

# The highland towers collapse and ramp construction



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## Introduction

The intent of this essay is to happen out from a field, a edifice that experienced building calamity, analyze its short approachs and come up with solutions and recommendations of what could be done to guarantee the same job doesn't happen in the hereafter. The edifice upon which the R esearch is based in this assignment is called the Highland tower, a edifice in Selangor Malaysia which collapsed and 48 people died and 12 others were evacuated from the other edifice. The Highland Towers prostration was an flat edifice prostration that occurred on 11 December 1993 in Taman Hillview, Ulu Klang, Selangor, Malaysia. The prostration of Block One of the flats caused the deceases of 48 people and led to the complete emptying of the staying two blocks due to safety concern. It was one of the most tragic edifice accidents in Malayan history where residential towers collapsed and killed people. Since so, the authorities and its subordinates sat down in a commission to see a manner forward for the building industry particularly building in hilly countries to minimise casualties.

The event has been widely publicized, when an American tourer in peculiar because it is captured in the following 10 yearss and taken to the Tower of exposure a dramatic sequence, and brainsick deliverance operations.

Building professionals with the instance of several of import influence in Malaysia, which will be the focal point of this paper, but besides lead to tort jurisprudence in Malaysia interesting development and elucidation.

## Case survey

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Highland Towers consists of three 12-storey edifices in a steep hill, was later extensively on the patios in the early 1980s in western base built in phases between 1974 to 1982. Each block is named:

Block1 ( built in 1977, the most southern )

Block2 ( built in 1979, north-west block 1, somewhat elevated than the other two, the closer to the top of the hill )

Block3 ( built in 1981, the Northwest block 1, block West 2 ) .

Parking behind the mountain rain collapsed edifice in the swimming pool located on both sides and the rear between Northwest Northeast parking batch after the landslide caused by the failure of the retaining wall behind the edifice failed, for 10 years. The tower is home to the flush middle-class households ; considerable proportion of occupants are exiles. Highland Tower was one time ill-famed early 1980s and 1990s for affluent people to conceal their kept woman popular topographic point. The H2O tower is behind a little watercourse known as the `` East Creek. `` Eastern Creek flows into the tower site tower `` before building. Later, construct a grapevine system to deviate flow to short-circuit the tower in 1991, a new lodging development undertaking, called `` Wu Antarabangsa Development Project `` , located in the tower Peak behind the start. As a consequence, the mountain has been cleared of trees and other flora and land screen, soil eroding exposed land, which will take to set down slides from the building site of the H2O diverted into the river to deviate the flow of the same East piping systems. finally, the grapevine system to go over- pressurized H2O, sand and silt from the Eastern Creek and the building site. pipe explosion at <https://assignbuster.com/the-highland-towers-collapse-and-ramp-construction/>

different locations in the mountains, the dirt had to absorb extra wet.

December 1993 monsoon rains further declining the state of affairs.

( Block One of the Highland Towers collapsed )

Role and duties

The Architect

( I ) there is no defence of this contract is a limited one, at least you must guarantee that other facets of the work of others is competent to finish.

Defensive designer, he merely retained the design and supervising of three flat edifices, and denied that his scope extends to the drainage, earthworks and retaining walls. It was dismissed by that tribunal. The tribunal held that the designer must take into history the edifice on which is built in the locality of the land, and the land itself, the safety appraisal of the edifice, it must be evaluated. [ In add-on, the tribunal held that as a affair of fact, the designer concerned about the vicinity and the edifice itself, when he submitted the layout program, the governments because it includes high tower behind the incline patios and drainage. Therefore, he must guarantee that the work carried out although others in a competent and workmanlike mode ]

( li ) there is no difference between the standard attention of unqualified physicians

Although the designer in world merely a edifice draughtsman, measure their behaviour on the tribunal has the ability to architect a criterion that if a individual is unqualified, but showed himself to hold a accomplishment, he will be judged by the criterion a competent and qualified staff.

