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VISION, CONNECTION, DIVISION: CIVIL ENGINEERING AND THE NELSON MANDELA BRIDGE AS UTOPIAN RHETORIC IN JOHANNESBURG'S ARGUMENT FOR CIVIC IDENTITY

BIOGRAPHY

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→ **In contrast to** overtly ideological edifices such as monuments and museums, transmitter towers and bridges emerge primarily from utilitarian needs. They are celebrated as feats of civil engineering, that is, the reconfiguration of the physical environment through the logical application of the exact sciences. While acknowledging the very real functionality of these structures, I demonstrate how the practice of engineering, as manifest in the inner-city of Johannesburg, is also an ideological act. To this purpose, I consider the Sentec Tower and the Telkom Joburg Tower, but in particular, scrutinise the more recent Nelson Mandela Bridge, all (originally) public structures erected with public funds. The aim of the study is to make visible the rhetorical function of engineered artefacts, a function that has been increasingly recognised and exploited by civic authorities in their aim to project Johannesburg variously as a modern / African / transforming / static / open / closed / global community. To this purpose, civil engineering outputs are examined as they engage with the principles of utopian and nationalist thought.

fig 1

fig 2

fig 1 The Sentech Tower, 2008
Author's photograph

fig 2 The Johannesburg skyline dominated by the Telkom Joburg Tower, 2008
Image courtesy of the Joburg Tourism Company

A city that lies at the heart of the largest urban conurbation in sub-Saharan Africa (Beall, Crankshaw & Parnell 2002), but that boasts no great river, mountain or coastline, must perforce draw its spectacular identity from the built environment. Thus the skyline of Johannesburg is dramatically intersected by two exceptionally tall transmitter towers. Reiterating its debt to the modernising narratives of concrete, the city has chosen one of these structures to uniquely symbolise Johannesburg in its official logo. However, more recently a deliberate counterpoint to the aggressive verticality of the towers has materialised in the city centre. Although largely invisible unless one is almost upon it, Johannesburg's newest landmark is a modest but emotively rendered cable-stayed bridge.

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This essay considers the Sentec Tower (Figure 1) and the Telkom Joburg Tower (Figure 2). In particular, I scrutinise the more recent Nelson Mandela Bridge (Figure 5), all (originally) public structures erected with public funds.[1] The aim of the study is to make visible the rhetorical function of engineered artefacts, a function that has been increasingly recognised and exploited by civic authorities in their aim to project Johannesburg variously as a modern / African / transforming / static / open / closed / global community. Civil engineering outputs are examined as they engage with the principles of utopian and nationalist thought.

My interest in the role of the engineer in imagining a community's identity has grown from collaborative research undertaken with Associate Professor Francis Legge of the Department of Civil Engineering Science at the University of Johannesburg. This research is in response to an injunction by the Engineering Council of South Africa (ECSA) that a minimum criterion for accredited qualifications in engineering is the inclusion of complementary studies in degree programmes that consider issues beyond the basic sciences (Engineering Council of South Africa 2004). We used the seminal texts of Lawrence Vale (1992; 1999) as a point of departure, finding support for the examination of the ideological content of the built environment in Denis Cosgrove and Geoffrey Petts (1990), Pyrs Gruffudd (1995), Abidin Kusno (2000) and Walter Peters (2004). Consequently, a line of exploratory investigation was initiated through a comparison of the structural, as well as the ideological, rhetoric of the Sentech and Telkom Joburg Towers as they reveal(ed) aspects of an imagined South African nation (Groenewald & Legge 2008). While the primary interest of the present undertaking is the Nelson Mandela Bridge, the latter cannot be usefully interrogated as an ideological trope without pausing to consider its antecedents, which are explored in the following section.

The swerve upward

In that swerve upward is the sublime conceptualism of western intellect "... [a] colonnade of stony things, the hard, harsh blocks of western personality" (Camille Paglia, in considering Olympus, the mountain shrine of the Greek gods, 1990:72).

The Sentech Tower was conceived by the South African Broadcasting Corporation (SABC) and funded by the ruling National Party Government in 1959 to enable FM radio transmission in South Africa. It was originally called the Albert Hertzog Tower and was at the time of its completion "the tallest concrete tower in Africa" (Zunz et al 1965:151). It is perhaps an indication of the hubris of the authorities in the 1950s that they did not think it necessary to exploit the rhetorical opportunity presented by the transmitter: the original tender called for a functional open-lattice steel construction.[2] It was left to the engineering contractors to suggest that a concrete tower might be more appropriate. The eventual decision to use concrete, although ostensibly a pragmatic one, was almost certainly fuelled by the ideological connotations of this material. As opposed to 'natural' materials, concrete produces "a narrative of progress" in the built environment, and marks a nation as one of the "great countries of the world" (Kusno 2000:1-2).

The tower was already under construction when the client appeared to realise that public access to a viewing platform would add even more value to the project; in other words, that a quotidian structure could serve a purpose similar to that of a national monument or political shrine. The contingency planning that ensued, as described in the July 1965 edition of *The Civil Engineer in South Africa*, makes for interesting reading. The tower (completed in 1962) took on its shape and function while growing organically out of the quartzite rock of the Brixton Ridge, and it is with discernable relief that the engineers were able to observe that, "In a curious way ... each part seemed to fit quite admirably into its place as a whole" (Zunz et al 1965:160).

