



CASE STUDY

"This practice of implementing circular economy principles for concrete aggregates highlights how CEMEX FRANCE is reducing the carbon footprint of its concrete by using aggregates sourced from demolished structures.
Through an efficient process of demolition, sorting, screening, and performance analysis, CEMEX FRANCE reduces its environmental impact and sets a precedent for sustainable practices in the construction sector .

Cemex, is one of France's leading materials company, producing and marketing aggregates and ready-mix concrete at more than 260 production sites.



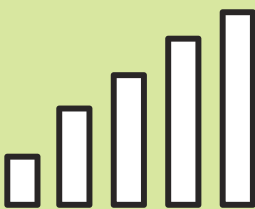
Introduction of the company and its sustainability- related goals

Green Concrete Technology and Materials Used

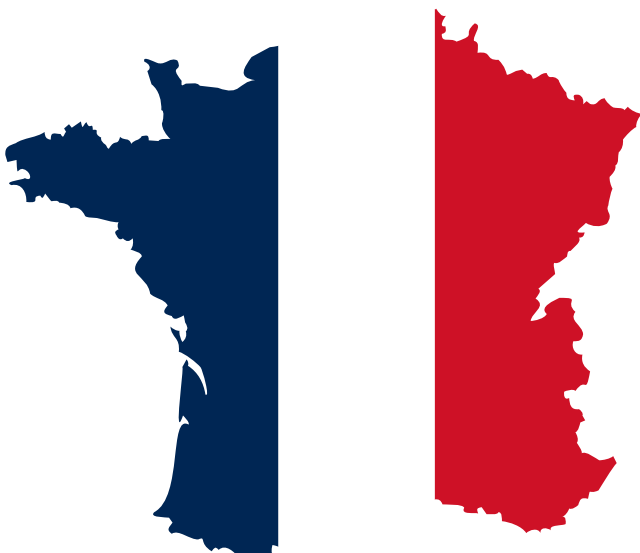


Environmental benefits

Economic and Social Impact



Interviews & Lesson learnt



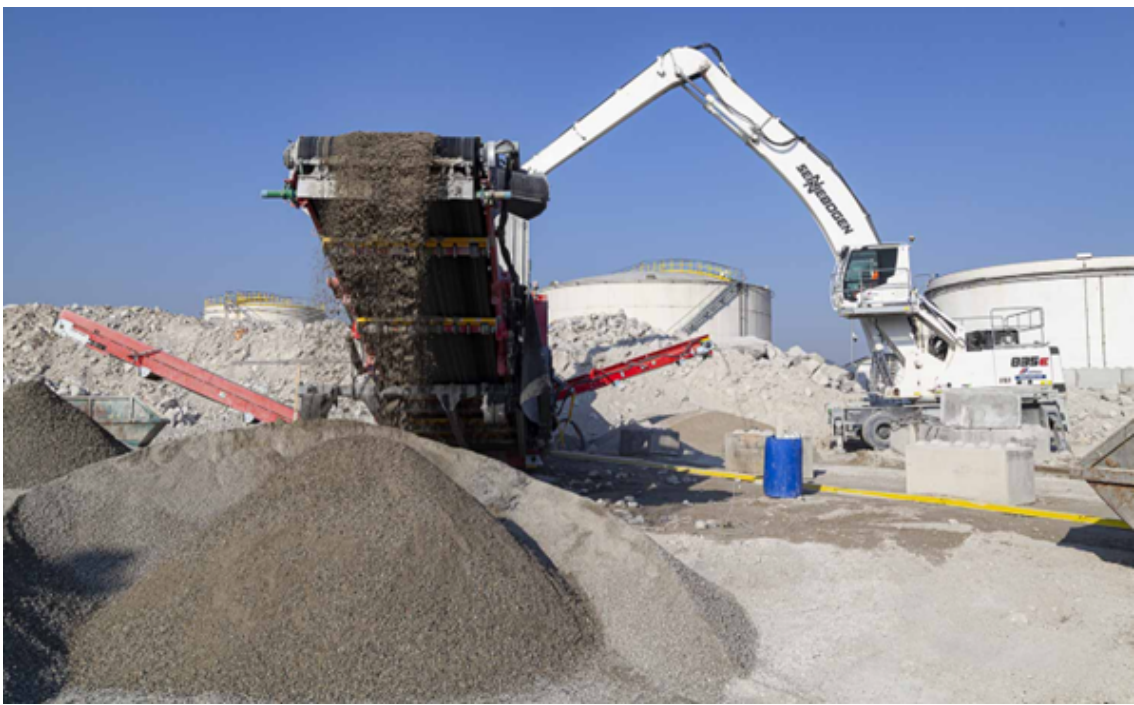
**Anneville Ambourville quarry
Cemex**

509 rue du Colombier, Anneville-
Ambourville
<https://www.cemex.fr/>



Introduction of the company / project and its sustainability- related goals

Cemex France is a major player in the construction materials sector, specializing in the **production of ready-mix concrete and aggregates**. Committed to eco-responsibility, the company develops innovative solutions to reduce the carbon footprint of its products. By incorporating recycled materials, optimizing its industrial processes, and promoting circular economy practices, Cemex France actively contributes to the transition toward more sustainable and environmentally friendly construction.



Objectives and ambitions for climate action

Cemex created the ‘Future in Action’ programme, which aims to develop low-carbon products, solutions and processes to become a net-zero CO2 company by 2050. Future in Action recognises that the opportunity to reduce emissions is not limited to the production process, but concerns the entire life cycle of our products, as well as the transformation of the industry's value chain.



2030

40% less CO2 per tonne of cementitious material (1990 baseline).
55% consumption of clean electricity.
Achieve a clinker factor of 71%.
50% use of alternative fuels.

2050

Become a net zero CO2 company

Improving the environmental footprint of buildings is based on each stage of their life cycle. Cemex contributes to this through an eco-design approach encompassing the entire value chain



Green Concrete Technology and Materials Used

Cemex relies on new technologies to support a rational **management of natural mineral resources**, which includes the recovery of excavated material and waste from the construction industry in order to contribute directly to the circular economy.

In 2020, Cemex launched **Cemex CIRCLE**, an approach based on the circular economy which, among other things, helps to **reduce the environmental impact of buildings and structures by developing the recycling of inert secondary materials from construction sites**.



