

Build your house with

Litecrete lightweight precast concrete

At last there is a unique residential building system which has been designed to offer a durable alternative to traditional construction methods . . . Litecrete lightweight precast concrete.

Litecrete precast concrete walls are solid, 220 mm thick panels, made up to 7-8 metres high. They can be used as load-bearing external and internal walls for single-storey or 2-storey dwellings.

Litecrete is manufactured using pumice aggregate, which provides an in-built insulation value, so that the panels comply with the Building Code insulation requirements. Once installed, they are virtually complete and only require decorating inside and out. No need for timber frames or supplementary insulation . . . and no rot.

Litecrete is manufactured under strict quality-controlled factory conditions, delivered to site and rapidly installed. Panels for a typical 2-storey house can be installed in a day or so . . . see the video on our website . . .



Timeless designs

The Litecrete system has evolved to the point where you can design a home which will require a minimum of maintenance yet provide maximum protection . . . and it will still look new for years after.



Whether you want a colonial mansion with deep window reveals, or a sleek contemporary townhouse, Litecrete can be manufactured in panel sizes to suit. You can achieve large open spaces, offering total flexibility when designing your home's floor plan.

Solid Construction

Litecrete panels form one integral, fully-insulated wall; solid, continuous and water-tight. This prohibits leaks, drafts and cold spots, resulting in a more comfortable living environment. No other components . . . no grief.

By comparison, a timber-framed wall is a collection of components – cladding, studs, building paper, insulation and plasterboard - installed by a range of tradesmen, with a propensity at each connection for air or water leaks. This can result in a loss of heating or cooling energy or lead to a build-up of toxic mould which is the basis of "leaky home syndrome".



Quiet and comfortable

Besides being stronger and more durable, the mass of the concrete walls provides an added benefit – a reduction in noise entering the home. The concrete mass can reduce sound penetration by 80 percent when compared to timber-framed construction. Although some sound will penetrate through the windows, a Litecrete home is often two-thirds quieter than a timber-framed house. So be sure to specify Litecrete if you're looking for a little peace and quiet.

Built-in insulation

Litecrete homes benefit greatly from the pumice aggregate incorporated into the mix which provides an in-built insulation value. Smart home-owners and builders are able to realise considerable savings by using Litecrete's energy efficiency to justify smaller heating and air-conditioning systems.

Thermal Mass Explained

By taking advantage of concrete's thermal mass, in combination with an appropriate level of roof insulation and glazing, the Litecrete walls regulate internal temperatures to provide a healthy and energy efficient living environment throughout the year.

These benefits are achieved during winter as, when the sun is at its lowest angle, the Litecrete walls directly absorb the sun's energy. As the sun goes down towards evening, the accumulated heat is gradually released back into the house to maintain a constant temperature.

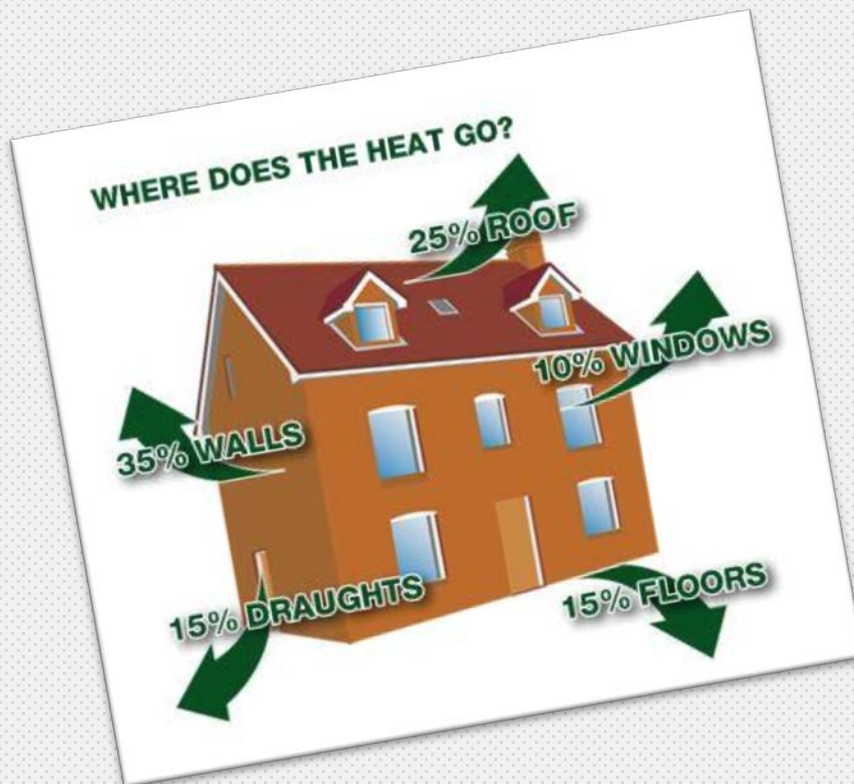
During summer the reverse takes place. In combination with shading to prevent the high-angled sun from directly entering the house, the Litecrete walls absorb excess heat to

balance the internal temperature. At night, opened windows purge the Litecrete walls of heat build-up, enabling them to cool and become ready to again absorb excess heat the following day.



Lower energy bills

The same qualities that bring you the quiet and comfort of a Litecrete home also brings the peace of mind of saving money. Litecrete homes can often reduce energy bills by up to 40% compared to timber framed homes. Make an investment in lifestyle with a home built in Litecrete and save money on energy bills at the same time.



