

Nursery TOP/CSC Guidebook

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Safe & Green Nurseries

- Together with the Nursery industry, the Government thrives to promote safe, green and sustainable farming in Singapore
- However, Nursery activities can pose safety and environmental hazards such as fire breakouts, water pollution and land contamination. Nursery Owners need to comply with regulatory requirements to safeguard operational safety and ensure the environmental sustainability of their businesses.
- This Guidebook serves as a quick reference for Nursery Owners in designing and implementing Nursery developments to achieve TOP/CSC compliance. This Guidebook does not replace any publication or advice from the regulatory Authorities.

Do you know?

Training courses will be launched to guide Nursery Owners about planning, budgeting and implementation of Nursery Developments. Enquire NParks/CUGE for more details



What to Expect - Your Regulatory Partners



What to Expect - Qualified Person (Architect & Professional Engineer)

Nursery development plans must be submitted by **Qualified Persons (QPs)** to regulatory authorities for approvals

QP is a professional who is:

- an **Architect** registered with the Board of Architects (BOA) or a **Professional Engineer (PE)** registered with the Professional Engineers Board (PEB)
- Has a valid practising certificate issued by BOA or PEB

Directories of Architects and PEs can be found in:-

[Register of Architects \(boa.gov.sg\)](http://boa.gov.sg)

[PEB - Directory of PE](http://peb.gov.sg)

To achieve TOP/CSC compliance, certain professionals **must** be appointed for the design and submissions of development works to the regulatory authorities. Typical design scope and services of respective professionals are shown on the right.

Nursery Owners may also engage a **Project Manager** with relevant experience to monitor submissions and progress. The QP may also undertake such Project Manager role.

The appointments of QP, PE and any professionals are at the sole discretion of Nursery Owners.

QP/Professional	Design Scope/Services
Architect	Development layout, building layout, drainage layout
Structural PE (Note: PE is only allowed to submit building plans for certain buildings/structures listed in Parts I & II of Third Schedule in Building Control Regulations 2003 - Singapore Statutes Online (agc.gov.sg))	Development layout, building layout, drainage layout Structures of building, greenhouse, shed Drains, detention tank, rainwater harvesting system Retaining walls, slope formation, entrance culvert Sewer connection
Mechanical PE	Water supply, sanitary connection Hose reel system, fire hydrant Pump systems for detention tanks, rainwater harvesting system
Electrical PE	Lightning Protection System
Registered Inspectors (Architect & Mechanical PE)	Inspection of fire safety works for TOP/CSC compliance

What to Expect – Permitted Land Use

- To ensure that the use of the land is maintained for nursery / agriculture use, only certain types and quantum (area) of ancillary and non-agriculture uses are allowed. Developers are to refer to the Tenancy Agreement/Contract for specific quantum controls, such as minimum percentage of Production Area to be used for planting.

Area Classification	Examples
Production Area	Soil mixing shed, seed germinating laboratory, treatment pond, including nursery planting areas
Nursery Planting Area	Greenhouses, netted planting areas, open-to-sky nurseries
Ancillary Area	Ancillary office, workers' quarter, retail/F&B, visitor centre, toilets, vehicular parking

- Covered greenhouse / farm spaces shall be computed as GFA. Netting over plants are not considered covered areas and need not be computed as GFA.
- Owner's dwellings or residential houses are not allowed in Nurseries.
- While LTA vehicular parking requirements are exempted for Nursery developments, adequate parking spaces should be allocated within the Nursery for operational purposes and visitors. Heavy vehicle and car parking lots are intensification of land use, subject to additional rent over and above monthly rent

What to Expect – Permitted Land Use

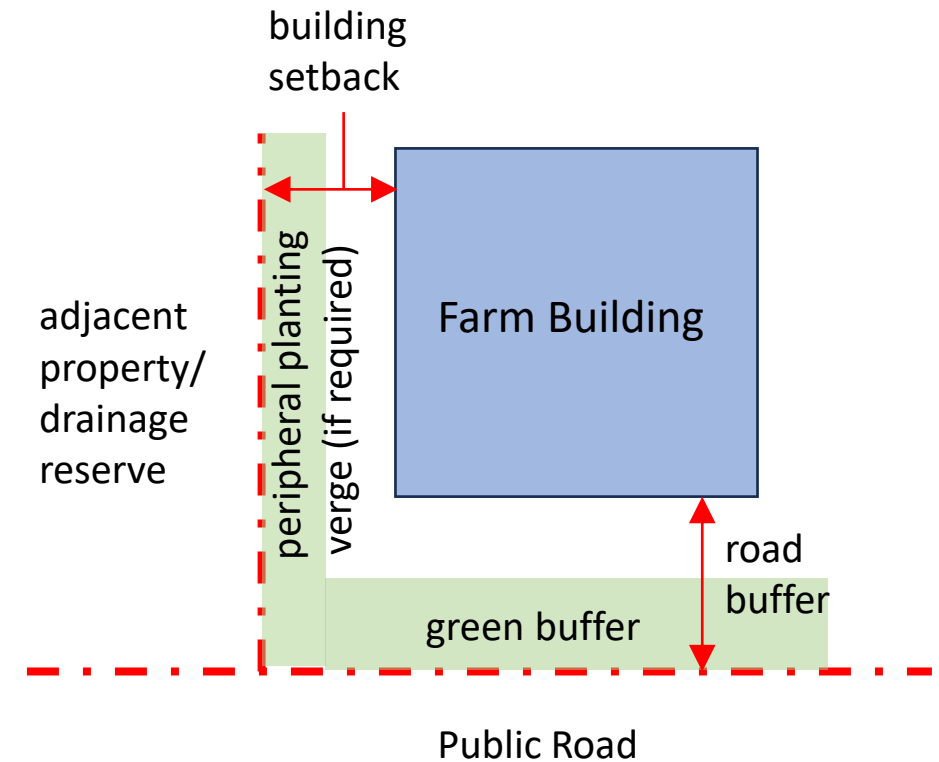
Buffers & Building Setbacks

All Nursery developments shall be sufficiently set back from public roads and common boundaries according to road buffer and setback requirements.

