

NOTIFICATION OF NEW EDITION OF CODE OF PRACTICE ON ENVIRONMENTAL HEALTH (COPEH 2024 EDITION)

Reference: NEA/EP/PDD/05-00075

Date : 03 June 2024

CIRCULAR TO PROFESSIONAL INSTITUTIONS

Who should know

Developers, Architects, Engineers

Dear Sir/Madam,

We would like to notify all Qualified Persons (QPs) that a new 2024 Edition of the Code of Practice on Environment Health (COPEH) has been released.

2. The new requirements of Section 1.7.1 of COPEH 2024 will take effect for new development application submitted to URA on or after 1 January 2025. Amendments for Sections 1.2 to 1.6, 1.10, 5.2.1(d) and 6 are existing requirements amended for better clarity and will take place with immediate effect. (Please refer to amendments in Annex 1 and the frequently asked questions (FAQs) on the amendments in Annex 2)

3. The new COPEH (2024 Edition) can be downloaded from NEA website at <https://www.nea.gov.sg/corporate-functions/resources/practices-and-guidelines/guidelines/practices>.

4. Please note that it is the responsibility of the QPs to design the developments to meet the above COPEH.

5. Should you require further clarification on the matter, please contact us via the OneService (www.oneservice.gov.sg) or the myENV (www.nea.gov.sg/myenv) mobile applications. Alternatively, you may reach us via the Online Feedback Form available on the NEA website (www.nea.gov.sg/feedback).

Thank you.

Sincerely,



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Annex 1 – Key COPEH Amendments

S/N	Section	Description of Amendments to the COPEH	Current clause	Revised clause (<i>new inputs underlined</i>)
1	1.2 Refuse Output	To update the list of common categories of premises and their respective refuse output to help QPs compute refuse output efficiently.	<p>1.2a)</p> <p>1) Hotel/Dormitory – 10 per 100sqm gross floor area</p> <p>2) Shop/trade premises – 30 per 100sqm gross floor area</p> <p>3) Restaurant/eating house/food centre/canteen – 200 per 100sqm gross floor area</p>	<p>1.2a)</p> <p>1) Hotel/Dormitory/<u>store/industrial premises</u> – 10 per 100sqm gross floor area</p> <p>2) <u>Retail</u> shop/trade premises – 30 per 100sqm gross floor area</p> <p>3) Restaurant/eating house/food centre/canteen/<u>pantry/food shop/food establishment</u> – 200 per 100sqm gross floor area</p>
2	1.3 Refuse Chute	To provide more flexibility to QP when designing for refuse chute ventilation opening.	1.3b) The chute shall terminate at the roof of a building. The chute shall be ventilated at the top with at least two openings of not less than 0.1 sq m each. This top section of the refuse chute shall be accessible from the common area to facilitate maintenance.	1.3b) The chute shall terminate at the roof of a building. The chute shall be ventilated at the top with at least two openings of <u>effective area</u> not less than 0.1 sq m each. This top section of the refuse chute shall be accessible from the common area to facilitate maintenance.
3	1.6 Refuse Bin Point and Refuse Bin Centre	<ul style="list-style-type: none"> To emphasize proper accessway within the premises is required for the transfer of SS EN-840 standard wheeled bin to the bin point or bin centre. 	1.6) Developments not adopting the Refuse Room system i.e. those with or without refuse chambers shall be provided with either a bin point or a bin centre within the premises. Refuse collections shall be carried out only from within the premises. A bin centre shall be provided if refuse output exceeds 1,000 litres/day.	1.6) Developments not adopting the Refuse Room system i.e. those with or without refuse chambers shall be provided with either a bin point or a bin centre within the premises. A bin centre shall be provided if refuse output exceeds 1,000 litres/day. <u>The accessway to the bin point or bin centre shall be designed to allow for the ease of SS EN-840 standard wheeled bin transfer. Transferring of bins and refuse truck collections shall be carried out only from within the premises. A minimum clear</u>

