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Urban planning of Khartoum. History and modernity Part II. Modernity

Urbanistyka Chartumu. Historia oraz współczesność Część II. Współczesność

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Słowa kluczowe: Afryka, Sudan, Chartum, rozwój strukturalny, urban sprawl, zagęszczenie tkanki miejskiej, squat, slumsy, migracje, modernizm afrykański, Doxiadis, McLean, kolonia brytyjska, segregacja społeczna

In the course of its short history of development, Khartoum on the Nile assumed the form of a *horizontal city*. Located in the vicinity of the seemingly endless Libyan and Nubian Deserts, the city grows like an oasis, becoming the migration destination for tens of thousands of regional refugees who, permanently or in transit, settle on the ever-further outskirts at the barren edges of the city. The colonial power of Great Britain possessed the strength and ability allowing it to use the potential of those wild frontiers of the old Kushite Empire. The British were perfectly aware of economic and political benefits derived from controlling the delta of the largest river in Africa, which served as a trade route for thousands of years. With the time passing, Khartoum became a more and more important point on the map of Africa, catalysing the still visible Afro-Eurasian multi-culture noticeable in the colourful ethnic mosaic of its inhabitants, as well as in architectonic-planning traditions which this article will concern¹.

Looking at the morphological evolution of Khartoum it is possible to delineate some distinct waves whereby planning, urban design and architecture mutually define the imagery succession of the city. The most prominent imagery and conceptualization of the city is exhibited in its beginnings as a colonial town marking an era of new urban vision and functional novelties

DEVELOPMENT AND PLANNING CONTROL IN THE GOLDEN ERA OF MCLEAN

The breakthrough in the city development came at the beginning of the 20th century, after a bloody take-over of power by the British when, according to the vision of Gen. Kitchener most traces of Ottoman architecture were eliminated and the first germ of a modern metropolis was instilled, with the mastery and values of architecture typical for the British colonial towns of the period. Implemented in 1908, the project by McLean opened, for the next 40 years, the

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Fig. 1. Old Khartoum Street. Photo: [in:] Authors' Archive



Fig. 4. City tram linking Umm-durman, Khartoum. Photo: [in:] Authors' Archive



Fig. 2a. Gordon Avenue. Photo: [in:] Authors' Archive



Fig. 5. Metropolitan Khartoum in mid-20th century. Photo: [in:] Authors' Archive

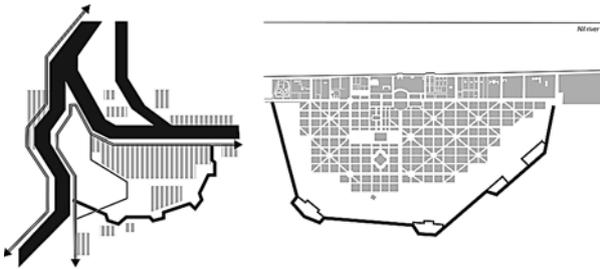


Fig. 2b. Ottoman Khartoum plan from 1823 (left) and following McLean plan from 1908 (right). Prep. by Adam W Chalupski, source: Authors' Archive



Fig. 3. Bird's-eye view of Umm-durman market. Photo: [in:] Authors' Archive



Fig. 6. Land use with class system, 1999. Prep. by Adam W. Chalupski, source: Pantuliano S.

period of distinctly flourishing urban development of the city, whose relic visible till today is the spirit of the cosmopolitan centre of Khartoum, where English citizens and other more eminent visitors from the West once resided in privileged isolation, as they were in no

haste to assimilate with the indigenous people whose informal capital was Umm-durman on the west bank of the Nile. Even today, one would in vain seek there a distinct network of streets which remained faithful to the *roll-of-the-dice morphology*, once outlined by Mahdi, where only mosque spires have remained signposts in the organic labyrinth of the city².

The initiation of colonial architectural style boundary the Blue Nile and a couple of boulevards stretching east-west axis: government offices and senior government officials of the British administration – large plots, greens / gardens, paved and planted boulevards and night lighting-green public spaces and extensive palm tree planting – autonomous irrigation system. two commercial zones one for traditional market dealings and the other for a relatively more sophisticated shopping outlets. The Gordon memorial college, a fine brick three wing building, designed on a typical symmetrical plan of the colonial style was built on the eastern flank of the city overlooking the Blue Nile and the modern hospital styled in colonial blocks with extensive veranda typology of massive brick walls and the typical boundary fence of wall and metal railing. To the south of this functional distribution the historic railway station was established in simple brick walls, marseille roof tiles and extensive workshops and warehouses in brick and corrugated metal sheet roofing.