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( C ) there is no alibi to state that mandatory employer does not follow with ordinances

Finally, the Court seems to hold categorically rejected the designer 's alibi that he cannot make anything to halt his foreman ( employers and applied scientists in obtaining certifications of fitness in three flat edifices do not carry through the conditions stipulated by the local governments in collusion background, alternatively of patios and retaining walls to guarantee proper design, provide and sufficient to defy, even though he knew it would impact the edifice, he was in charge ) incline instability - the Court has made clear that, when the jurisprudence is broken, the designer must describe to the governments - after the designer must guarantee that the jurisprudence, even in the hazard of being discharged.

Engineer

Defense applied scientist, he merely retained the design and supervising of three flat edifices, Highland Towers compound constructions within two retaining walls, and submit programs, drainage, and two and denied his scope extends to the drainage, earthworks. It was dismissed by that tribunal. The tribunal found that applied scientists must take into history the edifice on which is built in the locality of the land, and the land itself, the clip to measure the safety of edifices, must be evaluated. He should guarantee the stability of the incline behind Highland Towers.

His responsibilities not by a mere belief that they are built on terraced inclines and retaining walls were discharged by an applied scientist or other adviser. He should inquire the professional is qualified, whether he was  
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making what impact the safety of cascading tower. [ Neglect other facets of applied scientists - a serious misdemeanor of the governments to take attention of his duties to a presentment issued by the purchaser, and merely 10 per centum is based on the sanctioned drainage building ]

In drumhead locations near edifice professionals need to be considered, every bit good as the safety appraisal of the site itself, particularly taking into history the next hillside. Building professionals to take part in a limited scope can non conceal behind, these are the things that they themselves and their employers, but they may be capable to the responsibilities owed to the range of their service is non limited to this. Building professionals required to guarantee that others do the work to prosecute them in the design may impact / supervisory construction is competent, workmanlike mode to transport out the work. If you think the general edifice professionals have expertise in a specific country of a^<a^<eligibility when they are unqualified, their behaviour will be a step of this expertness qualified physician. After constructing professionals must guarantee that jurisprudence and, if necessary to describe to the governments if their clients interrupt the jurisprudence, even in danger by their client to be discharged.

Case application on jurisprudence of civil wrong

Negligence

The Highland Towers determination becomes another Malayan High Court determination which diverges from the attack of the English Courts and adopts the attack taken by other Commonwealth legal powers in letting the <https://assignbuster.com/the-highland-towers-collapse-and-ramp-construction/>

recovery of " pure economic loss" , particularly where sufficient propinquity can be demonstrated between the negligent act and the loss. Pure economic loss is the loss related to the merchandise itself which is faulty by ground of carelessness, as opposed to the loss or harm caused to the belongings of the Plaintiff by this faulty merchandise.

### Nuisance

In this cause of action, a Defendant is apt if the Plaintiff can demo the Defendant is responsible for a status or activity which interferes with usage or enjoyment of his land, and that status or activity is non a sensible user by the Defendant. The Highland Towers determination, necessitating the complainant must set up an extra demand that is the type of harm whether the suspect could moderately foreseeable, the rules adopted from English instance jurisprudence on the extension of the perturbation is limited in Malaysia, Cambridge Water Company leather Co. Ltd. v. Eastern European states.

### Cause of structural failure

The H2O tower is behind a little watercourse known as the `` East Creek. " Eastern Creek flows into the tower site tower `` before building, so the constitution of the grapevine system is to deviate the flow to short-circuit the tower.

In 1991, a new lodging development undertaking, called 'Bukit Antarabangsa Development Project ' , located in the tower under building behind the top of

the hill. The mountain is cleared of trees and other flora and land screen, land exposed dirt eroding is a major factor doing landslides.

Construction site of the new H2O diverted into the big grapevine systems used to reassign the East river flows. This heavy-duty piping and H2O, sand and silt from the river and E into the grapevine building site. Pipes burst, several topographic points in the mountains, and the surrounding dirt to absorb extra wet. December 1993 monsoon rains further impairment of the state of affairs.

The H2O content in the dirt becomes saturated, so that the dirt has become syrupy, really go the grade of clay. October 1992 by the hillside is saturated with H2O, the H2O is fluxing down the inclines and considered retaining walls.