Curious indeed: why did the client change their minds? While the 'nation' seemed incontestably secure in November 1959, by February 1960 Harold Macmillan had announced that South Africa's apartheid policy could enjoy no support from Britain. Utopia was under threat, and civil engineering had to evolve from a facilitator of utilitarian needs to a purveyor of ideology. Nevertheless contingency planning meant that the Albert Hertzog Tower fell somewhat short of the demands placed upon it, after the fact, to signify a defiant and fixed community. This task would be performed by its successor, the JG Strijdom Tower (currently the Telkom Joburg Tower) in Hillbrow.

The overt rationale for a transmitter tower in Hillbrow, which was completed in 1971, was the need for microwave broadcasting. But it is possible that the erection of the Albert Hertzog Tower alerted those in power that an opportunity had been missed in 1959. Apart from being considerably taller by some 72 metres, the JG Strijdom Tower differs in several other telling respects from its companion. Whereas the Brixton foundations are shallow, the Hillbrow foundations plummet 42 metres into the African earth; the Brixton tower evinces an elegant taper, whereas the Hillbrow tower is an unforgiving cylinder. Public access was an afterthought in Brixton; the Hillbrow

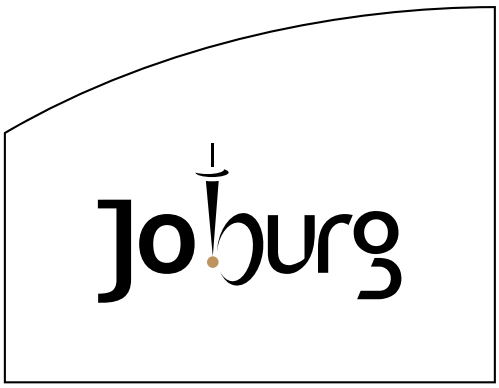

fig 3

tower was planned as an opulent (if forbidding) tourist destination (GNB 1972:1). While the Brixton tower grew organically on site, the tower in Hillbrow was assembled from exact pre-cast wall units, and so on. It is therefore noteworthy that the haphazard Brixton project was generously described by the consulting engineers in a professional journal, but silence followed the Hillbrow endeavour.

The ideological intent of the towers is also inherent in their original names: while the Albert Hertzog Tower appropriately acknowledged the Minister of Posts and Telegraphs at the time, the JG Strijdom Tower commemorated a prime minister who had been dead for 13 years. The anomaly is partially explained when one recognises – in the rhetoric of the Hillbrow structure – the intractable attitude for which Strijdom was known and admired (Davenport & Saunders 2000:398-406). At a time when criticism of South Africa was mounting, it was clearly useful to remind the nation of past heroes, steadfast in their struggle against foreign domination. The tower is therefore not only a concrete fortress, it evokes past intransigence; defying change in its physical form, it constructs the identity of citizens as fixed, patriarchal, isolated, aggressive and powerful.

If the paradigm shift during the construction of the Albert Hertzog Tower is interesting, the subsequent history of the JG Strijdom Tower as a signifier of community is even more arresting. For security reasons, both towers were closed to the public in the early 1980s. Privately owned since the early 1990s, the tower in Brixton fell into media obscurity. The Hillbrow Tower, on the other hand, has – despite its sealed doors – been politically and socially 'reinvented'; standing amidst a largely black population of *émigrés*, it has come to symbolise "freedom, opportunity, homes, schools, jobs, a safe haven for those who have fled from places far worse" (Dlamini 2004). On 31 May 2005 the JG Strijdom Tower was officially renamed the Telkom Joburg Tower. At the glittering ceremony, a mayoral committee member cited the role of the tower in "the City's 2030 vision to become Africa's techno hub" (Dlamini 2005) as one of the reasons for its importance: "'[T]he tower', states Sol Cowan (cited in Dlamini) 'is central to our identity.'" An emotive symbol of refuge, therefore, but also one of modernising, western technology – adequate justification for the structure to have been chosen in 2002 to represent Johannesburg in its official logo (Rebranding a city 2008) (Figure 3).

Perhaps. But the tower's modernist austerity was stylistically outdated by 2002, and clearly, for some, ideologically problematic. Consequently, in the logo the tower is divested of several thousand tonnes of concrete and tapers to a delicate point. It leaps from a golden bubble; capricious, unstable, carnivalesque. In choosing this particular structure to convey a city that – according to the designers of the logo – exudes "dynamism and zest" (Rebranding a city 2008), the authorities had to deny both the tower's physical properties, as well as the ideological meanings implicit in the original structure.[3]

Several points of interest are raised by this visual transformation, one being that the 'feminised' tower denies the probability that for a community in flux the patriarchal immutability of the real tower was its main appeal.[4] Yet it is this very masculinity that disturbs those who contemplate the spaces of the city. An article entitled 'Making Hillbrow more 'feminine' (Davie 2002b) and published on the official website of the city, declares the entire precinct to be too 'masculine', and thus in need of change. Yet, as Anthony Smith (1991:119) points out with regard to national identity as a project, the reconstructions of intellectuals have to remain as close to popular perceptions as possible. In the opinion of some, the ending of apartheid has heightened the Modernist expectations of historically disenfranchised people, rather than hastened the academics' programme of negotiation and consensus-seeking solutions (Beall, Crankshaw & Parnell 2002:18-19). Thus the 'real' Hillbrow tower – flanked by a mechanical modernist skyline – continued to head up the home page of the official website of the City of Johannesburg until November 2007 (Niven 2008) (Figure 4).[5]

