



Western Cape  
Government

Human Settlements

BETTER TOGETHER.

# AFRICAN UNION FOR HOUSING FINANCE 30<sup>TH</sup> ANNIVERSARY CONFERENCE

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Western Cape  
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# AUHF Conference 2014

## Housing Demand: The Current Situation



- The **Western Cape Province** has a housing **backlog** that is estimated at **500 000**
- **Nationally** the backlog stands at over **2 300 000**



# AUHF Conference 2014

## Government Interventions



- Government has initiated and implemented a variety of housing solutions such as PHP, Social Housing, Community Residential Units (CRU), Integrated Residential Development Project (IRDP) and Upgrading of Informal Settlements (UISP) among others



# Alternative Building Technologies (ABTs)

## *BACKGROUND: Delft Project*

- After a number of pilots, the Department of Human Settlements took a decision to use **Alternative Building Technology (ABT)** for the Delft project as a first for South Africa at such a scale.
- Delft is part of the National Government's priority project known as the N2 Gateway Project.
- The N2 Gateway Project is a development of housing units along the N2 in areas such as Boystown, Langa and Gugulethu.



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# Alternative Building Technologies (ABTs)

## *Background continues: Delft Project*

- In 2012 a tender went out for the construction of 2 100 housing units using **Alternative Building Technology (ABT)** in Delft, Cape Town.
- The ABT houses would be broken down into 1207 for Precinct 3 and 890 housing units for Precinct 5.
- Upon completion, the project would consist of single and double storey units.
- Construction of the ABT units is a part of the Western Cape Government's strategy of maximising the use of resources



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# Alternative Building Technologies (ABTs)

## Single and Double Storey ABT Units At Delft 3&5



- The project consists of 200 single and 1 900 double storey units.



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## ABT's: The Construction Process

### The Delft Project:



- Alternative Building Technologies (ABTs) are as efficient as traditional methods but have more benefits;
- Units are assembled in 40% less time compared to a brick and mortar house;
- A handful of people can assemble the interlocking panels in a short time;
- One panel slots into the next by means of a male-female connection detail;
- All joints are screw fixed to secure the panels.



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# ABT's: The Construction Process

## The Delft Project:



- Interlocking panels allow for ease of construction
- Panels are thermally efficient meaning they are warm in winter and cool in summer
- Panels are solid, robust and strong, and can be transported flat-packed over long distances



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## The Delft Project: The Construction Process *Under construction*



### *Complete unit*



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## ABT's: The Construction Process

*Before*



*After*



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## ABT's: The Construction Process

*The Delft Project:*



- Aluminium or steel windows and door frames are pre-fitted



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# ABT's: The Construction Process

## The Delft Project:



- Architect's model of the complete unit using Alternative Building Technology
- The unit can be completed in half the time compared to a brick-and-mortar one



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## How Did We Do This? (Delft Project)

### The Subsidy vs Actual Cost

- The revised subsidy amount is R110 000, but no specific allowance for ABT.
- ABT is more expensive than the quantum allowance:
  - ❖ 2014 Subsidy per unit = R 102, 953-55
  - ❖ ABT cost per unit in = R 112, 310-88
- ABT premium paid: R 9,357.33
- The Department took the decision to test ABT in the Delft project because:
  - ABT has been discussed for years without significant implementation effort; and to
  - Encourage Interested Suppliers of similar technologies to target products for this market
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## How did the Community Welcome ABT in Delft?

### Community's Response:

- ❖ **Early Stage of the project:**
  - did not like the new technology, which
  - resulted in various large and violent demonstrations.
  
- ❖ **Completion and Handing-Over stage:**
  - demonstrations ceased; and
  - acceptance from beneficiaries of the product.
  
- ❖ **Survey completed on first:**
  - did not indicate either acute happiness or unhappiness,
  - but rather acceptance of the product.

## Challenges Faced in Delft

- ❖ **Single supplier of ABT technology**
  
- ❖ **Liquidation of DURA Holdings**
  
- ❖ **NUMSA strikes**
  
- ❖ **Quality of the technology**
  
- ❖ **Teething problems: Contractor assembly**

# ABT's: The Legacy Project in Blue Downs

## Background



- Partnership between WCDHS, CoCT and NHBC:
  - WCDHS – Land
  - NHBC – Project Manager
  - CoCT – Planning Approvals and Service Connections
- 8 units of 45sqm each



# ABT's: The Legacy Project in Blue Downs

## The Construction Process



- Combination of light weight steel construction
- Cladded with waterproof boarding before plastering
- Steel frame building with Structural Insulated Panels
- Thin mortar with special concrete blocks



# ABT's: The Legacy Project in Blue Downs (ABTs)

## Experiences

- **Costing:**
  - Higher than the subsidy allowance: Cost per unit within the Gap market.
- **What was the Community's response to the project?**
  - Prefers conventional construction.
- **Challenges:**
  - Community Buy-In: Selling ABT & semi-detached to the community.

## Major Advantage of ABT

**Irrespective of the spike in outside temperatures either upwards or downwards, the temperature inside the units remains relatively temperate. Thus less energy would be required to heat up or cool down the units, resulting in lower annual energy bills for beneficiaries.**

## Protecting the Environment

### *Protecting The Environment : Solar Water Heaters*

- In order to safeguard the environment, the Department took a decision to support the use of solar geysers on its projects.
- The solar water geysers are funded by private organisations that are in partnership with the Department of Human Settlements.
- Solar water heaters promote energy efficiency through reducing cooling and heating costs.

## Protecting the Environment

### *Environment First*



- The Department supports the use of Solar Heaters to save the environment.
- In projects such as Joe Slovo, Steenvilla, Drommedaries and Bothasig, solar water heaters have been used.
- Currently the Department is only able to provide solar water heaters through partnership with other funders.

## Protecting the Environment

### *Environment First*



- In Witsand, on the West Coast of Cape Town the Department has supported the implementation of the Solar Water Geysers on stand alone units in the entire project.
- The whole project was built by women contractors



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## Protecting the Environment

### *Environment First*



- In our Social Housing Projects (like Steenvillas in Steenberg, Cape Town) we go out of our way to support environmentally-friendly solutions
- Solar Panels save households hundreds of Rands in electricity costs each month



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# Protecting the Environment

## Environment First – Bothasig Gardens

- The 120 Unit Bothasig Gardens Social Housing Project – “A Green Building”



- A green building is energy and resource efficient and environmentally responsible
- Clay brickwork in the Bothasig Gardens Project is very green.
- This brickwork is applied both on internal and external skins.
- Over the entire lifecycle of the external façade 90% of the external envelope will never need to be painted over, contributing to a greener environment due to less paint used and a much stable internal temperature ambience.



# Protecting the Environment

## Environment First – Bothasig Gardens

- The 120 Unit Bothasig Gardens Social Housing Project – “A Green Building”



- Bothasig Gardens also has, from left to right above, insulated roofs, solar water heaters, recycled rubberized playgrounds and an indigenous garden.



Thank you