The required road buffer depends on the category of public road that the development fronts – this information can be found in LTA's Road Interpretation Plan (RIP). A green buffer shall also be set aside in the road buffer depending on the width of the road buffer.

Building setback and peripheral planting verge requirement may also apply along the common boundaries, depend on the nature of the adjacent property.

Consult your QP for the permitted land use and actual buffer/setback requirements for your development.



Useful links

[URA's Development Control Handbook \(Agriculture\)](#)
[NParks' Guidelines on Greenery Provision and Tree Conservation for Developments](#)

Enquiries



<https://eservice.ura.gov.sg/feedbackWeb/>

What to Expect – Building Safety

The objectives of ensuring building safety in developments are:-

- protect people from injury caused by structural failure;
- protect people from loss of amenity caused by structural failure;
- protect other property from physical damage caused by structural failure
- protect people from injuries caused by lightning strikes
- prevent property damage caused by lightning strikes

Buildings/structures have to be designed according to acceptable standards to withstand loadings arising from building usage, operations, slope/soil movement, wind etc. Lightning protection systems have to be designed and installed on buildings/structures to keep occupants and buildings safe from lightning strikes.

Appropriate **QP(s)** must be appointed to design and submit **Building Plans (BP)** and **Structural Plans (ST)** to BCA for approval before commencement of site works. For example, Building Plans for farm structures may be submitted by an Architect or a Structural PE, but plans for retaining walls must be submitted by a Structural PE.

Appropriate QPs also have to certify the work done and submit as-built records to BCA to obtain **TOP/CSC approvals**. For example, lightning protection systems must be certified by an Electrical PE

Thunderstorm damages farms in Lim Chu Kang, one worker injured

Source: The Straits Times



2 of 4 Collapsed structures are seen at a farm belonging to Chew's Group after a thunderstorm on March 30, 2018. ST PHOTO: ARIFFIN

Ng Huiwen and Zaihan Mohamed Yusof

UPDATED SEP 15, 2022, 04:23 PM

PUBLISHED MAR 30, 2018, 07:33 PM



SINGAPORE - At least two farms in Murai Farmway near the Lim Chu Kang cemetery were severely damaged in a thunderstorm on Friday afternoon (March 30).

A 38-year-old worker at a plant nursery was taken to hospital after suffering minor injuries.

What to Expect – Building Safety

Existing Buildings without TOP/CSC

Existing buildings without TOP/CSC may not have been properly designed nor built according to acceptable standards, this could compromise the safety and quality of buildings. To ensure safety of occupants and achieve TOP/CSC compliance, Nursery Owners must appoint appropriate QPs to check the building structure and submit BP & ST plans to BCA for approvals.

Site survey and testing of building materials will be required to ascertain the quantity and quality of building materials. Depending on the survey/test results, strengthening of existing structures may be required. In view of the uncertainty of the building's safety and incurring costs for certifying existing buildings without TOP/CSC, Nursery Owners are advised to ensure that their building plans are properly submitted to BCA and obtain TOP/CSC approval before occupying the buildings.

Exemptions

- Certain minor structures can be exempted from BCA submissions, refer to [Building Works that do not Require Plan Submission to BCA | Building and Construction Authority \(BCA\)](#)

Consult your QPs on the requirements of building/structural design

Useful Links

[Building Plan submission](#)
[Structural Plans and Permit Approvals | Building and Construction Authority \(BCA\)](#)

Enquiries

[Building & Construction Authority \(bca.gov.sg\)](https://www.bca.gov.sg)



What to Expect – Fire Safety Protection

Fire load from plastic materials such as growing trays/planters, PVC pipes, nettings/coverings can **pose significant fire risk** to Nurseries. Closely-packed nursery buildings/shade nettings can also increase the risk of fire spread. It is essential to provide appropriate fire safety measures to ensure nurseries/farms are safe for occupation and ready for fire-fighting operations.

Farm fire in Lim Chu Kang involving wood waste breaks out on Friday; takes more than 24 hours to put out

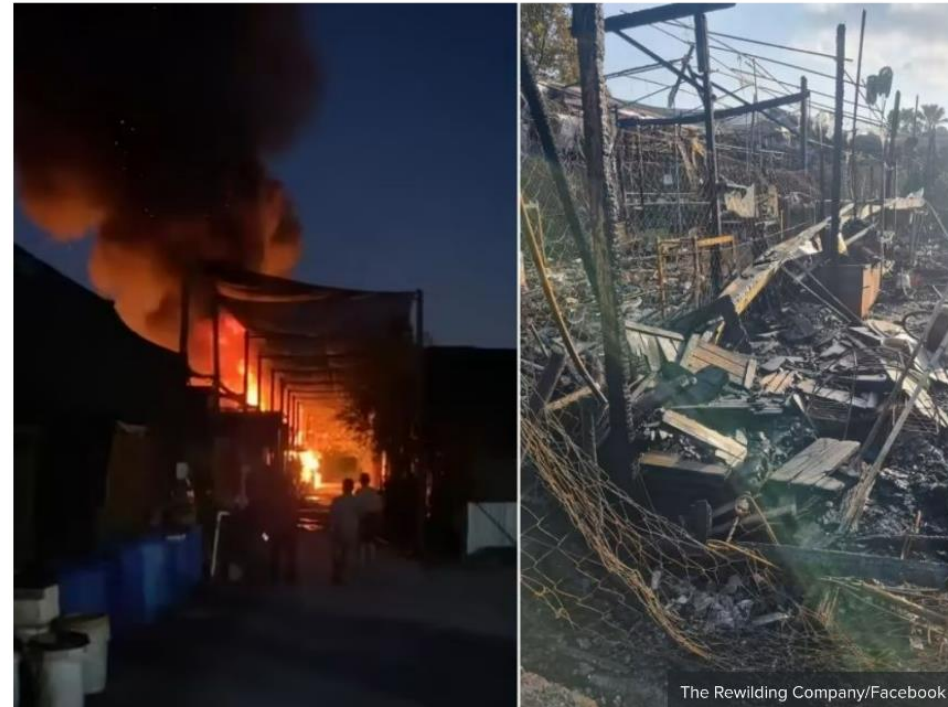
5 Jun 2018



Source: The Straits Times

The fire involved a large pile of wood waste, measuring approximately two football fields in area and 15m high. ST understands that the fire was located within the farm Malaysian Feedmills. PHOTO: WILLIAM HO

