Architectural education in sub-Saharan Africa: an investigation into pedagogical positions and knowledge frameworks

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Formal architectural education in sub-Saharan Africa was established in the 1920s, initially in South Africa, and later in Kenya and Nigeria during the 1950s. The first postcolonial schools in Ghana and Sudan were also inaugurated in the 1950s, triggering debates on the form architectural education should take for a postcolonial Africa. The origins of architectural education as a practice that was imposed across the region have had an unwavering impact on the current state of education in Africa. As the state of architectural education is increasingly discussed in global terms, the need to tell the story of sub-Saharan Africa has never been more urgent. Although this is often obscured by discourse from other parts of the world, it remains especially significant in relation to growing debates on decolonising and transforming education. This article engages with discourses of architectural education in the context of sub-Saharan Africa. Drawing from a wider study of architectural education across the region, it offers crucial insights into the pedagogical positions and knowledge frameworks that have defined (and to an extent continue to define) how architectural education is perceived and practised. The article investigates historic and contemporary discourses of architectural education that are informed by the recognition that architecture is a sociocultural phenomenon. The cases presented may further destabilise the status quo and the embedded hierarchies in architectural education. In the final instance, they are testament to a growing penchant for change, as they acknowledge alternative forms of knowledge and break from the hegemony of ahistoric educational approaches.

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Introduction

A century after the first architecture schools were established in South Africa,[1] and seventy years after the founding of the first postcolonial architecture schools in Ghana and Sudan,[2] the story of architectural education in sub-Saharan Africa has never been more intriguing. Despite the century-long span of this history of architectural education, international research on the subject has been fairly limited to date. In October 2014, the 'Building Modern Africa' issue of the *Journal of Architectural Education* (*JAE*) included only one short article on architectural education in sub-Saharan Africa.[3] This gap was also

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evident a decade earlier in the September/October 2004 edition of *Architectural Design*'s (*AD*) Profile on architectural education.[4] Finally, in the Spring 2018 special issue of *Charette* 'From the Global South: Pedagogical Encounters in Architecture', Nelson Mota and Dick van Gameren acknowledged that perspectives of sub-Saharan Africa, which come largely from the global north, may be problematic.[5] They could misrepresent the state of architecture (and architectural education) across the region. The immense size of sub-Saharan Africa, which encompasses diverse nations, cultures, and histories, renders this more complex. Marshall Brown acknowledged this in his introduction to 'Building Modern Africa'.

> JAE's foray into 'Modern Africa' was fraught with danger from the start. Our proposition to survey a territory so large, geographically diverse, and culturally distant, was bound to be a mix of discovery and conflict — similar to so many other western incursions into Africa. The intellectual stakes for JAE rise at least partially from the unfortunate fact that Africa continues to be a 'dark continent' for western architects.[6]

It is this reality, as well as my experience as an architectural educator working in the region for approximately two decades, that have served as a starting point for my exploration in the current state of architectural education.[7] Ideas, opportunities, and challenges of architectural education across the region are undoubtedly tied into global concerns and themes. These highlight the similarities in architectural education in different parts of the world. But there are also regional specificities that render such a study additionally interesting. After a wider literature review of architectural education across sub-Saharan Africa, which was instigated by my interest in contemporary architectural pedagogy in eastern and southern Africa, two key themes emerged. The first addresses pedagogical positions in architectural education, and the ways in which these influence the nature of educational engagement. The second discusses the knowledge frameworks in architectural education, a dominant theme in broader postcolonial educational literature.

Through a literature review of publications on architectural education across sub-Saharan Africa, this article explores these two themes to investigate architectural educational discourse across the region. I started by using academic citation databases, such as *Art and Architecture*, *Avery Index to Architectural Periodicals*, and *Scopus*. But this initial strategy soon proved to be inadequate. Very few publications on or from sub-Saharan Africa are available in these databases. This is a challenge for any research project on Africa. *Google Scholar* proved a much more valuable source as an academic citation search engine. Providing access to both academic and grey literature,[8] it offered a wider array of publications, including a number of relatively obscure documents that greatly enriched my study. But sourcing citations was not the only challenge. Sourcing references was also difficult. In some cases, I had to rely on personal contacts to obtain non-digitised documents, or even visit specific sites, such as the RIBA Library with its significant collection of documents on architectural education from across the world.

In this article, my approach was intentionally inclusive. I engaged equally with grey literature and other documents. While these are not usually included in scholarly research, they proved to be a necessary component of my study on sub-Saharan Africa. Some of these texts had been published in predatory journals, adding to the challenges of my research. Scholars based in Africa may publish in these journals out of necessity, inexperienced naïvety, and everything else in between. While this did raise questions about the validity and quality of these studies, I have included them in this article. These texts contribute to the emerging discourse on architectural education in sub-Saharan Africa in their own way. Their specific point of reference cannot be ignored. The sheer volume of these published papers should be critiqued for what it is and for its (positive or negative) impact on the broader discourse on architectural education. While this article focuses on sub-Saharan Africa, my research draws from studies that were published in English, mainly from the former British colonies across the region.

Pedagogical positions

Debates around pedagogical approaches that would be appropriate for architectural education emerged as a primary area of interest. Pedagogical approaches are additionally significant, because it is through these processes that students adopt and develop architectural values. These are transmitted consciously or unconsciously as part of the educational process.[9] Across sub-Saharan Africa, formal educational pedagogy is intrinsically linked to its colonial origins. It was initially introduced to enable individuals to enrol in the army, engage with trade, become religious missionaries, or serve in roles within the structures of colonial governance.[10] Control of access to education ensured the colonisers' hegemony across the region. It also served to develop ideas about the purpose of education as a means to access specific roles in government. In this context, education was often synonymous with the mere transmission (and acquisition) of pre-established knowledge.[11] Students entered higher education to be provided with the knowledge, skills, and experience that would enable them to engage in professional practice immediately after their graduation. In this model, students were empty vessels to be filled,[12] what C. Greig Crysler has described as a 'transmission model',[13] or 'banking education', in Paulo Freire's words.[14] This approach suggested an 'entrenched pedagogy',[15] which in turn encouraged notions of 'cultural cloning', a 'systematic reproduction of sameness'.[16] To guarantee conformity, this model maintained a degree of dependence and alienation.[17] In the context of professional education, sameness is often understood as linking back to the historic origins of a profession. In architecture, this builds a 'sense of kinship with centuries of traditions, thoughts, and personalities […] the true tie that binds those who practice architecture with those who teach it and study it'.[18] But in sub-Saharan Africa, this has often meant casting students as blank slates, disregarding their life experiences.[19] Art educator Odoch Pido has noted how this served to dislocate him (and his peers) from their societal context, a

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phenomenon that has also been described as 'the spectacle of separation and
quartering'.[20] This 'separation from oneself' was a prerequisite to participating
in modern (read: western) education.[21]