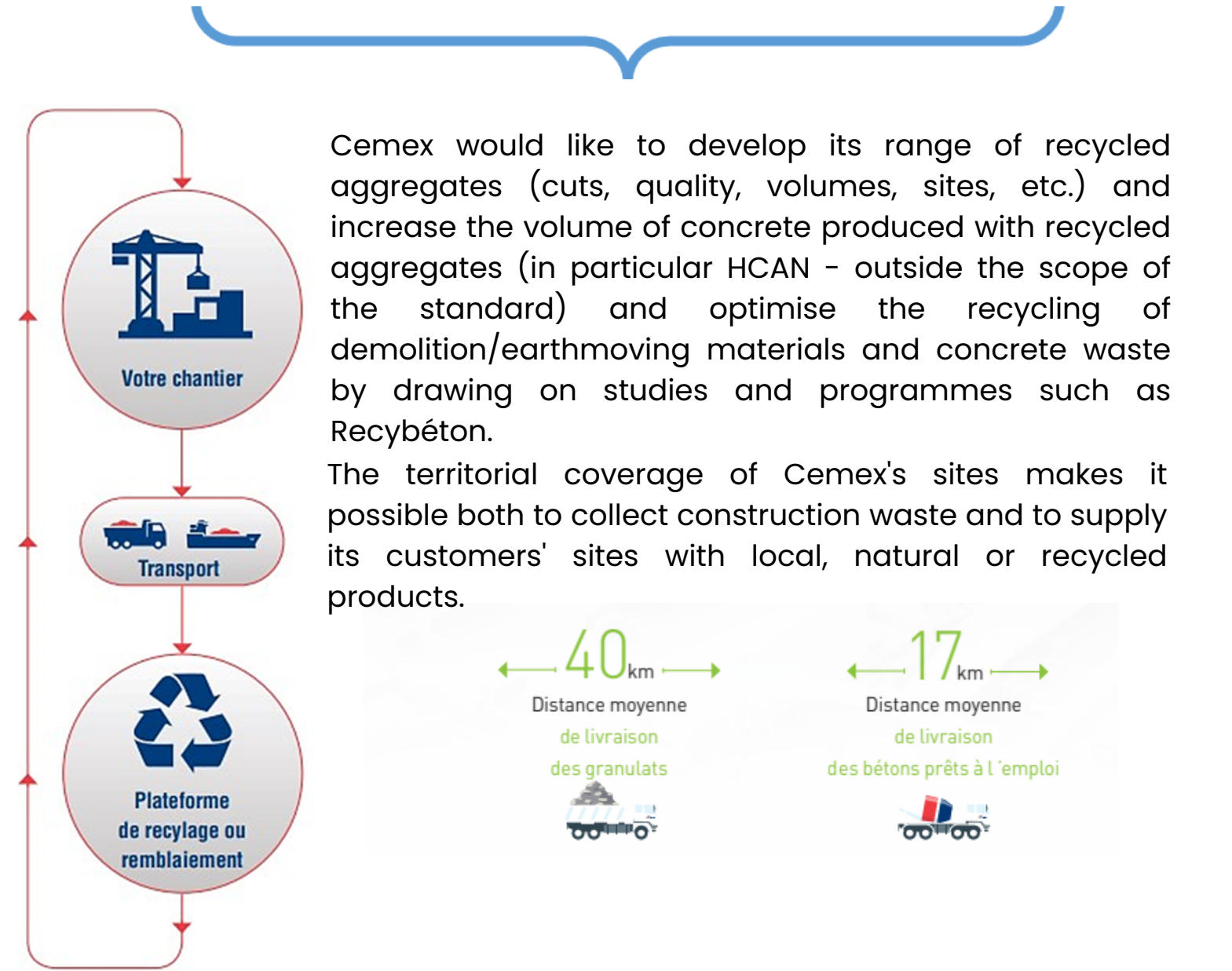
Recycled sands
Our recycled sands has the same granulometries as traditional sands (0/d)



Recycled gravel
Our recycled gravel has the same granulometries as traditional gravel (d/D).



Recycled aggregates
Our recycled aggregates has the same granulometries as traditional aggregates (0/D)



Cemex has a network of local sites enabling secondary materials to be collected and stored as close as possible to construction sites. A significant proportion of the inert materials received is directly recovered in the form of recycled products, which are made available to the construction industry.) Inert materials that cannot be recycled are reused in the redevelopment of our quarries, with a view to giving them a second life (agricultural, environmental or recreational use).



Environmental benefits

Cemex is **committed to sustainable development**. In France, Cemex is the only company of international stature in its sector to have obtained the following **certification** for all its ready-mix concrete and aggregates sites:



ISO 14001 environmental certification : the reference tool for taking account of your organisation's environmental challenges, with the aim of improving your overall environmental performance and contributing to the UN's Sustainable Development Goals (SDGs).



Commitment to Biodiversity certification: This is a reference framework that incorporates the principles of differentiated management and enables the management or creation/rehabilitation of planted areas to be part of a sustainable development approach.



The UNICEM CSR label for committed companies (Exemplarity level): UNICEM has set up a dedicated tool to help volunteer companies structure and promote their CSR approach.

Cemex France, a mission-driven company

In 2023, CEMEX became a mission-driven company by adding to its articles of association a clear purpose: to lead the creation and implementation of sustainable mineral solutions that help build a better future for today’s and tomorrow’s generations. This purpose is built around four main objectives.