Fire wipes out part of Terrascapes plant nursery in Chua Chu Kang, caged birds die



The Rewilding Company/Facebook

BY JUSTIN ONG
@JustinOngTODAY
Published July 21, 2022
Updated July 22, 2022



Source: Today

Images of a fire that was raging at Terrascapes plant nursery (left) on July 20, 2022 and its aftermath (right).

What to Expect – Fire Safety Protection

Appointment of QP is essential in the fire safety design of your development. Unless specified in Fire Code clause 9.6.4 (Farm Buildings), Nursery developments have to comply with all chapters of Fire Code according to the respective Purpose Group, regardless of building size. Fire alarm system, fire hydrants, hose reel system etc. may be required according to Fire Code.

Open-to-sky nurseries and certain minor works (e.g. standalone toilets, containers) can be exempted from SCDF submissions/approvals, subject to conditions under [Fire Safety \(Exemption\) Order - Singapore Statutes Online \(agc.gov.sg\)](https://www.agc.gov.sg/legislation/statutes/Fire_Safety_(Exemption)_Order)

Fire safety provisions, such as portable fire extinguishers and hose reels, can be used by occupants for incipient firefighting. However, only attempt to fight a fire if you are capable of doing so without endangering yourself or others. In locations where a public fire hydrant conforming to the Fire Code is unavailable, private fire hydrants shall be installed.

Fire Safety Certificate (FSC) provides for the safety of the buildings' occupants. Nursery developers and their QPs are required to apply and obtain FSC before using or occupying the premises. To apply for FSC, appointment of Registered Inspectors (Architectural RI and M&E RI where applicable) is also required for the inspection of completed fire safety works. FSC is only issued after the full completion of all fire safety works duly inspected by RIs.

Consult your QP for the required firefighting provisions for your development

Useful Links

[Fire Code 2023 \(scdf.gov.sg\)](https://www.scdf.gov.sg)
www.scdf.gov.sg/fire-safety-services-listing/plans-submission-process/fire-safety-certificate-temporary-fire-permit
[General Information of P&FM Licence \(scdf.gov.sg\)](https://www.scdf.gov.sg)

Enquiries

1. Visit SCDF website at <https://www.scdf.gov.sg/e-service/fire-safety-and-building-professionals>
2. Select: Appointment → Fire Code
3. Login to the booking portal using your Singpass App
4. Choose the available timeslot and fill in your details



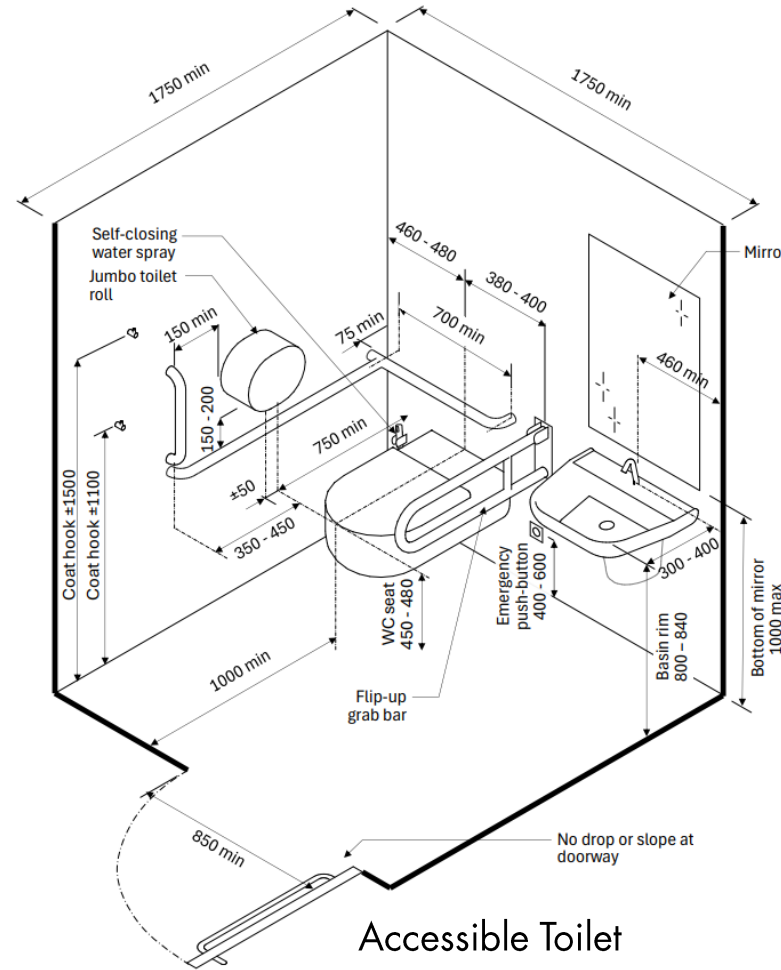
What to Expect – Accessibility

In Singapore built environment, good accessibility is essential to address the physical needs of as many people as possible, regardless of abilities and age. These will include older employees, those with injuries, pregnant staff and visitors with mobility issues.

Accessibility features such as grab bars, step-free access, wider paths, easy-to-read signages can reduce risks of incidents and **make your Nursery more welcoming.**

Depending on the types of building in Nursery development, accessible toilet, accessible parking lot and access ramps may be required in accordance with Code on Accessibility.