Hermie E. Voulgarelis has been particularly critical of such ahistoric
approaches to architectural education.[22] She has noted how the architecture
student of sub-Saharan Africa may be regarded as 'non-traditional' in the
context of 'traditional' architectural education.[23] Pedagogical approaches that
have changed little over the years have not helped either. Joe Noero has
argued that this signifies a failure of architecture to embed itself into sub-
Saharan Africa.[24] Instead, it seeks to emulate approaches from Europe or
North America that are perceived as the epitome of architectural education.[25]
Nicholas Coetzer has suggested that this is part of the 'absurdity of architectural
design education' in sub-Saharan Africa.[26] Such approaches instil in students an
'alien' set of references and values that do not reflect the realities of students'
lived experiences.[27] For Kirby Manià and others, this approach, which is based
on the notion of conformity with established norms and rules that bolster the
status quo, has contributed to further detaching architecture from the society
it purports to serve.[28] The dearth of discourse on alternative and transforma-
tional approaches in architectural education is part of the same problem.[29] It
is compounded by an accreditation system that is mainly interested in the
'adequacy and quality of physical infrastructure' in schools,[30] rather than
pedagogical approaches or the curriculum.[31]

Rethinking pedagogical approaches in the context of 'decolonising the curri-
culum is far more nuanced than simply replacing theorists and authors'.[32] This
was especially apparent in the early years of the school of architecture at the
Kigali Institute of Science and Technology (now the University of Rwanda),
where Garret Gantner challenged the view that limited access to resources
placed the school at a competitive disadvantage.[33] Instead, he argued that
this presented an opportunity to redefine what architecture education in sub-
Saharan Africa could be. He suggested that primary research should be integral
to architectural education across the region. But libraries in many universities
across sub-Saharan Africa are also woefully underfunded and understocked.
Many architecture schools do not even have functional libraries.[34] In this
light, contemporary architectural education in sub-Saharan Africa becomes a
blank canvas from which a new educational paradigm could emerge. It presents
an opportunity to develop research techniques appropriate for the regional
context.[35] Gantner's students' projects were similar to the design/build projects
of European and North American schools of architecture across sub-Saharan
Africa, but with a key difference. Students and instructors develop a close affi-
nity with the projects, as many students have first-hand experience of the con-
ditions for which they are designing. More alternatives to the inherent
shortcomings of the prevailing pedagogical approach have recently been put
forward. Roger C. Fisher and others have proposed storytelling or personal nar-
rative as a means of empowering students.[36] They have argued that this would
blur the division between learners and instructors, an invaluable move in a
context where the prioritisation of a dominant narrative has prevented the

emergence of alternative voices that institutionally 'tend to be marginalised and ostracised by professional and accreditation bodies'.[37] For Phillip Lühl, this has served as an opportunity to develop research prowess and specialisation.[38] It could also help in addressing the lack of research in architecture education across the continent.[39] Finally, it could be an opportunity to level the playing field between schools in Europe, North America, and sub-Saharan Africa.[40] Lack of resources would no longer mean that students in sub-Saharan Africa are adversely disadvantaged. These students could instead set an example of using found materials in their designs and presentations. They could showcase the realities of resource constraints as a core element in architecture.[41] In a similar vein, Iain Low has suggested that 'an African approach to studio demands that we "work the site" in all its multiple manifestations'.[42] Low sought to take the studio out of 'the studio' as a means of humanising and defragmenting the stratifications in architectural education,[43] noting that learning is 'not an isolated activity but linked to context and social interaction'.[44] Noero has further suggested that collaborative teaching approaches could promote ethical practice.[45] But this could only happen through true collaboration, which goes beyond what Tomà Berlanda has described as 'educational tourism'.[46] When students of European and North American architecture schools take on design/build projects that provide facilities for marginal communities, they do not usually acknowledge the involvement of (or do not engage with) local architecture schools.[47] This raises serious ethical questions, as it could easily become a new wave of 'educational colonialism' by European and North American schools.[48] While such projects may provide accommodation for marginal communities, they cannot be easily replicated, as their design and construction methods are too complex for local craft workers.[49] On the other hand, these projects pose a key challenge to architecture education in sub-Saharan Africa, which does not usually engage with rural and marginal communities. This is the result of an 'urban bias' that has persisted in architectural education across the region from the outset.[50]

Such challenges have been a key driver for the most ambitious attempt to reshape architectural education in sub-Saharan Africa. Lesley Lokko, programme leader at the Graduate School of Architecture (GSA), University of Johannesburg, at the time, has described it as follows:

> In the context of a racist and heavily-policed educational paradigm, opening up the pedagogical dogma to different views, positions and paradigms has had far-reaching implications, both radical and benign. As previously mentioned, the legacy of apartheid spatial ideology and planning has left architecture as a discipline in a particularly precarious position.[51]

The programme attempted to interrogate normalised but culturally loaded educational endeavours and spatial patterns. But it is still one of the very few schools that have adopted this radically different approach to architectural education that leads students to appreciate the role architecture can play in transforming society.[52] Lokko has further proposed that

