

Market Intelligence Report: Built Environment



greencapē

Songo Didiza

Built Environment Sector Manager

2014

Table of Contents

Table of Contents.....	1
List of Acronyms.....	2
1. Introduction	3
2. The Regulatory Framework.....	3
2.1 An Overview	3
2.2 Alternative Building framework.....	8
2.3 South African National Standards.....	8
2.4 Building Plans approval process.....	9
3. The Green Built Environment Market in South Africa	10
3.1 An Overview	10
3.2 Alternative Building Technologies	11
3.3 Eco Labelling Standards and Assessment Tools.....	11
3.4 Opportunities for promoting Green Building in South Africa	12
3.5 Potential Opportunities for Greening the Built Environment in the Western Cape.....	12
3.5.1 Rental Housing Market	13
3.5.2 Potential Market Drivers.....	15
4. Industry Bodies & Associations.....	16
4.1 Key Industry Associations	16
4.2 Industry events.....	17
Appendix	18
References	24

List of Acronyms

ABTs	Alternative Building Technologies
ANC	African National Congress
ASAQS	Association for the Council of Quantity Surveyors
CIDB	Construction Industry Development Board
CSIR	Council of Scientific and Industrial Research
DHS	Department of Human Settlements
DPW	Department of Public Works
GBCSA	Green Build Council of South Africa
GBFA	Green Buildings for Africa
IBT	Innovative Building Technologies
MinMec	Minister and Members of Executive Council
NHBRC	National Home Builders' Registration Council
NRCS	National Regulator for Compulsory Specification
RDP	Reconstruction and Development Programme
SAHF	South African Housing Foundation
SAPOA	South African Property Owners Association
SABS	South African Bureau of Standards
VOC	Volatile Organic Compounds
WCPG	Western Cape Provincial Government

1. Introduction

This report provides an overview of the regulatory frameworks that governs the built environment sector in the country as well as in the Western Cape. It also covers the regulatory framework of social housing sector in the province.

It will highlight the market growth incentives that have been created by the commercial property and subsidy housing sectors, respectively. It highlights the opportunities for doing business in the Western Cape. Lastly, it will also highlight the role that the regulatory framework has played in this regard thus far.

In South Africa there have been several large-scale property developments within the green building sector. These have introduced innovative building trends such as making use of natural lighting to reduce electricity usage, capturing rainwater for use in activities like watering the garden, and choosing a water-based paint over a lead-based option to reduce the production of harmful volatile organic compounds (VOCs). The green building concept is not a new phenomenon in South Africa, organisations such as the Council for Scientific and Industrial Research (CSIR) and the South African Property Owners Association (SAPOA) have been advocating the adoption of green building practices since the establishment of the Green Buildings for Africa (GBFA) programme in 1997.

In the Western Cape, the Western Cape Provincial Government (WCPG) has identified certain objectives as part of its overarching Green Economy strategy. This strategy has listed the following principles as key tenets: *Green economy is business-led and opportunities focused; Green economy works for the poor; People-centred approach; Lead by example*, amongst others. Within the strategy the built environment has been identified to be a targeted sector for green growth initiatives through the Smart Living and Working pillar.

A key tenet to this living strategy is the 110% green campaign which was launched by the Premier of the Western Cape in 2012 with the goal of encouraging 110% worth of commitment towards developing the green economy.

2. The Regulatory Framework

2.1 An Overview

The regulatory framework for the built environment in South Africa is governed by the Department of Public Works. The National Department of Human Settlements (NDHS) plays a role of oversight in the social housing planning process in the country.

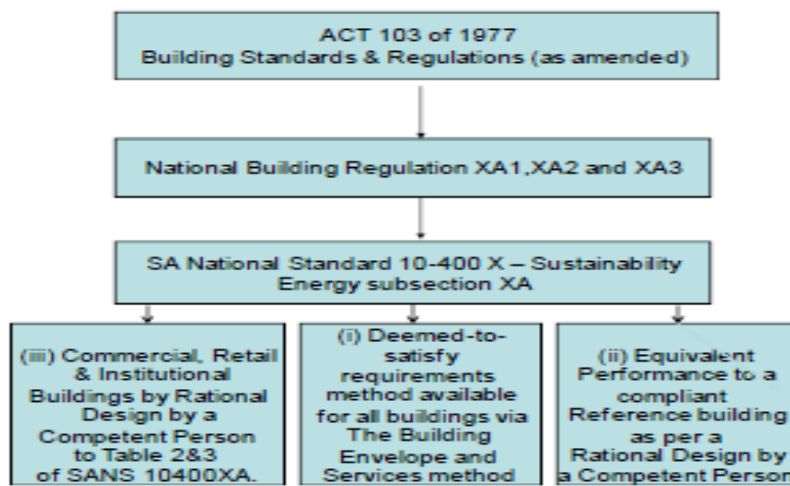
[The National Building Regulations and Building Standards Act \(No. 103 of 1977\)](#) forms the basis of how buildings in South Africa should be constructed and developed to suit human habitation. The New Building Regulations (NBRs) were introduced in 2008.

The role of the National Regulator for Compulsory Specification (NRCS) supports the policy setting framework for the building industry.

The National Building Regulations Division of the NRCS is responsible for ensuring a uniform understanding and implementation of the building regulations and building standards in accordance with the National Building Regulations and Building Standards Act, 1977 (Act No 103 of 1977) (NBRBS Act). It also advises government departments on possible amendments and changes to the building legislation.

The South African Bureau of Standards (SABS) is responsible for developing standards for the building industry in line with the regulations. In 2011, the SABS introduced the SANS 10400: The application of the National Building Regulations. This code sets out prescriptive provisions that are deemed to satisfy the technical aspects of the new NBRs.

