

Forgotten Dimensions of Low Cost Housing Crisis in Zimbabwe

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Abstract:

The provision of housing, particularly for low income persons, is seriously inadequate in most developing countries and the main reasons for this imbalance of shelter delivery are in most cases beyond the control of the individuals affected. The housing crisis in Zimbabwe is no exception, where the people on the bottom of the income scale are faced with escalating troubles as a result of wrong housing strategies and policies. All policies, strategies and efforts aimed to alleviate the housing crisis in Zimbabwe are based on the number of house units to be built for equal number of home seekers. But this approach of demand and supply of housing units in the aim of solving low cost housing crisis in Zimbabwe has failed. Misconception of meaning and understanding of 'Housing' and 'House', misconception and government policy of squatter settlement, inappropriate contextual factors, choice of inappropriate building materials and construction techniques, user participation, obsolescence and overcrowding, and inappropriate Building Standard and By Laws are some of the forgotten dimensions of low cost housing in Zimbabwe. This paper identifies these forgotten dimensions of the housing crisis and analyses the solution addressing these issues.

Key words:

Dimension of housing crisis, house, squatter, appropriate technology, building standard

1. Introduction

Hundreds of millions of people in the world today live in poor housing under adverse climatic conditions that stress their undernourished bodies toward the limits of human endurance and occasionally beyond (Shearer, 1986). According to Kamete (2006), the housing crisis is often sold and pushed onto the agenda in pre-dominantly quantitative terms and the mismatch between supply and demand is perhaps the scariest indicator used by proponents of increased housing delivery. Kamete (2006) also quoted that, it is hardly an exaggeration to conclude that housing policies and strategies are assessed by the number of housing units they produce and by their contribution to the reduction or elimination of housing deficits (Mayo et al., 1986), especially in the lower echelons of the urban income pyramid (Burgess, 1978, 1982). This is true not only in academic and professional circles (Buckley and Mayo, 1989), but also on the institutional policy and decision-making arena (Shildo, 1990), both at the local scene (NHTF, 1999), and on the international stage (World Bank, 1993).

This paper aims to identify and examine the forgotten dimensions of Zimbabwe's urban low cost housing crisis. It analyses the solutions of the forgotten dimensions of low cost housing problem and brings out how the forgotten dimensions of the low cost housing crisis influenced the overall housing situation in Zimbabwe. It also assesses how the current perception of dimensions of low cost housing crisis and policy framework, thought

inadequately and how these thoughts obscures the total solution of housing problems. The critical analysis of this paper concludes by highlighting the importance of addressing wider dimensions of low cost housing crisis in Zimbabwe. Below is the list of overall dimensions of housing crisis in Zimbabwe which the author strongly recognised to be addressed in order to achieve a sustainable low cost housing solution: -

1. Misconception of meaning and understanding of Housing and House amongst the Professionals, Politicians, Government decision makers, Stakeholders, and House owners.
2. Misconception of Squatter settlement and government policy towards squatter settlement.
3. Inappropriate Contextual Factors: - Design of the house units and layout design is done without the consideration of Vernacular Forms, cultures, values, climate, and materials.
4. Finance
5. Choice of Inappropriate building materials and construction Techniques.
6. Poor land delivery system.
7. User Participation: - Isolation of user groups from design and construction process.
8. Obsolescence and Overcrowding (Kamete, 2006)
9. Inappropriate Building Standard and By Laws: - Town Planning, Infrastructure, and Building Standards.
10. Shortage of skilled manpower
11. Unstable political situation and hyperinflation of the country

Finance, available land for the low cost housing, shortage of skilled manpower, unstable political situation and hyperinflation are more or less being discussed amongst the relevant government ministries and public Medias in Zimbabwe. The forgotten dimensions of housing crisis which are discussed and analysed in this paper are as follows: -

1. Misconception of meaning and understanding of Housing and House amongst the Professionals, Politicians, Government decision makers, Stakeholders, and House owners.
2. Misconception of Squatter settlement and government policy towards squatter settlement.
3. Inappropriate Contextual Factors: - Design of the house units and layout design is done without the consideration of Vernacular Forms, cultures, values, climate, and materials.
4. Choice of Inappropriate building materials and construction Techniques.
5. User Participation: - Isolation of user groups from design and construction process.
6. Obsolescence and Overcrowding (Kamete, 2006)
7. Inappropriate Building Standard and By Laws: - Town Planning, Infrastructure, and Building Standards.

