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## references

### Books:

Barthes, R. 1957. *Mythologies*. Hill and Wang: New York

Braungart, M. & McDonough, W. 2009. *Cradle to Cradle: Remaking the Way We Make Things*, London: Vintage

Capra, F. 2002. *The Hidden Connections: A Science for Sustainable Living*, New York: Anchor Books

Debord, G. 1957. *Towards a Situationist International*, London

Diefendorf, J.M. 2000. *Motor Vehicles and the Inner City*, in *Urban Planning in a Changing World: The Twentieth Century Experience*, edited by R Freestone. London: E&FN Spon

Freestone, R (ed). 2000. *Urban Planning in a Changing World: The Twentieth Century Experience*, London: E&FN Spon

Grant, G.B. & Pearce, J.M. 2007. *3D-Mapping Optimization of Embodied Energy of Transportation*, Clarion University of Pennsylvania

Venturi, R. 1977. *Learning from Las Vegas: The forgotten*

*ten symbolism of architectural form*. Cambridge, Mass: MIT Press

Givoni, B. 1994. *Passive and Low Energy Cooling of Buildings*. Van Nostrand Reinhold, New York.

Givoni, B. 1998. *Climate Considerations in Building and Urban Design*. Van Nostrand Reinhold, New York.

Gibbert, J. 2009. *Green building handbook for South Africa*. CSIR Built environment: City of Tswane

Hamdi, N. 2004. *Small Change: About the art of practice and the limits of planning in cities*, London: Earthscan

Henley, S. 2007. *The Architecture of Parking*. Thames & Hudson Inc.: New York

Hutchinson, R (ed). 2010. *Encyclopedia of Urban Studies*. California: SAGE

Illich, I. 1973. *Tools for Conviviality*, London: Heyday Books

Jennings, J. 1990. *Roadside America: The Automobile in Design and Culture*. Iowa State University Press: Iowa

Kieran, S. & Timberlake, J. 2004. *Refabricating Architecture*. McGraw-Hill: New York

Klose, D. 1965. *Metropolitan Parking Structures: A Survey of Architectural Problems and Solutions*. Frederick A. Praeger, Inc.: New York.

Krier, L. 2006. *The Urban Design Reader: Critiques and Urban Components*. Routledge Taylor and Francis Group: New York

Kunstler, J. 1993. *The Geography of Nowhere: The Rise and Decline of America's Man-Made Landscape*. Simon & Schuster: New York

Kwok, A. & Grondzik, W. 2007. *The Green Studio Handbook: Environmental strategies for schematic design*. Elsevier: London

Le Corbusier. 1967. *The Radiant City*. The Orion Press: New York

Margolius, I. 2000. *Automobiles by Architects*. John Wiley & Sons Ltd: Chichester

Marshall, S. 2005. *Streets & Patterns*, New York: Spon Press

Meyhöfer, D. 2003. *Motortecture*. Avedition GmbH: Ludwigsburg

Mumford, L. 1963. *The Highway and the City*, New York: Harcourt, Brace & World

Plater-Zyberk, E & Donnelly B.F. 2010. *New Urbanism*, in *Encyclopedia of Urban Studies*, edited by R Hutchinson. California: SAGE

Schumacher, E.F. 1974. *Small is beautiful : a study of economics as if people mattered*, London: Sphere Books

Siemiatycki, M. 2010. *Transportation*, in *Encyclopedia of Urban Studies*, edited by R Hutchinson. California: SAGE

Turner, J.F.C. 1972. *Freedom to Build: Dweller Control of the Housing Process*. MacMillan: New York

### Newspapers:

Pretoria News. 1996. *120 Years of vibrant growth*. Pretoria News. 31 May 1996, p8

### Internet:

Acid Cow. 2010. [O]. Available:

<http://acidcow.com/pics/11897-the-construction-of-empire-state-building-64-pics.html>  
Accessed: 5 May 2011

Andrew Mentis. 2006. [O]. Available:  
[http://www.mentis.co.za/products/rg\\_grating.php](http://www.mentis.co.za/products/rg_grating.php)  
Accessed: 2 October 2011

All Doing. 2010. [O]. Available:  
<http://www.alldoing.com/modern-car-garage-design-with-the-latest-layout/modern-car-garage-design-photos-1/>  
Accessed: 5 May 2011

ArchDaily. 2009. [O]. Available:  
<http://www.archdaily.com/category/institutional-architecture/>  
Accessed: 30 May 2011