Part X of the SANS 10400 deals with environmental sustainability, and Part XA deal with energy usage in buildings. Below is an overview of the building regulatory framework.



Source: SAFINTRA, 2012

Below is an overview of the regulatory frameworks that is applicable to the built environment sector in South Africa. These effectively comprise legislation, national policies and industry standards.

Year	Legislation/Policy/Standard	Objective
Legislation		
2008	National Building Regulations and Building Standards Act (Act 103 of 1977)	Outlines a set of functional guidelines for anybody building any type of structure in South Africa.
Policies and Government Strategies		
Social housing policies		

2004	Breaking New Ground (BNG) - a Comprehensive Plan for the Development of Sustainable Human Settlements	<p>Outlines an extensive plan to promote densification and integration of urban areas through enhanced regulatory mechanisms, planning functions and financial incentives. Objectives include:</p> <ul style="list-style-type: none"> • Utilising the provision of housing as a job creation strategy; • Ensuring that property can be accessed by all as an asset for wealth creation and empowerment; • Leveraging growth in the economy; • Supporting the functioning of the entire single residential property market to reduce duality within the sector by breaking the barriers between the first economy residential property boom and the second economy slump; and • Utilizing housing as an instrument for economic development.
2005	Social Housing Policy for South Africa	Provides an overview of the national housing programmes for the development of social housing in South Africa (refer to Appendix section for an overview of social housing programmes)
2009	National Housing Code	Outlines the National Norms and Standards for the construction of stand-alone residential dwellings, which apply to all units built through one of the National Housing Programmes (refer to appendix for full schedule of programmes).
Green Building Framework		

2011	National Framework for Green Building	<p>Promotes the objectives of green building in the public sector. These include the following:</p> <ul style="list-style-type: none"> • Pro-actively inform and support development of plans and programmes • Identify opportunities and constraints • Identify key strategic areas • Integrate principles of green building across areas, regions and sectors • Improve the realisation of cumulative effects • Focus on enhancement of human settlements • Integrate concept of green building into immovable asset formation in South Africa
2011	Green Economy Accord	<p>Outlines the South African government pact (between government, private business, trade unions and civil society) to create 300 000 new green jobs and double the country's energy generation capacity by 2020, including the commitment to install one million solar water-heating (SWH) systems in South Africa by the end 2014, promotion of retrofitting in commercial buildings to reduce energy use, and the provision of R25 billion by the Industrial Development Corporation (IDC) for Investments in green economy activities over a five year period.</p>
2013	Income Tax Allowance on Energy Efficiency Savings	<p>Regulations in terms of Section 12L of the Income Tax Act administered by the dti aimed at the large manufacturing investments (i.e. upgrades, expansions or new facilities that exceed R30 million and R200 million respectively).</p>
South African National Standards (SANS)		

2011	SANS 10400	Provides guidelines for the application of the technical aspects of the National Building Regulations. (refer to appendix section for full schedule of chapters: Chapter A - XA)
2011	SANS 10400-XA	Provides technical guidelines for the implementation of the new building regulations (NBRs). These are first set of minimum standards for energy efficiency and environmental sustainability for buildings in the National Building These regulations are applicable to new and refurbished buildings.
Western Cape policies		
2005-2014	Rental Housing Strategy (Building Sustainable Communities)	Present a 10 year strategic plan for the roll-out of rental stocks in the province. This strategy focuses on three tiers of the rental market: social housing rental housing for low- to medium income households), community residential units or CRUs (these include former hostels that have been converted into low-income family units and other public housing stock)and backyard dwellings, which form a large part of the rental market in townships and informal settlements.
2012	Information and Guideline documents on the implementation of green procurement in the City of Cape Town (CoCT)	Provides information and describes the desirable state of practice for the implementation of green public procurement and environmental legal compliance in the CoCT.
2012	Green Building Manual (Drakenstein Municipality)	Outlines a set of guidelines for green construction principles for the built environment professionals.

2.2 Alternative Building Framework

The South African Government adopted a National Framework for Green Building in South Africa (NFGBSA) in November 2011 as its official policy toward green building (DPW, 20113).

Although not a legislative requirement, public sector clients are encouraged to adopt policies that require a Green Star SA certification to be taken into account as a quality factor when procuring public building space in a lease agreement (CIDB, 2011).

2.3 South African National Standards

This standard applies to any building to be built in an area under the jurisdiction of a local authority. It enforces the technical guidelines of the National Building Regulations and Building Standards Act (Act 103 Of 1977).

The standards prescribe guidelines for the design and construction process such as glazing, insulation, shading, orientation, and building services, including HVAC and energy usage (part XA).

SANS 10400 contains prescriptive rules for any form of construction that are deemed to satisfy the National Building Regulations. The application of these rules is not mandatory¹; therefore the owner of the house is allowed to utilize any means to satisfy the requirements of the National Building Regulations.

