



Problems and prospects of CBD horizontal and vertical expansion in mining areas: The case of Kwekwe, Zimbabwe

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Abstract

This study explores and discusses the constraints and prospects of horizontal and vertical expansion of Zimbabwe's Kwekwe Central Business Expansion (CBD). Particular emphasis is put on assessing the impacts of gold mining on the constructability of the CBD. The study emanates from the view that the CBD of Kwekwe seats on mining shafts and tunnels where gold mining activities have been done and, in some instances, still being practised. The underground and open cast mining processes have immensely disturbed the stability and natural form of the ground. In obtaining data, the study adopted both qualitative and quantitative methods in which a survey was conducted in the CBD. Interviews were also conducted with the local authority, estate developers and mine operators. The study shows that various stakeholders in the CBD are aware of the impact of mines especially the likelihood of ground subsidence. One important aspect which can be noted is that mining activities preceded the development of the City of Kwekwe thus posing a great challenge in as far as expanding the CBD is concerned. Illegal gold panners present another great threat to the CBD as they tend to destroy the reinforcements of underground mine tunnels. To avert this peril it is imperative that the local authority put in place a monitoring mechanism such as seismographs to detect possible seismic events in the CBD. There is also a need for all stakeholders in the CBD to engage in a memorandum of understanding regarding the issue of illegal gold panning to promote sustainable growth of the CBD.

Keywords: Central Business District, horizontal expansion, mining area, spatial expansion of CBD, vertical expansion

Introduction

Mining activities have a significant impact on the form and structure of the city and the extent to which its boundaries can be extended. Some traditional mining towns from both recent and ancient times, have foregone mining activities and have become new tourists attractions for example La Union in Spain (Conesa, 2010). Most Zimbabwean cities have developed due the agglomeration of economic activities prevalent in particular areas (Zinyama Tevera & Cumming eds., 1993). Small settlements later developed into large settlements. One of the major activities, which have led to the formation of towns, is mining. In Zimbabwe, examples of mining towns are Shurugwi, Shamva, Kwekwe, Kadoma and Hwange. Whilst this can be said, little remains known of the residual effects of the economic activities on these settlements. The CBDs, being the nuclei of these settlements, often encounter many challenges in as far as expansion is concerned with some 'dying' soon after the depletion of the mineral resource. In South Africa, for example, Johannesburg emerged due to gold mining (Durrheim et al., 2006). Such cities, like Johannesburg, have continued to expand even though mining has become a less dominant economic activity. Literature is replete with evidence that most developed countries have coped up with the challenges faced in developing mining areas given their financial standing and appropriate technology for

monitoring mining related seismic events. However, in developing countries such as Zimbabwe, the level of awareness on how to deal with these challenges is very limited taking into account constraints in financial resources. The development of the City of Kwekwe is attributed largely to gold mining. Thus, the town's morphology (form and structure) has principally been shaped by this activity. Against this background, this study seeks to identify the challenges faced by relevant stakeholders in the quest to have the CBD expanded either vertically or horizontally. It intends to establish possible solutions to the identified challenges, to identify the impact of past and present mining on estate development in the CBD of Kwekwe, to map the risks and incidents of ground subsidence in the CBD of Kwekwe and to propose avenues and channels for future expansion of the CBD of Kwekwe.

Theoretical framework and literature review

Mining activities can shape the cities economically, socially and physically (Bauer, 2006). Planners, architects and structural engineers have put a lot of ink in an attempt to create habitable environments in mining areas. Layout designs and building designs are critical in creating spatial maps acquiescent to a comely mining environment (Conesa, 2010) habitable by the miners, free from or with minimal risks associated with developing or residing in mining areas. Recent studies in the Northwest Province mining Districts of South Africa have shown that mining has a lot bearing on the built environment (Hadjigeorgiou & Grenon, 2006). The practice of mining shapes the physical set up of the cities such that past and present mining activities positively or negatively affects the form and structure of the cities in question (McKinley, 1995). In terms of development and expansion of cities vertical expansion has largely been preferred to horizontal expansion because of the advantage brought about by it such as reduced energy consumption, reduced pollution and increase in efficiency (Arbury, 2007). The notion of vertical expansion is becoming popular especially in developed countries but in most developing countries, which lack capital and technology for intensive development it is done in moderation (Afram & Olympio, 2009; Arbury, 2007). Today, urban planners and designers are advocating for the creation of more compact cities which is in line with the idea of smart growth against that of extending city boundaries horizontally (sprawling) (Arbury, 2007).

