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## Counselling Service as a Panacea to the Collapse of Buildings in the Niger Delta Regions of Nigeria

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**DR. JOHNSON E. MACIVER**

*Department of Educational Foundations,  
Niger Delta University,  
Wilberforce Island.*

### **Abstract**

*The incessant collapse of buildings, both private and public in the Niger Delta region of Nigeria has become an endemic scourge to all and sundry and other neighbours. The battle to fight this cankerworm has become the major concern of the government (state and federal), investors in the area and many other stake holders and other individuals. This is why this paper is mapped out to guide everybody about the signs or modes of failure in buildings with a special focus on the roofing, beams, columns, walls, floor, slab and the foundation of the building. Mostly identified causes of these collapses have been classified as; (i) Human errors (application of materials that are poor and substandard)(ii) Inexperienced workers and (iii) Natural disasters (flood, erosion, etc). As a panacea, the service of guidance and counselling was recommended to earn the people the needed awareness and information. This will, for preventive tactics, produce skilled human resource management and high productivity. It will equally reduce the incidence of rampant building collapses in the area.*

For any building to stand firm and withstand the test of time its component elements known as the structural members must be standardized. In fact, the roof, beams, columns, walls, floors, slabs and the foundations are the segments that make up the building otherwise known as the structural members. If they are well structured and put in place by experts, the building is not expected to suffer any collapse accidentally. A structural member of a building is safe if it can withstand the load that comes upon it during its working life (Bamisaye, 2006). It is expected to serve that function for which it was put in place to the admiration and satisfaction of the owner, users and the

builder. Simply put, collapse of building means the inability of the structural members to perform their duty and therefore endangers the lives of the user(s).

The cases of collapse of buildings in the Niger Delta regions occurring one too many is quite disheartening. For those of the cities, their incidences are often picked by news media compared to the other cases occurring in the sub-urban and rural settlements of the coastal and Niger Delta regions of Nigeria. Professionals in the construction company are apprehensive. This is why there is need to come out with various studies into the causes of these collapses here and there in Lagos, Calabar, Bayelsa, Port Harcourt, Ondo, etc. Frame (2006), a renowned expatriate civil engineer resident in Nigeria for over two and half decades observed that there has been regular incidence of collapsed buildings in the country resulting in death of innocent lives and properties. In October, 1974, an uncompleted multi-storey building in Mokola, Ibadan-Oyo State collapsed and killed 27 people (Akinleye, & Amu, (2010). According to them, there was another at the ever busy Amukoko high density area of Lagos state, where a three storey building collapsed and killed one Ebele Ezenwa together with her new born son, mother, two nurses and unascertained number of tenants at 53 cemetery street, mosafejo. The collapse of building structures in the Niger Delta claim lives, valuable resources and causes apprehension in the people. This occurrence must be reduced to the barest minimum. This is why this paper is mapped to examine the structural members of such structures, the mode and causes of collapse of building structures and to create awareness on the possible panacea using guidance and counselling services. It is hoped that such awareness will increase the skills of professionals and builders including those of the masses, so that the incessant collapse of buildings in the area will be minimized.

### **The Building's Structural Members**

Building structural members include

1. **The Roof:** It is the top of the structural members which provides shelters over the dwellers and the properties under the building, shielding them from sunlight, rains and other weather that may tamper with the comfort of the dwellers.
2. **The Beams:** They are the horizontal structures of the building, mostly made of concrete or rolled steel joist. In fact most roofs rest on them by the wall plates of the truss of the building. The beams are the concrete solid end of the building before the roofing of the structure.
3. **The Columns:** They are vertical structural members of the house which carry the loads from the beams that is borne by the foundation. They are the rolled steel joists or concrete in variety of shapes and sections of the entire building.
4. **The Walls:** The walls are the vertical members of the building having known heights. They possess continuous lengths resting on the floor slabs of the foundation. They aids the beams and bear the weight of the load on the

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foundation of the structure. Spaces are made on them serving as doors and windows for entry and ventilation into the structure.

5. **The Floor Slabs:** The floor slabs are continuous horizontal building members that support the loads borne by the building, materials and users of the building. We have the solid flat and waffle slabs in a building. While the reinforced concrete, timbers, bricks, etc are the construction materials.
  
6. **The Foundation:** Situated in the soil is the foundation which is the lowest part of the building. It bears the weight of all other structural members of the building. It safeguards the building against any likely sinking into the soil that may arise because of the weight of the building.

