

Integrated Mass Housing



Strawtec Building Solutions

ABT for Mass Housing Solutions



Row housing, Rwanda

Strawtec is a greentech company that owns the technology and operational expertise to establish manufacturing facilities offering a diverse range of modular building solutions and high performance wall systems.

www.strawtec.com



Eckardt Dauck
Chairman

Affordable - Fast - Sustainable

Mace Group

Programme management expertise



Mace is an international consultancy and construction company, offering highly integrated services across the full property and infrastructure lifecycle from fund monitoring, cost consultancy, design management, through pre-construction, construction, fit out, and facilities management.

www.macegroup.com



Nick Demain
Director – sub-Saharan Africa



Andrew Gill
Operations Director

Fischer Architects

International Architects and Engineers



Clarenbach Gardens
Cologne

Fischer Architects International is a consultancy and engineering practice, offering highly integrated design and engineering services with high commitment to economical and sustainable building solutions in close cooperation with universities and research Institutes.

www.werkstadt.com



Claus Fischer
Managing Director

Synergy

Economic Impact

Programme
Management

Local Manufacturing



Pre-fabrication and
Construction

Sustainable Material

Innovative Adaptable
Design

Local Manufacturing



Strawtec Manufacturing Video

Sustainable Material

Durability

International Standards

Green



Convention Centre Essen, Germany (1965)



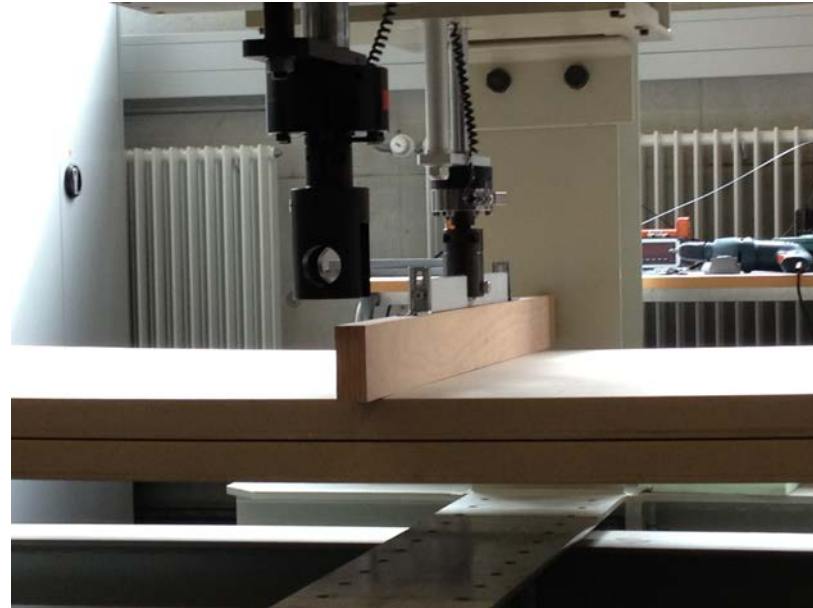
Apartment block, France (1958)



Strawtec Panels

Innovative Structural Design

- Design objectives
- Partners in R&D
- Testing
- Solution



Horizontal Load Test 2013



EiABC

Ethiopian Institute of Architecture,
Building Construction and City Development
Addis Ababa University
Addis Ababa

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

IAB

Institut für Angewandte
Bauforschung Weimar

**Bauhaus-Universität
Weimar**

Imagine
structure

mace

STRAWTEC
BUILDING SOLUTIONS

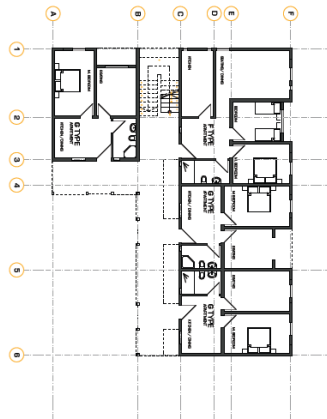
FISCHER
ARCHITEKTEN

Adaptable Architectural Design

- High density typologies
- Incremental construction



Apartment buildings, Rwanda



Row housing, Rwanda



Construction

- Pre-fabrication system
- Trained workforce
- Construction management expertise
- Speed of construction
- Guaranteed quality

Programme Management

- Project management
- Cost control
- Contract management
- Design of infrastructure
- Design and build

Economic Impact

- Supplementary income for farmers
- Skills development
- Job creation
- Positive impact on balance of trade
- Reduction in affordable housing shortage



Strawtec Made in Rwanda

Case Study and Lessons Learnt



Rwanda

- High demand for affordable housing
- Traditional construction material
- Government approach to ABT's
- Investment environment

Manufacturing in Kigali

- Investment facilitated through RDB
- Kigali Special Economic Zone plot acquired
- Manufacturing equipment shipped
- Raw materials supply chain established
- Local administration



Manufacturing equipment packed for shipment 2013



Meeting with Rwandan wheat farmers



Market Acceptance

- Development of housing typologies
- Strawtec Green Construction Forum
- Initial projects secured



North Facade Office Building
Kigali

Gisozi Development
Kigali



TVET School
Nyanza, Rwanda

Skills Development

- Training farmers
- Upskilling of construction workers
- TVET vocational training



Construction student



Training of farmers
Muzanse District, Rwanda

Challenges

- Local financing
- Investor incentives/support
- Legal framework

Lessons Learnt

- Establish local presence
- Additional time for project implementation
- Rapid progression = constant change
- Government support for ABT's
- Financial institutions resistance to ABT's for mass housing

Mace Group Angola

Case Study and Lessons Learnt



Nova Vida Phase II

- Affordable housing, Angola
- Client National Housing Institute/Imogestin
- Project value US \$550m
- 3,200 affordable dwelling units
- 32-month programme
- Infrastructure



Nova Vida Development, Angola

Services Provided

- Project Director
- Consultancy and technical support
- Business model, risks and costs

Challenges

- Performance of Chinese contractors
- Funding issues
- Delays in design and approvals
- Site management / supervision

Lessons Learnt

- Clear targets for quality, cost and time
- Clear funding mechanisms
- Clear programme goals
- Good site management
- Make sure management resource is sufficient to achieve the project outcomes

Affordable Housing Project Rwanda



Affordable Housing Project Rwanda

- Sustainable integrated community development
- 2,700 dwelling units
- Mixed typologies
- Retail, commercial space and community buildings
- First presentation Spring 2013
- Short-listed May 2014





Partners in Africa