Gallion and Eisner (1986) have noted that mines shape or determine the kind of building to be constructed in an area. In some countries, building standards and codes have been changed to suit mining town development. According to Walton (1995), deep foundations such as pile and pad are strongly discouraged in mining areas, which are normally characterized by a less stable burden rock. The impact of mining on the build ability of space is a major consideration in the development of mining towns. Goldbach (2010) laments on the rising water levels in old mining shafts and tunnels which tend to increase seismic activity in an area. Thus, mining has far-reaching consequences for people and infrastructure such as buildings and roads. Bauer (2006) notes the various methods of mining, which are used in extracting minerals from the ground, and these may be in the form underground or surface mining. Each method of mining has its own distinct impacts on the physical environment. A number of risks are associated with each method (Hadjigeorgiou & Grenon, 2006). Bauer (2006) asserts that subsidence can take place in an area where underground mining has taken place. Ground subsidence or sinking of land surface can cause structural damage to buildings and infrastructure (mine infrastructure and surrounding infrastructure). In a study in Illinois, Bauer (2006) noted various signs that can show that subsidence has occurred including the cracking of walls, the breaking of water lines and popping and snapping. In South Africa, investigations by Hadjigeorgiou and Grenon (2006) were made in the gold mining districts for prospecting on technology to cope adequately with large seismic events. It was noted that many of the cities and towns in the gold mining districts experience seismic events greatly damaging residential, commercial, and civic buildings in these towns. Though mining poses a lot of threats and difficulties it can be noted that people are able to cope up and adapt to the conditions set by mining, for example, the city of Johannesburg (Tang & Watkins, 2006). In Welkom, South Africa, due to the high frequency of mining-related seismic events, monitoring mechanisms have been put in place

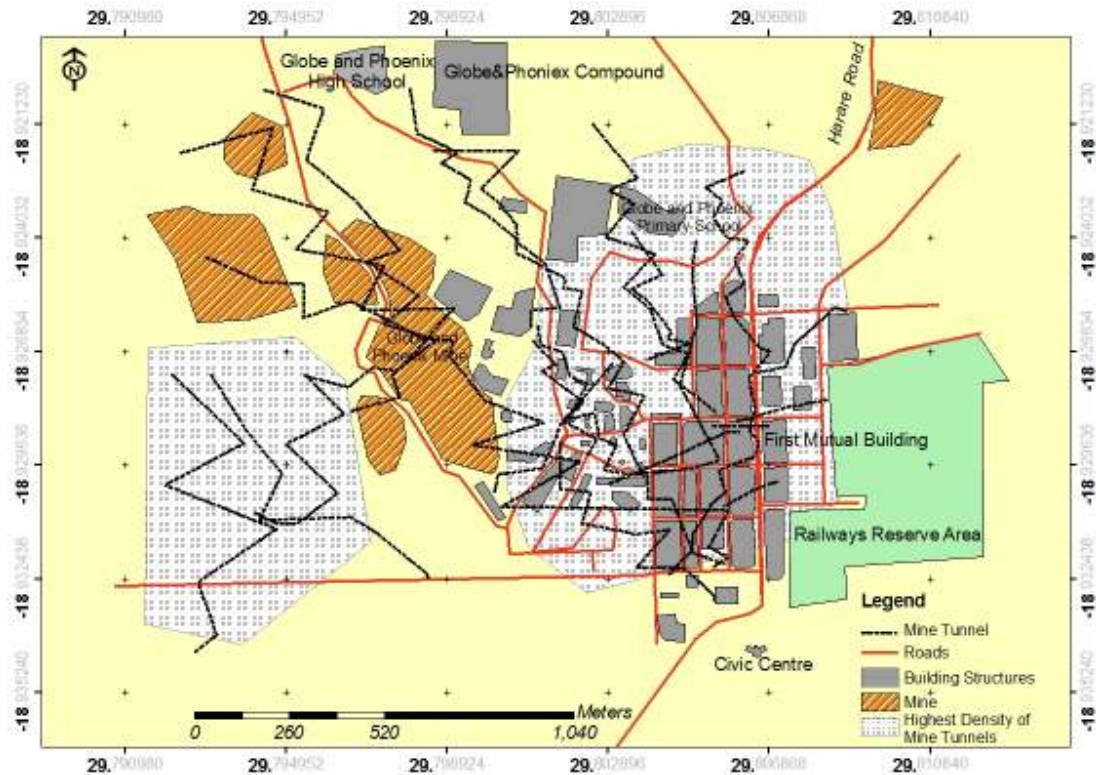
(Hadjigeorgiou & Grenon, 2006). Equipment such as seismographs has been installed in some areas to try and detect the possibilities of seismic events (Durrheim et al., 2006). Tang and Watkins (2006) have noted that most underground gold mines in South Africa ceased operations in the 1970s, leaving large tracts of land vacant in the mining belt. Since then, many of these areas have been converted to light industrial uses and have become important employment centres. Informal settlements have encroached on non-developed mining land, with residents living in close proximity to abandoned mining equipment and waste (ibid). New extraction technologies and increasing gold prices have spurred the mining industry to extract latent gold from the tailings of old mine dumps. Today, mining companies transport the reprocessed tailings to new super dumps in remote locations where it is stored for future advances in processing technology while they clear the old dumps to create opportunities for the real estate market (Tang & Watkins, 2006). As the gold industry has shifted from deep shaft mining to reprocessing waste, much of the original mining land in Johannesburg has been redeveloped for recreational, commercial, or light industrial uses (ibid).

