

Headline	Addressing lack of proper drainage systems		
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Addressing lack of proper drainage systems

- **Many** developers would meet the minimum specifications required for a working drainage system and only a few would go the extra mile and look beyond the minimum
- **Buyers** should also be wary of the drainage and stormwater management in high-rise buildings



by Joseph Wong

MOST buyers when selecting to purchase a property either for their own stay or for investment generally do not look at the drainage system of their homes or the estate that they reside in.

In most cases, they tend to take for granted that the developers have put in place the necessary system but in truth that is not always the case. Problem normally occurs when there is flood in the area.

Generally, many developers would meet the minimum specifications required for a working drainage system and only a few would go the extra mile and look beyond the minimum to cater for the "what if it happens" scenario.

For example, Eco World Development Group Bhd's efforts in its Eco Grandeur township in

Puncak Alam, Selangor, is a case study of how far-sighted developers can add value to the communities in which they operate.

"When we venture into a new area, we elevate the standards of existing infrastructure in the vicinity, with permanent infrastructure expansion going into full swing later in the development cycle.

"We also resolve local issues such as the flash floods in the vicinity of Eco Grandeur wherever we find them, as a showcase of our commitment to the community," EcoWorld divisional general manager Ho Kwee Hong tells *FocusM*.

Ho has a background in civil engineering with a major in water resources.

Specialising in flood forecasting, she leveraged her experience as a hydrology engineer during initial surveys of the vicinity of the Eco Grandeur site.

Coming across reports of persistent flooding in two specific locations in the area, which saw the evacuation of 144 residents from 60 homes as recently as



Alif says the authorities can impose the requirements to cater for excessive rainwater during monsoon season

November 2015, Ho dispatched her team to the affected sites.

There, they traced the floods to blockages in earth drains caused by maintenance issues. These were addressed through extensive dredging and drainage



When we venture into a new area, we elevate the standards of existing infrastructure in the vicinity, says Ho

works, and to date, there have been no recurring reports of rising water levels in Puncak Alam following EcoWorld's entry into the area.

Developers' responsibility

For any new project, it is the developer's responsibility to plan, build and connect the development's drainage system to the nearest public drainage system outside the project's boundary.

"It has to be approved by the Road and Drainage Department of the local authority," says Alif Arif Iskandar Abd Wahab, associate architect of Veritas Design Group, an integrated multi-disciplinary design firm.

"For the planning of the development to be approved, the civil engineer must take into account the average rainfall of the area and the catchment area of the new development.

"This will be checked and finally approved and/or supported by the local authority before the Certificate of Completion and Compliance is issued by the architect.

"Normally, a developer will



Flooding is a major concern for us as it can bring all work on a project site to a standstill, says Foo

built to the minimum specifications approved by the authority. However, the authority can choose to impose the specification to cater for the excessive rainwater during the monsoon season," he tells *FocusM*.

Guidelines

There are several objectives in any given local council's drainage and stormwater management guidelines.

Apart from supporting and improving the government's policy on drainage and stormwater management, developers are also tasked with improving the performance of drainage and stormwater infrastructure with the aim of creating a system that is of international standards.

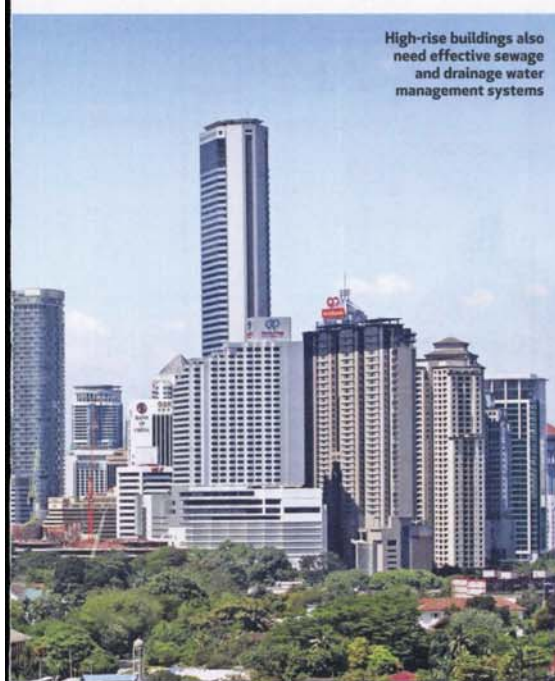
This is especially so for big housing estates whereby the responsibility appears to rest on the developer to draw up and implement a practical and effective master plan and in flood-prone areas, to mitigate the flooding.