2. Misconception of meaning and understanding of Housing and House

The house, more than sheltering us from rain, sun, dust, and other elemental afflictions, shelters us from the world. A house is not a machine for living in; it is a private world, dependable, unchanging, a constant kindly refuge in the cultural avalanche that we are pleased to call civilization (Fathy, 1960). According to Rapoport (1969, 46), the house is an institution, not just a structure, created for a complete set of purposes. Because building a house is a cultural phenomenon, its form and organisation are greatly influenced by the cultural milieu to which it belongs. If the family is the fundamental social group- the interpreter and buffer between the individual and society – then the house has an analogous function as between the individual and the world of things. It is the objective and tangible projection of the family, and the most important thing in a family's or an individual's life

(Fathy, 1960). A house is not only a physical space in which people live, but also a space where social interactions and rituals take place (Ozaki *et al*, 2002).

Houses express culture, whether through purposeful design or everyday use. House forms, their internal layouts, and the layout of dwellings in a neighbourhood can be disruptive or supportive of the culture of their occupants (Rapoport, 1969; Bochner, 1975; Ozaki, 2002). A house is laid out according to how it is to be used and various sociological and historical studies of housing have thus claimed that the layout of a house expresses underlying cultural values and norms, which limit the possible choices for use of space (Clark, 1973; Jordanova, 1989; Mumford, 1970; Rapoport, 1969). House forms are reflections of socio-cultural factors in England and Japan and it has been found that, intervening factors make the causal relationship between cultural values and housing form a complex one, as a variety of cultural factors affect housing forms. For example, women's status has had an impact on the spatial arrangement of the kitchen and the living area in both in England and Japan (Ozaki, 2002).

On 19 May 2005, the Government of Zimbabwe embarked on an operation to “clean-up” its cities and it was a “crash” operation known as “Operation Murambatsvina”, referred to “Operation Restore Order” (Herald, 2005). It is estimated that some 700,000 people in cities across the country have lost their homes, their source of livelihood or both and indirectly, a further 2.4 million people have been affected in varying degrees (Tibaijuka, 2005). Tibaijuka further highlighted that education for thousands of school age children has been disrupted and the vast majority of those directly and indirectly affected are the poor and disadvantaged segments of the population. They are, today, deeper in poverty, deprivation and destitution, and have been rendered more vulnerable. Operation Restore Order took place at a time of persistent budget deficits, triple-digit inflation, critical food and fuel shortages and chronic shortages of foreign currency and was implemented under lack of dialogue between Government and local authorities, and between the former and civil society (Tibaijuka, 2005, p7). As a solution to the housing crisis because of Operation Restore Order, the Government of Zimbabwe embarked on low cost housing projects like Operation Garikai and Hlalanikuhle, in which the main objective is to construct cells of structure for the homeless poor people. From the above concepts of house defined and explained by different authors earlier in this paper, it can be summarised that house is not only a cell or structure to live in but a complete institution, created for cultural phenomenon (values, norms, etc.), social interaction, rituals, economic and psychological factors. Considering house as an institution as explained; current low cost housing projects in Zimbabwe merely contain the above characteristics.

3. Misconception and government policy of squatter settlement

Srinavas (1996) defines squatter settlement as a residential area in an urban locality inhabited by the very poor who have no access to tenured land of their own and hence “squat” on vacant land either private or public. In squatter settlements, the illegal occupation of land and illegal development usually does not conform to town planning standards. So, theoretically it can not be considered as housing. According to Turner (1976), this is a misunderstanding of housing. What is important about housing, he notes, is “not what it is... But, what it does”. The observation is particularly relevant in the cities of the third world where resources (especially finance) are very limited and the persons involved are in dire poverty. However it is important to note that the definition varies from country to country. Therefore, squatter can be described as a residential area, which is developed without legal permission from the city authorities to build, hence their infrastructure and services are usually inadequate. Common confusion exists between squatter settlements and slums. A slum is a residential area that is physically

and socially deteriorated. This includes bad housing with inadequate lighting, lack of privacy and subject to fire hazards. These however can be been legally settled and might be properly planned in terms of settlement patterns. On the other hand squatter settlements refer to the condition and legal status of the settlement. Various names are used to describe them, such as: - Informal settlements, Low-income settlements, Semi-permanent settlements, Shantytowns, Unauthorized settlements, Unplanned settlements.