The new Khartoum exhibited an image of a well kept and managed city with green and clean environment and controlled building and land-use system.

For the planners associated in The Khartoum Town Planning Committee, the jewel in the crown to which they devoted most attention was, first of all, the area situated within the circle made the rail line that linked the tri-central metropolis with the Tuti Island in the middle of the confluence. The carefully planned layout of the Centre developed in a similar manner, successively towards the south where the district Khartoum II was created with its road-sanitary infrastructure, and in 1956, on the eve of regaining independence by Sudan, also with a new extension of Al Amarat with the accompanying road-sanitary infrastructure and multi-storey residential-commercial buildings executed on the level of European metropolises. The image contrasted with the landscape of further outskirts in the south or traditional courtyard houses located in camps on suburbs of Umm-Durman where, in accordance with the needs of poorer migrants it was practised to include the first squatter-style housing estates into the urban tissue, which while offering housing for some, for the town authorities and not only will become a reason for consternation felt in the planning of decades to come³.

Stable population density, for the first few decades of the 20th century oscillating around 87 residents per hectare, was acquired by means of regulating the balance of speculative market, an effective system of settlement in city farming areas or re-developing ineffective housing estates. The plan of the then small – covering merely 11.5 km² – metropolis predicted the population

of 100 thousand residents who, in the year 1925, were allowed to buy land allotted during a special verification process. Such tools served regulating proportions and the distribution of particular groups of Khartoum population who were familiar with the system of stratification reserving separate zones for Englishmen, Egyptians and the local population.

Only those nationals engaged in trading and services sectors were allowed to be allocated in residential blocks of various sizes in the central zone in between and within reach of the city center. Residential development of courtyard housing typologies for eastern communities comprising Egyptians for governmental services in post and education sectors and Syrians mostly for modern commercial outlets was developed in the new commercial center of the city. Houses were of small plot sizes, compact plans, rooms abutting on the relatively narrow streets, single courtyard, detached kitchen and sanitary conveniences.

Residential development in eastern Khartoum targeted mostly Mediterranean business and professional community, Italians and Greeks, who were encouraged to enter Sudan in an attempt to modernize commercial and technical services for the new era after the Mahdist phase.: small plots for ground floor townhouses characterized by a compact plan typology, front porches and verandas, detached kitchen and sanitary conveniences.

Stressing the effective use of urban space, location of building permits depended on the financial affluence of residents assigned to sectors of class 1, 2, 3, which imposed building standards on newly-erected buildings. Existing until the mid-20th century, class 4 was distinguished in order to allocate poor immigrants who, after 1947, were forced to adjust their property to the norms defining a higher standard of used building materials, intended to avoid proliferation of temporary structures⁴.

SHAPING OF THE CITY IDENTITY

After Sudan regained its independence, the USA offered an aid programme within which several pilot projects were introduced, whose most influential creator was an architect, Peter Muller. He represented a specific style reflecting the spirit of tropical architecture, a good example of which was once a complex of student dormitories with its airy interiors shaded by broad protruding verandas. Opening the ground-floor space onto green passages obtained by setting the buildings on columns, was then a rarity – in the reality of an African country. Linken by a railway network to Cairo, elegant, organised and multicultural Khartoum became, at the beginning of the second half of the 20th century, one of the most modern cities in Africa, known for the high standard of living of its inhabitants, as well as the standard of teaching in local educational institutions, including the University of Khartoum where the Faculty of Architecture was established⁵.

Among the first generation of architects educated there one has to name, first of all, Abdel-Moniem