Whatever the difficulties of settling for the "infamous" (Dlamini 2004) JG Strijdom Tower as a symbol for identity post-1994, it must be conceded that alternative signifiers were not thick on the ground in 2001 when the upcoming *World Summit on Sustainable Development* in 2002 made the branding of the city an urgent matter. Not until July 2003 would Johannesburg offer its citizens an alternative

fig 3 Official logo of the City of Joburg, 2008 Courtesy of the City of Joburg

fig 4 Home page of the website of the City of Joburg, 2003
Sourced at http://joburgnews.co.za

fig 4

to 'the swerve upward' in the recumbent and forgiving form of a cable-stayed bridge.

Mother nature's horizontal

> **This ... long narrow design signifies the triumph of Mother Nature's horizontals over the verticals of spiritual ascent (Paglia 1990:187).**

Camille Paglia (1990:187), in considering Botticelli's *Venus and Mars* (1486), is at pains to point out the degenerative qualities signified by the supine figures in this painting where the directedness of the male principle is dissolved by female passivity. Paglia compares the painting to a scene in Edmund Spencer's poem *The Faerie Queene* (1596) in which a knight is seduced by a sorceress and falls asleep, "his weapons abandoned and defaced". In Botticelli's work, Mars – limp and comatose – has his lance appropriated by impish satyrs; like a tree felled, this instrument of war is playfully transformed into a 'bridge' that links but also neutralises the opposing conditions of love and war across a narrow, horizontal picture plane.

Paglia's valorisation of what have been termed "exhausted archetypes" (Booth 1999:30) has elicited highly emotive criticism from feminist theorists (see O'Sullivan 1995); however, more disinterested comment on her work acknowledges the usefulness of her views despite their much-vaunted sensationalism (Ebert 1991; Fromm 1995; Booth 1999). "Maybe she's right", ventures Alison Booth (1999:30), "about the masculine drive for ... power over mortal flesh". Paglia "seems to stay fresh because she throws together so forcefully the postmodern and the ancient, popular culture and high art" (Booth 1999:28). At the release of Paglia's seminal text (1990), Teresa Ebert (1991:13) acknowledges its "outrageous" nature, but observes that theorists "need to empower [them]selves and others to interrogate the politics of Paglia ... in order to expose the fascist, patriarchal violence they legitimate".

Arguably, the "fascist, patriarchal violence" inherent in the stridently phallic Brixton and Hillbrow towers required, like Mars in Botticelli's painting, a disarmament, or "dissolution of Apollonian contour" (Paglia 1990:188). Thus, in November 1999, 13 groups of companies submitted pre-qualification bids for the Nelson Mandela Bridge project in Johannesburg. Lucy Blakstad (2002:6) suggests that

> **Bridges ... are not simply engineering structures that enable us to cross from point A to point B, but are deeply embedded in our consciousness ... [B]ridges are an explicit manifestation of the eternal – and eternally unsatisfied – human desire to link ... It seems that we all strive to bridge the gap that exists in terms of where we are now and our aspirations of where we want to be ... Somewhere else.**

Whether deliberate or not, the decision to construct a bridge in a city with no river betrays the desire of the authorities to transport Johannesburg 'somewhere else'; to outrun the spirit of truculent Modernism signified by the JG Strijdom Tower. Read in conjunction with the latter, the bridge project demonstrates a powerful utopian impulse

in the drive for a cultural, social and political identity as a postmodern city. The agents that took it upon themselves to forge this new symbol for Johannesburg also embraced the challenge of gaining adherence to the endeavour: the Nelson Mandela Bridge is therefore a deliberate exercise in utopian rhetoric.

Blakstad (2002) divides her overview of famous bridges into three places of contemplation, namely vision, connection, and division, themes that are echoed in the present study that considers, in the remaining sections of the paper, the utopian desire to 'be somewhere else' that spawned the idea of the Nelson Mandela Bridge, and the resultant ambivalence in the meaning of the structure for citizens.

Being somewhere else

> **It was envisaged that the [Nelson Mandela Bridge] would become a landmark on the city skyline as well as a lasting celebration of democracy for all (Jerling et al 2003:7).**

Part of the redevelopment of the Newtown area, the Nelson Mandela Bridge is 176 metres long, erected in downtown Johannesburg to transport traffic over the Braamfontein railway yard. Tenders for its construction were submitted in 1999 (the contract going to the LBA Consortium) and the bridge opened in July 2003. It was hailed by the media and the profession as a singular feat of civil engineering. In December 2003 the project was described in detail in an article entitled 'Nelson Mandela Bridge: the birth of a new icon' in *Civil Engineering*, the magazine of the South African Institution of Civil Engineering (SAICE) (Jerling et al 2003). The present study draws on this text as a *bona fide* measure of the clients' intentions (and the contractors' response) with regard to the meaning of the bridge for the city. It is therefore notable that before a word is said about the South African 'icon', the compilers need their audience to understand what benchmarks were used in the construction of the bridge; their first sentence thus defines the 'somewhere else' that the structure must attain:

> **Paris has the Eiffel Tower, New York the Statue of Liberty and Sydney the Harbour Bridge – all internationally recognised structures that have put these cities 'on the map'. It is foreseen that the Nelson Mandela Bridge will do the same for Johannesburg (Jerling et al 2003:3).**

The notion that communities are not a fact but are imagined was first suggested by Benedict Anderson (1993). Anderson contributes the idea of print capitalism as a primary cause of the emergence of nations, and his consideration of the national map as political rhetoric is a useful precedent for this study. In their deconstruction of myth and meaning of the 'innocent' map, Denis Wood and John Fels (1986) point out how quotidian artefacts argue for civic identities. This latter analysis can be condensed (Groenewald 2006) to identify six rhetorical themes, or *loci*, of national identity, namely

→ division
→ family
→ nature
→ perfectibility
→ stasis
→ tourism.

These themes, which are paralleled in utopian thought (Groenewald 2006), are used to examine the rhetorical profile of the Nelson Mandela Bridge, where the first consideration is division.

Division

A prerequisite of nations, utopias and identity is division – the setting apart of something that argues for uniqueness and perfection. Any appeal in this regard therefore needs to establish division as a primary ontological condition, yet the Nelson Mandela Bridge clearly reverses division as a primary *locus*. The bridge links the poorer south to the wealthier north of Johannesburg, and symbolically heals "the apartheid divide" (The Nelson Mandela Bridge 2003). Blakstad (2002:6) reports that people equate bridges with rainbows: as such, the Nelson Mandela Bridge personifies the notion of South Africa as the 'rainbow nation of God' – an idea associated with Mandela's presidency, but also an accepted metaphor for Christian forgiveness and renewal.[6] While the latter may be regarded by some as a desirable civic quality, Ivor Chipkin (2007:185) raises a difficulty in this regard: if defined as members of a world religion, South African citizens are "merely instances of humanity, indistinguishable from anyone else". Indeed, Blakstad (2002:6) posits that bridges represent "in-between zones, neither one side nor the other". As a signifier of identity, then, the Nelson Mandela Bridge seems to present a disappointingly weak argument.[7]

However, on another level, the intent of the clients and designers, as well as the physical appearance of the bridge, forcefully evokes division. The bridge sets itself apart from a lived African experience - it reaches for an international language epitomised by Paris and New York, and joins the towers in celebrating the modernising and universal language of concrete. The bridge separates itself from its immediate surroundings in much the same way that the JG Strijdom Tower set itself apart from "the sea of cosmopolitan humanity" (GNB 1972:1) that surrounded it. William Bloom (1993), Jonathan Hearn (2006) and Chipkin (2007) point out that members of the third-world

fig 5 The Nelson Mandela Bridge, viewed from the south, 2008 Author's photograph

metropolitan elite have become culturally and socially alienated from their proletarian fellow countrypeople; consequently aspirations in these communities tend to be determined by international patterns of thought rather than by an indigenous identity, which they set aside. Ironically, if narratives of Christian forgiveness do not differentiate the community, neither does this particular narrative of division. If, as Xolela Mangcu (2003:281) claims, Johannesburg is a city "in flight of itself", the bridge may very well enable the exodus.

Family

Like division, the theme of the family is indispensable in the construction of imagined communities (Smith 1991; 2003). Chris Ferns (1999:46) posits that "the fundamental organizational unit of Utopian society is the patriarchal family ... and it is the family which instils into Utopian citizens the habit of obedience to authority on which the stability of society as a whole depends."

Whereas the Hillbrow Tower responds powerfully to this *locus* of male hegemony, the Nelson Mandela Bridge is tasked with countering patriarchy. But how successful is it in 'feminising' Johannesburg? As suggested earlier, the supine bridge challenges the phallic tower and it is tempting to conclude that the former ushers in an era in which 'female' values are extolled and embraced. However, as a cable-stayed bridge, the most notable features of this landmark are its vertical pylons. Indeed, not one but four phalluses arrest the eye as they 'hold up' the horizontal bridge. At worst, then, for those who wish to 'feminise' the city, the bridge continues to argue for patriarchal authority. Like its antecedents the structure is named after a man, and consequently perpetuates the celebration of male genius. At best the bridge suggests a compromise between defiance and consensus: the cables – fanning out at angles, like a harp – elegantly mediate between these opposites. Notably, while Jo Beall, Owen Crankshaw and Susan Parnell (2002:21) point out that the task of integrating a gender perspective within the practice of local government in Johannesburg is "far from complete", their comment also suggests that it has at least begun.