Despite the difficulties faced in mining areas there are other areas, which have managed to adapt to the environment in these areas. This is largely due to fact that mining is an economic activity, which sustains human life and can influence the development of a large settlement like a city.

The spatial form of the CBD of Kwekwe in relation to the mine claims

Figure 1 shows the spatial form of Kwekwe City and the mine claims. It is clear from the diagram that Kwekwe CBD seats on tunnels and mineshafts. The oldest mining shafts and tunnels were established as far back as 1895 making them one of the oldest mining infrastructures in Zimbabwe. There are only two main shafts in the CBD of Kwekwe. These are emanating from the Globe and Phoenix Mine. As shown in the map the mine tunnels which are represented by black lines reach up to level 42 (one level can be 30 metres deep) are actually cutting across the CBD of Kwekwe (This means that the deepest tunnel is approximately 1500 meters or 1.5km deep). The areas that have the highest density of mine tunnels are those at the west of the main street that is Robert Mugabe Street. It is important to note that most of the buildings in the CBD are located on the western side of the main street. Now most of these tunnels are flooded with water. According to the Mine Survey Department at Globe and Phoenix, most of the mines are actually flooded and apparently, there are no measures have been taken to drain the water because of limited financial resources.

As pointed out earlier most of the development has been concentrated on the western side of the CBD however, the eastern side of the CBD is yet to be developed. One important aspect to note is that this area is characterised by few tunnels as compared to the western side. The area east of the CBD that is yet to be developed is called the Railway Reserve and this has been incorporated in the CBD for further expansion. However, the Railway reserve area has also fallen victim to the illegal gold planners who have dug most parts of the area. The Mine Survey Department of Globe and Phoenix mine however reports that mine reclamation can be done in this area and construction of buildings is possible.



Source: adapted from Google Earth, 2012

Figure 1. Form and structure of the CBD

Real estate development in the CBD Kwekwe

Whilst the CBD of Kwekwe is expanding there is need to take into account the various factors that are considered by estate developers before developing an area. According to Ehasz, (2005) estate developers may be estate agents, companies or independent organization and individual developers. Most of the Estate Agents in the city of Kwekwe are largely interested in residential property since it is the one with the highest demand in the property market in Kwekwe now. According to Baobab Estate Agent Company, it is more profitable to invest in residential property. They also cited sighted lack of insurance and security in the CBD in the event of ground subsidence. However, it should be noted that whilst other estate agents feel that mining activities around the CBD are a threat to their business some are of the opinion that mining activities bring profit to their business. Some of the property companies in the CBD are actually gaining a lot of profit because it brings hard cash rather than bank transfer. This therefore shows that running a property business in Kwekwe is actually more viable than in any other cities". However there are a number of factors that have been noted that estate developers consider and these include the state of the land or ground, distance from the mine claims, functionality or use and density of development.