Fig. 7. Peter Muller Dorms. Photo: [in:] Authors' Archive

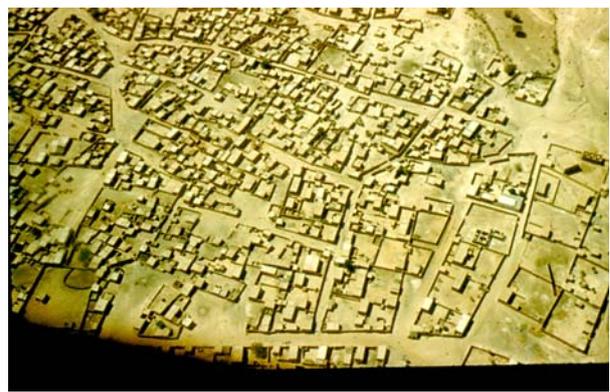


Fig. 9. Chaotic patterns of peripheral areas. Photo: [in:] Authors' Archive

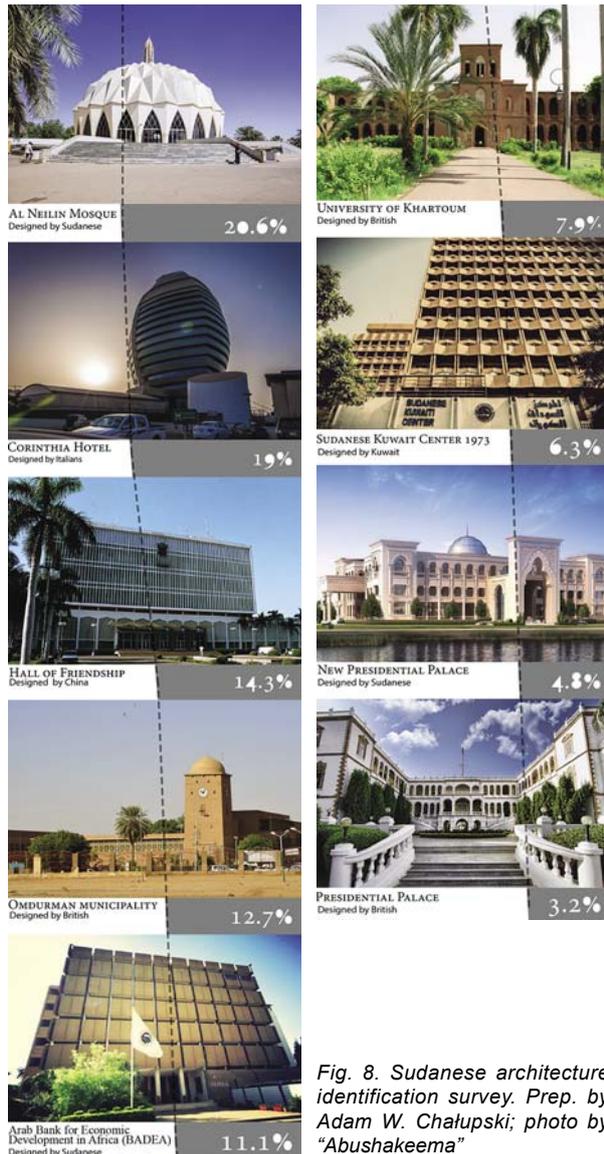


Fig. 8. Sudanese architecture identification survey. Prep. by Adam W. Chalupski; photo by "Abushakeema"



Fig. 10. One of popular cinema spots removed in 80'. Photo: [in:] Authors' Archive

Mustafa, whose modern style of design inspired by Peter Muller's idea adapted the style of arrangement solutions, based on local architecture which he updated, consolidating its majestic simplicity and austerity in the form identical with the spirit of modernism. His contemporary, Al Atabani, created architecture on a smaller scale, applying a simple set of solutions visible in the austere character of brick and hollow brick

used to build the walls of government buildings he had designed. The range of diversity among architects of that generation would not be complete without Hamid Khawad, whose attempts at optimising architecture to fit modest Sudanese conditions urged him to realise projects embedded in the local tradition of earthen constructions⁶.

Separately from the previously privileged (with English balance) architectonic style of the colonies, a certain type of geometry called tropical modernism gradually crystallised, visible in the forms of villas and larger city buildings, such as e.g. the office building of the Arab Bank designed by Abdel-Moniem Mustafa. Its characteristic features are the massive dimensions

of objects and minimalist, almost shabbily introduced window openings. Despite the brutalist character of the form of the building whose interiors lacked daylight, it was a clear manifestation of a tendency giving priority to modelling the shape on the basis of local climatic conditions. In the centre of a rich city the wealthy erected new objects, inaccessible for the desert sun residential fortresses in which the heat, accumulated within the thick walls during the day, was freed at night thanks to the heavy slatted window shutters⁷.