Nature

If the bridge is a hybrid of female and male arguments, the Nelson Mandela Bridge also denotes ambivalence with regard to its engagement with nature. The latter is frequently pivotal to the construction of an imagined community: ideas of what constitutes the 'natural' intersect, not necessarily harmoniously, with notions of what is 'noble'.[8] Chipkin's (cited in Krouse 2007) critique of the dismissal of the rural peasant from the imagined South

African nation under African National Congress (ANC) rule underscores the idea that the Nelson Mandela Bridge signifies a city that single-mindedly embraces western technology where the purpose is to overcome nature. Yet, true to its utopian nature, the bridge also embodies a subtle contradiction. The structure does not overcome a natural geographical barrier; it spans a railway yard, which is in itself a powerful symbol of western modernity. The close link between the bridge and Mandela also suggests a spiritual dimension (reinforced by the harp-like cable-stays) that draws on the mysteries of the metaphysical and a pre-industrial African heritage which, in this case, possibly erodes the legacy of the Modernist project.

Nevertheless, it is modernity that the designers of the bridge set out to signify and, in this quest, not any old civil engineering project will do. Consequently perfectibility – an essential but troubling feature of utopia – emerges as a prominent narrative of the Nelson Mandela Bridge.

Perfectibility

The heading of the feature article published in the SAICE magazine (Jerling et al 2003) refers to the recently completed bridge as an "icon" – a religious symbol, or an object of uncritical devotion – and chooses to highlight an extract from the tender document that calls for a bridge of "distinctive character and architectural merit" where mundane transport issues are clearly not at the heart of the matter. Rather

> the Development Framework recommended that the *proposed* bridge should be named 'Nelson Mandela Bridge' in honour of the former president and should possess architectural flair and monumental character *over and above* its utility for transport access. It was envisaged that the bridge would become a *landmark on the city skyline* as well as a *lasting* celebration of *democracy for all* (Jerling et al 2003:7, emphasis added).

It is useful to scrutinise this passage. Firstly, the name of the bridge was a prequel to its design – the latter had to live up to the perfection of the former. Secondly, monumentality was not required alongside utility, but as the more essential element. Third, the bridge had to change the very shape of the city, and undertake to be eternal. The challenge of representing the contentious ideal of "democracy for all" rounds off this formidable to-do list from which the solving of traffic problems is notably absent. But, over and above these criteria, the contract documentation states that a "*key* requirement of the design of the Nelson Mandela Bridge [is] that it should be a landmark structure of international note" (Jerling et al 2003:7, emphasis added). Bearing in mind that the planned bridge was not required to span a bay or an abyss, this call for 'international' status is noteworthy. Johannesburg is patently not 'on the map'; it must therefore improve. To this purpose, the bridge-as-signifier exhorts citizens to follow its example – be famous, be technologically spectacular, become an icon. However, through its association with Mandela, the bridge also prescribes perfection of a different kind: to practise love, hope and charity – a tall order, maybe, for Johannesburg's potential sophisticates.

Stasis

Whether possible or desirable, improvement problematises the existing state of affairs; the utopian vision implies the desirability of change, yet offers a promise of stability (Ferns 1999). Certainly the Nelson Mandela Bridge was designed to symbolise, prescribe, and physically enable transformation. Blakstad (2002:6) remarks that, "There is unquestionably something adventurous about crossing a bridge ... the 'other side' will always be the unknown ... the place where ... dreams could come true". Inherent in this language of change, then, is an injunction for citizens to 'progress' from Nationalist Party to ANC, fortification to connection, poverty to wealth, and despotism to democracy. The building of this bridge was a politically expedient process, in which all the necessary sentiments pertaining to 'a lasting celebration of democracy for all' could be expressed as the binary condition of an earlier regime.

Maybe less obvious is the larger shift in the government's prescription of South Africa's profile of nation. Contemporary documents on the Brixton or Hillbrow towers do not refer deferentially to either structure as 'Our own Eiffel Tower'; on the contrary, the JG Strijdom Tower showed a stiff finger to international opinion. The Nelson Mandela Bridge, in its need to evoke Paris and New York, demonstrates a leap away from this inward-looking approach. As such, it risks alienating citizens who fear innovation or who foster the notion of a primordial and unchanging identity (Smith 2003). In order to ameliorate their sense of unease, the structure (perhaps unintentionally) draws back from complete upheaval; the person after whom the bridge is named remains quintessentially African, and the values he represents are familiar and fatherly. Even more to the point, the design of the bridge is conservative – it does not require citizens to significantly adjust their ideas about bridges, engineering ... or democracy.

Within this apparently reassuring paradigm, it is maybe ominous that an emotive description of the symbolic bridge – called upon to signify a lasting democracy – should be followed in the engineers' report by the laconic remark:

"The founding conditions were poor" (Jerling et al 2003:7). The bridge had to cross the Johannesburg graben, a high weathered zone of Ventersdorp lava. Drilling revealed greywracke and conglomerate in the south, and shale of varying hardness in the north. Consequently, piled foundations were judged the most appropriate founding system, where the piles penetrated the graben up to 19, 2 metres. Here then is a similarity with the JG Strijdom Tower, where, due to the erodable shales of the Parktown Ridge, the foundations had to descend 42 metres into the ground. Read symbolically, neither despotism nor democracy can rely on *a priori* stability: both systems demonstrate inherent weaknesses, and patently require considerable precautionary measures to ensure their survival.

