

# Sustainable Development Report 2007





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# Headlines

In 2006, 229 million tonnes of primary aggregates were used in the UK construction industry. In addition another 26 million tonnes were used for a wide variety of industrial, environmental and agricultural applications.

The use of recycled and secondary materials in GB aggregates markets reached 70 million tonnes in 2006. This accounted for 26% of the total aggregates market, more than three times higher than the European average of 8%.

Health and safety performance continued to improve, with QPA members recording a further 23% decline in

HSE Reportable Injuries towards the objective of zero injuries.

Average carbon dioxide emissions per tonne of output of aggregates and value added products were 7.71 kg per tonne. On-site carbon emissions in the aggregates sector accounted for 0.52% of the UK total, and the QPA has made a carbon reduction Statement of Intent to generate significant reductions in sector emissions.

Over 86,000 jobs were dependent on the industry, including 36,000 people directly employed.

Over 35 million tonnes of aggregates were moved by rail and water, with

road delivery distances for aggregates averaging 29 miles, for asphalt 26 miles and ready-mixed concrete less than 6 miles.

Certified Environmental management Systems were recorded at 881 QPA member locations.

218,000 trees and over 11 kilometres of hedgerows were planted.

The area of land restored following quarrying continued to be substantially higher than land prepared for new extraction.

The area dredged for marine aggregates was equivalent to 0.016% of the area of the UK seabed.

# Introduction



This third QPA Sustainable Development (SD) Report from the QPA builds on the data provided in its two predecessors. To enable continuity, it covers the same headings as the previous two reports but includes an additional focus on carbon reduction, reflecting QPA policy in this area.

Since our first report was published in March 2006, more product specific information has become available from constituent bodies of the QPA, a prime example being the publication of a Sustainable Development Strategy on marine aggregates issues by the British Marine Aggregate Producers Association (BMAPA) which will shortly be followed by BMAPA's first SD Report.

This third QPA SD Report also includes data to support emerging policy and initiatives from Government and elsewhere. These include the Government's sustainable development strategy, notably the focus on sustainable consumption and production, the developing policy on sustainable construction, the 'Code for Sustainable Homes' and the updated construction materials 'Green Guide' for specifiers.

We were encouraged by the response to the first and second reports from a range of stakeholders. It was of particular interest to see the report quoted in European institutions as an excellent example of what industry should be doing in this important policy area.

In the UK, our first SD report was the chief reason why QPA won the Environment Award at the Trade Association Forum Best Practice Awards ceremony in 2006 and also was

chosen as Trade Association of the Year.

This report includes data from companies responsible for 70% of primary aggregate production in the UK and reflects the commitment of QPA members to both reporting on and improving the sustainability of the sector.

Given the scale of the industry and the fact that the data in this report covers over 1,800 locations, we appreciate that we have to continue to work to improve both the quality and quantity of data received from member companies. There has been much progress in this respect, but more will be required. As such, some of the data in the report is indicative rather than precise, but we hope will be of interest and useful none the less.

Looking to the future, there will continue to be significant demand for aggregates and quarry products created by high profile projects such as the Olympics as well as the multitude of schemes which generate over £100 billion worth of construction activity every year.

In meeting these requirements we know that there will be plenty of challenges ahead in all the areas covered by our core values. We will continue to look for opportunities to work with our stakeholders in order to make progress in these areas and to play our full part in relevant debates.

A handwritten signature in black ink that reads "Simon van der Byl". The signature is written in a cursive, slightly slanted style.

Simon van der Byl

Director General Quarry Products Association

# Carbon reduction

## Statement of intent

- The Quarry Products Association will:
- Ensure members understand the data, the terminology and the objectives relating to carbon.

