### Earthworks, Retaining Walls, and Boundary Walls

Earthworks

Earthworks are defined as any operations or works in, on, or over land which result in substantial modification to the existing ground terrain, land form, or slope. These include excavation, formation of a new slope or embankment, and cut and fill operations.

Extensive earthworks are discouraged as it may change the existing terrain. Earthworks may also result in the building of high retaining walls that mar the streetscape and have adverse impacts on the surrounding areas. Earthworks on any development site, where necessary, shall be minimised.

Planning permission is required if earthworks involve more than 2,000sqm of land or change in the level of the land of more than 1.5m anywhere in the development site or relative to the neighbouring land.

The guidelines for earthworks are dependent on where the earthworks are carried out.

Setback and buildable area for earthworks

*Location of Allowable Earthworks*

#### Earthworks within the building setback area

Earthworks may not be allowed within the building setback area, except in the following circumstances:

* When the proposed earthworks are to match the existing platform levels of the neighbouring sites;
* When the sites are on undulating or sloping terrain, with large differences in platform levels within the site, or between the site and the road;
* When the earthcut is necessary to build a fully submerged basement. The area within the building setback shall be reinstated to the original platform level upon the completion of the basement.

#### Earthworks within the build-able area (ie outside the building setback area)

Earthworks within the build-able area of more than 1m are subject to evaluation depending on merits. If the earthfill of more than 1m is allowed, the earthfilled area shall not be counted as an additional storey provided the overall aggregate building height complies with the maximum allowable building height measured from the allowable platform level.

#### Earthworks within the entire development site

Earthfill involving the entire development site may only be considered if the proposed earthworks are required to meet the technical requirements of PUB. Such earthfill may be allowed up to the Minimum Platform Level (MPL)1 stipulated by PUB.

1 **Minimum Platform Level (MPL)**: The minimum 1st storey level to be provided within the site. The MPL is determined by the Public Utilities Board (PUB).

Retaining & Boundary Walls

Illustration of a 1.5m high retaining wall

*Allowable Height of Retaining and Boundary Walls*

The maximum allowable height for boundary walls is 1.8m.

High retaining walls shall be avoided wherever possible, particularly for small in-fill plots. If they have to be built and can be allowed, they shall meet the following requirements:

* the height shall be less than 1.5m;
* retaining walls higher than 1.5m may be considered due to site constraints and the need for extensive excavation;
* the total visible height of the solid boundary-cum-retaining wall shall not exceed 2.8m, of which the solid boundary wall shall not exceed 1.8m.

If the retaining walls are to meet the MPL requirement stipulated by PUB for drainage purposes, the retaining walls along the site boundaries (except along boundaries that abut foreshore, roads, or waterbodies with drainage reserve equal to or more than 17.5m wide) need not be tiered as these are transitory, pending the redevelopment of the neighbouring land to the same MPL.

The above are general guidelines for earthworks and retaining walls. For industrial developments, these guidelines will apply differently depending on the type of development on the neighbouring parcels of land.

Earthworks for industrial scenrios where the guidelines apply

*Earthworks for industrial scenarios where the guidelines apply (see full illustration* [*here*](-/media/52700266ABC24FD5A07E3FFA0FA3A7D0.ashx)*)*

Earthworks for industrial scenrios where the guidelines do not apply

*Earthworks for industrial scenarios where the guidelines do not apply (see full illustration* [*here*](-/media/2AE61DD2089741BCA6FF3F84120C3A2C.ashx)*)*

1. Where the boundary is shared with an industrial development (B1/B2) or a business park:
   * The existing earthworks guidelines and controls on retaining and boundary walls shall not apply.
2. Where the boundary is not shared with an industrial development (B1/B2) or a business park:
   * The existing earthworks guidelines and controls on retaining and boundary walls shall apply.
3. Where the boundary abuts a public road:
   * The existing controls on earthworks, retaining, and boundary walls shall apply.
   * Earthworks guidelines shall not apply if the development beyond the public road is an industrial development (B1/B2) or a business park.
4. Where the boundary abuts a drainage reserve4:
   * The existing controls on retaining and boundary walls shall not apply.
   * Earthworks guidelines shall not apply only if the development beyond the drainage reserve is an industrial development (B1/B2) or a business park. If the development beyond the drainage reserve is not an industrial development or business park, the earthworks guidelines shall apply.