There are various non-voluntary ways in which one could comply with the requirements of the National Building Regulations. These include:

- 1) Prescriptive “deemed-to-satisfy rules”
- 2) Rational design² or assessment
- 3) A valid Agrément certificate

There are two key building codes of practice in 1), the SANS 10400 and the SANS 10401. The former is applicable for housing construction in South Africa. This code reproduces the regulations and covers provisions for building site inspections, building design and construction that are deemed satisfactory. Compliance with the deemed-to-satisfy rules is a direct approach to ensure that the building regulations have been applied. If a Competent Person – Energy is not involved in the design of a building the Owner, or the Appointed Person (in terms of the application for approval for erection of a building), who may be the Architect, has no option other than to design and to ensure that the building is constructed in accordance with the detailed prescriptive provisions of SANS 10400XA. The SANS10401 standard is the code of practice for the construction of dwelling houses in accordance with the National Building Regulations and covers the deemed-to-satisfy rules for housing and includes:

¹ “deemed-to-satisfy provision” means non-mandatory requirement, the compliance with which ensures compliance with a functional regulation (SABS, 2011)

² “rational design” means any design by a competent person involving a process of reasoning and calculation and which may include a design based on a standard or other suitable document (NBR, 2008)

- Conventional housing
- Incremental housing and
- Informal housing.

In 2), the purpose of rational designs is to ensure “fitness-for-purpose” of the elements covered by the design. Rational designs are required in respect of housing systems or components, which comprise materials and/or elements whose properties, characteristics and behaviour may be known or unknown. In both cases, a competent person (as defined under the Engineering Profession of South Africa Act, Act 114 of 1990), is required to produce the rational design. The Architect or Mechanical Engineer who is appointed and who signs acceptance as the appointed Competent Person for a project, may decide to employ an energy modelling software programme, or he /she will perform a calculation based on a National or International Standard or similarly authoritative document to develop a Rational Design, for the energy usage of the building.

The rational design includes a detailed structural analysis and detail design of critical members and connection design details.

In 3), an independent organisation, Agrément SA, which primarily focuses on the certification of non-standardised or innovative building products through technical assessments that verify whether the products and systems are fit for purpose. Agrément certifies products where no national standards are applicable and their certification process is performance based. A valid Agrément certificate will comply with the National Building regulations and is accepted by NHBRC for enrolment of non standardised and alternate housing construction.

Key Sources: NHBRC (NHBRC Talking Alternative Building Technologies publication), 2013

2.4 Building Plans approval process

The National Home Builder Registration Council (NHBRC) is the regulatory authority for the home building industry. The NHBRC’s Technical Division reviews the rational designs and once it demonstrates compliance to National Building Regulations a letter of approval is issued to the system owner. The performance of alternative systems is reviewed annually and the letters of approval renewed provided that the NHBRC has not received any reports of system failure.

The criteria follow an outline of the information required to perform a rational design assessment:

The system owner is required to provide rational design calculations that satisfy the National Building Regulations. The report must include design assumptions, detailed calculations, references to the necessary design standards and detailed design drawings. The structural design calculations must clearly demonstrate structural integrity and stability, including connection details. The design calculations should have proper sketches annotated in English, using SI notation.

The submission must demonstrate that the elements so designed have adequate performance at the serviceability limit state and at the ultimate limit state.

The submission report to NHBRC should address the following topics and demonstrate compliance:

1. structural performance (strength and stability);

2. fire resistance;
3. water penetration;
4. Condensation;
5. Thermal;
6. Durability;
7. Acoustics;
8. Construction manual (process); and
9. Quality manual (quality control).

The submission must be made by the system owner and certified by a competent engineer registered by the Engineering Council of South Africa (ECSA) in a professional category in terms of Act No. 46 of 2000.

At the municipal level, it is the local authorities that are responsible for the administration of the National Building Regulations (NBRs), and control the on-site activities on construction projects.

The Competent Person – Energy should be nominated at the time of application for Building Planning approval on the required Form 1 by the Owner and in Form 2 where the Owner makes application for the appointment of the nominated Competent Person. In Section 2 of Form 2 the Competent Person makes a declaration of competency, which is reviewed by the Building Control Officer.

Only Competent Persons – Energy are able to perform Rational Designs in terms of the Regulations.

3. The Green Built Environment Market in South Africa

3.1 An Overview

The market comprises largely of commercial investments made into the green building sector. The mainstream market is predominantly controlled by the commercial property sector. A number of these investments have undergone green building certifications.

The Green Building Council of South Africa (GBCSA) has certified 50 buildings to date (GBCSA, 2014). In the Western Cape there have been 11 GBCSA certified “green building” to date.

The majority of these early adopters are the market leaders in their respective industries, to whom social and environmental responsibility is a key tenet of their everyday businesses, mainly for marketing purposes. Other key contributing factors include the implied economic benefits associated with shifting towards greener practices.

The GBCSA has previously reported that businesses are starting to experience the economic benefit of buying greener building materials (such as low VOC paint, energy efficient windows and other materials) as this means they would incur lower electricity costs in the long term, especially those resulting from heating, ventilation and air conditioning (HVAC). The other noted benefits as highlighted by the GBCSA include overall lower operating costs; higher asset returns; increased property values and improved marketability (for additional information please refer to GBCSA’s *Rands and Sense of Green Buildings report*).

The market expectation from industry participants is that all property development projects going forward need to adhere to SANS 10400-XA.

3.2 Alternative Building Technologies

To date, the NHBRC has approved 40 alternative building technologies (ABTs) nationwide, of which 36 of these are in the Western Cape.

Below is an overview of building material manufacturers that are based in the Western Cape. The majority of these are manufactures of building insulation, effectively making up 42% of the market.

This market is dominated by small manufacturers. The small medium firms comprise close to 63% of the market whereas the large manufacturers comprise close to 38%.

ABT is slow off the ground due to community participation and the lack of information and understanding of the products on offer (NHBRC Western Cape, 2014).