### Useful Action for Businesses

- Measure, monitor and reduce all energy use to understand energy demands
- Introduce a carbon reduction plan engaging management and staff at all levels
- Focus on high energy use activities as a priority, eg asphalt plants
- Implement general energy efficiencies, carry out site energy reviews
- Ensure regular maintenance of plant, vehicles and equipment, and that controls are working and set correctly
- Evaluate installing more efficient plant/motors
- Look for logistics efficiencies, ensure drivers are trained to drive safely and efficiently
- Consider carbon implications down the supply chain
- Consult QPA website carbon page [www.qpa.org.uk](http://www.qpa.org.uk) for further information
- Use other websites, eg [www.carbontrust.co.uk](http://www.carbontrust.co.uk), [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

### Useful Carbon Information

- There are 11 greenhouse gases (GHGs) in the scope of the Kyoto Protocol
- CO<sub>2</sub> accounts for 65% of the climate impact of all GHGs
- UK on track to meet Kyoto target of cutting GHG emissions by 12.5% by 2012 (from year 1990)
- To calculate carbon emissions divide CO<sub>2</sub> by 3.67
- UK carbon emissions are over 130 million tonnes pa. i.e. 2.5 tonnes per head
- Government plan to cut carbon emissions by 30% (1990-2020) and by 60% (1990-2050)
- The Climate Change Bill will make targets for carbon reduction legally binding
- UK industry (not of 123 sectors)
- QPA currently estimates that the carbon emissions of the aggregate and quarry products sector are c. 1 million tonnes pa (0.7% of the UK total)

# Carbon reduction

## Statement of intent

- The Quarry Products Association will:
- Ensure members understand the data, the terminology and the objectives relating to carbon.
- Improve our understanding of our carbon footprint, and the impact of all of our activities.
- Identify and prioritise key areas for industry action.
- Seek to make best use of all available resources - for example we believe the Aggregates Levy Sustainability Fund should have a key role in supporting future carbon reduction in the sector.
- Work with our stakeholders to identify potential for joint action on carbon reduction. This may well highlight policy conflicts and difficult issues which we will need to confront and work through.
- Use our sustainable development strategy and reporting to update on progress.

*Lynnda Thompson*

Lynnda Thompson  
Chairman  
17 May 2007



# Focus on carbon reduction

The QPA published a carbon reduction Statement of Intent at the May 2007 Showcase to highlight the significance of this issue. The Government's draft Climate Change Bill has provided an indication of the scale of reduction in carbon emissions which will be required by 2020 and 2050. The likelihood that the 2020 target will call for a reduction in emissions of around 25% compared with current levels indicates the scale of this challenge. In general, the aggregates and quarry products industries are regarded as a less energy intensive sector, an exception being the lime industry, which has implemented a climate change agreement.

Historically, the main environmental focus of the sector has not been energy or carbon reduction. The reduction of potential operational impacts such as dust and noise, improving relationships with local communities and other stakeholders, and the contribution of quarry restoration to biodiversity and geodiversity, have been targeted and much progress has been made. While such issues will remain central to the industry's activities, carbon reduction will also be a key QPA priority. A number of members have already seen progress in this area and this is reflected in their company SD reports.

QPA's SD reporting identifies carbon dioxide emissions per tonne of output, taking account of the production of aggregates and value added product. As indicated on page 27, we do not regard data quality on energy consumption and associated emissions as mature enough to interpret the reduction in emissions recorded for the last three years as a precise trend. However, there is no doubt that

companies have taken steps to reduce energy use, and that the quality of data on energy use has improved.