Mine operators and methods of mining

The mine operators that are found near and around in the CBD, are Homestake, Carslon, Primrose, Gaika, Falcon and Kadenhe. On the list of mine operators are the informal or illegal gold panners who have been termed *makorokoza*. The mining methods that are being practiced in most of these mines are underground

mining and surface mining. In terms of underground mining one of the oldest mines, Globe and Phoenix is characterised by an inclined shaft that is more than 50 meters deep and is accompanied by mine tunnels, which can reach up to level 42. In terms of open cast mining, it can be noted that open cast mining is dominant as shown in plate 1. Most of these mine operators have been mining rights that expires after 99 years. Due to lack of finance most the mine equipment is beyond repair thus inappropriate machinery is used in the extraction of the gold. Due to lack of proper equipment most the mining which is being done Kwekwe is a *chikorokoza* type of mining". This means that even those mine operators who claim to be operating under legal premise and following all the mining regulation are not practicing proper mining. This can pose many challenges to the environment if no regulation and monitoring is done. Moreover, this has actually paved way for the illegal gold panners *makorokoza* to invade some of the mine claim because no one has absolute control over them. We have so far identified the operators and mining methods used. it now behoves us look at the impacts that they pose on the physical environment.

Impact of mines on the physical environment

The City of Kwekwe is greatly affected by mining activities. According Waugh (2000) elements of the physical environment are land; water and air and in the CBD of Kwekwe all, these elements are affected by the gold mining activities. The natural state of the ground has been affected. This is explained by minerals that are extracted from land. Land degradation is dominant. Land is greatly affected by the type of mining and in the CBD of Kwekwe both underground and open cast mining are used in the extraction of gold. Plate 1 shows open cast mining and the level of land degradation it has posed on the environment. The northwestern part of the CBD is the area that is most affected by land degradation due to mining activities and according to the CBD Local Development Plan 2005 this area is no longer suitable for development and has already been sidelined for development. Moreover, according to the 2002 subject plan of the CBD "the invasion of the subject area has led to the mushrooming of squatter settlement which accommodates not only gold panners, but also the residents from the City of Kwekwe". Most of the damage on the physical environment is being caused by the illegal gold panners who are digging the surrounding areas of the CBD in a haphazard manner. One of the illegal gold panners actually stated that gold is everywhere in the CBD. Even if one digs anywhere close to the CBD you can get at list 2 points (a point is a measurement of gold for one point one can get \$4). This means that the unemployed population is likely to be attracted by the illegal gold panning activities.



(Plate 1a)



(Plate 1b)

The plates show the trenches dug by the illegal gold panners 150 meters away from the CBD

Plate 1. *Negative impacts of mines on the land*

Mining has also had adverse impacts on the existing infrastructure in and near the CBD. Some of the water and sewage pipes around the CBD have been damaged and the illegal gold panners actually use the leaking water for cleaning purposes. This has also led to the pollution of nearby water sources. The damage of existing infrastructure poses a threat in as far as expansion of the CBD is concerned because future land development relies on existing infrastructure for example water and sewage pipes and good roads.

Risks and incidents of ground subsidence in the CBD of Kwekwe

The risks and hazards posed by mines have also been noted in some parts of the areas that are close to the CBD. A survey carried out in the CBD showed that 72, 5% of the shop and office users are actually aware of the consequences of locating near mines whilst 27, 5% are not aware of the consequences of locating near mines. From the above statistics, it can be realized that the public is very much aware of the likelihood of ground subsidence in Kwekwe. According to Kwekwe City Council, several cases have been reported in which people were granted permission to develop land only to realize at the end that land suitable for development. In such circumstances, the City Council is forced to compensate the client with another piece of land from a different area. Some of the buildings in town are under threat from ground subsidence including one of the major buildings that is First Mutual Building.