> a new set of pedagogies must be conceived of, a set of creative practices that make it impossible for official structures to ignore or marginalise: we call these
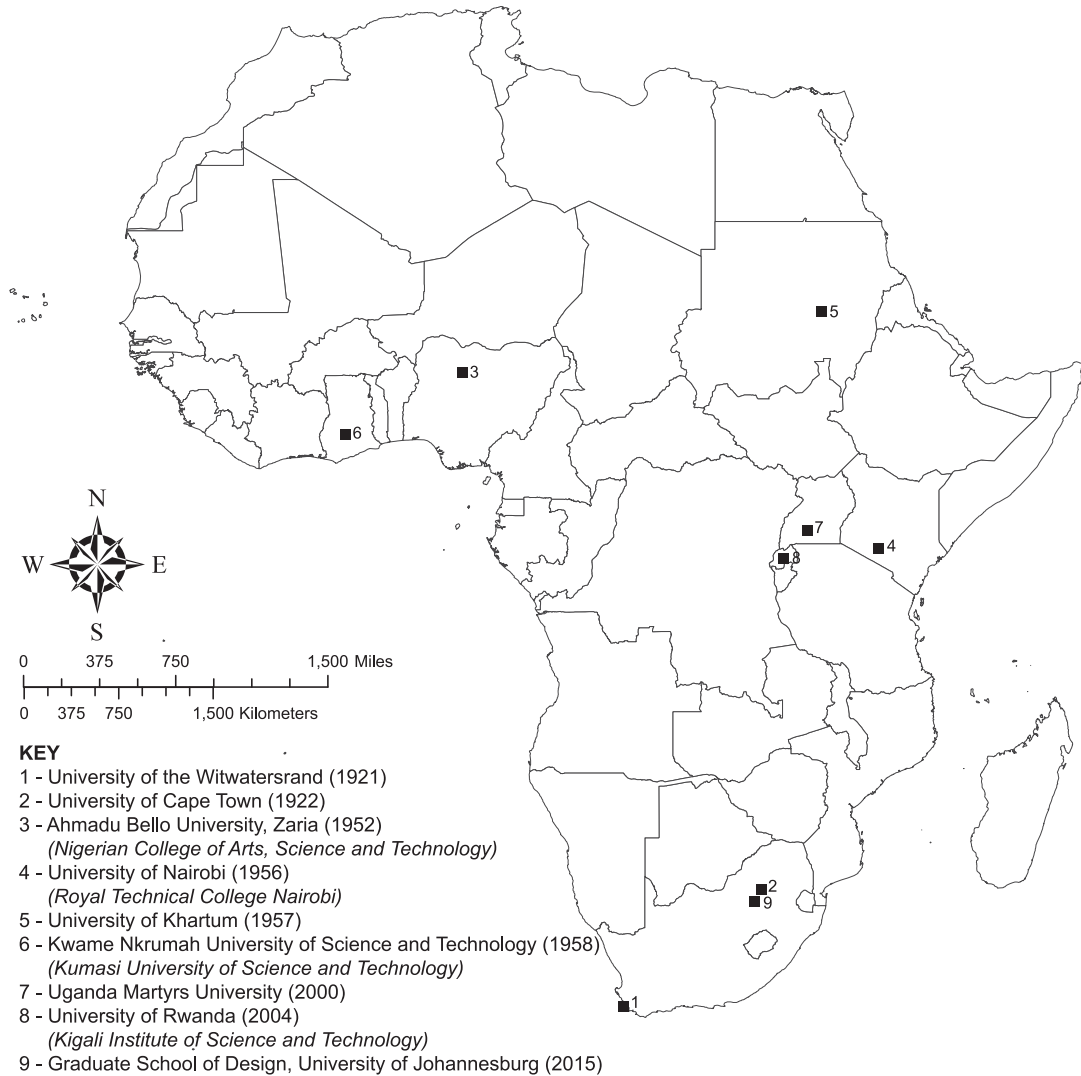
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> *transformative pedagogies* and it is our intention to develop these as the basic
> building blocks of a new curriculum. Diversity — of medium, perspective,
> approach and context — is key. The question of what constitutes an authentic
> African architectural culture is still premature and evolving, but we believe that
> protecting the space in which such a culture may develop and mature is the
> school's fundamental priority.[53]

Within this pedagogical approach, research became the foundation of the pro-
gramme, as a means to bridge divides across histories, societies, and ideals. This
radically different approach to the prevailing and somewhat pervasive model of
architectural education was distinguished in the 2017 African Architecture
Awards. Two of the five shortlisted projects in the 'Emerging Voices' category
were by students of the GSA.[54] But the long-term future of these pedagogical
changes is still unclear, as resistance to alternative approaches persists, despite
these recent distinctions. This may relate to the specific nature of knowledge in
architectural education.

Knowledge frameworks

The framing of knowledge has had a significant bearing in architectural edu-
cation in sub-Saharan Africa. For the most part, this has been scaffolded by
European knowledge frameworks that have influenced the way in which archi-
tectural knowledge has been structured and presented. Architectural education
in the context of sub-Saharan Africa has largely been adopted wholesale from
Europe. It arrived as part of the colonial project and it was imposed with little
regard for local realities. In most cases, these approaches and knowledge
systems have changed little over the years. This is evident in the limited trajec-
tories and the scant discourse around architectural programmes.

Outside of South Africa, where the first architecture programmes were estab-
lished in the 1920s, it was not until the 1950s that two more schools were inau-
gurated at the Nigerian College of Arts, Science and Technology, Ibadan (now in
Nigeria) in 1952,[55] and at the Royal Technical College, Nairobi (now in Kenya) in
1956 (see Figs 1 and 2).[56] Unlike their South African predecessors, these new
programmes were not professional. They rather aimed to train technicians
who would support architects from RIBA-accredited schools in the UK.[57] A
change in colonial education policies in the late 1950s marked the transition
to fully fledged architecture programmes. This change was instigated by the
limited number of expatriate architects in the region. It aimed to address the
increasing demand for local professionals that needed to engage with the con-
struction boom after World War II.[58] The newly revised professional architecture
programmes initially mirrored those in their parent institutions.[59] In addition,
both programmes built on the outcomes of the Conference on Tropical Archi-
tecture at University College London (UCL) in 1953.[60] This conference was a
response to protests by Nigerian UCL students who considered their architec-
tural education in the UK inappropriate for the conditions they would encounter
upon their return to West Africa. Among other related developments, the
Oxford Conference in April 1958 foregrounded the scientific paradigm in

KEY
1 - University of the Witwatersrand (1921)
2 - University of Cape Town (1922)
3 - Ahmadu Bello University, Zaria (1952)
   (Nigerian College of Arts, Science and Technology)
4 - University of Nairobi (1956)
   (Royal Technical College Nairobi)
5 - University of Khartum (1957)
6 - Kwame Nkrumah University of Science and Technology (1958)
   (Kumasi University of Science and Technology)
7 - Uganda Martyrs University (2000)
8 - University of Rwanda (2004)
   (Kigali Institute of Science and Technology)
9 - Graduate School of Design, University of Johannesburg (2015)

architectural education.[61] This was especially evident in crucial debates around tropical modernism, which became synonymous with the application of technology and the epitome of modernisation across sub-Saharan Africa.[62] These significant developments set the tone and defined the direction of early postcolonial architectural education. In the following decades, the 'universal appeal' of modernism overshadowed sociocultural issues in the curriculum.

Figure 1.
Location of architecture schools presented in this study, digital vector map processed by Mark R. O. Olweny, 2020

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Figure 2.
Timeline of key events, compiled by
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Year	Event
1921	University of the Witwatersrand, South Africa - Inauguration of architecture programme
1922	University of Cape Town, South Africa - Inauguration of architecture programme
1952	Nigerian College of Arts, Science and Technology - Commencement of non professional architecture programme
1953	Tropical Architecture Conference, University College London
1954	Architectural Association (AA) School of Tropical Architecture commences
1955	Nigerian College of Science and Technology - Inauguration of professional programme
1956	Royal Technical College, Nairobi, Kenya - Commencement of non professional architecture programme
1956	Independence - Sudan
1957	Independence - Ghana
1958	Oxford Conference
1958	Kumasi University of Science and Technology, Ghana - Commencement of architecture programme
1958	Technical College, Nairobi, Kenya - Commencement of architecture programme
1960	Independence - Nigeria
1961	Independence - Kenya
1984	African Union of Architects Conference: 'Appropriate Direction of Architectural Education in the African Region of the British Commonwealth'
1988	Commonwealth Association of Architects / Nigerian Institute of Architects Conference: ' Towards A New Direction in Architectural Education in Africa'
1991	Commonwealth Association of Architects / Congress of Heads of Schools of Architecture in the African Region Conference on Architecture Education
1994	First Free Election - South Africa
2000	Uganda Martyrs University - Commencement of architecture programme
2004	University of Rwanda - Commencement of architecture programme
2008	Uganda Martyrs University - Revision of architecture programme
2008	Oxford Conference 50 Years On
2015	Graduate School of Design, University of Johannesburg, South Africa - Commencement of graduate architecture programme