Shortly thenceforth, landslides, destructing the building of a retaining wall. Landslide mud that contains an estimated one hundred 1000 square metres - a mass equivalent to 200 Boeing 747 aircraft. Rammed earth base to first, bit by bit forcing it forward. After a month of this changeless force per unit area, foundations snapped and November 1993, the occupants began to see clefts organizing and spread outing the Highlands surrounding the tower, on the route warning of prostration. Unfortunately, no farther probe before a prostration December 11, 1993.

Safety governments and Investigation processes.

These were the findings of the probe that came from the accident. Besides bespeaking who was to fault for the happening of the accident. Within the

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first 24 hours, merely two adult females and an baby were pulled out of the debris. Indonesian amah Umi Rashidah Khoruman, 22, and her 18-month old girl Nur Hamidah Najib, survived the ordeal, but the 2nd adult female, Nipponese national Shizue Nakajima, 50, succumbed to her hurts.

Concluding study from the probes showed that It was the mistake of the belongings proprietors non to run out the land that caused the silt to construct and therefore the monolithic land slide that led to the prostration of the construction that claimed 48 lives.

Liabilitiess.

The followers are the tribunal 's findings of liability:

The first suspect was negligent in presuming duty non to prosecute a qualified designer, edifice patios insufficient, inadequate, could moderately be expected to hold caused the prostration of the retaining walls and drains eastbound recreation from its natural class and failed to guarantee that the incline is equal H2O pipe culverts, and detest non maintained drains and retaining walls.

The 2nd suspect ( the designer ) is assumed liability for carelessness does non guarantee equal drainage and retaining walls built in the next Highlandss tower site, which he foresaw or should hold foreseen that the edifice would jeopardize the hillside, he is responsible for, non specified with the governments on drainage, and the first suspect and the 3rd suspect ( applied scientists ) collude to acquire fitness certification does non carry through the conditions by the 4th suspect ( local governments ) are required, in making so does non follow with his responsibilities, the designer and no <https://assignbuster.com/the-highland-towers-collapse-and-ramp-construction/>

probe retaining walls, even though he knew they would impact the terraced hillsides and building of edifices, he was responsible for, and hatred, because he is an unreasonable land users.

The 3rd suspect ( applied scientist ) is behind the carelessness of duty without sing the hillside or incline of the tower, there is no footing for the design and building to suit sidelong burden or instead landslide has ensured that the next incline stableness, without execution of the sanctioned drainage program, and the first and 2nd suspects colluded to acquire fitness certification does non carry through the conditions stipulated by the 4th suspect and a nuisance, because he is irrational usage of land.

The 4th suspect ( local governments ) Although the carelessness of its construction-related occupations. That is about the edifice program blessing procedure to guarantee the execution of the sanctioned building of drainage systems, and in the Certificate of Fitness job remains because S95 Street, Drainage and Building Act ( 2 ) unsusceptibility.

The 4th suspect, but a care map Eastern watercourse tardily in carry throughing its building can non be spared for its carelessness. It besides attracted a nuisance liability.

The 5th suspect ( Arab - Malayan fiscal BHD ) is apt for the carelessness of failure to keep drains their land, and in the land after the prostration of the steps taken to reconstruct stableness.

Seventh suspect ( Metrolux belongings ) and its undertaking director, the 8th suspect, who is the duty of carelessness and nuisance, to forestall H2O from

fluxing into the downhill ( into their web site ) , but to steer the watercourse of H<sub>2</sub>O into the East, when they knew or ought to hold known, this will increase the sum of H<sub>2</sub>O injected into the clay and, in peculiar, have their ain extended land glade, travel east into the watercourse, it will be deposited, which will in bend ( to turn out ) cause or contribute to drainage mistake system and a prostration.

The 9th and 10th suspect ( fundamentally the province authorities ) , found no liability due to a proficient job on the prosecution of a peculiar political party.

The 6th suspect ( who carried out the work site clean- Arab - abortionpurchaser of land in Malaysia ) found no grounds of duty.

### Redresss

About redresss the first this is happen a qualified contractors and qualified Designer and building applied scientist. In this instance causes of edifice prostration the chief ground is to happen designer contractor caused by the irrational. So we summary have five points:

( I ) Nearby locations edifice professionals need to be considered, every bit good as the safety appraisal of the site itself, particularly taking into history the next hillside.

