

At the Service of Design, Living Comfort and Nature

CITRA is a Cape Town-based construction company that has developed a high-performance sustainable construction system. Certified by Agrément South Africa and approved by the NHBRC, the CITRA system allows for almost unlimited design possibilities, a human-centred and organic approach.

Dealing with the challenges of climate change, we are at the beginning of a new age, with the opportunities of the fourth industrial revolution and green energy. And at the heart of CITRA, there's a strong belief that technology is the key to the social and environmental issues related to housing. It's focused on lowering the cost of construction, achieving energy efficiency, reducing the environmental footprint and meeting the highest standards of aesthetics, health and wellbeing. This is what CITRA calls 'Live Different'.

House Mahika

The client has a great interest in the relationship with the natural environment. Due to this, CITRA designed the house on the Whale Coast of South Africa slightly set back from the street and elevated above the road level. The shape blends into the landscape of the mountains and the natural fynbos vegetation.

With the CITRA system, each component is integrated into each other, mixing interiors and exteriors and unifying the human habitat with nature. Through the unlimited design possibilities of the CITRA system, this design was possible without increasing the cost of construction.

The CITRA system's thermal insulation properties are outstanding. Without joints or overlaps, the seamless structure eliminates thermal bridges. It has an R-value of $2.2\text{m}^2\text{K/W}$, over three times more efficient than a standard cavity wall ($0.63\text{m}^2\text{K/W}$). This accomplishes ideal interior temperatures, minimises energy consumption, reducing carbon emissions and running costs. House Mahika is a demonstration of the synergy that CITRA archives between design and ecology: a harmonic, cost-effective and exceptional design.

eHomes

CITRA specially designed the eHomes for CentralBlue, a R2-3 billion development with social, economic, and environmental sustainability as the central ethos. The crafted design takes into consideration the growth of a family and has made space for easy expansion.

The eHomes have fresh and minimalist elements with a great character, harmoniously integrating functional elements such as stairs and natural light, giving the home an imposing and original beauty. The developer was particularly surprised to see that the eHomes are selling about 20% better

than comparable conventional houses in the same development.

To create these buildings, CITRA makes use of Parametric Design and Finite Element Modelling, which allows for very precise and highly optimised results in the structure, thermal performance, natural light, and cost optimisation. With unlimited and dynamic geometric volumes, the designs have no limits in the production of large scale developments like CentralBlue.

Thermal insulation is a key element in the environmental impact assessment of any house. The eHomes reduce the energy costs in a home by up to 30%, and all waste material of the CITRA core system is recycled or upcycled.

CITRA's goal is to achieve reduced energy expenditure and emissions throughout the lifecycle of a building and to build houses with a net positive environmental impact.

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House Mahika



HOUSE MAHIKA

Year: 2018

Budget: R2m

Size: 240m²

Scope: Design and Construction

eHOMES

Year: 2020 / 2021

Budget: R20m

Size: ±3,000m² in 49 units

Scope: Design and Construction

House Mahika



Designed by Swiss Architect, Beat Pfenniger