

GRANITE PRODUCTS LOW CARBON CONCRETE

and other sustainable
approaches



Granite Products has been operating a granite quarry since 1946. We've had a strong presence on the island for over 70 years and employ over 50 people directly or indirectly. We supply the local construction market with ready mixed concrete, aggregate and blocks. With a hardstone quarry, high capacity concrete batching plant and block making facility we have supplied some of the islands most prestigious infrastructure, housing and civil engineering projects.

IF A REDUCED CARBON FOOTPRINT IS AN IMPORTANT PART OF YOUR PROJECT'S SPECIFICATION, THEN GRANITE PRODUCTS CAN HELP YOU ACHIEVE YOUR GOALS.

Concrete is the most widely used building material in the world, offering many advantages over other building materials. Technical benefits such as stability, heat and fire protection mean it is chosen repeatedly for use in the construction of modern buildings and infrastructure. However, concrete and specifically cement has a high carbon intensity.

As the demand for more sustainable solutions with lower embodied carbon content increases, Granite Products has developed a comprehensive range of concrete mixes to help reduce carbon intensity without compromising strength or setting times.

All of our mixes are accredited to MPA industry standards, Quality Scheme for Ready Mixed Concrete (QSRMC) and have an accompanying carbon calculation for ease of reporting CO₂ saved with each load. Granite Products aspires to work with customers and clients to help them achieve carbon neutral / net zero carbon construction targets.

Eco40

up to
40%
reduction in embodied carbon*

Eco55

up to
55%
reduction in embodied carbon*

Eco65

up to
65%
reduction in embodied carbon*

*when compared to equivalent CEM I concrete



BENEFITS AND APPLICATIONS

Low Carbon Concrete Versus CEM I

The Granite Products low carbon range can be utilised in all applications where traditional concrete is used, for example, slabs, walls, columns, footings etc., traditional slip form paving including machine paving, deck units and tunnel segments in major infrastructure projects.

All Granite Products low carbon mixes are designed to ensure there is no compromise on performance, using latest mix design technology to ensure specification is met as well as being suitable for end use.

Visual

- Looks great, natural off-white colour. Clean off-form finish
- Compatible with colour pigments and oxides
- Placed by pump or skip

Sustainability

Mixes within the Granite Products low carbon concrete range have lower levels of embodied carbon on account of their use of supplementary cementitious materials in whole or part substitution for Portland Cement, (see graph on opposite page)

Heat Of Hydration

Granite Products low carbon concrete has a lower heat of hydration thereby reducing potential for early-age thermal cracking

High Durability

- Acid and sulphate resistant.
- Fire resistant to AS1530 Part 4 2005
- Chloride ion ingress resistant

Setting Times

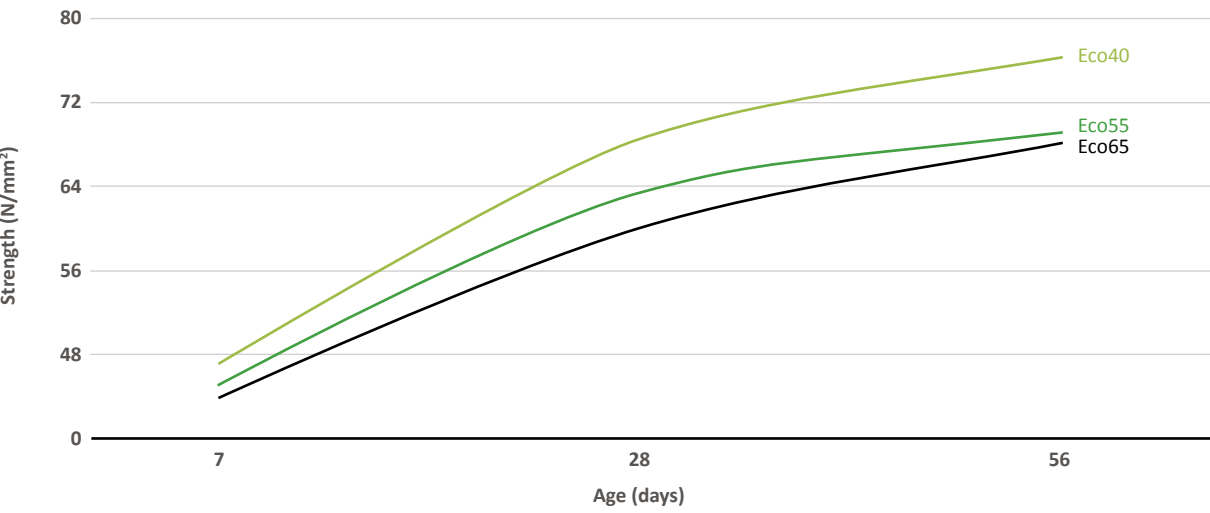
Granite Products low carbon concrete can be designed to a range of setting times

QSRMC Certification Standards

All mixes within the range are calculated to MPA industry standards and have an accompanying carbon calculation for ease of reporting CO₂ saved with each load.

