lower Catchwater, which stretches across the eastern half of north Hong Kong Island from Causeway Bay to Shau Kei Wan, traversing Tai Tam Country Park (Quarry Bay Extension) in the middle. The neighbourhoods immediately surrounding its trailheads in North Point are less densely populated (less than 25,000 people per km^2) due to the hilly terrain, but the size of the trail network and the large number of trailheads makes it accessible to around 247,000 people within a 15-minute walking distance.

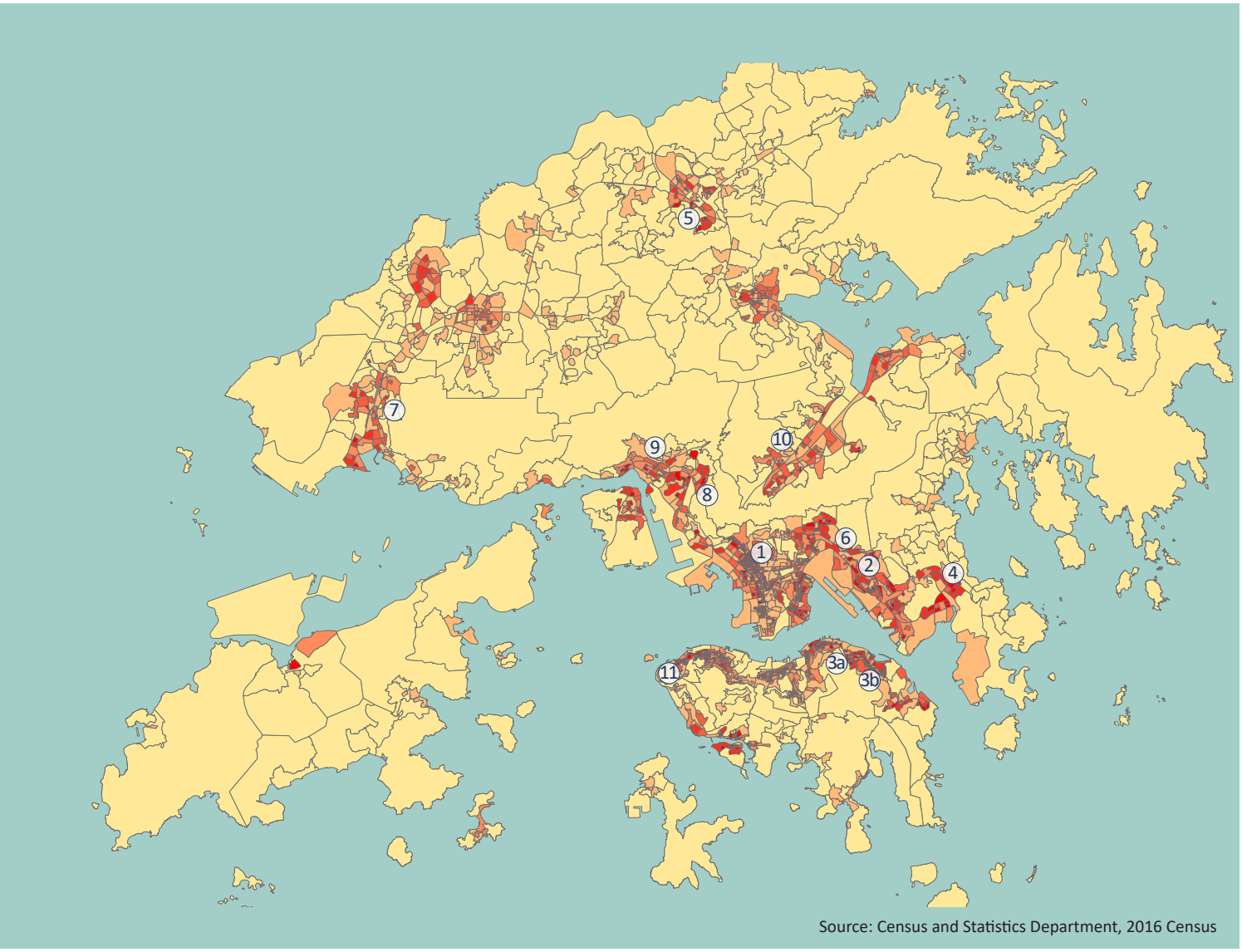
The next batch of trails, with catchment populations from 87,000 to 189,000 people, are mainly located on the edges of New Towns. These include Duckling Hill, Wu Tip Shan, Tuen Mun Trail, and Kam Shan Country Trail. The somewhat lower population densities in New Towns, plus the fact that the green belts abut development on only one side, explain the smaller number of people within the catchment areas. One exception is Hammer Hill, which is in sixth place despite being in urban Kowloon. As shown in Figure 23(6), the size of its catchment area is limited by major arterial roads with few pedestrian crossing points (New Clear Water Bay Road and the Kwun Tong Bypass).

The trails with the smallest population catchments are Fu Yung Shan in Tsuen Wan (61,000 people), To Fung Shan in Sha Tin (35,000) and Mount Davis in Kennedy Town/Pok Fu Lam (31,000 people). The small number of pedestrian access points limits their catchment areas. Fu Yung Shan and To Fung Shan are separated from adjacent urban centres by railroad tracks and major arterial roads that are only crossable by footbridges in a few locations. Mount Davis currently has only three viable trailheads, two of which are located on the southern side towards Pok Fu Lam, an area of much lower population density.

Table 4: 15-minute walking distance catchment population size

	Name	Location	15-min catchment population (to the nearest 1,000)
1	Woh Chai Shan (Bishop Hill) & Garden Hill 窩仔山(主教山)及嘉頓山	Sham Shui Po/Shek Kip Mei	324,000
2	Shum Wan Shan & Ping Shan 沈雲山及平山	Jordan Valley/Ngau Tau Kok	251,000
3	Sir Cecil's Ride & Mount Parker Lower Catchwater 金督馳馬徑及柏架山下引水道	Causeway Bay to Shau Kei Wan	247,000
4	Duckling Hill, Lin Yuen & Po Hang Paths 鴨仔山、蓮苑徑及寶坑徑	Tseung Kwan O	189,000
5	Wu Tip Shan 蝴蝶山	Fanling	107,000
6	Hammer Hill 斧山	Diamond Hill/Choi Hung	101,000
7	Tuen Mun Trail 屯門徑	Tuen Mun	90,000
8	Kam Shan Country Trail 葵涌金山郊野徑	Kwai Chung	87,000
9	Fu Yung Shan 芙蓉山	Tsuen Wan	61,000
10	To Fung Shan 道風山	Sha Tin	35,000
11	Mount Davis 摩星嶺	Kennedy Town	33,000
	Total		1,525,000

Figure 22: Population density near backyard trail locations



Legend

Backyard Trail

① Woh Chai Shan & Garden Hill
② Shum Wan Shan & Ping Shan
③a Sir Cecil's Ride
③b Mount Parker Lower Catchwater
④ Duckling Hill
⑤ Wu Tip Shan
⑥ Hammer Hill
⑦ Tuen Mun Trail
⑧ Kam Shan
⑨ Fu Yung Shan
⑩ To Fung Shan
⑪ Mount Davis

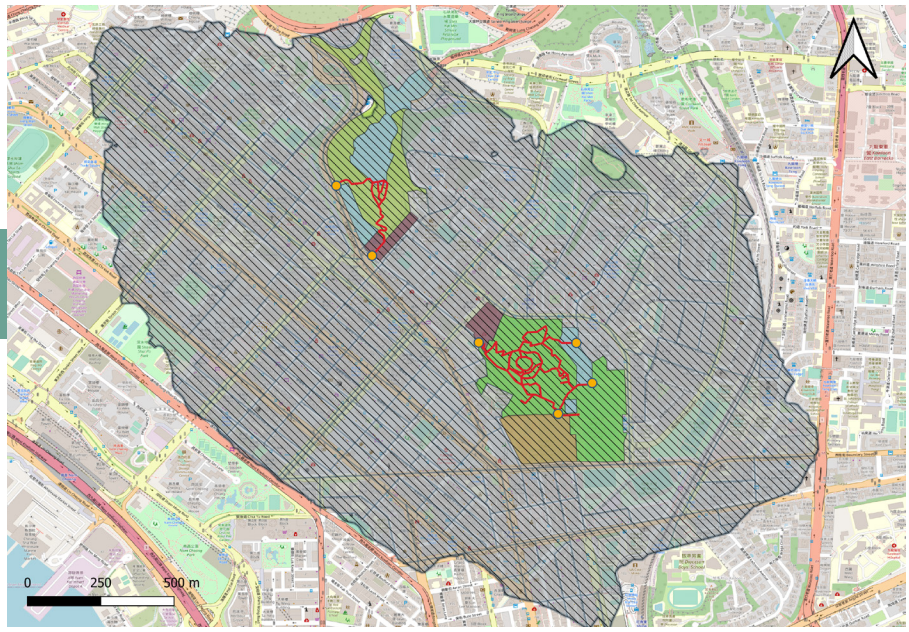
Population density (residents/km^2)

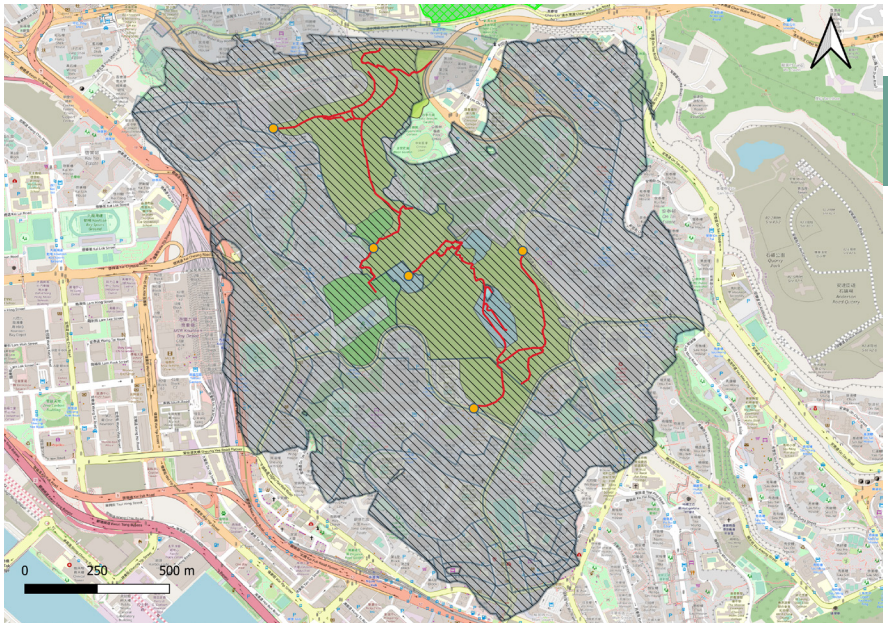
0–5,000
5,001–25,000
25,001–66,000
66,001–116,000
116,001–172,000
172,101–524,700

Figure 23: 15-minute walking distance backyard trail catchment areas

Catchment area maps are printed at the same scale to enable comparison between different trail networks.

1. Woh Chai Shan and Garden Hill
324,000 residents





2. Shum Wan Shan and Ping Shan
251,000 residents

Legend

- 15-minute walk catchment area
- Mapped backyard trail
- Trailhead
- Green belt
- Open space
- Country park
- Village type development
- Government, institution or community zone

3. Sir Cecil's Ride and Mount Parker Lower Catchwater
247,000 residents

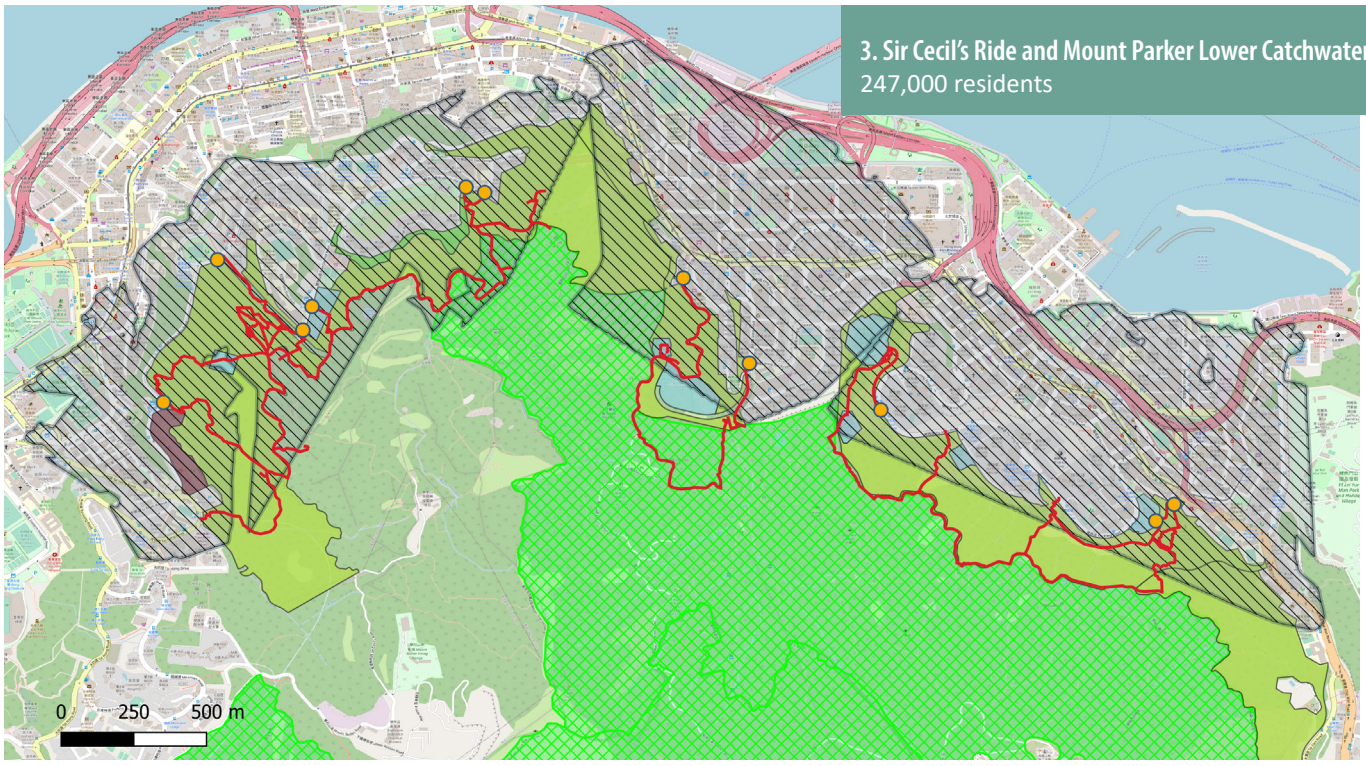
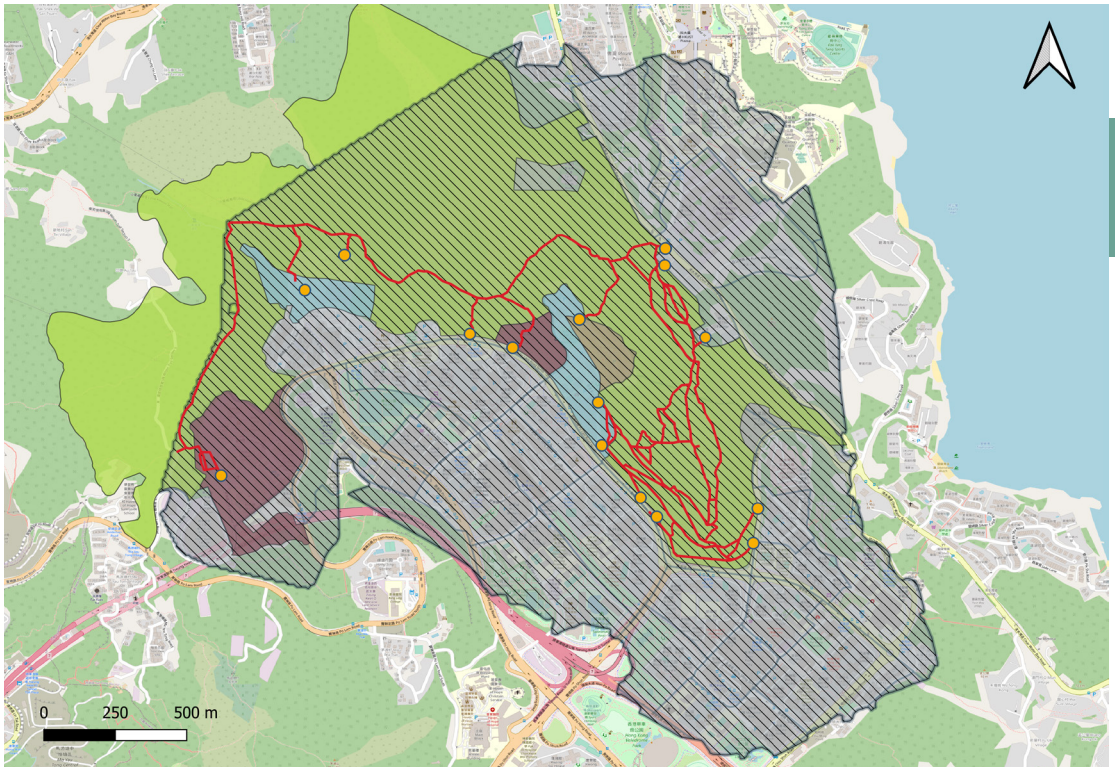
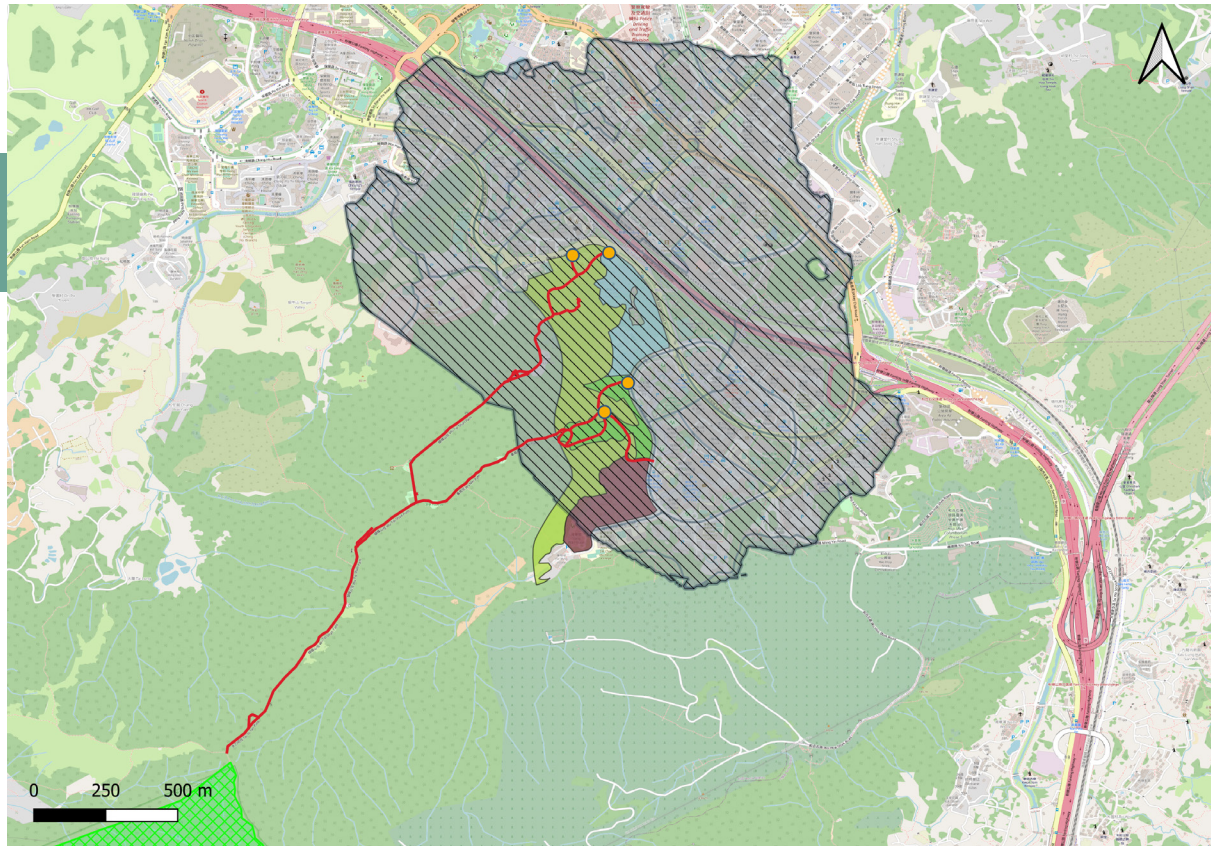


Figure 23 continued



4. Duckling Hill, Lin Yuen and Po Hang Paths
189,000 residents

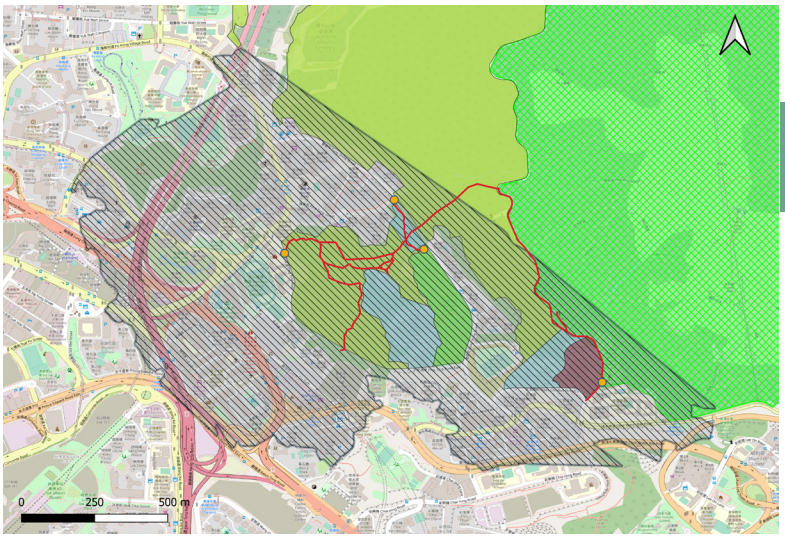


5. Wu Tip Shan
107,000 residents

Legend

- Green belt
- Open space
- Country park
- Village type development
- Government, institution or community zone
- 15-minute walk catchment area
- Mapped backyard trail
- Trailhead

Figure 23 continued



6. Hammer Hill
101,000 residents

Legend

- Green belt
- Open space
- Country park
- Village type development
- Government, institution or community zone
- 15-minute walk catchment area
- Mapped backyard trail
- Trailhead

7. Tuen Mun Trail
90,000 residents

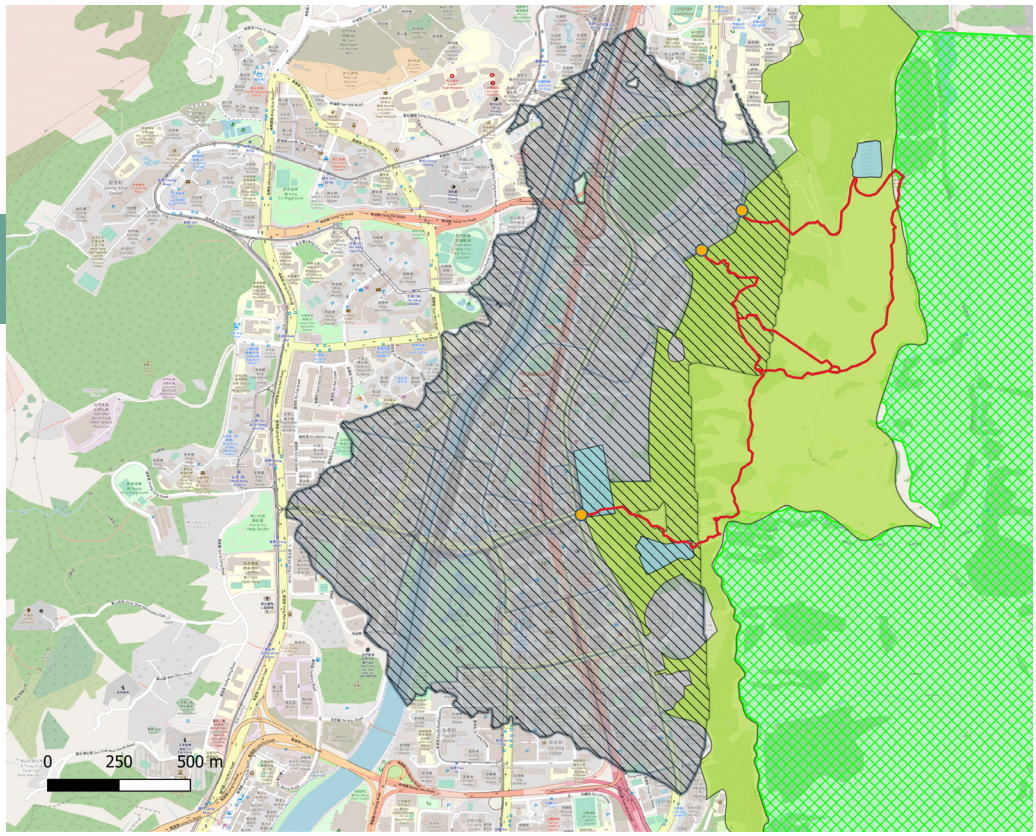
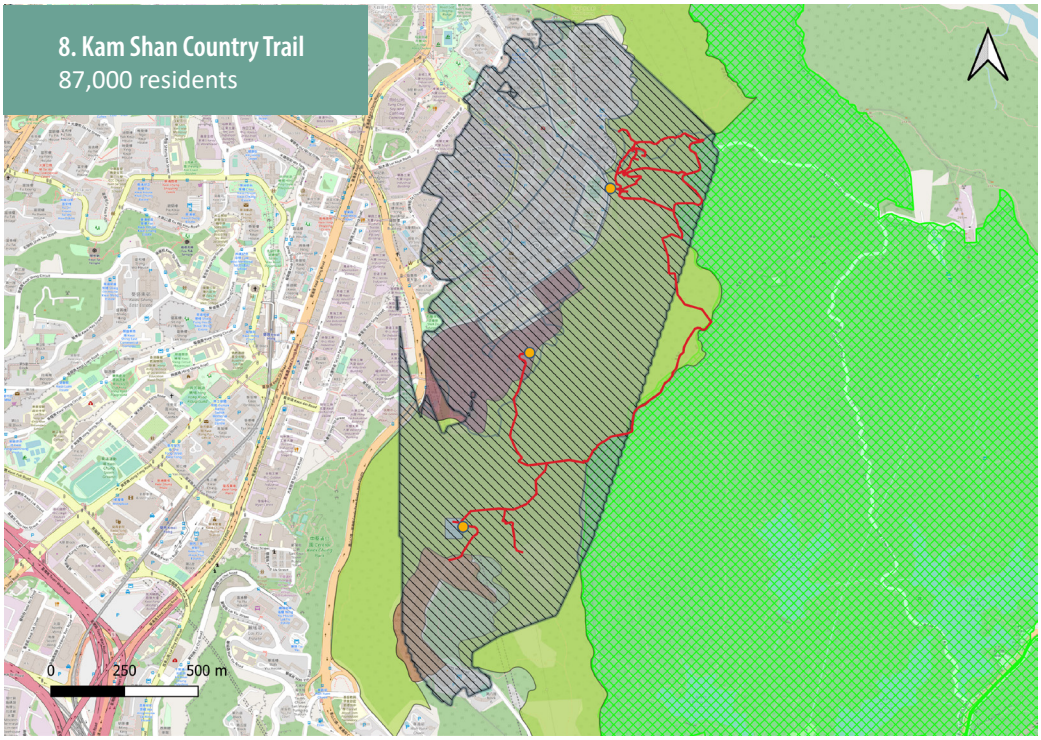
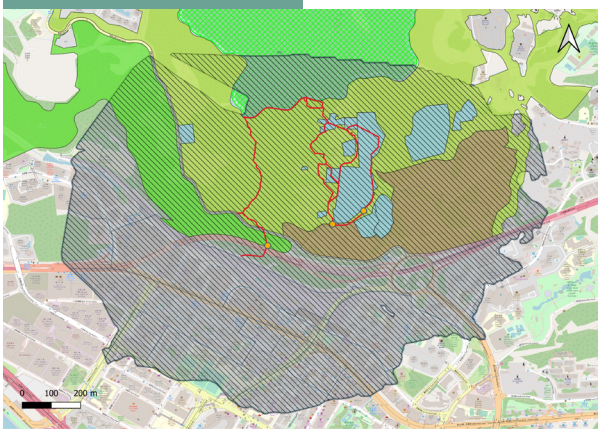


Figure 23 continued

8. Kam Shan Country Trail
87,000 residents



9. Fu Yung Shan
61,000 residents



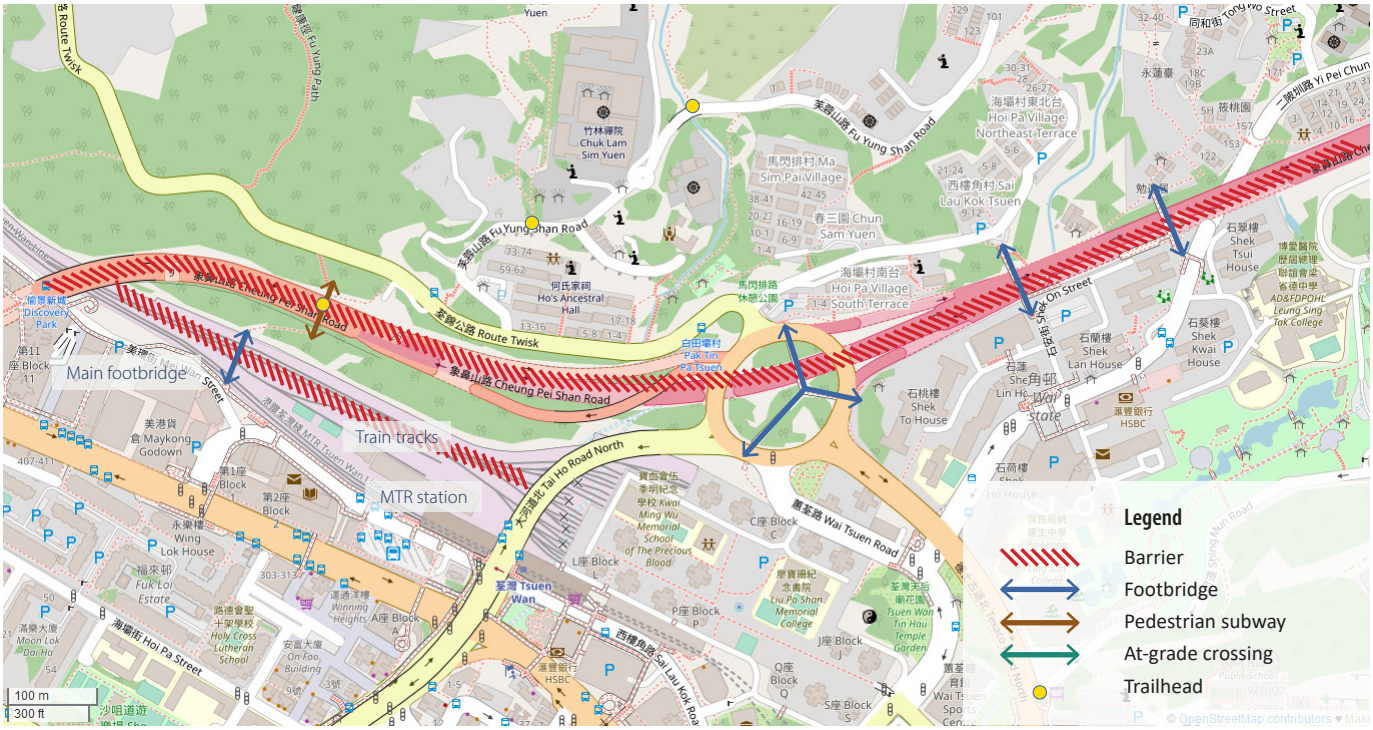
10. To Fung Shan
35,000 residents

11. Mount Davis
33,000 residents

Legend

- Green belt
- Open space
- Country park
- Village type development
- Government, institution or community zone
- 15-minute walk catchment area
- Mapped backyard trail
- Trailhead

Figure 24: Fu Yung Shan neighbourhood connectivity barriers



5.2 | ACCESS BOTTLENECKS

In the majority of cases, trailheads were very accessible from the surrounding neighbourhood, being accessible from sidewalks or public parks linked to a dense network of interconnected streets that allowed people living nearby to reach them by multiple routes. However, as noted previously, in some cases such as To Fung Shan, Fu Yung Shan, Mount Davis and to a lesser extent Hammer Hill, the size of the catchment area was limited by physical barriers that filter all access routes through a small number of bottlenecks.