- 1.Promote the social and environmental initiatives of our stakeholders, thanks to our employees
- 2.Act as a leader in the circular economy in our sector of activity and in our territories
- 3.Work to preserve the environment
- 4.Co-develop and promote best practices with our industrial sector

Objective	Monitoring indicators	2024 Results	2030 Target
2	Share of recycled aggregates in the total production of aggregates sold	7,6%	15%
	Share of concrete produced containing more than 5% recycled aggregates	3,9%	15%
3	Carbon footprint of Cemex France’s ready-mix concrete (in kg CO ₂ equivalent / m ³ of concrete produced)	178kg	150kg
	Share of quarries with a biodiversity management plan	75%	100%
	Share of concrete production units and industrial platforms implementing the company’s biodiversity program	52%	100%
	Average water consumption per cubic meter of concrete produced	189 Litres	170 Litres

Environmental benefits

Cemex, producer and supplier of construction solutions, is committed to the circular economy and decarbonisation of the construction industry. Recycled aggregates have a whole host of benefits for the environment:

1. Reduction in the extraction of natural resources

By replacing a portion of natural aggregates (gravel, sand) with recycled aggregates, the exploitation of quarries is reduced This helps preserve non-renewable resources and lowers the ecological impact of extraction (deforestation, loss of biodiversity, energy consumption).

By recycling and reusing construction, demolition and excavation waste, Cemex is able to conserve natural resources, reduce greenhouse gas emissions and benefit communities by promoting sustainable development and reducing the environmental impact of construction activities.



2. Recovery of construction and demolition waste

The construction and public works sector is the largest source of waste, almost 90% of which is non-recyclable. Also waste from deconstruction represents a significant portion of total waste in Europe (about 30 to 40%).

Recycling it reduces the volume of waste sent to landfills, contributing to a circular economy in the construction sector.

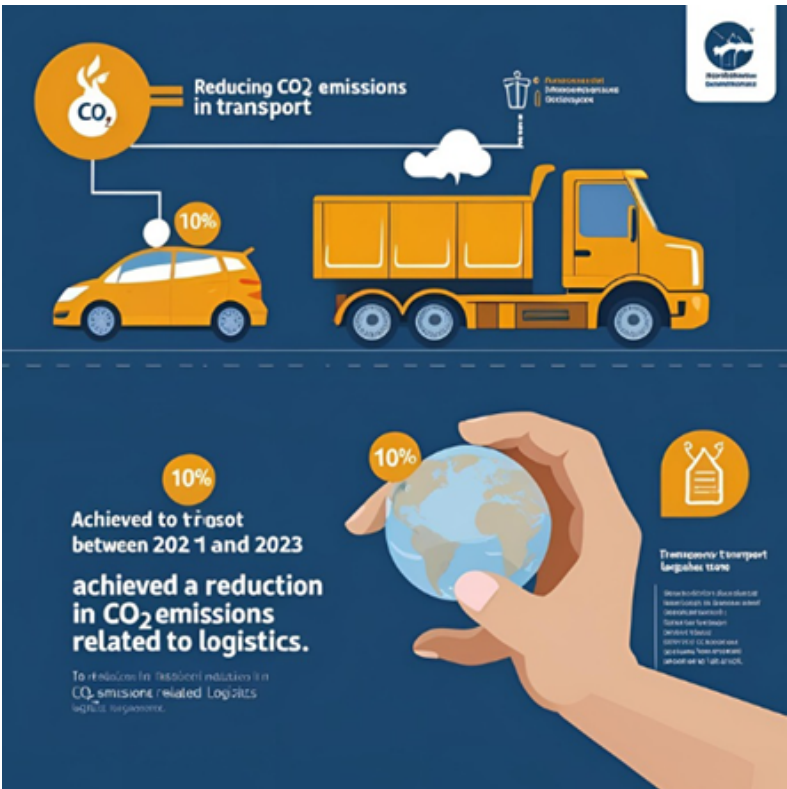
3. Reduction in carbon footprint

Producing recycled aggregates generally requires less energy than extracting and processing natural aggregates.

Shorter transportation distances (if recycling is done locally) = lower CO₂ emissions from logistics. At Cemex, recycled aggregates are processed and reused in urban areas, thus limiting the amount of transport and therefore the CO₂ impact. This is also due to the proximity of the sites, a key point at Cemex.