Squatter settlements in some countries trace their existence to three main factors; high rate of population growth due to rural-urban migration leading to low-incomes and unemployment, financial constraints that prevent the government from building conventional houses to meet the demand (Chilowa, 1996). In most developing countries squatter settlements have their emergence dating back from the colonial era where the urban space was exclusively for the whites and the locals were allowed in for the services they could offer and were housed in certain localities with no free means of acquiring land. With independence, the flow of locals to the cities was and has been too large for services planned for a small number of people (Jere, 1984). Besides the above, rural poverty and opportunity differences have contributed to mass movements from rural to urban areas. There are other factors like influx of refugees common in Africa and some Asian countries, natural calamities associated mainly with weather and economies that do not seem to improve (Hall and Pfeiffer, 2000).

According to Baum in Checkoway (1986, 25) planning was institutionalised in local government with the promise of offering a technical, value-free source of assistance for public decision making (Boyer 1983; Brownell 1980; Scott 1969). Nevertheless, planning has always been a political activity in the sense that recommendations affect private interests and interested actors have sought to influence decisions. According to Chipungu (2005, 20) the conflict between professionalism and politics have far reaching negative implications than one would expect on the mere surface. Most third world countries seem to be advancing politics at the expense of economic growth. It is now a common phenomenon that politicians try to use their powers even in areas where professional advice is required and essential. But then the point is how much more damage can be allowed before professionals interfere? Recently the so called clean up campaign (Murambatsvina) carried out by the Ministry of Local Government and the City of Harare is one of those political decisions made by the politicians in Zimbabwe. Developing Operation Garikayi/ Hlalanikuhle (meaning, 'be at peace') low cost housing is also a kind of solution to low income housing problem which was taken by the Ministry of Local Government and National Housing.

As mentioned above, Zimbabwe government policies towards squatter settlement up to date is either eviction and destroys the settlements. Eviction however, has not succeeded as squatter settlements have continued to increase in number and size from country to country. Some governments started housing programs to replace the earlier programs of clearance. Mass housing on the other hand requires resources in terms of funds and skills. This is in short supply in developing countries and most of them are said not to have had housing policies, which contain clear and effective measures to deal with major housing constraints (Payne, 1984). It is also noted that most governments cannot afford to house large number of the urban poor. Present level of public investment in housing is inadequate in relation to demand and private housing agencies are building very slowly (Asiama & Acquaye, 1986). With self-help groups and Non Governmental Organizations (NGOs) some have acquired a level of improvement leading to recognition by the government officials. It is in recognition of these efforts to house one-self that the governments and World Bank came up with the sites and services schemes. According to Hall and Pfeifer (2000), the poor have built their own city,

without any reference whatsoever to the whole bureaucratic apparatus of planning and control in the formal city next door, and they are rightly proud of what they have achieved.

According to the Cities Alliance (2002), upgrading consists of physical, social economic, organizational and environmental improvements undertaken cooperatively and locally among citizens, community groups, and local authorities to ensure improvements in quality of life for individuals. It is the improvement of the settlements ensuring minimal relocation of the residents (Abbott, 2000). What is emphasized through these definitions is the on site improvement by provision of basic services and through the participation of the residents. There are those services, however, that individuals cannot afford to do on their own outside the formal government set up (Payne and Davidson, 1983). These include expensive undertakings like building roads, schools, legal tenure and planning.

4. Inappropriate Contextual Factors

Cities and larger urban areas have distinctly different cultural tradition from the rural areas and this has contributed to the housing problem (Quazi, 1987). In the built environment, cultural and religious influence is evident in our attitudes, the preferences we have towards various aspects of a building and in the way we use buildings. According to Rapoport (1982), culture may be more important than climate, technology, materials, and even economics in influencing the built form. Cultural factors are often responsible for what are sometimes seen as 'irrational' architectural solutions. Solutions influenced by factors such as the need for privacy or religious beliefs, for ceremonial purposes, or even for status and prestige, factors that are usually not trans-cultural. Culture defined as: "... the integrated patterns of human knowledge, beliefs and behaviours. It refers to the art, music, styles, tastes, festivals, rituals, ceremonies, customs, codes, taboos, tools, techniques and institutions like marriage in a given community. ..., culture is the sum total of what binds individuals as a group with roots or into a community in which they think and will together" (Olweny, 1994, p12). So, housing is affected by the cultural and religious idiosyncrasies of a particular population. In defending cultural authenticity, one of the well known Egyptian Architect-Planner Hassan Fathy emphasized that, there is an essential non-interchangeability of cultures. By that he meant that basic cultural elements developed in response to indigenous needs, environmental and psychological, and that alien elements cannot be implanted or transplanted from other cultures or other environments if they are culturally inappropriate. Culturally inappropriate elements that are so inserted into the fabric of the harmonious built environment will undoubtedly generate contradictions, and will, with time, corrode and degrade the traditional culture (Serageldin, 1985, p 17).

