



**SHELTER AFRIQUE**

Financing Affordable Housing for Africa

## **AFRICAN UNION OF HOUSING FINANCE CONFERENCE**

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# **THE POTENTIAL OF MODERN METHODS OF CONSTRUCTION AS LEVERS FOR ACHIEVING SCALE AND AFFORDABILITY**

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# Introduction

- Shelter Afrique – enabling new housing supply (and demand) in Sub Sahara Africa for 32 years;
- Over the next 5 years we will approve financing worth over US\$1.1bn for new affordable housing across the Continent;
- Strategic Commitment to leading innovation in the supply and financing of new housing in Africa



**During the course of this presentation.....**

**350** people would have migrated to one of the major cities in SSA in search of a new life.



**By the end of the month....**

**125.000** will be looking for housing they can **afford**.



For 95% of them or up to **123.750**, this need will be met in temporary and informal settlements on the edge of our urban centres!.



## Key Messages



A single minded **large scale housing supply** programme is required across the continent to meet need and reduce cost.

Traditional approaches whilst well intended are now insufficient. We must build at an unprecedented **scale**.

We believe that a decisive shift towards **modern methods of construction and processes** offer significant potential for achieving scale in housing supply.



**“..To deliver affordable housing on a large scale, there is a productivity imperative for the housing construction industry.....”**

McKINSEY GLOBAL INSTITUTE (2014)



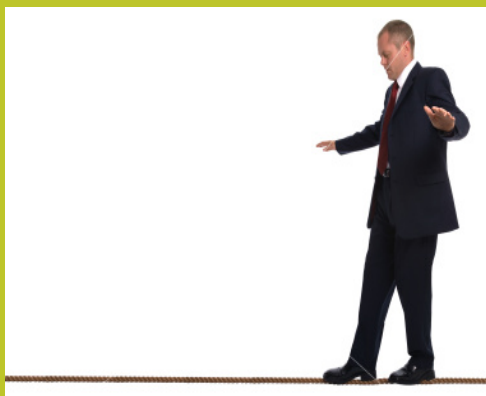
# In 2014...



**Housing Construction in Sub Sahara Africa is still largely HAND CRAFTED block by block and are un-affordable to large sections of the population**



## Challenges of Traditional Approaches



### **Poor Predictability of Out-Turn Cost**

- Less than 12% of traditional domestic construction are completed at entry cost\*

### **Poor Predictability of Delivery Timescale**

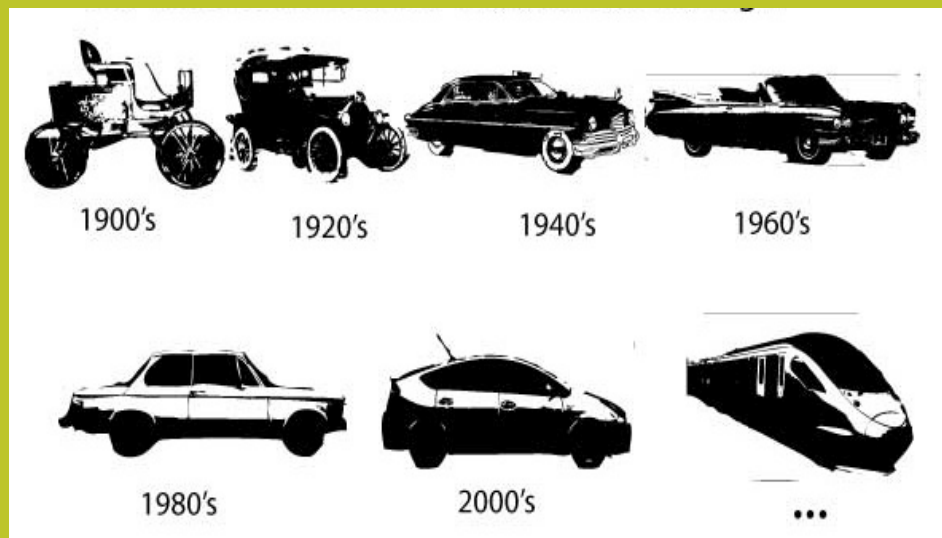
- Less than 18% of are completed to initial target time\*

### **Poor Predictability of Quality**

\* MENTOR GROUP STUDY FOR CONSTRUCTION BOARD OF KENYA (2011)



# Lessons from the Automobile Industry ?



## Transformation

“...At the beginning of the 20th century the automobile was a plaything for the rich. Most models were complicated machines that required a chauffeur conversant with its individual mechanical nuances to drive it. Henry Ford was determined to build a simple, reliable and affordable car; **a car the average American worker could afford**. Out of this determination came the Model T and the assembly line - two innovations that revolutionized American society and molded the world we live in today....” Henry Ford Changes the World, 1908

## Adapt.....existing technology

“.....Henry Ford did not invent the car; he produced an automobile that was within the economic reach of the average American. While other manufacturers were content to target a market of the well-to-do, Ford developed a design and a method of manufacture that steadily reduced the cost of the Model T.....”

Henry Ford Changes the World, 1908

## New Thinking.....

“....Central to Ford's ability to produce an affordable car was the development of the assembly line that increased the efficiency of manufacture and decreased its cost. Ford did not conceive the concept, he perfected it. Prior to the introduction of the assembly line, cars were individually crafted by teams of skilled workmen - a slow and expensive procedure...”