For big estates, a drainage and stormwater management blueprint would have been drawn up



Floods are an annual occurrence in some parts of the country

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High-rise buildings also need effective sewage and drainage water management systems

to assist the public and private sectors and the community to work together in managing drainage and stormwater concerns, according to a local council.

With the blueprints, big developments will be able to envisage drainage system and stormwater management to prevent or mitigate floods or associated problems which may hinder the developments.

To facilitate the implementation, the blueprints would normally outline a set of new coordinating structures to manage new partnerships expected to come from public agencies and private organisations working together, it says.

Three aspects looked into are the practical implementation of the estates' drainage system and stormwater management. These are to improve the drainage

system, ensure the collection of stormwater for daily usage, and prevention of flooding.

"Consequently, we look forward to a metropolis that is safe and secure from flooding and become a place to invest, live, work and play within a metropolis environment of an international standard," the local council says.

But that is not always the case. There is actually an overlap in terms of where the responsibility lies and this interferes with the blueprints.

Lost in translation

Since a number of people are actually involved, from town planners to developers and architects as well as contractors, things can become lost in translation, says an industry observer.

"Lack of a proper drainage system is one of the greatest fears

for those living in flood-prone areas.

"The number of news coverage over the years, showing grim images of flood-damaged homes, cars and properties, are constant reminders of why a good drainage system is vital for housing estates.

"While Mother Nature is usually blamed for the excessive rainfall, state governments, local authorities or errant developers and contractors must also bear the blame," he says.

Drainage for high-rises

Another much-overlooked drainage and stormwater management system are those within high-rise condominiums and serviced apartments as well as office blocks.

There are many cases where residents in high-rise buildings are faced with bad piping system resulting in sewage leakages and stinky toilets.

"Architects are responsible for the design of the drainage system inside the building, including the rainwater harvesting system," says Alif.

"However, the final output, OnSite Detention (OSD) tanks and connection of the drainage system from the development to the existing external drainage system is designed by the civil engineer," he explains.

In fact, compulsory building features that are being incorporated at the moment are the OSD tanks and rainwater harvesting (RWH) tanks.

The OSD tanks work by detaining the rainwater for a limited time before it is released to the main drains. The tanks should remain empty, except during a period of rainfall and shortly after that.

The RWH tanks capture the rainwater in the development's catchment area and recycle it for irrigation purposes.

Depending on the system used, the water from the RWH tanks can be used for car washing and to flush toilets.

"Both the OSD and RWH tanks mitigate potential floods by reducing the surface runoff at the buildings area," Alif says.

Depending on the severity of



Drainage is an issue at construction sites as they have to make do with temporary drainage systems

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the issues and the period of when the problem occurs, owners and residents can lodge a complaint to the developer to repair and fix it especially if it is within the defects liability period.

There should be a separate piping system for drainage water and sewage, he says.

While single piping systems do appear in rare cases, modern buildings are employing a two-piping system, because of the added advantages.

“Sewage is a form of waste water. It is defined as waste water that contains faeces, urine and laundry waste,” Alif explains.

“[The sewage and drainage water management system] is approved by two different authorities - drainage water is under the local authority and

sewerage is under Indah Water Konsortium,” he says, pointing out that a single piping system should not happen as a sewerage system must be separated from the drainage water system.

“Furthermore, by separating the drainage water system, a rain-water harvesting system can be implemented and thus leads to water saving and environmentally friendly,” he says.

The industry observer says because buyers are more concern with their own apartments, they don't look beyond that.

“Only the rare individuals take the time to see aspects of the project beyond their units. This should be the practice of every buyer but many are just not bothered or worse, apathetic towards matters outside their walls,” he says. 