The above analysis of culture and its relation to housing clearly shows that, planning and designing of any housing needs a detailed analysis of the particular culture the housing is designed for. The indigenous context (culture, climate, landscape, building material, etc.) must be respected and incorporated into the planning and design of the housing. The question can be asked here, whether the low cost housing designs is implemented considering local context of Zimbabwe? Design of low cost house units and housing layouts are done without the consideration of local culture, vernacular form and climate in Zimbabwe.

According to Ahmed *et al.* (2002) Planners seem inexplicably wedded to the rectilinear gridiron pattern in dealing with low-cost housing and the drawbacks of this approach, when the designs are regularly repeated without much revision and the executed projects never brought to completion, have become all too obvious after four decades of practice. Hassan Fathy stood against the bureaucratic approach to mass housing, the repetition of prototypes in

ever-shifting combinations. He advocated individualized attention to each building (housing unit). He admonished architects never to take commissions of more than 15 to 20 house units at a time, to deal with users as individual clients and persons and not as “prototypes” or “generic average families” (Serageldin, 1985, p 18). A research carried out by a group of postgraduate students on low cost housing project layout patterns in Sudan summarises and tested the following hypotheses (Ahmed *et al.* 2002): -

- The physical patterns adopted in these projects were invariably gridiron of simple shapes with no real evolution over more than four decades and minimum benefit from feedback;
- Planners do not take the design of low-cost housing as seriously as they do First- and Second-class housing, where more attention has been devoted;
- Public participation has been overlooked at all stages of planning and implementation;
- Whatever experimentations or innovations were introduced have not been followed up or developed to satisfaction;
- Political expediency has sometimes forced planners hastily to turn up designs or mechanically repeat old ones without much effort in working them to maturity;
- The single-storey developments have contributed to the horizontal expansion and low densities prevalent in the city.

In the case of low cost housing in Sudan, Ahmed *et al.* (2002) stated, “In virtually all the projects the rectilinear gridiron has been adopted as the housing pattern. Planner after planner for almost half a century has apparently seen no reason to change and only a few, fairly superficial variations on the theme have been attempted”. Despite the availability of a variety of planning patterns, the simple gridiron was the one invariably adopted for low-income groups; this has enhanced the cheerless profile of the extensions of the city. In the case of Zimbabwe, the scenarios and situations are the same as above Sudanese case studies of low cost housing.

The field of vernacular architecture offers an abundance of concepts that can be of use today in solving the critical housing situation now facing millions in the Third World (Shearer, 1986). The solutions that were found relied on energy from the sun and wind and the innovative, architectural structures and forms that were developed to make use of this natural energy. The vernacular architecture of the Arab World and neighbouring regions not only solved the climatic problems but did so with a combination of beauty and physical and social functionality (Shearer, 1986). A lot of lesson can be learnt and implemented in Zimbabwe low cost housing planning & design if the vernacular architecture is well analysed. Mafico (1991, p43) analysed the problems of community participation, privacy, home ownership and building material are dealt in Zimbabwe vernacular architecture and prescribed the solutions in the low cost housing.

Appropriate housing is housing suited to the needs of the occupants, and takes into account social, economic, cultural and environmental constraints and housing should be viewed not only as a physical product, but as an activity, an activity in which the users’ economic, social, cultural and psychological needs are considered (Olweny, 1996). Such an approach will go a long way towards improving the appropriateness of public housing, and ultimately, user satisfaction with housing. According to Turner (1972) the acceptance or otherwise of a need is the most important product of any human activity. Thus, whether or not a house is appropriate, is contingent upon the needs being fulfilled by the housing supplied (Turner, 1972; Sharifa, 1994). So, appropriate low cost housing is only achievable if all appropriate

contextual factors are considered in the planning and design stages of low cost housing in Zimbabwe.

