

Harvest of deaths as incompetence,



Site of the Anambra collapsed building

Photo: File

In this report, **VICTOR AYENI** writes on how torrential rainfall across the country, together with incompetence in the built sector, worsens incidents of building collapse

As the sun rose on the morning of September 9, a valence of despair, regrets, and grief surged through the residents of Egu Enuagwu in Odo Nnewi, Anambra State. Around 1am, while many residents were fast asleep, a three-storey building under construction collapsed.

Trapped in the rubble were the builder, Chiboba Aniefuna, his two sons, cousin, and several other construction workers who slept in the building in order to commence their plastering work the next day.

While Aniefuna's cousin and the workers were rescued alive, the father of two and his sons died in the incident.

The building came down around 1am today (Sunday) and it came with a thunderous noise. Three people, a man and his two sons, who were also supposed to be part of those to work on the site, died in the incident.

"They came from the Nimo community and were sleeping over to begin their work early in the morning when the incident happened," Sylvester, an eyewitness, told Sunday PUNCH.

During the rescue operation, several trapped people sustained varying degrees of injury and were rushed to St. Felix Hospital, in the Nnewi North Local Government Area of the state.

It was gathered that the dead victims were deposited in a morgue in Nnewi.

Some officials of the Council for Regulation of Engineering in Nigeria, Anambra State chapter, led by the Chairman, Victor Meju, and the Transition Committee Chairman of Nnewi North LGA, Chris Ohiara, visited the scene of the incident.

Meju, who supervised the evacuation, disclosed that an excavator was used to recover the three bodies from the debris.

According to him, the late builder was not a certified engineer and the materials used for the structure were substandard.

"Poor foundation, poor concrete mixture, poor quality of materials, poor wearing coat capacity, nonconformity to standards, non-approval from relevant regulatory authorities led to the avoidable tragedy," he told journalists.

Downed by downpour
Two days to the Anambra incident, another tragedy struck in Mbemena Coal Camp in the Enugu North LGA of Enugu State.

After a downpour on Friday evening, a high fence collapsed on a bungalow, killing four, siblings whose ages ranged between eight and 15.

A joint team comprising the National Emergency Management Agency, South East Zone; Enugu State Capital Development Authority, and the Mbemena Neighborhood Watch rushed to the scene to assist those trapped or in distress.

It was gathered that the collapsed fence had previously fallen in 2022 but was rebuilt without proper reinforcement.

"Factors such as a poor drainage system, heavy rainfall on the day of the incident, and the topography of the area all contributed to the collapse and subsequent destruction of the poorly constructed bungalow," NEMA said in a statement.

Following the incident, the Chairman of the Enugu Capital Territory Development Agency, Uche Anya, inspected the site and described its construction as "irresponsible."

"Unfortunately, the people we lost in that tragedy are innocent children and it is very painful," he added.

The ECTDA informed the building's occupants of a planned demolition and gave them 48 hours to vacate the premises.

Also, on July 22, the two sons of a 45-year-old furniture maker, Ahmed Atolagbe, were killed when a portion of the fence of a hotel collapsed on their house in the Ikorodu area of Lagos State

also largely compromised as some rooms within

their units are fine with whatever one is building as long as they have their cut.

"Buildings rarely collapse by acts of God; it is usually due to human ignorance or greed across several levels. This widespread mentality that anyone can be an engineer is what is literally the death of us. Professionals are not being consulted; in buildings where an architect is hired, a structural engineer is not. This is abnormal in saner climes."

A real estate project manager at Anola Development Limited, Mr Olayinka Banjo, during an interview with Sunday PUNCH, said poor construction practices were most times responsible for the collapse of buildings.

"First of all, structural failures are a reason. Weak construction materials, poor design, or inadequate construction practices can lead to structural failures that cause a building to collapse."

"Also, poor construction practices which involve shoddy workmanship, shortcuts, and substandard materials can result in a building being structurally unsound."

"Building collapse also occurs due to overloading. When there is excessive weight or stress on a building, such as heavy equipment, it can lead to eventual collapse if the structure can't handle the load."