Consult your QP on the accessible requirements for your development



Accessible Parking Lot

Useful Links

[Accessibility & Universal Design](#) | [Building and Construction Authority \(BCA\)](#)

Enquiries

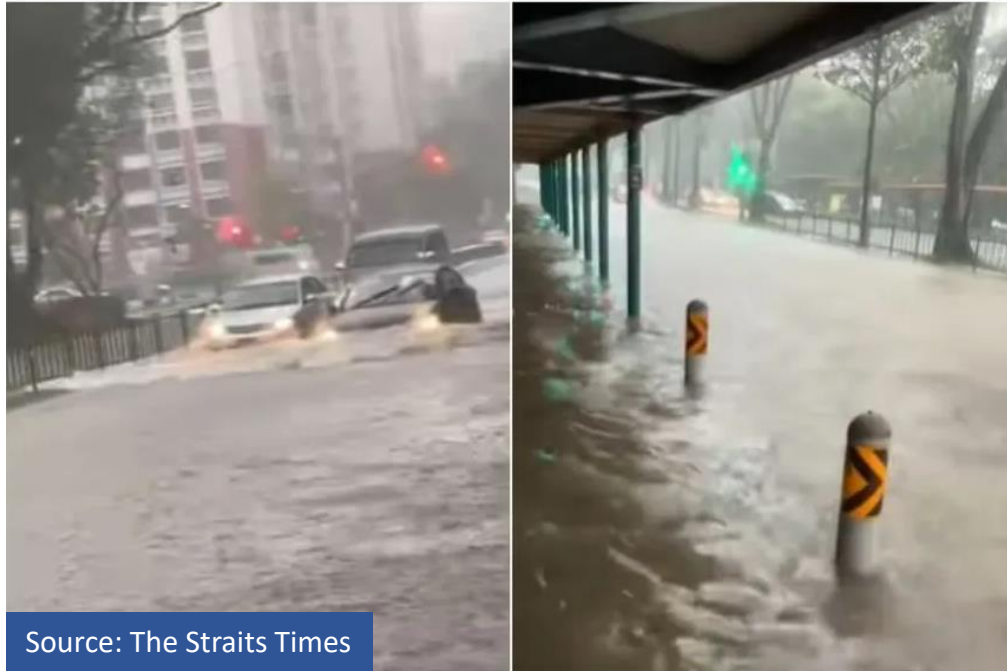
[Building & Construction Authority \(bca.gov.sg\)](#)

Building and Construction Authority 

What to Expect – Flood Protection

Climate change is causing more frequent and extreme rain events. **Stormwater management and building flood resilience is a shared responsibility**, developers and building owners have to play their part in preparation and mitigation for flash floods.

Heavy afternoon downpour causes flash floods in Jurong West



Source: The Straits Times

The water level in Boon Lay Avenue almost reached the height of the seats of a bus stop, with vehicles travelling slowly along that road. PHOTOS: SCREENGRAB FROM FACEBOOK VIDEO



Sherlyn Sim

UPDATED NOV 12, 2024, 12:53 PM
PUBLISHED NOV 28, 2023, 07:40 PM



Pasir Ris flood: 1 person taken to hospital, 5 others rescued from vehicles by SCDF



Source: The Straits Times

2 of 11 Car left stranded in flood waters at the junction of Pasir Ris Drive 12 and Tampines Avenue 10 on Aug 20, 2021. ST PHOTO: KEVIN LIM

Isabelle Liew

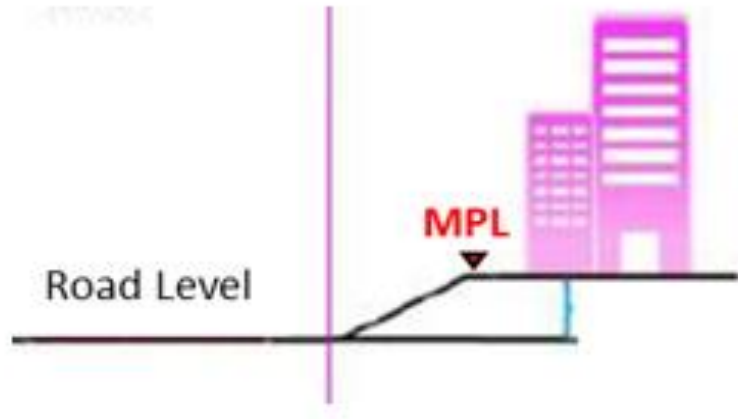
UPDATED AUG 21, 2021, 12:05 AM
PUBLISHED AUG 20, 2021, 09:07 AM



What to Expect – Flood Protection

Minimum Platform Level

- All developments must design to comply with the **minimum platform level (MPL) requirements** stipulated in PUB's Code of Practice on Surface Water Drainage (COPSWD).
- **MPL** is critical for a development as it is a **structural protection against flood risk** from external factors (e.g. intense rainfall, high tides etc).
- For Nursery developments, MPL shall not be lower than:
 - a. 4.0m above Singapore Height Datum for developments along the southern coast; and 4.5m above Singapore Height Datum for developments along the northern coast; or
 - b. 600 mm above the adjacent road/ground level; or
 - c. Any other level as may be specified by PUB; whichever is the highest.
- Flood protection measures will be required if MPL cannot be achieved due to technical constraints.