5. Choice of Inappropriate building materials and construction Techniques

The Ministry of Public Construction and National Housing (MPCNH) has the responsibility of building and maintaining all government buildings including provision of decent and affordable houses to people of Zimbabwe. The unprecedented boom in the construction industry since independence resulted in the high demand of building materials that superseded the production capacity of the manufacturing sector. In the period between 1989 to 1992, the estimated demand for bricks was 1250million yet only 1002 million were produced. In the same period, cement production levels have only been able to satisfy 84% of the demand most of which was taken by commercial and industrial sectors (MPCNH, 1993). The high demand in basic building materials caused the prices of these materials go up. For instance the cost of constructing a 50m² four roomed house in urban areas rose from ZW \$3800 in 1983 to about ZW \$22000 in 1990 and more than doubled to be pegged at ZW \$50000 in 1993 (MIPTP, 1993). According to MIPTP (1993), only 23% of the urban population could afford to buy a house that cost ZW \$50000 in Zimbabwe. Chakwizira & Kuchena (2004) highlighted that, the government of Zimbabwe in 1996 had an aim to build houses for all by the year 2000 which unfortunately never achieved and by 2004 approximately 50% of the population in Zimbabwe resided in urban areas. Inflation in August was at 200%, in September 2003, at 400% and by 2004 it was 600%. Up to date the official inflation has reached to 8000% in Zimbabwe (SW Radio Africa, 2007). According to the MPCNH (2000), cement was priced at ZW \$15 (1991); ZW \$450 (2002); ZW \$9000 (June 2003); ZW \$30 000 (December 2003) and ZW \$40 000 (May 2004) per bag.

According to Zami & Lee (2007), a house is composed of several materials such as brick, cement, timber, window frames and panels, door frames and leafs and several other building materials which contribute to the finished product and the use of bricks as a standard building material began in the early 1900s in Zimbabwe. This was because materials in use then were neither thermally friendly nor sound proof nor above all non fire resistant. However, high density housing in Zimbabwe allows the use of 115 mm brick walls to be used as load bearing walls (Model Building by Laws, 1977). So brick, cement, sand and timber are the major construction materials in Zimbabwe up to date which is unaffordable nowadays and an appropriate building material & construction technique needs to devise to solve the low cost housing crisis. For example, 'earth' can be used as an appropriate construction material in Zimbabwe

Zimbabwe did not recognize the use of earth for construction of 'descent' shelter for the urban environment (Zami & Lee, 2007). The Zimbabwe Standard Code of Practice for Rammed Earth Structures was started shortly after publishing the Code of Practice in 1996. The In-situ Rammed earth Company led by Mr. Rowland Keable, initiated the request to the Standards Association of Zimbabwe [SAZ] and was seconded by the then newly formed Scientific and Industrial Research and Development Council [SIRDC]. The In Situ Rammed Earth Company promoted the use of rammed earth as a green, sustainable material for the future. He pioneered many rammed earth projects in Zimbabwe among them is DfID School block at the Scientific and Industrial Research and Development Centre (SIRDC), Hatcliffe, Harare, Zimbabwe. This project was mainly constructed to demonstrate that rammed earth could successfully support a roof span of 8m whilst at the same time being a test bed for the publication of RE Structures: A Code of Practice. The building also incorporates boron treated timber roof, which was designed by the Timber Research and Development

Association TRADA. The building was inexpensive, and showed that wide span roofs are possible with the technology, important for classrooms and clinics. The creation of this was a milestone in illustrating how RE can be used to lower construction costs. This building technology was 60% cheaper than concrete blocks and could provide double the number of built units for the many African school building programs, as well as clinics & houses. The In Situ RE Company also carried out a number of rammed earth projects in the Zimbabwe, among some of them were a classroom block in Bonda, Manicaland commissioned by pioneering architect Mick Pearce in 1997, Office and housing in Chimanda on the North East border with Mozambique.

Earth is affordable and available and would be appropriate in the case of low cost house construction in Zimbabwe. It is possible to use un-stabilised raw earth as rammed earth or compressed earth blocks; but the stabilised form is more suitable for the Zimbabwean situation in terms of by-laws and housing standards. The only challenge that prevents earth becoming the preferred choice of building material amongst the general population is the acceptability of this material by that same population. An awareness and understanding by people to environmental issues such as air pollution, deforestation, land degradation and energy conservation would help them change their attitudes and views towards earth building. The flexibility and simplicity in technology incorporated in earth building affords adaptability and easy transfer of knowledge between different stakeholders in the building industry. Individuals and community as a whole can easily participate in building their own homes in affordable ways.