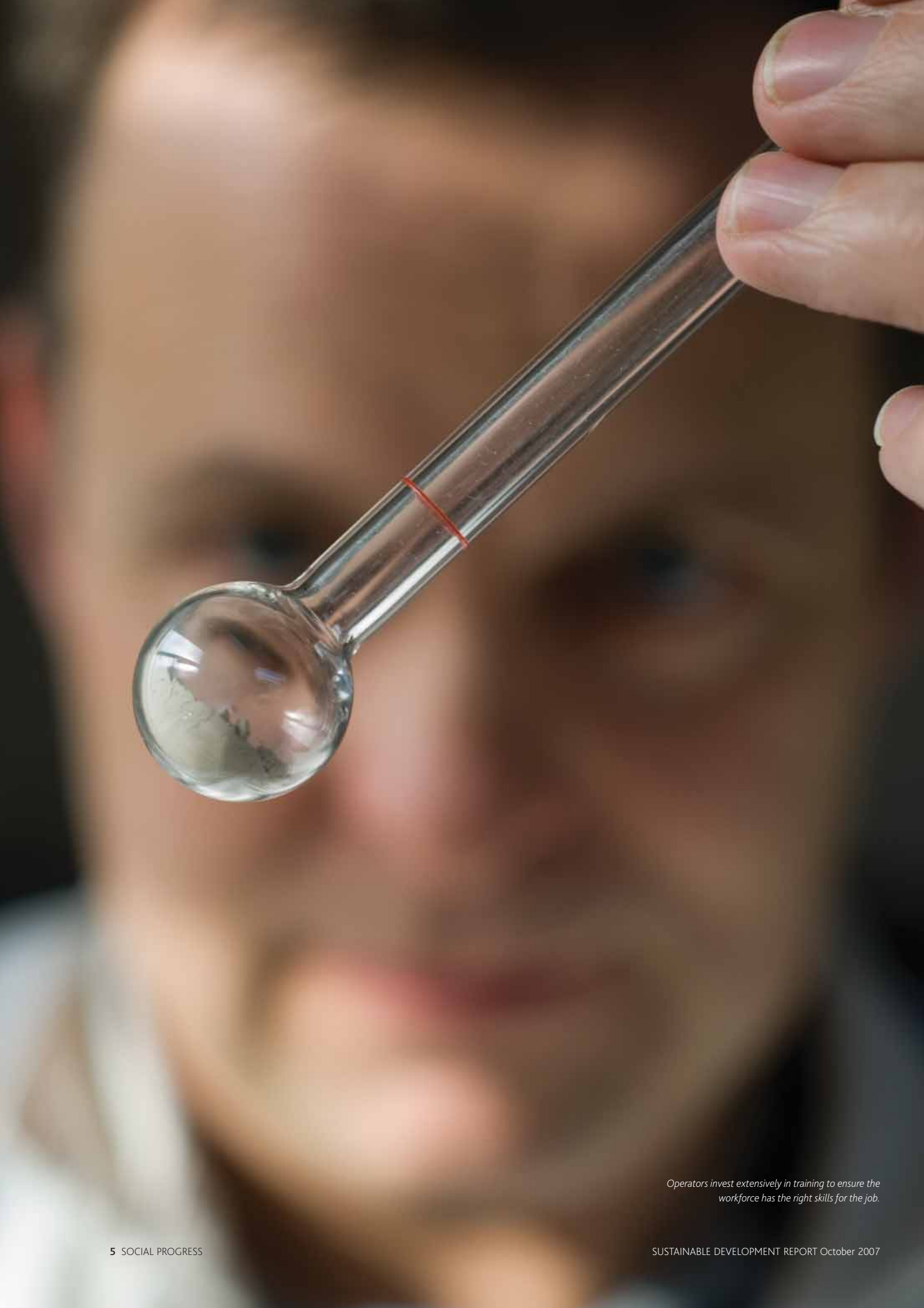
Further improving the quality and consistency of energy use in the sector will be a target for the QPA. In future reports we intend to provide more detailed data on the energy use and emissions associated with different products. We will also look more closely at the contribution of sector transport emissions. QPA members' participation in the sector Safe and Fuel Efficient Driving (SAFED) programme and the implementation of the QPA Driver Training policy are examples of steps already taken which are contributing to sector transport carbon reduction. Our continuing campaigns to preserve and enhance rail and wharf capacity for aggregates, for example through petitioning on the Crossrail Bill to preserve rail freight capacity, illustrate the sector's desire to make full use of all transport modes.

We have also made representations to Government that the Aggregates Levy Sustainability Fund (ALSF) from 2008/9 onwards should have an additional focus on carbon reduction. This would be a positive use of a small proportion of the annual £325 million of aggregates levy paid by the industry to Government.