It was not until the first post-independence architecture schools were inaugurated in Ghana and Sudan that sociocultural issues came under keen scrutiny. These reflected a broader desire to establish an architectural education that would be appropriate for an independent Africa. The new curriculum would have to address the pressing issues of urbanisation for a rapidly growing population and a small-scale construction industry with limited technological resources and few qualified locals.[63] The new programmes also had to respond to the emerging discourse on 'African-ness' and question approaches that had been adopted almost wholesale from Europe.[64] Responding to the aspirations of a newly independent Africa, the inaugural dean of the School

of Architecture, Town Planning and Building in Kumasi (Ghana) John Lloyd noted that 'a Faculty of Architecture […], if it is to truly contribute to the future of the [African] continent, must drastically redefine anew the task of an "architect"'.[65] This was in stark contrast to sentiments expressed by Robert Gardner-Medwin, then Head of the Liverpool School of Architecture, who oversaw the transition of the programme at Nairobi to a professional degree level. Gardner-Medwin was eager to uphold the status quo, supporting a science and technology focus for the programme.

> [Architecture] is first of all deeply and fundamentally concerned with bringing the applications of science and technology to bear upon the total problem of human settlement,' Gardner-Medwin instructed his Nairobi colleagues. Architecture was about delivering solutions to pressing material problems. It was a practical science and African architecture programs like Nairobi's were where practitioners would learn to apply rigorous technique to practical problems.[66]

This decision defined how architectural education went on to be perceived in East Africa well into the 1990s. But it was not without its challengers, as various initiatives aimed to specify an appropriate architectural education for sub-Saharan Africa. This was especially the case for Selby Mvusi who was trained in South Africa and emerged as a key instigator for change in the prevailing architectural curriculum. In hindsight, his endeavour could be viewed as the outset of the decolonisation movement in architectural education in East Africa. Mvusi called for a new approach that did away with the view of universal applicability and scientific rationality, as that 'rationalised away' the notion of cultural difference. The scientific paradigms embedded in architectural education at the time were regarded as universally applicable. They provided a means for addressing the needs of development. These in turn linked architectural education with the future of the fledgling postcolonial states of sub-Saharan Africa. As Margaret and Alick Potter have already noted,

> [building] is part of nationhood. When a new nation comes into being, its historians are apt to refer to its creators and 'builders', and its leaders as 'architects'. Once independence is achieved, to be able to build is — as any postage stamp collector will vouch — one of the insignia of freedom, no less vital an element in national self-esteem than the possession of armed forces or one's own international airline. And the justifiable pride in building is all the more intense if a nation happens to have a local vernacular — and, best of all, local materials — that can be used and developed.[67]

As a result, architectural education was founded on strong technological and scientific processes that afforded the budding profession valuable academic currency.[68] This approach placed culture and tradition firmly in the past. In this paradigm, a 'war on the past' was built on the assertion that nothing meaningful could be derived from it.[69] This idea was at the heart of conflicts in the architecture programme at the University of Nairobi. Selby Mvusi and his colleague Derek Morgan were adamant that the course should be equally concerned with sociology and urban ethnography. They believed that students should have an appreciation of the sociocultural place of architecture beyond the dictates of technical rationality. They aimed 'to disable student's expectations that

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they were going to be trained to become expert in ways preordained by pro-
fessions'.[70] In Daniel Magaziner's words,

> Mvusi theorized what would happen if Africans' contemporary 'thought-pro-
> cesses' were taken seriously instead of being dismissed as either inauthentic
> or archaic. Contrary to those who saw only binaries such as developed/under-
> developed, rural/ urban, African/Western, or traditional/modern, Mvusi insisted
> 'underdevelopment is not monolithic. Neither is it exclusive nor static. It is itself
> active and dynamic, and is forever pacing development.' To be poor and rural
> and African was not to be behind, but rather to be. The chronology of pro-
> gress was a fiction.[71]

Mvusi's sentiments expressed his frustration with the educational approach
at the University of Nairobi. Promoting the idea that modernity was incom-
patible with local norms, this approach effectively ignored the role of society
in creating architecture.[72] The desire to match former colonial powers in all
areas, including architecture, was a key driver for architectural education in
sub-Saharan Africa. Architecture was perceived as an overt indication of the
state of each country's development. Miles Danby has summarised how this
trickled down to architecture programmes. 'The students were eager to
learn the skills of the image-making foreigners so that they, in their turn,
would be able to produce modern buildings worthy of the progressive
aspirations of their countries.'[73]

Although Mvusi and Morgan were unsuccessful in their attempts to insti-
gate changes in the curriculum at Nairobi, their ideas re-emerge as key
themes in architectural discourse, especially in post-apartheid South Africa.
In this context, Yashaen Luckan has suggested that architectural education
should challenge the perception of the architect as the all-knowing
expert.[74] This notion, which is still promoted in some architecture
schools,[75] fails to appreciate that architectural education is a cultural
phenomenon; as such, it cannot be uniform.[76] The post-apartheid era has
further reinforced such endeavours, as architectural education seeks to
address the needs of a multiracial South Africa and the social disparities
across sub-Saharan Africa.[77] As a result, ahistoric approaches that present
the curriculum and the related pedagogical perspectives as fixed and
unchanging,[78] and view change with suspicion and trepidation, reinforce
the distorting view that architectural education exists in a paradigm of
'unchanging permanence'.[79] This echoes sentiments expressed by Wale
Odeleye, Masaruf Magaji and Muhammad Sa'adiya Ilyasu, among others.
These authors have suggested that the problems faced by the profession
have only emerged because architects themselves have failed to change
with the times.[80] For architectural education, this reflects a failure to
appreciate the

> increasing diversification of the student cohort, worsening staff to student rations
> [*sic*], under-preparedness of students for studies in architecture, the introduction
> of computer technologies and changes in architectural practice.[81]

