



Market Intelligence Report

Greening South African Buildings 2014

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List of acronyms

ABT	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
NBR	National Building Regulations
NBRBS Act	National Building Regulations and Building Standard Act, Act 3 of 1977
NFGBSA	National Framework for Green Building in South Africa
NHBRC	National Home Builders Registration Council
NRCS	National Regulator for Compulsory Specification
RDP	Reconstruction and Development Programme
SABS	South African Bureau of Standards
SAHF	South African Housing Foundation
SANS	South African National Standards
SAPOA	South African Property Owners Association
VOC	Volatile Organic Compounds
WCPG	Western Cape Provincial Government

50

Number of buildings certified by the Green Building Council of South Africa to date.

Executive summary

This offers a detailed examination of the regulatory frameworks that govern the built environment sector in the Western Cape and in South Africa as a whole. It also covers the social housing sector in the Western Cape.

The report highlights the market growth incentives that have been created by the Private Sector (commercial property developments) and the Public Sector - Government subsidized housing sectors respectively

It also highlights the opportunities for doing business in the Western Cape, along with the role that the regulatory framework has played in this regard to date.

The report is particularly concerned with developments within the green building sector, noting that the green building concept is not new to South Africa. 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 launch of the Green Building for Africa programme (GBFA) in 1997.

The Green Building Council of South Africa (GBCSA) has certified 50 buildings to date, and reports that businesses are starting to experience the economic benefits of buying greener building materials.

The report covers alternative building technologies (ABTs) and notes that the National Homebuilders Registration Council (NHBC) has approved 40 ABTs nationwide, 36 of them in the Western Cape.

The report pays special attention to potential opportunities for greening buildings (mostly residential) in the Western Cape.

1. Introduction

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 use;

Capturing rainwater for use in activities like watering the garden;

Choosing a water-based paint over a lead-based option to reduce the production of harmful volatile organic compounds (VOC).

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 launch of the Green Buildings for Africa (GBFA) programme in 1997.

In the Western Cape, the Western Cape Government (WCG) has identified certain objectives as part of its overarching Green Economy Strategic Framework. This strategy has listed the following principles as key, among others.

The green economy:

Is business-led and opportunities focused

Works for the poor

Advocates a people-centred approach

Advocates an effort to lead by example.

Residential Buildings have been identified as target area for green growth initiatives through the Smart Living and Working pillar in the province's Smart is Green Strategy document, key to which is the 110% Green Campaign. Green is Smart was launched by the Premier of the Western Cape in 2012 with the goal of encouraging commitment towards developing the green economy.

2. Regulatory framework

2.1 Overview

The Department of Public Works (DPW) governs the regulatory framework for the building industry in South Africa. The National Department of Human Settlements (NDHS) plays an oversight role in the country's social housing planning process.

The National Building Regulations and Building Standards Act, Act 103 of 1977 (NBRBS Act), provides the basis for how buildings in South Africa should be constructed and developed to suit human habitation. The new National Building Regulations (NBR) were introduced in 2008.

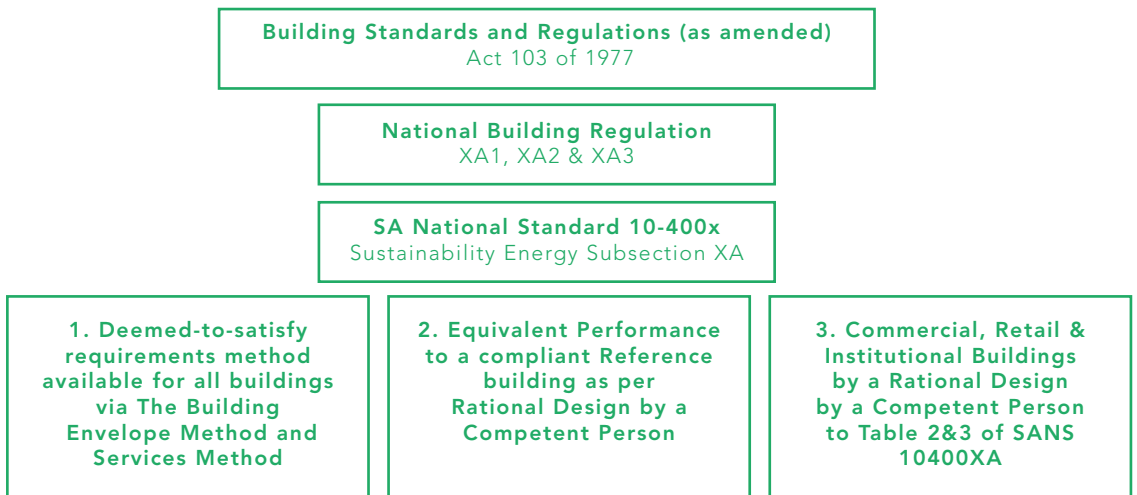
The role of the National Regulator for Compulsory Specification (NRCS) is to support the policy setting framework for the building industry.

