

**Building Environmental Performance Assessment:
Assessment Methods for Refuse Odour Level in Refuse Storage Areas (RSAs)**

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ABSTRACT

The odour problem is always a headache to pollution control since it causes environmental nuisance and health hazards to the community and further deteriorate both the outdoor and indoor air quality in HK.

In parallel to the effort on the technology development for odour abatement, the methods for assessing odour level with high efficiency, effectiveness and repeatability are of great importance to the control and monitoring of air quality at sites. This technical paper will focus on the assessment methods of refuse odour level in RSAs of HKHA.

Refuse odour is complicated in nature and highly differentiated from individuals' acceptance. There are some common methods to measure the odour levels but each has its own limitations. Some relevant field test results from local and overseas projects will be provided to better demonstrate these methods and further explain their significance and limitations. Some new approach/development on odour assessment will also be discussed.

The results and outcomes from this paper will be an advantage for the development of guidelines and standards on the control of odour problems for RSAs.

Keywords: odour, refuse collection station, TO-15 and field olfactometer

建築物環保表現評估：垃圾站臭味評估方法

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摘要

臭味的控制從來都不是容易解決的問題。臭味引致社區的環境污染及影響市民健康，且更使室內外的空氣質素惡化。

隨著不同種類的除臭產品相繼出現，對地方性的臭味監測及控制而言，一個有效並持續準確的氣味評估方法將十分重要。此論文將主要集中討論各種應用於香港房委會轄下之垃圾站的臭味評估方法。

垃圾臭味的性質十分復雜而各人對臭味的接受程度亦存在很大的差異。業界中有各種的臭味評估方法，可是各自存在一定的限制。在一些本港和海外的實地測試結果中可進一步說明這些評估方法的重要性及其限制，對一些較新的氣味評估方法及它們的最新發展亦會在此討論。

此論文的結論可為未來的垃圾站臭味控制問題，臭味評估準則的制定，對規範發展作一起頭作用。

關鍵字：臭味，垃圾站，TO-15 測試方法，實地嗅覺測量器/計

EXECUTIVE SUMMARY

Odour pollution from refuse collection station in Hong Kong is traditionally categorised as a public health and amenity issue. As society demands a higher quality environment, environmental monitoring of odour is vital to pacify the complaints arising from the nearby residents in refuse collection stations. This paper describes the method of measurement of nuisance odour emitting from two typical public housing estate refuse collection stations in which collecting, handling and temporary storage of refuse generated from commercial area was taken place. TO-15, an approved USEPA standard method in characterizing of volatile organic compounds, was used to identify and quantify the odourous compound present in these two refuse collection stations. Odourous compounds including the disulfide, olefinic and alcoholic compounds were identified by gas chromatography/mass spectrometry. Although all the level of odourous compound founded was below their corresponding odourous threshold, the additive and/or synergistic effect of these odourous compounds in aggregate could produce strong odour intensity. Future studies towards the measurement of odour intensity from refuse collection stations will be carried out by utilising a field olfactometer, Nasal Ranger developed by St. Croix Sensory.