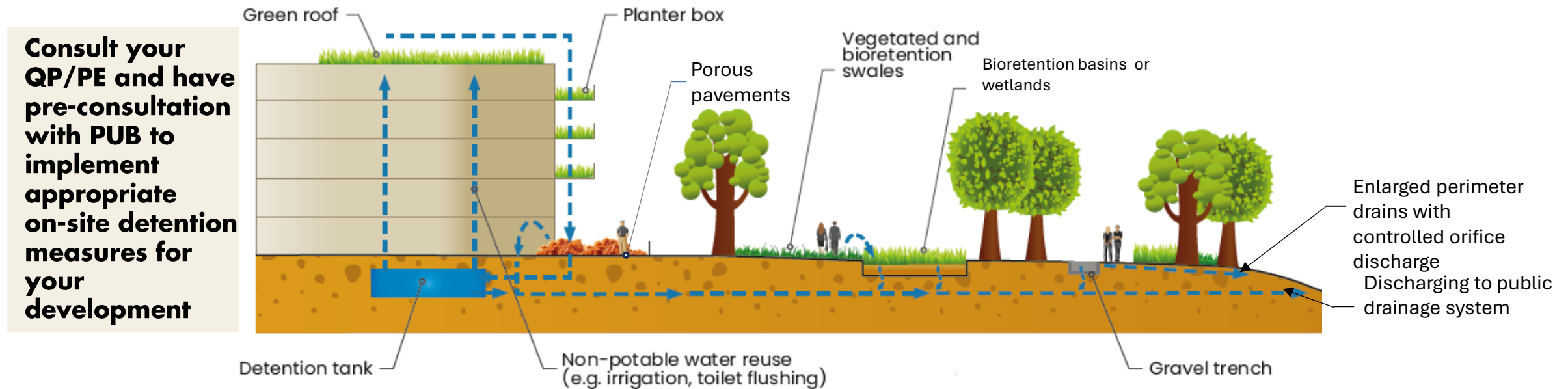


What to Expect – Flood Protection

On-site Detention Measures

- **New and redevelopments (0.2 hectares or larger)** are required to implement **on-site detention measures** to slow down stormwater runoff entering the public drainage system. **Professional Engineer** has to be engaged to design a stormwater detention system to reduce the peak stormwater runoff.
- The reduction of peak runoff can be achieved through the implementation of **ABC Waters design features** and/or **structural detention and retention features**, such as: (i) Detention tanks/drains; (ii) Retention/sedimentation ponds; (iii) Wetlands; (iv) Bioretention swales; (v) Bioretention basins or rain gardens; (vi) Porous pavements, etc.
- Maintenance method and cost shall be considered in the design of on-site detention measures.
- A combined detention and rainwater harvesting system can be considered as long as the proposed system comply with all PUB requirements.

The following schematic shows the various options for on-site detention measures:



Useful Links

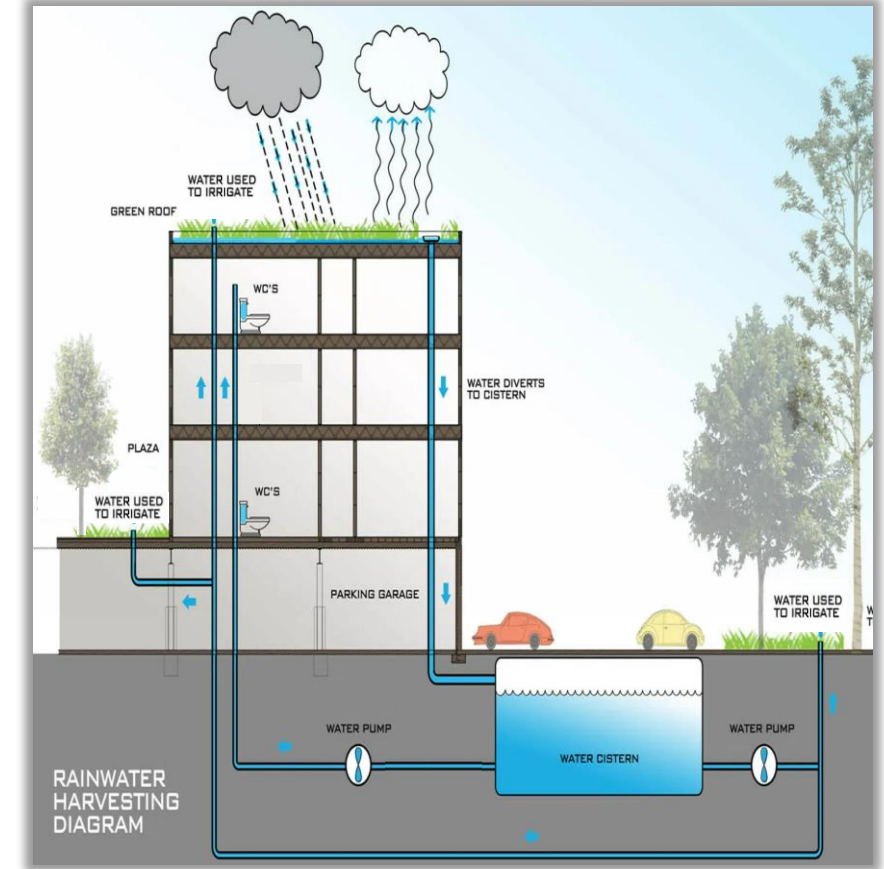
[PUB Guides and Handbooks](#)

Enquiries

[PUB Help & Feedback](#)

What to Expect – Rainwater Collection/Harvesting System (Optional)

- Rainwater collection/harvesting within Nursery development is not mandatory.
- The construction of rainwater harvesting systems (RWHS) is regulated under Section 31 of the Sewerage and Drainage Act 1999, which prohibits the construction of any works for taking or intercepting water from any place or sea within the territorial limits of Singapore without PUB's approval.
- If RWHS is needed, Nursery Developer shall appoint **QP/PE(s)** to carry out a RWHS Application to seek PUB's Approval and supervise the installation of the RWHS. The Guidance Notes for the Application of RWHS is found in this link: [Guides and Handbooks | PUB, Singapore's National Water Agency](#). PUB's Approval for RWHS is a pre-requisite for PUB's TOP Drainage Clearance.
- Harvested rainwater is strictly for non-potable use only, such as general washing/irrigation/toilet flushing. To prevent the unwitting use of the harvested rainwater for potable purposes, signages at points of usage shall be displayed clearly with the wording: "Non-potable water" and "Not for drinking".
- Rainwater harvesting through the usage of rainwater gutters, rainwater outlets and downpipes are not supported by NEA.
- Any transaction or sale of the harvested rainwater within water catchments, by Nursery Owner to other parties for use at other premises, is not allowed.
- **Waterborne Tax (WBT)** will be imposed on the volume of rainwater used by large rainwater harvesters. The charges will apply to Owners of existing and proposed RWHS with aggregate capacity exceeding 350m³, with effect from 1 October 2025. For more information on WBT, please refer to [Rainwater Harvesting - Alternate Sources of Water](#).