Category	Cemex France Result	CO ₂ Reduction	Financial Savings
Transport mix (concrete/aggregates)	10% between 2021-2023	≈ 10% CO ₂ emissions	Not quantified (optimization)
Vertua concrete	Reduction up to 70%	70%	Not locally quantified
Recycled materiels (≈40%)	Raw materials cost - 15-20%	-	15 to 20% on raw materials

Environmental benefits



4. Contribution to a circular economy in construction

By incorporating recycled aggregates into concrete production, companies like Cemex promote a sustainable material loop, aligned with circular economy principles. This strengthens the resilience of the sector in the face of resource scarcity



Regenera
Engagé dans l'économie circulaire

The Regenera brand, launched worldwide by Cemex in early 2023, will identify Cemex sites and services related to construction waste management and the provision of circular economy solutions.

5. Compliance with environmental regulations and incentives

In France, the RE2020 regulation and other frameworks encourage reducing the environmental impact of buildings. By 2030, the RE2020 regulation will reduce the environmental impact of the building sector by more than 30%.



Using recycled materials in construction and demolition projects helps companies comply with EU and national regulations on waste recovery and circularity. In addition, it can lower landfill costs, improve eligibility for green public tenders, and in some countries even unlock subsidies or tax incentives designed to promote circular economy practices.

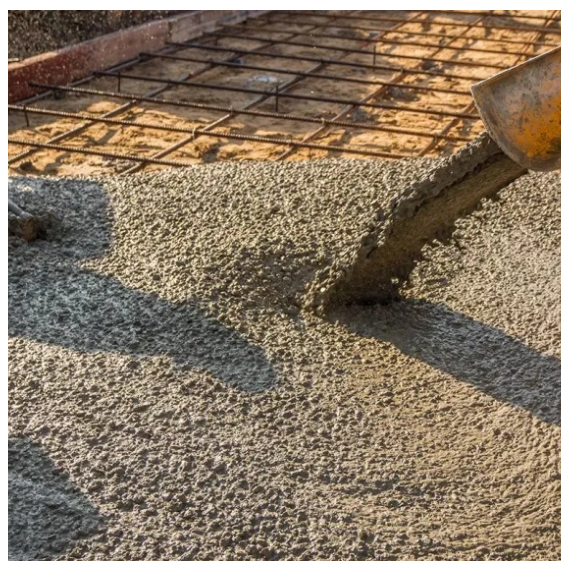
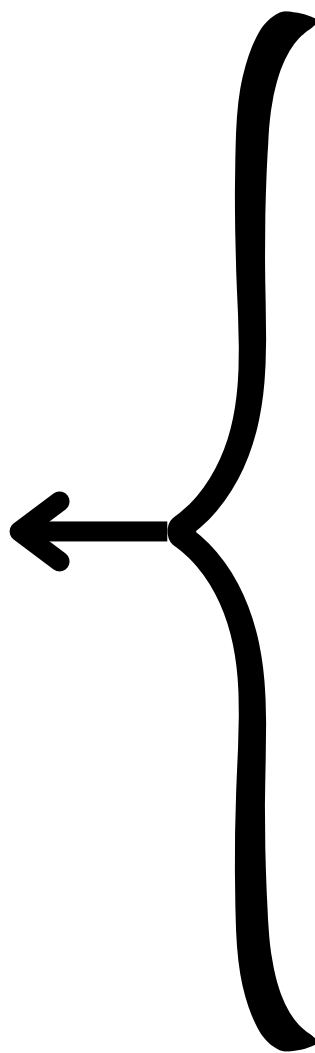
Economic and Social Impact

According to “Cemex 2024 corporate presentation” →



1. Economic Factors

- Raw materials: Recycled aggregates cost less when processing is efficient.
- Processing: Crushing/washing adds €5–15 /t, cutting savings if quality is low.
- Transport: Beyond 30–50 km, savings fade; river/rail can cut costs ≈20 %.
- Scale: Integrated quarry–recycling plants lower unit cost 5–10 %.
- Regulation: for landfilling (no tax for inerte waste backfilling)



2. Cost Comparison

- Best case: Nearby, clean recycled aggregates → concrete 10–15 % cheaper.
- Worst case: Low quality or long haul → cost up to +5 %.