Architecture Week. 2003. [O]. Available:  
[http://www.architectureweek.com/2003/1203/building\\_1-1.html](http://www.architectureweek.com/2003/1203/building_1-1.html)  
Accessed: 27 May 2011

Architech Gallery. 2010. [O]. Available:  
[http://www.architechgallery.com/arch\\_images/architech\\_images/photography/darris\\_lee/MarinaC.jpg](http://www.architechgallery.com/arch_images/architech_images/photography/darris_lee/MarinaC.jpg)  
Accessed: 25 June 2011

ArcSpace. 2006. [O]. Available:  
[http://www.arcspace.com/architects/hadid/hadid\\_features.html](http://www.arcspace.com/architects/hadid/hadid_features.html)  
Accessed: 30 May 2011

Arquinoias. sa. [O]. Available:  
<http://arquinoias.tumblr.com/post/611172807/city-of-the-future-by-harvey-wiley-corbett-1913>  
Accessed: 25 July 2011

Axel Bührmann 2009. [O]. Accessed:  
<http://www.flickr.com/photos/snapeverything/5188577953/sizes/o/in/photostream/>  
Accessed: 28 April 2011

British Precast. 2011. [O]. Available:  
<http://www.britishprecast.org/associations/precast-flooring.php>  
Accessed: 2 October 2011

Christie's. 2011. [O]. Available:  
[http://www.christies.com/LotFinder/lot\\_details.aspx?intObjectID=4490151](http://www.christies.com/LotFinder/lot_details.aspx?intObjectID=4490151)  
Accessed: 24 July 2011

Complex Plastics. 2010. [O]. Available:  
<http://www.complexplastics.com>  
Accessed: 5 October 2011

*Curbside Classic*. 2011. [O]. Available: <http://www.curbsideclassic.com/automotive-histories/automotive-history-trying-to-make-business-coupe-sense-of-the-gremlin/>  
Accessed: 14 March 2011

*Drink Milk Campaign 2002*

*Electrification Coalition, Electrification Roadmap*. 2010. [O]. Available: <http://www.electrificationcoalition.org/reports/EC-Roadmap-screen.pdf>  
Accessed: 6 June 2011

*FAQS 2005*. [O]. Available: <http://www.faqs.org/photo-dict/phrase/6395/oil-rig-pump.html>  
Accessed: 3 May 2011

*FOA Newsroom*. 2009. *Food, agriculture and cities: challenges and priorities*. [O]. Available: [http://www.agricultures-urbaines.com/.../briefingnote-foodagriculturecities\\_final.doc](http://www.agricultures-urbaines.com/.../briefingnote-foodagriculturecities_final.doc)  
Accessed: 5 May 2011

*Forrest Fulton Architecture*. 2009. [O]. Available: <http://forrestfulton.com/category/instances/>  
Accessed: 25 May 2011

*Foshie*. 2001. [O]. Available: <http://www.flickr.com/photos/foshie/2879426433/sizes/o/in/photostream/>  
Accessed: 12 June 2011

*HVAC Systems*. 2001. [O]. Available: <http://www.pages.drexel.edu/~kaf32/AE390/A5/Wind%20Scoops.htm>  
Accessed: 6 October 2011

*Index Universe*. 2010. [O]. Available: <http://www.indexuniverse.com/sections/interviews/8360-eedens-maxwell-brace-for-300barrel-oil.html>  
Accessed: 6 June 2011

*Inhabitat 2009*  
*International Organization of Motor Vehicle Manufacturers (OICA)*. [sa]. [O]. Available: <http://oica.net/category/production-statistics/>  
Accessed: 14 March 2011

*Institute for Energy Research (IER)*. 2010. [O]. Available: <http://www.instituteforenergyresearch.org/energy-overview/fossil-fuels/>  
Accessed: 6 June 2011

*Lee Jordan*. 2007. [O]. Available: <http://www.flickr.com/photos/leejordan/386909115/>

*sizes/o/in/photostream/*  
Accessed: 14 March 2011

*Linda Lovely*. 2005. [O]. Available: <http://www.flickr.com/photos/djlindalovely/5492825079/sizes/o/in/photostream/>  
Accessed: 13 June 2011

*1111 Lincoln Road*. 2011. [O]. Available: <http://1111lincolnroad.com>  
Accessed: 20 June 2011

*Mario Bellini*. 2010. [O]. Available: <http://www.mariobellini.com/>  
Accessed: 12 July 2011

*mle86*. 2008. [O]. Available: <http://www.flickr.com/photos/mle86/3484235040/>  
Accessed: 3 May 2011