Tourism

Finally, a utilitarian structure that is hailed as "spectacular" (Abraham 2004) an "icon", a "masterpiece of civil engineering" and "a landmark structure of international note" (Jerling et al 2003), must be conceived as a tourist attraction – it has, after all, been tasked with putting Johannesburg 'on the map'. All utopias welcome at least one visitor who reports on the wonders of the perfect society (Ferns 1999). But here one must question whether this putative icon can in fact function as a tourist attraction in the usual sense of the word. While adding texture to its background of office blocks, the bridge is not 'a landmark on the city skyline' (this remains the preserve of the Telkom Joburg Tower) and it is not easily photographed. More pointedly, perhaps, what would the tourist be photographing? Contrary to the claims of the parties involved, the Nelson Mandela Bridge is hardly an engineering outcome of international note, an accolade that apparently rests upon the claim that "the asymmetrical design of the bridge is unique" (Jerling et al 2003:8) – which it is not.[9]

However, despite the mundane nature of the bridge, the engineering profession has insisted upon its exceptional stature. The bridge was awarded 'The Most Outstanding Civil Engineering Project Achievement' by the SAICE in 2003, and the SAICE 'Award of the Century' in the construction category (Abraham 2004), although it is somewhat puzzling as to why this structure was regarded as "a major challenge" (Jerling et al 2003:11). The evidence seems to suggest that the bridge argues for its iconic status primarily through media reportage that, in turn, draws on the name of the former president to justify its applause. Consequently, countless companies and individuals lay claim to the true icon – Nelson Mandela – through a connection with the bridge, for example, Textron Fastening Systems head up their website with an aerial photograph of the bridge (Spanning the globe [s.a.]), and Gordon Gibson, who is an urban designer in Wales, illustrates his web page (Gibson 2006) with a similar view. Textron supplied the lockbolts used on the bridge, but it is unclear as to Gibson's exact contribution. Thus the bridge becomes a virtual tourist attraction in line with Anderson's notion of imagined identity as it is enabled through the universalising experience of reproducible image and text.

Conclusion

Perfection, material or spiritual, once attained, proves difficult to maintain without the oppressive surveillance techniques typical of hardcore utopias. A three-month security sector strike in 2006 left the bridge particularly vulnerable: aluminium handrails were stolen, lights smashed, and attacks on pedestrians increased. (Hills 2006) Unlike the impenetrable citadel in Hillbrow (which has arguably remained true to its ideological design), the 'icon' of international recognition and fraternal love in Braamfontein has, precisely because of its language of openness and connection, begun to reinforce the stereotypes that it set out to dismantle. After only three years, newspaper reports were documenting public disillusionment with the purported 'heavenly essence' of the bridge; the icon of upliftment had become "a vandalised, shabby hangout for criminals" (Hills 2006). At least one economist cited the structure as an example of the state's mismanagement of public funds (Willemse 2007:28).

What happened here? Viewed objectively, the Nelson Mandela Bridge speaks of change, civic optimism, and a technically skilled community – but on an ordinary scale. This 'smallness', as opposed to the tumescent swagger of the Joburg Telkom Tower, is arguably the bridge's more useful contribution to urban identity in an African city. Perhaps those who imagined the bridge would have benefited from insights such as those of Jennifer Robinson (2003:276) who writes that "Johannesburg has the opportunity to imagine a particular type of future for itself, and an identity not limited by preordained categorizations or the trajectories of other cities." The voluble claims for the Nelson Mandela Bridge possibly prevented this addition to the city from having any sustainable meaning for its citizens. It is notable that when delegates to the colloquium at which this essay was presented as a paper were taken on a tour of Johannesburg, the bridge was not on the itinerary. Icons cannot be 'announced'; however, they can and often do emerge in spite of themselves. The morbidly modernist cityscape on the official Johannesburg website was replaced in November 2007 by a full-colour panorama of the city terminating in the mediating cable-stays on the Nelson Mandela Bridge – a quietly hopeful sign.

fig 6 Home page of the website of the City of Joburg, 2008
Sourced at http://joburgnews.co.za

