

IT'S ALL ABOUT SPACE CREATION AND SLOPE PROTECTION

By Stephen Ng

Nehemiah Reinforced Soil Sdn Bhd (Nehemiah), a specialist sub-contractor involved in infrastructure development, has made a breakthrough in space creation and slope protection via its homegrown Nehemiah Wall technology.

'We are in the business of space creation,' enthuses Dr Nehemiah Lee, the patent holder of Nehemiah Wall and Managing Director of Nehemiah, which recently celebrated its 15th anniversary.

Besides the aesthetics of the Nehemiah wall, the space created – which Lee profoundly spoke about – is used for access roads in major housing development projects, garden and landscaping as well as basement car parks. Along with this is the value of land gained, which can work out to be substantial especially in places where land is expensive.

For example, in a bungalow project in Damansara Heights, the value of land reclaimed from slopes priced at about RM350 per square foot, 10 times the value spent on constructing the wall. 'With the additional space, the owner was able to enjoy a more spacious garden and hold parties,' Lee tells *Malaysian Business*.

Lee, who founded Nehemiah in 1993, recalls how he and his partner, the late Eugene Oh, first ventured into the construction business with the patent he now holds for the Nehemiah Wall.

Their first job was to build a retaining wall for a bungalow in Tanjung Bungah, Penang, which was completed in just slightly over two weeks. An extra 1,500

square feet was added to the total land area, and in Tanjung Bungah, this has indeed added a value of RM115,000 to the client's property, even after deducting the construction cost of RM35,000.

Protection

Nehemiah Wall is also used for slope protection and river embankment to prevent soil erosion and landslides, which can become a nightmare for house owners.

of excessive rain water is adequately catered for through proper design.'

A typical cross section of the wall consists of hexagonal concrete panels, which are interlocked to each other; these walls are further reinforced using galvanised steel bars and anchor blocks and backfilled with granular materials. The rest is well-compacted earth.

In between the concrete panels are polyfoam or polymeric materials that prevent soil from going through, but allowing water to seep through. The



Rock solid: The Alila housing project in Penang uses the Nehemiah Wall for slope protection

'Owing to the over-development in some places, the natural vegetation and landscape has been altered. When the slopes are not protected, water can cause massive soil movement especially during the rainy season,' he explains. 'Reinforced soil technology is used to strengthen the slopes whilst the drainage

mass of the retaining wall itself, together with adequate drainage system, prevent both soil erosion and massive earth movement which eventually leads to landslides.

Oftentimes, there are jobs that require urgent attention. For example, in the emergency works done for the Public



Lee: Our technology is capable of shortening the time for construction by 50%

Works Department to solve the Grik-Jeli slope failure in 2000, there was no time to waste.

‘Our technology is capable of shortening the time for construction by 50%. Compared to the conventional method of erecting a retaining wall using form work, we are at least 20 to 30% cheaper,’ Lee notes.

Nehemiah Wall is a most cost effective technology to build urban highway interchanges and to protect slopes and prevent landslides in hill slope

development. In the case of the Alila housing project in Penang, the Nehemiah Wall is used to protect the slope and reinforced the soil, on which over 10 units of double storey terrace houses were built.

Nehemiah Wall has also been used successfully for river embankments such as the one along a section of Klang River, which borders the Prolintas Highway.

Access roads

As part of a bigger piece of infrastructure, Nehemiah Walls have been used to build ramps and flyovers over other highways and railway tracks to allow access to housing projects.

These retaining walls have also been built to bridge deep valleys as in the case of the highest retaining wall in the Cameron Highlands, measuring 20.5 metres high, which was completed in February 2001. This has since been surpassed by another Nehemiah wall in Pos Betau (21.0 m), also in the Cameron Highlands.

Commercial and residential

According to Lee, the major revenue of Nehemiah comes from infrastructure work, while only 35% of its annual turnover comes from its housing division. Yet, projects involving housing and property development can be very challenging at times.

Sometimes, the company is caught in between, when there is a controversy between a developer and the residents in the neighbouring lot. While the developer may have the right to erect a high wall within its boundaries, this may become a sore point of contention for residents who may have fears about such development in front of their homes.

‘This is where sometimes we are on the receiving end of the brunt,’ Lee explains.

In the case of a petrol station in Petaling Jaya, there was a lot of protest from residents nearly a decade ago. ‘We were only involved in building the retaining wall, but all sorts of blame were hurled at our wall. Today, the controversy has died down, but the walls are still standing,’ recalls Lee.

To Lee and his team of qualified engineers, the cost benefits to the property owners in the project made up for the lower revenue generated. They are prepared to work hard on ensuring that the job is done well and the walls are strong and secure.

‘We take on projects for major developers as well as individual property owners. Our target is to submit proposals with cost estimate and preliminary design and drawings within one week, or up to a maximum of two weeks. This standard operating procedure has been incorporated within the ISO9001 system,’ he adds.

For this reason, Lee’s company has been successful in securing a number of major projects without having to resort to unprofessional means of securing contracts. ‘People come back to us when they want the job done well and delivered on time,’ he quips, emphasising that one of the policies is never to give or take any bribes.

An unassuming engineer, Lee attributes the success of the company to the grace of God and the support of people in the construction business. ‘For the past 15 years, except in our first year, we have been profitable, and averagely, we are growing by about 20%. With the anticipated economic slowdown, we are venturing into a number of overseas markets, where we will be involved in exporting this home grown technology.’ [h.p](#)



Steady: Nehemiah Wall is all about space creation