While the sector can take direct measures to minimize operational and transport energy use and emissions, we will also identify areas where carbon reductions can only be achieved by working with our stakeholders. For example, product standards and specifications can generate increasing energy demands, and the

location of production sites - dictated by geology and the operation of the planning system - will help to determine if delivery distance to markets, and associated transport emissions, are rising or falling. There may be policy conflicts between carbon reduction and other policy objectives, but such conflicts need to be identified and worked through.

Our carbon reduction Statement of Intent and associated Carbon Card recognize that this is an issue which will become increasingly significant for our industry and our stakeholders.



*Operators invest extensively in training to ensure the workforce has the right skills for the job.*

# Social progress

Health & safety • Competent workforce • Working with the community • Partnership with stakeholders • Heritage

Theme	Indicator	2006 (2005) Context	2006	2005	2004
<b>Safety</b>	HSE Reportable Injuries	QPA total (revised)	<b>177</b>	231	288
<b>Training &amp; competence</b>	NVQs registered (revised)	Industry total, cumulative to 2005/6	<b>11,969</b>	11,572	9,726
	SHE NVQs registered (revised)	Safety, Health & Environment NVQs	<b>475</b>	461	405
<b>Complaints</b>	Complaint incidents	0.38 (0.31) per location	<b>683</b>	559	502
	Complaints	0.42 (0.39) per location	<b>756</b>	701	670
<b>Community links</b>	Liaison groups	0.66 (0.57) per quarry	<b>324</b>	301	195
	Open days		<b>64</b>	34	
<b>Education</b>	Site educational visits	1.76 (1.49) per quarry	<b>868</b>	790	712
<b>Archaeology</b>	Land investigated - pre planning permission		<b>513 ha</b>	1,175 ha	
	Land investigated - post planning permission		<b>350 ha</b>	329 ha	

## Health & safety

### Core value

The highest priority for QPA members is the health and safety of their employees, contractors and visitors.

### Performance indicator

- Number of RIDDOR/reportable injury incidents: 177



### Current position

#### Hard Target

QPA's Hard Target strategy is under continuous review. Fuelled by the success of halving the number of accidents during the five years to March 2005, QPA members have committed to achieving a further 50 per cent reduction by the end of 2009 with the ultimate expectation of zero reportable injuries.

To address a historical anomaly, the Council of the QPA endorsed a proposal for health & safety statistics relating to precast concrete to be excluded from the QPA collations, as these activities are more within the remit of the British Precast Concrete Federation. The effect of this change on previously published data is presented in figure 1 opposite, which relates to direct employees.

Taking a ten-year view of Health and Safety Executive (HSE) reportable injuries to personnel directly employed by QPA members in their British operations, there is clear evidence of continuing success in reducing injuries – see Figure 2.

The significant challenge, however, for the QPA and its members is to exert the equivalent influence on the industry's contractors. The diverse nature of the contracting sector leads to a situation where the data is inevitably less precise. Indeed, there are indications of a lack of progress, partly due to increasing use of contractors. To counter this trend, QPA is increasing its efforts to better understand the underlying root-causes and potential solutions.

#### External Benchmarking

For many years in the past, the HSE had

rightly challenged the quarrying Industry and its adverse safety record, in comparison with the rest of the construction sector. However, by reference to Figure 3 it may be seen that the quarrying Industry's faster rate of injury reduction has actually put it ahead of construction since 2004.

To extend the benchmarking exercise further, the quarrying industry compares favourably with a number of comparative industries, but still has a significant way to go to match the "All Industry" figure – see Figure 4.

#### Sharing Best Practice

QPA strives to be an exemplar, particularly in terms of health and safety improvement. Not only does this require sector-leading representation but also first class communications with and between its members and other stakeholders.

An example is the creation of [www.safequarry.com](http://www.safequarry.com) which was developed with the support of its members and a range of other partners. The aggregates levy funded site features a rapid online alert system, toolbox talks, the latest on the industry "hot topics" and a database of best practice ideas. The site won two major awards in 2007 – firstly from the European Aggregates Association (UEPG) under the Social Pillar of the UEPG Sustainable Development Awards, and secondly the Social Initiative Award from the Trade Association Forum, where QPA emerged top from amongst over 300 trade associations.