6. User Participation in low cost housing projects

Citizens must participate in the design of buildings, thereby leading to a triangular relationship between the citizen, the architect, and the builder. This means that the task of the architect is not to express his own ideas in the building but those of the locale, the people, and the culture (Shearer, 1986). Far from being viewed as partners, beneficiaries were given no active role to play in shaping their habitats (apart from filing complaints); planning proceeded totally inside government departments and the accusations often repeated that planners were insulated and beneficiaries isolated are by no means unfounded (Ahmed *et al*, 2002). Hassan Fathy also encouraged self-help and promoted user participation in design. He allowed the peasants to express their wishes for the lay-outs of their homes, in other instances he left the peasants use a courtyard for a number of days and then established the lay-out of the courtyard on the basis of their use, defining the pathways where the earth had been beaten by their steps. All these efforts are examples of Fathy's persistent attempts to introduce further individualization in the design process (Serageldin, 1985, p 18).

The self-building process has been described as belonging to vernacular architecture or what is termed new traditional environments, but this new tradition must be qualified (Rapoport, 1988; Kellett & Napier 1994). Studies have shown that vernacular architecture in many places is based on profound elements which embody environmental quality. The self-building process in Brazil, however, has specific characteristics and problems. Mainly due to low-quality design solutions, self-built houses present on the whole a low environmental comfort standard (Labaki & Kowaltowski, 1998). The local new vernacular thus lacks some of the positive elements of many traditional buildings, especially praised for their intelligent solutions to climatic problems (Kowaltowski *et al*, 2005). In Brazil, 30 times more homes are being built in the informal as against the formal ways of construction (Augusto & Bastos, 1997). Due to specific local economic and social structures, as well as urban growth patterns, self-built houses, houses built by owner families, make up a substantial percentage of

Brazilian housing production (Nolasco, 1995; Kowaltowski, Pina, & Ruschel, 1995a, Ornstein, Romero, & Cruz, 1995; Werna, 1996). Self-built houses are the predominant mode of urban habitation production of a low-income population in other Latin American countries as well (Turner, 1976; Kellett & Napier, 1994). According to Brazilian data around 60% of the local housing production is self-built (Schulz, 1996). As in many developing countries, spontaneous housing, without tenure, is synonymous of extreme conditions of poor-quality housing and has a negative impact on the urban environment (Pettang & Tatiense, 1998). So, a distinction must be made between self-building activities on land without tenure such as invasions and slums or the so-called favelas, and those on lots acquired by families in private subdivisions or through government distribution programs (Kowaltowski *et al*, 2005).

According to Kowaltowski *et al* (2005), Self-builders need access to information, in various forms, from simple technical manuals or booklets distributed in construction material shops, to on-site assistance on choices of materials and building techniques. Technical reasons behind design features can be made clear, gaining importance and thus avoiding changes that may diminish comfort aspects. Information shown on drawings is of prime importance. Care must be taken in relation to furniture arrangements, shown on floor plans. Perception of room sizes are based on furniture layouts and self-builders tend to interpret empty space on drawings as opportunities for design modifications. In Zimbabwe so far there are no self building projects. But it is a high time now to think along the line of Brazilian self building projects to solve housing crisis in Zimbabwe.

7. Obsolescence & Overcrowding

According to Kamete (2006), though harder to define, overcrowding is evident in all urban high density areas and the situation is a post-independence phenomenon, which dramatically manifested itself after the colonial restrictions on rural-to-urban migration and occupancy were relaxed. The notorious Mbare flats, which were originally intended to house unmarried workingmen, now house more than one family complete with children and other kith and kin, some of them adults (Chombo, 2000). Chief among the forgotten aspects of the urban housing crisis in Zimbabwe are obsolescence and overcrowding (Clauson-Kaas *et al.*, 1996), both of which have a strong bearing on health, convenience and safety (cf. Cotton & Franceys, 1991; Hardoy & Satterthwaite, 1989).

