

**Detailed Justifications for Proposed Public Utility Installation
(Solar Photovoltaic System) on Lot 3018 S.A in D.D. 104, Mai Po, Yuen Long**

The Application Site and Zoning

1. The Application Site (the Site) mainly includes two ponds located between Palm Springs and Royal Palms. It falls within an area mainly zoned “Conservation Area” (“CA”) (about 98%) with a minor portion (about 2%) zoned “Residential (Group C)” (“R(C)”) on the Mai Po and Fairview Park Outline Zoning Plan (OZP) No. S/YL-MP/8. The proposed solar photovoltaic (PV) system is regarded as a ‘public utility installation’. According to the Notes of the “CA” and “R(C)” zones, ‘Public Utility Installation’ is under Column 2 use which requires planning permission from the Town Planning Board (the Board).

Wetland Regulations and The Site

2. The Site is located within the Wetland Buffer Area (WBA). The ponds form part of the wetland ecosystem in the Deep Bay Area. The site is over 100 metres from the Wetland Conservation Area (WCA). Regulatory context is established under the Town Planning Ordinance (Cap. 131) and the specific planning guidelines for wetland protection, particularly TPB Guideline No. 12C on Wetland Buffer Areas.
3. Before development, the Site with two ponds was idle and inactive, colonized by weeds plants (**Plans 3e and 4a**). In late 2021, the embankments were reinforced and the two ponds were filled with water to a depth of about 2m. It mainly includes two ponds, each to be installed with a floating PV system, which has started electricity generation (**Plans 2, 3g, 4b and 4c**). Besides, a small pond with ancillary filter ponds is proposed at the northwestern portion of the Site. No vehicular access is available. Footway access is via the footpath of Palm Springs Boulevard, then walk down a few steps to a small and flimsy footpath, passing through Lots 3024 and 3023, to reach the western part of the Site (**Plan 2**).
4. The proposed PV system had once been operated in mid-2023 but was subsequently discontinued due to PlanD’s enforcement action under case no. CEP/E/YL-MP/252. The Site is currently vacant¹ (**Plan 4g**).

¹ The floating platforms remain on site are directly related and ancillary to the permitted 'Agriculture Use (Fish Pond Culture only)' because they facilitate operator's access for management of the fish ponds.

Ownership and Compliance

5. The subject lot is held under Block Government Lease (BGL) of DD104 and is described as an agricultural lot demised for padi use in the BGL. The applicant is the current landowner. Ownership proof obtained from the Land Registry has been submitted.

The Proposal

6. The applicant, owner of the Site, seeks planning permission to use the Site for proposed public utility installation (solar photovoltaic system). The major development parameters of the current application are as follows:

Applied Use	Public Utility Installation (solar photovoltaic system)
Site Area	About 3,220.0m ²
Floor Area	Meter Room– 0.56 m ²
Total GFA	0.56 m ²
No., Size and Height of Installation/Structure	3 - Phase 1 – 36.59m x 6.87m including 56 solar panels (size 2.094m x 1.038m) with tilt angle of 1° facing south (total generation capacity 20.00 kw) (Drawing 1) - Phase 2 – 41.37m x 10.13m including 96 solar panels (size 2.094m x 1.038m) with tilt angle of 1° facing south (total generation capacity 30.00 kw) (Drawing 2) - Meter Room – 2.05m, 1 storey
No. of Parking Space	---

7. The PV systems at the Site would comprise a total of 152 PV panels (**Plans 4b and 4c**), with an installed generation capacity of 50 kilowatts. The PV panels are non-glare plates installed on two floating platforms fabricated with hazardous free materials, adopting a floating installation approach to minimize intrusive construction works, avoid pond dredging or filling, preserve existing water capacity and pond function, and maintain compatibility with the underlying aquaculture use. The design further incorporates non-reflective panel surfaces to reduce visual impacts, a floating platform system that avoids permanent modification of the water body, and footpath access only via Palm Springs Boulevard without any vehicular access.

Site History and Current Conditions

8. The subject lot is held under Block Government Lease (BGL) of DD104 and is described as an agricultural lot demised as “padi” use in the BGL. In the 1960s, the Site was a paddy field (**Plan 3a**). Fishpond aquaculture in Hong Kong flourished in the mid-1980s and experienced a gradual decline since then. The applicant purchased the Site in 1988 and the two fishponds were left idle and became inactive with no aquaculture activity. In 1990, the two ponds still contained plenty of water (**Plan 3b**).
9. However, from 2000 onwards, fish pond aquaculture in Hong Kong experienced a gradual decline, and the Site’s ponds were left idle and became inactive with no aquaculture activity, leading to progressive reduction in water depth, overgrowth of invasive weedy plants including *Bidens alba* and *Brachiaria mutica* from 2000 (**Plans 3c and 3d**), absence of pond drainage and maintenance practices, and consequent degradation of pond ecology and water quality conditions.
10. By 2014–2015, before commencement of the current proposal, the Site had become largely colonized by weedy plants (**Plan 4a**), with environmental surveys revealing algae growth at the western side of the pond in 2015 (**Plan 3e**) together with lacking of management in the ponds and overgrowth of weedy plants indicating a degrading habitat, due to blockage of sunlight reaching the water as well as decomposition of dead plants which consumes oxygen in the waters, all of which indicating ecological imbalance caused by excessive organic material from decomposing dead plants and leaves, reduced water quality and loss of dissolved oxygen due to decomposition and sunlight blockage, and progressive desiccation of the water body. In 2021, the ponds were nearly dried out. The bottom soil was exposed and displayed a reddish-brown color, indicating an oxidized state characteristic of dried pond sediments (**Plan 3f**). Without intervention, the ponds would undergo natural succession toward a terrestrial system and be permanently lost.
11. In 2021, the ponds were nearly dried out. The bottom soil was exposed and revealed a reddish-brown color, which gave the indication that it was in an oxidized state (**Plan 3f**). To facilitate the proposed use of the solar photovoltaic system, management on these ponds has been conducted since 2023. The overgrown weeds in the ponds were removed. Both ponds were refilled with water with regular maintenance water-depth monitoring and stocked with fish.

