

# Fact behind Building Collapse in Shanghai



## **Building Collapsed In Shanghai** (06/27/2009) ([Daqi](#))

At around 5:30am on June 27, an unoccupied building still under construction at Lianhuanan Road in the Minhang district of Shanghai city toppled over. One worker was killed. According to information, a 70 meter section of the flood prevention wall in nearby Dianpu River and that may have something to do with this building collapse.

But the high-resolution photos are really amazing.

([China Daily](#))

Improper construction methods are believed to be the reason of last Saturday's building collapse in Shanghai, according to a report from the investigation team. The investigation team's report said that workers dug an underground garage on one side of the building while on the other side earth was heaped up to 10 meters high, which was apparently an error in construction, according to a report on [eastday.com](#), Shanghai's official news website. "Any construction company with common sense would not make such a mistake," said an expert from the investigation team.

Earlier this week, there were also reports saying that cracks on the flood-prevention wall near the building, as well as the special geological condition in the water bank area, may be part of the reason for the collapse. "These factors are not the basic reason of this accident," said the expert.

Nine people linked to the building collapse, including the real estate developer, contractor and the supervisor for the project, have been put "under appropriate control", said the official Xinhua News Agency Sunday evening.

Firm's ignorance led to toppling of Shanghai building, report says By Will Clem and Lillian Zhang. July 4, 2009.

An official investigation into the collapse of an unfinished building in Shanghai has said that the accident was due to the construction company's "ignorance", rather than flaws in the design or building materials. However, the report stopped short of apportioning blame, and has been criticised for failing to address key issues.

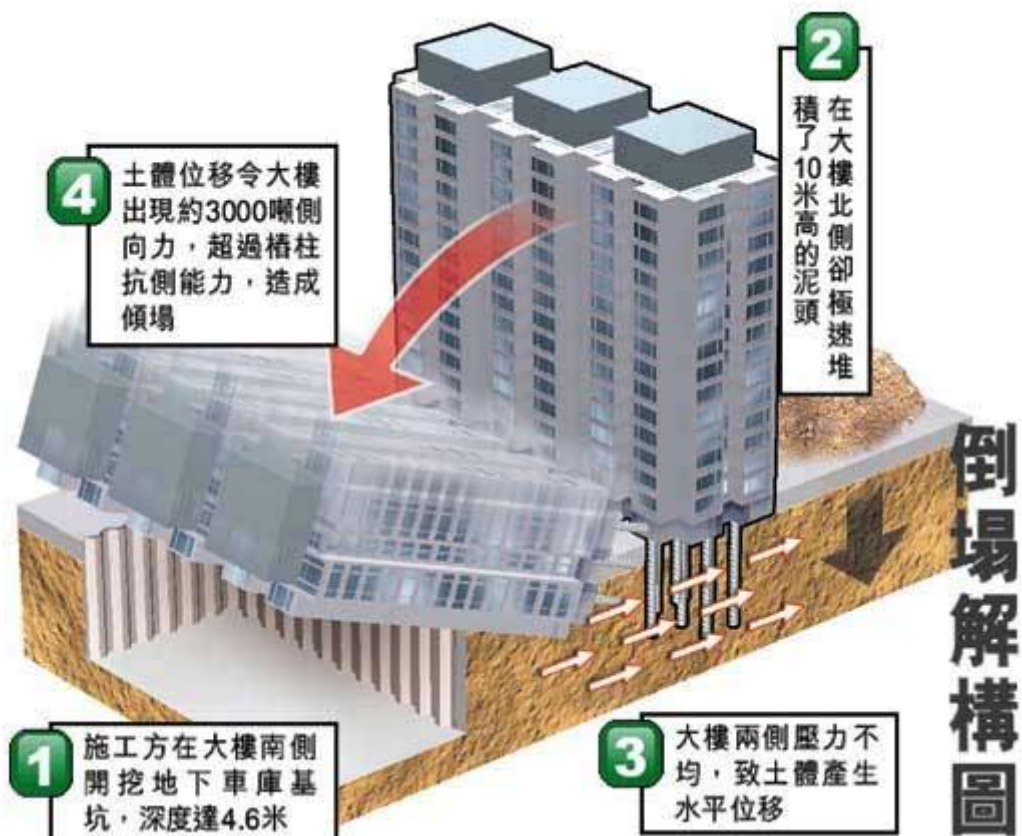
The report said the collapse was caused by earth, excavated to make a 4.6-metre deep pit for an underground car park alongside the building, being piled to depths of up to 10 metres on the other side of the structure. The weight of the pile created a "pressure differential" which led to a shift in the soil structure, eventually weakening the foundations and causing them to fail. This situation "may" have been aggravated by several days of heavy rain leading up to the collapse, but investigators would not say whether this was a crucial factor. The report said the construction company - Shanghai Zhongxin Construction - "did not consider clearly" that the earth pile could have such a devastating effect.