### **The Building Structures' Mode of Collapse**

The roof, Beams and floor slabs, columns and walls and foundation are found to cause collapse of the building if not fortified from the onset (Building Research Establishment, 1980). Accordingly, the institute warns against the following symptoms;

1. **The Roof:** Collapse of the building occurs in the roof as a result of;
  - i. Sagging of the beams if constructed with timber. Infact the tie beam bends due to insufficient bracing to the rafters or if the span is too long without much support along the span.
  - ii. The truss members may corrode as a result of rust from the steel with which they are made culminating in crack and breakage of the members of the structure.
  - iii. Strong wind can blow away the roof truss if it is not properly fixed to the main structure of the building.
  
2. **The Beams and Floor Slabs:** the Horizontal placement of the beams and the floor slab, both of them are at risk of collapse modes, because they are subjected to shearing, deflection or bending. Infact, once the fibres along the bottom face of the beam are torn and those along the top face are crushed, bending/deflection will be witnessed. Secondly, the shearing mode of failure appears in three ways (Luebke and Peting, 1996). They are;
  - i. **Horizontal Shearing:** beams' material having parallel separation to the neutral axis, while the internal layers slide past one another.
  - ii. **Vertical Shearing:** this is mostly caused by used short beams.
  - iii. **Punching Shearing:** this is common when flat slabs are used. Here, columns support floor slabs directly without a beam in between. Thus, cracks will occur in the slab's top face because the column punches in the slab.

3. **Columns and Walls:** they have similar collapse mode because both are vertical structural members of the building. Their collapse modes include;
  - i. **Buckling or Twisting:** occurs if heavy eccentric loading is made on columns. Thus, if that is the case, the members of the building bulge out or bend about the axis of the structure. Infact, slender columns without corresponding length fails easily because of their small cross sections.
  - ii. **Crushing:** In buildings with short columns, crushing may occur. This is because when their compressive strengths are overloaded, the construction materials crush.
  
4. **Foundation:** There are two major aspects here; viz: uniform and differential settlements. It is uniform settlement when the soil under the foundation settles uniformly. But differential settlement is theopposite of the former and it wrecks serious damage to the building.

### **The Cause of the Collapse in Building**

According to the Building Research Establishment (1950), collapse in building structures is mainly caused by human error and or natural forces.

1. **The Natural Forces:** such forces include earthquakes, hurricanes and tsunamis. In fact multi storey building is prone to such dangers because the wind may bring it down thereby putting the safety of the users and the public in a devastating risk (Frame, 2006).

Another natural force is the movement of moisture upwards or downwards in its solid, liquid or vapour form (Ransome, 1993). It is a fact that when the atmospheric moisture falls on the surface of the building structure, their temperature gradually decrease. The building materials corrode and timber dampens /weakens with time. Next, the basalt used in the concrete get weakened too because of the upward movement of moisture in the soil creating expansion and contraction due to wetness and dryness, especially when calcium chloride was used as admixture. This leads to cracking or lifting of reinforced concrete units resulting in deflections of supported slabs (Ransome, 1993).

The dampened timber attracts fungi and insect attack which can lead to collapse of the building.

2. **Human Errors:** According to Schild (1981) these include:
  - i) **Design and Construction Error.** In this error, load on the building, if not well calculated, leads to improper material specification. Next, the strength of the building is affected if inadequate laboratory tests are not carried out on the materials of the building. In fact, defects would arise from family actions and omissions at various stages of the building process including lack of feasibility

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studies, preliminary design and failure in proper plumbing can cause collapse of building structure (Aliyu, 2006).

- ii) **Deficient Construction Techniques:** incompetent contractors can cause collapse of buildings. In most cases, these contractors compromise standard because of greed of money and carryout projects without the expected specifications and standard. What mostly takes place is the hiring of local builders who neglect structural engineer's expertise in the design of the building resulting in collapse of building. This is why in April, 2006, the Lagos State Governor, Senator Bola Ahmed Tinubu, during an exhibition organized by the institute of building in Lagos signed into law, the physical planning law and building regulations that will check the quack in building construction industry. It is hoped that if other states of the Niger Delta take to such steps, the issue of collapse of buildings will become a thing of the past.
- iii) **Sub-Standard Construction Materials:** for every building, there are expected standard materials for its construction such as rods, cement, block, etc. Again, for most of these materials, the adulterated ones exist. When these are used by contractors, the collapse of such building is often a matter of short time.
- iv) **Human Activities:** a good example here is mining, which create spaces in the soil. And once a building is erected in such area, the structure tilts, leading to cracks and consequent collapse is witnessed.
- v) **Inadequate Supervision:** Most buildings in the Niger Delta regions collapse because of lack of supervision. This was the view of Aliyu (2006), the Director of Public Building and National President of Institute of Architects. Again, the non-involvement of structural engineers at the design stage is a factor for the collapse of buildings (Ezeh, 2006). He was the president of Engineers at the National level. That architects and engineers should supervise the construction of a project so that specifications and standards are not comprised, he concluded.
- vi) **Natural Disasters:** these include flooding, earthquakes, storm, fire outbreak, wars, wind, etc which can unexpectedly cause the collapse of buildings. A good example is the suicide bombing of the Boko Haram sect rampaging the Northern part of the country which has left many buildings and innocent lives devastated. It is worthy of note that the human errors mentioned above span through poor expertise, the use of substandard materials, lack of supervisors, natural disasters, compromised design and inadequate skillful builders, all put