Enquiries
[PUB Help & Feedback](#)

PUB SINGAPORE'S
NATIONAL
WATER AGENCY

What to Expect – Pollution Control

In Nursery operations, there is a risk of nutrient-rich water discharging into waterways/reservoirs which can severely contaminate water sources, potentially causing algal blooms and/or harming aquatic ecosystems and drinking water supplies



Fertilizers, pesticides, herbicides, compost must be stored properly because these substances contain concentrated nutrients and chemicals.

Specific to Nurseries, these are key requirements for compliance with regulations to minimize pollution:-

- Water Pollution Control Measures:-
 - ✓ Adopt **Best Management Practice (BMP)** to prevent the discharge of nutrient-rich water into the watercourse/reservoir (see next page for more information)
 - ✓ Composting activities (if any) shall be carried out using proper composting facilities in roofed and curbed areas such as concrete flooring to prevent feedstocks from leaching into the ground and entering the storm drain. All feedstocks for composting shall be stored in roofed and curbed areas with impervious flooring.
 - ✓ Store fertilisers, soil mixing and pesticides in roofed or properly covered shelters, and kerbed areas with impervious flooring
 - ✓ Containment facility and spillage control measures for horticulture waste, chemicals, fuels etc.
- **Any open burning for any purpose is not allowed.**
- Provisions of bulk bins, waste collection point, bin centre (if necessary) for horticulture and general waste.
- Adequate vehicular space must be provided for a 10m refuse truck to park and maneuver from entry to exit point during waste collection
- All trade effluent should be discharged to PUB sewer line, usage of holding tank is not allowed
- Mitigation of odor issues arising from operations

Consult your QP for the required pollution control measures for your development

Useful Links

[Clean Catchment](#) | [PUB, Singapore's National Water Agency](#)
nea.gov.sg/docs/default-source/resource/practices-/copeh-2024.pdf

Enquiries

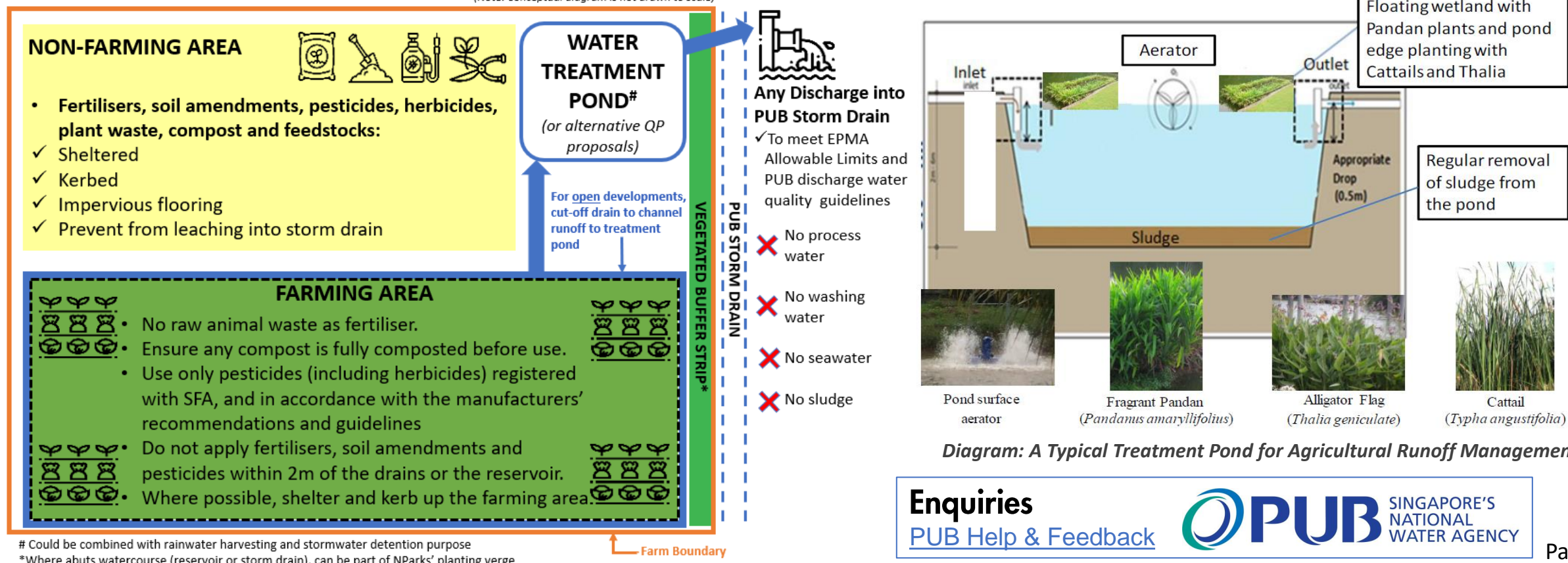
Email to:
DCLD_Consultation@nea.gov.sg

What to Expect – Best Management Practice

- **Best management practice (BMP) is to be adopted to prevent the discharge of nutrient-rich water into the watercourse/reservoir.** For examples:

- Implement a closed-loop water recirculation system to manage any nutrient-rich runoff for reuse within the site, without discharging into public drain; or
- The farming/nursery areas with fertilizer usage are sheltered/covered with rain-impermeable material ; or
- The farming/nursery areas with fertilizer usage are open-to-sky or use rain-permeable covers. A cut-off drain should be implemented along the boundary of farming areas to channel all runoff with high nutrient to a treatment pond (or alternative QP's proposal) which is designed to treat the pond water to meet the discharge water quality requirements stipulated in EPMA (Trade Effluent) Regulations and PUB's discharge water quality requirements. Refer to diagram below.