Investigators stopped short of saying whether the company's errors were negligent or easily avoidable. However, they stressed that the building's foundations and construction materials all complied with the city's building regulations.

Huang Rong , director of the Shanghai Urban Construction and Communications Council, said inspections had shown that none of the remaining 10 apartment blocks was in immediate danger. "The surrounding buildings are now stable," he said. "The safety inspection of these homes will be the second phase of our professional team's work."

Jiang Huancheng , an architect and a lead investigator for the report, said it had been an "enormous shock" to see the site for the first time. "In my 46 years in the industry, I have never seen or heard of this," he said. "To put it simply this was ignorance leading to rashness. We need to take this accident as an important lesson ... and ensure that it does not happen again."

Several days before the release of the report, Wu Hang , Mr Jiang's assistant, accused the construction company of incompetence and lacking "common sense". Mr Wu said the investigation had found there had been no structures to support the walls of the car park pit, and this had been a key factor contributing to the accident.



- (1) An underground garage was being dug on the south side, to a depth of 4.6 meters
- (2) The excavated dirt was being piled up on the north side, to a height of 10 meters
- (3) The building experienced uneven lateral pressure from south and north
- (4) This resulted in a lateral pressure of 3,000 tonnes, which was greater than why the pilings could tolerate. Thus the building toppled over in the southerly direction.

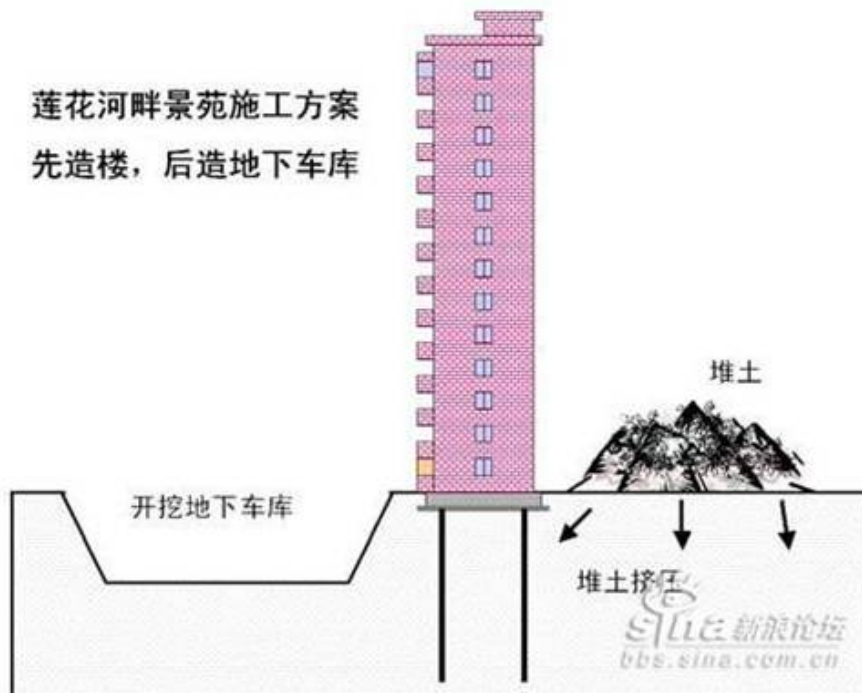
([Sina.com](http://Sina.com))