In September 2006 the QPA's Health & Safety Best Practice Awards attracted well over 100

Figure 1

QPA HSE Reportable Injuries	2004	2005	2006	QPA Target 2009
Previously published (including 'Precast')	367	293	-	< 184
Revised data (excluding 'Precast')	288	231	177	< 144

Figure 2  
QPA/HSE  
Reportable  
Injuries

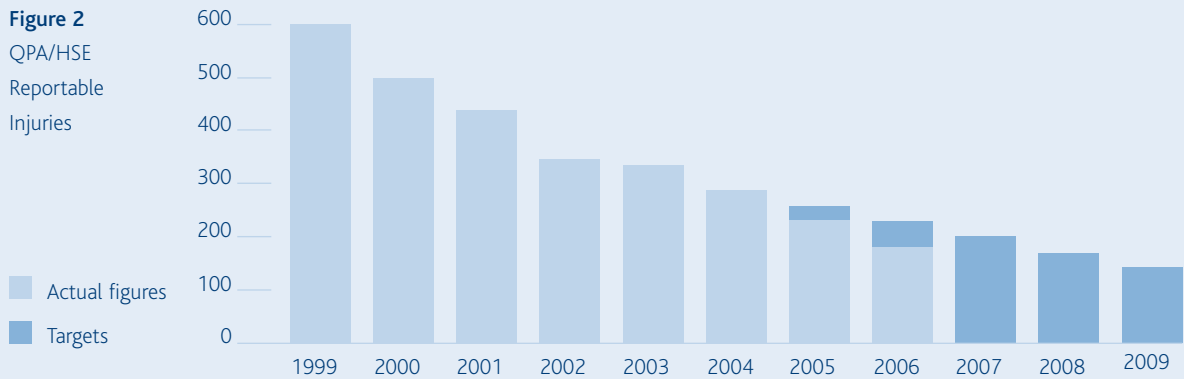


Figure 3  
Accident  
Incident Rate  
(per 100,000  
direct  
employees)

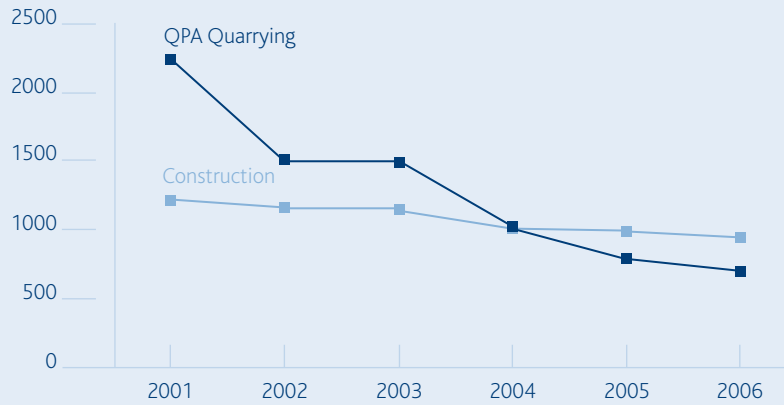
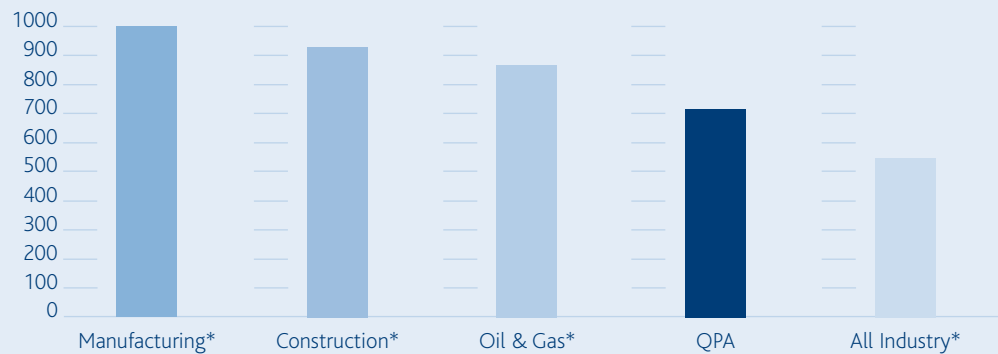


Figure 3  
Accident  
Incident Rate  
(per 100,000  
direct  
employees)



\*Health and Safety Commission 2005/06

# Social progress

entries spanned across nine categories.