Recent accounts of the state of architectural education, which suggest that
current challenges are no different from those of the past, do highlight a

permanence of the status quo. Matthew Barac has noted that the willingness to change and innovate is evident in newer or independent schools of architecture.[82] These include the GSA at the University of Johannesburg, and the initial architecture programme at the University of Rwanda.[83] In the case of Rwanda, the challenge of setting up an architecture programme primarily with expatriate staff was not lost on the faculty. They were aware they needed to tread the fine line between architectural hegemony or cultural imperialism on the one hand, and the need to build a local identity for the budding architects on the other.[84] The programme directors acknowledged that especially in the context of sub-Saharan Africa, architectural interventions extend well beyond simply designing buildings. As a result, they devised a programme that prioritised primary research.[85] In the GSA, the programme was formulated around the sociopolitical ideals of post-apartheid South Africa. Questions of decolonisation and transformation were firmly embedded in the new graduate course. Such challenges could only be addressed in a new school of architecture that would be unimpeded by historical luggage. As a result, the programme rapidly implemented and engaged with new ideas, including those that were generated during the *#RhodesMustFall* and *#FeesMustFall* movements in South Africa in 2015, to rethink architectural education.[86] These movements highlighted the divide between students and society, a 'disengagement […] among many architecture students […] and […] the lived experiences of the community for which they hypothetically make decisions'.[87] Finally, Uganda Martyrs University developed another approach, as it sought to address the key challenges of environmental design and sustainability. To do so, the programme adopted a 'radically ambitious agenda [that] included changes to the ethos, educational approach and the way instructors interacted with students'.[88] Enacting change and transforming the programme was possible in this institution, because educational approaches and canons were not yet entrenched.[89] Such examples are reminiscent of their historical precedents in the 1950s and 1960s. Half a century after it first emerged, this discourse seems to be entering a phase of reawakening.

Reflections and conclusions

Reflecting on the origins of architectural education in sub-Saharan Africa and its current state, two almost polarised views persist. On the one hand, it is suggested that the system needs a radical transformation. This could be achieved by abandoning the ineffective frameworks that continue to scaffold architectural education across the region. The opposing view argues that the status quo has served the profession well. As such, it does not need to be changed. Berlanda has challenged this view, arguing that it is practically underpinned by validation requirements.[90] Attempts to break away from it could potentially render students unable to claim the title of the 'architect', as this is legally protected in most countries in Africa.[91] This state also raises a pertinent question regarding the role of architecture in the postcolonial period, when

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architectural education still maintains western value systems.[92] While the early post-independence anticolonial movements had hinted at possible changes, current discourses across sub-Saharan Africa suggest that this did not influence architectural education. Limited examples are still islands of novelties within a sea of sameness. This reinforces the view that 'the discipline of architecture is inherently conservative and any changes to its teaching [are] constrained by its international traditions, conservative attitudes and inertia in bureaucratic systems'.[93]

The ways in which knowledge systems, pedagogical approaches, and their embedded cultural values influence architectural education in sub-Saharan Africa have only occasionally been interrogated and challenged, despite their position at the centre of this field. This is bewildering in light of the strong anticolonial sentiments that emerged across the region during the 1950s and 1960s, and resulted in conferences and other initiatives that called for changes to architectural education over the following decades.[94] The emergence of critical discourses on architectural education in post-apartheid South Africa could be viewed as a continuation of the earlier postcolonial trends in East and West Africa. Their difference lies in their impetus for change and their willingness to challenge the status quo, to 'destabilize […] traditional hierarchies within education that perpetuate class, race, and gender hegemonies and, at the very least, destabilize the illusion that societal structures are static'.[95] This has called for a rethinking of educational approaches. More specifically, architectural education has to acknowledge the contribution of pedagogy and knowledge systems to the desired transformation, including the ways in which these can also address injustices that remain embedded in the architectural production of the built environment. The transformation and decolonisation of architectural education across sub-Saharan Africa necessarily has to engage with global discourses. The globalisation of architectural education and practice is accompanied by increasing demands for international validation of architecture programmes and growing calls for diversity in the profession. Future research should therefore take stock of global developments in architectural education, which have been present as a backdrop to developments across the region since the colonial period.

The increasing rate of publications on architectural education across sub-Saharan Africa is refreshing. But this is not yet the case outside of South Africa and Nigeria. Discourse from other sub-Saharan countries is less visible and difficult to access. But where it is available, it offers a fascinating insight into the state of architectural education across this vast region. Although this article reviewed a wide array of publications, it was limited to publications in English. That publications from the same region are also written in other languages, such as Afrikaans, French, and Portuguese, ironically reflects a colonial legacy that is still intrinsically tied to education across sub-Saharan Africa. The findings are indicative of the state of discourse on architectural education across the region, which is increasingly cited as a challenge to the future of both the profession and architectural education in sub-Saharan Africa. The

few examples presented in this article have highlighted attempts to rethink architectural education for sub-Saharan Africa. Their significance may grow, as similar attempts seem ready to emerge across the region in the immediate future.

Acknowledgements

Funding

Notes and references

1. These first schools of architecture were established at the University of the Witwatersrand (Wits) in Johannesburg in 1921 and the University of Cape Town (UCT) in 1922.
2. These schools were established at the Kumasi Institute of Science and Technology (now Kwame Nkrumah University of Science and Technology) in Ghana and the University of Khartoum in Sudan in 1957.
3. Iain Low, 'Educating Architects in Africa', *Journal of Architectural Education*, 68.2 (2014), 162–64 <https://doi.org/10.1080/10464883.2014.937230>
4. See *Back to School: Architectural Education — The Information and the Argument*, ed. by Michael Chadwick (=*Architectural Design*, 74.5 (2004)).
5. Nelson Mota and Dick van Gameren, 'Dwelling with the Other Half: Architectural Education for the Design of Affordable Housing in the Global South', *Charrette* 5.1 (Spring 2018), 33–49.
6. Marshall Brown, 'Difficult Territory', *Journal of Architectural Education*, 68.2 (2014), 155 <https://doi.org/10.1080/10464883.2014.943630>
7. See Mark Olweny, 'Colonial Modernism and Architectural Science Education in Sub-Saharan Africa', in *Fifty Years Later: Revisiting the Role of Architectural Science in Design and Practice. 50th International Conference of the Architectural Science Association*, ed. by Jian Zuo, Lyrian Daniel and Veronica Soebarto (Adelaide: Architectural Science Association; University of Adelaide, 2016), pp. 1–9; Mark Olweny, 'Socialisation in Architectural Education: A View from East Africa', *Education + Training*, 59.2 (2017), 188–200 <https://doi.org/10.1108/ET-02-2016-0044>; Mark Olweny and Charles L. M. Olweny. 'Ethical Positions in Built Environment Education', in *Proceedings of African Perspectives 2009: The African Inner City: [Re]sourced*, ed. by Karel A. Bakker (Pretoria: University of Pretoria, 2010), pp. 173–78.
8. The term 'grey literature' refers to articles not formally published by commercial academic publishers. See Neal Robert Haddaway and others, 'The Role of Google Scholar in Evidence Reviews and its Applicability to Grey Literature Searching', *PLoS ONE*, 10.9 (2015) <https://doi.org/10.1371/journal.pone.0138237>
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10. See Ann Beck, 'Colonial Policy and Education in British East Africa, 1900–1950', *Journal of British Studies*, 5.2 (May 1966), 115–38 <https://doi.org/10.1086/385522>; Michael Mwenda Kithinji, 'An Imperial Enterprise: The Making and Breaking of the University of East Africa, 1949–1969', *Canadian Journal of African Studies*, 46.2 (2012), 195–214 <https://doi.org/10.1080/00083968.2012.702084>; Timothy Parsons, 'Dangerous Education? The Army as School in Colonial East Africa', *The Journal of Imperial and Commonwealth History*, 28.1 (2000), 112–34 <https://doi.org/10.1080/03086530008583081>