From the sentiments or views echoed by the public during the survey it can be deduced that no one really knows the level of damage posed by mines on the ground and on buildings at this point in time no major event has occurred which seem to threaten the day to day running in the CBD. Most of the respondents cited the cracking of the building as one sign that shows the impacts of mines and this is also in line with the research made by Baurer (2006) in which cracking of building walls was cited as one of the signs of ground subsidence. However, one interesting thing is that the signs of ground subsidence are being felt to the areas, which are close to the CBD for example Globe and Phoenix Primary School 300 metres away from the CBD. One of the classroom blocks has actually been abandoned because it is developing cracks that are caused by underground mining activities. The uncontrolled illegal mining activities are the major causes of this catastrophe. This shows that the impacts of mines are being greatly felt in areas closer to former mining areas. There is also some glimpse of lack control over mining activities in the CBD Kwekwe. An example is the proximity at which the mining activities are being practiced. Trenches are being dug even as close as 2metres away from the main street that is Robert Mugabe Street. In some parts of the CBD there are cases in which the developer in given land and later on finds out that the land is not suitable for development. The areas that are mostly affected are the areas around Globe and Phoenix Mine shown in figure 1. According to the local authority, there are two cases so far which has occurred so far, in which the developer realizes during construction that the land is not suitable for development.

Constraints to vertical expansion

There is evident necessity for the CBD of Kwekwe to expand but this has been hindered by scores of factors. Concerning planning of the CBD, the local planning authority issued a local Plan of 2006 stating that: "Vertical expansion should be encouraged in the CBD. The idea is to achieve maximum use of land and buildings. In encouraging development, care must be exercised in order to avoid more than five storey building. This is so because there are several mine tunnels underground the city centre. It is not clear how extensive these tunnels are and as a precaution buildings should be restricted to no more than five floors". With reference to the Figure 1, which shows the spatial structure of Kwekwe, it can be noted that most part of the existing CBD are seating on mine tunnels. Meanwhile, there is a lot of speculation and no one really knows what is down there because there is no monitoring mechanism to determine the potential risk or damage. All of these factors are causing underutilization of land particularly the area west of Nelson Mandela Street. From a survey conducted in the CBD 60% percent of the buildings are

one storey, 20% are two storey, 12.5% are three storey and 7.5% are four storey. This shows that land is grossly underutilized because a greater percentage of the buildings have only one floor.

According to the 2003 Local Development plan for the CBD “there is potential for upward development because much land which is available for lateral expansion is taken up and property owners may be forced to adhere to new bulk factors and construct tall buildings”. Figure 1 shows the layout of the underground mining shafts and tunnels of Globe and Phoenix Mine which is about 800meters away from the CBD. It can be observed from the figure 1 that the mine tunnels are cutting across the CBD. The deepest tunnels at Globe and Phoenix Mine can reach level 42 (the difference between each level can be 30metres). Underground mining is still being practiced though at a low scale because most of the tunnels are flooded with water. As alluded earlier the illegal gold panners have invaded some of these mining shafts and are actually damaging the underground reinforcement structures that prevent the mine tunnels from collapsing. If the supporting reinforcement infrastructure is destroyed, there is high probability that the ground may collapse. Now if the city of Kwekwe is seating on this ground construction of tall building will be highly risky since it requires special foundations such as pile foundations.

The other option, which is in place for future expansion of the CBD, is parallel or horizontal expansion. Horizontal expansion is also greatly affected by mining activities. The sprawling of the CBD is likely to be restricted due to the proximity of mines. This has furthermore been worsened by the opening of new mines on the northern side of the CBD where Kadenhe Mine has been opened. This mine has blocked the possibilities of CBD expansion on this side and this leaves the CBD surrounded by mining claims. Furthermore, on the east of the CBD on the Railway Reserve area some of the land has been dug by illegal gold panner. It therefore entails that this area is supposed to be reclaimed first before any meaningful development takes place. There is also great disadvantage for the CBD to expand laterally because its hinterland is comprised of low residential areas and light manufacturing industries.