Endnote

1. The Sentech Tower was originally called the Albert Hertzog Tower and also, for a time, the SABC Tower. The Telkom Joburg Tower was originally the JG Strijdom Tower. However, the structures are popularly referred to as the Brixton and Hillbrow towers. A third imposing structure, Ponte City, has always been a privately owned building and as such – its spectacle and significance notwithstanding – is not considered here.
2. This apparent oversight might be partly attributable to the fact that Johannesburg was not a bastion of Afrikaner nationalism, neither was it the administrative capital. The Brixton Ridge in Johannesburg merely afforded one of the highest points in the region from which to launch FM transmissions.
3. The mayoral committee concede the difficulty of depicting the 'real' tower when they state, not altogether correctly, that an "abstract" (cited in Dlamini 2005) version of the tower had been incorporated into the logo.
4. Johannesburg's pride in its priapic nature is engagingly captured in the headline 'A flat mountain? We have our Tower' (Davie 2002a) for an article on the official city website that dismisses as impotent the famous landmark that put its rival Cape Town 'on the map'.
5. At the time of writing, some pages on the official website still carry the 'old' header illustration of the Telkom Joburg Tower, for example Neil Fraser's 'Citichat' contributions.
6. I acknowledge second-generation feminist criticisms that have been levelled against Paglia's essentialising of what have historically been termed binary oppositions, particularly those of male and female, reason and emotion, mind and body, culture and nature, active and passive. However, for the purposes of the present argument, Paglia's exposition of, in her view, the male impulse to transcend human obeisance to the earth (and thus the female), serves to enrich an examination of engineering artefacts – constructed by and named for men – that have, as their central purpose, the subjugation of nature.
7. Archbishop Desmond Tutu is usually credited with coining the phrase, presumably drawing on the Old Testament story of the flood where the rainbow symbolises God's promise not to pass further judgement on humankind (Baines 1998).
8. Tellingly, of the three 'exemplars' provided by Jerling et al (2003), only one city's prominence is attributed to a bridge, and in that case many would counter that it is its spectacular opera house and not its bridge that put Sydney 'on the map'.
9. Jean-Jacques Rousseau popularised the cult of the natural and introduced the critique of urban sophistication (Johnson 1989) but a diminishing nostalgia for nature emerged during the late 19th-century. In 1915 Ernst Bloch (2000:2) celebrated "the vitally formative consciousness of the future, of the city". However, as early as the 1920s, belief in a mechanical paradise again encountered resistance, reflecting what Fredric Jameson (2004) refers to as "an ever-feebler pride in the Promethean triumph over the non-human". Thus the rhetoric of civic identity often evokes the Arcadian idyll, while in reality authorities pursue policies of rapid industrialisation: Germany, France, the United States of America and South Africa are examples of industrialised societies where farmers until recently were hailed as the guardians of sacred national values (Carey 1999; Lowenthal 1994; Eliade 1966; Grundlingh 2006/09/29).
10. By typing 'asymmetrical cable-stayed bridge' into a popular Internet search engine, several examples of this type of structure can be sourced. The Zakim Bridge over the Charles River in Boston, Massachusetts, that carries ten lanes of traffic, is a case in point (The Zakim Bridge 2002).

All images of the City of Joburg website, which are designed by BIG Media and sourced at http://www.joburg.org.za, are used with permission of the webmaster.

References

Abraham, A. 2004. 'Excellence award' for Nelson Mandela Bridge. [O]. Available: http://www.jda.org.za/news2004/nov9_bridge,tm Accessed on 20 February 2008.

Anderson, B. 1993. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* London: Verso.

Baines, G. 1998. The Rainbow Nation? Identity and Nation Building in Post-apartheid South Africa. [O]. Available: http://www.arts.uwa.edu.au/MotsPluriels/MP798gb.html Accessed on 8 May 2006.

Beall, J, Crankshaw O & Parnell, S. 2002. *Uniting a Divided City: Governance and Social Exclusion in Johannesburg.* London: Earthscan.

Blakstad, L. 2002. *Bridge: The Architecture of Connection.* London: August Media.

Bloch, E. 2000. *The Spirit of Utopia.* Stanford: Stanford University Press.

Bloom, W. 1993. *Personal Identity, National Identity and International Relations.* Cambridge: Press Syndicate of the University of Cambridge.

Booth, A. 1999. The Mother of All Cultures: Camille Paglia and Feminist Mythologies. *The Kenyon Review, New Series* 21(1), Winter: 27-45.

Carey, J (ed.) 1999. *The Faber Book of Utopias.* London: Faber & Faber.

Chipkin, I. 2007. *Do South Africans exist? Nationalism, Democracy and the identity of 'the people'.* Johannesburg: Wits University Press.

City of Johannesburg. 2008. [O]. Available: www.joburg.org.za Accessed on 27 July 2008.

Cosgrove, D & Petts, G. (eds). 1990. *Water Engineering and Landscape: Water Control and Landscape Transformation in the Modern Period.* London: Belhaven.

Davenport, TRH & Saunders, C. 2000. *South Africa: A Modern History.* London: Macmillan.

Davie, L. 2002a. A flat mountain? We have our tower. [O]. Available: http//www.joburgnews.co.za/aug_2002/hillbrow.stm Accessed on 25 September 2007.

Davie, L. 2002b. Making Hillbrow more 'feminine'. [O]. Available: http//www.joburgnews.co.za/jan_2002/hillbrow.stm Accessed on 20 July 2008.

Dlamini, N. 2004. Sentinels watch changes in Jozi's inner city. [O]. Available: http://www.joburg.org.za/2004/may/may10_flats.stm Accessed on 25 August 2007.

Dlamini, N. 2005. Hillbrow tower renamed. [O]. Available: http://www.joburg.org.za/2005/june/jun1_tower.stm Accessed on 25 August 2007.

Ebert, TL. 1991. The Politics of the Outrageous. *The Women's Review of Books* 9(1), October: 12-13.

Eliade, M. 1966. Paradise and Utopia, in *Utopias and Utopian Thought*, edited by FE Manuel. Boston: Houghton Mifflin: 260-295.

Engineering Council of South Africa. 2004. *Whole qualification standard for Bachelor of Science in Engineering (BSc(Eng))/Bachelor of Engineering (Beng):NQF Level 7.* Document PE-61 Rev 2 26 July.

Ferns, C. 1999. *Narrating utopia: ideology, gender, form in utopian literature.* Liverpool: Liverpool University Press.

Fromm, H. 1995. O, Paglia Mia! *The Hudson Review* 48(2), Summer: 308-316.