		<ul style="list-style-type: none"> To specify a minimum height clearance for QP to design a vehicular road that is sufficient for a typical refuse truck to access to the bin point/bin centre for collection. 		<u>height of 4m shall be provided at development ingress and egress for refuse collection vehicle access. For bin centre provided with RORO compactor/container, the vehicular clear height in front of the bin centre shall comply with the requirements stated in Clause 1.6j(ii).</u>
		To specify the clearance between the frame of the roller shutter to the compactor/containers to prevent accidental damage of the roller shutter during haulage of containers.	1.6j(vii) When there are more than 1 RORO compactor/container in the bin centre, the minimum separation between the adjacent compactor/containers shall be 0.5m.	<u>1.6j (vii) The minimum separation between the frame of the roller shutter and the compactor/containers shall be 0.5m. When there are more than 1 RORO compactor/container in the bin centre, the minimum separation between the adjacent compactor/containers shall be 0.5m.</u>
4	1.7 Pneumatic Waste Conveyance System (PWCS)	To simplify the PWCS requirements as the requirements under 1.7a – 1.7g, 1.7i - 1.7m were already covered in Singapore Standard SS642.	<p>Where a PWCS (i.e. stationary vacuum system or vacuum truck system) is provided, the following requirements shall be complied with:</p> <p>a) For refuse chute which are square, the cross-sectional area of the chute shall be not less 0.3 sq m. For refuse chute which are round, the minimum internal diameter of the chute should not be less than the diameter of 600 mm. The refuse chute shall be made of reinforced concrete material.</p> <p>b) The opening of the chute hopper is to be fully volume-controlled to restrict large or long items from entering the chute (see Appendix 1B). The chute hopper shall be adequately sized to accommodate bagged waste of size 300 to 350 mm measured in any angle. These features will allow the disposal of bagged waste of typical</p>	<u>1.7) The design of the PWCS shall comply with the latest Singapore Standard SS 642: Code of Practice for Pneumatic Waste Conveyance System. The exhaust air discharge point shall also be located at the highest level possible and pointed away from residential dwelling units and commercial spaces within and surrounding the development. The PWCS bin centre shall be designed to also meet the same requirements stated in Section 1.6. The refuse storage capacity in the bin centre shall be sufficient for storage of at least two (2) days of refuse output of the development.</u>

			<p>sizes, and prevent oversized waste from choking the hopper and the chute.</p> <p>c) Sensors and monitoring equipment shall be provided to monitor the refuse collected at the refuse chute and activate the discharge cycle to convey the refuse to the bin centre to prevent excessive piling of refuse within the refuse chute.</p> <p>d) Inspection openings shall be provided at intervals of not more than 50 m along straight sections, and at locations of the PWCS conveyance pipe network where refuse is likely to accumulate and block the conveyance pipe, including, but not limited to, pipe connections and bends in the conveyance pipes.</p> <p>e) The ventilation, air intake and air outlet units shall be sited so as not to cause any noise or smell nuisance to neighbouring premises or residents of the premises served by the PWCS.</p> <p>f) The system shall be designed so as not to cause any noise nuisance to residents of the premises served or neighbouring premises when it is operated.</p> <p>g) Dust and odours shall be removed from the air that conveys the refuse before the air is discharged into the atmosphere. Measures to remove dust and odours include, but are not limited to the following:</p> <p style="padding-left: 40px;">i. Dust and deodorising filters shall be provided to filter dust and foul odours</p>	
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from the air conveying the refuse before the air is discharged to the atmosphere.

- ii. The type and quantity of filters provided shall be appropriate and sufficient to treat all air exhausted from the PWCS system.
- iii. The filters shall efficiently filter the air without affecting system performance and in an energy efficient manner.
- iv. All filter media shall have a life span of no less than six (6) months between replacements.
- v. In addition to the filters, an Odour Treatment System shall be provided to treat the air such that the discharged air from the exhaust air outlet or bin centre does not cause smell nuisance to residents.

The discharge point shall also be located at the highest level possible and pointed away from residential dwelling units and commercial spaces within and surrounding the development.

- h) A PWCS bin centre shall be provided for stationary systems. The PWCS bin centre shall be designed to meet the same requirements stated in Section 1.6. The refuse storage capacity in the bin centre shall be sufficient for storage of at least two (2) days of refuse output of the development. The PWCS refuse container shall be designed in accordance with DIN 30722.