BEGINNING OF CRISIS AND CHRONOLOGY OF REMEDIAL PLANS

Despite decades of continuous growth, the capital of an independent state became an arena of a struggle for power and a sensitive debate on the issue of national identity of the Sudanese, whose traditions were an irreconcilable composite fluctuating between Black Africa with its post-colonial turn towards its own heritage, and broadly understood Arabia whose wealth in the form of natural deposits and satellite television reminded its neighbours about the foundations of Islam. The ever-stronger isolation resulting in inter alia deteriorating economic situation, as well as a burden of recurring natural disasters and military conflicts, brought about rapid growth of informal squatter settlements erected in a hurry by refugees beguiled by the diminishing brilliance of the Star of Africa. The beginning of irreversible changes, defined by critical scientists as the “de-planning” process, is attributed to the end of the 1960s, when the control of state was seized by the second military regime. The approaching crisis whose effects would become visible after just several years, manifested by the increasing chaos at the city outskirts, deteriorating condition of the road and railway networks, and of the sanitary system, as well as by the disappearance of urban greenery. A phenomenal increase in the number of mosques was undoubtedly related to the fact that Sudan proclaimed itself to be an Islamic State, and the period was preceded by a total change in customs, disappearance of multi-culture, closing bars, cinemas and cafes, as well as a gradual loss of interest in conserving the urban tissue. The Committee of City Architects, which was previously of capital significance in maintaining the balanced development of Khartoum, played a constantly diminishing role, until its practically almost complete disappearance⁸.

Planning interventions by Doxiadis during the 1960s, which were meant to stop “horizontalisation” and to systematise directions of development by a split-into-stages plan of developing the road network, building new housing estates and increasing tissue density, were not realised because of poor coordination of the implementation process. Nevertheless, the plan made it possible to at least identify and diagnose negative phenomena contributing to the deterioration in the standard of living and the deepening isolation

between the rich and the poor – in particular the *urban sprawl* and the *leap frog* effect. With a similarly notable physical effect, the MEFIT plan was initiated in 1975, which was to meet the needs related to the population growth, migrations from areas afflicted by draught and famine, and increasing prices of land in the centre. The plan of multidirectional expansion of the city, aimed at increasing the population in the poorly urbanised areas, so-called “white spots” with low population density, revealed the inefficiency of planning units, and its implementation was made additionally difficult by the lack of appropriate coordination and the deepening financial collapse of Sudan. Political problems occurring during the 1980s weakened the effectiveness of controlling informal construction businesses, leading to gradual closing off of the manufacturing and agricultural sectors which, so far, constituted a significant source of state income. In practice, it resulted in a rapid growth of the population living in slums, whose number during the mid-1980s equalled the officially registered population of Khartoum⁹.

The structural plan of Doxiadis and Mustafa for the 1990s expressed helplessness towards the increasing effects of “urban sprawl” and “leap frog”, considering them inevitable. However, no new mechanisms of control were proposed, instead offering merely a series of relocation activities, demolition of informal settlements blocking traffic routes and other public spaces. The growth of squatter population and chaotic urban tissue did not stop acceleration to which undoubtedly contributed the short period of economic boom associated with the appearance of Chinese investors, concentrated on exploiting oil deposits¹⁰.

Since the beginning of the 1970s, when the fundamentalists seized the power, the population of Khartoum increased eightfold. During the following years of neglect the city lost its character, and chaotically erected buildings dominated both the old centre and informal outskirts. The first decades of the new millennium were preceded by creating the KPP-5 plan, which was divided into five-year stages of development of the areas stretching along the northern bend east-west, taking into consideration the whole region situated within the administrative boundaries of the Khartoum state. Apart from the housing infrastructure, it was also planned to create an enormous green screen to prevent dust being blown in from the desert. For some years the talks concerning the construction of a new international airport located in the south part of the metropolis are being finalised. The current international terminal occupies a vast plot of land in the very centre of the city; therefore, one can soon expect intensification in the tissue density in the southern part of the city¹¹.