GRANITE PRODUCTS LOW CARBON CONCRETE RANGE VERSUS CEM I

Typical low carbon concrete performance for a grade C35/45



For more specific technical support please contact
Richard Diegan on **01534 481570**



SUSTAINABLE APPROACHES AND WAYS OF WORKING

As part of our local community in St Peter’s Valley we not only take care of the land we work but also ensure our operations and way of working are as sustainable as possible. Team ideas and effort have resulted in product innovation, good practice, and a commitment to recycling and minimising waste, all of which help us and you through specifying our products to reduce our carbon footprint.

Low Carbon Concrete And Recycled Materials

We produce low carbon RMC using between 50% and 80% of GGBS in our mix designs reducing the embodied carbon by up to 65% depending on the mix and specification

All returned concrete is recycled either into mega blocks or re-crushed into pipe bedding using our own crushing plant

Granite Products has recently started taking in inert construction waste for recycling

Planning permission has been granted for an inert landfill site.

We also recommend the use of steel fibres for certain projects, this can reduce or eliminate the need for steel reinforcement being laid on site, several potential advantages are:

Fibres- Steel or Poly/Macro

Requires less labour on site

Economical concrete reinforcement for greater project scheduling

Requires no minimum amount of cover of steel

Safer to use than standard reinforced steel

Less crane usage

Less haulage requirements

All round carbon reduction and cost savings

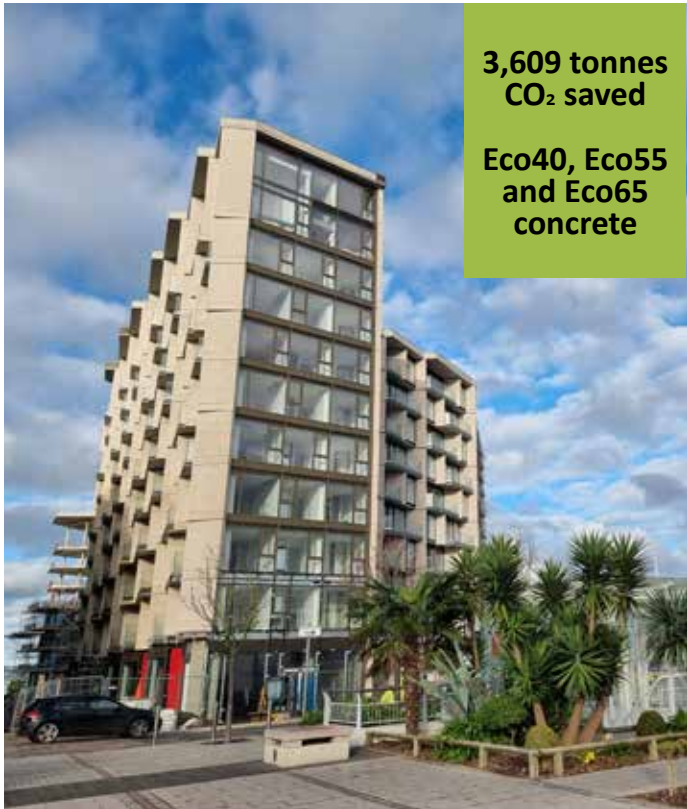
Low carbon concrete is not just about how the concrete is blended with other binder products, we also have to consider factors like low carbon fuels, distance travelled by our vehicles in the quarry and engine running times. The changes we have made over the last 4 years have all contributed towards lowering our carbon footprint.



A HIGHLY SUCCESSFUL TRACK RECORD

Jersey Development Company

Jersey Development company (JDC) is owned by the Government of Jersey and is responsible for regeneration and strategic property development such as completing the development of the St Helier Waterfront and regenerating Government owned property no longer required for the delivery of public services. JDC creates new homes for local residents and new Grade A office space for the island’s premier financial services industry. Carbon emissions reduction is an important part of these community focused projects’ specifications.



3,609 tonnes CO₂ saved
Eco40, Eco55 and Eco65 concrete

Legendre Horizon

This 280 apartment block is part of the prestigious waterfront development, Horizon. Over a 4 year period Granite Products has supplied 20,500m³ of Eco40, Eco55 and Eco65 concrete to the Horizon site with a total CO₂ saving of 3,609 tonnes.