			<ul style="list-style-type: none"> i) For vacuum truck systems, the size of the intermediate storage area shall be sufficient for the storage of at least two (2) days of refuse output. The requirements stated in Section 1.6 shall still apply so that a proper storage facility within the development is available in the event that the vacuum truck is not available for collection. j) The bin centre shall be accessible to refuse collection vehicles, and be so sited so as not to cause nuisance to neighbouring premises. The design requirements for the bin centre as stated in Section 1.6 (j) shall still apply. k) A communications system shall be incorporated into the system to automatically and immediately alert the management and appointed service provider of any faults or breakdowns detected in the system so that repair work can be promptly arranged. l) The complete system including the exhaust air treatment system shall be designed for ease of maintenance. m) The electrical and electronic components (including the Programmable Logic Controller) shall use Original Equipment Manufacturer (OEM) parts. n) The design of the PWCS shall comply with the latest Singapore Standard SS 642: Code of Practice for Pneumatic Waste Conveyance System. 	
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		<p>To include waste infrastructure provisions specific to developments within DPWCS area for the purpose of effective DPWCS implementation.</p>	<p><NEW CLAUSE></p>	<p>(NEW) <u>1.7.1 Developments within designated District Pneumatic Conveyance System (DPWCS) Areas</u></p> <p>Developments within designated DPWCS Areas gazetted under Section 31G of the Environmental Public Health Act shall include the following waste infrastructure provisions:</p> <ul style="list-style-type: none"> (a) Refuse and recyclables chutes connected to the DPWCS for Residential, Offices, and Civic & Community Institutions (C&CI) that are taller than four (4) storeys. The refuse capacity of the temporary storage area shall be sufficient for at least 15% of the total refuse output connected to the chute. Additional chutes or dust screw tanks provisions shall be provided to meet the minimum storage capacity. (b) Refuse and recyclables disposal throw points connected to the DPWCS at suitable locations within the premises for developments without chute provision. (c) Dust screw tank with bin lifter connected to the DPWCS for commercial development or commercial premises within a mixed development such as Retails, Malls, Hotels to convey bulky refuse generated that are unsuitable to be disposed into the refuse chutes. The screw tank shall be housed within a room and comply with the following design requirements: <ul style="list-style-type: none"> i. The room shall have a clear height of at least 5m and be designed for the
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				<p>access of SS EN-840 standard wheeled bins from within the development. Sufficient space shall be provided for the manoeuvring of refuse bins within the room and the bin lifter to operate the bin properly.</p> <ul style="list-style-type: none"> ii. The room's walls shall be lined with smooth tiles or other smooth, impervious materials. iii. There shall be provisions for room lighting, an electrical power supply point, and a water supply point for washing and drainage (e.g. gully trap connected to the sewer). The room shall be adequately ventilated and rendered pest-proof against birds, rodents and insects. iv. Where air intake valve is installed within the room, an air intake louvre with a minimum free area of 1.2 sq m shall be provided. The air intake valve and louvre shall not be sealed or blocked at all times, to provide pressure relief and prevent a possible build-up of negative pressure within the room. The room shall be able to withstand a minimum of 2kN/m² of negative pressure. Measures shall be taken to prevent over pressurisation of the system beyond the design parameters of the room. v. There shall be reasonably sufficient working area with no obstruction that hinders safe movement and carrying
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				<p>out of maintenance works within the room. Designated maintenance access to the room shall be provided for future equipment replacement.</p> <p>(d) A bin point with a minimum floor area of 3m x 2m shall be provided within the development for the consolidation and storage of bulkier refuse that are unsuitable to be disposed into the PWCS. The bin point shall comply with the same requirements stated in Section 1.6 and be accessible to a refuse collection vehicle.</p>
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5	1.10 On-Site Food Waste Treatment System	To exclude industrial premises who are solely engaging in the following specified activities: (i) manufacturing any food additive, dried food or spices; (ii) manufacturing bottled drinking water; (iii) high pressure processing of food will be excluded from the thresholds:	<table border="1"> <thead> <tr> <th colspan="2">Types of premises</th> <th>Thresholds (Gross Floor Area)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Industrial</td> <td>Single User Factories (SUFs)</td> <td> Large food manufacturers² (i.e. Operation area > 750 sq m) <i>Premises which are solely used for specific trade activities³ can be excluded from the requirement. An exemption request along with the necessary documents shall be submitted to NEA for checks. Elaboration shall also be provided to support their request when required by NEA.</i> </td> </tr> <tr> <td>Multi-User Factories (MUFs)</td> <td> At least 1 large food manufacturer (i.e. Operation area > 750 sq m) Or GFA > 20,000 sq m and > 20 food tenants (i.e. food manufacturers and food caterers) </td> </tr> </tbody> </table>		Types of premises		Thresholds (Gross Floor Area)	Industrial	Single User Factories (SUFs)	Large food manufacturers ² (i.e. Operation area > 750 sq m) <i>Premises which are solely used for specific trade activities³ can be excluded from the requirement. An exemption request along with the necessary documents shall be submitted to NEA for checks. Elaboration shall also be provided to support their request when required by NEA.</i>	Multi-User Factories (MUFs)	At least 1 large food manufacturer (i.e. Operation area > 750 sq m) Or GFA > 20,000 sq m and > 20 food tenants (i.e. food manufacturers and food caterers)	<table border="1"> <thead> <tr> <th colspan="2">Types of premises</th> <th>Thresholds (Gross Floor Area)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Industrial²</td> <td>Single User Factories (SUFs)</td> <td>Large food manufacturers³ (i.e. Operation area > 750 sq m)</td> </tr> <tr> <td>Multi-User Factories (MUFs)</td> <td> At least 1 large food manufacturer (i.e. Operation area > 750 sq m) Or Gross Floor Area (GFA) > 20,000 sq m <u>and</u> > 20 food tenants (i.e. food manufacturers and food caterers) </td> </tr> </tbody> </table>		Types of premises		Thresholds (Gross Floor Area)	Industrial ²	Single User Factories (SUFs)	Large food manufacturers ³ (i.e. Operation area > 750 sq m)	Multi-User Factories (MUFs)	At least 1 large food manufacturer (i.e. Operation area > 750 sq m) Or Gross Floor Area (GFA) > 20,000 sq m <u>and</u> > 20 food tenants (i.e. food manufacturers and food caterers)
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		Amended to use the term "valorisation" to allow other type of solutions beside recycling into animal feed.	Premises where homogeneous food waste is segregated for recycling into animal feed may be exempted from the requirement to set aside space for on-site food waste treatment. An exemption request along with the necessary documentations shall be submitted to NEA for verification.	Premises where homogeneous food waste is segregated for <u>valorisation</u> may be exempted from the requirement to set aside space for on-site food waste treatment. An exemption request along with the necessary documentations shall be submitted to NEA for verification.
		To ensure sufficient space catered for the installation of the on-site food waste treatment system, including service and maintenance works and access of SS-EN 840 standards wheels bin.	(b) The size and layout of the space set aside shall be designed to support the implementation of the on-site food waste treatment system including: i. For mandated premises (i.e. premises that meet the respective thresholds stipulated in the Resource Sustainability Act), the minimum space required for the on-site system, including space for service and maintenance works of the treatment system and access of SS EN-840 standard wheel bins is 25 m2 (e.g. 5.0 m by 5.0 m for a square space). For all other premises, the space to be set aside will depend on the specific on-site system to be installed.	(b) The size and layout of the space set aside shall be designed to support the implementation of the on-site food waste treatment system including: i. For mandated premises (i.e. premises that meet the respective thresholds stipulated in the Resource Sustainability Act), the minimum space required for the on-site system, including space for service and maintenance works of the treatment system and access of SS EN-840 standard wheel bins is 25 m2 (e.g. 5.0 m by 5.0 m for a square space). For all other premises, the space to be set aside will depend on the specific on-site system to be installed. <u>QPs should consult relevant suppliers of on-site food waste treatment system suppliers to determine the space required for the system.</u>
6	5.2.1 Aquatic Facility	To align NEA and PUB's requirements on rinse shower discharge from aquatic facility.	5.2.1d) iii) The rinse shower water shall drain directly into the sewer system and not into the AF and the overflow perimeter flow system or splash zone of AF.	5.2.1 d) iii) The rinse shower water shall <u>not</u> drain into the AF and the overflow perimeter flow system or splash zone of AF.