The majority of modern prestigious buildings are investments or gifts from China, countries of the Arabian Peninsula, as well as Libya. Public transport, road services, waste management and functioning of utilities do not meet the inhabitants’ needs, frequently posing a threat for their life and health. Complicated

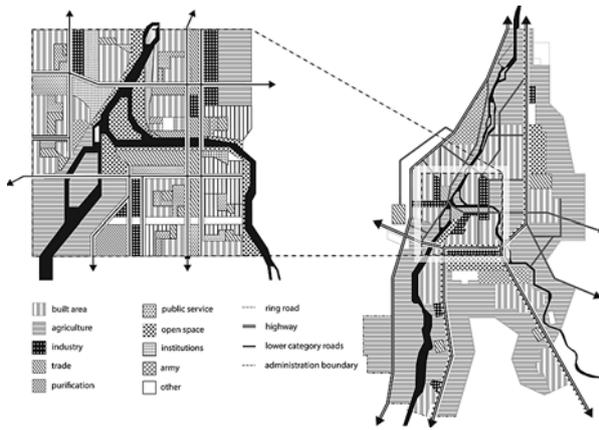


Fig. 11. Khartoum development plan for 1960–1980 by Doxiadis, 1959, (left) and regional development plan, 1975–1990 by MEFIT. Prep. by Adam W. Chalupski, source: city planning archives



Fig. 12. Low level of improvement in urban development. Photo: [in:] Authors' Archive

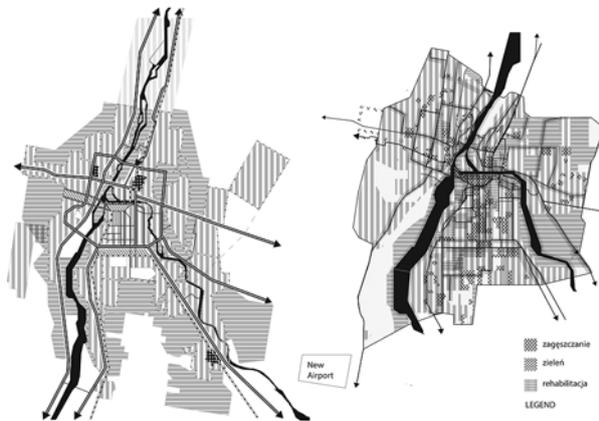


Fig. 13. Khartoum structural plan for 1990–2000 by Doxiadis + Mustafa (left) and KPP 5 for 2013–2038 by MEFIT + CENETS published in 2008 (right). Prep. by Adam W. Chalupski. Source: city planning archives



Fig. 14. KPP 5 regional plan 2013–2038. Prep. by Adam W. Chalupski, source: city planning archives

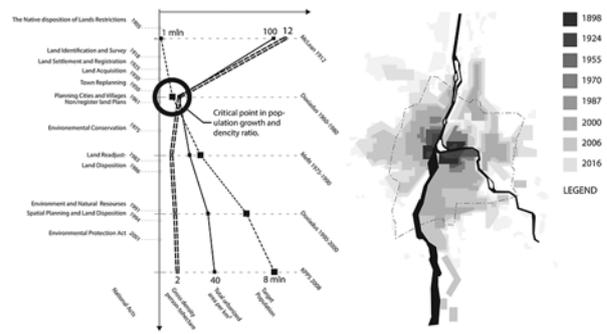


Fig. 15. City planning event chronology 1898–2016 (left) and Khartoum historical expansion diagram 1898–2016 (right). Prep. by Adam W. Chalupski. Source: Zakaria, B.I. Pantuliano S.

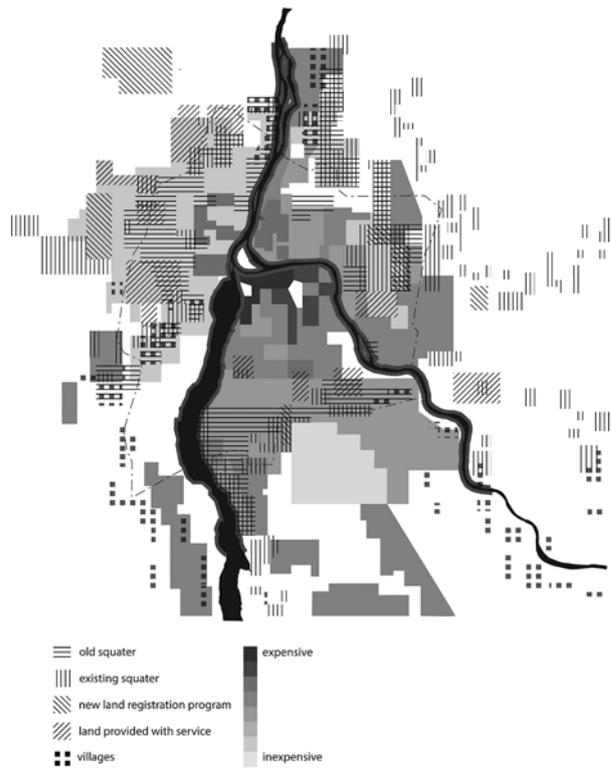


Fig. 16. Land prices in comparison to squatter zones and areas under solving programs. Prep. by Adam W. Chalupski, source: Eltayeb, G.E., Seif El Islam