(Note: Conceptual diagram is not drawn to scale)



Enquiries

PUB Help & Feedback

PUB SINGAPORE'S
NATIONAL
WATER AGENCY

What to Expect – Best Management Practice



Source: NParks

Cut-off drains channel runoff to the **water treatment pond** and pond water can be used for irrigation



Source: SFA

Use only **pesticides and herbicides approved by SFA** to ensure food and environmental safety



Source: SFA

Sheltered production areas help to contain nutrients and retain moisture to support plant growth



Source: NParks

Good housekeeping allows optimal use of plot space



Source: PUB

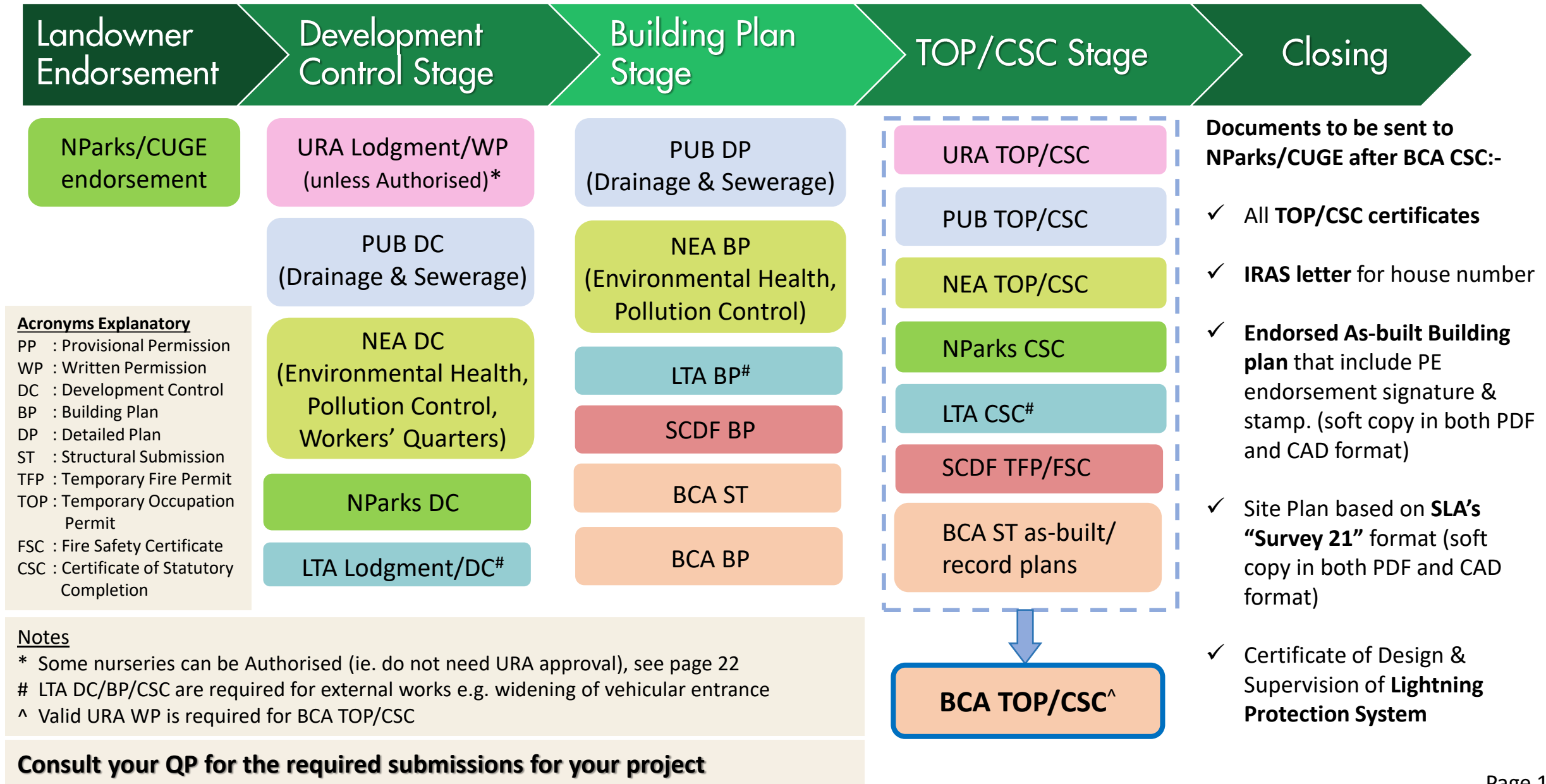
Growing wetland plants in the water treatment pond allows for a more environmentally sustainable treatment process compared to chemical treatment



Source: PUB

Closed-loop water recirculation system to manage any nutrient-rich runoff for reuse within the site

What to Expect - TOP/CSC Submission Workflow



Recommended Timeline

1st Month

- Appoint **QP & PEs** required for your development
- Discuss development design with QP & PEs
- Conduct topo survey, purchase plans of public services if necessary
- QP/PE **pre-consultation** with Authorities etc. SCDF (fire safety), PUB (detention system, rainwater collection system)

2nd Month

- **Pre-consultation** with Authorities
- Finalise development **design concept** with QP/PE
- Estimate total development **budget** for developer's acceptance



