HZZK

HABLA ZIG-ZAG KILNS

energy efficient technology

Clay Brick Association AGM
Presented by Peter Habla (Managing Director, HZZK)
South Africa – April 2016

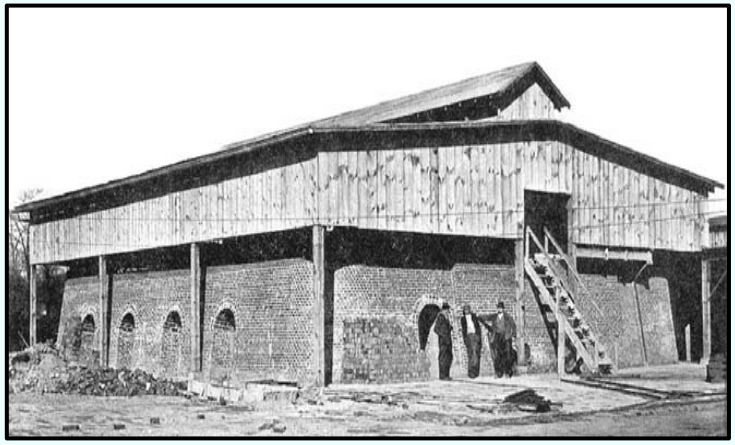
Presentation Overview

- Habla History
- Design Benefits
- Habla in South Africa
- Economic Benefits
- Environmental & Social Benefits
- Going Forward
- Summary

Habla History

The Habla Zig-Zag Kiln was first built 89 years ago

(Habla Kiln, England, 1929)



(Habla Kiln, Tennessee, USA 1936)

- Invented in 1927 by German Engineer, Alois Habla
- 150 Habla Zig-Zag Kilns were built in the UK, Europe, Scandinavia, USA and Australia (between 1927 & 1961)

Why did it cease production?

- Post 1961 (Australia) the skyrocketing cost of labour favoured the automated tunnel kiln in the developed world, smaller scale brick works were pushed out of the market
- South Africa is a unique blend of the developed world capacity and developing world constraints – ideal for the Habla Zig-Zag Kiln

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Design Benefits

“The Habla Kilns modular design, has a small footprint for its output”

- Small land footprint, 15m wide x 20m long or (300m^2)
- 25,000 to 30,000 solid brick units per day
- Option for operators to have numerous Habla kilns, based on market demand
- Varying Models available *(varying levels of automation)*
- HZZK models to suit individual client needs and budgets

Design Benefits

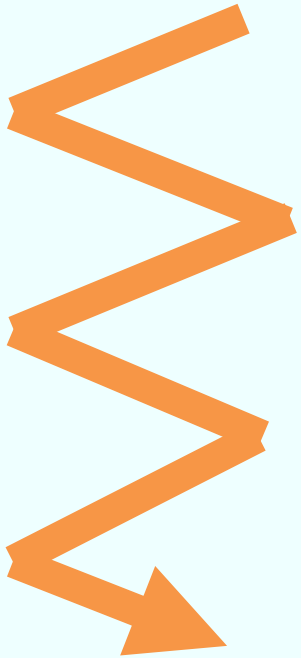
“The Habla Kiln has a drying system”

- Heat recovery system for drying of green bricks
- Complete utilisation of residual heat from fired product
- Drying dependent on the following;
    - Green brick preparation
    - Bricks structural integrity
    - Sensitivity of the clay
    - Water content
    - Ability of clay to be dried
    - Ability of clay to be fired
    - Ability of clay to cooled off (thermal shock sensitivity)