Fig. 17. Skeletons of modern urban landscape of Khartoum. Photo: [in:] Authors' Archive

legal standards, high prices of land and low incomes of citizens translate into the austere character of family buildings whose permanent “unfinished state” aptly reflects the atmosphere of constant uncertainty and risk, associated with unknown tomorrow. Some large-scale investments, such as e.g. the Sport City Stadium have remained stagnant since the 1980s, becoming a symbol of the style of government at the base of which are chaos and disinformation. The largest investor and contractor of projects during the last two decades is China, which funded several hospitals, bridges, roads, electricity and embankment systems both in the capital and deep in the country. The principles of those Sudanese-Chinese co-investments as well as of repaying the loans taken out by Sudan are not clear. However, unofficially it is known that Sudan leases some areas of land to China for one hundred years, as a form of repaying immense debts. The plan called Khartoum 2025, which is considered within the KPP-5, involves creating rings of bypasses relieving the congested city centre and rehabilitation of old buildings from the colonial and post-colonial era. Despite the lack of clarity concerning the further direction and forms of development of Khartoum, the city remains an excellent target for potential urban renovation activities¹².

CLUSTER OF NEGATIVE FACTORS

Khartoum, originally designed in a class system, despite partial disappearance of the previously existing ethnic segmentation, still runs a potential risk of returning to the ethnic segregation and stratification, which took the form of a religious apartheid in the not so distant past. A preserved example of that phenomenon is the ring surrounding the city, inhabited by migrants from the south. The three-class system previously applied by the British has survived until today, distinguishing plot categories by their area. In consequence of a later modification establishing the minimum size of a plot area at 200 m², it was made more difficult to legalise plot purchases and to build houses by poorer citizens who, most frequently, exist only in informal structures. The others who can afford to “enter the threshold” must first cover one of the considerable expenses, namely fencing in the plot, which is the fundamental safety standard in the Sudanese society dominated by family traditions. With such high initial outlays and inflation, people often lack money to complete the project which then stops at the stage allowing for habitation, though without ensuring even minimal standards.

The Chair of the Faculty of Urban Planning at the University of Khartoum, dr Seif Sadigh, estimated that the period sufficient for completing the project of a given single-family housing complex lasts 15 years. As a result of such impediments, the process of creating housing estates was dominated by groups of developers, operating in the city outskirts unconnected to the urban infrastructure, who swiftly took possession of

plots located there. Not so long ago, in this manner without any consideration for the city plans, much sparse, disorganised tissue was added, whose alarmingly low infrastructure content led finally to legal amendments obliging the buyers to fit out their plots with minimum 20% of infrastructure¹³.

The horizontally open urban structure of Khartoum determines the general character, morphology and directions of development which, in accordance with the forces of nature, will take the simplest route, filling in the emptiness of the desert. Three – and four-storey buildings are a rarity, since the city has always avoided crowded building development. The results of the open horizontal building development of Khartoum are increasing costs and numerous problems with establishing infrastructure and services. While in Cairo building one kilometre of a road solves communications problems for thousands of inhabitants, in Khartoum it does so for merely a few hundred¹⁴.

Buildings of naturally huge dimensions were gradually segmented, changing their function and purpose. Many buildings were demolished, and introducing building companies from China into the construction market allowed for erecting taller structures which slowly began to appear in the cityscape. Urban transformations within the last decades are the result of the operating market forces, financed and designed independently by private companies. Only a small percentage of visible changes in the structure and urban components are the effects of top-down urban-planning guidelines. There are no efficient instruments of administration that would allow for effective densifying of particular housing quarters; instead, there are still arriving migrants outlining subsequent “puzzle pieces” in the Cartesian jigsaw. A homogeneous mosaic of building quarters, like an algorithm, replicates the pattern from the centre towards monotonous outskirts with their clay settlements unified by their colouring with the desert¹⁵.

CONCLUSIONS

Sudan, which is just leaving behind a 20-year period of isolation caused by sanctions imposed by the USA during the 1990s, is currently predicted by experts to be potentially one of the most important points on the development map of Africa. The lack of a vision for the future is one of the main obstacles hindering the sustainable development of the city which, as the capital, grapples not only with the inflow of refugees, but also the increasing labour emigration of intellectuals who could visualise it. The task of creating such a vision awaits those who will be able to combine values inherent to the regional specificity of Sudan with the needs of a metropolitan capital of the 21st century.