7	6.4 Recyclables Chute System	To emphasize that recyclables chute chamber is not refuse chute chamber and recyclables chute cannot be designed to connect to a refuse chute chamber in order to minimise contamination of recyclables collected.	6.4b) A recyclables chute chamber shall be provided. It shall be connected to a recyclables chute and house a recycling bin. The recyclables chute and its chamber shall be suitably located to facilitate easy and nuisance-free removal of recyclables and shall be designed to meet the same requirements as those for the refuse chute chamber stated in Section 1.4. Its capacity shall be sufficient for at least one day of recyclables output (as specified in Section 6.2(b)) from all the premises connected to the recyclables chute. Recyclables deposited in the recyclables chute chamber shall be consolidated and stored main recycling point for collection. The main recycling point shall comply with the same requirements stated in Sections 6.3(a) and 6.3(b).	6.4b) A recyclables chute chamber shall be provided. It shall be connected to a recyclables chute and house a recycling bin. The recyclables chute and its chamber shall be suitably located to facilitate easy and nuisance-free removal of recyclables and shall be designed to meet the same requirements as those for the refuse chute chamber stated in Section 1.4. Its capacity shall be sufficient for at least one day of recyclables output (as specified in Section 6.2(b)) from all the premises connected to the recyclables chute. <u>Clear segregation of refuse and recyclables so as to avoid possible mixing of refuse/recyclables, e.g. with proper partitioning shall be provided to separate the recyclables chute chamber from the refuse chute chamber to minimise contamination of recyclables collected.</u> Recyclables deposited in the recyclables chute chamber shall be consolidated and stored main recycling point for collection. The main recycling point shall comply with the same requirements stated in Sections 6.3(a) and 6.3(b).
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Annex 2 – FAQs for COPEH Amendments