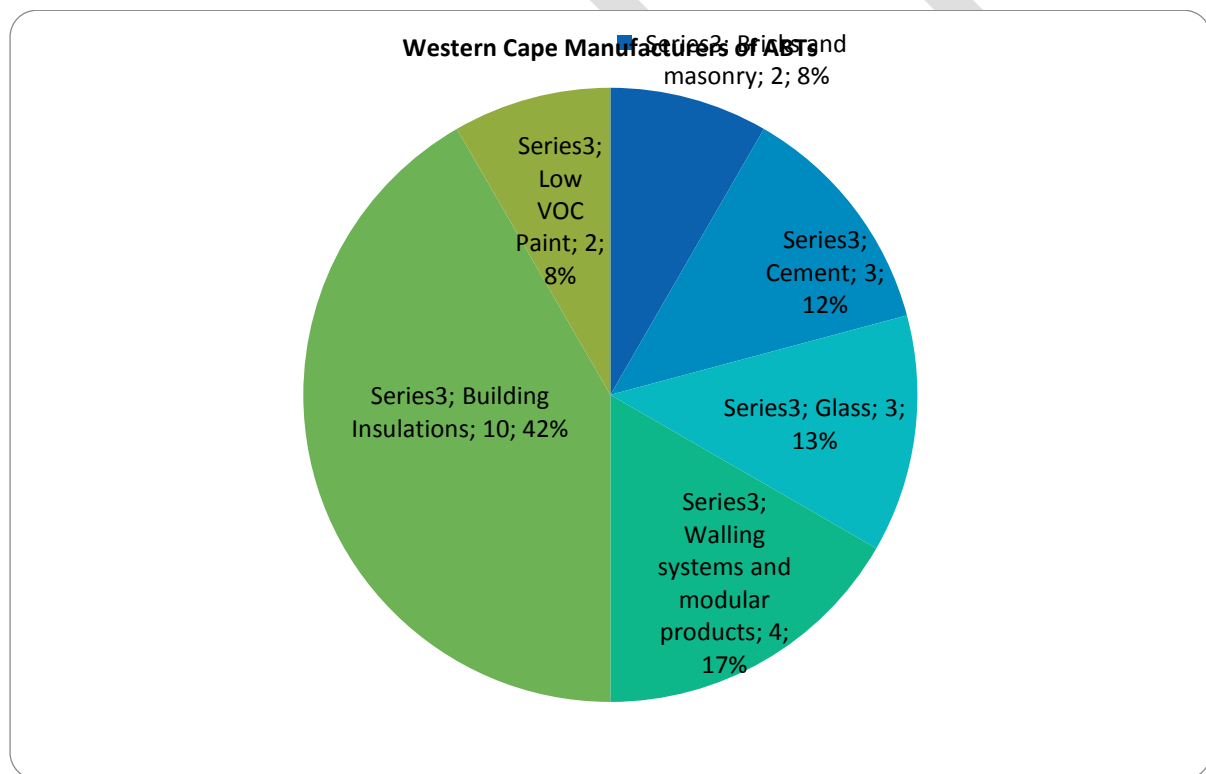


Figure 1 - Manufacturers of Alternative Building Materials in the Western Cape

3.3 Eco Labelling Standards and Assessment Tools

The South African Bureau of Standards (SABS) has released the SANS 941. The new Energy Efficiency labelling standard was published in 2013 and will be implemented in 2014. This will be applicable

mainly to electrical appliances (please refer to the Energy Efficiency report for further details on this scheme).

Several industry assessment tools have been introduced. These include the Ecospecifier South Africa and Eco Standard assessment tools, respectively. The CSIR is also presently developing an eco labelling scheme on behalf of the Department of Public Works – the South African Eco Labelling Scheme (SANES).

3.4 Opportunities for promoting Green Building in South Africa

The CSIR has been appointed to prepare the implementation plan for the roll-out of Innovative Building Technologies (IBTs³) in terms of the Presidential Infrastructure Coordinating Commission (PICC) Council resolution that requires 60% of government's social infrastructure building to be constructed from IBTs by 2017. The plan identifies the institutional arrangements that need to be made as well as the technical backing required to create a supportive environment for the use of IBTs. As a result, the plan recommends that an IBT Centre of Competence be established in order to develop the IBT sub-sector, an IBT Forum be created in order for stakeholders to communicate, as well as a government department be appointed in order to champion IBTs.

The stipulation to use IBTs to construct 60% of new social infrastructure projects by 2017 was adopted by Cabinet in August and arose out of the construction of 12 schools in the Eastern Cape during 2012 as part of a development agency IDT pilot project. A further 16 schools will be built in 2014 and the pilot project may result in an additional 30 schools being constructed. IBTs are not covered by the building standards in the National Building Regulations, and therefore, they must either comply with the deemed-to-satisfy rules as set out by SANS, they must have a rational design or they must be Agrément certified (CSIR, 2014).

3.5 Potential Opportunities for Greening the Built Environment in the Western Cape

The identified opportunity is the Social Housing Sector. The National Department of Human Settlements (NDHS) approved the enhancement of the National Norms and Standards for the Construction of Stand Alone Residential Dwellings and Engineering Services (Norms and Standards) in 2013.

The Norms and Standards are aligned with the NBR, SANS 10400-XA regulations. These have been adjusted by the additional building envelope measures to improve thermal performance of the dwellings. The measures comprise:

- The installation of a ceiling with the prescribed air gap for the entire dwelling;

³ IBTs are a range of [alternative building technologies](#) – generally framed panels fabricated off site and assembled on site. They are classified according to mass into heavy or light materials, and on-site or off-site fabrication (CSIR, 2013).

- The installation of above-ceiling insulation comprising of a 130mm mineral fibreglass blanket for the entire house;
- Plastering of all intern walls;
- Rendering on external walls;
- Smaller size windows; and
- Special low E clear and E opaque safety glass for all window types as prescribed.