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 NBRBS Act.

It also advises Government departments on possible amendments and changes to 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 South African National Standard 10400 (SANS 10400). This code sets out prescriptive provisions that are deemed to satisfy the technical aspects of the new NBR.

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



Source: SABS 2012

Below is an overview of the regulatory frameworks that are applicable to the building industry in South Africa. These 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	Outlines an extensive plan to promote densification and integration of urban areas through enhanced regulatory mechanisms, planning functions and financial incentives. Objectives Include Using housing provision as a job creation strategy Ensuring that property can be accessed by all as an asset for wealth creation and empowerment Accelerating 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 Using 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 appendices for an overview of social housing programmes.)
2009	National Housing Code	Outlines the national norms and standards for the construction of standalone residential dwellings, which apply to all units built through one of the National Housing Programmes. (Refer to appendices for full schedule of programmes.)
Year	Legislation/policy/standard	Objective
Western Cape policies		
2005-2014	Rental Housing Strategy (Building Sustainable Communities)	Presents 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, including 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 preferred ways to implement green public procurement and environmental legal compliance in the CoCT.

Year	Legislation/policy/standard	Objective
Green building framework		
2011	National Framework for Green Building in South Africa (NFGBSA)	Promotes the objectives of green building in the public sector. These include: 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 the concept of green building into immovable asset formation in South Africa.
2011	Green Economy Accord	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. Includes a commitment to installing 1 million solar water-heating (SWH) systems in South Africa by the end 2014; promoting retrofitting in commercial buildings to reduce energy use; and a provision of R25 billion by the Industrial Development Corporation (IDC) for investments in green economy activities over a five-year period.
2012	Green building manual (Drakenstein Municipality)	Outlines a set of guidelines covering green construction principles for built environment professionals.
2013	Income tax allowance on energy efficiency savings	Regulations in terms of Section 12L of the Income Tax Act administered by the DTI aimed at large manufacturing investments. That is: upgrades, expansions or new facilities that exceed R30 million and R200 million respectively.
South African National Standards (SANS)		
2011	SANS 10400	Provides guidelines for the application of the technical aspects of the NBR. (Refer to appendices for full schedule of chapters: Chapter A-XA.)
2011	SANS 10400-XA	Provides technical guidelines for the implementation of the new NBR. These are the first set of minimum standards for energy efficiency and environmental sustainability for buildings in the NBR. These regulations are applicable to new and refurbished buildings.

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 on green building (DPW, 2013).

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

2.3 South African National Standards

These standards apply to any building to be built in an area under the jurisdiction of a local authority. They enforce the technical guidelines of the NBRBSA Act.

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

SANS 10400 contains prescriptive rules for any form of construction that is deemed to satisfy the NBR. The application of these rules is not mandatory. The owner of the house is allowed to use any means to satisfy the requirements of the regulations.

There are various non-voluntary ways in which one could comply with the requirements of the NBR.

These include:

Prescriptive deemed-to-satisfy rules

Rational design or assessment

A valid Agrément certificate

(1) Prescriptive deemed-to-satisfy rules

There are two key building codes of practice comprising deemed-to-satisfy rules: SANS 10400 and 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 SANS 10401 standard is the code of practice for the construction of dwelling houses in accordance with the NBR and covers the deemed-to-satisfy rules for housing.