QPA is also one of the founding bodies of the "Atlantic Alliance" which has been formed between Industry and its regulators on both sides of the Atlantic to further a range of internationally-important health & safety issues – and which complements the work of the UEPG. In Europe, as from 2007, QPA provides the chairmanship of the UEPG Health & Safety Committee which spans membership from 22 countries.

## Respirable Crystalline Silica

QPA is also at the forefront of implementing the innovative multi-sectoral Social Dialogue Agreement. This bi-partite Agreement between Employers & Trade Unions, was signed in Brussels on 25 April 2006 in the presence of the European Commissioner for Employment, Social Affairs and Equal Opportunities. Signatories represent, collectively, 15 industry sectors and two European trade unions whose UK affiliates include Unite (T&G and Amicus); the GMB, and the TUC.

The four-year Agreement, which came into force in October 2006, applies to every EU Member State and is based on a legal text supported by a Good Practices guide and a number of supporting annexes. Occupational exposure limits are those that apply in the nation States. A hierarchical reporting regime will commence at local site level in early 2008, and will conclude with collation at the level of all EU27 sector associations.

QPA ensured that its members were fully aware of the new requirements by running a UK-wide series of eight half-day seminars to

communicate the Silica Social Dialogue Agreement – in addition a full-day seminar was organised jointly with the Silica and Moulding Sands Association (SAMSA, a constituent body of the QPA).

As the HSE were official observers and centrally involved in developing the guidance, it is a valid subject for all members of the tripartite HSE-chaired Quarries National Joint Advisory Committee (QNJAC) which includes representation from other industry aggregates-related trade associations that are not parties to the Agreement.

## Aspirations

**The ultimate expectation of QPA members is zero reportable injuries. The industry acknowledges that this is a particularly hard target but it regards it as its social responsibility to aim for nothing less. As a further step in this direction, the association has set a target for a further 50% reduction in RIDDOR incidents between 2005 and 2009, based on the 2004 outcome. The baseline for this new target is the total of 288 RIDDOR incidents recorded by all QPA members in Britain in 2004.**

## Core value

**We recognise the need to maintain and develop a competent workforce.**

## Performance indicators include

- **National Vocational Qualifications (NVQs and SVQs) registered: 11,969 to date (2006) including qualifications awarded in preceding years**



# Competent workforce

## Current Position

Data from the industry training body EPIC indicate further growth in the number of National Vocational Qualifications (NVQs) in the sector. Of particular interest is the evidence of increasing registration of Safety Health and Environmental (SHE) NVQs levels three to five.

A feature of 2006 has been a focus on driver training in the sector. The QPA has worked closely with the Department for Transport (DfT) and their appointed contractors to ensure the successful delivery of the Aggregates Section SAFED scheme to improve the fuel efficiency and safety of road haulage in the sector. The scheme, funded by the ALSF, trained 5,500 drivers before scheme closure in March 2007. In addition, 400 haulage operations received site specific advice to improve fuel efficiency. Early estimates indicate that SAFED trained drivers improved the fuel efficiency of their driving by over ten per cent.

In 2006 the QPA also implemented a driver training policy for member companies. The objective of the policy is that all drivers employed or used by QPA members will be trained to a standard enabling the award of an EPIC Drivers Skills card by April 2009. This is a very ambitious objective and is being implemented in stages, the first stage applying to directly employed drivers and drivers of "liveried" company vehicles; subsequent stages will cover all other "regular" or "less regular" sector drivers. This training initiative focuses particularly on improving driver safety awareness during the collection and delivery of aggregate and quarry products.