As noted in the previous section, Fu Yung Shan is divided from urban Tsuen Wan by MTR tracks, the Tsuen Wan rail depot, and Cheung Pei Shan Road, a limited access highway. Just three footbridges spaced at 300–500m intervals provide access over the highway and rail tracks.

The entrance to the main footbridge (Figure 25) is accessed through a set of unmarked glass doors in the privately-managed elevated walkway connected to Tsuen Wan MTR station. The first fingerpost pointing towards Fu Yung Shan is located close to the trailhead on the opposite side of Cheung Pei Shan Road where the pedestrian path meets Route Twisk, an older mountain road.

Similarly, railroad tracks and Tai Po Road divide To Fung Shan from the residential areas of Sha Tin Town Centre. There are three routes across the barrier: through an elevated walkway in the New Town Plaza shopping mall, via the Sha Tin Rural Committee Road bridge, or a narrow footbridge at Wo Che Estate. From the direction of Tai Wai, To Fung Shan may be accessed via Tung Lo Wan Hill Road, which is quite a long distance. However, To Fung Shan is better signposted due to the presence of local attractions such as the Ten Thousand Buddhas Monastery.

Figure 25: Main footbridge to Fu Yung Shan

Source: Google Streetview, December 2021

Source: Carine Lai, April 2022

Figure 26: To Fung Shan neighbourhood connectivity barriers

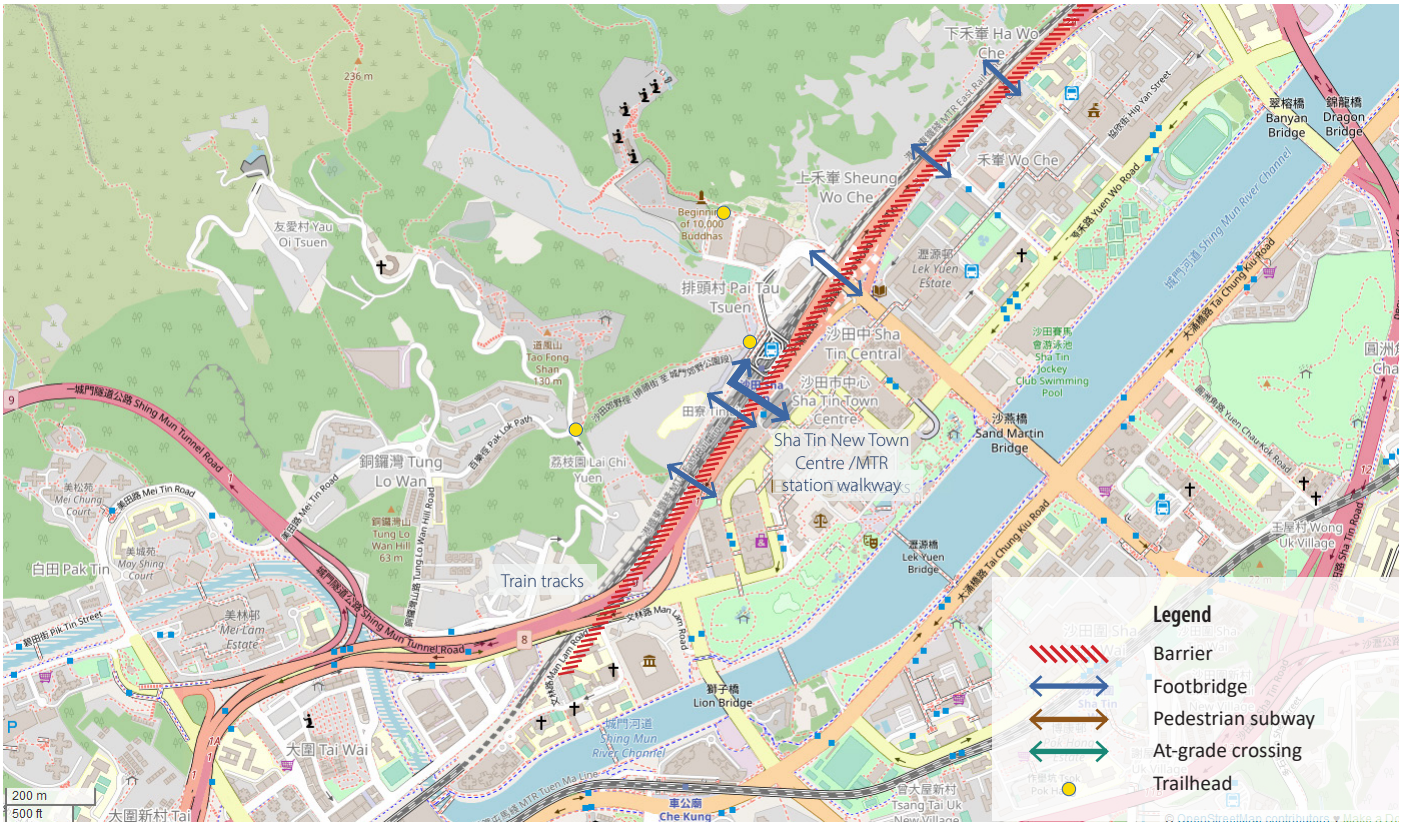
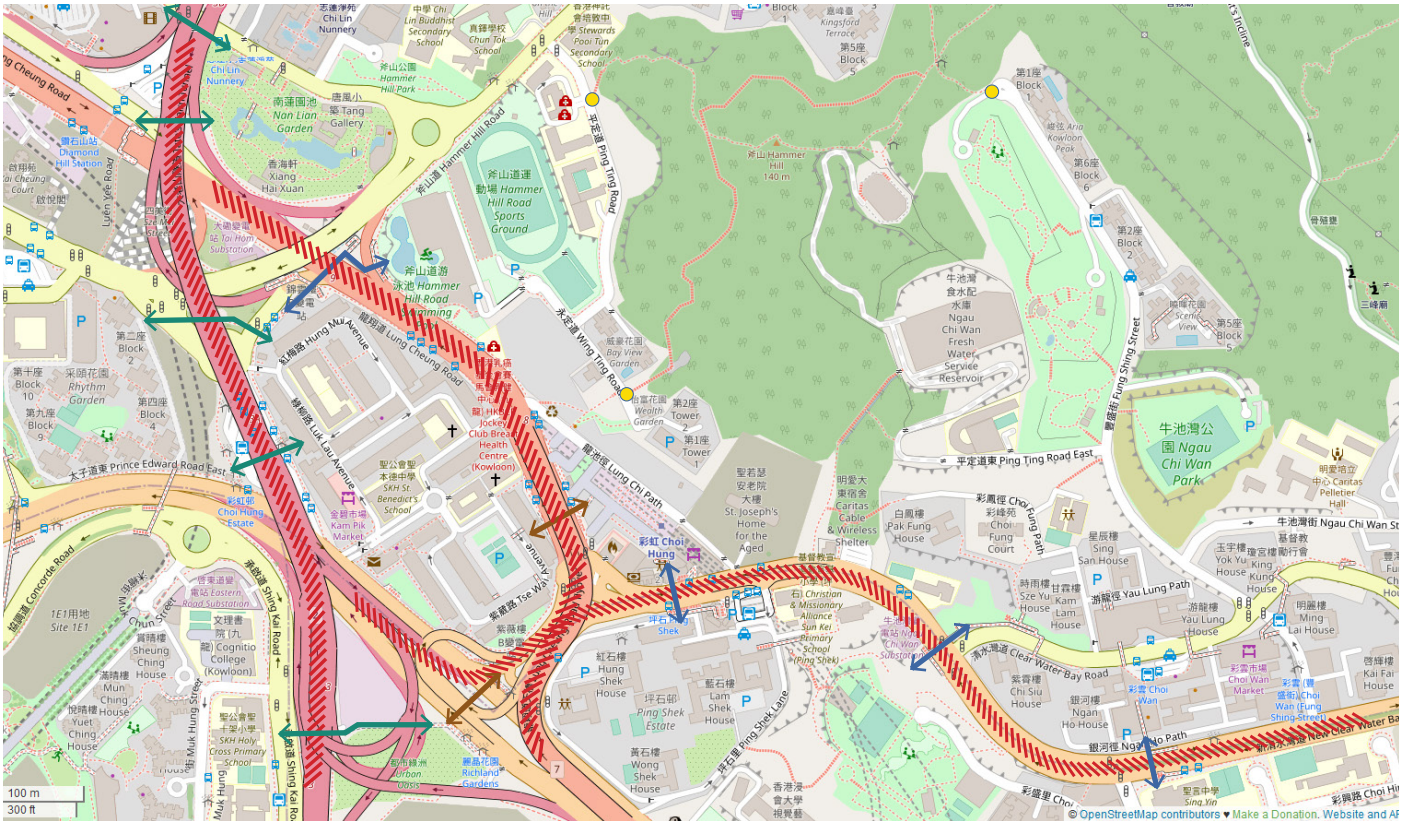


Figure 27: Hammer Hill neighbourhood connectivity barriers



Hammer Hill's catchment area is limited to the semicircle created by Sing Kai Road, an elevated highway; and New Clear Water Bay Road. The pedestrian network in this area is fragmented due to the convergence of several major arterial roads. These major barriers are difficult to remedy since providing additional crossings across expressways and railroad tracks would be difficult to justify from a cost standpoint.

However, at minimum, improved wayfinding signage would help pedestrians to find their way more easily. District Councils, the Hong Kong Tourism Commission, the Mass Transit Railway Corporation (MTRC) and footbridge owners such as D-Park in Tsuen Wan (which controls the entrance to the main footbridge to Fu Yung Shan) can all contribute towards better wayfinding.

6 Trail Accessibility

This section will discuss findings from the trail mapping exercise for the purpose of highlighting areas for improvement in trail accessibility. It will discuss several dimensions of accessibility including pedestrian-vehicle conflicts both near trailheads and along trail routes, trail conditions and safety, connectivity to country parks, and right of access through public land.

6.1 | PEDESTRIAN-VEHICLE CONFLICTS

Some examples of vehicle-oriented planning that created potential conflicts between pedestrians and vehicles were found.

The roads around Shum Wan Shan and Ping Shan were quite pedestrian-unfriendly. A trailhead and a bus stop are located across from Lok Wah Estate on Chun Wah Road. A pedestrian subway has been provided. The nearest at-grade crossing is about 140m away, and the road is divided by a median with railings along either side. However, the Google Streetview image below taken in March 2022 captured an elderly man crossing the road in an unsafe manner: it appears that instead of using the subway, he had crossed the road at grade and was forced to walk on the outside of the railings for some distance before being able to get back onto the sidewalk. The subway is currently undergoing works to install a lift to provide barrier-free access. While a lift might induce some people to use the subway instead of crossing unsafely, providing an at-grade crossing opposite the housing estate entrance would have been a better solution.

In another example at Fu Yung Shan, while a zebra crossing and a cautionary crossing have been provided at the most heavily used crossing points on Route Twisk near the trailhead to Fu Yung Shan, pedestrian provisions slightly further to the east on Fu Yung Shan Road are less adequate. Around the Chuk Lam Sim Monastery, the sidewalk on one side of the street is extremely narrow, nonexistent, or obstructed with unattended articles. Worshippers, villagers, and any hikers using these routes are forced into the road. Currently there are no marked pedestrian crossings, only a gap in the crash barriers or railings to allow people to cross. At minimum, a cautionary crossing should be provided across from the monastery entrance.

These types of barriers have been remedied in the past if sufficient public demand for an at-grade crossing can be demonstrated. For example, In Tseung Kwan O, Po Lam Road North (a median-separated road) divides the residential area from Duckling Hill and several important community facilities such as the Sheng Kung Hui Elderly Services Building, the Tseung Kwan O Jockey Club General Out-patient Clinic, and Tseung Kwan O Government Secondary School. Between 2007 and 2009, elderly residents dissatisfied by having to navigate stairs to cross the road successfully campaigned to persuade the District Council to support the installation of an at-grade pedestrian crossing.[73] This remains the sole at-grade crossing available.

Besides pedestrian-vehicle conflicts near trailheads, there were also a few examples of hikers needing to share roadways with vehicles for long stretches of the route. These were on historic roads with no sidewalks with low traffic volumes that are now primarily used for recreation or for maintenance access.

At Hammer Hill, hikers are required to share space with vehicles on Jat's Incline, a narrow, winding, steep one lane road built in the early 20th Century to connect Shatin Pass Road (which forms part of Wilson Trail 4) to Clear Water Bay Road. Jat's Incline is the boundary between Hammer Hill and Ma On Shan Country Park. It has no pedestrian sidewalks. While it is a limited access road with light traffic, it carries one-way downhill traffic which seems to encourage fast driving. A news search found four reported vehicular accidents in 2021 and 2022 in which drivers lost control and drove off the side of the road at night.[74] There were also two bicycle accidents, one of which resulted in a pedestrian being hospitalised in serious condition.[75]

Figure 28: Chun Wah Road trailhead (Shum Wan Shan)

Source: Google Street View, 2022

Figure 29: Pedestrian environment near Fu Yung Shan

Source: Google Street View, 2022

Source: Google Street View, 2022

Source: Carine Lai, April 2022

Source: Carine Lai, April 2022

Top: Cautionary crossing and zebra crossing on Route Twisk.
Bottom: Obstructed and disappearing pavements on Fu Yung Shan Road.

Figure 30: Pedestrian crossings on Po Lam Road North, Duckling Hill

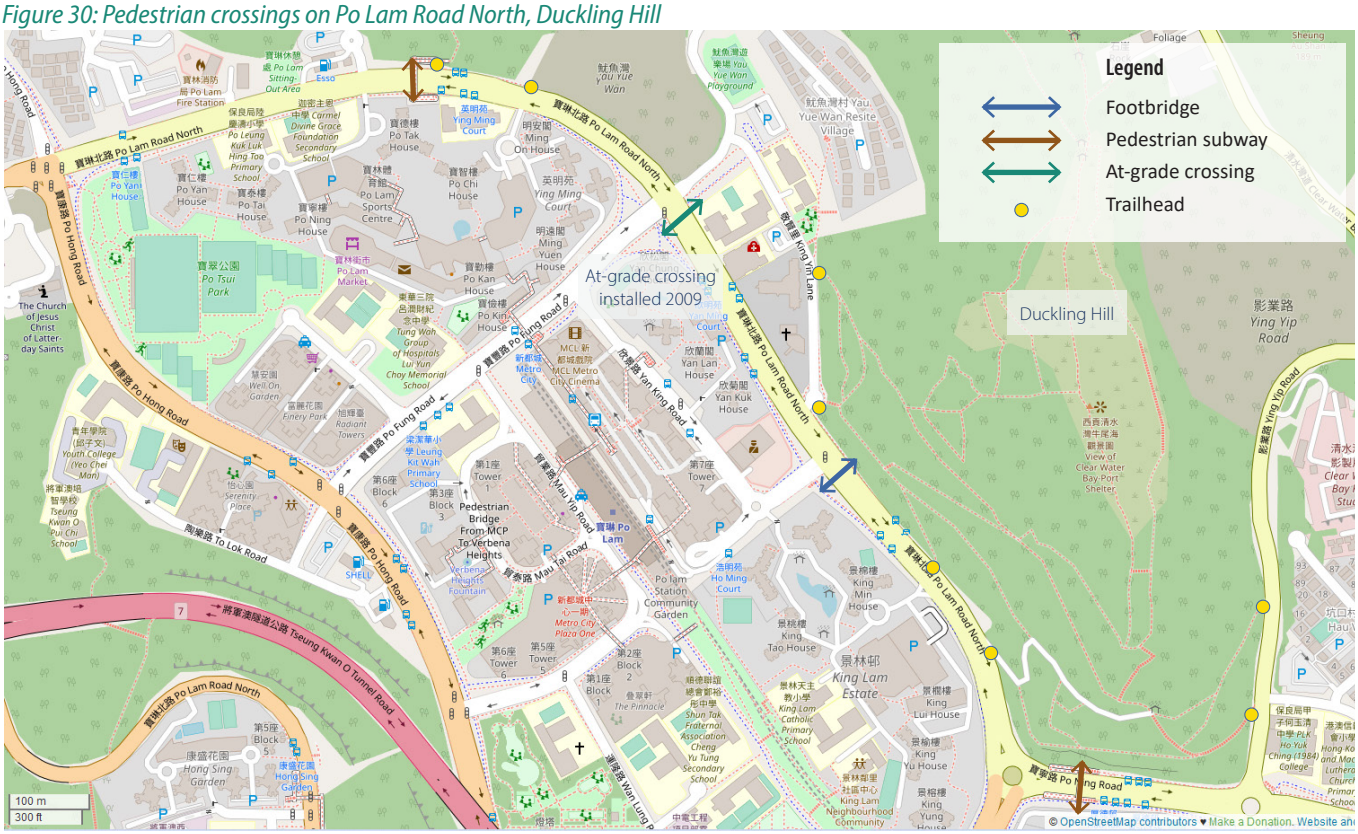


Figure 31: Jat's incline

Source: Google Street View, July 2022

Hikers must also share space with vehicles on Mount Butler Road and Sir Cecil's Ride in Tai Hang, Mount Davis Path in Kennedy Town/Pok Fu Lam, and the Quarry Bay Green Trail. However, these cases are less dangerous as they are access roads for facilities that draw limited traffic, and since these roads are two-way, people drive more slowly and cautiously.

In some cases it may be feasible to ban or further restrict traffic. For example, the vehicle-accessible portion of Sir Cecil's Ride is a cul-de-sac that ends at the Mount Butler High Frequency Radio Station and is not needed to access any other buildings or facilities. Vehicle access should be limited to those necessary for the maintenance and operation of the radio station. A small car park could be provided at the bottom of the hill for recreational visitors.

It is not feasible to ban all traffic on Jat's Incline since it is needed to provide access to several villages within Lion Rock and Ma On Shan Country Parks. However, a lower speed limit should be imposed, and traffic calming measures should be introduced to slow driving. These may include chicanes, speed tables near trailheads and country park entrances, and road markings to visually narrow the vehicular lane and give pedestrians a designated space to walk.

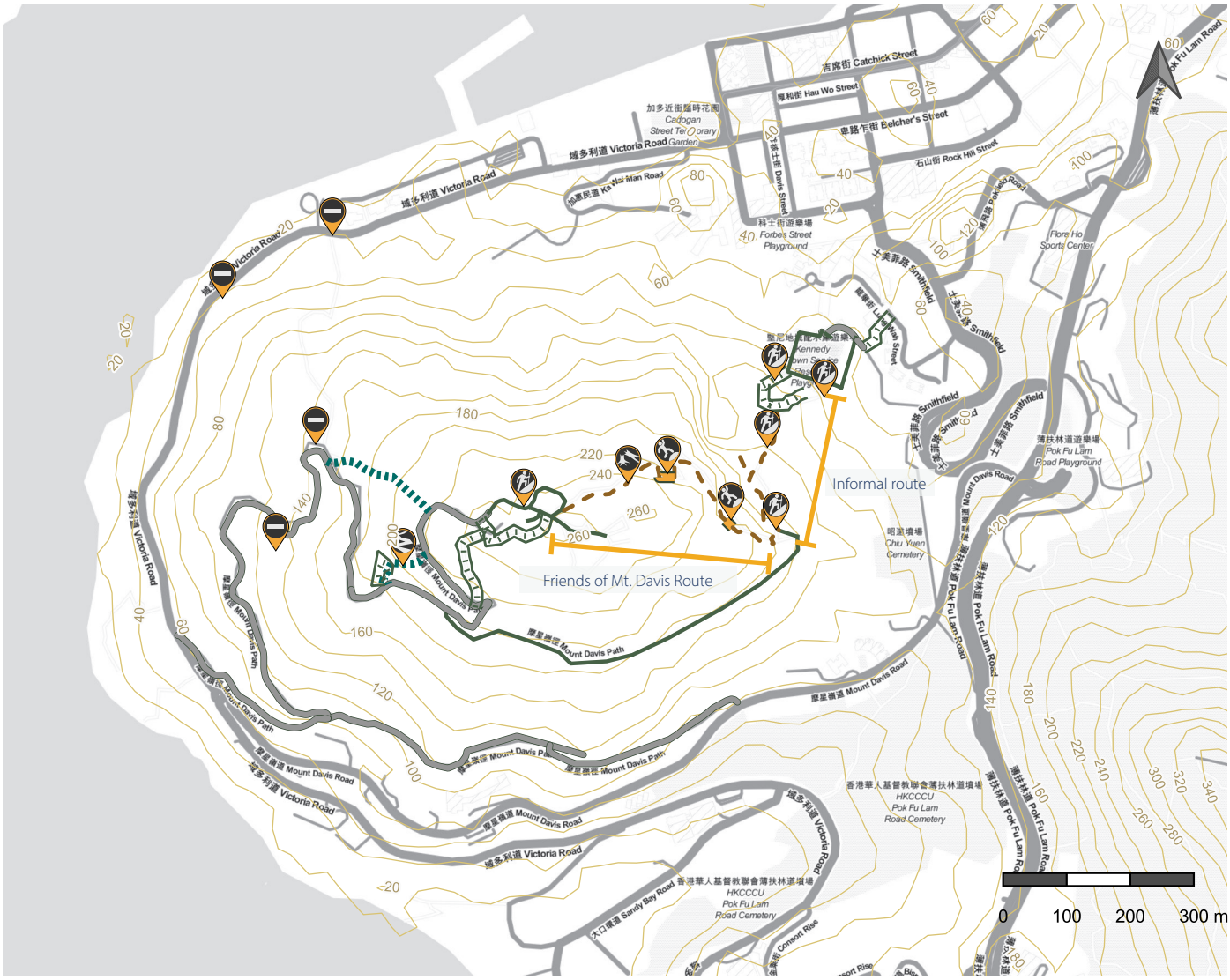
6.2 | TRAIL CONDITIONS AND SAFETY

While the majority of the trails explored in this project were safe and well-maintained, there were certain routes connecting residential areas to the main trail that were extremely steep or in poor condition. These included unofficial paths created by trail walkers, infrastructure maintenance tracks appropriated by hikers, or old abandoned trails. These routes cannot be recommended since they are not very safe.

Three problem areas were identified. The first was on Mount Davis. As noted in Section 5.1, the main trail (Mount Davis Path) begins on the hill's south side, further away from population centres. Trail walkers have created an unofficial route from Kennedy Town Service Reservoir Playground above Sai Wan Estate to the top of Mount Davis. This route is quite steep and includes two makeshift bridges, shown on the map in Figure 32.

The less dangerous portion of this unofficial trail has been "adopted" by the Lions Club of Mount Davis Centennial organisation, which has placed trail markers at intervals. The photos in Figure 33 show the condition of the trail in early 2022.

Figure 32: Mount Davis trail conditions



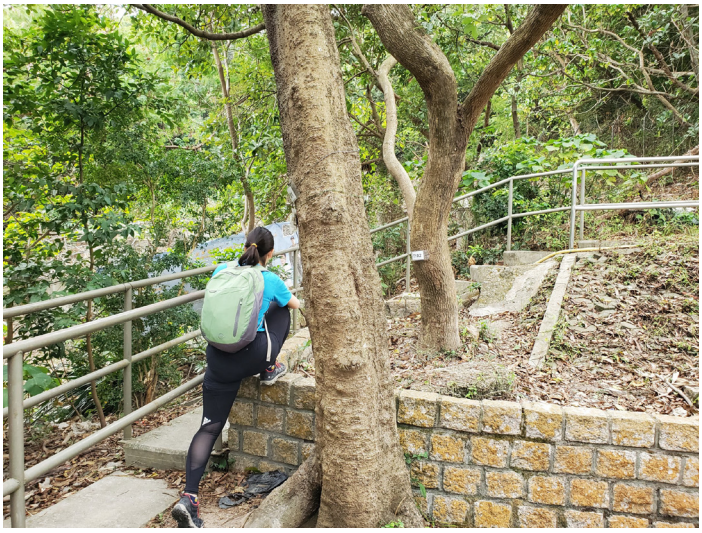
Cautions

- Blocked path
- Broken connection
- Fall risk
- Fallen tree
- Poor/rough path condition
- Steep
- Overgrown path

Trail surface material

- Bare soil
- Brick paved
- Concrete
- Concrete stairs
- DIY bridge
- Improvised materials
- Metal stairs
- Natural rock
- No data
- Non-standard concrete
- Stone paved
- Stone paved stairs
- Uncemented stone
- Uncemented stone stairs
- Vehicular road

Figure 33: Mount Davis–Kennedy Town informal route



Source: Bosco Woo, January 2022

Source: Bosco Woo, January 2022

Source: Bosco Woo, January 2022

Source: Go Yi, January 2022

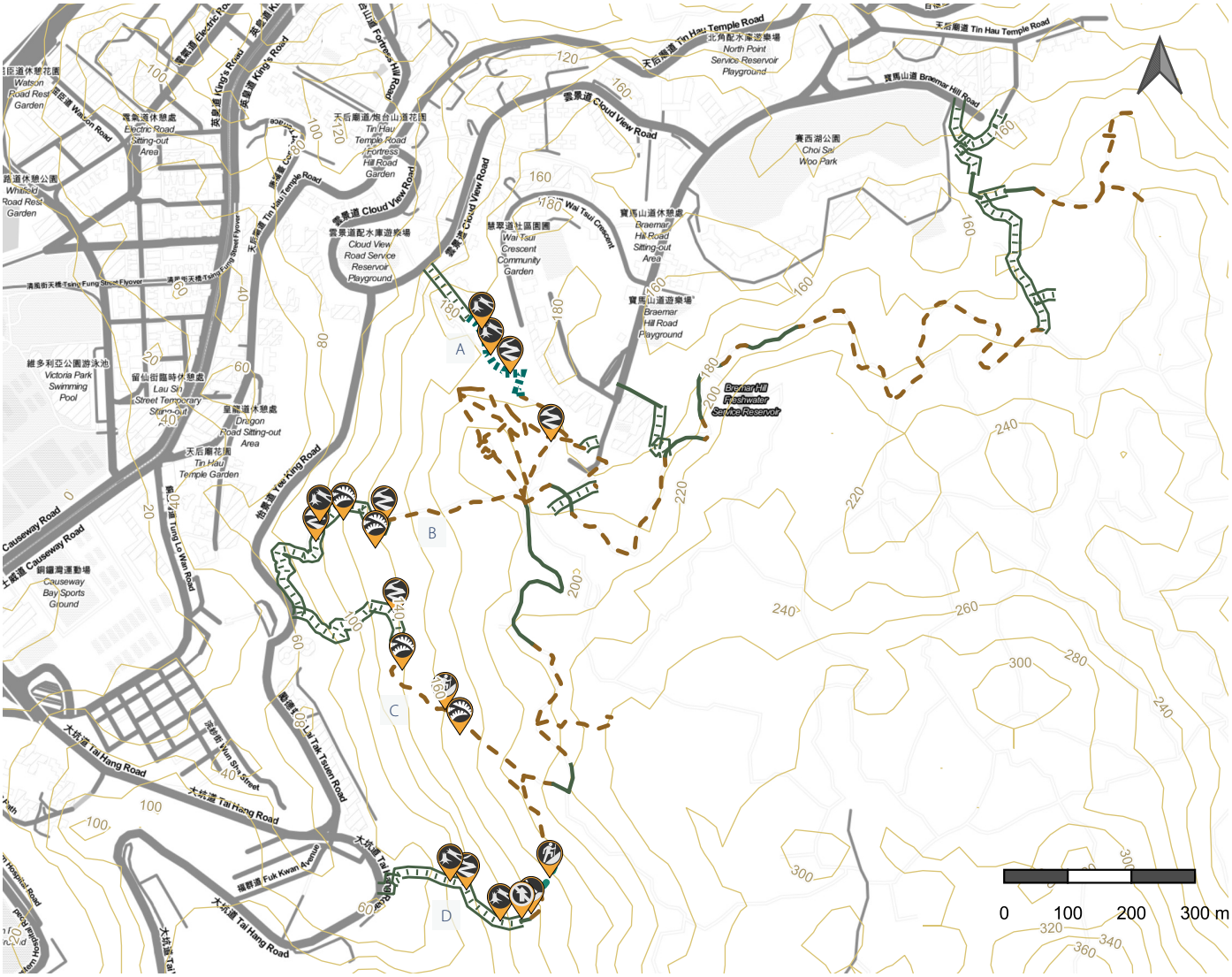
Source: Go Yi, January 2022

Top left: Unofficial trail entrance at Mount Davis Service Reservoir Playground. Walkers need to climb a low wall and navigate a series of slope maintenance tracks.
Top right: A steep section of the ascent from the service reservoir—hikers have tied ropes between trees for assistance.
Bottom left: One of two makeshift bridge along the Friends of Mount Davis Path.
Bottom centre: Friends of Mt. Davis (Lions Club) trail way marker.
Bottom right: Graffiti warning of dangerous trail ahead.