3rd Month

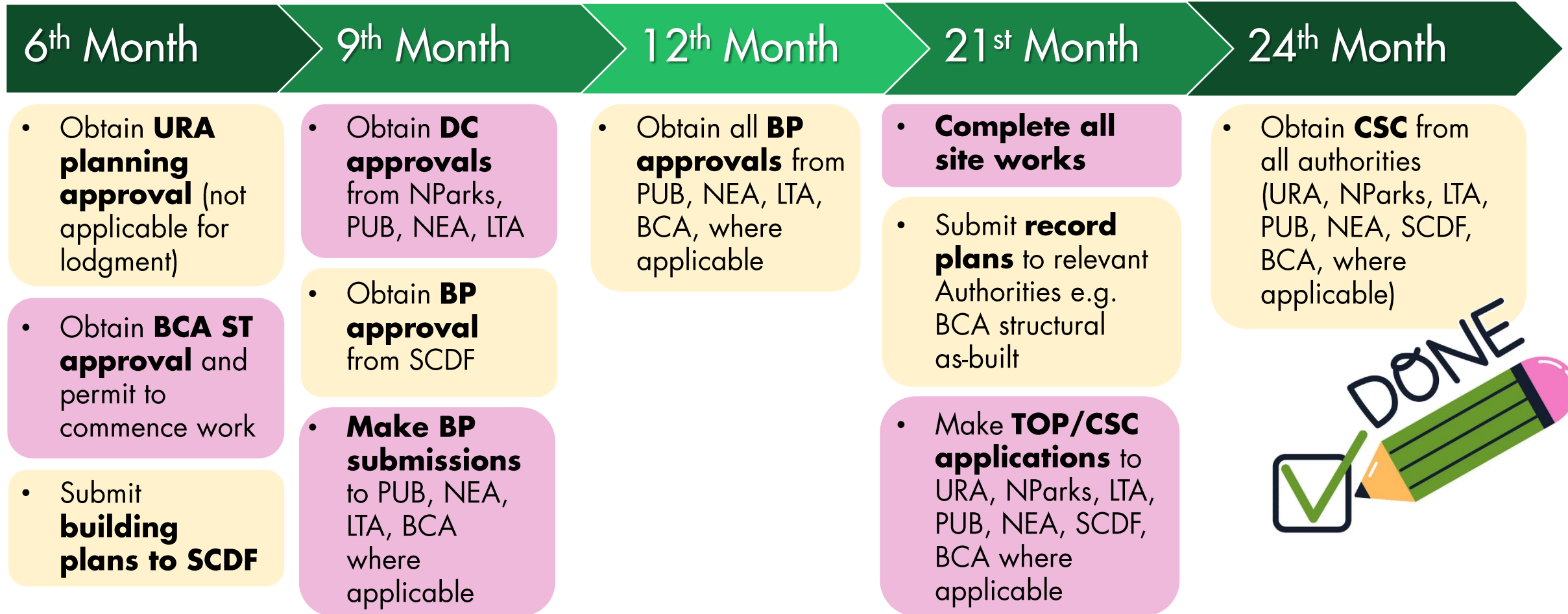
- **Submit development plans** to NParks/CUGE for Landowner's endorsement
- **Prepare plans** for DC submissions and BCA ST submission



4th Month

- Obtain **Landowner's endorsement** from NParks/CUGE (subject to completeness of submission)
- Make plan lodgment application or planning submission to URA (if not exempted under Authorisation, see page 22)
- Make **DC submissions** to NParks, PUB, NEA, LTA
- Make **structural submission** to BCA
- **Engage Contractor(s)** to build development works

Recommended Timeline



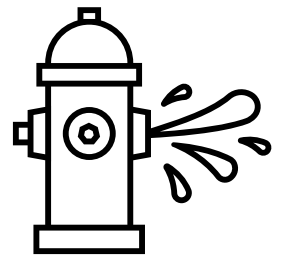
Work with your QP to develop the entire submission timeline

Common Mistakes

Common Mistakes	Consequences
<ul style="list-style-type: none"> • Not appointing QP and PEs early • Assuming submissions and authority approvals are not required • Not making pre-consultations and authority submissions early • Not considering all authority requirements in design stage 	<p>Poor planning of development design resulting in abortive preliminary cost/works (e.g. last-minute addition of accessible toilet)</p> <p>See page 19 for recommended timeline</p>
Not budgeting for development construction cost + consultancy fees + authority submission fees + contingency	Last minute funding and potential delay in development completion & TOP/CSC approval
Commencing construction works without authority approvals	<p>May result in enforcement actions, rectifications and abortive costs</p> <p>Enforcement Actions Building and Construction Authority (BCA)</p>
Not promptly following up with authorities/QP/PE on submission status	Delay in authority approvals
Making major design changes without submitting for amendment approval e.g. BCA structural amendment	Delay in TOP/CSC approval

Useful Tips

- Seek QP/PE's advice on permitted land use and statutory requirements to finalise development design **before construction**, this is to avoid abortive design/works
- Engage PEs **early** to finalise design/cost of detention system, rainwater collection system, sanitary/sewer systems, pumped systems etc
- Subject to eligibility, QP can explore faster **lodgment submission** options for **simple** development works:-
URA - [Plan Lodgment \(ura.gov.sg\)](https://ura.gov.sg/plan-lodgment)
PUB - [Building Plan Submission Process Flow | PUB, Singapore's National Water Agency](#)
LTA - [LTA Farm Lodgement Guide](#)
- Consider **minor works** that can be **exempted** from authority submissions:
URA – refer to Authorisation criteria in [Plan Application Process](#)
SCDF - [Fire Safety \(Exemption\) Order - Singapore Statutes Online \(agc.gov.sg\)](#)
BCA - [Building Works that do not Require Plan Submission to BCA | Building and Construction Authority \(BCA\)](#)
- Minimise building areas to reduce fire risks and scope of authority compliance
- Position buildings/greenhouses/sheds/netted planting areas near to public road/hydrant
- Consult NEA and MOM for specific requirements and any restrictions for workers' quarters
- If possible, avoid features such as roof gutters, rainwater outlets to save cost of installation of safe and permanent maintenance access to these features
- Use existing vehicular entrance to save construction cost and authority processing time.



End of Guidebook