12. The ponds at the Site are undergoing the medium stage of pond succession - a natural ecological process in which abandoned fishponds gradually transition from aquatic to terrestrial habitats through vegetation colonization and water loss. In the long term, without active management, these water bodies would eventually dry out completely and be converted to terrestrial habitats, resulting in permanent loss of wetland function and loss of habitat for wetland-dependent species.
13. This succession process is precisely what the planning intention of the Conservation Area (CA) zone seeks to prevent. According to paragraph 9.10.2 of the Explanatory Statement of the OZP, existing fishpond culture should be maintained and its continuous operation is encouraged.
14. To facilitate the proposed use of the solar photovoltaic system and to reverse pond degradation, management of these ponds has been conducted since 2023, including removal of overgrown weeds, refilling of both ponds with water to a depth of approximately 2 m to restore aquatic habitat, establishment of regular maintenance and water-depth monitoring, stocking of the ponds with fish to restore aquaculture function. In late 2021, the embankments were reinforced to support subsequent infrastructure works (**Plans 3g, 4b and 4c**).
15. The Site currently comprises two main water bodies—two larger ponds with proposed floating PV systems under the current application and one small fish pond with associated filter ponds for pond management—and has no vehicular access, with footway access only via the footpath of Palm Springs Boulevard, then down a few steps to a small pathway passing through Lots 3024 and 3023 to reach the western part of the Site (**Plan 2**).

No Adverse Impacts to the Application Site and Surroundings

Visual Landscape

16. The Application involves the installation of 2 floating solar photovoltaic system. The installation works do not require any dredging/pond filling, this floating approach shall minimize the impacts and disturbances to the existing visual landscape, as the existing water capacity within the ponds will be maintained.

Vegetation and Tree Protection

17. No vegetation or tree felling will be carried out at the Application Site during the installation phase. The existing terrestrial vegetation and tree coverage surrounding the ponds will be preserved. As such, adverse visual and landscape impacts to the surrounding areas are not anticipated.

Operational Phase Maintenance and Management

18. Regular inspections will identify and manually remove invasive plant species to protect native vegetation, monthly grass cutting and maintenance will be conducted to prevent overgrowth around the solar photovoltaic system and ensure its optimal operation while avoiding impact to the visual landscape, maintenance work for pond bunds will be undertaken approximately every three years, the visual and landscape amenity of the Site will be enhanced through adequate landscape proposals, and the floating PV systems will be shielded from the low-density residential development of Palm Springs by buffer planting to ensure no adverse visual impact is generated.

Accessibility and Traffic Impact

19. The Site is accessible via footpaths only. No vehicular access is available and no parking space would be provided. The Site can only be accessed on foot via Palm Springs Boulevard and the connecting pathways through adjacent lots. Therefore, adverse traffic impact is not anticipated. The proposed development will not generate vehicle movements or traffic demand.

Ecology and Environment

20. Information on the ecological baseline conditions of the Application Site was collected through a comprehensive 12-month literature review and field surveys from February 2024 to January 2025, covering both dry and wet seasons. This information was integrated into the Ecological Impact Assessment (EcoIA) to support the technical aspect of the Application.
21. The proposed works within the Site do not involve significant intrusive construction works such as dredging or pond filling; the floating platform installation approach minimizes disturbance to underlying pond sediments and water quality, benthic habitats and aquatic fauna, and bankside vegetation and riparian habitat, with only a small portion of the pond's surface occupied by the floating platform facilities. The proposed works, combined with pond restoration from the dried condition, provide positive potential impacts to wildlife by restoring open water habitat for

waterbirds, restoring foraging habitat for migratory bird species, and supporting invertebrate and fish populations, with ecological impacts during the operational phase being minor and no specific ecological mitigation measures considered necessary.