The thermal mass of Litecrete will:

- optimise benefits of solar gain; reduce energy use by up to 40%
- smooth out fluctuations in internal temperatures
- with night time ventilation eliminate the need for day time cooling
- when combined with air-conditioning, reduce the energy used for cooling by up to 50%
- make use of low-temperature heat sources such as heat pumps
- help to reduce emissions of CO², the main greenhouse gas

Year on year savings

All of this translates into a concrete home costing less to own than a timber-framed or monolithic clad home. The beauty of a Litecrete home is that it requires far less work to keep it looking like new. Buying a home is probably the biggest single investment you'll ever make. Invest wisely. A Litecrete home will pay you back in terms of operating cost, resale value and quality of living. Over the long term, benefits like energy efficiency, fire and rot resistance and low maintenance reduce the cost of owning a home.



Supply of Litecrete panels

Litecrete precast panels are manufactured by Wilco Precast Ltd. Wilco have been making precast panels for over 50 years. We don't build houses; we only make panels and deliver to site . . . and we're very good at it. Therefore we don't compromise the relationships between the home owner, designer and builder. If you decide to use Litecrete, your designer will send us his concept drawings so that we can give you an early estimate to see if it fits within your budget. The designer will then proceed to complete the design and arrange for a structural engineer's input prior to applying for a building consent. Before or after the building consent has been uplifted we supply a formal quotation. Upon receiving the order acceptance we begin shop drawings for the panels, prior to manufacture, with delivery set at an agreed date. The builder arranges for craneage and installation.

External finishing

The panels are cast on steel casting beds and the face off the steel surface, usually the external



face, is as smooth as. This means that once installed the panels are ready for painting or plastering. We can also install bandsawn timber planks into the mould to replicate a woodgrain surface texture. Simple rebates, such as vertical or horizontal lines, can easily be incorporated. Sophisticated designs can also be produced, however for one-off applications the cost may deter most people. Vertical panel V joints are often left "expressed" – still visible after painting or plastering. They can be also be disguised with a flexible "control joint" to cope with seismic movement. This means that the joints virtually disappear, apart from a 3mm line down the panel. Paint or plaster systems should be vapour permeable.

Some designers specify Litecrete with a natural "clear" concrete finish for the exterior. However, the following should be considered:

- We recommend that a matt finish sealer is applied to prevent a buildup of grime on the surface and enable the panels to be hosed down easily.
- The pumice aggregate contains minerals which can sometimes result in more surface figuring than normal precast. Each batch of concrete can vary and there are colour variations from panel to panel.
- If a consistent, blemish-free surface is required, then a masonry paint or mineral-based stain should be considered.
- We also recommend that designers and their clients visit the Wilco factory and view typical Litecrete panel surface finishes prior to the start of panel manufacture.

Internal finishing

The interior face of the panel has been trowelled so that the surface is not as smooth as the exterior. Some are happy with this natural "honest" look. However, we recommend that a 1 mm cementitious skim coat is applied prior to painting or plastering this face. Control joints should also be considered for the plastered vertical internal panel joints to prevent fracturing during seismic movement.

Plasterboard can be glued direct to the surface or timber battens can be installed to hide any electrical or plumbing services before applying the plasterboard. Ceramic tiles can also be glued direct to the Litecrete wall.



Trenches can be cut into the panel to hide pipes, etc and are plastered over before painting.

We can also cast-in PVC conduits for the installation of electrical services. These run the full height of the panel and are accessed by the electrician drilling into the panel at any height with a hole saw, squaring out the opening with a small grinder, gluing in the box and dropping the lines down from the top.

Sustainable housing and the environment

Sustainable building means sustainable living. It is not just about energy-saving building products, or environmentally-pleasing subdivisions. It is about using less and having more.

Climate change through global warming, increasing fuel prices and threats to our natural resources are fuelling the drive towards sustainable living. Litecrete's features and benefits support New Zealand's sustainable housing initiatives.



Durability: Litecrete builds durable, long-lasting structures that will not rot, rust or burn. Life spans for concrete buildings products can be double or even triple those of traditional building materials.

Thermal mass: Homes built with concrete walls and floors are highly energy efficient because they take advantage of concrete's ability to absorb and retain heat. This means homeowners can cut their heating and cooling bills.

Minimal Waste: Litecrete can be produced in the quantities required for each project, reducing waste. After a concrete structure has served its original purpose the concrete can be crushed and recycled.

Rot-proof: Litecrete is rot-proof. You will never, ever have to experience the trauma associated with "leaky home syndrome" if you build a home with Litecrete.

Toxic mould: Exposure to toxic mould in homes and buildings has been blamed for ailments ranging from headaches to severe respiratory infections and immune system disorders. In addition to carpeting, mould can feed on plasterboard, timber joists and framing and other wood-based linings. Litecrete won't support the growth of toxic mould as there is no organic material in the Litecrete mix for it to feed on.

Durability

When used and installed in accordance with the limitations and instructions of the manufacturer, the Litecrete precast wall panel system can be expected to meet the New Zealand Building Code (NZBC) durability requirements B2.3.1(a) of 50 years, provided the Litecrete panels are installed and finished as recommended and all coating systems and seals where specified are correctly maintained. Litecrete will not rot, harbour mould or mildew.

Pumice concrete is not a new phenomenon. Since the early days of the Roman Empire lightweight concrete-type construction methods were employed. The beautiful coffered dome in the Pantheon was constructed using a pumice concrete mix and is still standing after more than 2000 years.



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