The total cost of the new dwellings amounts to R 110 947.00.

COST BREAKDOWN OF THE STANDARD 40 SQUARE METRE DWELLING TO BE FINANCED FROM THE NATIONAL HOUSING PROGRAMME FOR PERSONS EARNING R0 TO R3 500 IMPLEMENTATION DATE: 1 APRIL 2014	
Cost element	Cost
Earthworks	R 6,707.48
Concrete, Formwork & Reinforcement	R 10,780.37
Brickwork	R 15,528.48
Roof Structure	R 8,832.44
Ceiling and insulation	R 7,311.82
Windows	R 8,083.53
Doors and Frames	R 6,558.00
Finishing and paintwork	R 10,637.98
Electrical	R 9,958.40
Plumbing and toilet	R 9,976.38
Sub total A	R 94,374.88
P & G	R 8,578.67
Sub total B	R 102,953.55
Project manager	R 3,604.00
Clerk of works	R 3,089.00
Transfer cost	R 1,000.00
Beneficiary administration	R 300.00
Total	R 110,946.55
Total rounded off	R 110,947.00

Source: NDHS; 2013

Please note that these amounts will be adjusted annually in terms of the current approved application of the Bureau of Economic Research – Building Cost Index (BER-BCI) of the University of Stellenbosch. The changes introduced by the Norms and Standards will take effect on 1 April 2014.

3.5.1 Rental Housing Market

The greatest scope for growth of low-income rental housing is found in Cape Town, Eden and the Winelands. These districts have the highest number of households earning between R800 and R3 500 per month, as well as great demand, with a high degree of inadequate housing conditions). In Cape Town and the leader towns the West Coast, Cape Winelands, Overberg and Eden districts, there are limited quantities of well-situated, state-owned land suitable for formal state-funded rental housing. All of these towns have made provision for land to be earmarked for rental housing in their human settlement plans, and this land must be officially allocated and released for rental, following which the land (HSD, 2013).

The Western Cape provincial government has embarked on several pilot programs focusing on bringing in ABTs into the social housing sector. These pilot programmes include the City of Cape Town's ceiling project for the subsidy housing market.

The targets for rental housing as identified by the Provincial government:

Strategic Goal	Strategic Objective	Performance Measure Indicator	Annual Target
n/a	n/a	No. of housing units completed (institutional Subsidy)	120
Optimal use of resources and partnerships	Enhancing Supply of new rental housing opportunities and encouraging improved Property Management or rental stock	No. of Housing units completed (Social Housing)	270
		No. of new units completed (CRU)	300
n/a	n/a	No of CRU units refurbished	1000

Source: DHS, 2014

Other pilot programmes that are currently being implemented across the province include the following below:

Project Name	Location	Additional information
Joe Slovo 2 & 3	Cape Town	Solar Water Heater project
Kuyasa Project	Cape Town	Solar Water Heater project
Nuwe Begin	Blue Downs	Innovative funding and use of local labour
Legacy Project	Blue Downs	social rental housing
Bothasig Gardens	Cape Town	social rental housing
Imizamo Yethu	Cnr Hout Bay Road & Victoria Road, Hout Bay (CoCT)	social rental housing
Ishack Living	Stellenbosch University	Incremental upgrading of settlements
Pelican Park	Cape Town	Gap Housing
Delft 3, 5, 6, 8 & 9	Cape Town	Uses alternative or eco-technologies
Atlantis Witsand iEECo	Atlantis	Renewable technology and Settlement Design project
Abbotsdale	West Coast	Breaking New Ground (BNG)

Drommedaris	Paarl	BNG
Thembaletu	George	BNG
Oceanview (Mountain View) Development	OceanView	Alternative Building materials
People House Process (PHP) Development	Knysna	social rental housing
Manenberg Human Settlements	Manenburgh	Green Start Rated - 4 star rating
Edward Road, Ottery	Cape Town	
Freedom Park Housing Development	Cape Town	Came out of Design indaba to uses innovative building materials

3.5.2 Potential Market Drivers

GreenCape has identified certain drivers for the greening of the built environment market in the Western Cape.

1. Policy Framework

Social Housing

The new Norms and Standards for the Social Housing sector are aligned to the SANS 10400-XA guidelines.

The requirements of the SANS 10400-XA in the social housing sector will drive the demand of new news ABTS for the sector.

Commercial Sector

In the commercial sector, the newly introduced tax allowance incentives on energy efficiency savings has created an incentive for the built environment participants to bring new ideas in how companies can reduce their energy consumption patterns perhaps through building insulation and glazing mechanisms (as energy retrofitting and renewable energy projects are prohibited from this process).

The independent rating system is at present a voluntary process. Over the years wide consideration has been given by the CIDB and the DPW to follow the lead of several other countries requiring all new public buildings to be designed to achieve a prescribed rating as a minimum. This could be incorporated as a requirement into the CIDB Best Practice Project Assessment Scheme (refer to Annexure section for the CIDB criteria). This has been an ongoing discussion since 2009 but as of yet this yet to materialise. In the Western Cape this has been adopted by the City of Cape Town (CoCT). (Refer to CoCT's Green Procurement guidelines policy in regulatory framework table).

2. Improved Industry Knowledge

The increased number of well trained built environment professionals such as quantity surveyors will drive the growth of new skills into the sector. For example, in the Western Cape a significant segment of the market is increasingly becoming saturated with building insulation materials that are required in green building projects (refer to pie chart of ABT market).