Besides, the obsolescence and crowding situation in Sakubva in Mutare, Rimuka in Kadoma, Makokoba in Bulawayo, St Mary's in Chitungwiza, is nowadays in an alarming situation. According to City of Gweru (1998), Mutapa Township in Gweru was established before independence to cater for 4500 single men but After independence, families moved in and the township now houses some 15,000 people who share one block of old toilets. All the townships discussed above are among the oldest in the country. Overcrowding has now taken even greater proportions not only in older areas but even in comparatively newly developed areas such as Epworth, Budiriro, Dzivaresekwa, Kuwadzana & Glen View in Harare, Zengeza in Chitungwiza, Mkoba in Gweru, Cowdary Park in Bulawayo. Overcrowding in these areas said to create problems on services especially sewerage reticulation which frequently breaks down and blocks, electricity which becomes overloaded, and roads become congested. Obsolescence and overcrowding have repercussions that are now becoming evident not only in the centres mentioned above, but also throughout urban Zimbabwe and the most obvious and easily recognisable is the overloading of facilities (Kamete, 2006, p989). So, it is crucial and must to increase the capacity of the infrastructural facilities to serve the increased population of these housing discussed above ensuring sustainable solution to housing crisis in Zimbabwe.

8. Inappropriate Building Standard and By Laws

According to Mafico (1991, p107), housing standards can be defined as, “relative measures of suitability, acceptability and liveability for a given socio-cultural, economic and cultural settings”. In the same text, the UN defines standards as, “measures of the acceptability of housing at a given time and place in a cultural, technological and economic setting.” Mafico also (1991, p108) states that, housing standards were first introduced in the western world during the 19th century to protect the weaker members of society against overcrowding and ill health. The main thrust of these standards was to acquire minimum standards of hygiene, safety and privacy in the housing units, which were provided to the working class. In developing countries, and Zimbabwe in particular, housing standards were said to have instituted by the colonial government to protect the European settlers and officials, the standards usually led to the replication of the type of dwelling enjoyed in the home country. It is within this background the central components of the conventional low cost housing paradigm were developed and housing has been perceived as structures built within the guidelines of Town Planning, Infrastructure and Building standards and housing is an end state of construction activities (Zami & Lee, 2007).

Infrastructure standards are applied on the services that enable the efficient and hygienic use of any building. These inevitably affect the quality of the low cost structures. The width of the access roads of old low income suburbs in Zimbabwe are 10 meters. Older (before independence in Zimbabwe) high density suburbs had narrower roads because; residents of these suburbs were not expected to own vehicles. Roads of these old high density suburbs were tarred, and are still tarred but full of potholes which is very inconvenient to motorists. On the other hand, newer (after independence) high density suburbs in Zimbabwe are blessed by wider (15 meters) access roads because of the revised infrastructure standards but surfaced with only gravel. Introduction of gravel road leaves the new high density suburbs looking like a growth point whereas these suburbs are located in the country’s largest cities. Mafico (1991) states that, “this has reduced costs of providing services (which it has), it has on the contrary, actually lowered the minimum quality requirements of newly established suburbs.” Reticulation Standards ensures supply of water to dwellings for keeping the home environment safe and hygienic for the user. They also guarantee the disposal of all waste be removed from the home environment. Older high density suburbs used to have communal water taps and toilets, which resulted in poor maintenance of hygiene conditions around these facilities. These standards have been upgraded and the provision of communal water taps and toilets have been abolished. The individual houses now have their own taps and toilet facilities. But unfortunately, some of these households can’t afford sinks, W.C or shower fittings.

Town Planning Standards cover a wide range of standards in the building industry. For example: - subdivision, height restriction, land use, zoning etc. Subdivision Standards govern minimum dimensions of plot which is suitable for construction, future expansion, and gardening and or recreation. Plots in older high density suburbs measuring 25 X 15 meters, were reduced to 25 X 12 meters, and further reduced to 25 X 10 meters. Further reductions in plot sizes resulted in these plots measuring 25 X 8 meters. These dimensions are the ones currently in use in newer suburbs such as Cowdary Park, Pumula South and Operation Garikayi/ Hlalanikuhle housing areas. All the above mentioned problems are due to the revision of subdivision standard/ plot sizes. The arguments in favour of the reduction of plot size are the “reduction of costs.” The reduction of costs should not stand as a justification for compromising privacy and the economic condition should not be used as a barometer in determining revision or evolution of standards.

