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Atkinson, S. ed. 2011. *The philosophy Book*. London: Dorling Kindersley Limited.

Berge, B. 2000. The ecology of building materials. Oxford: Reed.

Conway, H and Roenisch, R. 2005. *Understanding Architecture: An Introduction to Architecture and Architectural History*. New York: Routeledge.

Crash Course, 2013, Entropy: Embrace the Chaos! Crash Course in Chemistry #20 [Online]. [Accessed 20 August 2015]. Available from: http://www.youtube.com/watch?v=ZsY4WcQOrfk&spfreload=10.

Da Costa, M. and van Resburg, R. 2008. 'Space as Ritual: Rethinking spatial strategies in the African City,' *South African Journal of Art History*, 23(3): 43-55.

Dewar, D. 2000. 'The relevance of the Compact City Approach: The Management of Urban Growth in South African Cities'. In: Burgess, R and Jenks, M. eds. *Compact Cities: Sustainable Urban Forms for Developing Countries*. London: Spon Press. 209-219.

-Dewar, D. and Uytenbogaardt, R. S. 1991. South African Cities: A Manifesto for Change. Cape Town: University of Cape Town.

Evers B. & Thoenes, C. eds. 2003. Architectural Theory: From the Renaissance to the Present Volume 1. Taschen

Fisher, R.C. 1998. 'The Third Vernacular. Pretoria regionalism – Aspects of Emergence'. In: Fisher, R,C., Le Roux, S., Maré, E. eds. Architecture of the *Transvaal*. Pretoria: University of South Africa. 122-147.

Latour, B and Yaneva, A. 2008. 'Networks: Give Me a Gun and I will make all Buildings Move – An Ant's View of Architecture.' IN: Geiser, R. ed. *Explorations in Architecture: Teaching Design research*. Berlin: Birkhäuser Verlag AG. Groak, S. 1993. The Idea of Building: Thought and Action in the Design and Production of Buildings .London: E &FN SPON

Harries, K. 2000. *The Ethical Function of Architecture*. Massachusetts: Massachusetts Institute of technology.

Holm, D. 1989. 'Kerkplaats and Capitalists. The first architecture in context'. In: Fisher, R,C., Le Roux, S., Maré, E. eds. *Architecture of the Transvaal*. Pretoria: University of South Africa. 55-77.

Hopkins, P. 2006. *Voëlvry: The movement that Rocked South Africa*. Cape Town: Zebra Press.

Hou, J. ed. 2010. Insurgent Public space: Guerrilla urbanism and the Remaking of Contemporary Cities. London: Routledge.

Hucheon, L. 1988. *A Poetics of Postmodernism: History, Theory, Fiction*. London: Routledge.

Jones, D. ed. 2014. Architecture: The Whole Story. London: Thames & Hudson Ltd.

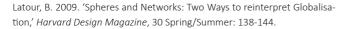
Jordaan, G. 'Pretoria as Urbs Quadrata. Architecture SA, May/June: 26-29.

Kane, O & Onouye, B. 2006 Statistics and Strength of Materials for Architecture and Construction 3rd Edition. Prentice Hall

Griffin, M. and Kittler, F.A. 1996. 'The City is a Medium,' *New Literary History*, 27(4): 717-729.

Gruber, P. 2011. *Biomimetics in Architecture: Architecture of Life and Buildings*. Vienna: Springer-Verlag/Wein.

Labuschagne, P. 2011. 'Memorial Complexity and Political Change: Paul Kruger's Statue's Political Travels through Space and Time'. South *African Journal of Art history* 26(3): 142-154.



Leach, G. 1989. *The Afrikaners: Their Last Trek*. Johannesburg: Southern Book Publishers (PTY) Ltd.

Lemon, A. ed. 1991. *Homes apart. South Africa's segregated Cities*. London: Paul Chapman Publishing Ltd.

Louw, M.J. 1959. 'n Geografiese Studie van Funsionele Differensiasie in die Metropolitaanse Gebied van Pretoria'. Doctor Litterarum et Pilosophiae. University of South Africa, Pretoria.

Mamarian, A. and Niazkar, N. 2014. 'The Lost Space of Architecture in the Context of urban Lost Space', *International Journal of engineering and Advanced Technology*, 3(5) June: 311-321.

Massey, D. 2005. For Space. London: SAGE Publications Ltd.

Maylam, P. 1995. 'Explaining the Apartheid City: 20 Years of South African Urban Historiography'. *Journal of South African Studies. Special Issue: Urban Studies*, 21(1): 19-38.

McNabb, D. E. 2010. Research Methods for Political Science: Quantitative and Qualitative Approaches. Second Edition. U.S.A.: M.E. Sharpe. Inc.

Merritt, F.S. and Ricketts, J. eds. 2001. *Building Design and Construction Handbook. 6th Edition*.USA: McGraw-Hill

Murray, N. and Sheperd, N. 2007. 'Introduction'. In: Hall, M., Murray, N. & Sheperd, N. eds. *Desire Lines, memory and identity in the post-apartheid city*. London: Routledge. 1-18

Pile, S. 2000. 'The Un (known) City... or, an Urban Geography of What Lies Burried below the Surface.' In: Borden, I., Kerr, J., Pivaro, A. & Rendell, J. eds. The Unknown City: Contesting Architecture and Social Space. Massachusetts: Massachusetts Institute of technology. 264-277.

Pit, M., Steller, K., Streng, G. November 2007. Parasitic Architecture: Introduction. [Online]. Available from http://www.gerjanstreng.eu/files/TO2%20 essay%20parasitic%20architecture.pdf.>[Accessed : 22 October 2015] Sardis, N. 2001. *Entropy in Control Engineering*. Singapore: World Scientific Publishing Co. Pte. Ltd.

Springs, J.A. 2009. 'Dismantling the Master's House: Freedom as Ethical Practice in Brandom and Faucault. 'Journal of Religious Ethics', 37.3: 419-441

Swilling, M. 1991. 'Introduction'. In: Humphries, R., Shubane, K. & Swilling, M. eds. *Apartheid City in Transition*. Cape Town: Oxford University Press. ixxx.

Terreblanche, S. 2002. *A History of Inequality in South Africa*. 1652-2002. Pietermaritzburg: University of Natal Press.

Trancik, R. 1986. Finding Lost Space. New York: van Nostrand.

Van der Klashorst, E. 2013. A Reinterpretation of Urban Space in Pretoria. Visual Arts dissertation. University of Pretoria, Pretoria.

Vernon, C. 2007. 'Projecting power on Conquered Landscapes: Canberra and Pretoria.' In: Etherington, N. ed. *Mapping Colonial Conquest. Australia and Southern Africa*. Perth: University of Western Australia Press. 146-177.

Williams, D.C. 2012. *Global Urban Growth: A reference Handbook*. Santa Barbara, California: CA Publication

Zecchin, L. 2011. Architecture of/in the Marginal Spaces: A Methodological approach for the territory of the low and medium mountain. A Doctorial Thesis in Environmental Engineering, Architecture for City and Landscape. University of Trento, Venice.

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