"Flaws in the architectural or engineering design of a building can create weak points and there is also human error - mistakes made during construction, renovation, or demolition, which can weaken a building's structure and potentially lead to a collapse," he explained.

Corroborating Banjo's claims, the Chief Executive Officer of a real estate firm, Titan Clan Limited, Godwill Mpmah, said the wrong practices of architects and structural engineers could affect structural integrity.

He said, "There are over three or four key persons involved in the developing of a housing project. There is the architect who does the drawings; the structural engineer who does the structural work in terms of load sharing or load carrying, that is, which side of the house should carry what weight or balance across the support system of the house."

"There are also the electromechanicals; those who have to do the plumbing and the electrical parts of the house. The two most important people who decide if a house will last long or fall short are the architects and the structural engineers. Poor architectural and structural work will make a building collapse."

According to Mpmah, it is hard to see a bungalow collapse because it's on the ground level.

However, any house that goes from one suspended floor to two or three-suspended floor is susceptible to collapse.

"It is only these kinds of high-buildings that the structural engineer works on. The error that can happen is when the structural engineer does not do proper load share work of the house. If he does the wrong recommendation for the rods (reinforcements) for the house like where there should be 20mm rods and instead prescribes 16mm rods for a house going up to four or five floors, that is poor structural work. That house with time will fall no matter the cement packed into the building," he added.

Mpmah explained that greed could also make architects and developers bypass housing approvals.

He said, "The other part is the developer himself. The structural engineer has recommended what will carry the house but because the developer wants to make more profit, he uses lower-grade or below-par reinforcements. When these inferior qualities made from recycled or smelted pieces of iron are used in construction, they won't carry the house properly."

"Then some architects and developers bypass house approvals. A house will have approval for three floors and they will build nine floors because they want to maximise the land; but the foundation can't carry these structures so they eventually collapse. The greed that comes with the

building collapse prevention guild recorded that at least 62 catastrophes occurred in 2022, causing 84 deaths and injuring 113 persons.

The report indicated that Lagos had 20 cases of building collapse incidents, while Kano and Anambra recorded five each; Delta and Jigawa states also had four each.

The document showed that out of the 271 building collapse incidents recorded within the past 10 years in Nigeria, at least 531 persons died, as the menace of crumbling structures continues to plague the country's built sector.

In April, the Director-General of the Standards Organisation of Nigeria, Farouk Salim, at an event in Lagos, lamented that Nigeria had witnessed a disturbing increase in building collapse over the years.

He noted that statistics indicated that there were over 221 cases in Nigeria, which made it the country with the highest number of building collapse incidents in Africa; Lagos State alone had 60 per cent of the number.

In July, a report on housing regulatory framework standards in sub-Saharan Africa by the World Bank attributed the frequent building collapse in Lagos State to gaps and loopholes in the permitting process and the use of unqualified professionals in the design and construction of buildings.

It also listed the absence of a legally adopted building design code, limited land available for development, and lack of systems for quality construction materials as reasons buildings caved in regularly in the state.

According to the bank, only about 10 per cent of construction sites obtain permits, and even when permits are obtained, final construction can still deviate from their requirements.

The report partly read, "Based on past studies and consultations with the government and key stakeholders, the main drivers for building collapse in Lagos are the absence of a legally adopted building design code."

Lagos State. This contributes to poor quality design and construction, increasing vulnerability and reducing building design life."

"Lack of systems to ensure the quality of construction materials: Materials in the marketplace often do not meet the Nigerian national standards, which include minimum material standards, certification mechanisms and testing requirements. In addition, material testing facilities in Lagos have limited capacity."

To resolve this, the World Bank proposed collaboration between the government and the private sector as well as bottom-up outreach to inform communities about the risks associated with low-quality construction and design.

Meanwhile, the General Manager of the Lagos State Materials Testing Laboratory, Mr Funsho Ehudale, noted that a new law would soon be enacted to make substandard construction impossible in the state.