( li ) edifice professionals to take part in a limited scope can non conceal behind, these are things that they themselves and their employers, but they may be capable to the responsibilities owed to the range of their service is non limited to this.

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( lii ) edifice professionals required to guarantee that others do the work may be engaged to oversee their influence in the design / building is competent, will transport out their work, a workmanlike mode.

( Iv ) if the edifice professionals think they have expertise in specific countries when they are unqualified, their behaviour will be a step of this general makings expertise qualified physician.

( V ) building professionals must guarantee that the jurisprudence after a study to the governments if necessary, if their clients interrupt the jurisprudence, even in danger by their client to be discharged.

The 2nd thing to make is to guarantee that the experience and expertness to this undertaking.

Following to it is to guarantee that all stuffs and constituents to be installed and used in order to prove its functionality and satisfactory conformity with the needed criterions. For illustration ; specific research lab trials should be taken before utilizing compressive strength, stableness and lastingness.

Finally, before any portion of the undertaking is complete, responsible for the blessing before its following regulative organic structures should be. The undertaking is a theoretical account for all the points necessary trials, carried out before the existent execution. Engineers can besides utilize the cause of the conditions and other facets of the theoretical account.

The 3rd thing is because this state of affairs has occurred for many old ages, although the tribunal has non yet made the determination, but still want to

remind contractors, who together oversee project quality, and how to decide some of the hazard about. Do not allow the calamity go on once more.

#### Percentage Frequency of Causes of Building Collapse ( Malaysia 1960-2010 )

NO	Investigated causes of edifice prostration	Malay a	Percentage ( % )
1	Structural failure	1	10
2	Faulty design	2	20
3	Poor craft	1	10
4	Substandard stuffs	1	10
5	Due to environing edifice development	2	20
6	illegal transition	0	0
7	Inexperience contractor	3	30
8	Building use	0	0
entire		10	100

So in this tabular array we can see Causes of Building Collapse most ground

is Inexperience contractor. Now we need clean know find an experient

contractor is really of import,

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faulty design and due to enviroing edifice development besides account for a big proportion.

### Recommendations

From the above analysis and treatment presented, you can deduce that the chief ground for the edifice 's structural failures, design mistakes and hapless craft, which may besides be applicable to other states in the universe.

Besides from the consequences of this survey, it is believed that there are three types of claims, can bring forth any edifices collapsed, that contract claims, civil wrong claims and incidents of both contract and civil wrong claims ; This means that a party can be made in this both his / her petition. Therefore, the undermentioned recommendations for who had suffered losings in the square edifice prostration

Events so that their demands:

( 1 ) The Government shall endeavour to help in the probe of any incidence of edifice prostration, to let victims to cognize the responsible party, and from whom to do a claim.

( two ) The Government should help proprietors or who have suffered the loss of a edifice prostration in the event a 3rd party to prosecute their instances in tribunal as they do their other demands, if they can non, because

The expensive nature of the proceedings.

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( three ) The Government should ordain Torahs that will better the effectivity and criterions for the building of edifices.

( four ) In add-on, the authorities should supervise, manage and implement the jurisprudence, its effectivity.

( V ) Every edifice proprietor should guarantee that qualified professionals and experient contractors are engaged in transporting out their building procedure.

( six ) Every professional organic structure should supervise their members and besides be ready to punish any error-prone member who ISS found apt in constructing prostration incident.

## Decision

Ramp building led to landslides - like we decidedly hear a batch of intelligence, and landslides claimed more and more of life events, why is everyplace and dropping of trees for the building of the activities. Otherwise, this calamity 21 old ages ago can be avoided! I hope the Government will earnestly look at this issue!

## Mentions

- [hypertext transfer protocol: //malaysiafactbook.com/Highland\\_Towers\\_collapse](http://malaysiafactbook.com/Highland_Towers_collapse)

[hypertext transfer protocol: //www. nst. com. my/nation/general/i-saw-highland-towers-block-crash-to-](http://www.nst.com.my/nation/general/i-saw-highland-towers-block-crash-to-)

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