Design Benefits

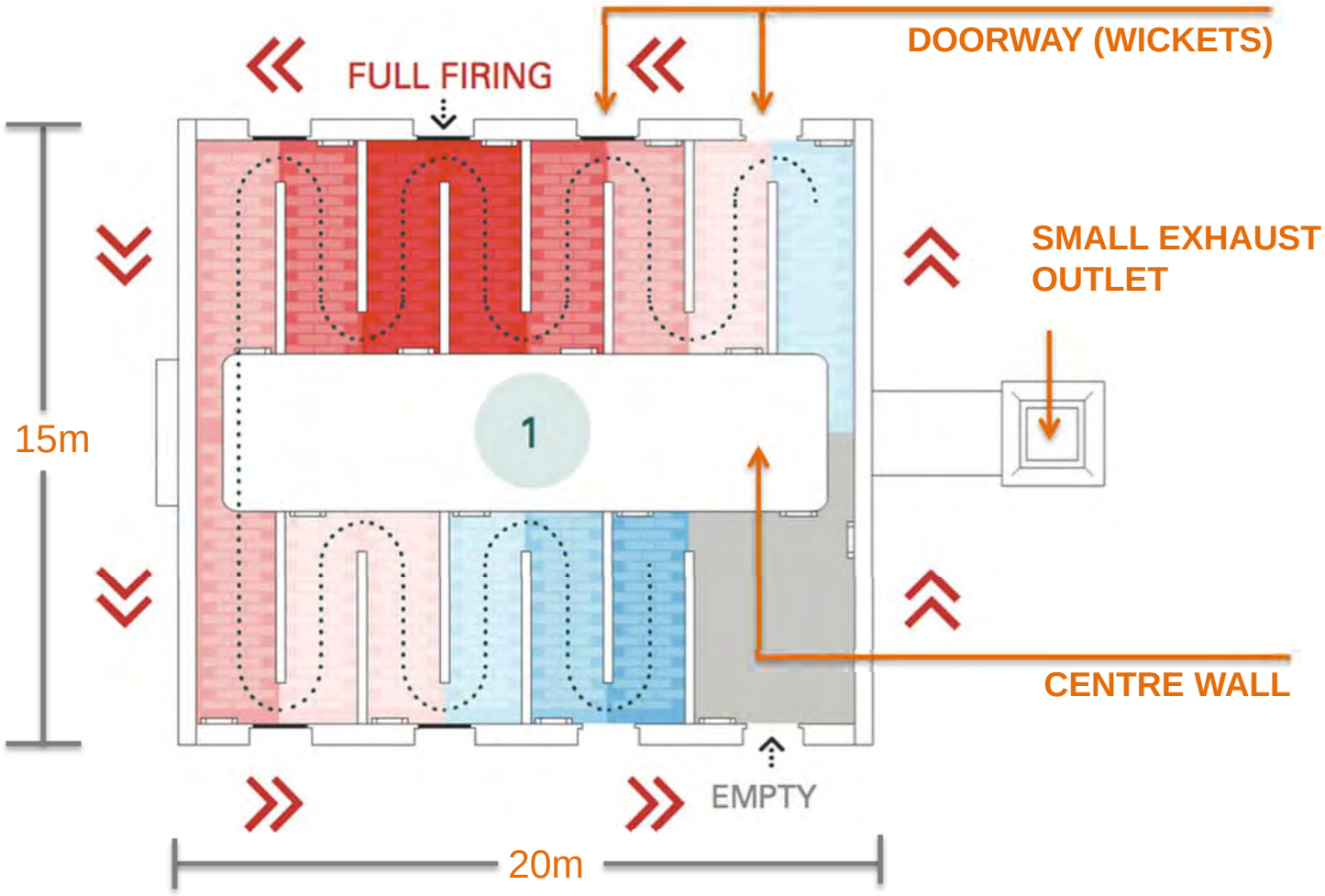
“The Habla Kiln has Long Zig-Zag moving fire zone”

- Fire is pulled through stationary bricks set in a zig-zag pattern
- Avoids “dead corners”
- Allows for optimal combustion and maximum energy (heat) extraction from fuel sources
- Enables wide variety of clays to be fired and/or fuels to be burnt



Kiln design benefits

“The Habla Kiln has Long Zig-Zag moving fire zone”



Design Benefits

“The Habla Kilns unique induced draught fan, enables accurate fire control”

- Consistent quality bricks
- Significantly less waste (< 5%)
- Even cure and brick shrinkage
- Fire control through use of HZZK internal kiln components
- Controlled atmosphere (formula)
- Kiln operator controls the fire

Design Benefits

“The Habla Kiln has an ergonomic, worker and operator friendly design”

- Comfortable, clean and safe working conditions
- Ground level work, decreasing risk of falls and related injuries

Roof

- Protects kiln workers from the elements
- Reduces down days
- All-weather operation

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Habla South Africa

"The South African Journey to date – 2015"

May 2015

Workshops Gauteng & Western Cape

2015

September 2015

HZZK-CDR-SA Project Signing at Worcester Bakstene

swisscontact

EECB
ENERGY EFFICIENT CLAY BRICK

WORCESTER BAKSTENE
FILLING THE GAP SINCE 1944
023 340 4570 ☎ 023 340 4007

Habla South Africa

"The South African Journey to date – 2015"

November 2015 → **2015** → **December 2015**

Construction commencement

Kiln Foundation Concrete Pour

Habla South Africa

“The South African Journey so far – 2016”

January 2016

2016

February 2016

2016

March 2016

Habla South Africa

“The South African Journey so far”

April 2016

Economic Benefits

“Adopting Habla technology has many $ economic benefits”