It includes:

Conventional housing

Incremental housing

Informal housing

(2) Rational design or assessment

The purpose of rational design is to ensure the elements covered by the design are fit for purpose. Rational designs are required for housing systems or components comprising 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 building's energy use.

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

(3) A valid Agrément certificate

Agrément SA is an independent organisation that focuses primarily 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 its certification process is performance-based. A valid Agrément certificate will comply with the NBR and is accepted by NHBRC for enrolment of non-standardised and alternate housing construction.

Key Sources: National Home Builders Registration Council
(*NHBRC Talking Alternative Building Technologies publication*), 2013.

2.4 Building plans approval process

The NHBRC is the regulatory authority for the home building industry. The NHBRC's Technical Division reviews the rational design and, once it demonstrates compliance to the NBR, 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, as follows:

The system owner is required to provide rational design calculations that satisfy the NBR. 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 Standard Index (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:

Structural performance (strength and stability)	Thermal
Fire resistance	Durability
Water penetration	Acoustics
Condensation	Construction manual (process)
	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 46 of 2000.

At the municipal level, the local authorities are responsible for the administration of the NBR, and control the on-site activities on construction projects.

Registration	Plan Submission Process	Municipal Approval
<p>Design process</p> <p>Compliance with NHBRC / Agreement criteria</p> <p>Rational/Agreement</p>	<p>Compliance with Municipal regulations (zoning requirements, site development plans, title deed, building line relaxation, etc.)</p> <p>Building certificates (Roof truss, plumbing, glazing, electrical, fire, completion, etc.)</p>	<p>Building Inspections by officials</p> <p>Occupation Certificate (very NB!!)</p>

3. The Green Buildings market in South Africa

3.1 Overview

The market comprises largely 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 buildings to date.

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

The GBCSA has 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 incur lower electricity costs in the long term, especially those costs associated with HVAC. The other notable benefits 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 future property development projects need to adhere to SANS 10400 XA (Energy Efficiency Regulations for new and renovated Buildings).

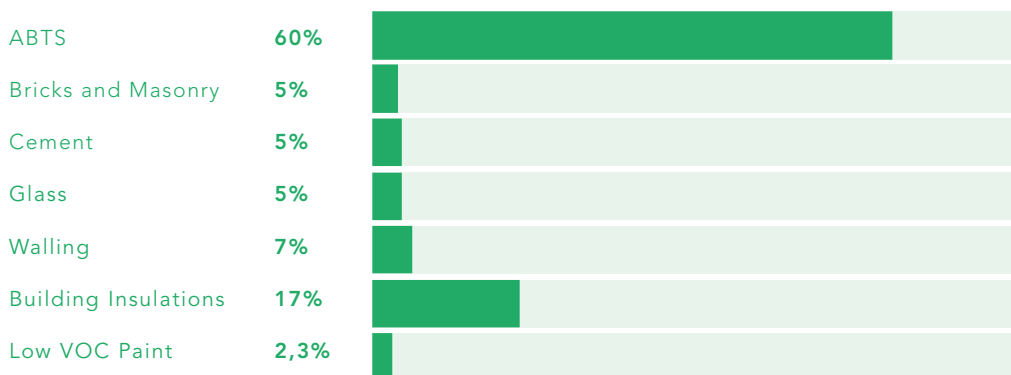
3.2 Alternative building technologies

To date, the NHBRC has approved 40 alternative building technologies (ABT) nationwide, 36 of them in the Western Cape.

Below is an overview of building material manufacturers that are based in the Western Cape. The majority of these fabricate Insulated Building technologies (panels, blocks, etc.) effectively making up 42% of the market.

This market is dominated by small manufacturers, which make up close to 63% of the market with the large manufacturers making up close to 38%.

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



3.3 Eco labelling standards and assessment tools

The SABS published the SANS 941 energy efficiency labelling standard in 2013 and it will be implemented in 2014. It will apply mainly to electrical appliances.

Please refer to the GreenCape Energy Efficiency Market Intelligence 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. The CSIR is also presently developing an eco labelling scheme on behalf of the DPW – 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 alternative building technologies (ABT) in terms of the Presidential Infrastructure Coordinating Commission (PICC) Council resolution. This requires 60% of Government's social infrastructure building to be constructed from ABT 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 ABT.