Currently, this unofficial route is the only one connecting the top of Mount Davis with Kennedy Town. There was a staircase leading from Victoria Road to the top of the hill via the former Kung Man Village (see "blocked path" icons in Figure 32), but it has been closed since 2018 due to the redevelopment of the Kung Man Village site into public housing. The Civil Engineering and Development Department is currently carrying out site formation works and plans to reestablish the connection after the completion of the project.[76]

A second area with inadequate trail access is Lai Tak Tsuen near Tai Hang. Most routes leading up from Lai Tak Tsuen to Sir Cecil's Ride, which follows the ridge above it, are steep and unmaintained. Residents would have to travel 1.6km away by road to Cloud View Road or 2.5km to Mount Butler Road to find safe, well-maintained trail entrances.

Figure 34: Problematic routes connecting Tai Hang to Sir Cecil's Ride



Refer to legend under Figure 32 on p.40.

As Figure 34 shows, there are four possible routes (labelled A to D) linking the Tai Hang area with Sir Cecil's Ride. As indicated by the icons on the map, they had numerous problems including poor path conditions (crumbling concrete paving or eroded soil), fallen trees, paths so overgrown that were difficult to see and steep challenging sections. Three of these routes cannot be recommended for use by the general public in their current state.

Routes B and D appear to be remains of paths from the former Tai Hang Village. Tai Hang Village was not a post-war squatter settlement but a historic Hakka village, which explains the presence of abandoned government infrastructure such as fire hydrants and railings—such infrastructure was not provided to squatter settlements as the government did not wish to legitimise them.

The aerial photos in Figure 35 show that the hillside was still heavily cultivated in 1963, but mostly cleared by 1973 with the construction of Lai Tak Tsuen. Hence these paths probably have not been maintained for around 50 years.

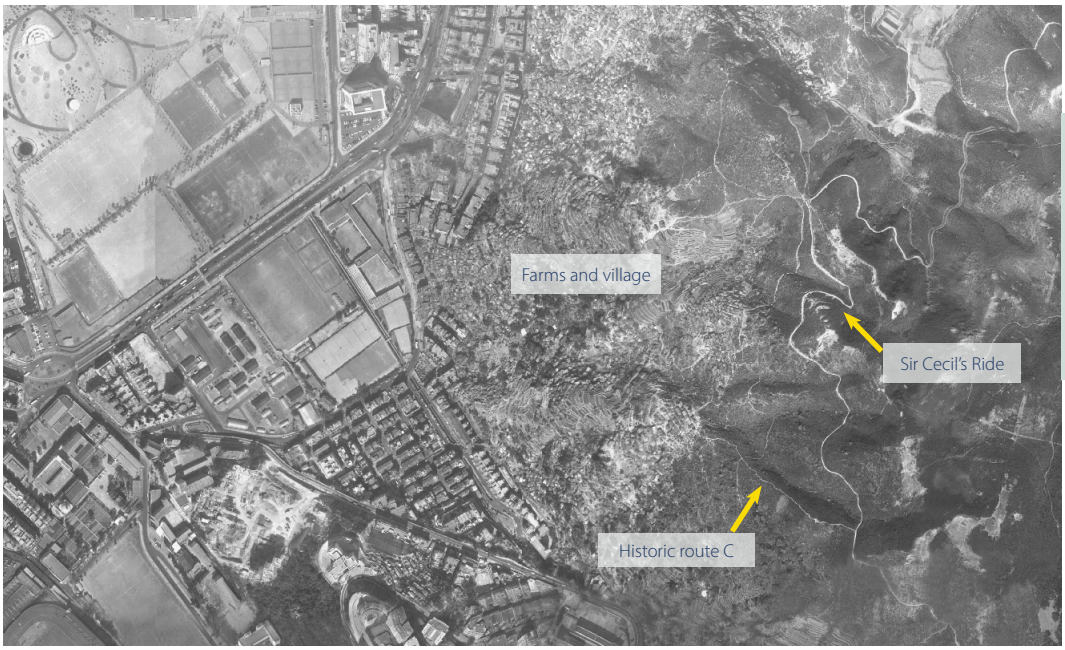
The photos in Figures 36 to 39 show the poor condition of paths in the Tai Hang Area.

Of the four routes, Path A (Figure 36) is the gentlest and least hazardous. It may be used with some caution by all ages. It requires stabilisation to prevent further soil erosion in some places, replacement of broken paving, clearance of fallen vegetation, and some trail markers. The path does cross a shallow stream and it may be necessary to build a raised path for safe crossing during heavy rainfall.

While steeper than A, Route B (Figure 37) is an old village path that could potentially be rehabilitated if it were reestablished and cleared of overgrowth. The banyan tree that has grown over the path is a unique feature. There is much litter including broken glass that poses a hazard and should be cleared, however some of the village ruins could be left in place for educational purposes.

Route C is a historic path (see historic aerial photos in Figure 35 and present-day photos in Figure 38) which is very steep and would need extensive work to be made suitable for all

Figure 35: Clearance of Tai Hang Village, 1963–73



This 1963 aerial photo shows Tai Hang village and extensive cultivation on the slopes of Lin Fa Kung Hill. Sir Cecil's Ride is clearly visible on the right, with a path connecting it to the upper reaches of the village. This corresponds roughly to Route C in Figure 34.

Source: Aerial Survey of Hong Kong, Hunting Surveys, Government of Hong Kong, 1963

By 1973, the hillside is no longer cultivated and most of the village has been cleared away. The construction site of Lai Tak Tsuen is visible. The path linking Sir Cecil's Ride with the former village area has become obscured by regrown vegetation.

Source: Hong Kong, Kowloon and the New Territories, source unknown, hosted by Hong Kong Historic Maps, 1973

ages. It currently appears to be little used, heavily overgrown with thorny bushes, and difficult to navigate. It is currently only usable by advanced hikers and is not recommended.

Route D (Figure 39) is another abandoned village path where the remains of former village houses and government infrastructure are visible. It is currently not very safe as there is a missing bridge over a stream and the upper section is very steep and requires scrambling up rocks. While less difficult to navigate than Route C, it should not be recommended as the structural stability of some of the old concrete paths is questionable.

It would be beneficial to residents living in the area to rehabilitate at least one of these routes to provide safer access to Sir Cecil's Ride. Of the four, Route A would be the simplest to rehabilitate. However, the trailhead is slightly further away from Lai Tak Tsuen and not very accessible to those living downhill in Fortress Hill as getting there requires walking up four staircases. The trailheads for routes B or C are closer to Lai Tak Tsuen and to a staircase leading down the hill to Tai Hang, however rehabilitating them would be more challenging (especially C).

The third area with trail accessibility problems was Shau Kei Wan. There is currently one safe route linking Hing Tung Estate to Mount Parker via the Shau Kei Wan Service Reservoir Playground (see Figure 40). This route leads through the Tai Tam Country Park (Quarry Bay Extension). However, residents also use several less safe routes, including slope maintenance ladders and staircases (see Figure 41), drainage channels, a rocky stream bed, and

Figure 36: Route A, Sir Cecil's Ride to Cloud View Road

Source (all): Carine Lai, April 2022

Left: One of two fallen trees over the path on Route A seen in April 2022, indicative of absence of maintenance.
Centre: Signs of soil erosion on the natural trail.
Right: The path crosses a shallow stream/drainage channel. There was very little water at the time of the site visit but it may be flooded during times of heavy rain.

Figure 37: Route B, Sir Cecil's Ride to Yee King Road

Source (all): Carine Lai, April 2022

Left: Woods have grown on the site of the former Tai Hang Village. At one point what remains of the path leads through the middle of a banyan tree.
Right: Crumbling concrete steps from old village path.

Figure 38: Route C, Sir Cecil's Ride to Yee King Road (historic path)

Source: Carine Lai, April 2022

Route C is steep and overgrown with thorny vegetation. Ribbons tied to trees and bushes by hikers serve as the only visible trail markers.

a dilapidated former squatter village path. During site visits, residents were also observed using the artificial maintenance ledges on the reinforced cliffside for jogging and socialising.

One less safe trailhead is on Ngoi Man Street (the right-most trailhead on Figure 40). The trail is a cracked, overgrown concrete path that appears to have once been part of an informal settlement. At one point, people need to climb over the railings onto a water infrastructure maintenance catwalk (see Figure 42).

While sections of the main Mount Parker Lower Catchwater itself are steep and challenging, improving access on the eastern side would still provide Shau Kei Wan residents with a more accessible trail loop.

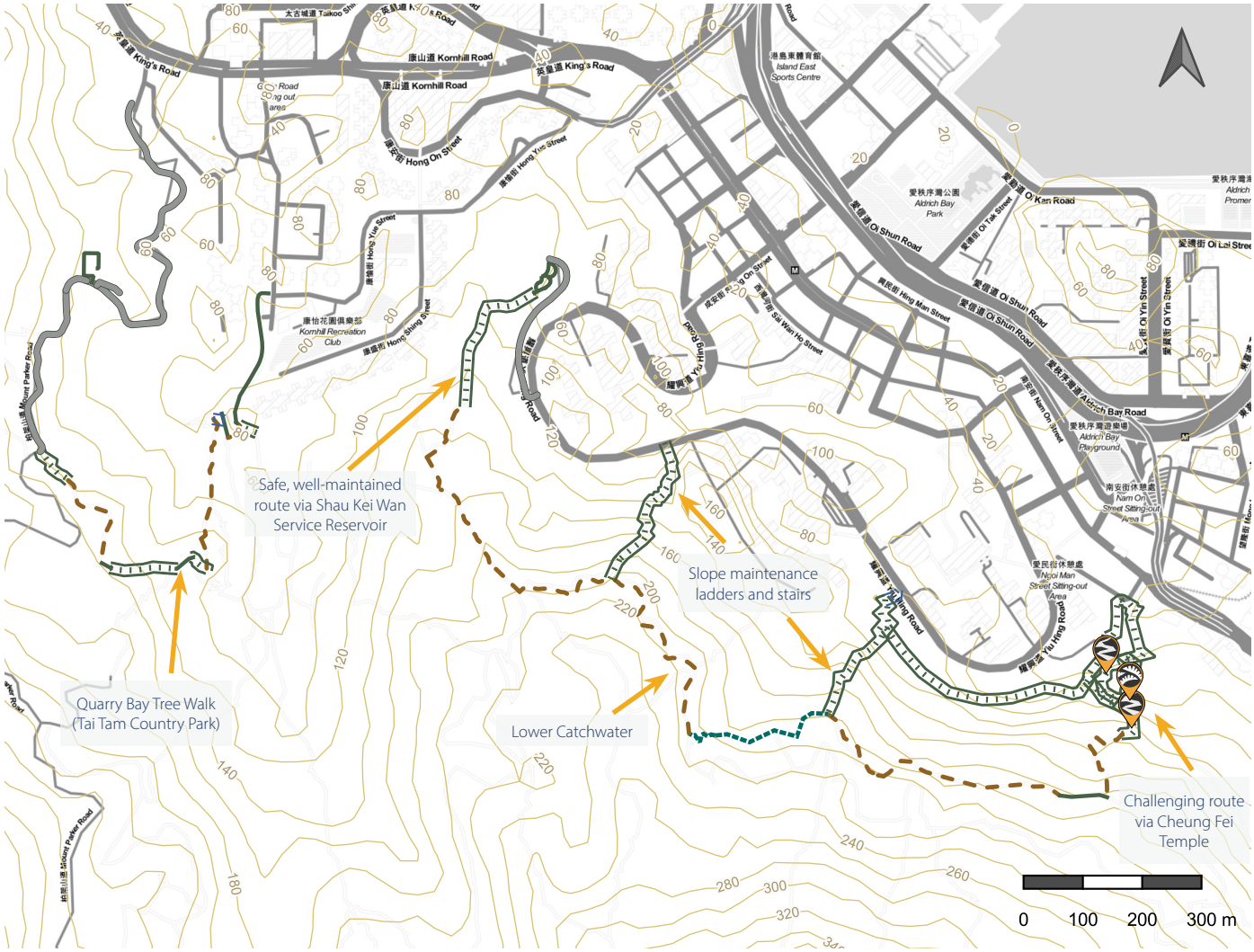
However, as will be discussed in Section 7.1, any trail rehabilitation must be done carefully with environmentally friendly methods and materials, and excessive concretisation of walking trails should be avoided.

Figure 39: Route D Sir Cecil's Ride to Tai Hang Road

Source: (all) Carine Lai, April 2022

Top left: An abandoned fire hydrant indicates that the government once provided infrastructure to this village.
Bottom left: The remains of a former village house, surrounded by domestic rubbish.
Bottom right: Stairs on either side of a stream indicate that a bridge used to be there. Hikers must currently climb across boulders to cross.

Figure 40: Problematic routes linking Shau Kei Wan to Mount Parker Lower Catchwater



Refer to legend under Figure 32 on p.40.

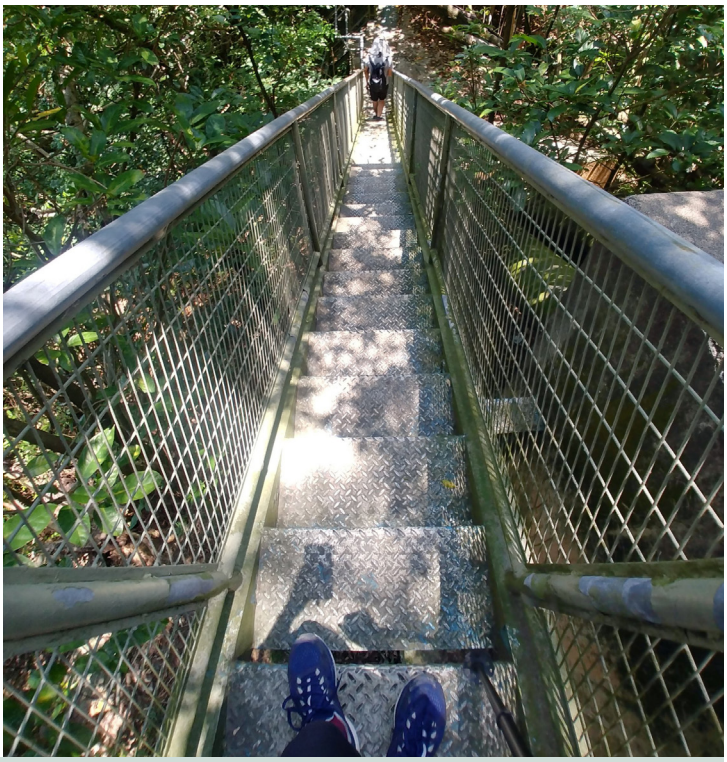
Figure 41: Unauthorised use of maintenance tracks in Shau Kei Wan

Source (top three) Carine Lai, May 2022

Top left and top centre: Slope maintenance stairway behind The Endeavourers Leung Lee Sau Yu Memorial Primary School.
Top right: Slope maintenance ledge behind Yiu Tung Estate. These maintenance paths are used by local residents for walking and jogging despite the "no unauthorised entry" signs.
Bottom: Gated maintenance stairs on Yiu Hing Road. Based on comparisons between this Google Street View image and earlier user-uploaded photos, the chain link fence was installed between October 2021 and February 2022 to deter people from using the maintenance stairs.

Source: Google Street View, February 2022

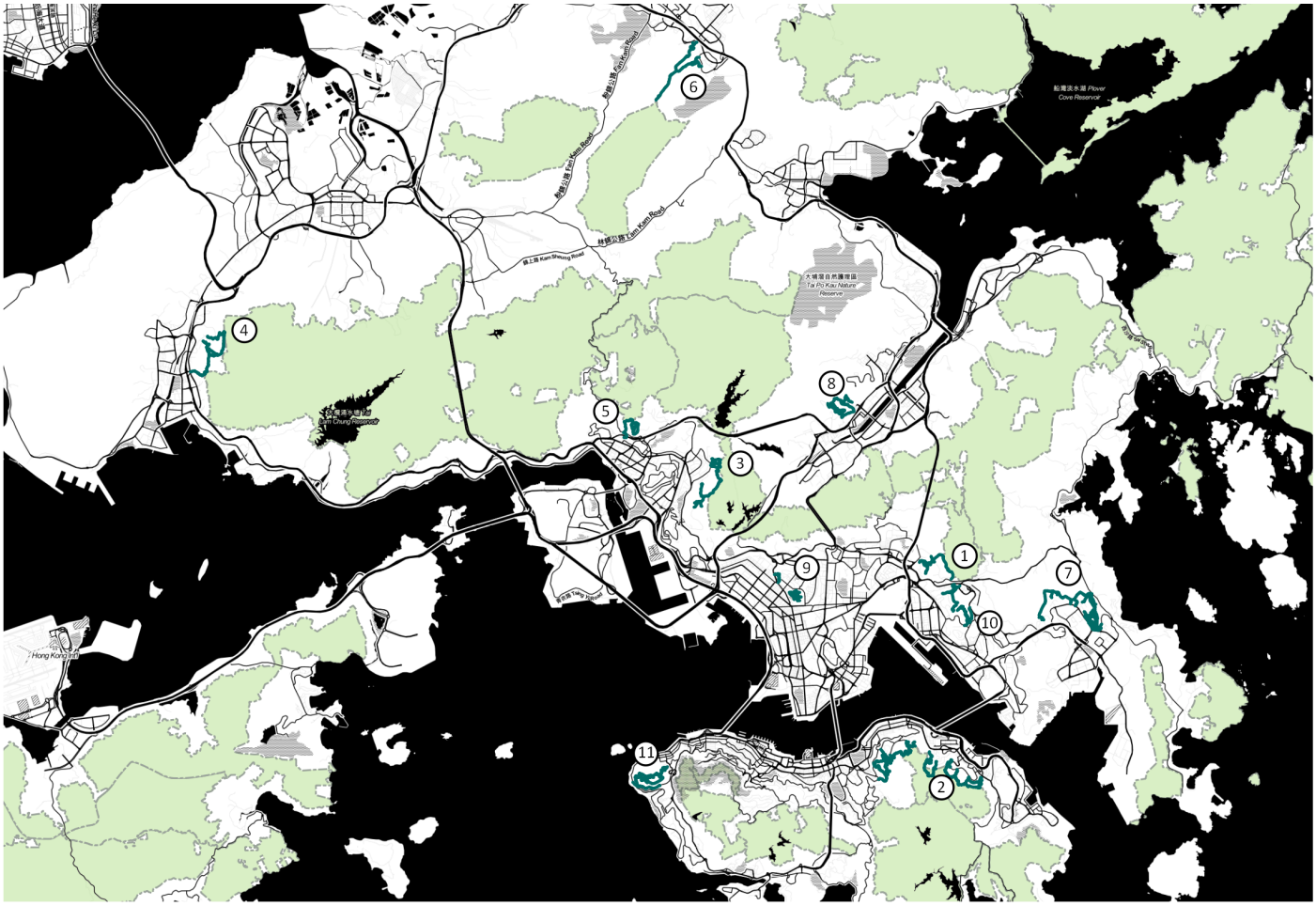
Figure 42: Cheung Fei Temple route, Mount Parker, Shau Kei Wan



Source (all): Carine Lai, May 2022

Top left: Trailhead via temple complex on Ngoi Man Street.
Top right: Sign provided by a local kaifong (neighbourhood) association indicates an elder-friendly path but it is not clear what it points to as the paths in the vicinity are poorly maintained
Bottom left: Poorly maintained concrete paving
Bottom right: The route requires hikers to climb onto a water mains maintenance catwalk, follow it for a short distance, and then climb over the opposite railing to continue uphill.

Figure 43: Backyard trails in relation to country parks



	Backyard Trail	Adjacent country park
1	Hammer Hill	Ma On Shan Country Park
2	Sir Cecil's Ride & Mount Parker Lower Catchwater	Tai Tam Country Park (Quarry Bay Extension)
3	Kam Shan Country Trail	Kam Shan Country Park
4	Tuen Mun Trail	Tai Lam Country Park
5	Fu Yung Shan	Tai Mo Shan Country Park
6	Wu Tip Shan	Lam Tsuen Country Park
7	Duckling Hill	None, but connected to Razor Hill and Little Hawaii Trail
8	To Fung Shan	None, but connected to Sha Tin Country Trail
9	Woh Chai Shan & Garden Hill	None
10	Shum Wan Shan & Ping Shan	None
11	Mount Davis	None

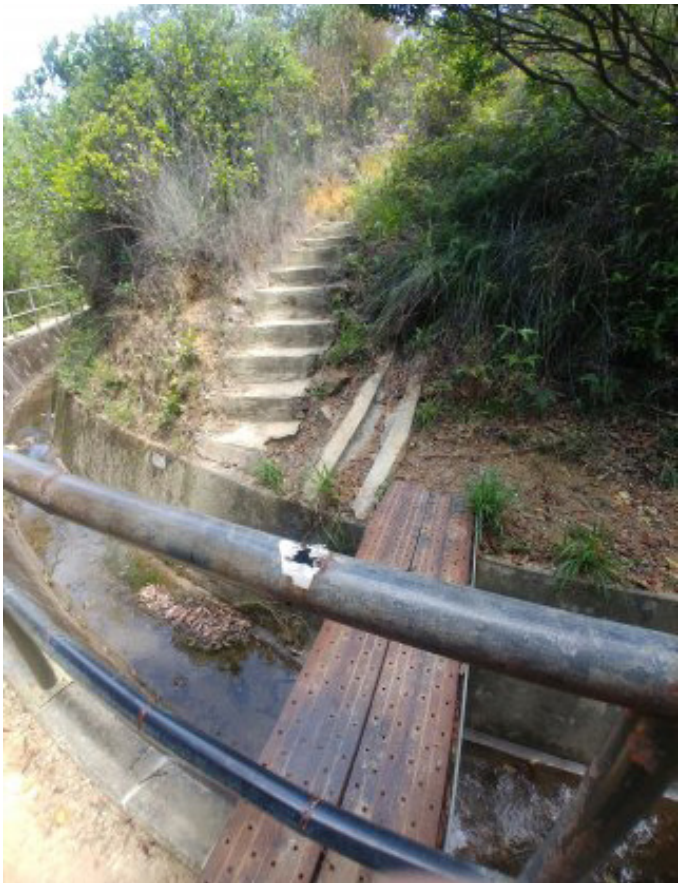
6.3 | CONNECTIVITY TO COUNTRY PARKS

Of the eleven trails studied in this project, six border on country parks including Hammer Hill, Sir Cecil's Ride & Mount Parker Lower Water Catchment, Kam Shan Country Trail, Tuen Mun Trail, Fu Yung Shan and Wu Tip Shan. In addition to serving the immediate neighbourhood, these backyard trails can also be used as routes to enter and exit country parks. Figure 43 shows the location of the six trails in relation to country park boundaries.

Of the remaining five trails, Duckling Hill and To Fung Shan are connected to broader trail networks such as the Little Hawaii Trail and Sha Tin Country Trail respectively. Woh Chai Shan & Garden Hill, Shum Wan Shan & Ping Shan, and Mount Davis are isolated hills. (Mount Davis is close to Lung Fu Shan Country Park but is separated from it by Pok Fu Lam Road).

Connections between backyard trails and country parks are usually relatively seamless, with one major exception. While the western end of the Mount Parker Lower Catchwater transitions into Tai Tam Country Park, the steeper eastern side of the catchwater offers few connections. However, there were at least two unauthorised paths that have been built into Tai Tam Country Park with makeshift bridges across the catchwater and concrete steps up the hill, one example of which can be seen in Figure 44. AFCD should assess them to see if they are suitable to be made official.

Figure 44: Unauthorised connection from Mount Parker Lower Catchwater into Tai Tam Country Park



Source: Carine Lai, May 2022

6.4 | ACCESS THROUGH PRIVATE PROPERTY

Under common law, the public has legal right of way over private land if a trail has been used for a long time without objection from the landowner.[77] Under such conditions, landowners may not block off public access or charge for entry. However, such rights might be difficult to enforce. In England and Wales, the government has codified "public rights of way" over private property by keeping a record of established footpaths and requiring landowners to keep them open for public use.[78] However, although Hong Kong shares UK's common law tradition, there is no equivalent list of legally protected footpaths. Members of the public would have to establish their right to cross plots of private land on a case-by-case basis.

In Sha Tin, the Tao Fung Shan Christian Centre, currently a popular photography spot and lookout point, was built over the site of a historic trail (see Figures 45 and 46) and formally restricts access to just one entrance, which is open between 8:30 a.m. and 5:30 p.m. on weekdays. Maps as far back as 1928 show that a trail crossed the land where the Christian Centre now stands. The Christian Centre was built in the 1930s. The present-day configuration of paths has existed since at least 1960. It is unclear whether the public would be able to reestablish the right to traverse the site given how long access has been restricted.