美丽的  
莲花河畔景苑大楼  
是怎样倒塌的



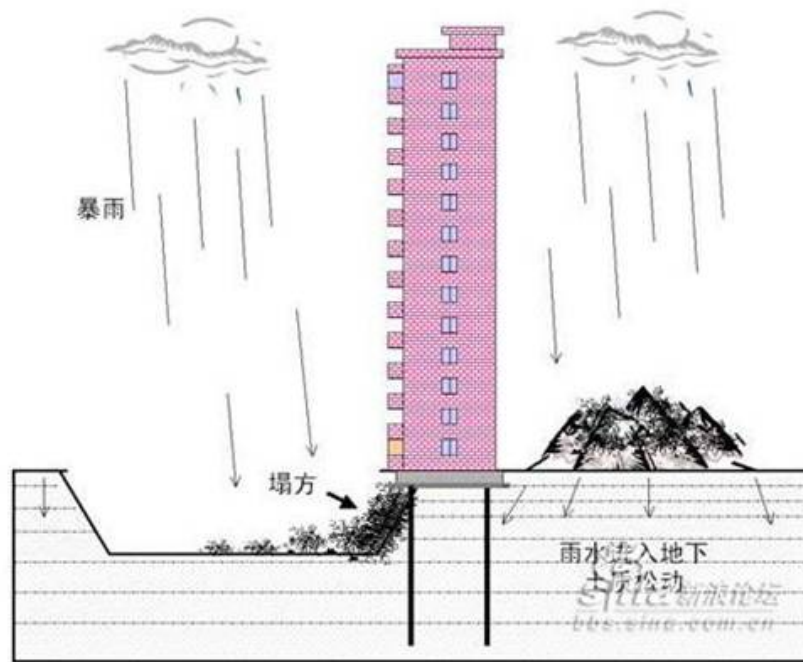
First, the apartment building was constructed

莲花河畔景苑施工方案  
先造楼，后造地下车库



Then the plan called for an underground garage to be dug out.  
The excavated soil was piled up on the other side of the building.



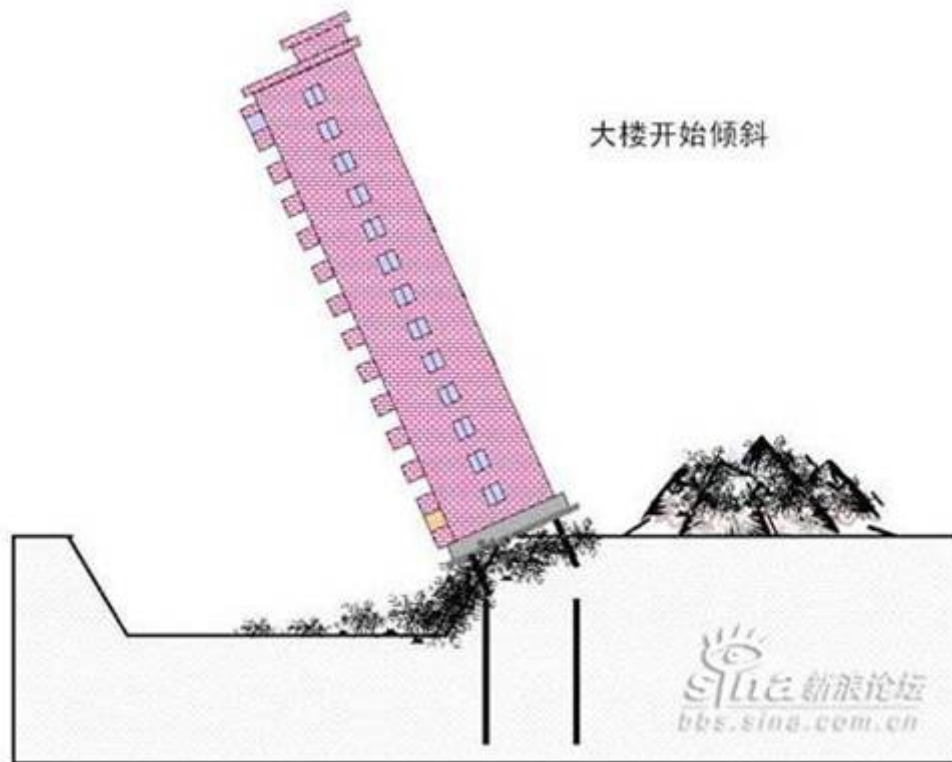


Heavy rains resulted in water seeping into the ground.