ABT include, for example, 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).

As a result, the plan recommends that an ABT Centre of Competence is established to develop the ABT sub-sector. It also recommends that an ABT Forum is created for stakeholders to communicate, and that a Government department is appointed to champion ABT.

The stipulation to use ABT to construct 60% of new social infrastructure projects by 2017 was adopted by Cabinet in August. It 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 the construction of an additional 30 schools. ABT are not covered by the building standards in the NBR. Therefore, they must either comply with the deemed-to-satisfy rules as set out by SANS, have a rational design, or be Agrément-certified (CSIR, 2014).

3.5 Potential opportunities for greening the built environment in the Western Cape

The richest opportunities for greening the Western Cape's built environment are in the 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. These norms and standards are aligned with the NBR, SANS 10400-XA regulations.

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

Cost breakdown of the standard 40 square meter dwelling to be financed from the National Housing Programme for persons earning R0 – R3500. Implementation date: 1 April 2014

Cost Element	Cost in Rands
Earthworks	R 6707.48
Concrete, Formwork & Reinforcement	R 10780.37
Brickwork	R 15528.48
Roof Structure	R 8832.44
Ceiling and Insulation	R 7311.82
Windows	R 8083.53
Doors and Frames	R 6558.00
Finishing and Paintwork	R 10637.93
Electrical	R 9958.40
Plumbing and Toilet	R 9976.38
Sub-Total A	R 94374.88
P&G	R 8578.67
Sub-Total B	R 102953.55
Project Manager	R 3604.00
Clerk of works	R 3089.00
Transfer Cost	R 1000.00
Beneficiary Administration	R 300
Total Rounded Off	R 110 946.55
Total	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 University of Stellenbosch's Bureau of Economic Research – Building Cost Index (BER-BCI). 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 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 and a high level of inadequate housing conditions.

In Cape Town and the leader towns of the West Coast, Cape Winelands, Overberg and Eden districts, there is a limited quantity of well-situated, state-owned land suitable for formal state-funded rental housing. All 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 (HSD, 2013).

The WCG has embarked on several pilot programmes focusing on bringing ABT into the social housing sector. These pilot programmes include the City of Cape Town's (CoCT) 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	Number 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	Number of housing units completed (social housing)	270
		Number of new units completed (CRU)	300
n/a	n/a	Number of CRU units refurbished	1000

Source: DHS, 2014:

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

Project name	Location	Additional information
Joe Slovo 2 and 3	Cape Town	SWH project
Kuyasa Project	Cape Town	SWH 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	Corner Hout Bay Road and Victoria Road, Hout Bay, Cape Town	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	Carried out under BNG
Drommedaris	Paarl	Carried out under BNG
Themba lethu	George	Carried out under BNG
Oceanview (Mountain View) Development	Ocean View	Uses ABM
People House Process (PHP) Development	Knysna	Social rental housing
Manenberg Human Settlements	Manenberg	Four-star Green Star rating
Edward Road, Ottery	Cape Town	
Freedom Park Housing Development	Cape Town	Came out of the Design indaba and uses innovative building materials

3.5.2 Potential market drivers

GreenCape has identified certain drivers for greening the Western Cape's built environment market.

1. Policy framework

Social housing

The new norms and standards for the Government Subsidized 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 ABT for the sector.

Commercial sector

In the commercial sector, the newly introduced tax allowance incentives on energy efficiency savings have created an incentive for the building industry participants to bring in new ideas on how companies can reduce their energy consumption patterns. This could possibly be achieved using building insulation and glazing mechanisms since energy retrofitting and renewable energy projects are prohibited from this process.

The independent rating system is at present a voluntary process. Over the years, the Construction Industry Development Board (CIDB) and the DPW have given extensive consideration to following the lead of several other countries that require all new public buildings to be designed to achieve a prescribed rating at 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 under continuous discussion since 2009 but has yet to materialise. In the Western Cape, this measure has been promoted by the CoCT (see the CoCT's green procurement guidelines policy in the regulatory framework table).