3. Social Impacts

- Jobs: 3–5 local jobs / 10 000 t recycled.
- Environment: Quarry impacts drop, complaints down 20–30 %.
- Training: All sorting staff need specific skills.
- Safety: Manual sorting accident rate ≈15 % higher.
- Job shift: Some quarry roles decline, offset by recycling growth



Economic and Social Impact

Social impact



Job Creation

New local value chains:

The collection, sorting, processing, and transformation of construction waste create local jobs in recycling facilities.

Logistics and transport:

The reorganization of the supply chain (local transport of recycled materials) generates new positions (drivers, handlers, etc.).

Equipment maintenance and operation:

Facilities for processing recycled aggregates require specialized technicians and operators.



Examples of Jobs:

Collection & Sorting

- Construction-waste sorter (manual or mechanical, on site or at a recycling facility)
- Inert-waste truck driver / collector
- Selective deconstruction technician (targeted demolition to separate material streams)

Processing & Recovery

- Crushing / screening plant operator
- Recycling-facility technician (quality control, maintenance)
- Recycled-aggregate production manager

Quality Control & Laboratory

- Materials laboratory technician (particle size, strength, cleanliness tests)
- Quality & environmental manager (standards compliance, traceability)

Logistics & Management

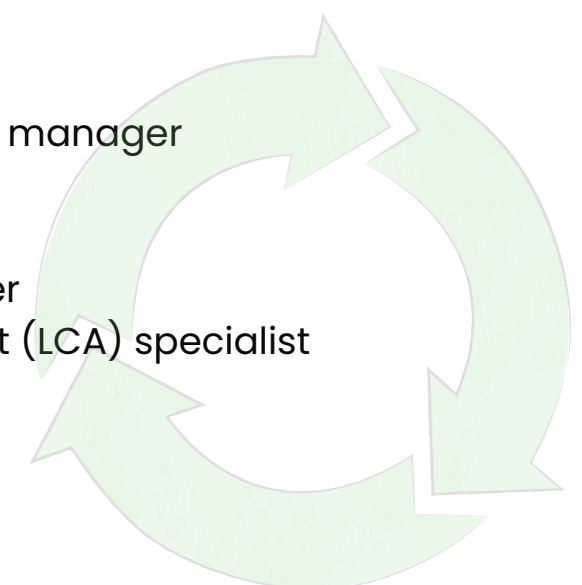
- Waste-flow logistics planner
- Transfer-station or recycling-platform manager

Engineering & Design

- Circular-economy / materials engineer
- Environmental / life-cycle-assessment (LCA) specialist
- Consultant for material reuse

Training & Awareness

- Trainer in selective deconstruction
- Health-and-safety coordinator for recycling sites



Skills development

Specialized technical training:

Teams are trained in specific processes such as:

- Sorting inert materials
- Quality control of recycled aggregates
- Adjusting concrete mix designs to incorporate these materials

Circular economy skills:

Employees gain a broader understanding of material life cycles and sustainability principles

- Innovation and R&D
- Incorporating recycled aggregates requires applied research, involving engineers and technicians trained in ecological transition



Interviews & Lesson learnt



Interviews

You can [watch the CEMEX video](#) filmed at the Anneville-Ambourville quarry on our YouTube channel. It features an interview with Louis Natter, Director of Sustainable Development and CSR at Cemex, in which he explains the circular economy approach, particularly through water conservation, recycling of inert materials and production of low-carbon concrete.



Lessons learnt

Case Study: File Analysis :

Utilization of the INIES database (Environmental and Health Declaration Sheet) to compare the carbon footprint of VERTUA-type concrete.

Laboratory tests on recycled aggregates:

Particle size distribution / cleanliness / preparation of recycled aggregate test specimens / preparation of natural aggregate test specimens.

Study of plasticity and strength between conventional concrete and green concrete:

Compressive strength test of 'conventional' and decarbonized concrete specimens.

Comparative cost analysis and reflection on the financial overcost

Visit to a **production plant** and exploration of careers in aggregate production.



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