Figure 45: Private land on To Fung Shan

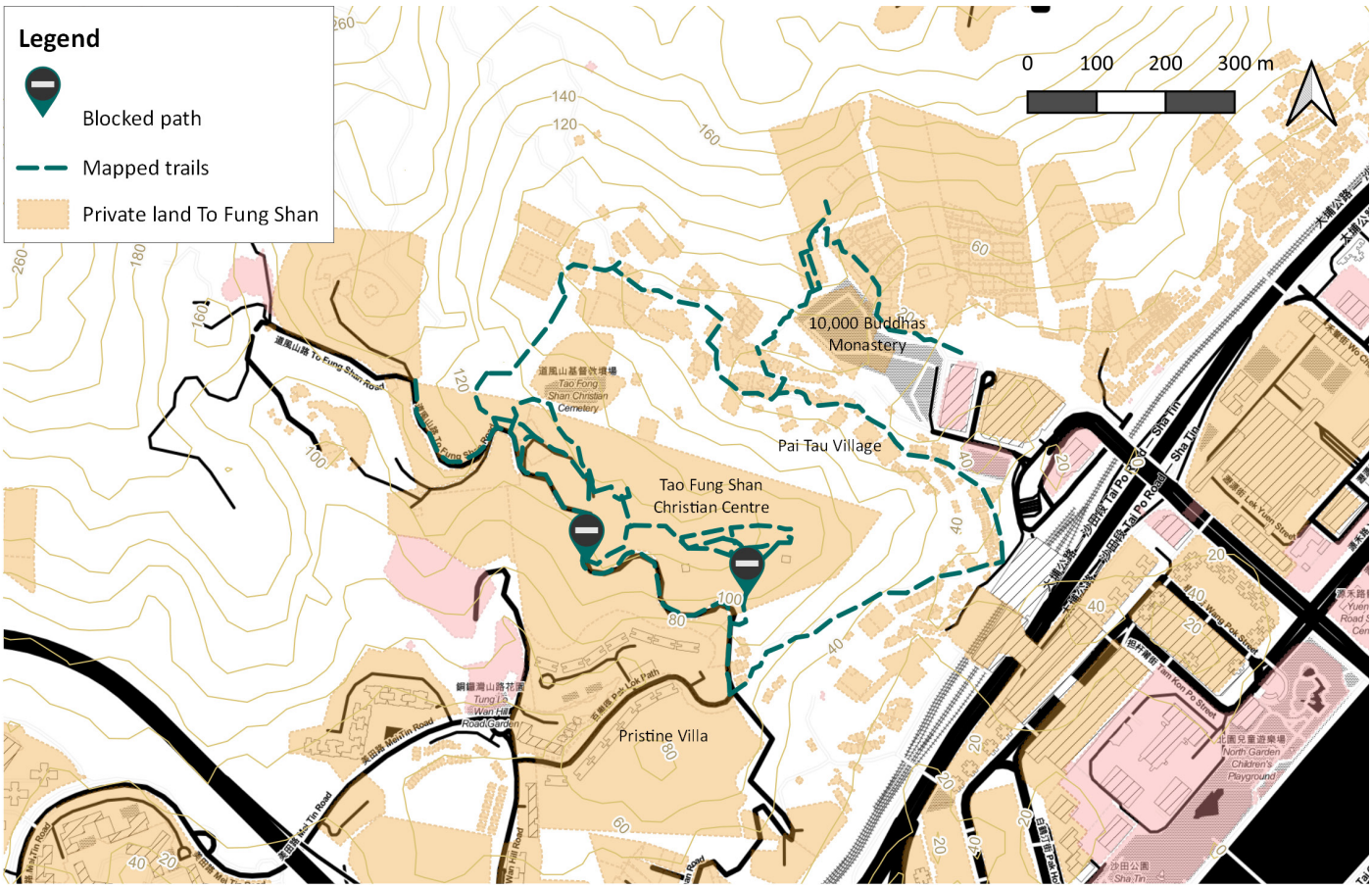
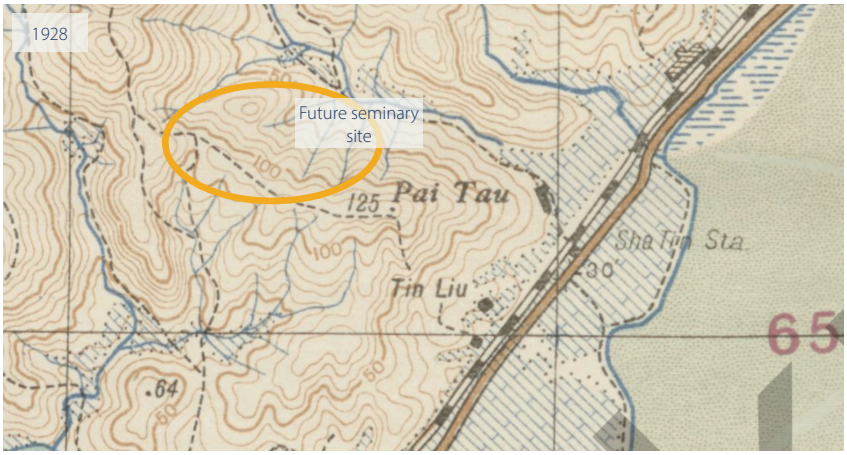


Figure 46: Historic trail on To Fung Shan



Source: Hong Kong and New Territory (GSGS 3868), UK National Archives, 1928

Source: Hong Kong and New Territories Survey Sheets, Hong Kong Map Service, 1960

Source: Open Streetmap, 2022

Figure 47: Closed back entrance to Tao Fung Shan Christian Centre

Source: Bosco Woo, January 2022

7. Trail Conditions, Facilities and Activities

7.1 | OVER-CONCRETISATION OF TRAIL SURFACES

Of the eleven backyard trails explored by the research team, ten of them had mostly paved surfaces. Figures 49 to 59 show the different trail surfaces used on each of the trails. Note that these maps only include parts of the trails that were explored by the research team during this project. The only trail network that still had mostly natural surfaces, at least along the flatter main route, was Sir Cecil's Ride and the Mount Parker Lower Catchwater which comprise part of an extensive trail network across the north of Hong Kong Island linking to Tai Tam Country Park. However, a few segments appeared to be suffering from soil erosion.

Trails on Green Belt land are more likely to be paved than trails in country parks since they fall under HAD's jurisdiction instead of AFCD's. While AFCD does sometimes concretise trails due to constraints in policy, materials, and skilled manpower, they seek to avoid doing where possible. They have knowledge in eco-trail building methods which stabilise trails using natural materials such as rocks, gravel or logs sourced from the immediate surroundings where available.[79] Since 2016, AFCD has taught trail construction methods to volunteers and construction industry trainees through workshops.[80]

In Green Belt areas, trails are often concretised by the HAD through public minor works contracting. Often this is initiated due to requests by District Councillors or local residents. There is a common assumption that paved trails are easier and safer to walk on. However, paved paths are unpopular with many hikers and runners because the uniformity of the steps and the hardness of the surface places more strain on the joints.[81] Granite pavers, which are often chosen as a more aesthetically pleasing alternative to concrete, are frequently slippery when wet. Organisations such as the Concern Group on the Concretisation of Hong Kong Natural Trails and The Green Earth oppose concretisation mainly because the construction process is environmentally damaging to the adjacent slopes and vegetation. In the longer term, paved trails impede water drainage on slopes, exacerbating surface runoff and soil erosion.[82] Over time, the soil beneath the trail erodes away, resulting in cracked and unstable concrete.[83] This can be seen on abandoned squatter village paths.

Despite main routes being paved, many backyard trails had some unpaved branches, some of which were evidently created through informal or unauthorised construction. They varied widely in quality and materials. Some informal paths were safe and stable, especially those made of rocks embedded into the soil and fitted together without mortar. Old village paths built in this way have lasted a century.[84] However, informally built trails can be as environmentally damaging as concretisation if builders fail to take water drainage into account. Informal trail builders usually seek the most direct route, creating steep steps that channel water and become unstable after heavy rain. The use of scavenged materials such as plastic, treated wood, and car mats can introduce microplastics and leach toxic chemicals into the environment. The common use of iron rebar to anchor steps becomes a hazard to hikers as the bars become more exposed due to weathering. Makeshift bridges over ditches and gullies can also deteriorate over time.

Environmentally sustainable trail construction and maintenance is a challenge due to the lack of capacity in both the government (outside of AFCD) and industry. The HAD has limited knowledge of eco-trail methods and despite AFCD's training workshops, there are currently no construction companies with the necessary skills. Administrative and commercial constraints are also an obstacle to building more sustainable trails. As a commercial proposition, eco-trails are not profitable as the projects are too small-scale to be worthwhile and the work is extremely labour-intensive, taking a day just to build one or two steps. However, the HAD's minor works budget can only be distributed through the standard tendering process and not through nonprofit projects. A further bureaucratic obstacle is that the HAD does not directly manage the land, therefore separate permission needs to be granted by the Lands Department for any nonprofits to carry out trail repair works.[85] Sections 8.3 and 8.4 will discuss ways in which nonprofits can help to build capacity and the government can adapt alternative administrative mechanisms to cooperate with them on trail building and maintenance through pilot projects.

Figure 48: Wood/plastic composite boards with soil backfill

The Concern Group on the Concretisation of Hong Kong Natural Trails has engaged with HAD and persuaded them to do a pilot project where plastic-wood composite boards backfilled with soil were used to stabilise 20m of a trail in Lam Tin. A contractor carried out the project using specifications advised by the Concern Group. While still not using entirely natural materials, this is an improvement over concrete.

Source: Concern Group on the Concretisation of Hong Kong Natural Trails, 2022

Figure 49: Trail surfaces on Woh Chai Shan and Garden Hill

Legend

Cautions

- Blocked path
- Broken connection
- Fall risk
- Fallen tree
- Poor/rough path condition
- Steep
- Overgrown path

Trail surface material

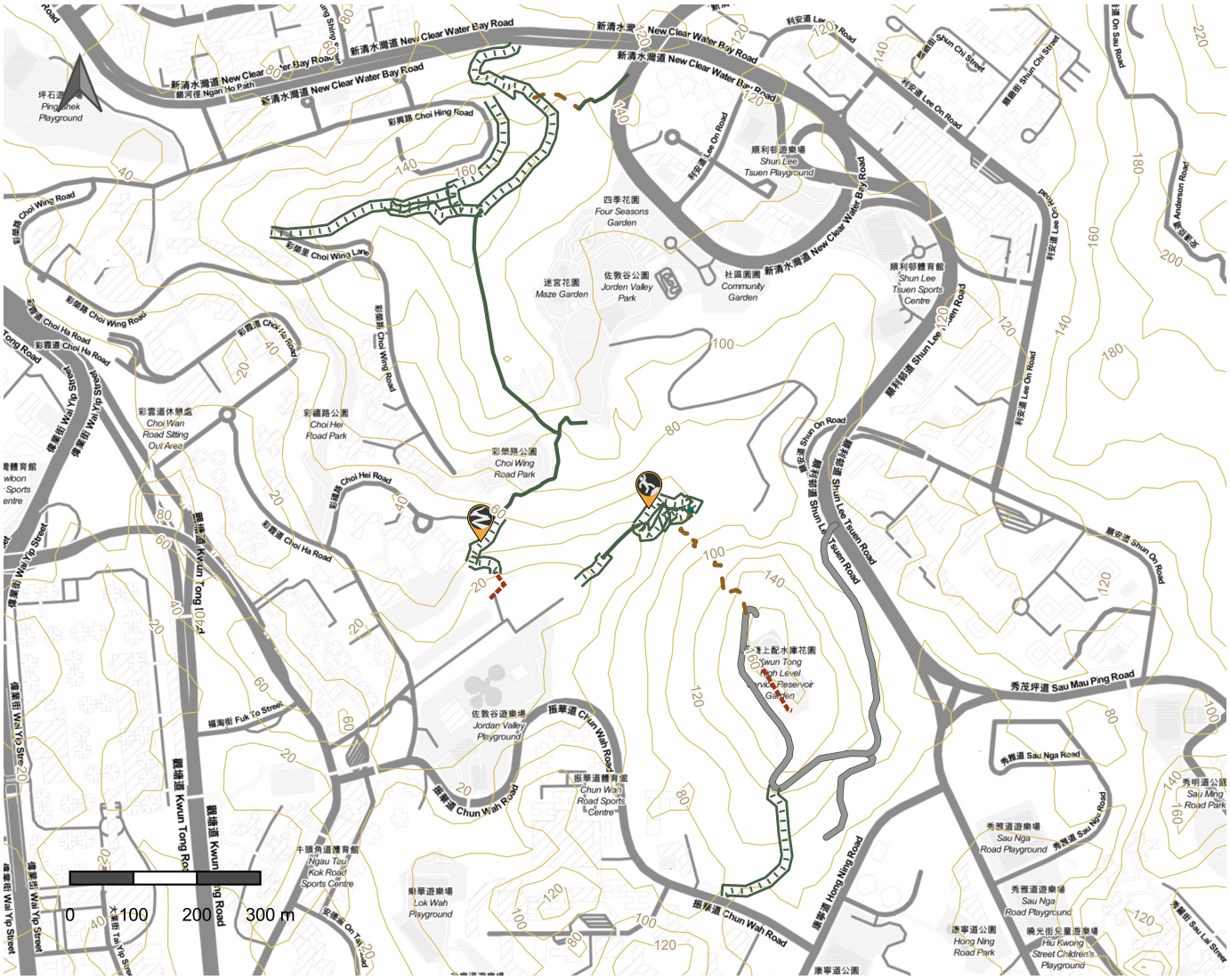
- Bare soil
- Brick paved
- Concrete
- Concrete stairs
- DIY bridge
- Improvised materials
- Metal stairs
- Natural rock
- No data
- Non-standard concrete
- Stone paved
- Stone paved stairs
- Uncemented stone
- Uncemented stone stairs
- Vehicular road

Left: "Unity Path" (同心徑), an informal brick stairway built by community members.
Right: Informal path with rebar supported wooden planks and car mats.

Source (both): Bosco Woo, January 2022

Figure 50: Trail surfaces on Shum Wan Shan and Ping Shan

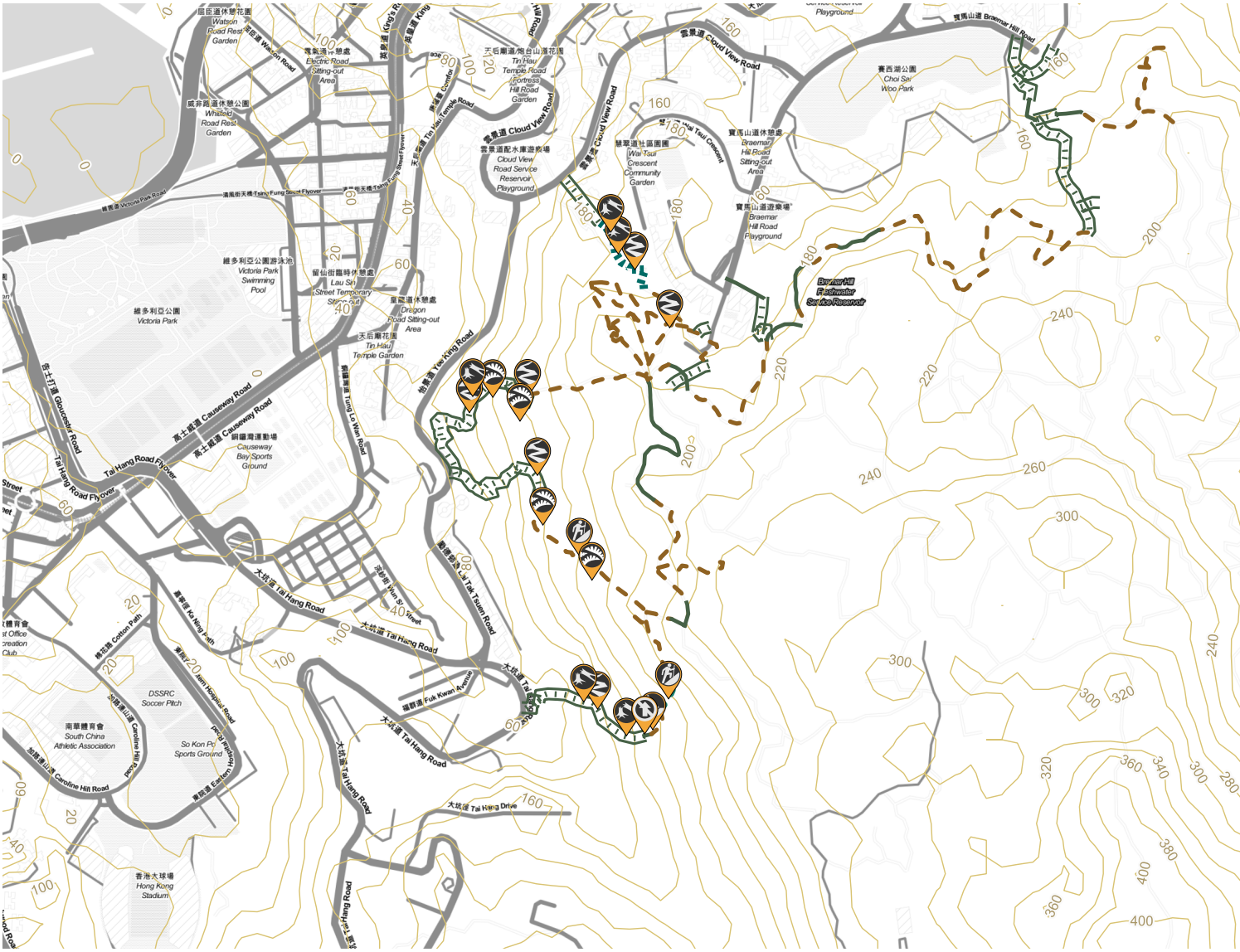
Refer to legend under Figure 32 on p.40.

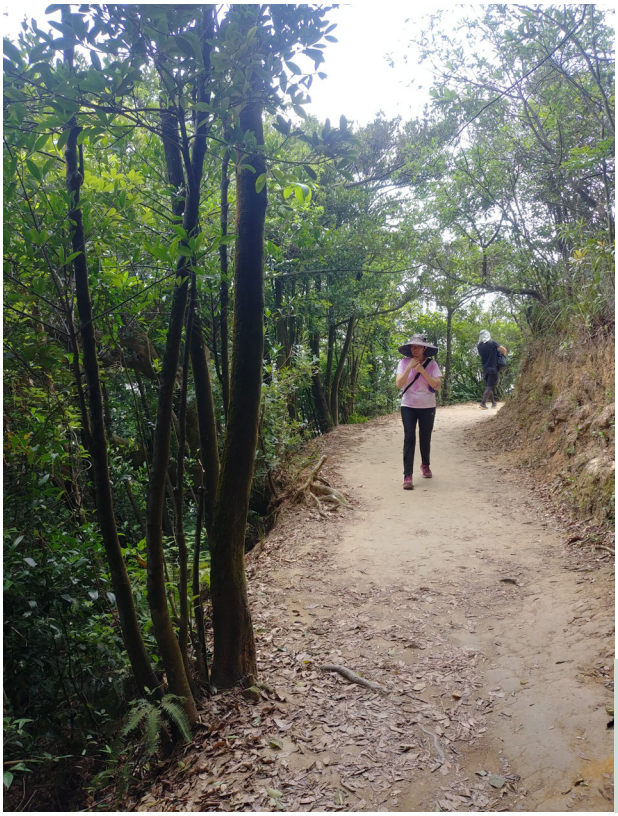


Top Left: Paved path, Shum Wan Shan. There is mortar between the paving stones, making the surface impermeable. The majority of the trail network is similarly paved.
Bottom left: Informal trail built out of stacked rocks with a rope handle for support on north side of Shum Wan Shan. No mortar is used between the stones. This type of construction is stable but extremely labour-intensive and requires strong community cooperation.
Above left: Natural trail showing signs of erosion.
Above right: Informal trail reinforcements using iron rebar and scrap wood. This type of construction can be hazardous as the materials deteriorate and the iron bars become more exposed.

Source (all): Bosco Woo, January 2022

Figure 51a: Trail surfaces on Sir Cecil's Ride



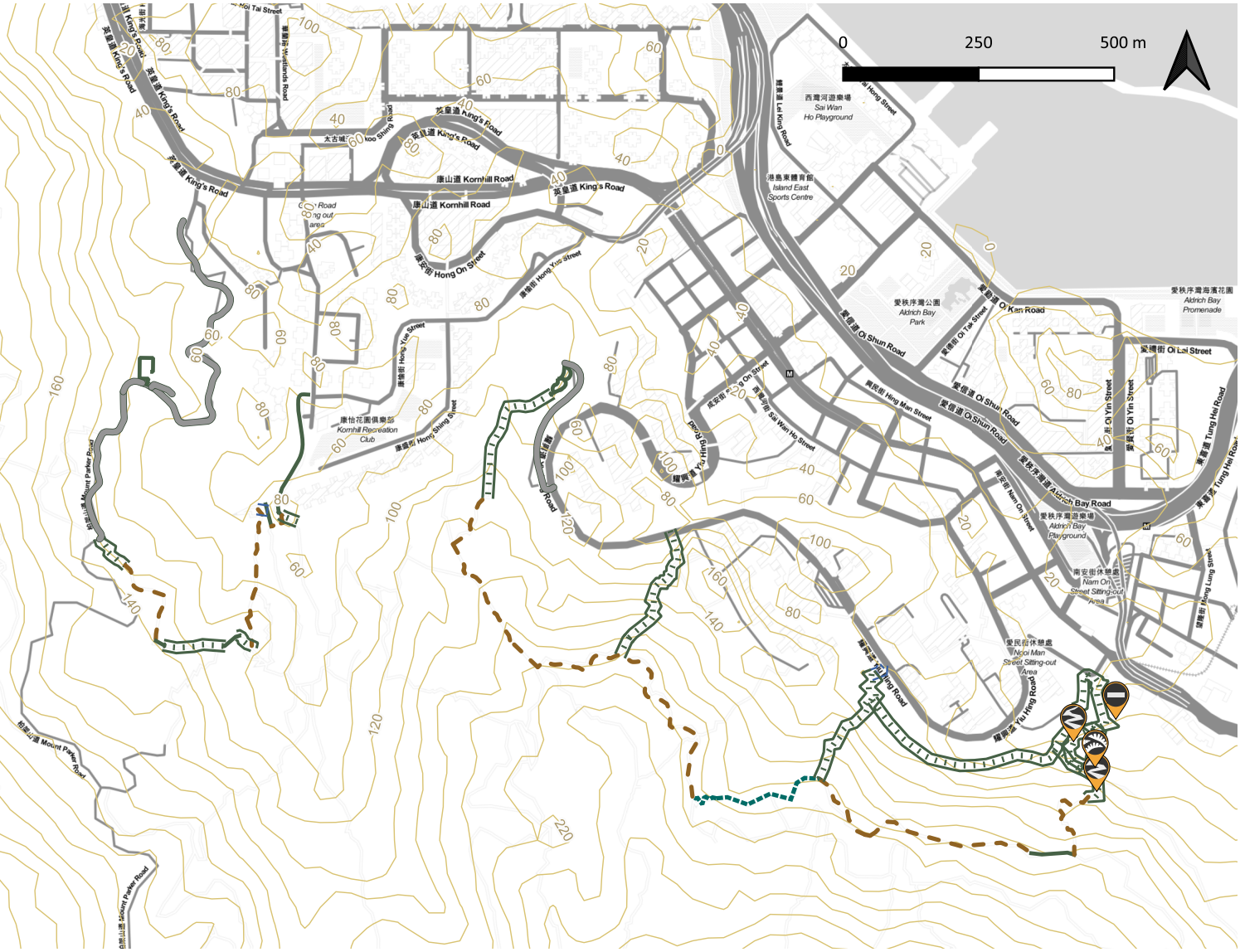


Source (both): Carine Lai, April 2022

Left: The main trail of Sir Cecil's ride is mostly unpaved, one of the few remaining natural backyard trails seen in this study.
Right: Concrete-reinforced steps with soil backfill within Tai Tam Country Park near Braemar Hill. .

Figure 51b: Trail surfaces on Mount Parker Lower Catchwater

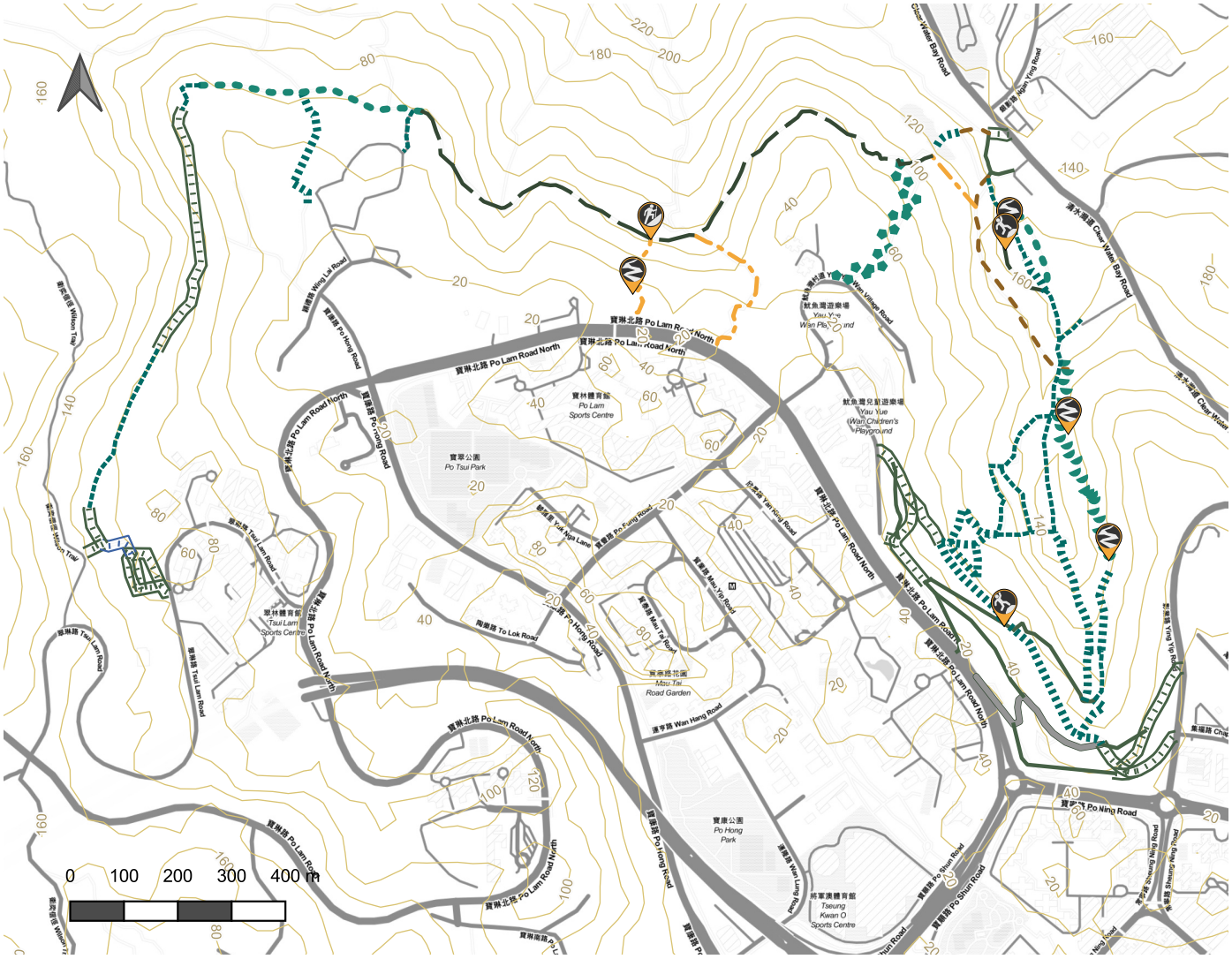
Refer to legend under Figure 32 on p.40.



Source (both): Carine Lai, May 2022

Left: Informally constructed concrete footholds and rope to assist hikers climbing a steep shotcrete slope.
Right: Natural trail alongside the Mount Parker Lower Catchwater.

Figure 52: Trail surfaces on Duckling Hill



Source: Bosco Woo, January 2022

Source: Yeung Ha Chi, January 2022

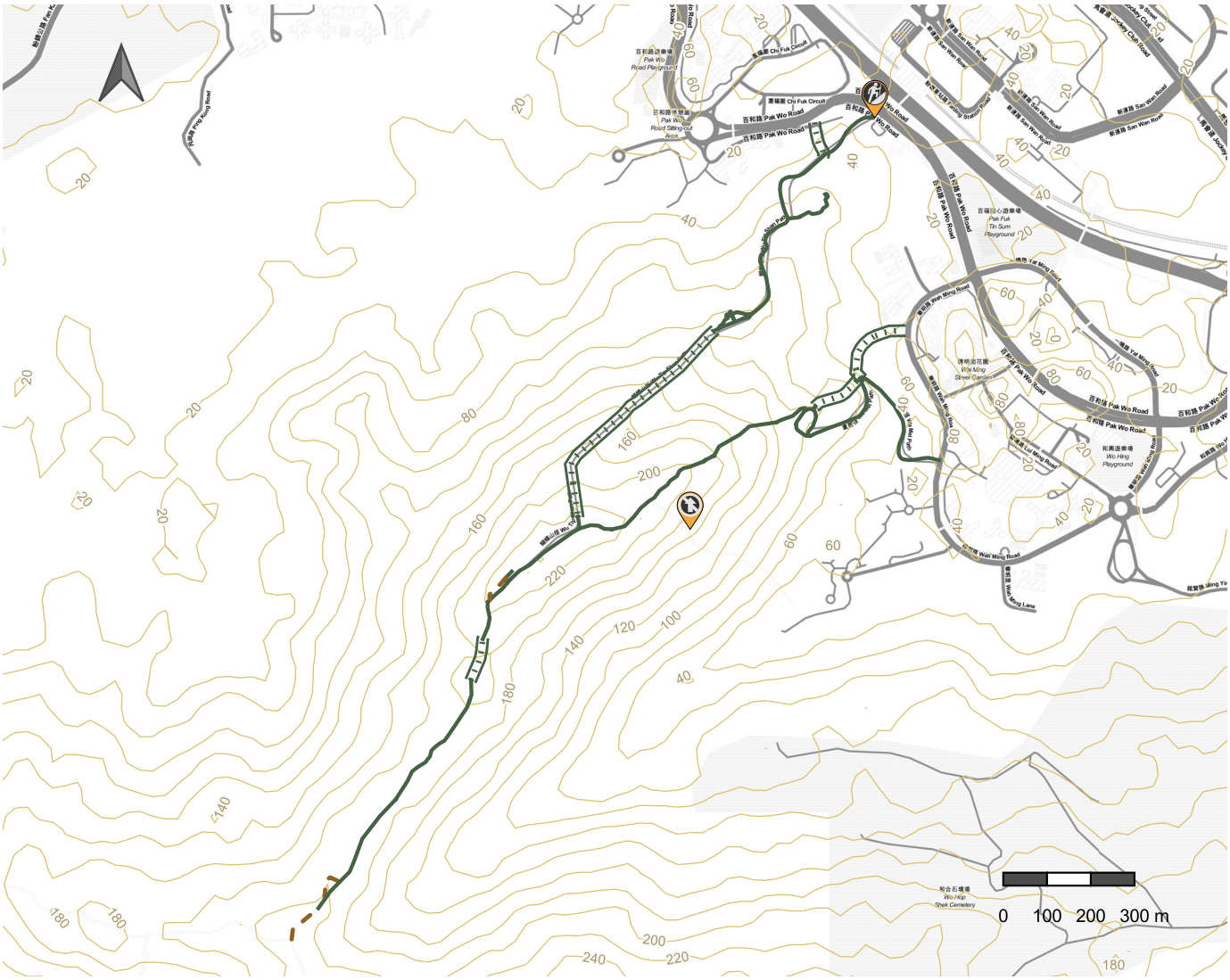
Source: Bosco Woo, January 2022

Source: Bosco Woo, January 2022

Far Left: Paved main trail, Duckling Hill. The main north–south trail along the ridge of Duckling Hill and most of the paths at the base of the hill have been paved by the Home Affairs Department.
Centre left: Unmortared stone path. This secondary trail runs parallel to the north–south main trail. It has been present on maps since the early 1970s.
Centre right: Steep access route to Po Hang Path from Po Lam Road North. Morning walkers appear to have laid an informal path using large rocks, poles, and rope.
Far right: Worn out concrete path linking Po Hang Path to Tseung Kwan O Village. Po Hang path has old concretised sections that may have been laid by villagers.