In how many capitals of the modern world can one still encounter centres full of wasteland or enormous plots of land occupied by cemeteries? Bold competition projects concerning the development of areas

located along the Nile, the style of which is to resemble Manhattan, express a sentimental desire to return to the period, not so long ago, of the past magnificence of Sudan, which awaits its restoration separated from it by an impenetrable maze of administrative chaos. One has also to pose a question whether contemporary urban planning, attaching more and more significance to ecology, power industry and social values, is willing to accept such a way of development in order to succeed, and if not – then what is the alternative?

Lack of transparency in the activities of individuals responsible for the planning and development of the city hampers creating a comprehensive planning vision. Although the system responsible for implementing directives concerning spatial planning resulted in the ailing urban structure of metropolitan Khartoum today, one should not ignore successful projects and initiatives in this field realised recently. The effects of negotiations

with indigenous people, concerning obtaining land for the new airport, are winning recognition; attempts of local architects at recreating the Committee of City Architects, whose years-long dormancy has led to complicating the homogeneous spatial thinking, also look promising. Considering the reality, tendencies and necessities (for instance, social and geopolitical) it has to be concluded that the era of horizontalisation in the Sudan capital reached the tipping point, when the most essential among the urban components of the city – the Man – enters the era in which the natural focal point of development will be the ability to densify the existing urban tissue and, consequently, the verticalisation of building development occurring in Khartoum.

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- ¹³ Sadig S., op. cit.; Murillo F., op. cit., s. 25; Zuhail E.A., op. cit., s. 13.
- ¹⁴ Mohim, *The Khartoum Grid*. <https://spacepolitik.wordpress.com/2014/08/02/the-khartoum-grid/>, 2014; Sadig S., op. cit.; Zuhail E.A., op. cit., s. 1–16.
- ¹⁵ Mohim, op. cit.

Streszczenie

Kosmopolityczne centrum Chartumu, zbudowane aby sprostać wymaganiom rezydujących tam w izolacji Brytyjczyków, było koncepcją realizującą planistyczną wizję współczesnego miasta metropolitalnego stworzonego na poziomie nieodbiegającym od dwudziestowiecznych założeń urbanistycznych Zachodu. Rozgąłęzająca się według ściśle zaplanowanego i kontrolowanego schematu, ortogonalna siatka Chartumu wraz z zaprzeczającym jej, chaotycznym Umm-durmanem po drugiej stronie Nilu stały się w ciągu półwiecza istnienia dowodem fenomenu, który nawet dziś mógłby być uznany za utopię. Wolna od napięć, pełna kulturowych kontrastów i różnic klasowych stolica Sudanu nie uniknęła dotyku przedwczesnej starości. Czas dobrobytu znany dziś ze starych pocztówek i sentymentalnych opowieści zastąpił czas innej utopii, której wizja nie zniosła zderzenia z rzeczywistością.

W drugiej części pracy dotyczącej historii rozwoju urbanistycznego Chartumu autorzy przedstawili problematykę dotyczącą realizacji wizji urbanistycznych z I i II połowy XX wieku. Zwrócili również uwagę na ich skutki i fakt, że stanowią istotną spuściznę dla współczesnej generacji planistów.

Abstract

The cosmopolitan centre of Khartoum, built in order to meet the requirements of the British residing there in isolation, was a concept realising the planning vision of a contemporary metropolitan city created on the level differing from the twentieth-century urban-planning principles of the West. Branching off, according to a meticulously planned and controlled scheme, the orthogonal grid of Khartoum with its opposite, chaotic Umm-durman on the other bank of the Nile, within half a century of their existence became proof of the phenomenon which, even today, might be regarded as a utopia. Free from tension, full of cultural contrasts and class differences, the capital of Sudan did not escape the touch of premature old age. A period of prosperity, known from old postcards and sentimental stories, was replaced with another utopia whose vision did not survive the clash with reality.

In the second part of work concerning the history and urban development of Khartoum, the Authors presented issues concerning the realisation of urban-planning visions from the 1st and 2nd half of the 20th century. They also drew attention to their consequences and the fact that they constitute a significant legacy for the current generation of urban planners.