

Software could help prevent building collapse in sinking cities

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Skyline of Shanghai. Image credit: Laoluan.

(PhysOrg.com) -- Shanghai, the most populated city in China, is sinking at an average rate of 2-4 cm per year. Although that may not sound like much, the downward shift can cause the collapse of buildings and underground tunnels, endangering lives and costing money. Recently, the National Natural Science Foundation of China has granted funding of about ¥500,000 (about \$80,000) to a Nottingham University researcher to develop a computer program to identify which buildings and other structures are moving the most and are at greatest risk of collapse.

Andrew Sowter, a mathematician and scientist at the University of Nottingham Ningbo, China, (UNNC) is developing [software](#) that analyzes satellite images of [Shanghai](#) over the past several years, which shows how much the land has moved across the coastal city. The

program can accurately measure the land's movement down to the millimeter. Along with researchers at Tongji University in Shanghai, Sowter is also analyzing data from the ground to confirm the satellite data.

While Shanghai is being used as a case study, several other cities in [China](#) are also sinking and could benefit from the research. Many of the sinking cities are coastal cities, such as Ningbo, which is currently constructing an underground rail system. Like Shanghai, Ningbo has a rapidly growing population and is built on water-logged land. Rapid urban development has also required groundwater to be pumped into the cities, contributing to the sinking.

In addition to identifying risks for sinking cities, Sowter's computer program could also have applications for identifying risks in earthquake zones, flood areas, locations with glacier movement, and landslide areas.

More information:

via: [The Engineer](#)

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