11. Glenn Mills and Alan Lipman, 'Society and Architectural Education in South Africa — Are Universities Appropriate Venues for Schools of Architecture?', *Environment and Planning B: Planning and Design*, 21.2 (1994), 213–21 <https://doi.org/10.1068/b210213>

12. See Mills and Lipman, 'Society and Architectural Education'; Mark Olweny and Connie V. Nshemereirwe, 'Educating Built Environment Professionals: Perspectives from Uganda', paper presented at the Built Environment Education Annual Conference (BEECON), London, 12–13 September 2006.

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14. Paulo Freire, *Pedagogy of the Oppressed*, 3rd edn, trans. by Myra Bergman Ramos (New York, NY: Continuum, 2005).

15. William C. Sewell, 'Entrenched Pedagogy: A History of Stasis in the English Language Arts Curriculum in United States Secondary Schools', *Changing English*, 15.1 (2008), 87–100 <https://doi.org/10.1080/13586840701825345>

16. Philomena Essed and David Theo Goldberg, 'Cloning Cultures: The Social Injustices of Sameness', *Ethics and Racial Studies*, 25.6 (2002), 1066–82 (p. 1067) <https://doi.org/10.1080/0141987022000009430>

17. Sharon E. Sutton, 'Resisting the Patriarchal Norms of Professional Education: Reply to Leslie Kanes Weisman', in *The Sex of Architecture*, ed. by Diana Agrest, Patricia Conway and Leslie Kanes Weisman (New York, NY: Abrams, 1996), pp. 287–94.

18. Ernest L. Boyer and Lee D. Mitgang, *Building Community: A New Future for Architectural Education and Practice* (Princeton, NJ: Carnegie Foundation for the Advancement of Teaching, 1996), p. 4.

19. John P. Odoch Pido, 'Mismatch in Design Education at the University of Nairobi', in *Art — Design — Education — Exchange with Africa*, ed. by Satu Miettinen (Helsinki: University of Art and Design, 2002), pp. 21–29 <http://arted.uiah.fi/adeea/adeea1.pdf> [accessed 3 July 2020]

20. Achille Mbembe, *Critique of Black Reason*, trans. by Laurent Dubois (Durham, NC: Duke University Press, 2017), p. 78.

21. Ibid.

22. Hermie E. Voulgarelis, 'Non-Traditional Architectural Studies: What Might Influence the Development of a Successful Model? A Review of Literature', in *Design, Development & Research Conference*, ed. by Eddie Appiah, Nhlanhla Mlitwa and Dzigbordi Anyomi (Cape Town: Cape Peninsula University of Technology, 2011), pp. 396–404.

23. The term 'non-traditional' is typically used to refer to students with disabilities, as well as students from minority ethnic and racial backgrounds, students who have different learning styles, or students whose learning approaches are atypical. For sub-Saharan Africa, the concept of the 'non-traditional' student is somewhat flipped, given that the approach to architectural education is still largely linked to European origins. While overtly apparent in South Africa, it is not much different across the region.

24. Joe Noero, 'Education in Architecture: Global Difference', *RIBA Education Series*, September 2011 <https://vimeo.com/30021019> [accessed 3 July 2020]

25. Tomà Berlanda, 'De-Colonising Architectural Education: Thoughts from Cape Town', *Built Heritage*, 3.1 (2017), 69–72 <https://doi.org/10.1186/BF03545677>

26. Nicholas Coetzer, 'Towards a Dialogical Design Studio: Mediating Absurdities in Undergraduate Architectural Education in South Africa', *South African Journal of Art History*, 25.1 (2010), 101–17.

27. Foluke Jegede and others, 'Designing to Meet Indigenous Needs: Place of Traditional Studies in Architectural Education', in *Proceedings of INTED2017 Conference*, ed. by Luis Gómez Chova, A. López Martínez and I. Candel Torres (Valencia: IATED Academy, 2017), pp. 2331–36.

28. Kirby Manià, Ariane Janse van Rensburg and Randy Bird, 'Writing into Design: An Embedded Writing Course for Architectural Studies', *South African Journal of Higher Education*, 31.5 (2017), 172–88.

29. Voulgarelis, 'Non-Traditional Architectural Studies'.

30. Masaruf Magaji and Muhammad Sa'adiya Ilyasu, 'The Architectural Education Curriculum in the Nigerian Schools of Architecture', *IOSR Journal of Research & Method in Education*, 6.6 (2016), 13–17.

31. See Magaji and Ilyasu, 'The Architectural Education Curriculum'; Michael B. O. Adegbile, 'Nigerian Architectural Education in a Sustainable Age', in *Sustainable Futures: Architecture and Urbanism in the Global South* (Kampala: Uganda Martyrs University, 2012), pp. 224–31; Jegede and others, 'Designing to Meet Indigenous Needs'; Olu Ola Ogunsote and Bogda Prucnal-Ogunsote, 'Infrastructural and Interconnectivity Considerations in the Design of Modern Architecture Studios in Nigeria: Lessons from Leading Schools of Architecture', *Journal of the Association of Architectural Educators in Nigeria*, 1 (2013), 51–69.

32. Lesley Lokko, 'A Minor Majority', *Architectural Research Quarterly*, 21.4 (2017), 387–92 (p. 389) <https://doi.org/10.1017/S1359135518000076>

33. Garret Gantner, 'Hands, Eyes and Feet: Approaches to an Architectural Education', in *Sustainable Futures*, pp. 232–37. The lack of resources is a major point of discussion across sub-Saharan Africa. See Ogunsote and Prucnal-Ogunsote, 'Infrastructural and Interconnectivity Considerations'.

34. Steve Ikpendu Nwankwo, Joseph Ogbogu Diogu and S. C. E. Obasi, 'Evaluation of Students Design Studio Performance in Schools of Architecture towards Ensuring Qualitative Architectural Education in Nigeria', in *Proceedings of ICERI2014 Conference*, ed. by Luis Gómez Chova, A. López Martínez and I. Candel Torres (Seville: IATED Academy, 2014), pp. 4187–97.