He added that the agency was currently under pressure for mass testing of buildings because a sister agency recommended hundreds of defective buildings for demolition.

"Adherence to material quality and abiding by other ethical principles of construction could avert collapse and a new law to force compliance would soon be enacted," he said.

Effect of heavy rains
Available records indicate that more building collapse incidents occur during the rainy season

than during the dry season.

While some link the incidents to groundwater and soil mechanisms which result in the tilting of foundations and wet groundwork, others blame it on the use of sub-standard materials and shoddy construction works.

Speaking with Sunday PUNCH, a structural engineer, Ezekiel Adeniyi, explained that downpours could cause building collapse through improper drainage, flooding, and landslides.

He said, "When there is an accumulation of water around and beneath a building, it can lead to excessive water pressure, which could weaken the foundation, cause soil erosion, and ultimately result in the collapse of the building."

"Heavy rains can make the soil extremely wet. If this happens, soil may lose its ability to support the building, leading to a collapse. Another cause is landslides and mudslides, especially in hilly areas. The increased water weight can trigger the movement of soil and rocks, destabilising the foundation of nearby buildings and causing them to collapse."

"When there is a prolonged downpour, it often results in flooding. This can directly impact buildings, especially those situated in low-lying areas or near bodies of water."

Adeniyi also noted that extreme rainfall could affect the structural health of buildings if a structural engineer did not factor the wet season into the loading calculation and the design of the base foundation.

"When there are flaws in the design in place, heavy rains can add much weight to the building due to water accumulation, putting excessive stress on the structural components," he added.

During his interview with our correspondent, Mpmah noted that the structural integrity of a

kind of foundation that will go with the land.

"Most of the land on Lagos Island is soft because of the terrain, so because of this, the land closer to the ocean needs a firm foundation; one that is attached to the deeper part of the earth, not the softer surface."

Adebanjo added that to avoid a situation where the foundation of buildings continued to slant, "geotechnical testing is necessary before commencing development."

'Professionalism will curb incidents'
Last week, the General Manager of the Lagos State Building Control Agency, Gbolahan Oki, linked the frequent building collapse incidents in the country to attitudinal problems and a lack of maintenance culture.

Oki also lamented that only 4,000 architects were registered in the country and over 6,000 unregistered.

He added that the crucial role of professionals in the construction sector was to counter the trend of building collapse.

"To end building collapse in Nigeria, professional bodies should register all candidates as this would promote professionalism and end quackery in the built sector," he said.

He also called for increased vigilance and community involvement, the use of appropriate building materials, and the need for thorough documentation of all individuals working on construction sites.

"Construction often starts with the architect who designs and plans the project. The structural engineers are to ensure that the structures can withstand the stress and pressure imposed by use and the environment," Oki added.

Speaking on what could be done to curb building collapses, the Executive Director of TCL, Shola Adeyabo, said, "There should be stricter regulations that will ensure that older buildings are properly renovated and their structural integrity tested in order to prevent building collapse."

"The soil properties of a building site should also be properly investigated by a structural engineer. The type of soil and loading of the building will take into consideration other factors like rainfall and seismic activity, and the expert will come up with the base foundation type like deep foundation or shallow foundation."

Speaking on the need for the government to put an end to the loss of lives through building collapse, an architect and Principal Partner at OddSpace Consult, Mr Ayomide George, told Sunday PUNCH that there should be consequences for those who violated building regulations.

He said, "The government must identify and prosecute consultants, architects, quantity surveyors, and engineers who are complicit in the collapse of buildings across the country. They should also publish all permits received during those projects and all documents related to safety testing."

"The best way for the government to demonstrate its commitment to putting an end to the loss of lives and property is to ensure that there are dire consequences for violating building regulations. This will encourage more responsible practices in the built industry."

On his part, Bassey called for proper funding of agencies in the built sector in order to attain a high level of responsibility.

"Agencies responsible for the built environment need to first be adequately funded, and then held to a high level of responsibility and where necessary be made to be partially liable for any collapse as should have been within their purview," he stated.

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