Jersey International Finance Centre

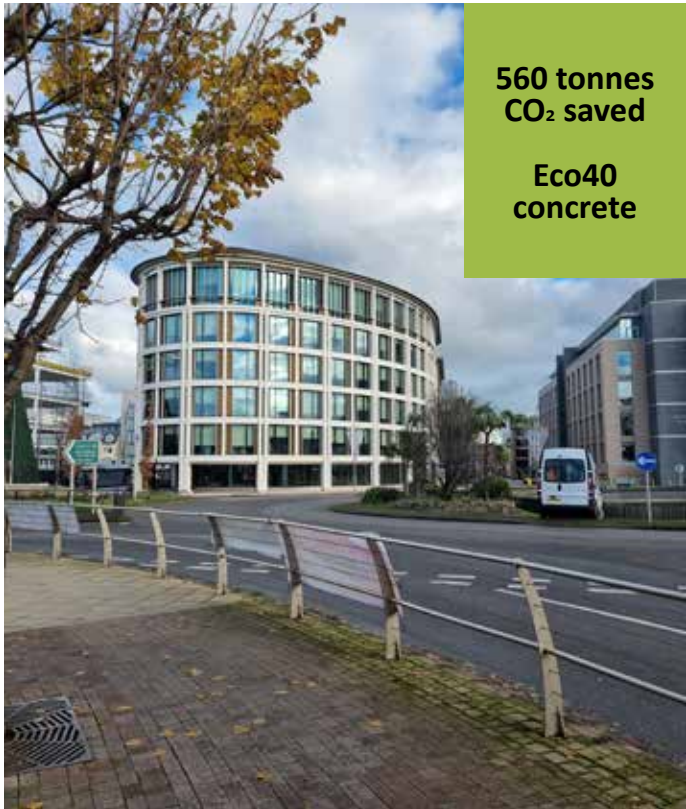
The International Finance Centre will provide a world-class business hub providing of 470,000 sq ft of environmentally sustainable Super-Prime Grade A office space in the heart of St Helier across six standalone buildings. Construction is being delivered on a building by building basis in response to demand and Granite Products has supplied three buildings so far.



530 tonnes CO₂ saved
Eco40 concrete

Cameron’s Jersey International Finance Centre, Building 1

Granite Products supplied 3,500m³ of low carbon concrete with a total CO₂ saving of 530 tonnes.



560 tonnes CO₂ saved
Eco40 concrete

Jersey International Finance Centre, Building 5

Granite Products supplied 3,700m³ of low carbon concrete with a total CO₂ saving of 560 tonnes.

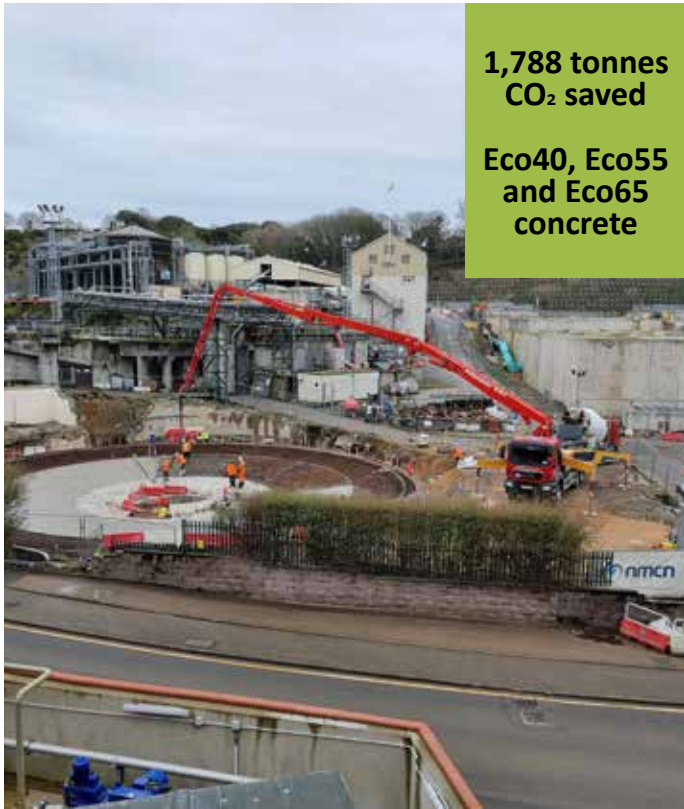
ROK Jersey International Finance Centre, Building 6

In 2022, Granite Products supplied 3,750m³ of Eco40, Eco55 and Eco65 concrete with a total CO₂ saving of 765 tonnes.

