

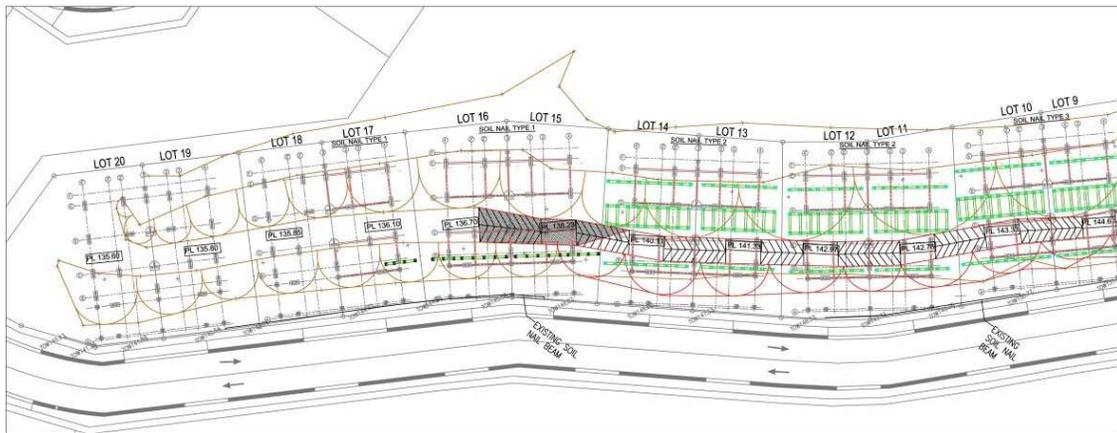
## Rafflesia Parcel C5-Semi-D @D'sara Perdana

### Strengthening the Existing Slope terrain with minimum disturbance

(by Ir. Oh Chin Wah, Executive Director) (2011 Oct-Dec)

#### Piling and Slope Protection Works

This project is one of the parcel development of overall development which consists of 460 units Semi-Detached buildings in Damansara Perdana and named as Rafflesia. Although this parcel consists only 20 units but it is facing some challenges when comes to constructability. It can be considered as one of the successful case for the building constructed along the existing slope with minimum cutting and disturbance to the existing environment.



Layout of Parcel C5 Development



Layout of Parcel C5 Development (Continued)

The interesting features of the building design are emphasized on preserving and strengthening the existing slope terrain with minimum disturbance. By elevating the building structure above the existing slope terrain, the building is not only avoided the cutting into the existing slope and having a great view too by overlooking the future

garden lake at the lower terrain. If viewing from existing road along this parcel, one can find that there is only two storey building above the road level and another two storey is below the existing road level which has cleverly maximized the used of space above the slope.

In view of the stringent requirement by the Consultant in minimizing the cutting to the existing slope wherever possible, the original design of the pile foundation was revised as per the Contractor proposal in order to suit to the construction methodology. The original design of foundation is using 250mm diameter micropile which required higher capacity and bigger size crawler drilling rig to carry out the drilling work but unfortunately the existing site profile may not favorable to this option. In addition, the temporary earth cutting or heavy steel staging platform is required in order to facilitate the movement of the above drilling rig. Neither the option of cutting the slope which is definitely not the Consultant’s preferred choice, nor the option of higher cost for erecting heavy steel staging platform to be borne by the Developer can satisfy each party either. The Contractor proposed replacing the original 250mm diameter micropile with 200mm diameter micropile with equivalent capacity and most importantly the equivalent cost too.



*Setting-up of Portable Micropile Rig*

In this case, the Contractor specifically modified the drilling rig become a portable drilling rig which capable to construct 200mm diameter borehole up to 30m depth including coring into granite rock but only required a very small steel staging platform. The portable drilling rig is assisted by the lifting crane moving along either from the lower platform of slope or upper existing road. In term of the design consideration, the

Consultant have introduced tie beam at various level of structure in order to tie up all the individual pile group for the purpose of enhancing the rigidity of the foundation system against the overall stability.



*Completed Micropile Works*