Planning, mining, design, monitoring and management in the CBD

From the study it is clear that mining activities preceded city development. The question which one may ask is, is the current planning, mining, design, monitoring and management of the CBD appropriate and adequate in ensuring the sustainability of the CBD? In terms of planning it can be noted that plans have been put in place to deal with the issue of illegal panning. This is so when taking into account the fact that by laws have been introduced to try to curb the issues of illegal mining. This is line with the requirements stated in the Mine and Minerals Act PART XXI section 309 that calls for the local authority to create by laws on town lands. However, the problem, which seems to affect Kwekwe is that there are mine claims which were registered way back in around 1950 and still have mining rights and most of them are now encroaching in the vicinity of the CBD. According to the local authority, some of these mines trenches are being dug even 5 meters away from buildings. The question that may arise is who really owns the land in the CBD of Kwekwe? Is it the Council or the Mine Operators? In their efforts to try and contain the issue of illegal mining the Zimbabwe Republic Police has been given the task to arrest al illegal gold panners but it seem as if most of the illegal gold panners have some kind of political backing.

According to the Kwekwe CBD Local Plan of 2003, the Local Authority “...shall together with the Ministry of Environment forge partnership to enforce laws to restrict gold panning in the vicinity of the CBD”. In terms of expansion, precautionary measures have been taken and the building floors have been limited to only five. Figure 1 shows the layout map that outlines the built up area in the CBD and the mining areas. Vertical expansion is risky in the areas that have the highest density of mine tunnels and there is great potential for this area to experience ground subsidence. About the prospects of expanding the CBD, this area can be developed and space is available for future development. However, a layout of this area is already in place and plans are already in place to reclaim the area.

Discussion

From the study it can be observed that the CBD of Kwekwe is seating on top of mine shafts and tunnels just like Johannesburg. The public seem to be aware of the consequences of subsidence just like residents of Johannesburg. There is a likelihood of ground subsidence in the CBD of Kwekwe which is in line with Baurer (2006) who noted that ground subsidence can occur on any place where underground mining activities has been done. Baurer (2006) noted that buildings begin to crack if subsidence is occurring. This is evident in some parts of the CBD signs of ground subsidence are beginning to appear as shown by the cracking of building. However, signs of subsidence are yet to be felt in most parts of the CBD but there is just a looming fear that it may occur any time. This is largely attributed to the fact that there is no monitoring mechanism to detect the likelihood of ground subsidence. Indeed, this is unlike in South Africa, where seismographs have been installed in mining areas (ibid). Estate developers also consider a number of factors before investing or developing in a mining area. Some of the considerations that have been noted are the state of ground, proximity to mines and this has been pointed out by Walton (1995).

Conclusion and recommendations

There are a numbers of lessons, which can be drawn from this research. The study indicates that mining activities preceded the development of the CBD of Kwekwe thus there is a great challenge in as far as expanding the Central Business District is concerned. The greatest challenge lies on vertical expansion because it is uncertain to assess the stability of the ground. The most disturbing part is that the abandoned mines have been invaded by the illegal gold panners therefore no one really knows the level of damage done on the old mining shafts and tunnel. This is however a different case as compared to other countries such as South Africa because the problem of illegal gold panning is not rife. Moreover, most of these tunnels are flooded with water. This same scenario is found in Johannesburg as pointed out by Durrheim, et al, (2006). From the study, it can be noted that the CBD cannot expand if the nature of the ground on which development is to take place is damaged or unstable. Expansion of the CBD of Kwekwe is largely constrained in terms of expansion in many ways. There seem to be very little room for the CBD of Kwekwe to expand since most of the surrounding areas are damaged. About vertical expansion, no monitoring mechanism has been put in place to detect the possibilities of ground subsidence in short no one really knows what is down there. From the study, it can be noted that not much has been felt so far in terms of the possible effects of mines. The public is aware of the consequences of mines no action is being done to avert this peril. This is actually an ecological time bomb that can erupt at any time.