Gordon, LG. 2006. [O]. Available: http://www.sylfaencynefin.org.uk/main_pages/aboutus.html Accessed on 22 February 2008.

GNB. 1972. Strijdom Tower – Hillbrow. Unpublished internal report: Arup Archives, Johannesburg.

Groenewald, M. 2006. *South African Paper Currency: National Symbol and Utopian Desire.* MA Dissertation, University of Pretoria.

Groenewald M & Legge, TFH. 2008. Foundations of the Nation: The Hillbrow and Brixton Towers as Figuration of National Identity in South Africa. Conference proceedings of the *Sixth International Conference on Case Histories in Geotechnical Engineering,* Washington DC, August 11-16, hosted by the Missouri University of Science and Technology, Rolla, Missouri.

Gruffudd, P. 1995. Remaking Wales: nation-building and the geographical imagination, 1925-50. *Political Geography* 14(3): 219-239.

Grundlingh, L. (louisg@uj.ac.za). **2006/09/29.** Personal communication. Email to: M. Groenewald. (lize@twr.ac.za). Accessed on 21 October 2006.

Hearn, J. 2006. *Rethinking nationalism: a critical introduction.* Basingstoke: Palgrave Macmillan.

Hills, C. 2006. Jo'burg's Nelson Mandela Bridge 'no longer heavenly'. *Mail & Guardian online.* [O]. Available: http//www.mg.co.za/articlePage.aspx?articleid=276350&area=/breaking_news Accessed on 20 July 2008.

Jerling, W, Kromhout, F, Nielsen, L, Kelly, M, Nxumalo, T, Parrock, A, Hartley, F, Potgieter, A & Jones, G (compilers). 2003. Nelson Mandela Bridge: The Birth of a New Icon. *Civil Engineering/ Siviele Ingenieurswese: Magazine of the South African Institution of Civil Engineering* 11(10), December: 3-21.

Jameson, F. 2004. The politics of utopia. [O]. Available: http://www.newleftreview.net/Issue25.asp?Article=02 Accessed on 18 August 2005.

Johnson, P. 1989. *Intellectuals.* London: Weidenfeld & Nicholson.

Krouse, M. 2007. Do South Africans really exist? [O]. Available: http://www.mg.co.za/articlePage.aspx?articleid=305926&area=/insight/insight__national/ Accessed on 28 July 2007.

Kusno, A. 2000. *Beyond the Postcolonial: Architecture, Urban Space and Political Cultures in Indonesia.* London: Routledge.

Lowenthal, D. 1994. European and English landscapes as national symbols, in *Geography and National Identity,* edited by D Hooson. Oxford: Blackwell: 15-38.

Mangcu, X. 2003. Johannesburg in flight from itself: political culture shapes urban discourse, in *Emerging Johannesburg: Perspectives on the Postapartheid City,* edited by R Tomlinson, RA Beauregard, L Bremner & X Mangcu. New York: Routledge: 281-291.

Niven, S. 2008. Personal communication with spokesperson for 'BIG media' and webmaster for the official website for the City of Johannesburg on 26 June.

O' Sullivan, S. 1995. Camille Paglia's Sex, Art and American Culture. *Feminist Review* 49, Spring: 108-114.

Paglia, C. 1990. *Sexual Personae: Art and Decadence from Nefertiti to Emily Dickinson.* London & New Haven: Yale University Press.

Peters, W. 2004. Apartheid Politics and Architecture in South Africa. *Social Identities,* 10(4): 537-547.

Rebranding a city. 2008. [O]. Available: http://www.interbrand.com/portfolio_details Accessed on 25 March 2008.

Robinson, J. 2003. Johannesburg's futures: beyond developmentalism and global success, in *Emerging Johannesburg: Perspectives on the Postapartheid City,* edited by R Tomlinson, RA Beauregard, L Bremner & X Mangcu. New York: Routledge: 259-280.

Smith, AD. 1991. *National Identity.* London: Penguin.

Smith, AD. 2003. *Nationalism: Theory, Ideology, History.* Cambridge: Polity.

Spanning the globe. [S.a.] [O]. Available: http://textronfast.com.au/appsol/archives/lockbolt_SA.html Accessed on 22 February 2008.

The Nelson Mandela Bridge. 2003. [O]. Available: http://www.southafrica.info/doing_business/economy/development/mandelabridge.htm Accessed on 20 February 2008.

The Zakim Bridge. 2002. [O]. Available: http://bridgepros.com/projects/CharlesRiver/Charlesriver.htm Accessed on 31 March 2008.

Vale, LJ. 1992. *Architecture, Power, and National Identity.* New Haven: Yale University Press.

Vale, LJ. 1999. Mediated monuments and national identity, in *The Journal of Architecture* 4, Winter: 391-408.

Willemse, J. 2007. Staat ráák ekonomie. *Beeld* 21 February: 28.

Wood, D & Fels, J. 1986. Designs on Signs: Myth and Meaning in Maps. Cartographica 23(3): 54-103.

Zunz, GJ, Lowes, DJ, Lewis, MR & Isaacs, B. 1965. The Albert Hertzog Tower: Brixton – Johannesburg. *The Civil Engineer in South Africa* July: 151-174.