According to Building Standards, high density housing in Zimbabwe allows the use of 115 mm brick walls used as load bearing walls which is a cost cutting measure. It almost reduces the cost of housing by more than a quarter of its total anticipated costs. These walls do not however have good sound and thermal properties due to the inadequate thickness. It is important to note that, the local authorities in Zimbabwe do not allow such 115 mm brick wall even for garage construction in low density suburbs. The minimum room size by the legislation is 7 sq. meters with the shortest side measuring 2.1 meters. According to architectural standards, a habitable room should comfortably accommodate the occupants, furniture and circulation space. Most of the bedroom and kitchen in high density suburbs cannot accommodate minimum furniture with any circulation space. Natural ventilation and lighting are big problems in these high density suburbs. Fig 1 shows a typical layout of plot subdivision plan with house units on it in Cowdary Park Housing and natural airflow pattern. It is very difficult for natural air to circulate around the house units because of poor composition of the house units. Fig 2 shows a typical section through two adjacent house units and boundary wall in between of Hlalanikuhle Housing and how sunlight is obstructed by the boundary wall and roof structure.

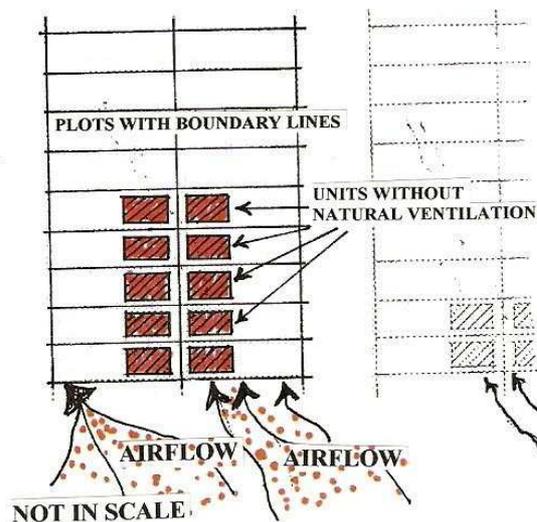


Fig. 1
Layout of plot subdivision plan of Cowdary Park Housing. Source: Zami & Lee, 2006.

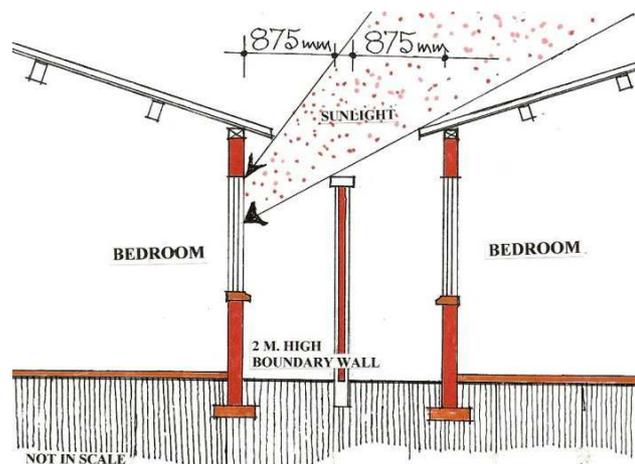


Fig. 2
Section through two adjacent house units in Hlalanikuhle Housing, Zimbabwe. Source: Zami & Lee, 2006.

The definitions of housing standards as mentioned earlier also do not go along with the discussed housing standards. Besides, housing standards currently practiced in Zimbabwe were adopted in 1977 and for the past 30 years there have been a lot of economic, technological and cultural changes. There is an immediate need for the Government of Zimbabwe to review the Regional, Town and Country Planning Act and other relevant Acts to align the substance and the procedures of these Acts with the social, economic and cultural realities facing the majority of the population, namely the poor (Tibajuka, 2005).

9. Conclusions

Problem of low cost housing crisis in Zimbabwe is not just going to be solved by constructing a huge number of similar designed cells or structure by the government based of housing waiting list and it will not be fair to expect that people are going to live in those cells. Low cost housing problem needs to redefined and refocused. The refocused definition should encompass all the above discussed forgotten dimensions of low cost housing crisis in Zimbabwe. To fully understand and solve the problem of low cost housing crisis in

Zimbabwe it very important to understand the definition and what does house and housing ideally means. The ideal meaning of housing consists of quantitative and quantitative requirements that ensure the sustainability and success of the housing. Quantitative dimensions of housing crisis are always being taken by the government of Zimbabwe to solve the housing crisis and the qualitative dimensions are always being avoided. But to solve the problem housing crisis it is a must to readdress and change the problem of misconception of squatter settlement and government policy towards squatter settlement, inappropriate contextual factors, choice of inappropriate building materials and construction techniques, user participation (not to isolation of user groups from design and construction process), obsolescence & overcrowding, and inappropriate building standard and by laws.

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