Figure 53: Trail surfaces on Wu Tip Shan

Refer to legend under Figure 32 on p.40.



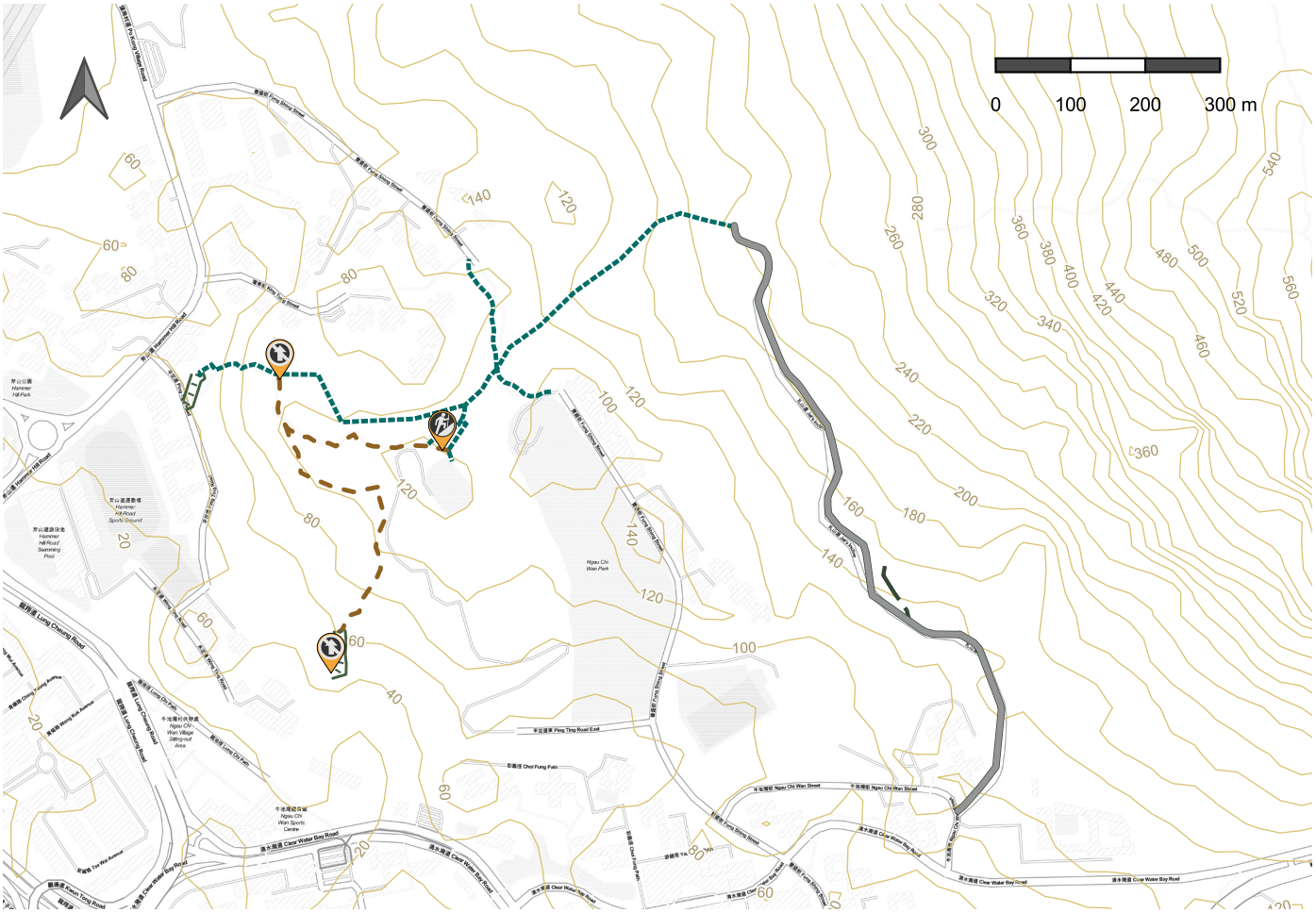
Source: Bosco Woo, January 2022

Source: Go Yi, January 2022

Left: Paths on Wu Tip Shan are extensively concretised, including flat sections such as this.
Right: Rest area on Wu Tip Shan.

Figure 54: Trail surfaces on Hammer Hill

Refer to legend under Figure 32 on p.40.



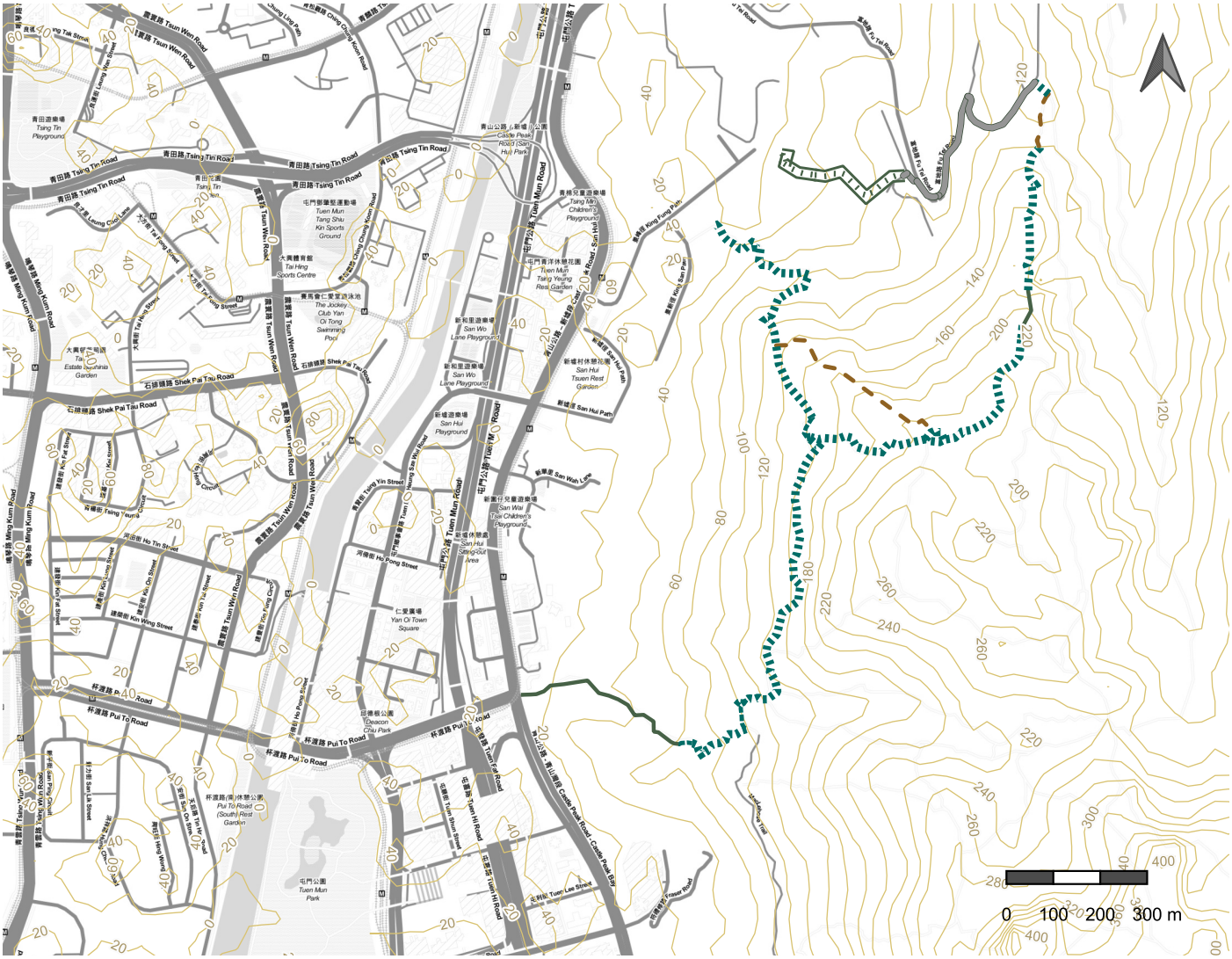
Source: Go Yi, January 2022

Left: The main trail leading from Ping Ting Road in Choi Hung to Jat's Incline is paved.
Right: Unpaved secondary route off the main trail used by morning walkers for exercise and socialising.

Source: Bosco Woo, January 2022

Figure 55: Trail surfaces on Tuen Mun Trail

Refer to legend under Figure 32 on p.40.

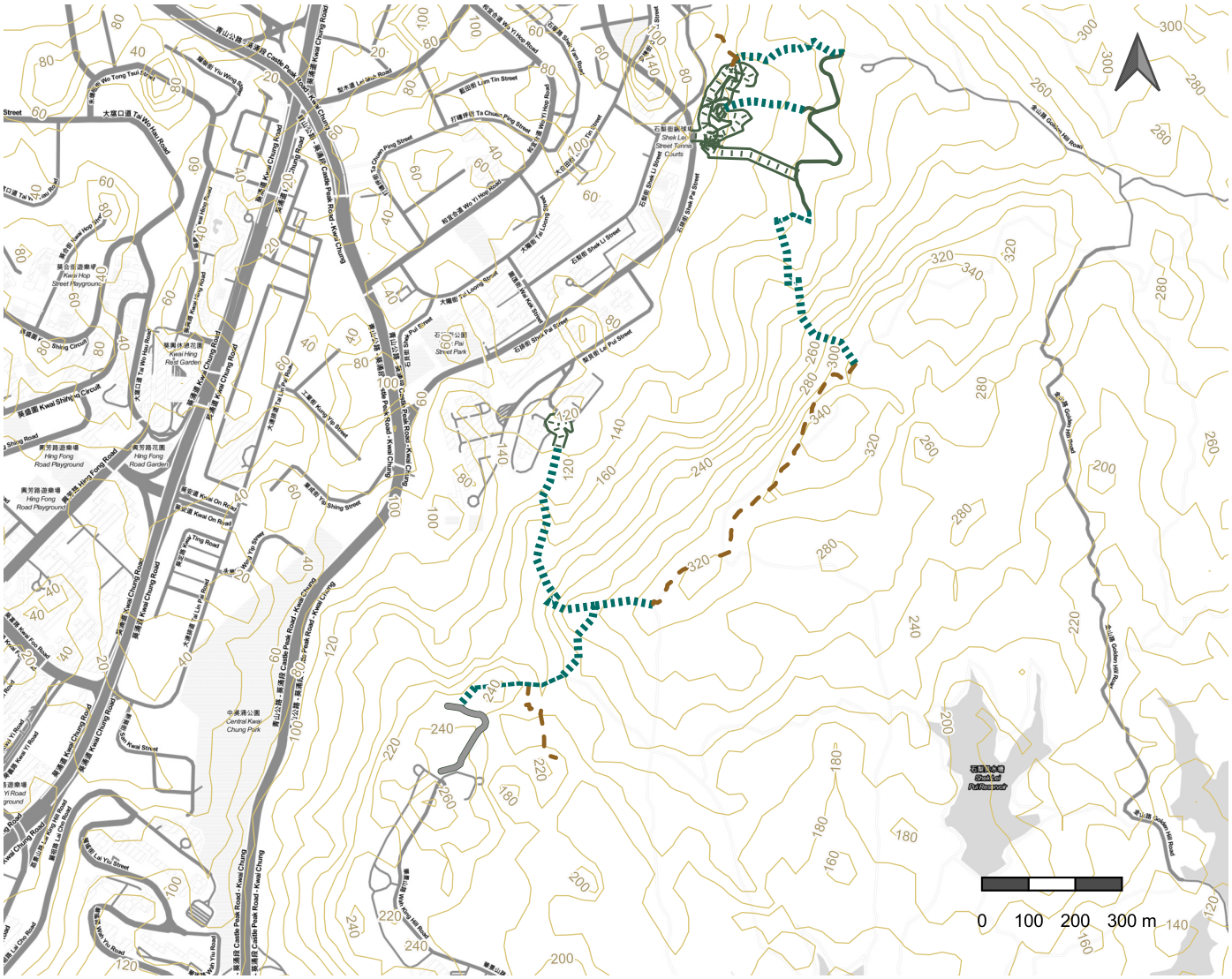


Left: Stone paving covers nearly all of Tuen Mun Trail.
Right: Concretised path through Fu Tei Sheung Tsuen.

Source (both): Carine Lai, April 2022

Figure 56: Trail surfaces on Kam Shan Country Trail

Refer to legend under Figure 32 on p.40.

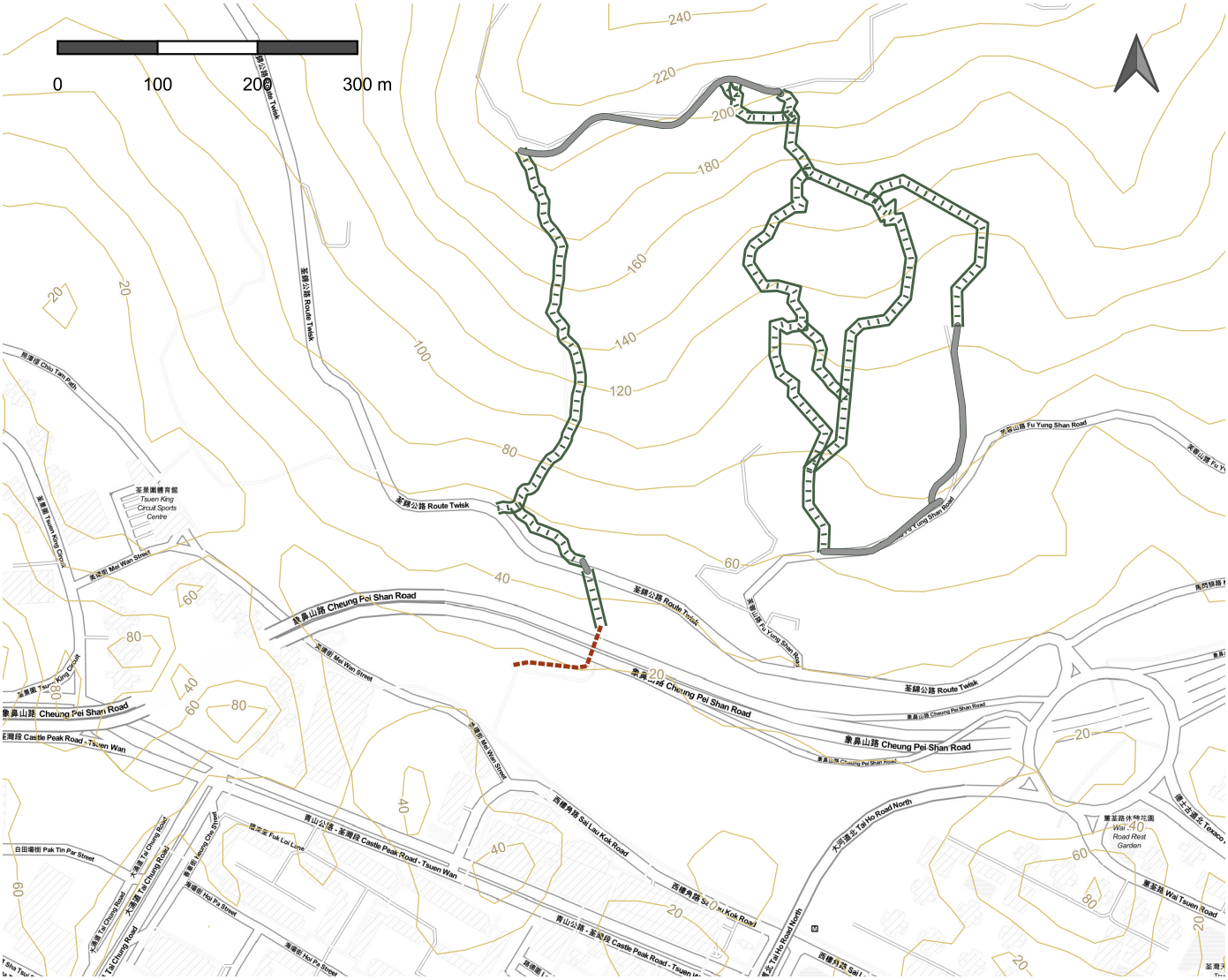


Left: The sloped sections of the Kam Shan Country Trail are paved with granite steps.
Right: Flat sections of Kam Shan Country Trail remain unpaved. The path follows the country park boundary and electrical cables serving the Shing Mun reservoir pumps are buried underneath.

Source (both): Carine Lai, April 2022

Figure 57: Trail surfaces on Fu Yung Shan

Refer to legend under Figure 32 on p.40.

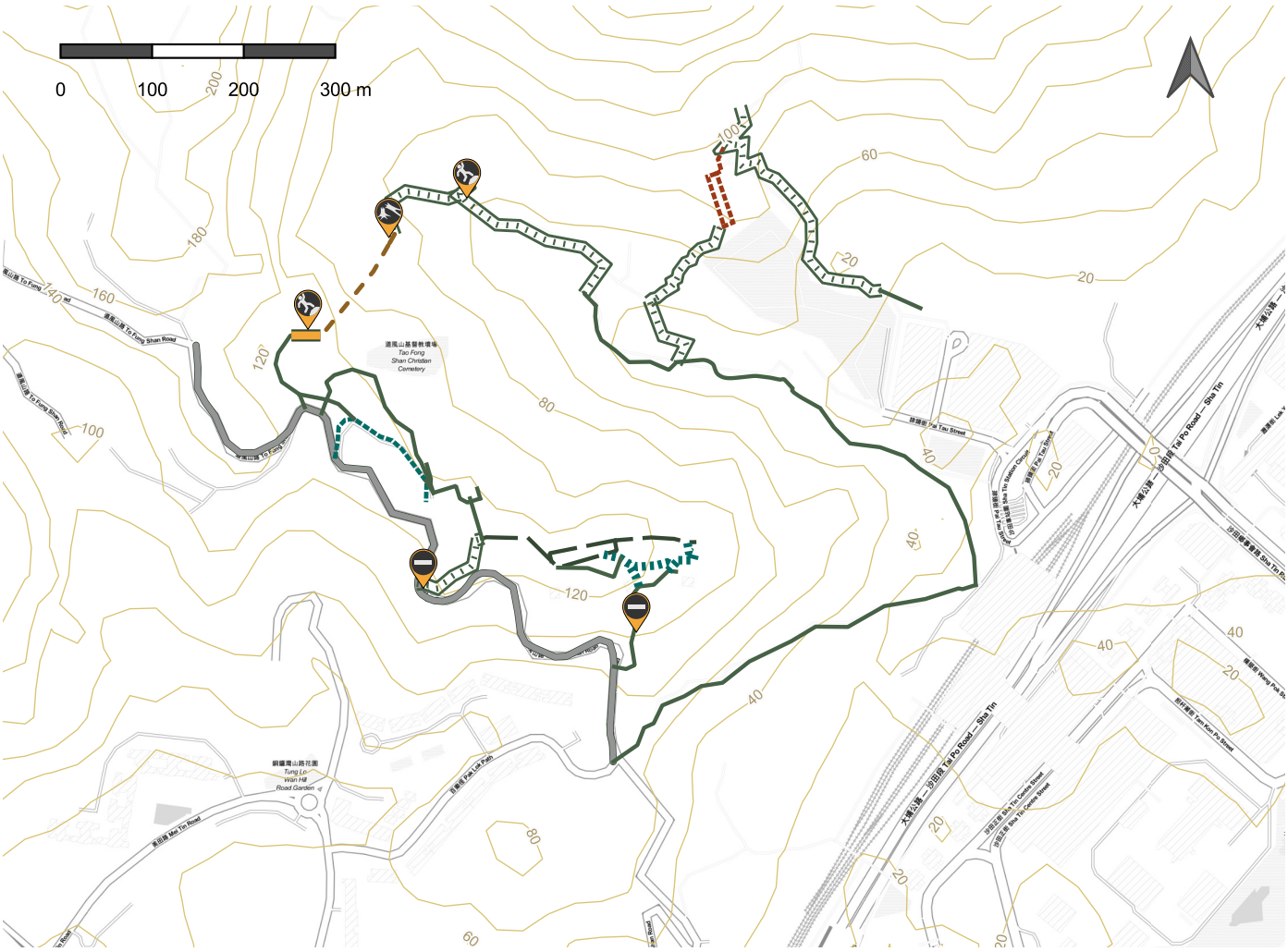


Left: Concretised stairs on Fu Yung Shan. Virtually all trails in the area have been paved.
Right: Irregular concrete secondary trail behind temples on Fu Yung Shan. This path was probably laid by villagers or temple owners.

Source: Carine Lai, April 2022

Figure 58: Trail surfaces on To Fung Shan

Refer to legend under Figure 32 on p.40.



Left: To Fung Shan trails include village paths such as this one from Pai Tau Village to several temples and monasteries further uphill.
Centre: Most walking trails on To Fung Shan have been concretised. This, together with undesirable land uses in the area (i.e. unauthorised columbaria) has made it less attractive as a hiking destination.
Right: A short segment of unmaintained natural trail, however this segment appears to be rarely used.

Source (all): Bosco Woo, January 2022

Figure 59: Trail surfaces on Mount Davis

Refer to legend under Figure 32 on p.40.

Source (all): Bosco Woo, January 2022

Top left: The main trail—Mount Davis Path—is a paved road that is quite steep in places. It was built in the early 20th Century to transport heavy artillery to gun emplacements on the hill.
Bottom left: Paved staircases provide shortcuts for hikers.
Right: The north-eastern slope of Mount Davis has a steep informal trail with improvised structures to assist hikers.

7.2 | TRAIL AMENITIES AND ACTIVITIES

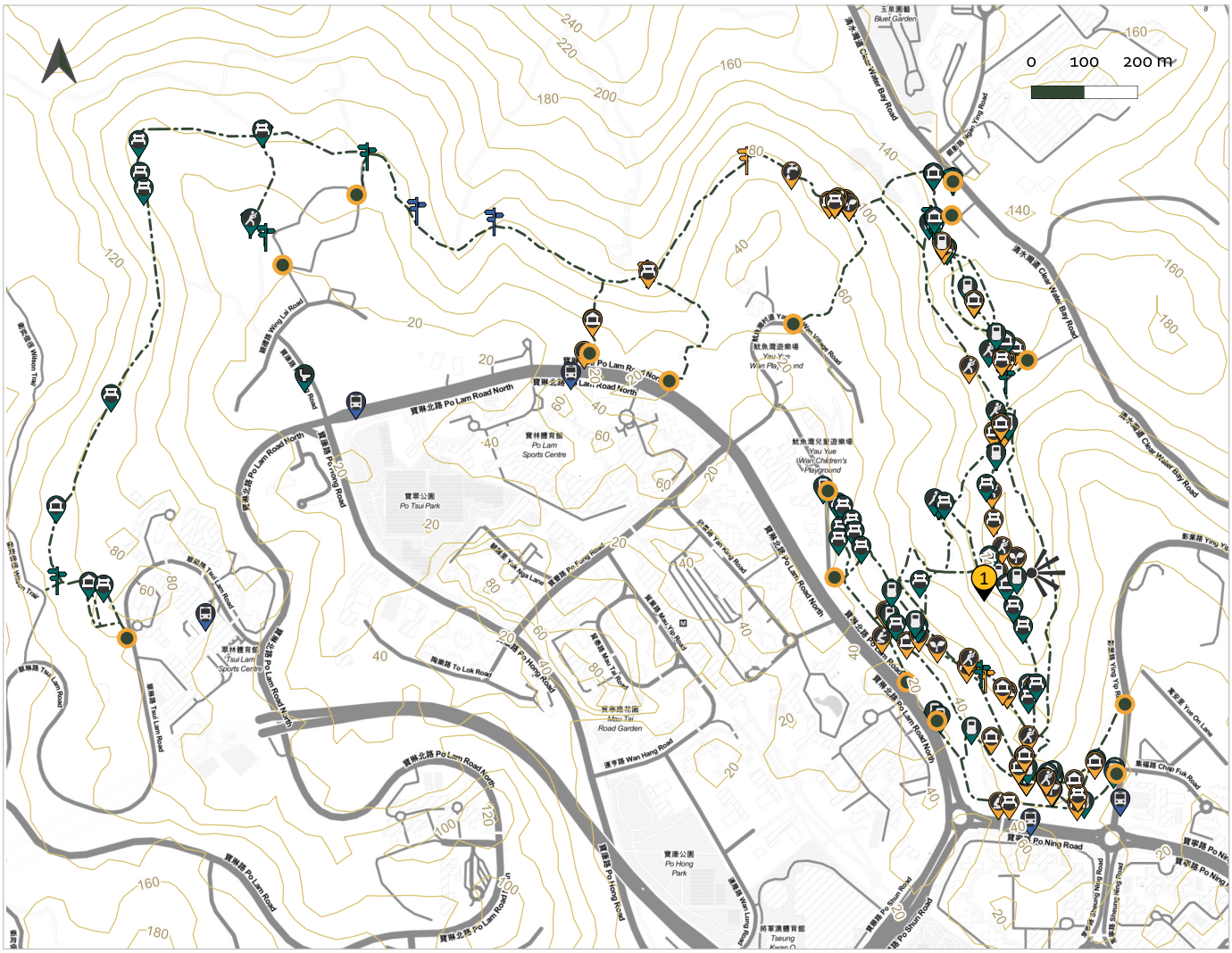
During the trail mapping process, researchers logged the location of trail amenities and whether they were built by the government, private landowners, or members of the public. Official amenities included furniture such as seating, rain shelters, signage, play facilities, and rubbish bins provided by various government departments including HAD, AFCD, and occasionally LCSD. Other facilities were added by private landowners or members of the public. Private landowners sometimes added their own directional signage to guide visitors to local attractions. Members of the public informally brought, built, or added onto government facilities their own amenities from outdoor gyms to religious shrines.

The design and location of official amenities shows how the government expects people to use trails. Unofficial amenities show how people actually use trail spaces in ways that the government could not anticipate or does not wish to accommodate. They offer evidence of the wide diversity of needs that people are choosing to fulfil in green belt spaces, encompassing physical, mental, social, cultural, and spiritual needs, as well as a sense of community and self-actualisation.

Figures 60 to 70 map the locations of trail amenities and activities on the trails studied in this project. They reveal notable differences between trails in different districts. Some such as Duckling Hill and Wu Tip Shan have received extensive minor works investment and have had numerous amenities installed in addition to being paved. Others such as Sir Cecil's Ride have been left in a more natural state with minimal intervention besides the addition of wayfinding signage. Different trails also show different degrees of informal intervention. At one extreme, Woh Chai Shan had at least ten different sites with informal fitness or sports equipment such as exercise bikes and ping pong tables within a 200m radius. Others, such as Sir Cecil's Ride had very few informal structures, reflecting differences in user bases.

The following sub-sections will look at different types of trail amenities in detail to assess existing provision, analyse patterns of usage and identify areas for improvement.

Figure 60: Duckling Hill facilities and points of interest



Legend

Ownership colour code

Government	Private	Informal

Seating	Wayfinding signage	Temple/site of worship
Shelter	Gardening	Public transport stop
Exercise area/equipment	Water source	Rubbish bin
Sports area/facility	Toilet	Food/beverage outlet
Trailhead		

Source: TrailWatch, 2022

Points of interest

1 Trigonometric point	Lookout point

Observations:
The HAD has built wayfinding signage, seating, shade pavilions, fitness equipment (similar to elder fitness stations in public parks), and shaded pegboards for people to hang their belongings on Duckling Hill. Most of the seating is concentrated at the base of Duckling Hill and along the main north–south path leading to the summit so that people can rest at regular intervals. Nevertheless, residents have continued to bring their own seats and to build their own shades and exercise equipment (i.e. stretch bars made of bamboo poles fixed between two trees). They also modify government facilities to suit their purposes better, such as by hanging clocks and adding protective tarps to shade pavilions.

Figure 61: Fu Yung Shan facilities and points of interest

Refer to legend under Figure 60 on p.65.

