

spotlight

Wheels to curb collapse of buildings

Cement maker offers small-scale developers free concrete testing to ensure quality construction works, reports **JOE OMBUOR**

An audit report ordered by President Uhuru Kenyatta after several buildings collapsed in Nairobi last year killing and maiming several victims singled out poor quality of concrete, lack of proper foundation and the use of substandard building stones as the principal causes.

That was only the tip of the iceberg in the lucrative but problem-laden construction sector where entrenched cartels collude with crooked urban, lands, administrative (chiefs and their assistants) and other authorities to defeat laid down rules to the detriment of innocent lives.

Hushed, but important factors include corruption and greed on the part of law enforcing authorities and property owners in a hurry for quick money, not to mention poverty that propels legions into suicidal-risk taking. Such was the case with the Huruma house built with part of its foundation submerged in the murky Nairobi River. It crumbled with 51 lives.

To help smaller clients surmount the problem, Bamburi Cement company has come up with a mobile laboratory circulating in Nairobi and its environs with a target to cover the whole country.

"Big construction projects such as malls, office blocks and others not constricted by funds follow laid out

requirements to the letter. That is why they hardly collapse," says Bernard Koskei, an engineer at Bamburi.

Besides cement, everything from water, sand, ballast to building stones or bricks is subjected to quality checks before it is committed to construction. "Sand and ballast are primary materials whose size alone can affect the strength of a building. Sand, for instance, must not have any clay or organic materials to be declared suitable," he says.

"Water is one item generally taken for granted, yet its quality has direct impact on the final quality of construction works. That is why portable water is recommended. Fetching water from highly polluted sources such as the Nairobi River or using muddy water from puddles can have dire consequences on the end product and must be avoided," says Koskei.

INTEGRITY OF CONCRETE

He says ideal concrete should be cube-like as the size and orientation of ballast directly affect the integrity of concrete: "Once you get your sand, water and ballast right, then everything else falls into place. Cement is but a glue to hold the materials together."

Koskei says it is important to test concrete in its fresh and hardened state, hence the provision of seven to 28 days to be sure of how well the con-



Work at a construction site in Nairobi.



Bamburi Cement Company has rolled out a mobile laboratory to ensure quality concrete. [PHOTOS: JOE OMBUOR/STANDARD]

crete has cured. "We strive to achieve the best water and cement ratios without affecting the concrete while workability test is done to ascertain concrete is neither too stiff nor too soft," he says.

"Seven days are not conclusive, but will guide you to know if you will achieve the ultimate strength of the concrete at age 28 days." He says any doubt noticed about the quality of the concrete automatically necessitates its trashing and a fresh start made.

"One cubic metre of concrete weighs about 2.4 tonnes (2,400 kilograms), thus it is expected to have cured sufficiently after 28 days and gained strength to enable it sustain its own and any other additional loads.

In multi-storey buildings such as the one that collapsed in Huruma, it is recommended that each floor takes approximately 28 days to determine if the concrete has cured sufficiently to sustain its own and any additional loads," says Koskei.

He says the mobile lab service that the company is using to educate its customers is a value addition: "Similar services are available at the Kenya Bureau of Standards (KEBS), the Ministries of Roads and Works and private providers at a fee that most small-scale property owners are not willing to incur as they try to maximise on profits, thus leading to expensive tragedies."

Jonathan Murage, the architect su-

pervising construction work at the seven-storey Zuplex Towers in Westlands, Nairobi, a beneficiary of the Bamburi's free lab service, says concrete testing is mandatory for quality work.

He puts the cost of Zuplex Towers slated for completion later this year at between Sh380 million and Sh400 million. He says companies providing concrete testing services for a fee include Mass Lab in Nairobi.

CORRUPT OFFICERS

"Concrete comes in different classes specified by the project engineer and testing a design mix costs Sh31,320 per class at Mass Lab," he says. "Crush concrete cubes are tested in sets of three after seven and 28 days at a cost of Sh900 per test."

Engineer Kuria Kamau from the National Construction Authority blames collapsing of buildings in Nairobi on city authorities "paid to look the other way" instead of enforcing the law and save lives.

"Not only do they look the other way during construction for the sake of their stomachs, they give approval for construction at improper sites such swamps and river banks where foundations cannot hold," he says.

"We spell out the conditions to be followed but have no enforcement powers. Impunity is such that the owner of the Huruma building paid casual labourers to erase the X signs condemning his property. Contractors are not free of blame, for crooked ones collude with property owners to defeat the rules," says Kamau.

trends

Will Nextgen Mall raise demand for Mombasa Road office space?

By JAMES WANZALA

Last month's opening of Nextgen Mall just a few metres from the Southern Bypass is expected to raise demand for office space on Mombasa Road, which has over the years seen slow uptake. Since its opening in late December, there has been a speedy uptake of office space in the mall, with Nakumatt Supermarket leading as the anchor tenant.

Other companies that have set up shop at the 700,000-square foot mall located opposite Eka Hotel include the Kenya Commercial Bank and Amaco Insurance.

The launch of Nextgen Petro Centre at the mall is intended to attract global oil companies in Kenya to Mombasa Road. The centre, developed by the Nextgen Office Suites Developers Ltd, is part of an integrated development that also has a mall and a park consisting of three ten-storey residential towers.

The centre targets global petroleum companies trading in LPG, lubricants, fuel, petrol

station equipment suppliers, polymer and other related trading activities in the country.

"The Petro Centre ensures that both national and international companies from this integrated infrastructure, all under one roof in terms of combined resources and streamlined processes and for better interactions within the industry and in the best interests of the Comesa region," the developers said in a statement.

Alex Muema, managing director of Ndatani Enterprises, a real estate company, relocated from Afya Centre in Nairobi's city centre and has set up shop in Nextgen Mall.

"We bought the office space in 2011. I have been paying progressively until last year November. I have relocated from town due to congestion and traffic jam. The mall is also at an ideal location for me because most of my business operations are on the outskirts of the city," says Muema.

According to Anthony Wanjiru of Revaloth Properties, who are selling Nextgen Mall offices, Mombasa Road office uptake is on the

rise, propelled by cargo and tour firms.

"Many of those who live in Syokimau and Kitengela are setting up offices in buildings on the highway and avoid the CBD," says Wanjiru, noting that most of them rent warehouses in the godowns.

Wanjiru says on the ground floor of Nextgen Mall, for instance, they charge Sh350 per square foot and Sh150 from the third to sixth floors. The mall is usually busy in evening hours, thanks to Lang'ata and Rongai residents who do shopping at the mall on their way home through the Southern Bypass.

But some think otherwise. "I don't see much demand for office space on Mombasa Road even with coming of Nextgen Mall considering already we have an oversupply of 3.6 million square feet of office space in Nairobi and its nodes like Upper Hill and Westlands," says Johnson Denge, the real estate services manager at Cytonn Investments.

Denge says historically, Mombasa Road has not been good for office space since it was originally an industrial zone.



Nextgen Mall on Mombasa Road. [PHOTO: WILBERFORCE OKWIRI/STANDARD]