Henry Ford Changes the World, 1908

The assembly line reversed the process of automobile manufacture. Instead of workers going to the car, the car came to the worker who performed the same task of assembly over and over again. With the introduction and perfection of the process, Ford was able to reduce the assembly time of a Model T from twelve and a half hours to less than six hours.....”

Henry Ford Changes the World, 1908

## Affordability

“.....In the 1920s the motorcar came to represent the American dream. Cars fell in price dramatically, so that many Americans could afford them. They could be sold to a mass market because they could be made more cheaply, using assembly line methods. Henry Ford’s Assembly line brought the average price of a car down from \$850 in 1908 to \$250 in 1925. ...”

Henry Ford and Mass Production, 1998

## Jobs....added value

“.....The car industry led to the creation of many jobs in factories supplying parts. For every worker in a car factory, there were ten more making components. Ford’s ideas were soon adapted for use in other industries.....”

Henry Ford and Mass Production, 1998

**“....in many places, the productivity revolution of the past 3 decades has bypassed the construction industry..”**

McKINSEY GLOBAL INSTITUTE (2014)

## Concepts from the Automobile Industry



- Courage to challenge Status Quo
- The Car as a commodity...mass produced affordable to many;
- Standardisation of components and Platform Sharing;
- Industrial manufacturing production processes leading to certainty of cost, quality and time;
- Integrated Supply Chain;
- Continuous Improvement to drive down cost and increase quality;

## Lessons for the Housing Construction Industry

- Housing Construction can learn from developments in the Car Industry;
- **Deconstruct the House** - Housing as a commodity not a privilege for the few;
- **Adapt existing Technology** – Henry Ford did not invent new technology he adapted;
- **Mass Production** – Does not necessarily mean poor quality;
- **Continuous Improvement** – Improving quality at lower cost



## Value Engineering the Processes



**“..Industrial Style Construction Methods and Value Engineering can cut costs by 30% and construction time by 40-50%....”**

MCKINSEY GLOBAL INSTITUTE ANALYSIS (2014)



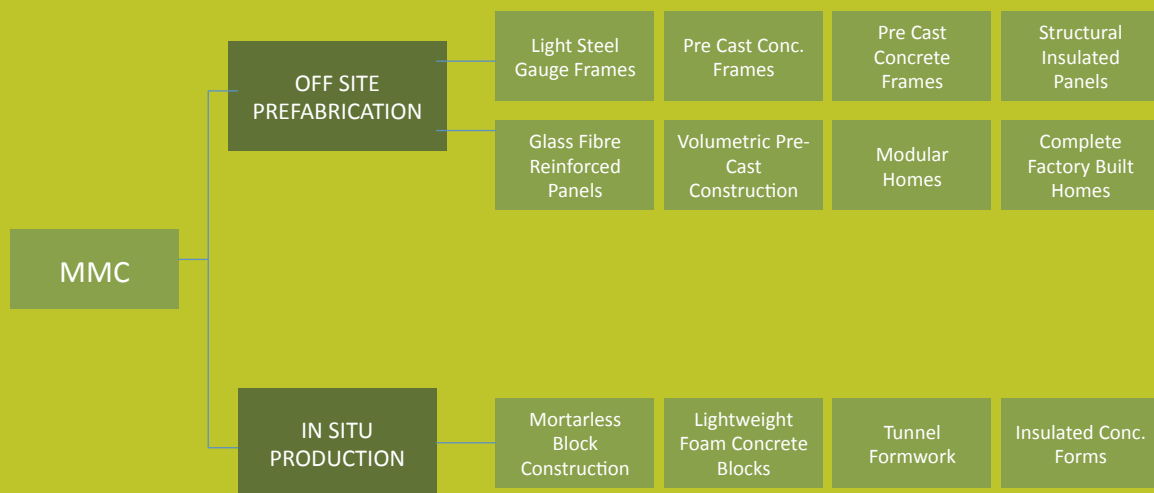
## Integrating manufacturing and house building...



## Implementing Industrialised Housing

- We already have a wide range of technology and methods on the market (next slide)
- The next step is to perfect/adapt these methods to deliver mass production of housing in Sub Sahara Africa;
- No single method fits all. Most of the existing methods can be adapted and improved;
- Critical Challenges include information, market acceptability, infrastructure and availability of Capital;

## Range of Modern Methods of Construction



## Value & Budget Housing Corporation, Mumbai, India

Affordable Housing Developer . Up to 18000/annum

“..VBHC has been able to transform real estate development into a lean industrial process amenable to mass production with the use of the ‘form’ technology for construction. VBHC plans to replicate the success of project Vaibhava in Bangalore and aims to develop a strong nationwide footprint...”

P.S. Jayakumar, Managing Director

“..VBHC has set up an expansive network of integrated housing projects nationwide that will apply the latest industrial engineering and construction technology to improve the construction process and build scale through standardization...”

The Carlyle Group 2011.

# Benefits

McKinsey 2014 Report “Bridging the Affordable Housing Gap” :

- **Improved productivity through Industrialising construction processes and value engineering can reduce costs by 20 – 30%;**
- **Standardising design and similar design to value measures by about 15% or more;**
- **Industrialised processes can reduce Procurement Costs by 25-30% across all categories of materials and systems;**

**An industrial approach can convert housing **construction** into housing **production** saving both cost, time and enabling scale.**

## Adopting Modern Methods of Construction

### The Role Of Government

- Create enabling environment, offer scale opportunities, shaping consumer acceptance, standardising building codes etc

### The Role of the Private Sector

- Embrace change and a new mindset, investment, developing partnerships and collaboration with manufacturing sector.



# Thank you

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