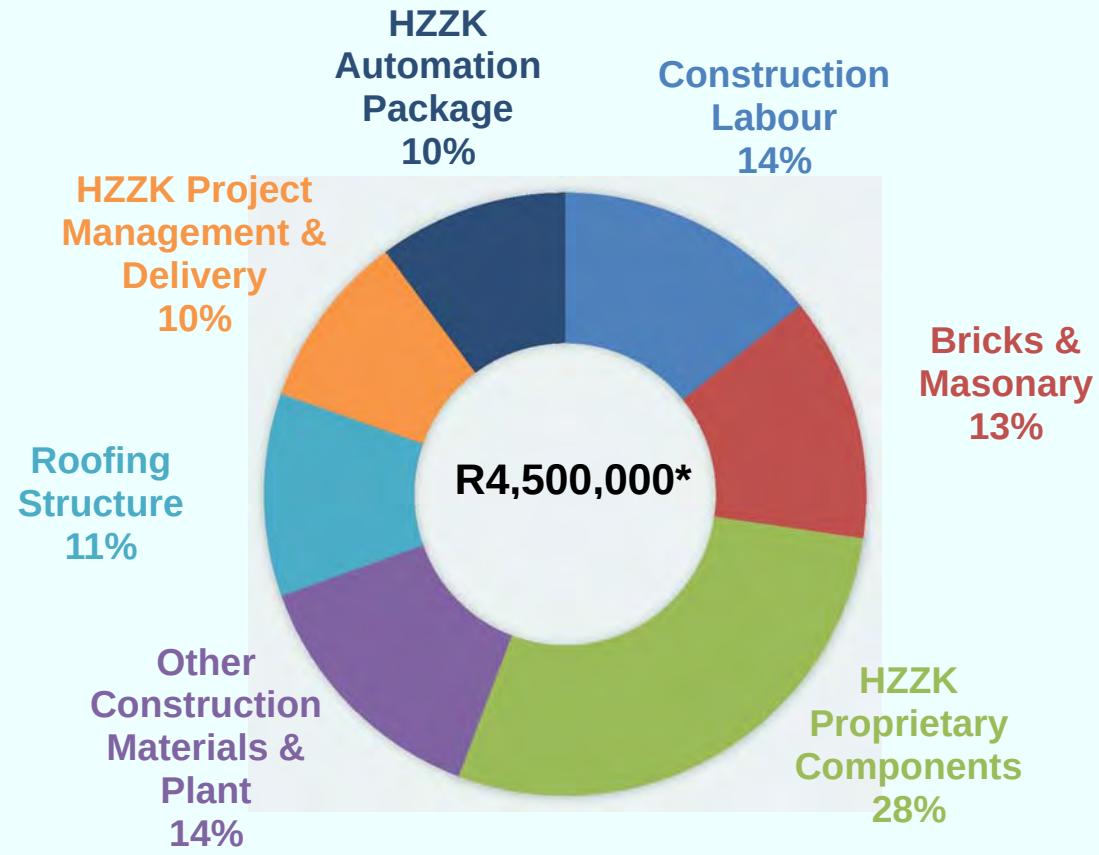
- Short implementation period*
- Low Capital Cost
- Short Payback Period
- Minimal maintenance costs
- Decrease fuel bill
- Decrease waste = higher commercial output
- Meet government regulation

**Subject to site specific review by HZZK*

Economic Benefits

Low Capital Cost **Approx. R4,500,000***

- ***Construction Costs***
- ***Automation***
- ***HZZK Proprietary Components***
- ***Consultancy Services***



**Subject to site specific review by HZZK*

Economic Benefits

“Payback period on Habla investment less than 2 years”

PBP< 2 years*

- ***Conservative Wastage Saving***
- ***Conservative Energy saving***

**Subject to site specific review by HZZK*

Economic Benefits

"Adoption of a Habla Kiln, creates an opportunity for Carbon Credit generation"

- Decrease coal use and subsequent decrease in CO_2 emissions, creates opportunity for Carbon Credits
- Opportunity for additional annual $ revenue stream

SOURCE: www.sustainableact.blogspot.com.au

Environmental & Social Benefits

“Habla Technology enables brick kiln Owners/Operators to meet environmental and social obligations and requirements”

- Reduces Greenhouse Gas emissions
- Upskilling of workforce
- Improves working conditions

Summary

“We can deliver Habla Technology in Southern Africa”

- Proven technology
- Long history of success
- Attractive economics
- Provide a turnkey solution
- Short construction timeframe *(12 weeks)*
- Meet Environmental, Social and Regulatory requirements
- Simple operation
- Simple cost effective solution

Going Forward

“We are currently refining our package”

- Refining kiln operation at Worcester Bakstene
- Monitoring and testing of the kiln
- Further Package development
- South African (local partnership/agent) development
- HZZK roll-out from July 2016

Thank you

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