2. Improved industry knowledge

The rising number of well-trained building industry 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 green building market is becoming increasingly saturated with building insulation materials that are required in green building projects (see graph of ABT market).

In the Western Cape, the CoCT has been allocated market development funding to a maximum of R30 million to retrofit ceilings to RDP houses from the jobs fund. Within the CoCT, there are approximately 50 000 subsidy houses that were built without insulated ceilings between 1994 and 2005.

In recent years, there have been several research and development (R&D) innovations in this market. These include those launched by the CSIR. For example, in 2011 and 2012, the CSIR, in conjunction with BASF, undertook an energy and thermal performance research project on a house constructed on the CSIR innovation site in Pretoria using BASF materials.

3. Public advocacy

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

4. Industry bodies and associations

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

4.1 Key industry associations

Association of South African Quantity Surveyors	(ASAQS)
Building Industry Bargaining Council	(BIBC)
Construction Industry Development Board	(CIDB)
Council of the Built Environment	(CBE)
CSIR Built Environment unit	
Engineering Council of South Africa	
Green Building Council of South Africa	(GBCSA)
South Africa Property Owners' Association	(SAPOA)
South African Bureau of Standards	(SABS)
National Home Builder's Registration Council	(NHBRC)
The South African Housing Foundation	(SAHF)

4.2 Industry events

There are several industry events held annually to disseminate information. These include the GBCSA's Green Building Convention, which was integrated with the World Green Building convention in 2013; 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 from the research conference included

The use of construction materials is not properly controlled throughout the building industry. This presents several opportunities for bringing the waste market into the construction industry, specifically for using building debris and other forms of building waste.

New companies such as Demorec have already started exploring this opportunity in the Western Cape

The use of good water harvesting systems, water-efficient fixtures and methods to control water use can potentially reduce water consumption significantly and also save costs

Government is starting to incorporate the green building rating in newly built buildings. Examples include the Falcon Building in Pretoria and the Public Works Building in Manenburg in the Western Cape.

The findings supported the notion that lifecycle cost analysis could positively demonstrate the green building business case for both developer and tenant, in terms of return and long-term financial benefit. The Clay Brick Association (www.claybrick.org.za) has already led the market in this type of research.

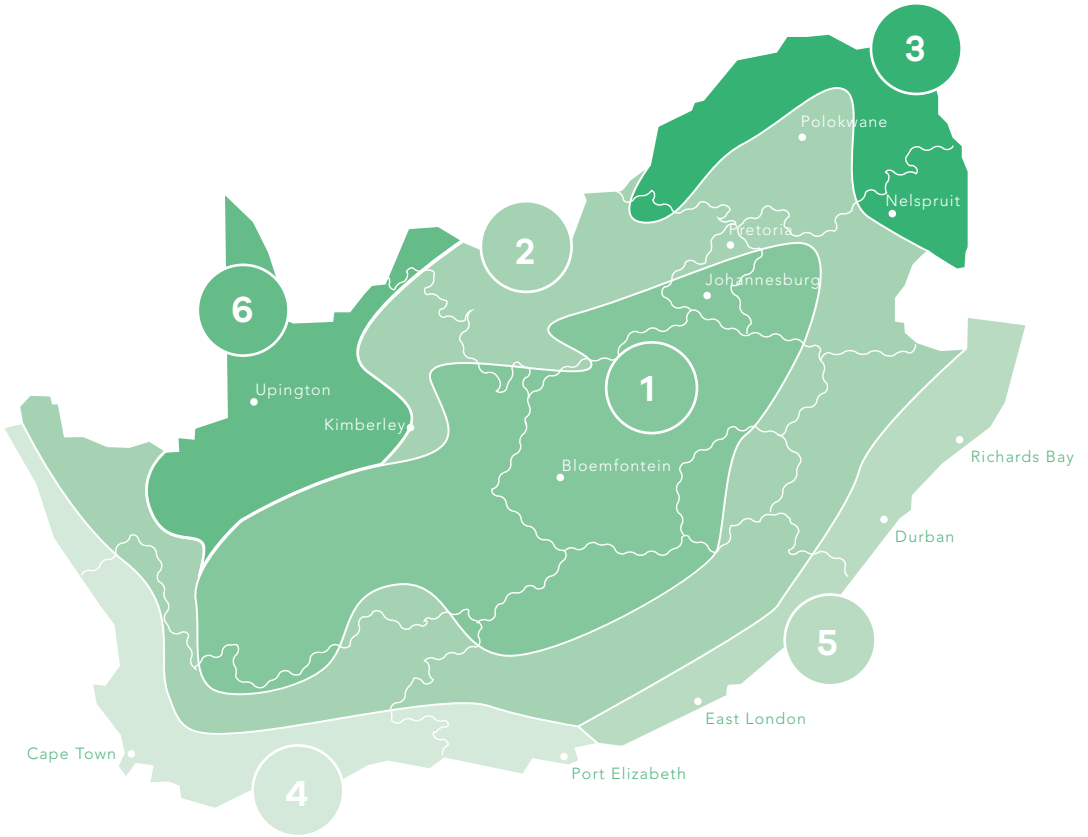
For more information, refer to the association's publication on lifecycle assessment