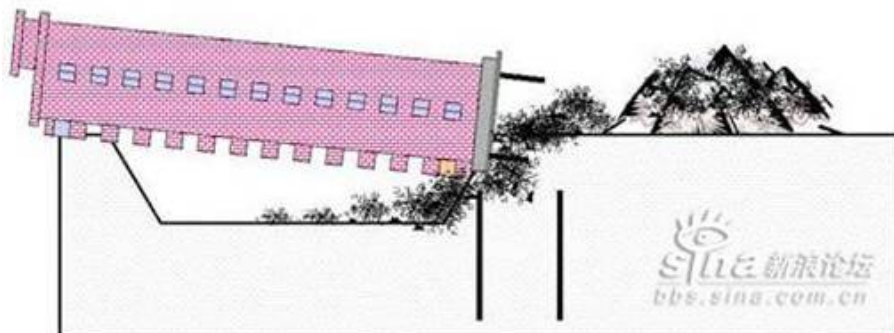
The building began to shift and the concrete pilings were snapped

due to the uneven lateral pressures.



The building began to tilt.

创造世界房屋倒塌奇迹



And thus came the eighth wonder of the world.





















Fuente adicional: [http://english.sina.com/head/eng20090627pm\\_gmt.shtml](http://english.sina.com/head/eng20090627pm_gmt.shtml)

**Fuente CHINA DAILY 15-07-2009**

[http://www.chinadaily.com.cn/china/2009-07/04/content\\_8378498.htm](http://www.chinadaily.com.cn/china/2009-07/04/content_8378498.htm)

## Cost-cutting not cause of tower's fall

By Cao Li (China Daily)  
Updated: 2009-07-04 08:29



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**Shanghai authorities announce that the apartment building that collapsed early Saturday, killing one worker, was not compromised because of cost-cutting but because of apparent construction mistakes that undermined the building's foundations. Xinhua**

SHANGHAI: The collapse of a Shanghai high-rise last Saturday was not due to cost-cutting on the part of its builders - as some rumors have suggested, local authorities announced on Friday.

The design and materials used on the 13-story building, one of 11 under construction in Minhang district's Lotus Riverside residential complex, meet appropriate standards, said Huang Rong, director of Shanghai Municipal Construction and Communications Committee.

The pre-stressed high-strength concrete (PHC) hollow foundation piles that were uprooted in the collapse, and which were widely criticized by the public as a possible cause, were being used properly, said Jiang Huancheng, an academician leading the investigation.

Huang said mud piled up to a height of 10 meters on the north side of the building and the excavation of a 4.6-m deep underground car park on the other side caused the foundation to shift, leading to the collapse.

Gu Guorong, another expert in the investigation team, said the ground could have withstood a mud pile no higher than 5 m. "I have never seen or heard of such an accident in my whole 46 years in the industry," said Gu.

The news conference attracted around 200 journalists who were told there was no decision as yet on possible compensation for the 500 homeowners affected.

Huang said the cause of the accident needs further investigation. He also said prosecutors have joined the probe.

Any immediate danger to surrounding buildings has been mitigated and a 24-hour watch is still being conducted, he said.

Further safety tests will be conducted on the 620-unit complex and the 66,000 sq m development will be reinforced if that is found to be necessary.

The collapse, which happened around dawn on Saturday, claimed the life of a 28-year-old worker, surnamed Xiao, from Anhui province, who had returned to the site to collect tools.

Chen Zhiqiang, an official with Minhang district government, said the authority is negotiating with Xiao's family over compensation.

Residents of 132 nearby households who were evacuated as a precaution have been allowed to return home.

On Monday, Minhang district government announced that nine individuals connected to the incident have had their freedom limited as the probe continues and the capital of the developer has been frozen.