35. This was evident in projects such as the Laboratory for an Integrated African Network for the Built Environment (LIANE) and the joint development of courses for energy-efficient and sustainable housing in Africa (JENGA).

36. Roger C. Fisher, Mary E. Lange and Emmanuel N. Nkambule, 'Cultural Hybridity in the Teaching of Architecture within a Decolonised Society', *Paranoá*, 18 (2017) <https://doi.org/10.18830/issn.1679-0944.n18.2017.01>

37. Berlanda, 'De-Colonising Architectural Education', p. 71. This was a challenge for the second school of architecture in Uganda, at Uganda Martyrs University, which was ostracised for developing a programme markedly different from that in the other existing school at the time.

38. Phillip Lühl, 'Towards a New Architecture School: Positioning Namibia's First School of Architecture Theoretically within its Post-Colonial Context', in *Architectural Education @ Different Scales: Architectural Education Forum Symposium*, ed. by Ariane Janse van Rensburg (Johannesburg: University of the Witwatersrand, 2016), pp. 33–41.

39. Yomi Michael Daisiowa Adedeji and others, 'Architectural Education and Sustainable Human Habitat in Nigeria', *WIT Transactions on Ecology and the Environment*, 167 (2011), 89–99 <https://doi.org/10.2495/ST110091>

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40. Sandra Felix, 'Architecture for All', *Architectural Education @ Different Scales*, ed. by Van Rensburg.

41. See Zakkiya Khan and Nico Botes, 'In your Hands & Self-Portrait: Introductory Spatial Design Exercises in the First-Year Studio', in *#Decolonise! DEFSA 14th National Conference Proceedings*, ed. by Susan Giloi and Herman Botes (Tshwane: Design Education Forum of Southern Africa, 2017), pp. 104–17.

42. Low, 'Educating Architects in Africa', p. 163.

43. Mark Olweny, 'Introducing Sustainability into an Architectural Curriculum in East Africa', *International Journal of Sustainability in Higher Education*, 19.6 (2018), 1131–52 <https://doi.org/10.1108/IJSHE-02-2018-0039>; Mudashir Gafar and Abdulazeez Umar Raji, 'An Assessment of Architecture Students' Perception on the Soft and Practical Skills Integration into the Curriculum Structure for Sustainable Development in Nigeria', *Journal of Technology Management and Business*, 5.2 (2018), 43–58 <https://doi.org/10.30880/jtmb.2018.05.02.006>

44. Hermie E. Delport-Voulgarelis and Rudolf Perold, 'Part 1: Exploring Collaboration in Architectural Education: Towards Design-Build Projects', *Journal of the South African Institute of Architects*, 77 (January/February 2016), 42–47 (p. 43). See also Olweny, 'Socialisation in Architectural Education'.

45. Noero, 'Education in Architecture: Global Difference'.

46. Tomà Berlanda, 'Shade of Meaning: Clinic in Turkana, Kenya, by Selgas Cano, Ignacio Peydro and MIT students', *Architectural Review*, 23 February 2015 <https://www.architectural-review.com/today/shade-of-meaning-clinic-in-turkana-kenya-by-selgas-cano-ignacio-peydro-and-mit-students/8678837.article> [accessed 3 July 2020]

47. Numerous 'study abroad' projects have been undertaken by European and North American universities. See Kelley Beaverford and Stewart Morgan, 'More Mortar, Muzungu!', *Canadian Architect*, April 2009 <https://www.canadiaarchitect.com/more-mortar-muzungu/> [accessed 3 July 2020]; Thomas Fowler and Kevin Dong, 'Partnering without Boundaries: Integrating Structures, Architecture, Practice, and Education', paper presented at the Fourth International Conference on Structures and Architecture, Lisbon, 24–26 July 2019.

48. Berlanda, 'Shade of Meaning'.

49. Ibid.

50. Rhodri Windsor-Liscombe, 'Modernism, Multi-Racial Community and Mau Mau: Maragua 1953', in *The Scaffolding of Empire*, ed. by Peter Scriver (Adelaide: Centre for Asian & Middle Eastern Architecture, 2007), pp. 17–42.

51. Lokko, 'A Minor Majority', p. 390.

52. Bridget Horner, Miranda Young-Jahangeer and Rubby Dhunpath, 'Performing Problems on the Pavement: An Innovative Approach to Architectural Education in Post-Apartheid South Africa', *Journal of Architectural Education*, 70.2 (2016), 203–13 <https://doi.org/10.1080/10464883.2016.1197667>

53. Lesley Lokko, 'uKuhumusha: From "Here" to "There" — Transplanting the Unit System from Europe to Africa (and Back Again)', *Charrette*, 4.2 (2017), 13–26 (pp. 21–22).

54. Approximately 500 projects were submitted from more than thirty countries across Africa.

55. The College was moved to Zaria in 1955. It has since changed its name to the Ahmadu Bello University.

56. The Royal Technical College Nairobi became University College Nairobi in 1963, one of the three constituent colleges of the tri-country University of East Africa. After the breakup of the University of East Africa, it became the University of Nairobi in 1970. This was partly the result of ideological differences between the leaders of the three countries of the East African Community. See Kithinji, 'An Imperial Enterprise'.

57. See Clive Whitehead, 'The Concept of British Education Policy in the Colonies 1850–1960', *Journal of Educational Administration and History*, 39.2 (2007), 161–73 <https://doi.org/10.1080/00220620701342296>

58. Olweny, 'Colonial Modernism'.

59. These parent institutions were the Architectural Association for the Nigerian College of Arts, Science and Technology, and the University of Liverpool for the Royal Technical College Nairobi.

60. Patrick I. Wakely, 'The Development of a School: An Account of the Department of Development and Tropical Studies of the Architectural Association', *Habitat International*, 7.5–6 (1983), 337–46 <https://doi.org/10.1016/0197-3975(83)90082-6>

61. See Leslie Martin, 'Report on the Oxford Conference on Architectural Education', *RIBA Journal*, 127 (June 1958), 772–77; Jiat-Hwee Chang, *A Genealogy of Tropical Architecture: Colonial Networks, Nature and Technoscience* (London: Routledge, 2016).

62. See Hannah le Roux, 'Building on the Boundary — Modern Architecture in the Tropics', *Social Identities*, 10.4 (2004), 439–53 (p. 439) <https://doi.org/10.1080/1350463042000258889>

63. Łukasz Stanek and Ola Uduku, 'Post-Independence Modernization', in *Radical Pedagogies: Reconstructing Architectural Education at the 7th Warsaw under Construction Festival*, ed. by Beatriz Colomina and Evangelos Kotsioris (Warsaw: Warsaw Faculty of Architecture, 2015), pp. 16–19 (p. 16).