In the Western Cape, the CoCT has been allocated market development funds to the maximum of R30m to retrofit ceiling for RDP houses from the Jobs fund. Within the City of Cape Town there are approximately 50 000 subsidy houses that were built without insulated ceilings between 1994 and 2005.

In recent years there have been several R&D innovations into this market. These include those done by the Council for Scientific and Industrial Research (CSIR)⁴ designed a pilot energy efficient using insulated building product for this market.

3. Public Advocacy

Industry bodies will continue to play a role in increasing the public awareness on the overall savings that can be drawn from investments into 'building green'. Some municipalities such as Drakenstein have already started with these projects.

4. Industry Bodies & Associations

There are a number of voluntary associations for the varying built environment professions.

4.1 Key Industry Associations

- 1) Association of South African Quantity Surveyors (ASAQS)
- 2) Building Industry Bargaining Council (BIBC)
- 3) Construction Industry Development Board (CIDB)
- 4) Council of the Built Environment (CBE)
- 5) CSIR Built Environment unit
- 6) Engineering Council of South Africa
- 7) Green Building Council of South Africa (GBCSA)
- 8) South Africa Property Owners Association (SAPOA)
- 9) South African Bureau of Standards (SABS)
- 10) National Home Builder's Registration Council (NHBRC)
- 11) The South African Housing Foundation (SAHF)

⁴ The Council for Scientific and Industrial Research (CSIR), in conjunction with BASF, undertook an energy and thermal performance research project in 2011 and 2012 on a house constructed on the CSIR Innovation Site in Pretoria using BASF materials.

4.2 Industry events

There are several industry events that are held on annual basis for the purpose of information dissemination. These include the GBCSA's Green Building Convention (in 2013 this was integrated with the World Green Building convention); Alive2Green Green Building conference and exhibition; GreenCape's industry networking events and the Cape Construction Expo.

The South African Council for the Quantity Surveyors Profession (SACQSP) organised the "Vision 20/20" conference in 2013.

Some key findings of the research conference included:

- 1) The use of construction materials is not properly controlled throughout the built environment – this presents several opportunities for markets that will seek to bringing the waste market into the construction industry, i.e. the use of building debris and other forms of building waste. New companies such as Demorec have already started exploring this opportunity in the Western Cape.
- 2) The use of good water harvesting systems, water efficient fixtures and methods to control water usage has the potential to reduce water consumption significantly and also result in cost savings.
- 3) Government is starting to incorporate the green building image in newly built buildings (examples of this include Falcon Building in Pretoria and Public Works building in Manenburg in the Western Cape).

The findings supported the notion that life cycle cost analysis could positively demonstrate the business case for both developer and tenant, in terms of return and long term financial benefit. The Clay Brick Association (www.claybrick.org.za) have already led the market in this type of research (refer to the Clay Bricks Association industry publication on Life Cycle Assessment).

Appendix

1. SANS 10400 consists of the following parts:

10400 Part	Title	Edition	Published
A	General Principles and requirements	3	Nov 2010
B	Structural design	3	Sept 2012
C	Dimensions	3	Oct 2010
D	Public Safety	3	Jan 2011
E	Demolition Work	3	Nov 2010 (within A)
F	Site Operations	3	May 2010
G	Excavations	3	Jan 2011
H	Foundations	3	Sept 2012
J	Floors	3	Oct 2010
K	Walls	3	Mar 2011
L	Roofs	3	Nov 2011
M	Stairways	3	Apr 2011
N	Glazing	3.1	Mar 2012 (3 Feb 2010)
O	Lighting and Ventilation	3	Jan 2011
P	Drainage	3	Oct 2010
Q	Non-water-borne means of sanitary disposal	3	Mar 2011
R	Storm water Disposal	3	Sept 2012
S	Facilities for persons with disabilities	3	Apr 2011
T	Fire Protection	3	Mar 2011
U	Refusal Disposal	3	Nov 2010 (within A)
V	Space heating	3	Jun 2010
W	Fire Installation	3	Mar 2011
XA	Energy Usage in Buildings	1	Aug 2011

Source: SAHF (2013)

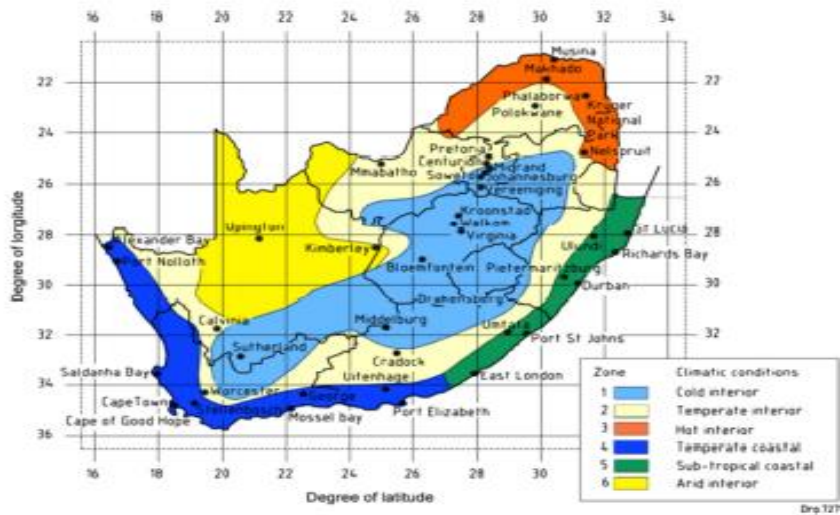


Table B.1
Locations in the climatic zones of South Africa (Extracted from the full table)