Points of interest

1 Chuk Lam Sim Yuen Buddhist Monastery

Lookout point

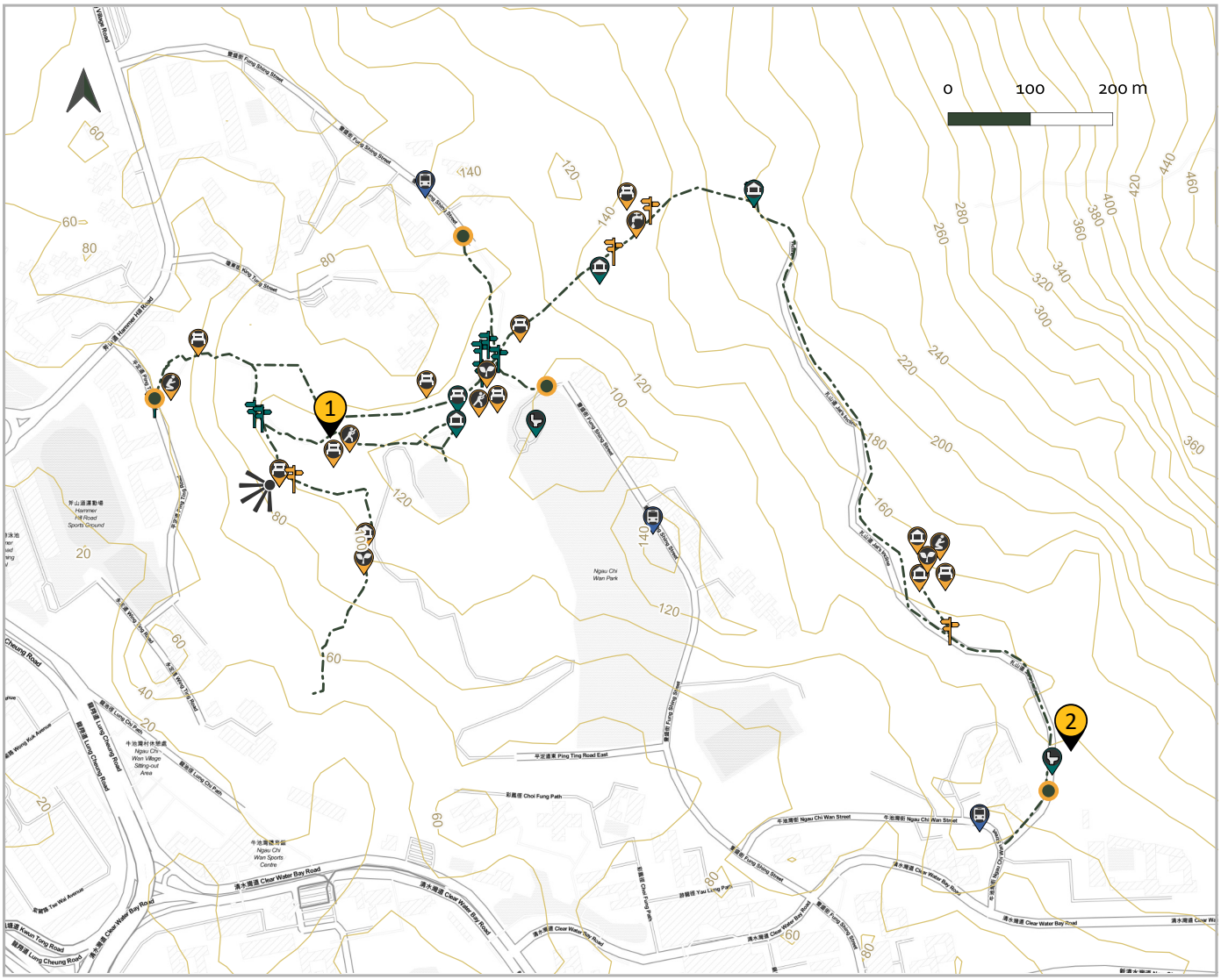
Source: Yeung Ha Chi, April 2022

Observations:
There were several concrete benches along the main trail (on the western side), however many are broken or covered in fallen leaves. There were only a few informal structures visible along the main trail, such as a religious shrine surrounded by potted plants. The network of trails on the eastern side provides access to a large number of temples and shrines, both formal and informal. Local residents and temple owners have supplemented scarce directional signage with a variety of handmade signs.

Source: Carine Lai, April 2022

Figure 62: Hammer Hill facilities and points of interest

Refer to legend under Figure 60 on p.65.

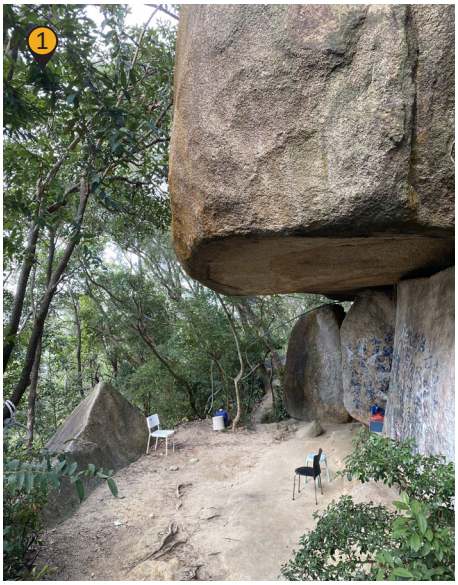


Points of interest

1 Boulder

2 Jat's Incline Morning Walker's Garden

Lookout point



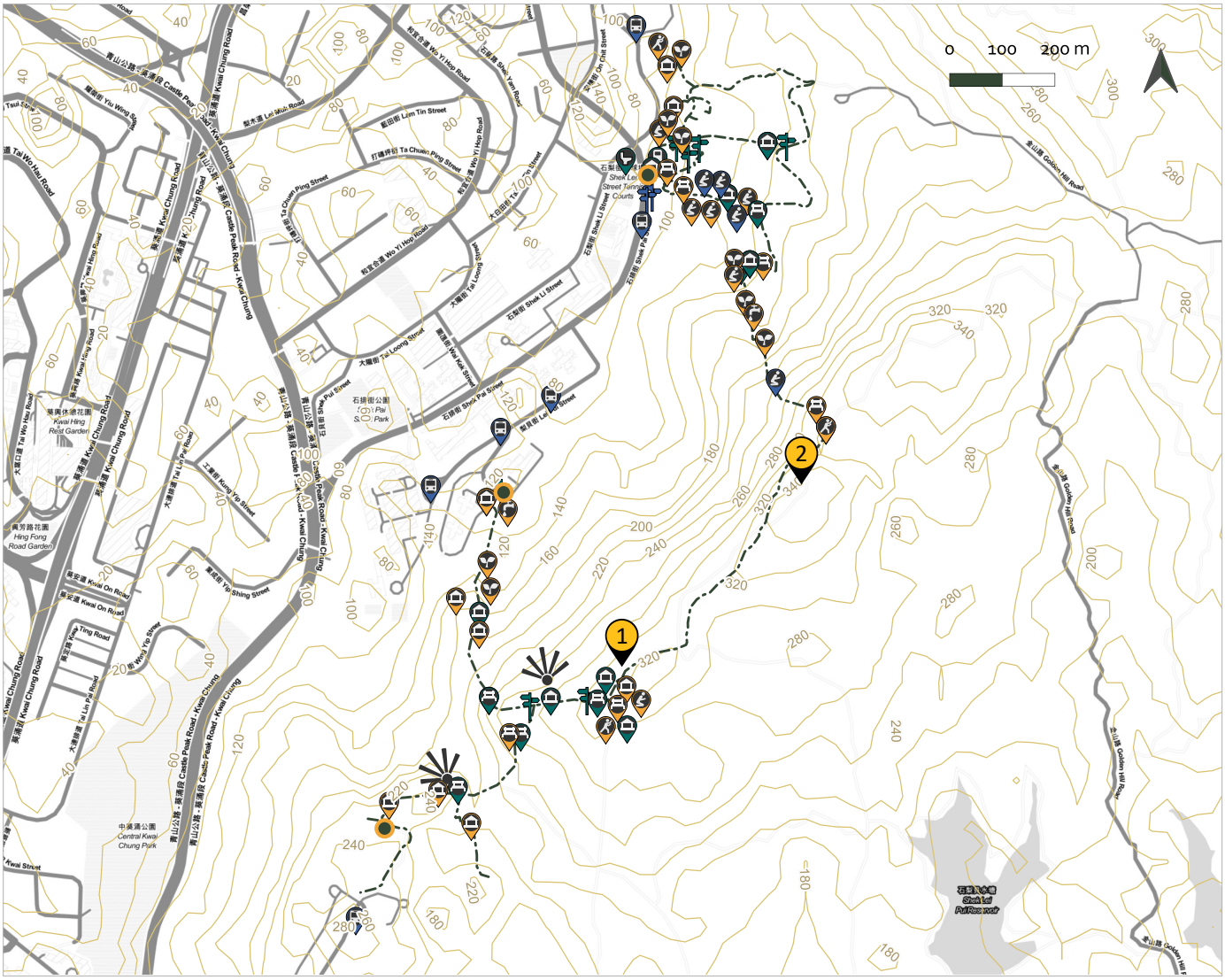
Source: Nicole Lau, April 2022

Observations:
Official facilities on Hammer Hill include three shade pavilions and directional signage. However, there were some significant informal structures, including a large shelter/hut with a barbecue pit, exercise areas, gardening beds, and seating. These were built away from the main trail on unpaved secondary tracks.

Source: Iamme Acho, Google Street View, April 2022

Figure 63: Kam Shan facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

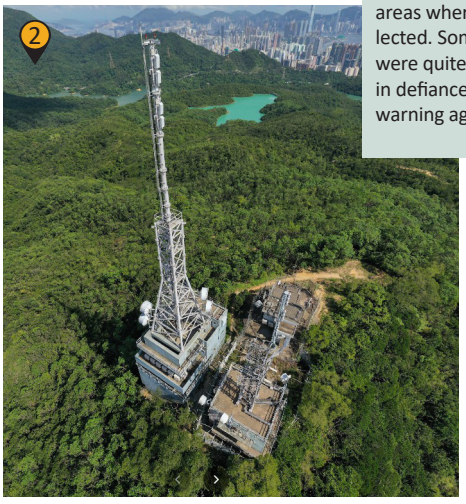
1 Golden Hill Radio Station

2 Golden Hill (TV) Transmitting Station

Lookout point

Observations:
HAD facilities such as seating and shade pavilions are located along the uphill/downhill routes, especially at lookout points offering views over Kwai Chung. Informal facilities (seating, exercise facilities, religious shrines) tend to cluster in flat clearings. There is significant unauthorised gardening and cultivation near areas where spring water can be collected. Some of these farming plots were quite large, and carried out in defiance of government signage warning against illegal cultivation.

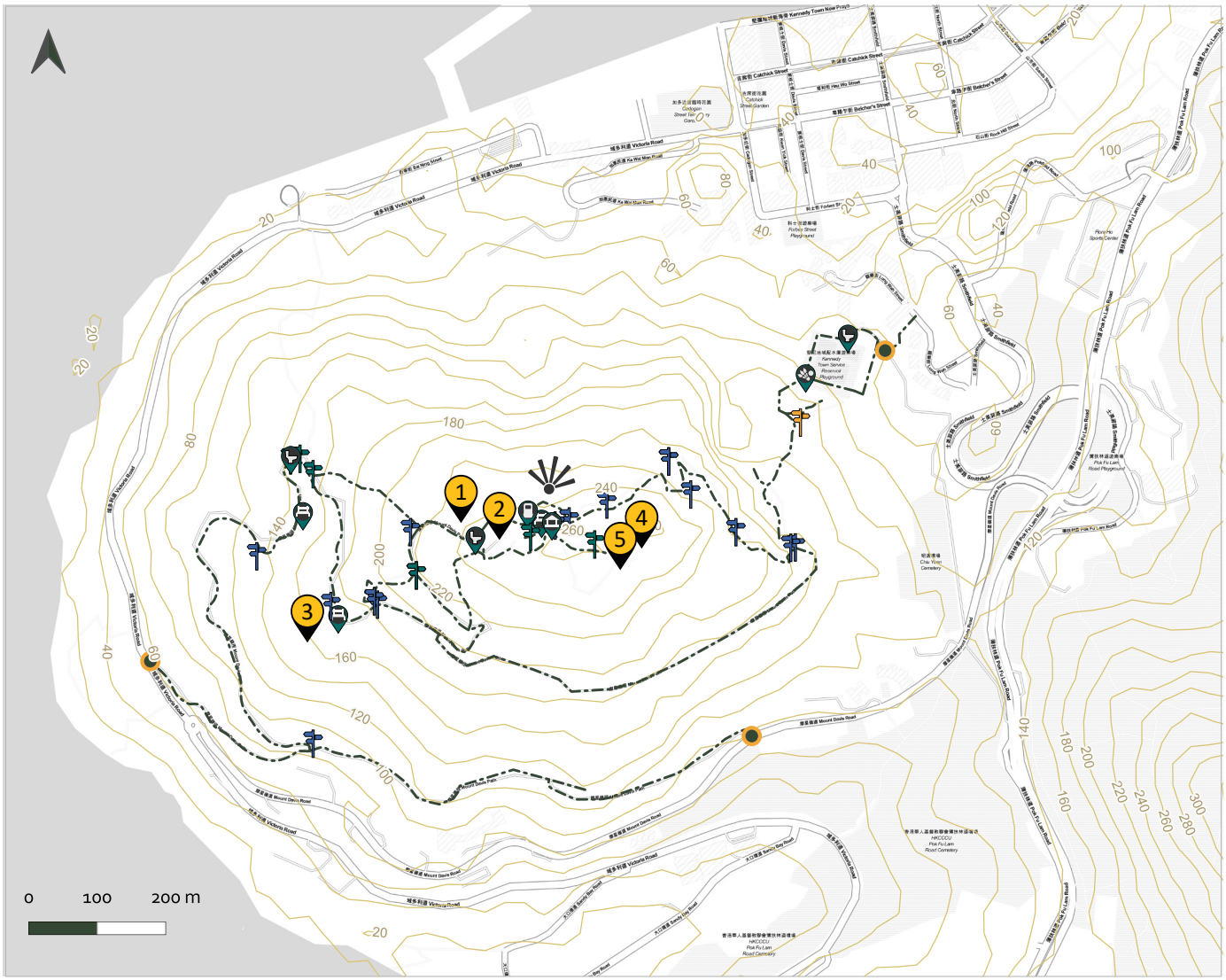
Source: Carine Lai, April 2022



Source: Cyril Ha, Google Street View. 2020

Figure 64: Mount Davis facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

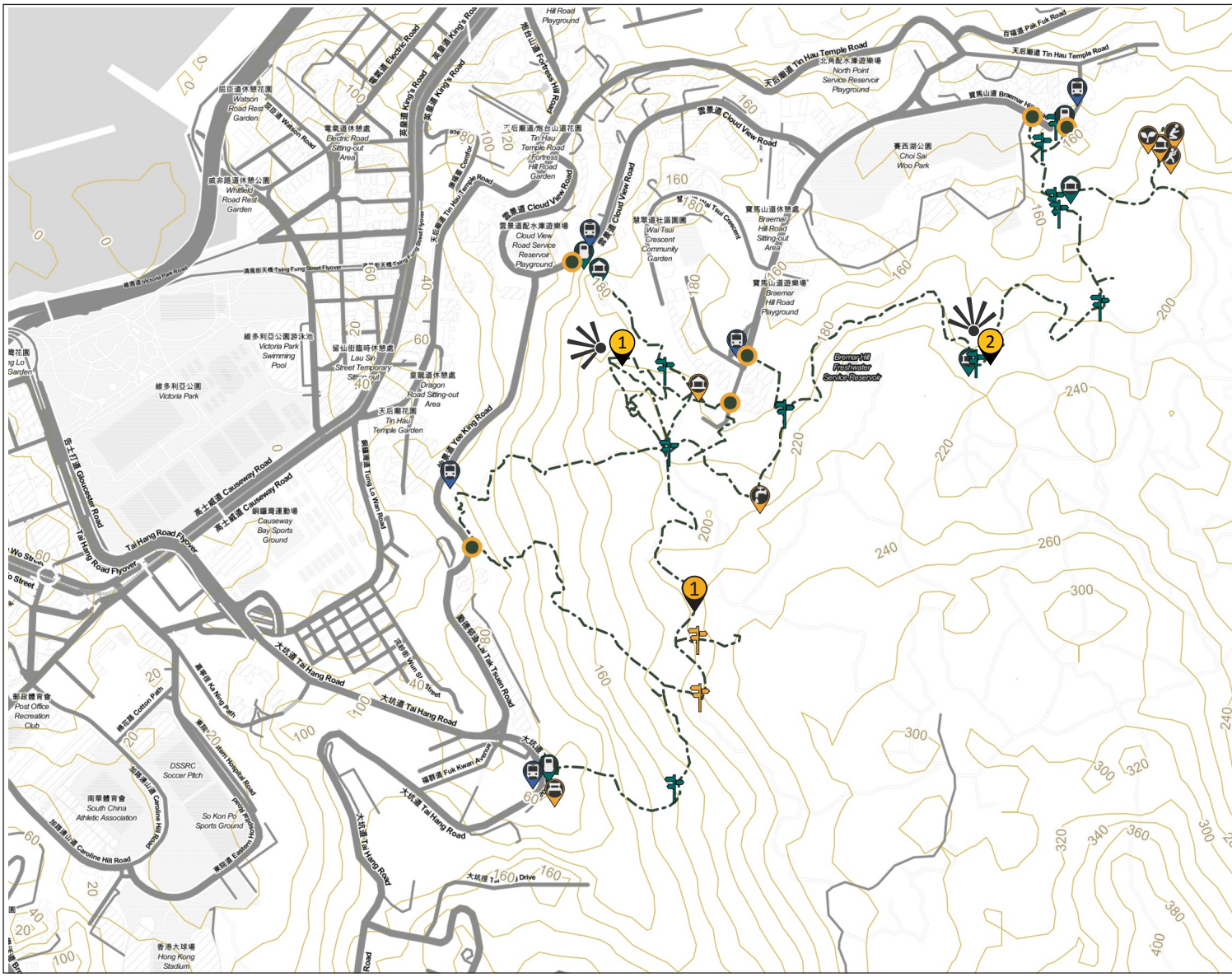
1. Jockey Club Mount Davis Youth Hostel
2. Mount Davis Battery 1 ruins
3. Mount Davis Battery 2 ruins
4. Barracks ruins
5. Anti-aircraft battery ruins
- Lookout point

Observations:
Official facilities on Mount Davis consist of a couple of sitting-out areas and a barbecue site. Numerous trail markers and signposts were installed by the Lions Club Friends of Mount Davis. No informal structures besides hand-chalked signs were found, indicating that Mount Davis is not heavily used by elderly morning walkers. However, graffiti, barbecue remnants (outside of the designated barbecue area) and BB pellets indicate that it is a gathering spot for youth and war-gamers. This may be due to its limited accessibility from Kennedy Town.

Source (both): Carine Lai, October 2022

Figure 65a: Sir Cecil's Ride facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

1 Boulders at summit of Hung Heung Lo Fung (Red Incense Burner Hill)

2 Stone bridge over stream with scenic view

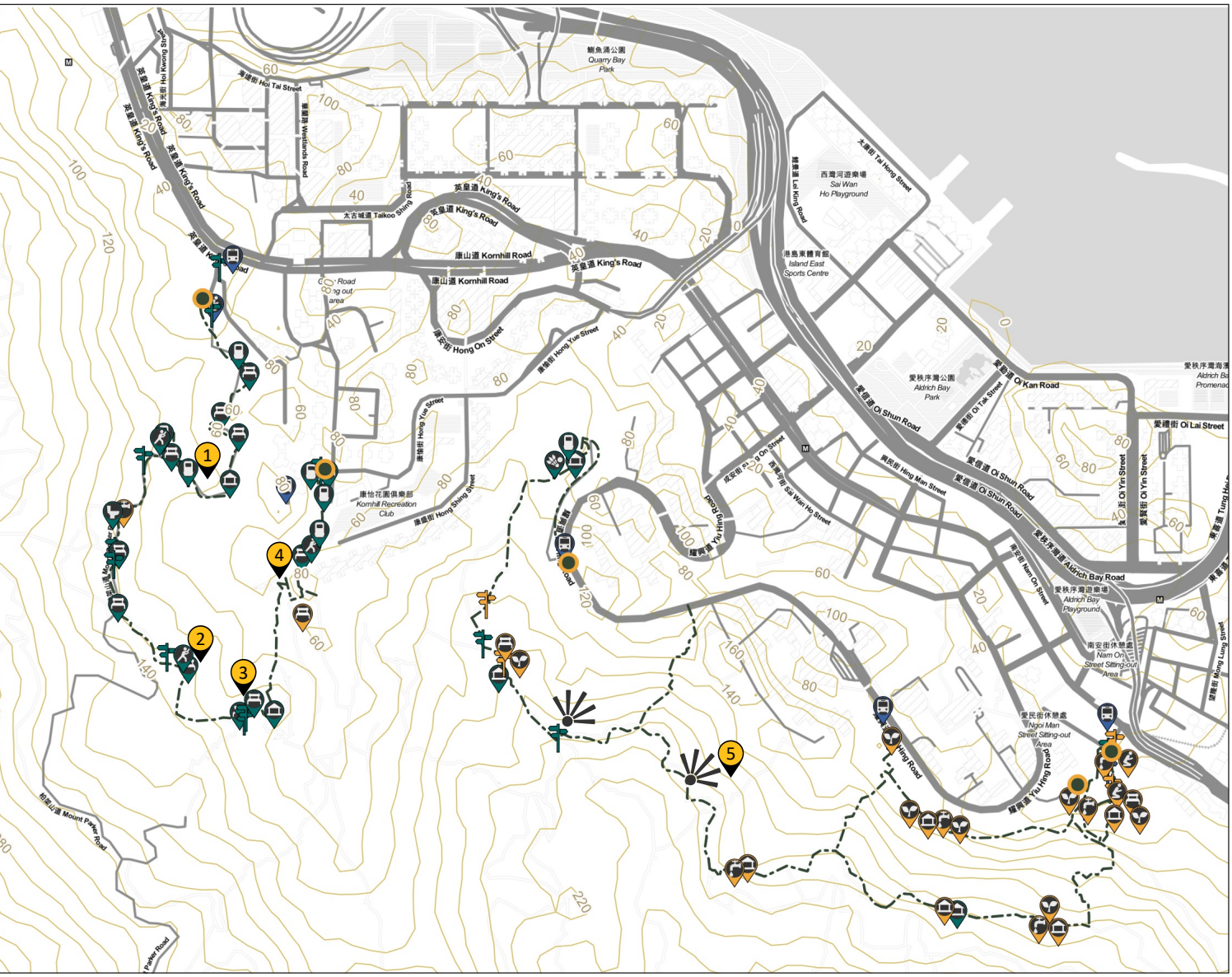
Lookout point

Observations:
Sir Cecil's Ride had the most minimal facilities, both official and informal. As well as being one of the few unpaved trails, the HAD has only provided directional signage. There were also very few informal structures of any type visible from the main trail. This could be reflective of the upper middle-class demographics of the neighbourhoods closest to the trailheads.

Source (both): Carine Lai, April 2022

Figure 65b: Mount Parker Lower Catchwater facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

1. Woodside Biodiversity Education Centre (historic staff residence of the Tai Koo Sugar Refinery)
2. World War II era stoves
3. World War II era stoves
4. Concrete supports for former Taikoo Sugar Rel cable car
5. Yiu Tung Stream

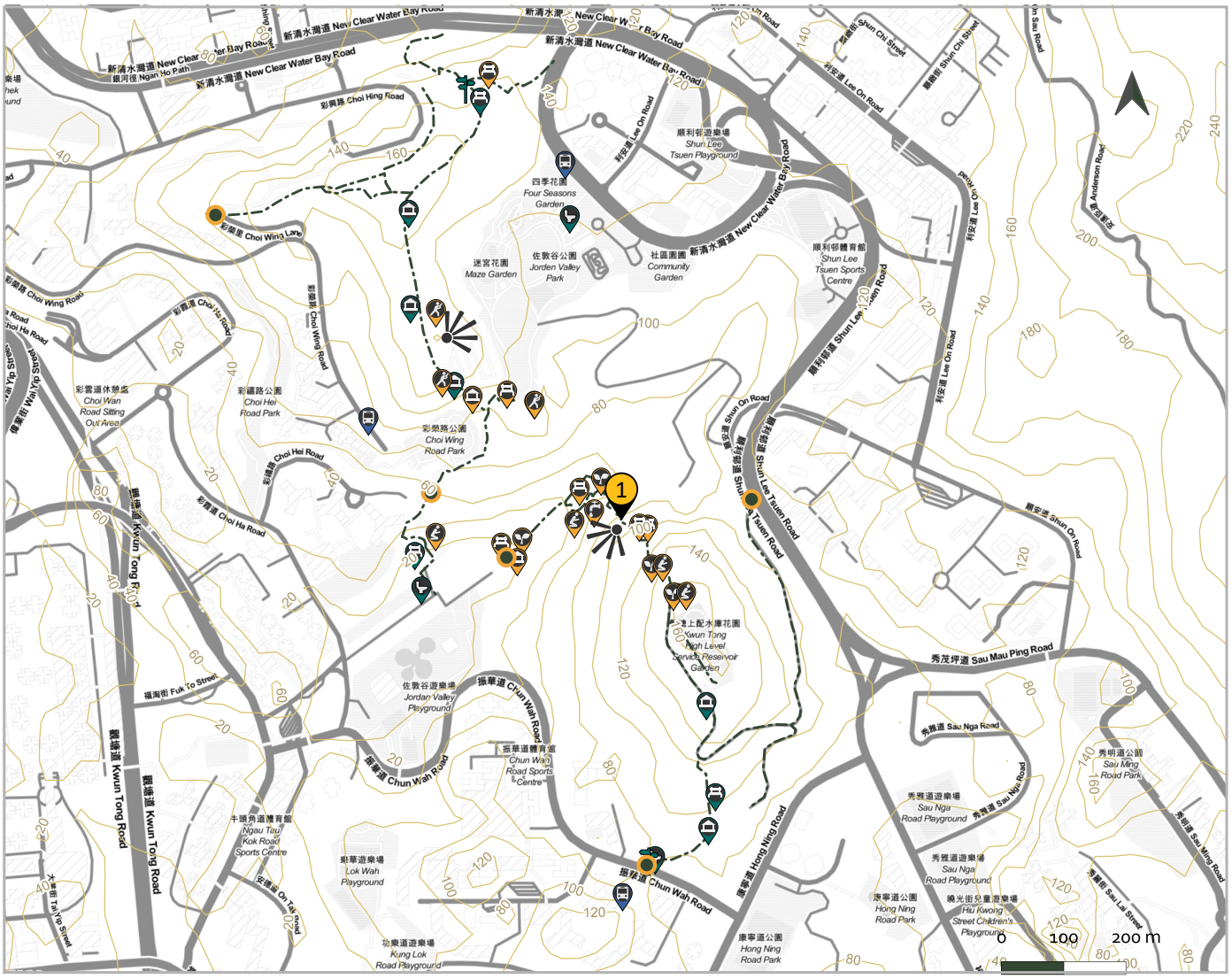
Lookout point

Observations:
The loop on the western side (The Mount Parker Green Trail and Quarry Bay Tree Walk) is within country park boundaries and features a fair number of trail facilities including seating, shade pavilions, and exercise stretch bars. The lower catchwater on the eastern side has very few official amenities, as the uphill/downhill routes in particular are unauthorised or neglected. Unofficial facilities are mostly concentrated at the more accessible bottom of the hill, some of them along water infrastructure maintenance tracks.

Source (both): Carine Lai, April 2022

Figure 66: Shum Wan Shan and Ping Shan facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

1 Former Jordan Valley Reservoir Main Dam

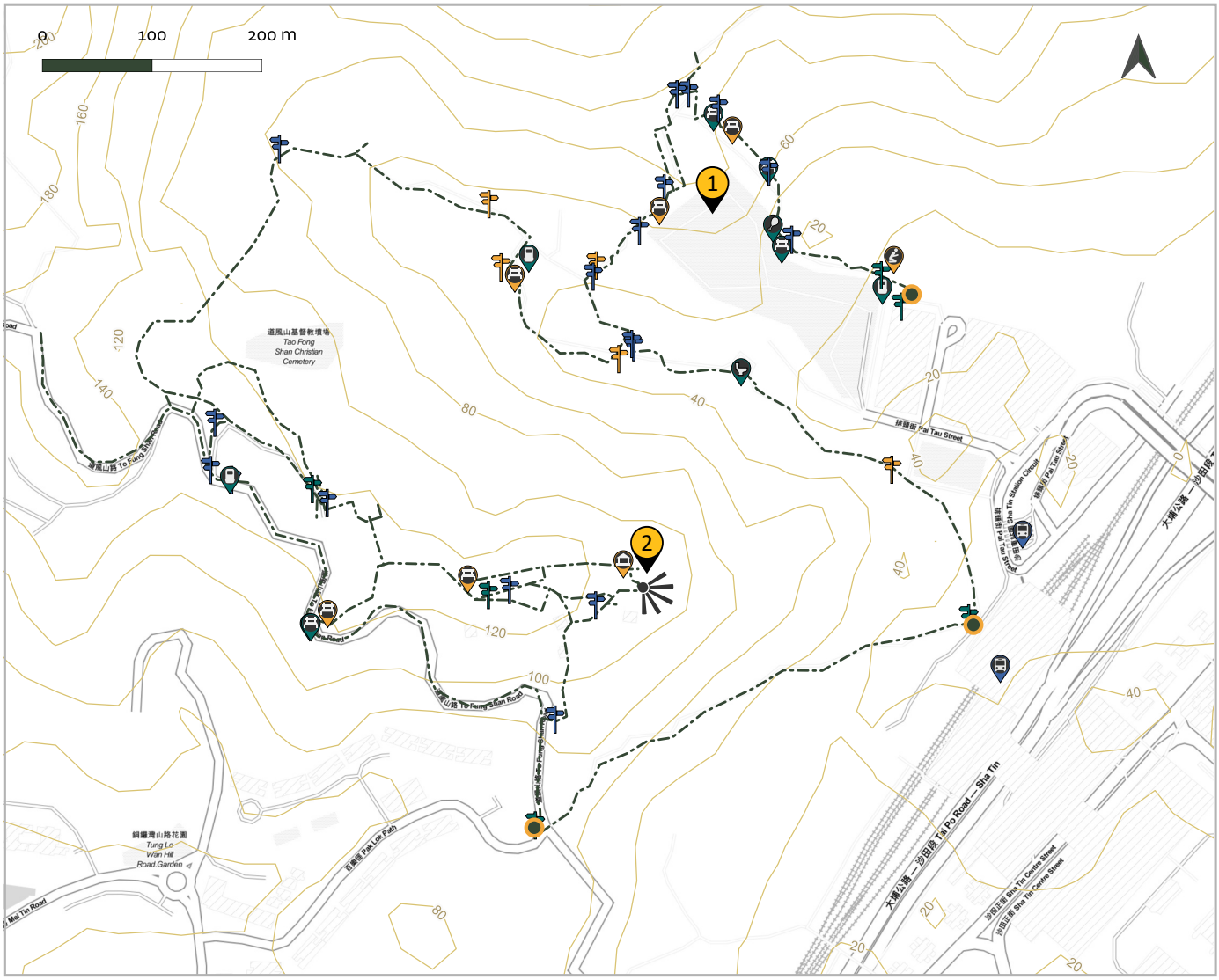
Lookout point

Source: Nicole Lau, January 2022

Observations:
Official facilities on Shum Wan Shan and Ping Shan consist of a few benches and shade pavilions, some of which look dated and uncomfortable. Residents have utilised flat areas to build informal exercise facilities, especially concentrated on the unpaved north-western slope of Shum Wan Shan.