General

1. Do building plans submitted at development stage need to comply with the new/revised requirements of COPEH 2024?

The new requirements of Section 1.7.1 of COPEH 2024 will take effect for new development application submitted to URA on or after 1 January 2025. Amendments for Sections 1.2 to 1.6, 1.10, 5.2.1(d) and 6 are existing requirements amended for better clarity and will take place with immediate effect.

Section 1.7.1 Developments within designated District Pneumatic Waste Conveyance System (DPWCS) Areas

2. What are the reasons for additional requirements for developments within the designated District Pneumatic Waste Conveyance System (DPWCS) areas?

As the owner or occupier(s) of every premises within the declared DPWCS area are required to design their internal waste collection systems with connection to the DPWCS network in mind, waste infrastructure provisions specific to developments within DPWCS area are provided for the purpose of effective DPWCS implementation.

3. Where are the DPWCS areas?

Under Environmental Public Health Act (EPHA) Section 31G – Declaration of DPWCS areas, The Minister may, from time to time, by notice in the *Gazette*, declare an area to be a DPWCS area where a pneumatic waste conveyance system is established, and operated or maintained, for that area.

The current list of DPWCS areas are located within Kampong Bugis ([Gazette for DPWCS in Kampong Bugis](#)) and Jurong Lake District ([Gazette for DPWCS in JLD](#)).

Section 1.10: On-site Food Waste Treatment System

4. What are the changes in the thresholds stated in the table?

The threshold table is updated to be aligned with the Resource Sustainability (Food Waste Segregation, Treatment and Reporting) Regulations 2024 published on 7 Mar 2024 in the [Government Gazette](#).

For industrial premises, premises who are solely engaging in the following specified activities: (i) manufacturing any food additive, dried food or spices; (ii) manufacturing bottled drinking water; (iii) high pressure processing of food will be excluded from the thresholds:

- For Single User-Factories (SUFs), the premises carrying out the above specified activities will be excluded from the requirements under section 1.10.
- For Multi User-Factories (MUFs), food tenants carrying out the above specified activities will not be included in the count of food tenants.

QPs should submit relevant documentation for verification purposes.

5. What is food waste valorisation? What are some of the examples beside processing into animal feed?

Food waste valorisation is the conversion of food waste or by-products into higher-value products or resources. Other valorisation processes include the following examples (not limited to):

- Processing into insect feed. Formulated feedstock for Black Soldier Fly (BSF) larvae which would be processed into animal and pet feed. Insect frass generated from BSF larvae can be processed into fertiliser/soil amendment.
- Ingredients for food production. Spent grains from beer breweries and malt factory processed into functional ingredients for food and drinks/beverages.

6. Are there any changes to the minimum space requirement of 25 m² stated in Section 1.10 (b)(i) for mandated premises?

No. While, the typical space required for the installation and operation of an on-site food waste treatment system of 1 tonne capacity is 25 m², QPs should consult relevant suppliers of on-site food waste treatment suppliers to determine the space is adequate for the required system. The space includes space for service and maintenance works of the treatment system and access of SS EN-840 standard wheel bins.

Section 5.2.1: Aquatic Facility

7. Where should the rinse shower water for the Aquatic Facility be drained to?

For both outdoor (open) and indoor rinse shower points, please refer to the latest version of Public Utilities Board (PUB)'s Code of Practice on Sewerage and Sanitary Works (COPSSW) for the different drainage requirements.