Climatic Region	Description	Major centre
Region 1	Cold interior	Johannesburg, Bloemfontein
Region 2	Temperate interior	Pretoria, Polokwane
Region 3	Hot interior	Makhado, Nelspruit
Region 4	Temperate coastal	Cape Town, Port Elizabeth
Region 5	Sub-tropical coastal	East London, Durban, Richards Bay
Region 6	Arid interior	Upington, Kimberley

Climatic Zone Map (SABS, 2011)

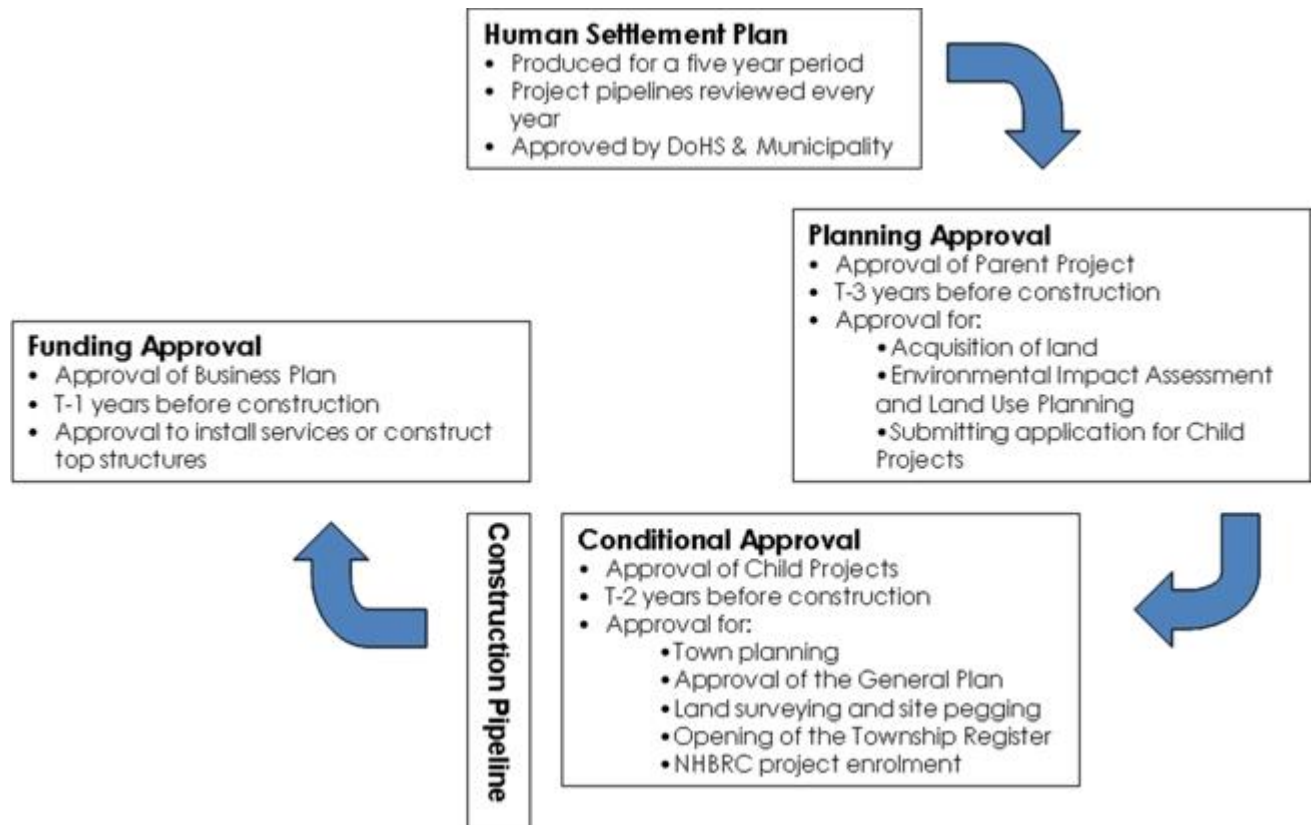
DRAFT

2. List of useful contacts of industry associations

Association Name	Contact Details	Website
Association of Architectural Aluminium Manufacturing of South Africa	(011) 8055002	www.aaamsa.co.za
Association of South Africa Quantity Surveyors	011-3154140	www.asaqs.co.za
AFSA - Aluminium Federation of South Africa	(011) 455 5553	www.afsa.org.za
IESSA - Illumination Engineering Society of South Africa	021.552.4848	www.iessa.org.za
Institute for Landscape Architecture in South Africa	(011)0615000	www.ilasa.co.za
Institute for Timber Construction SA	(021)5576851	www.itc-sa.org
Institute of Timber Frame Builders	(021)8454435	www.itfb.co.za
Clay Brick Association of South Africa	(011) 805-4206	www.claybrick.org
Kitchen Specialists Association	+27827878806	www.ksa.co.za
Master Builders and Allied Trader's Association Western Cape	(021)6852625	www.mbawc.co.za
National Home Builder's Registration Council	(021)9139210	www.nhbrc.org.za
Seifsa - Steel and Engineering Industries Federation of South Africa	+27 11 298 - 94	www.seifsa.co.za
South African Institute for Building Design	(031)2024726	www.saibd.co.za
Cement & Concrete Institute	(011) 3150300	www.cnci.org.za
South African Institute of Entrepreneurship	(021) 4472023	www.entrepreneurship.co.za
SA Federation of Civil Engineering Contractors (Safcec)	(021) 976 8059	www.safcec.org.za
South African Institute of the Interior Design Professionals	(011)4860450	www.iidprofessions.com
South African Light Steel Frame Building Association (SASFA)	(011)7266111	http://www.seifsa.co.za/
South African Paint Manufacturing Association	(011)4552503	sapma.org.za
South African Wood & Laminate Flooring Association	(011)4552822	www.sawlfa.co.za
South African Wood Preservers Association	(011)9741061	www.sawpa.org.za
Thatchers Association of South Africa	(083) 2838429	www.sa-thatchers.co.za

3. Overview of DHS Social Housing Timeline process

Below is an overview of these plans are compiled over a 5 year period to align with the Integrated Development Plans (IDPs).