together help to cause the collapse of buildings in the Niger Delta regions of Nigeria.

### **Counselling Service as a Panacea to the Collapse of Buildings**

This is the service that will be rendered for effective human resources management and productivity in the building and construction sector of our country, especially in the Niger Delta region of Nigeria. In fact every segment of management requires adequate human resources. The management of human resources is the function of all enterprises which provide the effective utilization of people to achieve both objectives of the enterprise, the satisfaction and the development of the employees (Davis, 1981). This is where counselling services come in as a panacea. In fact, guidance and counselling helps the individual to come to terms with his abilities, aptitude, interests, attitudes and other personality characteristics so that he can understand himself and to a large extent direct himself (Denga, 1986).

Thus, the under mentioned counseling services are plausible panacea for effective human resource management which can be of help to the incessant collapse of buildings in the Niger Delta regions of Nigeria;

1. **Career Guidance Planning Model:** Most students do not know what they can do, what their talents are or how to think about themselves. Many young people are found in vocations because of what they may likely gain from it without the adequate knowledge of what it takes to succeed in the vocation. This is why the provision of occupational information through counselling is very important. According to Ipaye (1983), career information should be disseminated as part of counselling interview through the use of Audio-visual tape recorders, overhead projectors, flannel graph, magnetic board, bulletin board, film/filmstrips, periodic and career education. In fact, a thorough scrutiny of the factors influencing career development of each individual should be made. All these will go a long way in developing the effective human resources management in our building sector. Once done, the interest, intellectual abilities, aptitudes, family, peer groups, self-concept, values and expectations of these expertises in the building sector will be harnessed. And if effectively carried out, the mentioned service tests and non-test techniques in counselling are employed; collapse of buildings will be minimal.
2. **Planting Career Resource Centres:** This should be established in the industries, public places, schools, etc. by the government. Low worker productivity has been a bane in our industries and many other workers' works. The assessment of the labour force is very important and there must be

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assessment centres for the greatest potential for any kind of job (Zunker, 1981). Such centres should have the following resource components.

- i. **Industrial Counsellors:** These counsellors will organize all the career materials into a more efficient and workable unit.
- ii. **Career Materials:** These include: occupational descriptions, occupational outlooks, projections, postsecondary education and training information for special population (financial and information and handicapped persons). Indeed, counselling services should be provided in the area of personnel selection and placement, employing interview testing and appraisal. These will afford the interviewer the opportunity of knowing the interviewees' capability, attitude and interest. This knowledge will give the sector vision on the development of programmes for training (in-service). Placement service by the counseling centre(s) is paramount. This is a pool of individuals and a pool of jobs. And it is the counsellors that finally assign successful job seekers to corresponding jobs for effective productivity.
- iii. **Emotional Intelligence Counselling:** sometimes referred to as heart-intelligence counseling describes the individual's ability to motivate himself so as to face frustration control impulse/ delay gratification, and control stress/develop a vibrant hope futuristically (Akinboye, 2002). For emotional intelligence to be developed there must be adequate counselling. It is needed by the worker for maximum production. Thus, he knows his emotions, use it, understands it, and regulates it. Emotional balance gives birth to school success, family management and job engagement. To maximize human productivity, stress must be neutralized, self-control must be enhanced, effective communication must be used, etc

### **Conclusion and Recommendation**

In Nigeria, especially around the Delta and coastal regions, collapse of buildings has done much harm to human and economic resources of the nation. Collapse of buildings, from this paper has been caused by human errors and natural disasters. To reduce these occurrences, there must be the dissemination of occupational information service through counselling, planting of resource centres in industries, personnel section and placement services, and the inculcation of emotional intelligence balance for effective productivity in every sphere of human endeavor through counselling services. Lastly, as a panacea to the Niger Delta regions, counselling services are recommended. They will enable productivity and human resource management in building sectors, etc to thrive.

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