Appendix 1:

1. SANS 10400 consists of the following parts:

10400 Part	Title	Edition	Published
A	General Principles & 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
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	April 2011
N	Glazing	3.1	March 2012
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	April 2011
I	Fire Protection	3	March 2011
U	Refuse Disposal	3	March 2010
V	Space Heating	3	Jun 2010
W	Fire Installation	3	March 2011
X	Energy Usage	3	Aug 2011

Climatic Zone Map of South Africa (SABS, 2011)



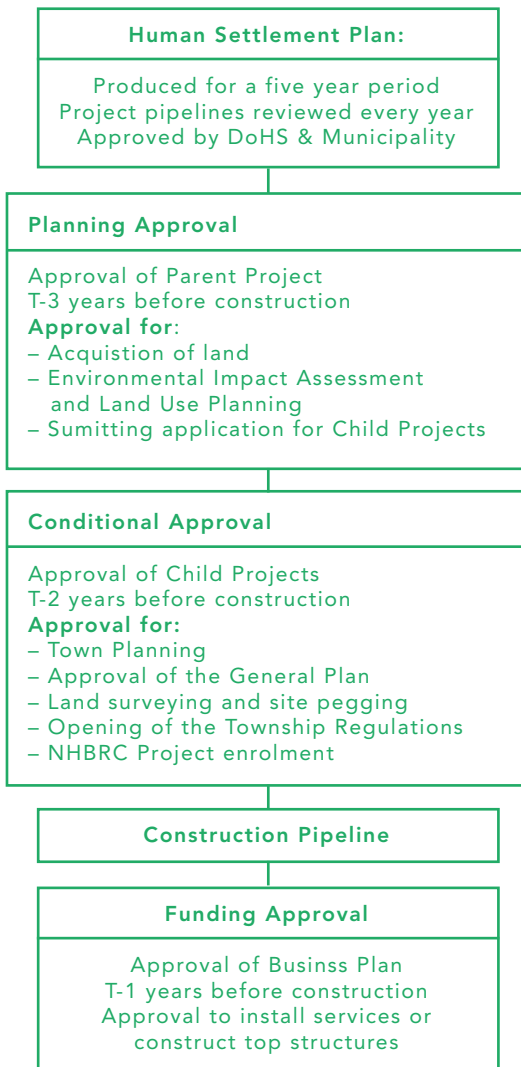
Climatic Region	Description	Major Centre
Region 1	Cold Interior	Johannesburg, Bloemfontein
Region 2	Temperate Interior	Pretoria, Polokwane
Region 3	Hot Interior	Makhado, Nelspruit
Region 4	Temperate Coastal	Cape Town, Port Elizabeth
Region 5	Suptropical Coastal	East London, Durban, Richards Bay
Region 6	Arid Interior	Upington, Kimberley