Source: WCP Department of Human Settlements

4. Overview of Social Housing Programmes

4.1 Individual Housing Subsidy

Individual housing subsidies are available to low-income households, where an applicant wishes to buy a residential property for the first time. The subsidy can be used to buy an existing house - including the property on which the house stands. It can also be used to buy a house on a plot-and-plan basis, or to finish an incomplete house. Successful applicants will receive this subsidy only once. It is not a cash pay-out, but is paid directly to a financial institution or a conveyancing attorney.

4.2 Finance Linked Individual Subsidy Programme (FLISP)

The Finance Linked Individual Subsidy Programme (FLISP) is an instrument that assists qualifying households by providing a once-off down payment to those households who have secured mortgage finance to acquire a residential property for the first time.

4.3 The Integrated Residential Development Programme

The Integrated Residential Development Programme (IRDP) provides for the acquisition of land, servicing of stands for a variety of land uses including commercial, recreational, schools and clinics. It also provides for residential stands for low, middle and high income groups. The land use and income group mix will be based on local planning and needs assessment.

4.4 Upgrading of Informal Settlements Programme (UISP)

The Upgrading of Informal Settlements Programme (UISP) seeks to upgrade the living conditions of millions of poor people by providing secure tenure and access to basic services and housing.

4.5 Institutional Programme

The Institutional Programme provides capital grants to social housing institutions which construct and manage affordable rental units. The Programme also provides for the sale of units by the social housing institution after at least four years has lapsed

4.6 Community Residential Units Programme

The Community Residential Units Programme (CRU) aims at facilitating the provision of secure, stable, rental, tenure for low income housing households. The Programme provides a coherent framework for dealing with many different forms of existing public sector residential accommodation

4.7 Consolidation Subsidy Programme

The Consolidation Subsidy Programme seeks to assist households who have received serviced sites in terms of the state housing scheme instituted pre-1994. It provides for the completion of houses on the serviced sites

5. The Grading Criteria for CIDB accreditation

All building contractors seeking to participate in public sector infrastructure delivery must be registered on the CIDB Register of Contractors with the associated grading. In South Africa the contractors' CIDB grading designation is determined by a contractor's financial capability and its works capability.

The financial capability relates to the contractor's financial history (turnover), including the value of their completed contracts and the amount of working capital it can gather to sustain a contract, i.e. available capital. Available capital is determined from the liquid cash resources available to it, including bank balances, loans that may be leveraged and any financial backing. The works capability is determined by the largest contract it has undertaken in its class of construction works, the number of professionals it employs as well as its fulfilment of relevant statutory requirements CIDB. The contractor grading designation will be used by government (national, provincial, municipal and state owned enterprises) to decide if the firm's tender will be considered for a particular construction works contract. For example: if the firm is registered as a 5CE, it will be considered for public sector civil engineering works contracts of a value not exceeding R6.5 million. However, it may register for

different classes of works. For example, it may be registered as a 5CE and as an 8ME. This means that it will also be considered for public sector mechanical engineering works contracts of a value not exceeding R130 million (for further information on CIDB process please access this link http://www.cidb.org.za/documents/kc/cidb_publications/brochures/brochure_contractor_registration_guidelines.pdf).

5. Public Sector Procurement Process

For the purpose of tendering opportunities with the Western Cape provincial government, all suppliers are required to register with the Western Cape Supplier Database (WCSD) at no cost (for further information please consult <http://www.westerncape.gov.za/tenders/process/info>). The regulatory framework for government projects is governed by various national policies. These include the National Preferential Procurement Policy Framework Act (PPPFA), Public Finance Management Act (PFMA), Broad-based Black Economic Empowerment Act (BBBEE), Supply Chain Management, Western Cape Provincial Treasury Instructions as well as the CIDB regulations that were mentioned earlier on in the report.

For clarity on these policies the following link can be consulted <http://www.westerncape.gov.za/general-publication/policies>.

The focus of the public sector has been narrowed towards the current state of the subsidy housing sector in the province (as seen in the following section).

References

1. Western Cape Provincial Government. Green Economy Strategy. 2013
2. National Homebuilders Registration Council. Talking Alternative Building Technologies. 2013
3. Green Building Council of South Africa. Rands and Sense of Green Buildings. 2012
4. <http://www.25degrees.net/index.php/Latest/south-africas-green-building-movement-gathering-momentum.html>
5. <http://www.buildingregulations.co.za/download-regulations/>
6. http://www.cidb.org.za/Documents/KC/cidb_Publications/Ind_Reps_Other/cidb_UNEP_SBCI_SA_Report_GHG_Buildings_Discussion_Document.pdf
7. <https://www.ecsa.co.za/ECSADocuments/ECSA%20Documents/Documents/290410PolicyDocument1999.pdf>
8. <http://www.westerncape.gov.za/tenders/opportunities/westerncape>
9. <http://www.sacommercialpropnews.co.za/keywords/south-africa-green-building/index.3.html>
10. <http://www.ci-net.co.za/>
11. <http://www.engineeringnews.co.za/topic/idt>