Figure 67: To Fung Shan facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

1 Ten Thousand Buddhas Monastery

2 Tao Fung Shan Christian Centre large cross

Lookout point

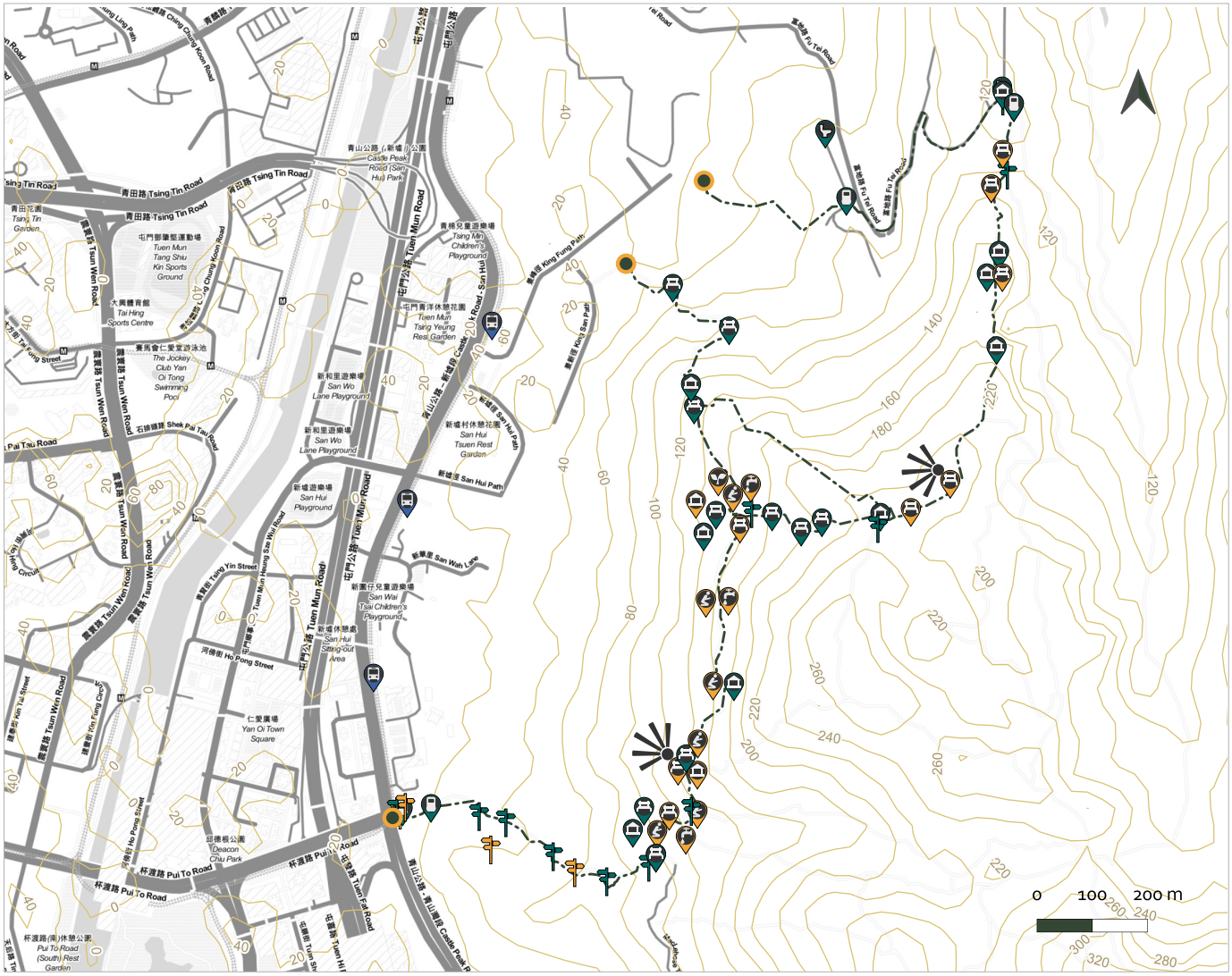
Observations:
The paths around To Fung Shan provide access to villages and religious buildings in the area, rather than purely recreational trails. Hence there are relatively few recreational trail amenities, although the path to the Ten Thousand Buddhas monastery is famously lined with gold painted statues. Much of the directional signage in the area has been provided by the neighbourhood's religious institutions and by local residents, rather than the government.

Source: Nicole Lau, January 2022

Source: Underwaterbuffalo, Wikimedia Commons, 2009

Figure 68: Tuen Mun Trail facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

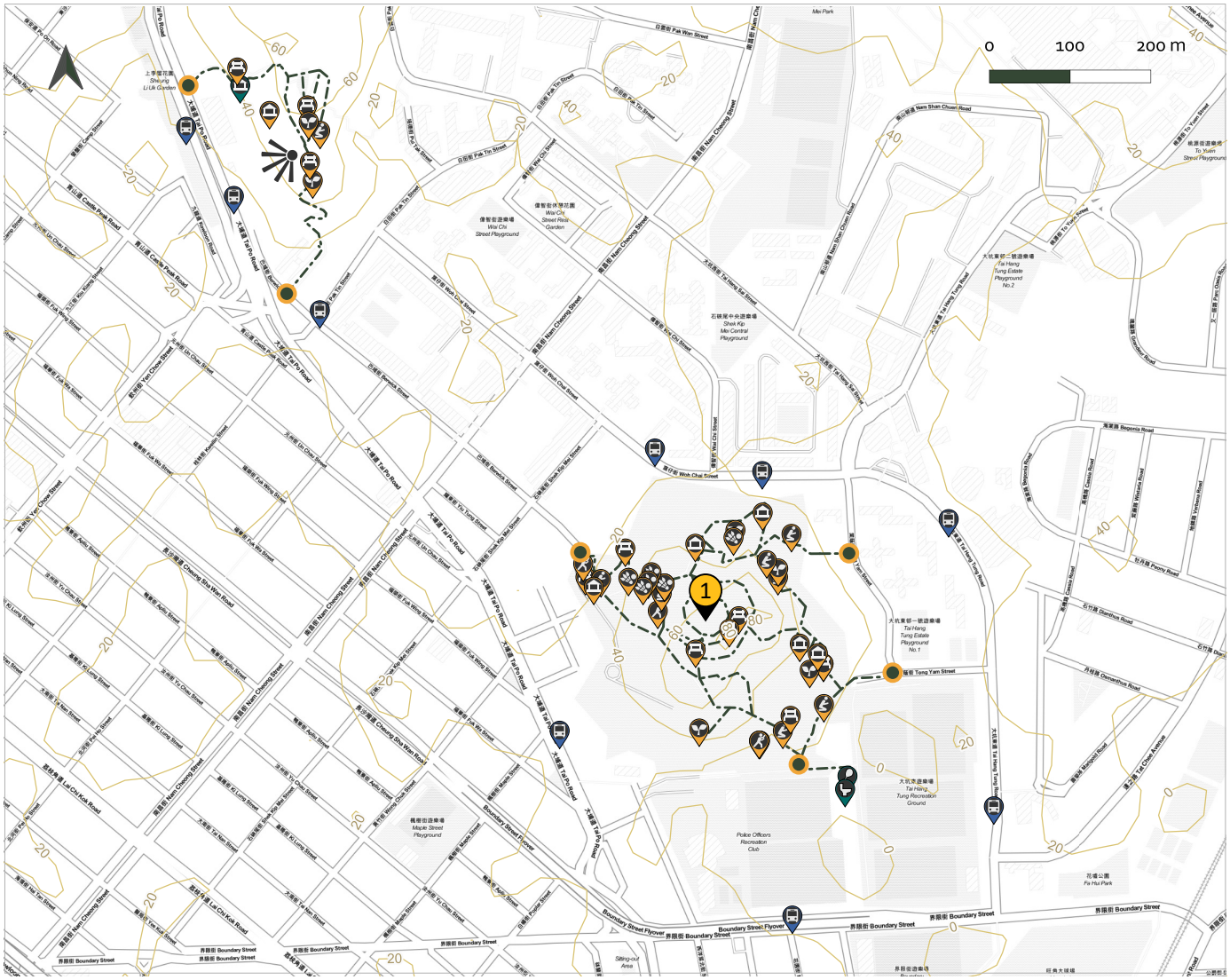
Lookout point

Source: Yeung Ha Chi, April 2022

Observations:
Tuen Mun Trail, like Duckling Hill, has extensive official amenities such as seating and shade pavilions due to investment by the Home Affairs Department. It also appears to be heavily used by a community that has constructed numerous informal amenities, such as spring water collection points, shelters, gardens, and religious shrines. These amenities appear to be maintained regularly by community members—one informal shrine even has a goldfish pond.

Figure 69: Woh Chai Shan and Garden Hill facilities and points of interest

Refer to legend under Figure 60 on p.65.



Points of interest

1 — 1904 brick Roman-style Sham Shui Po Ex-Service Reservoir

Lookout point

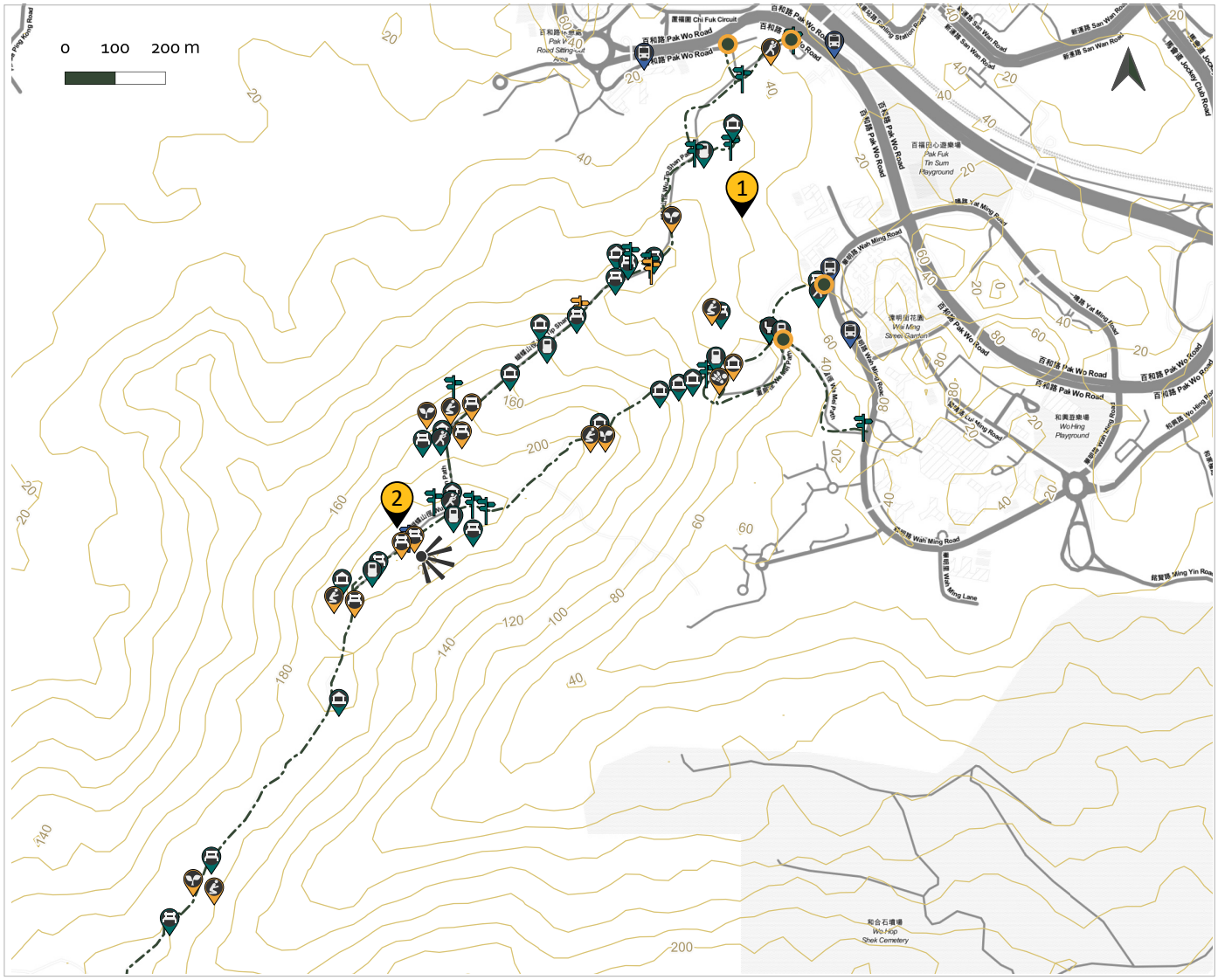
Source: Hong Kong Reminiscence, Wikimedia Commons, 2020

Source: Google Street View, 2016

Observations:
While there is a public park with a snack kiosk, changing room and toilet at the base of Woh Chai Shan, there are few if any official amenities on the hill itself. This is also the case for Garden Hill, which has an LCSD-managed sitting-out area close to the bottom. Over the years, Woh Chai Shan in particular has been taken over by nearby residents and used as an informal park. It has an extremely high concentration of informal structures, including religious shrines, ping pong tables, mahjong tables, fitness machines, stretch bars, and gardening plots.

Figure 70: Woh Chai Shan and Garden Hill facilities and points of interest

Refer to legend under Figure 60 on p.65



Points of interest

1 Grave of Wing Chun grandmaster Ip Man

2 Trigonometric point

Lookout point

Source: Google Street View, 2015

Observations:
Wu Tip Shan is similar to Duckling Hill and Tuen Mun Trail in that it has been the subject of extensive investment in trail amenities by the HAD. North District has gone further than most in imposing visual branding on the location through large, noticeable signage which names places along the trail instead of providing directional information. Wu Tip Shan appears well-used by older people in the neighbourhood who have constructed various amenities including an informal badminton court, but not to the extent of Duckling Hill.

7.2.1 Wayfinding signage

As each district builds its own trail amenities, there is no uniform standard for wayfinding signage except for on territory-wide trail systems such as the Maclehose Trail. There is wide variation in what type of wayfinding signage is provided, where they are placed, and what information they include. Before going into specifics, it should be noted that broadly speaking, there are three different types of wayfinding signage, each of which serves a different purpose.[86] They are:

1. Orientation panels provide an overview of the area and inform users of the routes and attractions in the vicinity, typically using a map. They are usually placed at the entrance to a site (i.e. near the trailhead).

2. Fingerposts are signs that point people towards specific destinations. They include information about the direction of a path, the destination, and (sometimes) the distance to the destination. They are usually placed at decision points (path junctions).

3. Waymarkers are signs that help guide people along a route and provide confirmation that they are travelling in the right direction. They are usually located at intervals along route segments between decision points.

Orientation Panels

On the eleven trails surveyed, orientation panels were rarely found on backyard trails except in country park areas. For example, orientation panels were provided on the Mount Parker Green Trail in Quarry Bay, which leads to the Tai Tam Country Park (Quarry Bay Extension). They were also available at the trailhead to Tuen Mun Trail because it shares an entrance with the MacLehose Trail Section 10 and Tai Lam Country Park. Outside of these examples, orientation panels provided by the HAD were only found on Duckling Hill and at a trail entrance to Sir Cecil's Ride in Braemar Hill. Orientation panels would be especially useful at the entrances to backyard trails that are connected to larger trail networks, including but not limited to those on country park boundaries.

However, the majority of the trailheads observed lacked not only orientation panels but any wayfinding signage whatsoever. For people not already familiar with the trails, there was no way to know whether steps on the side of a hill led to a viable trail, maintenance tracks, a dead end, or to unsafe routes. Some trails began on unsignposted vehicular access roads for service reservoirs, village paths, or private footpaths. In some cases, local landowners or community members added their own informal directional signage.

Figure 71: Orientation panels

Source: Carine Lai, April 2022

Source: Nicole Lau, January 2022

Source: Yeung Ha Chi, April 2022

Top left: Maclehose Trail endpoint orientation panel typical of those found at the entrances to country parks.
Top right: Orientation panel provided by HAD at the foot of Duckling Hill.
Bottom left: Metal orientation panel on a plinth at an entrance to Sir Cecil's Ride in Braemar Hill. The HAD often favours metal plaques for ease of maintenance.

Figure 72: Unmarked staircases

Source: Bosco Woo, January 2022

Source: Carine Lai, April 2022

Unmarked trail entrances such as these are very common, known mainly to nearby residents. It is unclear where they lead or what condition the trail is in.
Left: Entrance to Shum Wan Shan near Jordan Valley Nullah. The path on the left leads to the defunct dam; the research team did not find out where the staircase on the right goes.
Right: Entrance to unmaintained, challenging route to Sir Cecil's Ride near Lai Tak Tsuen in Tai Hang.

Figure 73: Unofficial wayfinding signage near trailheads

Source: Bosco Woo, January 2022

Source: Carine Lai, April 2022

Left: Community residents have hand-painted "Bishop Hill" (an alternative name for Woh Chai Shan) in red slab at the foot of the hill.
Right: A small plaque bolted to the wall of Mei Ho House in Sham Shui Po guides walkers towards the Garden Hill trailhead, which is inconspicuously located at the end of an alley. The hostel owners may have installed it due to lost visitors.

Figure 74: Trailheads marked with fingerposts

Source: Bosco Woo, January 2022

Source: Carine Lai, April 2022

Left: This sign provided by the District Council is located at the bottom of Shum Wan Shan but is the only trailhead on Shum Wan Shan that is marked.
Right: Decorative signpost for Mount Parker Road Green Trail. District Councils sometimes provide feature signage for particularly well-known trails that they wish to promote.

Figure 75: Sign pointing to Ngau Chi Wan Park

Source: Bosco Woo, January 2022

This signpost at the foot of Hammer Hill on Ping Tin Road says "Ngau Chi Wan Park", which is on the other side of the hill. Hammer Hill is not mentioned.

Fingerposts

On the eleven backyard trails surveyed, fingerposts were the most common type of signage. They were located at major path junctions to provide directional and destination information. Where trailheads were signposted at all, they were most commonly marked by fingerposts ranging from very plain to highly decorative (see Figure 74).

It was rare for official fingerposts to include distance-to-destination information, with the major exception being Tuen Mun Trail. Distance information enables people to estimate how long a journey might take, which is especially useful to people who are not very familiar with the trail. Occasionally, fingerposts were misleading as they did not include the most salient information. Figure 75 shows a fingerpost at a trailhead on Hammer Hill which reads "Ngau Chi Wan Park". It refers to the fact that Ngau Chi Wan Park is on the other side of the hill as walking over the hill is the shortest path on foot. However, the sign may lead to confusion as it seems to suggest that Hammer Hill is the park. It does not mention Hammer Hill at all. An orientation panel or the addition of distance information would make the sign more informative.

Figure 76: Official fingerposts

Source: Carine Lai, April 2022

Source: Go Yi, January 2022

Source: Carine Lai, April 2022

Top left: Fingerpost on Sir Cecil's Ride
Top right: Metal plaques serving as fingerposts on Hammer Hill. As each District Office installed directional signage independently, there was a wide variety in the designs and materials used.
Bottom right: Tuen Mun Trail was one of the few backyard trails that provided distance information and walking time estimates on fingerposts.

Figure 77: Unofficial fingerposts

Source: Go Yi, January 2022

Left: Unofficial fingerpost on Tuen Mun Trail built from metal plates bolted onto a steel beam. The characters are hand-written, with some signs written from left-to-right and others from right-to-left. An effort was made to imitate government street signs with thick black borders. The rectangular sign next to it is a safety notice placed by the Tuen Mun District Office warning that the trail leading up the slope is very difficult.
Centre: Fingerpost installed by religious institutions along the Fu Yung Shan catchwater directing worshippers towards several Buddhist temples in the area as well as back downhill to Tsuen Wan.
Right: Graffiti arrow "to temple" on Hammer Hill.

Source (left and centre): Carine Lai, April 2022

Figure 78: Official waymarkers

Source (both): Carine Lai, April 2022

Left: Waymarker at the start of MacLehose Trail Section 10. MacLehose Trail distance posts all share this distinctive design and are placed at intervals of 500m.
Right: 400m waymarker along the Shing Mun catchwater provided by Tsuen Wan District Council at Fu Yung Shan

Figure 79: Unofficial waymarkers

Ribbon tied to tree on a branching trail near Red Incense Burner Summit along Sir Cecil's Ride.

Source: Carine Lai, April 2022

Additionally, just as not all trailheads were signposted, not all junctions were marked. As a result, community members, villagers, and sometimes private landowners added their own frequently handwritten fingerposts. These ranged from simple graffiti to metal signposts that attempted to imitate the style of official road signage.

Waymarkers

Waymarkers were also rarely seen except for on routes within country parks, where numbered distance posts are placed along recognised hiking trails (i.e. MacLehose Trail, Wilson Trail, Lantau Trail, and Hong Kong Trail), Tree Walks and Country Trails to enable hikers to communicate their position to rescuers in emergencies.[87] The only non–Country Park backyard trail where waymarkers were found was along the Shing Mun catchwater at Fu Yung Shan (see Figure 78). While the close proximity of backyard trails to urban areas makes the emergency location function of waymarkers less critical, it was found that community members and hikers still perceived a need for them and created their own to reassure people that they were going in the right direction, especially on poorly maintained or unclear trails. These unofficial waymarkers occasionally took the form printed sign boards such as on the Friends of Mount Davis Trail, but graffitied arrows or ribbons tied to trees more often served this purpose.

Signage with unclear wayfinding purpose

At Wu Tip Shan, HAD-installed trail signage went a step further than most other districts in visually branding the trail through a distinctive graphic style. However, despite being large and noticeable, these signs did not serve a clear

Figure 80: Visual branding signage at Wu Tip Shan

Source (both): Go Yi, January 2022

wayfinding purpose. They were labelled with the names of local landmarks or rest pavilions but provided no other directional information. They included display boards used to display public service messaging posters or were left blank. Installing orientation panels in some of them would make them more useful.

Overall, while wayfinding signage is generally adequate, there is room for improvement, especially for signage around trailheads. Enhancing wayfinding signage at trailheads and in the neighbourhoods surrounding them will improve the public perception of local accessibility to trails. It would make people more aware of trails in their local area which they may not have heard about and help out-of-district visitors find trails more easily. Besides HAD, other bodies responsible for local signage can assist, including the MTRC and the Hong Kong Tourism Commission. MTRC can include backyard trails on orientation panels in MTR stations, exit signage, and its local tourism promotional materials. The Tourism Commission's urban fingerposts which point towards nearby attractions could also be modified to include backyard trails.

7.2.2 Seating and shade

The most common amenities provided on backyard trails were seating and shade pavilions. Individual benches were often located at intervals on more well-used steep routes to allow people to periodically take a rest. Rest pavilions tended to be placed at the summits of hills or at junctions where an uphill/downhill route meets a horizontal ridgeline or contour-following path. These shelters offer people a space to rest after a period of exertion, to shelter from the rain, and to enjoy the view. In some cases, HAD-installed shade pavilions bore plaques stating that they had been funded by charitable organisations such as the Rotary Club on Fu Yung Shan or the Lions Club International on Mount Davis and Tuen Mun Trail.

Installed by different District Councils, these facilities utilised a wide variety of materials, including stone, concrete, wood and metal. Unlike the AFCD which tends to use wooden furniture that is more comfortable to sit on hot days and which fits in better with the natural environment, stone and concrete furniture are common on HAD-managed trails due to ease of maintenance.

Figure 81: Lions Club International funded pavilion

Source (both): Carine Lai, April 2022

Lion's Club International pavilion on Tuen Mun Trail.

Besides government-built facilities, informally built seating is frequently found on backyard trails. Their presence was not limited to trails on which official amenities were lacking. For example, Sir Cecil's Ride had no official seating but also very few informally built seats. On the other hand, trails with an abundance of government facilities such as Duckling Hill and Tuen Mun Hill also had many self-built seats and shelters. This indicates that the self-built seats serve a use other than simply providing a place to rest. Examining the position and arrangement of informal seating and shelters may offer insights into the purposes they serve and hint at how to better design trail facilities in the future.

Informal seating and shelters

Informal seating created by morning walkers comes in many forms, from repurposed dining chairs to tiled concrete benches. While some seats are placed individually alongside a trail to allow people to briefly take a rest, many of them are found in clusters on flatter areas of terrain. They are often found in close proximity to DIY shelters and activity areas such as exercise spots and religious shrines. This indicates that the seating is used by people engaged in social activities. During site visits, groups of older people could be seen sitting and talking, playing mahjong or cards, and exercising together. They build or bring seats and place them in such a way as to facilitate these activities, whereas official benches are usually placed singly. Group seating is available at shade pavilions which are usually placed on top of hills, however, informal seating clusters along with other activities are also found near the base of hills where the terrain allows. Older people who frequently visit backyard trails may not necessarily have the desire or ability to walk to the top, but still want to enjoy the space and socialise. In other examples, informal seating was often oriented towards views rather than facing the path. DIY stump or slab seating is often found in spots that offer scenic views if an official rest pavilion is not available or if nearby pavilions do not offer good views.

A wide variety of informal shelters were seen on the trails, ranging from simple beach umbrellas or tarps to elaborate bamboo structures. Morning walkers sometimes built onto existing official shade pavilions, adding on materials to provide extra protection from the sun and rain. The larger structures were furnished like clubhouses with tables and chairs. Calendars and clocks were common. Personal belongings such as umbrellas and newspapers were often found hanging from the roofs or tucked between the beams. Some even provided facilities for people to make tea and play mahjong. Others appeared ancillary to nearby gardening plots or religious shrines. Unlike the standardised official pavilions, the informal structures had a great deal of site-specificity and personalisation.

This specificity makes it more difficult to draw generalisable lessons about pavilion design from informal structures, however, one lesson is to pay greater attention to the orientation and microclimatic conditions of particular locations when installing them. Official pavilions often do not provide shade over the fixed seating while the sun is at an angle. An angled roof design might provide better coverage.

Figure 82: Seating in poor condition on Fu Yung Shan

Source: Yeung Ha Chi, April 2022

Source: Carine Lai, April 2022

The uniform design of the seats indicates that they had been installed by the government at some point in the past, but they are clearly no longer maintained. Notably, the handrail appears to have been installed after the seats, rendering some of them inaccessible without climbing the fence.

Alternatively, more flexibly designed seating both under and around pavilions would allow people to move into the shade as the sun moves throughout the day. Providing hooks for people to hang belongings while exercising might also be appreciated by morning walkers.

7.2.3 Other activities

A broad variety of activities were found including callisthenics and tai chi, badminton, ping pong, religious worship, gardening, mahjong, collecting mountain spring water, making tea, gathering medicinal herbs, keeping goldfish, and making art (see Figures 86 to 90).

Figure 83: Official and unofficial seating

Source: Carine Lai, April 2022

Source: Carine Lai, April 2022

Source: Nicole Lau, January 2022

Source: Carine Lai, April 2022

Source: Carine Lai, April 2022

Top left: Benches are typically placed in a line facing the path, especially along steep trail segments.
Top right: Plastic chairs are often placed around activity areas such as this informal outdoor gym.
Centre right: Community members often build benches around flat clearings used for morning exercises.
Bottom left: The views from shade pavilions are often blocked by vegetation.
Bottom right: Informal tiled slab seats at a lookout point.

Figure 84: Informal and modified shelters

Source: Nicole Lau, January 2022

Source: Carine Lai, December 2021

Source: Nicole Lau, January 2022

Source: Nicole Lau, January 2022

Source: Nicole Lau, January 2022

Source: Carine Lai, April 2022

Informal shelters range from simple structures (top left) to quite large, elaborate ones with clubhouse-like facilities (top right, bottom right). Sometimes they are built onto existing government rain shelters (centre left, bottom left). Trail users often add calendars, clocks, and hooks for personal belongings to both informal and government rain shelters.