*Modern Mechanix*. sa. [O]. Available: <http://blog.modernmechanix.com/2007/03/21/worlds-first-drive-in-movie-theater/>  
Accessed: 4 July 2011

*NAAMSA 2010*. [O]. Available: <http://roadsafety.co.za/2010/08/27/what-does-naamsa-say-about-the-new-co2-vehicle-emissions-tax/>  
Accessed: 5 March 2011

*National Resources Defence Council: Global Warming Basics*. 2009. [O]. Available: <http://www.nrdc.org/globalWarming/f101.asp>  
Accessed: 7 June 2011

*OICA 2010*. [O]. Available: <http://oica.net/>  
Accessed: 5 March 2011

*Rogers Stirk Harbour & Partners*. 2011. [O]. Available: <http://www.richardrogers.co.uk/render.aspx?siteID=1&navIDs=1,4>  
Accessed: 27 May 2011

*Savaus 2010*. [O]. Available: <http://www.flickr.com/photos/24990899@N05/5303432302/sizes/l/in/photostream/>  
Accessed: 27 April 2011

*Solaripedia*. 2010. [O]. Available: [http://www.solaripedia.com/13/205/2082/wind\\_tower\\_dubai\\_near\\_creek.html](http://www.solaripedia.com/13/205/2082/wind_tower_dubai_near_creek.html)  
Accessed: 20 June 2011

*Statistics South Africa*. 2010. [O]. Available: <http://www.statssa.gov.za/>  
Accessed: 5 April 2011

*Sustainable Design & Technology*. 2004. [O]. Available:

[http://www.sda-uk.org/materials/principles/embodied\\_energy.htm](http://www.sda-uk.org/materials/principles/embodied_energy.htm)  
Accessed: 14 June 2011

*Triptyque*. 2008. [O]. Available: <http://www.triptyque.com>  
Accessed: 15 June 2011

*Ukadapta*. 2010. [O]. Available: <http://ukadapta.blogspot.com/2010/07/citroen-ds.html>  
Accessed: 16 June 2011

*U.S. Energy Information Administration, Petroleum Statistics*. 2010. [O]. Available: [http://www.eia.doe.gov/energyexplained/index.cfm?page=oil\\_home#tab2](http://www.eia.doe.gov/energyexplained/index.cfm?page=oil_home#tab2)  
Accessed: 6 June 2011

*VentaNation*. 2005. [O]. Available: <http://www.ventanation.co.za/>  
Accessed: 6 October 2011

*VladStudio 2010*

*WattzOn*. 2009. [O]. Available: <http://www.wattzon.com/stuff/items/k6i6d88q0ws-jfki9pxl26dumye/kpx0z7v6uv6d9f0toyszcfoi5>  
Accessed: 14 June 2011

*wbur.org*. 2009. [O]. Available:

<http://www.wbur.org/2009/09/18/damian-ortega>  
Accessed: 27 April 2011

## Articles:

*Barnard, J*. 2008. *Light steel frame building and sustainability*. *Steel Construction*, 32(3): 15

*BMW Recycling*. 2001. *Reconsumption Experiment and Vehicle Disassembly Plant in Landshut*, *The Columbia Journal World Business*, 26, July: 5-14

*Brennan, J, Gupta S.M. & Taleb K.N*. 2003. *Operation Planning Issues in an Assembly/Disassembly Environment*. *International Journal of Operations & Production Management*, 14(9): 57-67

*Brooke, L*. 2000. *Think DFD! (Design for Disassembly)*, *Automotive Industries*, 171, September: 71

*Glancey, J*. 2005. *Architecture and the car: as the automobile evolved in tandem with modern architecture, it created myths, legends and new building types*. *The Architectural Review*, June 2005, 33-36

*Hammond, G & Jones, C*. 2008. *Inventory of Carbon & Energy (ICE)*, University of Bath, 9-14

*Jordaan, G.J. 1989. Pretoria as 'Urbs Quadrata'. Architecture South Africa, 5/6, 26-29*

*Lejda, K. 2004. Selected Problems in Car Recycling. Technical University of Rzeszow, 7-12*

#### *Interviews:*

*Le Roux, G. Industrial Engineer, University of Pretoria. 2011. Interview by author. [Transcript]. 25 Mei 2011. Pretoria.*

#### *Dictionary definitions:*

*Assembly. (n.d.). Encyclopaedia Britannica, Inc.. Retrieved October 1, 2011  
Website: <http://dictionary.reference.com/browse/assembly>*