Documents filed by the developer - Shanghai Meidu Real Estate Development - with regulatory bodies suggest several board members work for the local township government, something that is illegal.

(China Daily 07/04/2009 page3)



**A pedestrian looks at the toppled apartment building on Friday in Shanghai's Lotus Riverside complex. China News Service**

## Anger and tears over collapse of building

By Cao Li (China Daily)

Updated: 2009-06-29 07:33



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SHANGHAI: Zhou Xuejun, 60, burst into tears and demanded a refund for her residential unit, which she says is unsafe after a nearby building collapsed in Shanghai's Minhang district.

"I can't live there," she cried as she pounded on a desk Sunday at the government reception center set up to deal with the accident. Standing behind her were hundreds of other angry homeowners, who spent millions on similar apartments priced at about 14,300 yuan (\$2,090) per sq m.



People who bought houses in a building that collapsed Saturday in Shanghai discuss collective action Sunday near the site of the collapse.

Gao Erqiang [Click for more news photos...](#)



Sheng Shunchang, a homeowner, said: "I want my money back and compensation for the price gap when I buy a new property, considering the soaring property prices."

The residents have bought units at 11 apartment blocks in the "Lotus Riverside" residential community, which is under construction on the eastern outskirts of Shanghai.

About 5:40 am on Saturday, one of those buildings fell on its side, almost intact. Pillars that were supposed to be buried deep under the earth were uprooted. A 28-year-old worker surnamed Xiao from Anhui province was killed as he collected his tools from the falling building.



The 13-story apartment building, which was under construction, toppled over almost intact, killing one worker. Gao Erqiang

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Meanwhile, it has emerged that the developer, Shanghai Meidu Real Estate Company, has been working illegally because its construction license expired in 2004.

Zhang Suping, who lives across the river from the collapsed building, said his family and neighbors were woken at dawn by the falling building.

"I thought it was an earthquake and I ran downstairs, where I found other neighbors looking at the collapsed building," he said.

About 132 households across the street were evacuated, and 120 families moved to hotels paid for by the district government.

Shanghai mayor Han Zheng and Party secretary Yu Zhengsheng have ordered an investigation into the collapse.

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An initial investigation found that the rest of the buildings are safe. "An investigation team formed by experts found that by 6 pm of Saturday, none of the other 10 buildings have tilt, shift or sank," the report says.

"And government departments have also found no leaking, cracks or moving of gas pipes, power wires or water pipes. They all meet the safety standards and chance of a secondary disaster is low."

However, Xu Jianping, who signed a contract for an apartment in one of those buildings only 10 days ago said: "I dare not move in."

Most residents are demanding refunds and compensation, but experts doubt whether their claims will be successful. Zhang Qi, a man in his 50s, said he wants his money back and compensation of an equal amount. Zhang and his new wife bought a property in February with a loan of 450,000 yuan.

"We are paying back the bank," he said. "I won't be able to afford another property nearby even if I get my money back."

Zhou Xuejun, another owner, said she was devastated because she had spent her life savings and borrowed 400,000 yuan to pay for the unit that she not dare to move into now.

Si Weijiang, a lawyer, said the refund and compensation claims would depend on the result of investigations.

"Buyers of the collapsed building will definitely get their money back, but it is not sure if others who still have their property will," he said.

"According to Chinese law, they cannot have their money back or be compensated unless it is proved that their properties are too dangerous to live in even after renovation.

"And as I see it, courts rarely support compensation claims for price gap in such situations."

An architect surnamed Meng with Shanghai Xian Dai Architectural Design Group told the Shanghai Morning Post: "The builder should have taken into consideration the riverside location and loose soil."

On Friday, some residents said they saw that the anti-flood bank of nearby Dianpu Lake was broken after days of rainfall.

It is also suspected that piled-up mud, about the height of 3 to 4 floors, which had been dug out from under the buildings had caused the ground tilt, and that this led to the bank break and the building collapse.

Sub-standard construction has been a major concern in the building sector, as the country rolls out enormous city expansions and finishes off vast infrastructure projects to keep pace with fast economic growth.

The Shanghai government Sunday ordered developers to ensure safety during the construction of all projects.