Local authorities cannot solve the problems that affect them in the areas of jurisdiction alone. It seems like the City Council is not able to contain the problem of mining since it does not have much control over the illegal gold panners. Moreover, those private companies who are operating near the CBD of Kwekwe are not using the proper techniques and methods of mining. There are more like professional *makorokoza*. Most of them do not have enough capital to practice proper mining. This also explains why most of the mines are flooded because most of them do not have enough money to carry out proper mining operations. Another issue that is linked to the illegal gold panning is the issue of unemployment. The harsh economic environment seem to be driving force behind all informal activities in many cities and Kwekwe has not been spared from this because illegal mining seem to be real problem bedevilling the City. The chances of ground subsidence would have been reduced if illegal gold panners (*makorokoza*) had not invaded the old mining claims.

In as far as real estate development is concerned, it can be noted that the estate developers put into consideration a number of factors before developing in the CBD. The factors that they consider are the state of the ground on which they want to develop, the proximity of development from mines and analyzing the market to determine which property is in demand. All these factors are the ones that drive the development of the city.

Recommendations and way forward

Intensification has the potential to enhance urban amenity through a greater mix of land uses as well as increased vibrancy. To maximize the use of land it is also imperative for the estate developers to use light material. For example, steel can be used instead of concrete in the construction of pillars. This can help reduce the weight of the building and the likelihood of ground will be reduced since less force will be exerted on the ground. Moreover, since not much is known about the state of the mine tunnels and the ground it is to use suitable foundation for buildings in this case pile foundations needs to be avoided since they have deep foundations. Furthermore, it is also imperative to introduce monitoring mechanisms to predict the possibilities of seismic events. A lot of attempt has been made to encourage the monitoring of seismic events in countries like South Africa. Durrheim et al (2006) note that monitoring of possible seismic events needs to be established even after closure of a mine because seismic events are likely to be triggered as mines are allowed to flood. In South Africa the national and local monitoring networks, operated by the Council for Geosciences and Mining are taking giant strides to improve the quality of seismic monitoring and to ensure continuity, especially as mines change hands. It is therefore plausible for the City of Kwekwe to emulate such an initiative by engaging government and the private sector. The private sector can be given a tender to drain the flooded mines as is done in Johannesburg South Africa. There is need for the establishment of a national and local monitoring Council for Geoscience and mining companies, respectively, which can play a role of installing instruments like seismographs seismically active areas such as mining areas.

A memorandum of understanding (MoU) needs to be reached between various stakeholders that the Local Authority, the Mining Commissioner, the Zimbabwe Republic Police, the Politicians, the beneficiaries of the mining activities both legal and illegal and the property investors. Through dialogue, a consensus can be reached among these various stakeholders especially to try to address the issue of illegal panning which is threatening the growth of the city. On such a forum, emphasis should also be put on outlining the advantages of creating a compact city, which is more sustainable, and citing how this can be incorporated with the mining activities. Moreover, it may also be necessary for the Kwekwe City Council to create a Growth Management Strategy (GMS) which will be a long term plan created to ensure that development of the city is carried out in a sustainable manner. This also entails creating a Regional Growth Strategy (RGS), which will guide the growth of the city even for the next 20 years as is done in the City of Auckland in New Zealand (Arbury, 2007).

It is also imperative that cities should be developed away from mining activities. As noted earlier, that mining preceded city development in the city of Kwekwe, it is high time that planners need to introduce plans, which are effective and more sustainable. The Mining and Minerals Act states that council has the authority to pass by-laws on all state land Part XXI section 308 (3). This has proved to be difficult in Kwekwe because most of the land in the CBD is owned by private sector and investors who have mining rights to operate for up to 99 years. Another option though it may sound contradictory to upward expansion but can be an avenue is to create out of town shopping centres for example as was done in Harare in which shopping centres like Sam Levi, Avondale, and High Glen were established. These out of town shopping centres will be located outside the CBD where the risk of ground subsidence is less or none. Out of town, shopping centers will reduce pressure in the CBD by offering similar goods at similar prices offered in the CBD.

If a closer look is taken on the issues bedevilling Kwekwe in as far as expansion is concerned, one can actually trace its roots to the economic crisis of unemployment. It must be emphasized that unemployment is triggering the practice of illegal gold mining that has caused some sense of insecurity to developers. However, to avert the peril it is necessary to empower those illegal panners or (*makorokoza*) by making them legal employees of particular licensed operators or even under government. This calls for the government and the private sector to enter into a smart partnership in which the private sector will provide capital and the government the regulating.

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