2. List of useful contacts of industry associations

Association Name	Contact Details
Association of Architectural Aluminium Manufacturers of South Africa	(011) 805 5002 www.aaamsa.co.za
Association of South African Quantity Surveyors	(011) 315 4140 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
Institutue for Landscape Architecture in South Africa	(011) 061 5000 www.ilasa.co.za
Institute for Timber Construction in South Africa	(021) 557 6851 www.ito-sa.org
Institute of Timber Frame Builders	(021) 845 4435 www.itfb.co.za
Clay Brick Association of South Africa	(011) 805 4206 www.claybrick.co.za
Kitchen Specialists Association	082 787 8806 www.ksa.co.za
Master Builders and Allied Trader's Association Western Cape	(021) 685 2626 www.mbawc.co.za
National Home Builders Registration Council	(021) 913 9210 www.nhbrc.org.za
SEIFSA – Steel and Engineering Industries Federation of South Africa	(011) 298 9400 www.seifsa.co.za
South African Institute for Building Design	(031) 202 4728 www.saibd.co.za
Cement and Concrete Institute	(011) 315 0300 www.cnci.org.za
South African Institute for Entrepreneurship	(021) 447 2023 www.entrepreneurship.co.za
South African Federation of Civil Engineering Contractors	(021) 976 8059 www.safcec.org.za
South African Institute for Interior Design Professionals	(011) 486 0450 www.iidprofessions.com
South African Light Steel Frame Building Association (SASFA)	(011) 726 6111 www.seifsa.co.za
South African Paint Manufacturing Association	(011) 455 2503 www.sapma.org.za
South African Wood & Laminate Flooring Association	(011) 455 2822 www.sawlfa.co.za
South African Wood Preservers Association	(011) 974 1061 www.sawpa.org.za
Thatchers Association of South Africa	083 283 8429 www.sa-thatchers.co.za

3. Overview of DoHS Social Housing timeline process

Below is an overview of these plans compiled over a five-year period to align with the Integrated Development Plans (IDP)



Source: WCP Department of Human Settlements

Appendix 4: Overview of social housing programmes

4.1 Individual housing subsidies

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

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

4.3 Integrated Residential Development Programme

The Integrated Residential Development Programme (IRDP) provides for the acquisition of land and servicing of stands for a variety of land uses including commercial, recreational, schools and clinics. It also provides for residential stands among 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

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 that 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.

4.6 Community Residential Units Programme

The CRU programme aims to facilitate the provision of secure, stable, rental tenure for low-income 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 that have received serviced sites under the pre-1994 state housing scheme. It provides for the completion of houses on the serviced sites.

Appendix 4: Overview of social housing programmes

5. Grading criteria for CIDB accreditation

For further information on CIDB process, visit: http://www.cidb.org.za/documents/kc/cidb_publications/brochures/brochure_contractor_registration_guidelines.pdf.

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, a contractor's CIDB grading designation is determined by the contractor's financial capability and its works capability.

Financial capability relates to the contractor's financial history, or turnover, including the value of its completed contracts and the amount of working capital – or available capital – it can source to sustain a contract.

Available capital is determined by the liquid cash resources available to the contractor, including bank balances, loans that may be leveraged and any financial backing.

A contractor's works capability is determined by the largest contract it has undertaken in its class of construction works, the number of professionals it employs and its fulfilment of relevant statutory requirements.

The contractor's grading designation will be used by national, provincial, municipal Government and state-owned enterprises to decide if the firm's tender will be considered for a particular construction works contract.

For example:

For further information on these policies, visit <http://www.westerncape.gov.za/general-publication/policies>

If the firm is registered as a 5CE, it will be considered for public sector civil engineering works contracts worth not more than 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 worth not more than R130 million.

Appendix 5:

5. Public sector procurement process

For further information, visit <http://www.westerncape.gov.za/tenders/process/info>.

For the purpose of tendering opportunities with the WCG, all suppliers are required to register with the Western Cape Supplier Database (WCSD) at no cost.

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 (B-BBEE),
Supply Chain Management,
Western Cape Provincial Treasure Instructions,
as well as the CIDB regulations (see link above).

7. References

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Green is Smart: Green Economy Strategic Framework 2013
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Talking Alternative Building Technologies. 2013
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5. <http://www.buildingregulations.co.za/download-regulations/>
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8. <http://www.westerncape.gov.za/tenders/opportunities/westerncape>
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10. <http://www.ci-net.co.za/>
11. <http://www.engineeringnews.co.za/topic/idt>