64. The notion of 'African-ness' is also mentioned elsewhere as 'Africanism', 'the Africa personality', 'African humanism', 'Africa family-hood', or 'Négritude'. See Daniel Magaziner, 'The Foundation: Design, Time, and Possibility in 1960s Nairobi', *Comparative Studies in Society and History*, 60.3 (2018), 599-628 <https://doi.org/10.1017/S0010417518000208>

65. Stanek and Uduku, 'Post-Independence Modernization,' p. 16.

66. Magaziner, 'The Foundation', p. 609.

67. Margaret Potter and Alick Potter, *Everything is Possible: Our Sudan Years* (Gloucester: Sutton, 1984), p. 13.

68. Ibid.

69. Magaziner, 'The Foundation'.

70. Ibid., p. 613.

71. Magaziner, 'The Foundation', p. 626.

72. Lesley Naa Norle Lokko, 'Introduction', in *White Papers, Black Marks: Architecture, Race, Culture*, ed. by Lesley Naa Norle Lokko (Minneapolis, MN: University of Minnesota Press, 2000), pp. 14–35.

73. Miles Danby, 'Architectural Education in Africa and the Middle East', *Architectural Education*, 2 (1983), 15–26.

74. Yashaen Luckan, 'The Strategic Position of the Architecture Programme within the Faculty of Engineering and the Built Environment at the Durban University of Technology (DUT): Towards Interdisciplinary Engagement — Bridging the Gaps Between Theory and Practice', in *Proceedings of the Second Biennial Conference of the South African Society for Engineering Education*, ed. by Brandon Collier-Reed (Cape Town: SASEE, 2013), pp. 105–17.

75. Low, 'Educating Architects in Africa'.

76. Voulgarelis, 'Non-Traditional Architectural Studies'.

77. See Fisher, Lange and Nkambule, 'Cultural Hybridity'; Horner, Young-Jahangeer and Dhunpath, 'Performing Problems on the Pavement'; Danie Theron, 'Some Issues in Architectural Education in South Africa', in *UIA International Architect: Southern Africa*, ed. by Haig Beck (London: International Architect, 1985), p. 65; Lucien le Grange, 'Preparing for the Future: Addressing the Education and Training of Black Architects in South Africa', *Architecture SA*, (January/February 1989), 36–38; Glen Mills, 'Notes on Architectural Education: Are

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Universities Appropriate Venues for Schools of Architecture in a Restructured South Africa?', *Architecture SA*, (January/February 1993), 14–15.

78. See Michael B. O. Adegbile, 'Enhancing Architectural Education in Nigeria', *Lagos Journal of Environmental Studies*, 7.2 (2010), 79–81; Christopher Cripps, 'Architecture in Europe and the South: Some African Experiences', paper presented at the N-AERUS Annual Seminar, *Beyond the Neo-liberal Consensus on Urban Development: Other Voices from Europe and the South*, Paris, 15–17 May 2003 <http://n-aerus.net/web/sat/workshops/2003/papers/docs/13.pdf> [accessed 3 July 2020]; Abiodun Olukayode Olotuah, Abraham A. Taiwo and Olufunto O. Ijatuyi, 'Pedagogy in Architectural Design Studio and Sustainable Architecture in Nigeria', *Journal of Educational and Social Research*, 6.2 (2016), 157–64 <https://doi.org/10.5901/jesr.2016.v6n2p157>

79. This is inherently linked with the 'politics of neglect' in apartheid-era South Africa. See Voulgarelis, 'Non-Traditional Architectural Studies'; Akunnaya Pearl Opoko and Adedapo Adewunmi Oluwatayo, 'Architectural Education for Today's Challenges', *Arts and Design Studies*, 38 (2015), 24–30; Adegbile, 'Nigerian Architectural Education'.

80. See Magaji and Ilyasu, 'Architectural Education Curriculum'; Wale Odeleye, 'Address by CAA President', *Nigerian Institute of Architects Journal*, 6.2 (April–June 1991), 5–6.

81. Jolanda Morkel, 'Facebook-Enhanced Face to Face Learning: The Architecture Studio', in *Proceedings of the 5th International Computer & Instructional Technologies Symposium* (Elazığ: FIrat University, 2011), pp. 1–7 <http://web.firat.edu.tr/icits2011/papers/27718.pdf> [accessed 3 July 2020]

82. Matthew Barac, 'Pedagogy: KIST, Kigali, Rwanda', *Architectural Review*, 25 October 2013 <https://www.architectural-review.com/essays/reviews/pedagogy-kist-kigali-rwanda/8654542.article> [accessed 3 July 2020]; Matthew Barac, 'Pedagogy: University of Johannesburg, South Africa', *Architectural Review*, 17 April 2013 <https://www.architectural-review.com/essays/reviews/pedagogy-university-of-johannesburg-south-africa/8644828.article> [accessed 3 July 2020]

83. This was known as the Kigali Institute of Science and Technology at the time.

84. Gantner, 'Hands, Eyes and Feet'.

85. Rudolf Perold and Oswald Devisch, 'Sustainability and Difference in Suburban Cape Town', in *Association of Architectural Educators Living and Learning Conference Proceedings* (Sheffield: Association of Architectural Educators, 2014), pp. 190–94.

86. *#RhodesMustFall* is a 'radical student movement centered on decolonizing UCT by confronting questions of institutional racism, increasing access to education, and reforming the Eurocentric university curriculum'. See A. Kayum Ahmed, '#RhodesMustFall: How a Decolonial Student Movement in the Global South Inspired Epistemic Disobedience at the University of Oxford', *African Studies Review*, 63.2 (June 2020), 281–303 (p. 282) <https://doi.org/10.1017/asr.2019.49>. The *#FeesMustFall* movement was a 2015 student uprising against lack of access to, and financial exclusion from, higher education in South Africa. See *Fees Must Fall: Student Revolt, Decolonisation and Governance in South Africa*, ed. by Susan Booysen (Johannesburg: Wits University Press, 2016); Lokko, 'uKuhumusha'.

87. Horner, Young-Jahangeer and Dhunpath, 'Performing Problems on the Pavement', p. 203.

88. Olweny, 'Introducing Sustainability', p. 1142.

89. Ibid.

90. Berlanda, 'De-Colonising Architectural Education'.

91. Felix, 'Architecture for All'; Coetzer, 'Towards a Dialogical Design Studio'.

92. Lühl, 'Towards a New Architecture School'.

93. Fisher, Lange and Nkambule, 'Cultural Hybridity', p. 4.

94. The first conference was held in 1984. It was hosted by the African Union of Architects (AUA) in Nairobi, Kenya, under the theme 'The Appropriate Direction of Architectural Education in the African Region of the British Commonwealth'. Two follow-up conferences, partly sponsored by the Commonwealth Association of Architects (CAA), were held in 1988 and 1991. Both aimed to respond to the perceived dilemma of architectural education.
95. Horner, Young-Jahangeer and Dhunpath, 'Performing Problems on the Pavement', p. 204.