The wide diversity of activities shows that many backyard trails have been transformed into community spaces. They are especially important to retirees who walk and gather there every morning. Several of the backyard trails had areas where older people gathered to exercise—flat clearings equipped with stretch bars made from poles tied across two trees at approximately waist height. Other DIY amenities included "donated" home exercise machines to custom-built fitness equipment such as stationary bikes and shoulder stretching pulleys. Woh Chai Shan featured an especially large number and variety of DIY exercise machines that were built by a retired mechanical engineer, So Chi-keung, who dedicated himself to the task after crediting his recovery from the after-effects of Severe Acute Respiratory Syndrome (SARS) in 2003 to spending time walking and exercising on the hill (see Figure 90). [88]

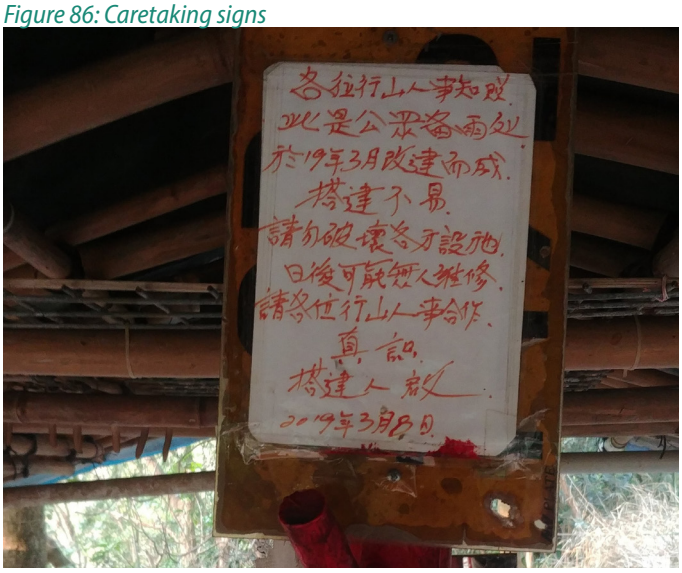
While some of these informal amenities were built by individuals, others must have required a joint effort. There was evidence of ongoing care and maintenance. Exercise machines were kept in working order, leaves were swept, and potted plants watered. It was relatively common to find handwritten signs asking fellow trail users to take away their own rubbish, not relieve themselves on the ground, and not to damage the facilities. Prior to the closure of the top of Woh Chai Shan to the public in 2020, neighbourhood residents maintained and stocked a communal shed filled with toys and sports equipment such as badminton rackets, balls, and hula hoops for visitors to borrow. Some "morning walkers' gardens" (i.e. informal rest areas) have been maintained by the same groups of people for decades. For example, a rain shelter and shrine on Tuen Mun Trail called Yeuk Mung Yuen (若夢園) was built in the 1990s by a group of morning walkers who are now in their 70s. [89]

For some trail users, the recreational benefits of backyard trails do not only come from passively absorbing their environmental amenity value but from being active participants in co-creation. They build communities, exercise creativity, solve problems, and derive a sense of purpose and achievement. These are mental health benefits that cannot be reproduced simply by providing better official amenities. Nevertheless, informal activities are not without harm to the environment. There is a need for some management measures to mitigate environmental damage and manage hazards, as explained below in Section 8.

Figure 85: Frame for hanging personal belongings, Duckling Hill

Source: Nicole Lau, January 2022

Figure 86: Caretaking signs



Source: Carine Lai, December 2021

Top: Sign affixed to a support beam in an informal shelter. It reads: "To fellow hikers: this is a public rain shelter built in March 2019. It was not easy to build. Please do not damage the facilities. In the future, there may not be anyone to repair it. Thank you for your cooperation. Signed, the builder(s)".
Right: "Please keep [the place] clean, take away your own rubbish"

Source: Carine Lai, April 2022

Figure 87: Fitness and sports




Source (all): Nicole Lau, January 2022

Top left: Group of elders engaged in an exercise routine surrounded by DIY fitness equipment.
Top right: People using stretch bars made from poles tied across tree trunks.
Bottom left: Badminton players
Bottom right: Ping-pong table placed on a hillside with nets around it to prevent balls from rolling away.

Figure 88: Religious worship

Source: Nicole Lau, January 2022

Source: Carine Lai, April 2022

Source: Nicole Lau, January 2022

Top left: Informal shrine built into a shotcrete slope.
Right: Spring-fed goldfish pond and potted plants next to a religious shrine.
Centre: Calligraphic inscription.
Informal sites of religious worship are frequently found on backyard trails. By local custom, hillside shrines develop when residents who move away deposit unwanted religious figurines for others to worship because it would be disrespectful to throw them away. Members of the community volunteer themselves as the caretakers of these shrines and regularly maintain, curate, and clean them, at times with the help of donations from fellow worshippers.

Figure 89: Spring water collection, cooking and gardening

Source: Carine Lai, April 2022

Source: Carine Lai, May 2022

Source: Nicole Lau, January 2022

Left: Spring fed into man-made stone basin
Top right: Stove located near a stream, possibly for making tea.
Bottom right: Informal garden beds outside an abandoned house.

Figure 90: Top of Woh Chai Shan, 2017

Source (both): Carine Lai, December 2017

Left: Before the WSD closed off access in 2020, residents used the flat grassy top of Woh Chai Shan (the reservoir's concrete cap) as a playground.
Right: DIY swing set with shared toy shed in the background.

8. Management of Backyard Trails: Towards a Community Partnership Approach

8.1 | PROBLEMS CAUSED BY UNAUTHORISED STRUCTURES

The lack of comprehensive management on backyard trails gives their users a degree of freedom and flexibility to modify their environment, giving the trails a unique character. However, their unauthorised construction is not legal and can be environmentally damaging and may pose safety risks. The Land (Miscellaneous Provisions) Ordinance makes it an offence to "use, inhabit, be in possession of, enjoy, erect or maintain a structure on or over, and place or maintain anything on" government land without a licence or deed of appropriation.[90] The same ordinance also prohibits digging or excavating any soil, stone or turf from government land,[91] which applies to building steps and unauthorised cultivation even if no actual structures are erected.

Some view the occupation of government land by informal morning walkers' structures as an appropriation of public space for personal use. Others argue that these structures improve otherwise neglected land and create a public benefit by alleviating the lack of recreational space and facilities in the city.[92] Informal community spaces defy easy categorisation because they are neither private nor conventionally public, but belong to an in-between category, called "common space". Common space is shaped by community practices in which people not only share existing amenities, but collaboratively generate shared benefits.[93] They negotiate a fine line between openness and cohesion, being open to new people and ideas while retaining enough shared values to self-govern. Morning walker communities discourage selfish behaviour and encourage contribution through unspoken norms. For example, people stop visiting shrines whose self-appointed guardians are seen as self-interested instead of serving the community,[94] and while members of the public are welcome to use DIY shelters and might even be served tea by regulars, people who take advantage but refuse to contribute to their upkeep may be given the cold shoulder.[95] Their flexibility, fluidity and ambiguity of common spaces makes them tricky for governments, which prefer clear roles and responsibilities, to interface with.

Besides creating ambiguity over appropriate uses of public land, informal interventions can also pose safety and environmental risks. The government discourages unauthorised cultivation of government land because it can destabilise slopes and contribute to mudslides. It also discourages collecting rainwater in open containers to prevent the breeding of mosquitoes. As mentioned in Section 6.1, informal trail construction disturbs vegetation and can exacerbate soil erosion if water runoff is not appropriately taken into account. The use of scavenged synthetic materials such as umbrella tarps and plastic chairs materials generates litter and contaminates soil as items break and are abandoned.

Some activities themselves are hazardous or damaging. For example, lighting fires to boil tea, barbecue food, or burn religious offerings adds to the risk of forest fires. Feeding wildlife (i.e. monkeys and wild boars) or feral dogs disrupts the ecosystem and increases conflicts between humans and animals. The government extended its ban on feeding wild animals in selected country parks and nature reserves to all of Hong Kong beginning on 31 December 2022.[96]

However, not all improvised structures are equally damaging. The impact varies based on the size and materials of the construction and on the location. A few seats are of lower impact than unauthorised stair construction. Structures made of stone or wood are less polluting than ones made of plastic. Country park buffer zones should be regarded as more environmentally sensitive than isolated hills surrounded by urban development.

Many hillsides on the urban fringes have already been heavily impacted by human intervention. Slopes have been altered by quarrying, blasting, site formation, and previous human settlement. Hillsides throughout Hong Kong were likely cleared of trees by the 17th and 18th Centuries and were mostly bare by the early colonial period.[97] (This allowed footpaths to be visible in early 20th Century aerial photographs such as those shown in Section 4.) Almost all of Hong Kong's existing forests grew back after World War II. The quality of the regrowth varies widely depending on site conditions and degree of isolation from seed sources—some areas have grown into relatively diverse secondary forests while others are still dominated by exotic tree monoculture that were selected for their growing speed and tolerance of poor conditions.[98] Additionally, the construction of catchwaters and concrete drainage channels by the government over decades has altered downstream ecosystems by diverting water, drying up streambeds and reducing deposits of sediment and nutrients, resulting in poorer biodiversity.[99] Therefore, the location where informal construction takes place will impact the environment to varying degrees of severity.

8.2 | ENFORCEMENT AND GOVERNMENT-COMMUNITY RELATIONS

The Lands Department carries out enforcement against illegal structures on government land based on complaints by District Councillors and members of the public, which means that there is no prioritisation based on the degree of environmental impact or hazard to the public. The Lands Department is broadly responsible for disposing of and maximising revenues from public land; environmental management is not a key focus. Larger scale breaches of government land such as construction waste dumping or unauthorised brownfield operations generally take higher priority. Moreover, it would require too much manpower for the Lands Department to inspect all unallocated government lands on a regular basis.

When enforcement is carried out, the administrative procedures are cumbersome and quite ineffective. Enforcement officers are required to post notices on illegal structures ordering their removal by a certain date. If not removed, the Lands Department may clear the structures itself. It can also remove abandoned structures without notice. Trail users frequently avoid clearance operations by taking structures down and reassembling them at a later date. Since removal notices are tied to specific locations, simply moving the structures elsewhere is often sufficient to evade enforcement. At Duckling Hill, trail users and the Lands Department engaged in a years-long cat-and-mouse game that continues to this day. Trail users even adopted strategies such as building benches that looked virtually identical to government ones, but placed in locations more to trail users' liking, to avoid detection.[100] Enforcement efforts are not really focused on preventing environmental damage but on targeting illegal acts in an ad-hoc way.

Communities have sometimes banded together to try to persuade the government to tolerate illegal hillside structures, or failing that, to replace them with legitimate facilities. For example, in 2012, residents of Wah Fu Estate enlisted the help of a district councillor to ask the Lands Department to leave an informal coastal shrine to Tin Hau in place.[101] More recently, morning walkers who use the DIY fitness machines and ping pong tables on Woh Chai Shan petitioned the Sham Shui Po District Office not to demolish them after removal notices were posted in May 2022.[102] They received no reply, but the structures are still in place at the time of writing.

At Duckling Hill, advocacy against government clearance campaigns developed into a more organised and sustained effort to lobby the Sai Kung District Council to make community improvements. Residents first unsuccessfully tried to petition the government to tolerate their unauthorised hillside structures in 2006.[103] Over the next few years, residents led by a retired civil servant collaborated with social workers from the Tseung Kwan O Aged Care Complex and the Association of Concern for Elderly Livelihood to lobby the Sai Kung District Council. They submitted another petition in 2011 with over a thousand signatures[104] and asked for proper facilities to be built if the government insisted on removing the unofficial ones. Two researchers from Hong Kong Polytechnic University and a local architecture firm, Parallel Lab, also became involved and led a design workshop with residents to create plans for submission to the District Council.[105]

In 2014, the Sai Kung District Council decided to allocate some of its HKD100 million Signature Project Scheme funding[106] to a public toilet at the foot of Duckling Hill as part of the Tseung Kwan O Heritage Hiking Trail and Heritage Information Centre project connecting Duckling Hill to the Mau Wu Shan Observation Post and Wilson Trail 3.[107] The Duckling Hill trail was paved, and rain shelters and improved signage were also added.[108] This engagement process explains the presence of more unusual facilities on Duckling Hill such as orientation panels, pegboards for residents to hang their belongings, and the elder fitness corner at the summit. The age-friendly working group of the Sai Kung District Council continued to follow up with residents on the condition of the facilities for several years afterwards.[109] Through their advocacy, elderly residents became more empowered to participate in community affairs in other ways. For example, twenty residents learned to become eco-tourguides for Duckling Hill through a programme organised by Gaia Hong Kong and the Chinese University of Hong Kong.[110]

8.3 | ADOPT-A-TRAIL

Finding a balance between the unique character of backyard trails and the need for better environmental management is difficult. Placing them under the administration of the LCSD and turning them into official parks would diminish their natural character and their spontaneity, flexibility and scope for co-creation.[111] On the other hand, non-intervention would not address ongoing problems such as soil erosion, litter, and damage to historical structures. However, there are a few precedents that point towards adopt-a-trail community partnerships as a potentially viable solution.

Duckling Hill provides a positive example of trail users becoming proactively engaged with the District Council in the planning and design of local trail facilities, which produced better-than-average albeit overly-concretised results. If District Councils are going to invest in trail facilities, there should be transparent and open public engagement to ensure that the facilities built meet the needs of different trail users and that money is not spent on unnecessary or unwanted interventions. Environmental organisations should have the opportunity to voice their input to propose more sustainable alternatives and prevent unnecessary concretisation.

However, while greater public engagement would improve the quality of HAD facilities, it would not address problems over which HAD has no jurisdiction, such as heritage preservation, tree management, soil erosion, or mitigation of environmentally damaging informal activities.

Certain policies adopted by the AFCD in the past have shown that collaboration with local communities is possible. When country parks were established in 1976, AFCD registered established morning walkers' gardens within the boundaries. Established informal facilities such as vegetable gardens and rain shelters were tolerated as long as they did not expand and were kept in good condition by the users, thus containing their environmental impact. While many unofficial structures were subsequently abandoned and demolished, a few became regularised. They were added to official country park maps, indicated on official wayfinding signage, and were given official delineated boundaries. In several cases, AFCD invested resources into providing and maintaining some facilities for the morning walkers' gardens, such as rain shelters, rubbish bins, cubby holes, concrete stoves, and slope maintenance.[112]

In one case in Lung Fu Shan Country Park (established 1998), the AFCD and the Lung Fu Shan Morning Walkers Association, founded by Chan Sheung Kui ("Uncle Kuen")[113] developed a co-management relationship that extended well beyond tolerance: in the late 1990s–early 2000s, the Association created a Chinese herb garden, an initiative endorsed and financially supported by the AFCD and the Central and Western District Council. The Association remains responsible for the day-to-day care of the garden and co-organising educational initiatives.[114]

However, while these examples suggest ways in which backyard trails could be cooperatively managed, there are several obstacles. The main problem is that unlike AFCD, HAD does not directly manage the land and cannot allow nonprofits to do trail construction without separate permission from the Lands Department. Therefore, unless the land were to be placed under the jurisdiction of a single managing body, the HAD would need to establish some sort of agreement with the Lands Department by which HAD could lend support to nonprofits in applying for temporary use of government land. This needs to be set up with policy support at the bureau level between the Home and Youth Affairs Bureau and the Development Bureau.

An existing mechanism that could be used is the "Use of Vacant Government Land for Community, Institutional or Nonprofit Making Purposes on Short Term Basis" programme, under which the Lands Department releases lists of empty government sites with low commercial potential for nonprofits to use for periods of one to five years,[115] which can be granted at nominal rents provided a government bureau or department lends policy support to the proposal.[116] However, this programme has limitations: while the list includes a number of sites on green belt hillsides, they are not necessarily located in places accessible to or desired by trail users or in places where trail stabilisation is needed. The Lands Department should be willing to accept sites proposed by nonprofits if HAD provides support.

Alternatively, the land could be granted to HAD under a temporary government land allocation, which would give the HAD the flexibility to form agreements for nonprofits, whether for a one-time trail repair project or for a longer period to care for and maintain an area. A smaller-scale precedent for this is The Vessel on the Kwun Tong Waterfront Promenade, where land allocated to the Energising Kowloon East Office (EKEO) under the flyover was transformed into a small cultural venue by a nonprofit, HKALPS, under a manage-operate-maintenance contract.[117] While financial sustainability has been a problem at The Vessel, which includes a restaurant, some small shops, and event spaces, basic recreational trail facilities such as rain shelters and exercise stretching bars would likely be within the capability of nonprofits to support through volunteer work. Nonprofits would also be able to fund small-scale eco-trail pilot projects on their own.

8.4 | CAPACITY BUILDING

Before adopt-a-trail programmes can be implemented on a wide scale, there needs to be a significant scaling up of capacity in the nonprofit and voluntary sector in terms of skill development, awareness raising, and financial support.

At present, only the AFCD and two nonprofit organisations (The Concern Group on the Concretisation of Hong Kong Natural Trails and The Green Earth) have eco-trail building expertise. They have so far trained several hundred volunteers, but more are needed. There are also virtually no construction companies with eco-trail building skills. In the medium to longer term, the nonprofit sector must scale up its training capacity. Retired AFCD staff are a pool of valuable knowledge who could be recruited as consultants and teachers.

However, it might be more difficult for environmental groups to recruit morning walker communities to participate in eco-trail training due to differences in values and outlooks. Environmental groups promote a "leave no trace" ethos and disapprove strongly of informal construction, while some morning walkers of the older generation tend to be more dismissive of environmental concerns and might be hostile towards being asked to dramatically change their practices. Informal construction may diminish on its own over the next decade or two as younger and more educated walkers eschew such practices. However, in the meantime, environmental groups should continue raising awareness and try to develop messaging that may be more relevant to morning walkers, e.g. focusing on the safety and long-term stability of natural materials and the importance of water runoff management. Retired AFCD staff might be effective ambassadors in this regard. Efforts should be focused on changing the most harmful practices while less damaging ones can be tolerated.

More coordinated awareness-raising and education is needed in general. Environmental groups need to work together to develop cohesive informational packages that can be aimed towards different audiences, from the general public to the hiking community to government officials. Some District Offices are open to allowing nonprofits to take up eco-trail pilot projects, but have low awareness of the issue and do not see it as very important. Building up public awareness will help shift official perception of natural trails from a niche concern to a demand of trail users, providing stronger justification for supporting eco-trail projects and programmes.

Regarding funding, if nonprofit adopt-a-trail programmes are to be scaled up, some government funding will be needed. If eco-trails cannot be funded through the minor works budget, the Community Involvement Project (CIP) funding stream can provide an alternative. CIP funding goes specifically for nonprofits and has been used for leisure, sports, and greening activities.[118] However, the funding amounts available are much smaller than those under the District Minor Works scheme—projects were capped at HKD2.5 million in 2021[119] and applicants would have to compete with other priorities such as celebratory events. The Environment and Conservation Fund under the Environmental Protection Department, which funds nonprofit environmental projects, may offer another source of government grants.[120]

Corporate partnerships or sponsorships may therefore be another source of financial and volunteer support. While eco-trail construction will probably remain unprofitable under conventional construction tenders, engineering and architectural firms may be willing to contribute towards such projects as part of their corporate social responsibility initiatives. They can provide financial support, support training initiatives, and recruit volunteers.

8.5 | CASES FOR COMPREHENSIVE MANAGEMENT

While many backyard trails could be managed through a voluntary adopt-a-trail model, there are areas where there are compelling reasons for more comprehensive management, such as areas designated for intensive recreational activities and areas with valuable heritage buildings that need active protection.

Out of the eleven trails included in this project, the one that stands out as needing comprehensive management is Mount Davis, due to the multiple historical structures spread across it. The current lack of management has resulted in ongoing damage due to graffiti, vandalism, littering, as well as the elements. There is also a surviving bunker structure ("very possibly the only one of its kind now left in Hong Kong")[121] which currently cannot be safely visited due to lack of lighting and accumulated debris. The educational potential of the site is underutilised due to the poor quality of the interpretive panels and lack of basic visitor facilities. Mount Davis should be brought under unified management as a heritage park.

The unresolved question is which government department should be responsible. In theory, Lung Fu Shan Country Park could be extended to cover Mount Davis—it lies adjacent to Mount Davis, separated by Pok Fu Lam Road, and covers the Pinewood Battery, a similar defensive structure (built 1905) about 1.5 km away. The AFCD was allocated HKD500 million in the 2021-21 Budget to, among other recreational projects, create "open museums" for wartime relics by enhancing interpretive panels and improving educational facilities.[122] Placing Mount Davis under the AFCD may also facilitate much-needed trail improvements such as the creation of a proper link to Kennedy Town and the reestablishment of paths leading to other historic points of interest such as the 1903 City of Victoria Boundary Stone, which was rediscovered in 2021.[123] However, its incorporation into Lung Fu Shan Country Park is unlikely because its landscape quality is probably not high enough under the AFCD's own metrics.[124]

The second option is to turn Mount Davis into a museum park under the LCSD. Its Cultural Services Branch manages some historic sites such the Museum of Coastal Defence and the Sheung Yiu Folk Museum. Extra care would have to be taken to avoid destroying the hill's semi-wild character and turning it into an over-manicured urban park. If this option is chosen, the Antiquities and Monuments Office should be closely involved and the LCSD should engage with researchers and historic societies to ensure the historical context is respected and any introduced uses are complementary. The design tender should be based primarily on design quality rather than on cost.

A third option would be to place it directly under the management of the Antiquities and Monuments Office which is housed under the Development Bureau. The Antiquities and Monuments Office already manages several historic sites directly and would be able to provide docent services. However, the Antiquities and Monuments Office would most likely only manage a smaller area covering just the historic military structures while the rest of the hill remains under ad-hoc management by the HAD and other departments. While this would preclude trail improvements, placing a site directly under the Bureau allows for more flexibility from departmental rules and constraints. For example, parts of the Hong Kong Island waterfront are directly overseen by the Development Bureau through the Harbour Office enabling more innovative spatial management and programming approaches.

A fourth option, private or nonprofit management, is unlikely to be feasible due to site constraints and low commercial viability.

Besides Mount Davis, Woh Chai Shan may need more comprehensive management in the future depending on the ex-reservoir's eventual revitalisation or adaptive re-use scheme. The WSD currently arranges guided tours to view the ex-reservoir but it has not yet decided on long-term plans.[125] Future uses may require the site to be handed over to another department or bureau and would have implications for the surrounding slopes. For example, if the government decides that emergency vehicle access must be provided, major site formation works will be required in order to build a road. There is potential for further conflicts between backyard trail users and historic revitalisation. The introduction of comprehensive management requires careful public engagement to ensure that community voices are included in the plans.

More broadly speaking, the construction of intensive recreational or eco-tourism facilities in other green belt areas would require comprehensive management bodies and possibly private investment. For example, the government is proposing to develop eco-tourism facilities in South Lantau such as a water sports centre, an adventure park and animal farm which would be located in Green Belts and Coastal Protection Areas near Pui O, Mui Wo and Shui Hau Village.[126] However, the Civil Engineering and Development Department's preliminary assessments found that of the three, only the adventure park would be financially viable as a standalone facility, making them unattractive to private investors. If constructed, they would need to be funded and run by the government on a long-term basis. Additionally, their proximity to ecologically valuable habitat would mean that the managing body needs to have a knowledge and awareness of conservation in order to ensure that activities are conducted responsibly to avoid overloading the carrying capacity. This unanswered question is what partly led to the abandonment of similar plans for urban fringe parks proposed in the 1990s.

While solutions might be found for cases such as Mount Davis on an individual basis, in the longer term there may be a need for the Culture, Sports and Tourism Bureau to create a new agency with hybrid recreation and conservation functions to manage these sorts of urban fringe spaces where eco- or heritage tourism activities are combined with environmental management.

9. Conclusion

Backyard trails are a valuable type of green space in Hong Kong. They provide urban residents with access to nature, a function that is especially important in densely built-up urban environments with a shortage of public open space. The eleven trails included in this study potentially serve a combined 1.5 million people who are able to access a trailhead within 15 minutes' walking distance of their homes.

Some backyard trails not only provide spaces for passive recreation but foster a sense of community. They have attracted communities of mostly elderly neighbourhood residents who engage in informal placemaking by modifying the space to meet their needs, from social gathering to religious worship. These frequent visitors develop a sense of ownership and have at times mobilised to protect these spaces, such as when morning walkers sounded the alarm over the demolition of the historic reservoir on Woh Chai Shan. Backyard trails therefore contribute towards the physical health, mental well-being and social lives of residents and play a role in active aging. This will become increasingly important as the proportion of Hong Kong residents over the age of 65 is projected to grow from 20% in 2021[127] to over 30% in 2036.[128]

These informal activities have thrived in a space of official neglect as these peripheral green spaces are mostly unallocated government land which is not managed comprehensively. Most of these spaces are zoned as Green Belt, an ambiguous designation that serves multiple planning purposes—part conservation buffer, part land bank—and receives only incidental consideration in conservation or recreation policy. However, while this administrative grey zone has allowed users a degree of freedom and flexibility not found in managed parks, their improvised constructions can be environmentally damaging or unsafe. Since enforcement against illegal occupation of government land is complaint-driven, it does not necessarily focus on the most harmful activities such as stair-building but often targets more easily removed objects such as temporary shelters. While illegal construction should not be encouraged, there is a case for tolerating structures which users are actively maintaining and which do not pose a significant safety or environmental threat.

Interventions by District Councils and the HAD are generally reactive. Facilities that are installed are not always the most well-designed or appropriate. Over-concretisation of paths is an ongoing problem driven by demand from some stakeholders and expedience in contracting. While popular trails have been excessively paved, other connections which could potentially serve significant urban populations have fallen into disrepair or only exist as somewhat unsafe informal trails. However, given the HAD's tendency to default to concretisation, it is not recommended that these trails be improved in the short term. Environmental groups should continue engaging with HAD to encourage them to adopt more environmentally friendly methods while continuing to build awareness and capacity. In the medium term, HAD should move towards a community partnership model to collaborate with nonprofits and morning walkers' groups so that volunteers can participate in maintaining and monitoring backyard trails. Nonprofits and community groups can apply for various government grants and recruit engineering and architecture firms to support trail adoption. These initiatives will require cooperation with the Lands Department in order to authorise or legitimise trail repair works and some DIY recreational facilities on government land.

Trail amenities such as seating and rain shelters could also be better designed and positioned to meet trail users' needs. Some trails would also benefit from the provision of toilets at more popularly used trailheads. Directional signage would be more helpful if orientation panels were placed at trailheads and if fingerposts included information about distances to destinations. Duckling Hill provides a good example of how residents can mobilise, bring in design professionals to conduct charettes, and engage productively with District Councils and District Offices to improve hillside facilities. Open public engagement with multiple stakeholders is needed across all districts to ensure appropriate and fiscally responsible investment in trail facilities.

Regarding pedestrian connectivity near trailheads, there were relatively few serious problems since most trailheads were located in or near residential neighbourhoods. However, there were a few trailheads that were placed on collector or arterial roads with infrequent pedestrian crossings, which may lead to walkers attempting to cross in an unsafe manner. In two locations: Jat's Incline in Kwun Tong District and Mount Butler Road in Eastern District, hikers are required to mix with vehicular traffic, which is unsafe especially on Jat's Incline, a one-way downhill road where drivers are prone to speed.

Additionally, few of the trailheads were marked or indicated as local attractions in neighbourhood wayfinding signage. Some smaller hills do not even have officially recognised names. For example, Woh Chai Shan (alternatively known as Bishop Hill) and Garden Hill are unnamed on the Lands Department's GeoInfo Map. Hence, many smaller trails are known mainly to local residents. Overall, most of the neighbourhood accessibility issues could be addressed at the district level by District Offices working together with the Transport Department (for pedestrian access issues) and the Tourism Commission, MTRC, and in some cases shopping mall owners (to improve visitor signage).

For sites of exceptional historical significance such as Mount Davis and to a lesser extent Woh Chai Shan, there is a need for more comprehensive and intensive management. Under existing departmental structures, this would require expanding country parks, placing them under the LCSD's jurisdiction, having them directly managed by the Antiquities and Monuments Office, or putting them under private management. Each option has different limitations and may not be feasible in every case. In the longer term, the government may need to consider opening a new unit under the Culture, Sports and Tourism Bureau to manage eco-tourism and outdoor heritage sites with both recreation and conservation functions.

9.1 | SUMMARY OF RECOMMENDATIONS

Below, policy recommendations are briefly summarised and divided into short-, medium- and long-term measures.

	Recommendation	Implementing bodies (**Lead**, Supporting)
Short-term		
1.	Wayfinding: Recognise and promote backyard trails at the district level by improving wayfinding signage in neighbourhoods and marking trails on orientation panels and fingerposts placed by the Tourism Commission and MTRC .	**District Councils**, Tourism Commission, MTRC
2.	Improve wayfinding signage on trails by including distance information on fingerposts and placing orientation panels at well-used trailheads.	HAD
3.	Pedestrian-vehicle conflict: Provide safe pedestrian crossing facilities in the vicinity of well-used trailheads.	Transport Department
4.	Implement traffic calming measures on hillside roads where hikers mix with vehicular traffic, especially Jat's Incline.	Transport Department
4.	Trail Facilities: When trail facilities are due for revitalisation or replacement, proactively engage with residents and trail users on design and siting decisions. For more effective feedback, bring in design professionals to lead collaborative design workshops.	HAD
6.	Sustainable trails: Adopt less environmentally-damaging intermediate trail construction methods, such as using wood composites instead of concrete.	HAD
7.	Begin small-scale eco-trail construction pilot projects in selected locations.	**Environmental groups, HAD,** Lands Department
8.	Reach out to morning walker communities to raise awareness about soil erosion and encourage people to join eco-trail workshops. In the meantime, the number of eco-trail workshops needs to be scaled up (see no. 9 below).	Environmental groups
Medium-term		
9.	Sustainable trails: Build capacity in eco-trail construction methods through expanded training programmes, more coordinated education, and awareness building.	**AFCD, environmental groups,** retired AFCD staff
10.	Community partnership: Establish an "adopt-a-trail programme" inviting nonprofits and community groups to maintain and monitor backyard trails.	**Home and Youth Affairs Bureau, Development Bureau,** HAD, Lands Department, nonprofits, community groups
Long-Term		
11.	Comprehensive management: Establish a cultural heritage park at Mount Davis to better preserve the wartime ruins and educate the public.	AFCD, LCSD or Antiquitites and Monuments Office
12.	Create a government unit to sustainably manage eco-tourism facilities and heritage sites located outside of country parks.	Culture, Sports and Tourism Bureau

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