

## The Link 2 @Bkt Jalil

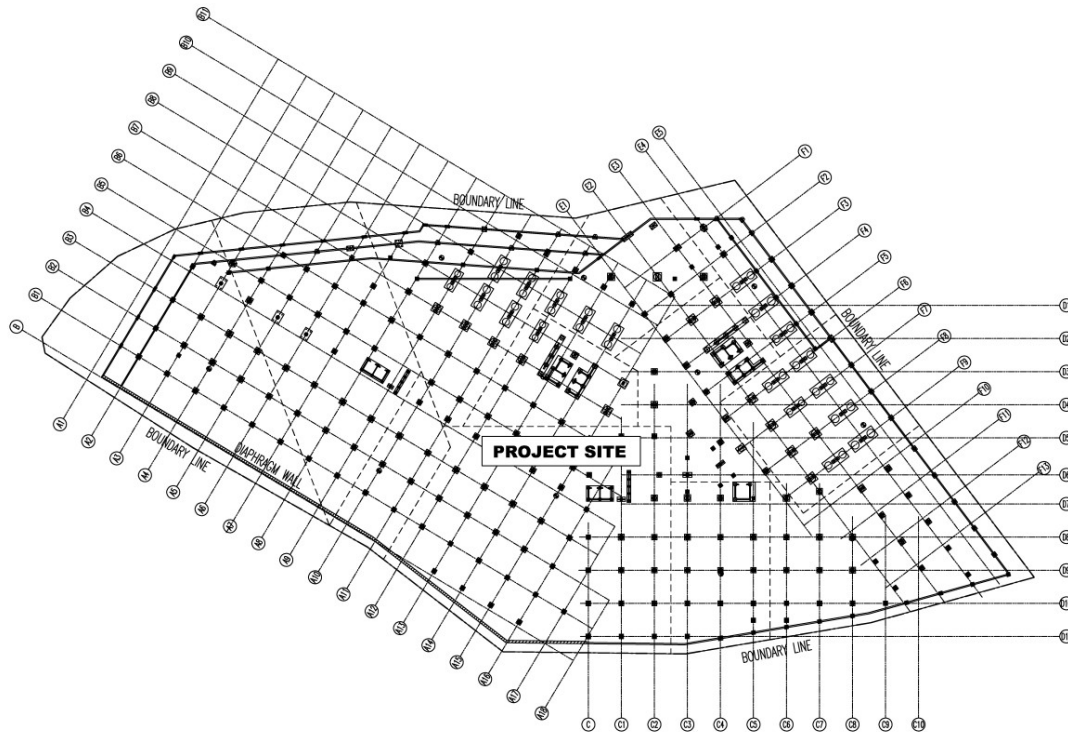
### Challenges on Earthwork Excavation and Pilecap RC Works

(By Mr. Lai Chee Yong, Project Manager) (2014 Oct-Dec)

The Link 2 is a mixed development with 2 condominium towers and multi storey shop lots situated at a strategic location at the heart of Bukit Jalil which has easy access to KESAS, MEX, NPE and BESRAYA.

In recent years, Bukit Jalil has grown to become one of the fastest growing areas around Klang Valley, with most properties launched being sold out. Thus, the client, Berjaya Golf Resort, has an exceptional high expectation on us to complete the foundation and piling work in time.

The project was awarded to us with a conforming design for 312 number of bored piles at the towers and shops, 164 number of micropiles at the slopes, slope strengthening system with soil nail, over 200,000 meter cubes of earth to be removed and pile cap works for the 2 tower blocks. The earth retaining system of contiguous bored pile was replaced by a stretch of 143m length diaphragm wall under a Contractor's Alternative Design (CAD) approach.



Overall Site Layout

The project commenced on 15<sup>th</sup> March 2014 with 2 sectional completion dates on 30<sup>th</sup> October 2014 and 22<sup>nd</sup> November 2014 respectively. The main challenge for the project was of course to complete the excavation work and pile cap RC work which were the last activities before the monsoon season which normally occurs in the month of September until November.

To overcome the challenge, a schedule compression was adopted, that is fast tracking the project schedule. All activities are planned to have an early start and overlapping with its predecessor task. Almost all activity started simultaneously as soon as we mobilized in.

The existing ground at RL52.0m was supposed to be cut to basement level of RL 37.3m. However, scheduling that would cause the bored pile work to start late due to the enormous volume of earth to be removed. Thus, the bored pile construction was scheduled to overlap with the earthwork, and we had commenced early with bored pile construction at RL40m. With this arrangement, the earthwork was planned into 2 stages. The final cutting was carried out upon the completion of bored pile at one of the tower block.



Site Photo

Commencing at higher ground is a risky matter, due to the deeper empty bore, the eccentricity of the pile has to be tightly controlled. The operation team too needs precise control during concrete ordering. Ordering more concrete, would translate to higher wastage and more cost for removal. Ordering less would translate to undercast pile and remedy work.

Beside the quality matter, the platform was a mess during construction due to the overlapping, high traffic of dump trucks and movement of bored pile machineries as well as micropiles and slope strengthening activities. Every activity becomes critical because it would cause delay to the next task if not complete. The slope strengthening could not commence if the slope profile is not achieved, the completion slope strengthening would affect the commencement of the next cutting and bored pile construction near to the slope. It required lots of attention to work sequencing. Overall, the operation team has handled it well with frequent and close coordination among our sub-contractors and our own team.



Diaphragm Wall Machine GB46

While the earthwork and piling works were busy at the lower platform, the diaphragm wall has also commenced at the higher platform along the main road. The challenge is to complete the entire diaphragm wall in 2 months in order not to delay the cutting of earth and slope profiling. There was an occurrence where the access for diaphragm wall work was being over excavated. We have had to backfill the area to make a narrow access of just 15m just beside the sloping end for the continuity of the diaphragm wall construction.

The diaphragm wall construction was eventually completed without any incident, thanks to the close supervision and full attention of the diaphragm wall team. The earthwork could then continue and constructed as per slope profile.

On the other hand, the bored pile operation was not as smooth. At the far right corner of the construction site, where the silt trap was initially constructed, one of our piling rigs has toppled into the muddy ground. The operator escaped with minor scratches but damages to the machinery were beyond expectation. The accident had caused us to loss at least 2 unproductive weeks for the rescue operation.

However, our schedule was not badly affected due to the accident; thanks to our early mitigation approach by deploying 5 boring rigs instead of 3 rigs as planned.



Construction Site

The overall progress was well ahead of schedule. We could handover the entire project within the first sectional completion date by end October 2014. With the completion date ahead of schedule, the client has further instructed us to commence with the B3 slab construction for the 2 towers to earn an early start to the superstructure schedule.

We were glad that the undivided attention from all committed project personnel as well as the efficient technical team, we had been able to complete the project in time. We would also express our gratitude for the commitments and supports from our sub-contractor and suppliers for making this project a success.

With this positive track record, we are sure Geohan would stand a better chance for next sequel of success story - The Link 2 Phase 2. Until then, thank you.