Economic growth and thriving communities

The economic growth of the UK depends on the maintenance and development of its basic infrastructure. This means efficient and effective transportation, affordable housing for all, and investment in essential services in all regions. To make this happen, new or improved roads, rail links, airport facilities, homes, hospitals, schools, shops and offices are all needed. For their construction, an adequate supply of raw materials will be required.

What are the raw materials that we need and where do we get them from?

Most raw materials in any construction project are ultimately derived from mineral resources quarried from the ground or dredged from the sea: almost all the concrete, asphalt, cement, bricks, stone, glass and ceramics used in construction work are products of our own extractive industries. Recycled materials, such as construction and demolition waste and glass, are making a significant contribution to this supply, but new minerals will always be required.

By volume the most important materials required to build infrastructure are aggregate minerals i.e. rock that has been broken into small pieces, either naturally (sand and gravel) or artificially by crushing hard rocks such as granite or limestone (crushed rock aggregate). Each year, between 200 and 220 million tonnes of aggregates are produced in Great Britain for construction purposes.

New houses — in the right place, at the right price

Successful, thriving communities need homes that everyone can afford. Increasingly, young people and key workers are not able to live close to their work place, and many that leave their jobs in vital public services cite the lack of affordable homes nearby as a major factor influencing the decision. Thus, an adequate supply of affordable houses is needed, especially in the South East. Each new home requires the use of about 60 tonnes of aggregate, with additional amounts for transport links and other infrastructure.

Meeting the demand for new construction

In order to meet the demands for new homes and roads, together with transport links and additional infrastructure, sufficient supplies of aggregates are needed from sources close to development areas or locations where bulk transportation can be used. This requires continuing sustainable and environmentally sound production from quarries and making full use of recycled materials.

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Where does the aggregate come from?

In Britain, most aggregate is quarried from the rocks beneath our feet. Aggregate is derived from natural sand and gravel resources, such as old river gravels, or from crushed hard rock, such as limestone or granite. In the East Midlands, both types of aggregate are extensively produced: for example, limestone in Derbyshire, igneous rock in Leicestershire, sand and gravel at several locations in the Trent Valley. Sand and gravel dredged from the sea bed is another important source of supply, especially in London and the South East. Aggregates are also produced by recycling old road surfaces, from construction and demolition waste, and from secondary sources such as blast furnace slag. However, much of this material is already being used and there is little scope for increasing its contribution to demand — most has to be new material.

How does the aggregate get to the construction site?

Since aggregate is very bulky, a large part of its cost is due to transportation from a quarry to the construction site. The cost of a lorry load of gravel doubles by moving it 40 km. In England and Wales in 2001, 91% of the total volume of aggregate sales were transported by road. Hence it is economically and environmentally important to seek suitable resources close to the construction site. However, this may not be possible as in England and Wales sources of rock suitable for aggregates generally occur at some distance from where they are needed. In this case, transport by rail or sea is more efficient and environmentally preferable.