



The Benefits of Concrete Masonry Units:

Concrete block modular masonry is a long-standing internationally proven system which can do much to alleviate South Africa's housing shortage. It was first specified by the local authorities in the late seventies and early eighties in the Western Cape, where it is still being used with great success to this day.

Successful Project deliverance is a concern which will always be on the mind of Architect, Engineer, Specifier and Contractor alike. Precast Concrete as preferred building material and as such, Concrete Masonry Units (CMU), has stood its reputation proud for many years. The International Building Industry shows remarkable preference toward this method of concrete unit delivery to site for various reason, but consistency in quality can be single out as a primary reason.

Limit your concerns and liability by keeping the following in mind when deciding on structural design. Concrete Masonry Units features the following advantages:

Versatility

- CMUs are available in various sizes and designs
- Allows architects/designers and owners a variety of design options.
- CMUs can be plastered or not. This provides versatility in terms of texture, finish and design.

Energy Efficiency

- The energy efficiency of CMUs can largely be attributed unit mass and thermal mass.
 - *"Thermal Mass: Thermal mass is the ability of a material to absorb and store heat energy. A lot of heat energy is required to change the temperature of high-density materials like concrete bricks and tiles. They are therefore said to have high thermal mass."*
- CMUs provide thermal mass that maintains uniform temperatures.
- Thermal dissipation is thus favourable.
- This in turn lowers the need for artificial climate control.
- CMUs deliver acceptable "R-Values" in terms of energy efficient structural design.

Environmentally Friendly

- CMUs are fully recyclable.
- Long-term: The deconstruction of concrete structures provides Recycled Crushed Aggregate to produce CMUs.
- CMUs manufactured from recycled or repurposed aggregates can classify as an Alternative Building Technology (ABT)
- Low carbon emission footprint during the manufacture stages of CMUs.

Cost Effective:

- The clay brick to CMU price deficit: CMUs can be priced 10 - 15% more competitively compared to clay bricks per 1000.
- Using a larger CMU for construction will save mortar, bricks and construction time.

Acoustic insulation:

- CMUs are a highly suitable material for attenuating noise due to the density of the unit and units combined.
- Sound proofing qualities can be improved by building thicker walls and adding mass.
- Propagation of sound through various mediums contributes to acoustic insulation – consider hollow masonry units – solid web, hollow space, followed by solid web.

Fire resistance and durability:

- Concrete masonry is fire resistant and often used as firewalls.
- Concrete is one of the strongest materials available and is proven to withstand and surpass the intended lifecycle of a structure.
- Concrete masonry units meet all the building regulations of South Africa.

Modular design capability:

- CMUs can be applied in a modular design format.
- The units can be manufactured to cater for corners, window- and door openings, fill blocks in gables etc.
- Modular design by Architects feature the following advantages:
 - Ease of construction.
 - Eliminate the need for cutting of bricks and blocks.
 - Assists in structural erection time.
 - Limit onsite wastage and benefit site management.
 - Overall effectiveness contributes to reduced project time frame
 - Benefits general project cost.

Quality control:

- CMUs is a precast concrete unit.
- Quality standards applicable to precast concrete applies to the manufacture of CMUs. Consult the CMA brochure “Advantages of Precast Concrete”.

Your contact, consultation and resource porthole:

The Concrete Manufacturers Association (CMA) is your resource to:

- Suppliers, supplying precast concrete units consistent in high standards and quality.
 - Advice on design aspects and parameters.

- Advice on installation methodology.
- Access to various brochures and books applicable to the subject matter.



Figure 1 - Example of Modular Construction

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