765 tonnes CO₂ saved
Eco40, Eco55 and Eco65 concrete

States Of Jersey Infrastructure

The States of Jersey Infrastructure, Housing and Environment department's focus is to provide the critical national infrastructure and to enable Islanders, businesses and visitors to live, work and enjoy the Island, while working to protect and enhance the natural environment. Granite Products has supplied a range of low carbon solutions to help reduce CO₂ emissions in construction projects.



**1,788 tonnes
CO₂ saved**
**Eco40, Eco55
and Eco65
concrete**



**1,466 tonnes
CO₂ saved**
**Eco40
concrete**

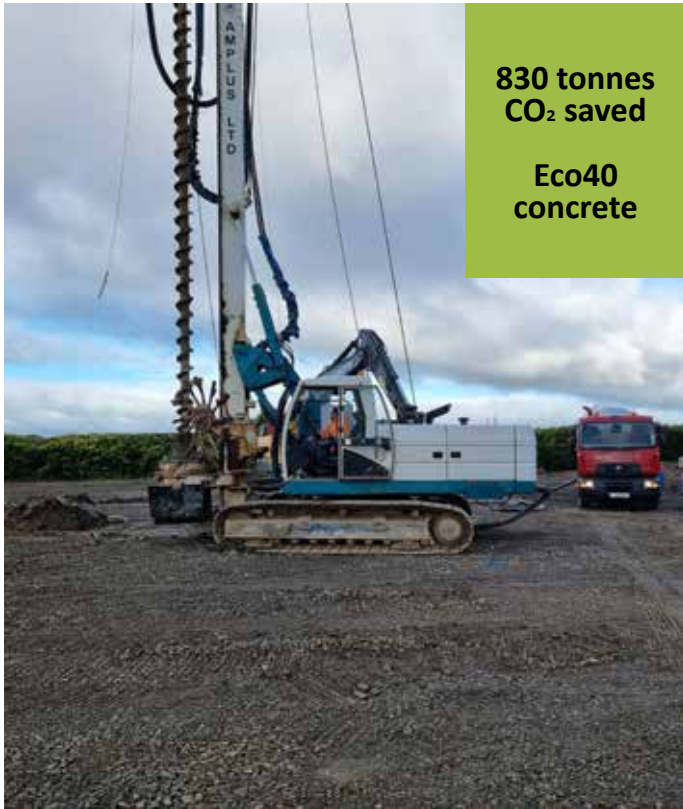
Bellozanne Water Treatment Works

This new state of the art water treatment works has involved Jersey contractors in upgrading this vital Island facility. Between 2019 and 2022 Granite Products has helped to reduce the project's carbon footprint by supplying 12,345m³ of Eco40, Eco55 and Eco65 concrete with a total CO₂ saving of 1,788 tonnes.

Andium Housing (States of Jersey)

Hacquoil & Cook

Andium Homes is Jersey's largest provider of affordable housing, responsible for more than 4,700 properties, housing more than 10,000 Islanders and we were delighted to work with Hacquoil & Cook by supplying Le Squez Housing project with 9,845m³ of Eco40 concrete with a total CO₂ saving of 1,466 tonnes.



**830 tonnes
CO₂ saved**
**Eco40
concrete**

Piling Works

The foundations of any project are the first opportunity to demonstrate the project's commitment to reducing its CO₂ footprint and Granite Products has supplied numerous contractors including Amplus and BGR who have been supplied 6,600m³ of Eco40 concrete for piling works with a total CO₂ saving of 830 tonnes.

BGR is a specialist founding contractor and its 'Green Machine' literally breaks ground in Jersey. BGR's environmentally friendly piling rig is the world's first to be powered solely by batteries, which like most electric vehicles, is charged up overnight.

Amplus, an independent ground engineering company is an 'Eco-Active Company' and a member of the Association of Geotechnical and Geo Environmental Specialists and has completed more than 2,000 projects in over a 20 year period.



**330 tonnes
CO₂ saved**
**Eco40
concrete**

Troy Court Housing Project

ROK Construction

ROK is a construction company that says "Our focus is on people, partnership and collaboration is key to our ability to consistently deliver value and quality across our safely managed projects". We are proud to be one of their preferred suppliers. Troy Court Housing project was supplied 2,205m³ of Eco40 concrete by Granite Products with a total CO₂ saving of 330 tonnes.



Head Office

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Certifications

Granite Products is proud to be QSRMC
accredited to the following standards:
BS EN ISO 9001:2015, BS EN ISO 9001:2015,
EMS ISO 14001, BS ISO 45001
Our technical lab is UKAS accredited.