22. The pond restoration from the dried-out condition provides positive environmental benefits including restoration of water quality through management and monitoring, prevention of pond succession toward terrestrial habitat, and maintenance of wetland ecosystem function. Tracking back to 2014–2015, the Site was largely abandoned and covered with weedy herbaceous plants; however, management has been conducted since 2023 to facilitate the proposed solar photovoltaic system, including removal of overgrown weeds and refilling of both ponds with water accompanied by regular maintenance, water-depth monitoring, and fish stocking. Through effective management and monitoring of water quality, the environment is enhanced to maintain water quality and provide potential habitats for wildlife, with the detailed management Protocol specified in **Appendix J** of the EcoIA.

Justifications and Conclusions

23. The justifications are summarized as follows:

- a) According to Hong Kong’s Climate Action Plan 2050 promulgated in October 2021, the Government will strive to increase the share of Renewable Energy (RE) in the fuel mix for electricity generation to 10% by 2035, and further increase it to 15% through facilitating local RE projects, regional co-operation and joint ventures, etc. The proposed development is in line with the Government’s objective.
- b) Application for taking part in CLP’s RE Feed-in-Tariff Scheme has been approved by CLP (**Appendix Ia**), which fosters the community initiative to promote RE in Hong Kong. The proposed PV system at the Site, with an installed generation capacity of 50 kilowatts, is anticipated to generate 50,000 kilowatt-hours of electricity annually, equivalent to reducing 34 tonnes of carbon dioxide, or the carbon removal by over 1,400 trees. It can be regarded as a sustainable development in line with public interest.

- c) The design, installation, operation and maintenance of the installation would be in compliance with the requirements set out under the Technical Guidelines on Grid Connection of RE Power Systems and the Guidance Notes for Solar Photovoltaic System Installation, both issued by EMSD. The PV system has been accepted and registered with EMSD (see receipts in **Appendices Ib and Ic**).

- d) An Ecological Impact Assessment (EcoIA) has been conducted, which reveals that no significant ecological impact would result from the proposed development, demonstrating that no species of high conservation importance would experience adverse impacts, the pond restoration provides net positive ecological benefits, the floating installation design minimizes disturbance to underlying habitats, and proposed management measures detailed in Appendix J ensure ongoing environmental quality.

- e) The planning intention of “CA” zone is to conserve the ecological value of wetland and fishponds which form an integral part of the wetland ecosystem in the Deep Bay Area. **The proposed development, when combined with proper pond management and monitoring, would restore the water body from its current degraded, nearly-dried state, halt the natural succession process that would otherwise result in permanent loss of the pond as a wetland habitat, reduce algae growth in the ponds through improved water management, reduce carbon emissions through renewable energy generation, and rejuvenate the ponds which would otherwise be permanently lost to terrestrial succession.** Hence, the proposed development would facilitate the conservation of the ecological integrity of the wetland ecosystem, directly supporting the planning intention of the CA zone as stated in paragraph 9.10.2 of the Explanatory Statement of the OZP, which encourages the maintenance and continuous operation of existing fishpond culture.

- f) The planning application would satisfy the requirements listed in TPB PG-No. 12C i.e. no-net-loss in the wetland area or function at any scale. The ponds within the Application Site were under poor condition prior to formulation of the present proposal, the restoration of water and fish species improve the habitat quality of the ponds which provide potential foraging habitat for birds and wildlife. The net effect is a gain in wetland area and ecological function compared to the pre-restoration degraded state.

- g) In recent years, the Government has developed floating PV systems at various water bodies such as Shek Pik Reservoir, Plover Cove Reservoir, Tai Lam Chung Reservoir, San Tin Polder and Ha Mei San Tsuen Polder. In particular, the San Tin Polder also located within the Wetland Buffer Area (WBA) helps demonstrate that PV system within WBA should be acceptable (**Plans 4e and 4f**). These government projects provide clear precedent for the proposed development within a similar planning context.
- h) The proposed development is not incompatible with the surrounding environment, which comprises adjacent fishponds (some active, some abandoned), marsh and wetland habitats, low-density residential development of Palm Springs, and agricultural land uses; the floating PV system, with its minimal disturbance design and enhanced landscape management, sits comfortably within this mixed landscape context.

24. To conclude, the proposed PV system is not incompatible with adjoining land uses, being designed to coexist with aquaculture use and residential development, with no adverse ecological, traffic, environmental, visual and landscape impacts are envisaged. The proposal aligns with Government policy objectives by directly supporting Hong Kong's Climate Action Plan 2050 and renewable energy targets, facilitates pond restoration and wetland conservation by reversing natural succession that would otherwise result in permanent loss of this wetland habitat, complies with all relevant planning guidelines including TPB Guideline No. 12C (no-net-loss in wetland) and Technical Guidelines for RE installation (EMSD), and has precedent in similar developments such as the San Tin Polder and other government floating PV systems in WBA demonstrating acceptability.

25. In view of the above, it is respectfully submitted that the proposed solar photovoltaic system would constitute a sustainable development that promotes renewable energy in Hong Kong in line with Government objectives, facilitates restoration of a degraded pond environment, conserves the ecological integrity of the wetland ecosystem, maintains compatibility with surrounding land uses, and generates positive environmental and carbon reduction benefits. Favorable consideration is respectfully requested for this application.