## Aspirations

**The industry is committed to developing the workforce to levels that are appropriate to employees' current positions and future career aspirations. It would like to see a major step forward in the number of health, safety and environmental qualifications as this would assist in the delivery of the sustainable development objectives.**

## Working with the **community**

### Core value

We recognise that our operations are part of the local community and strive to be good neighbours.

### Performance indicators

- Recorded complaints from the local community per location: **0.42**
- Sites with a community/liaison group: **324**
- Percentage of quarries with community/liaison groups: **66%**
- Educational visits: **868; 1.76 per quarry**



### Current position

QPA's community programme aims to provide campaigns and resources to assist members in engaging with their local communities.

In Scotland, a QPA liaison committee is highlighted as an example of best practice in Government's Planning Advice on Community Engagement.

### Community safety

QPA's annual Play Safe campaign which aims to warn children about the dangers of playing in quarries and at other operations focused in 2006 on the problem of children being potentially injured or even killed due to irresponsible adults breaking down quarry fences.

A nationwide survey had found that 85% of quarry managers that responded were concerned about adult trespass. In the majority of cases, this was associated with leisure activities, such as dog-walking, motor-cycling and bird-watching. But in some cases over recent years, fences have been cut by adults trying to steal the eggs of rare birds. By cutting or breaking down fences to gain entry, a gap is left which provides easy access for youngsters and leaves them exposed to a range of potential dangers. A hard hitting, wide spread media campaign was supported by member visits to schools and youth groups in the period from May onwards.

In addition, 2006 saw the culmination of an 18-month aggregates levy funded research project to specifically explore the serious problem of quarry trespass by teenagers. The innovative programme included pilot projects

involving four secondary schools in key quarrying areas of the country. The students themselves were given the problem of trespass to tackle, and variously produced videos, websites, artwork, magazines and even sculpture to raise awareness. Roy Leighton, one of the UK's leading learning analysis experts was then engaged to assess this work and also to take a group of 30 teenagers through a seven-week programme in which they were being asked to reassess their whole approach to risk.

From this, a teaching template was developed that can be taken to schools and is also available at [http://www.qpa.org/youth\\_teens02.htm](http://www.qpa.org/youth_teens02.htm).

A new managers' pack was also distributed across the membership and this includes advice on establishing community safety partnerships.



Alongside the pack, the QPA also developed a new online game called Quarry Rescue, [www.quarryrescue.com](http://www.quarryrescue.com) which offers young people a fun way of engaging with our safety agenda. Players have to rescue trespassers from a quarry by answering questions on hazards, with make-the-link and safety messages displayed throughout the experience. The game is being distributed via viral marketing.

The resources were launched at a final project

conference in March at the University of Loughborough. Speakers included the HSE, the Association of Chief Police Officers and the rail industry.

### Virtual Quarry

The QPA launched a comprehensive new interactive online education resource, which is free for teachers and students to use at home or at school.

The Virtual Quarry website, [www.virtualquarry.co.uk](http://www.virtualquarry.co.uk), was again developed with the support of ALSF through the Mineral



Industry Sustainable Technology programme. A variety of partners, including the then English Nature, Earth Science Teachers Association (ESTA), HSE and National Stone Centre, sought to build an open access site which provides both an interactive fun experience for children and a substantial resource for teachers. For youngsters, the highlight is a tour of a virtual quarry by a team of walking, talking animated characters, who explain where the materials for our buildings and roads come from. After the tour, youngsters can transform an old quarry into a nature reserve and take a closer look at rocks and fossils. There is also a Rock Cinema, information on wide-ranging events

around the UK and links to a variety of fun places to visit.

The Virtual Quarry also has much to offer teachers, providing access to a substantial learning resource covering key stages 1 to 4 of the National Curriculum. The site includes more than 20 complete teaching units developed against the schemes of work recommended by the Department for Education and Skills. Each has been written by a qualified teacher and tested by other teachers.

Although the emphasis is on science and geography, the units also draw on the relevance of quarrying to the citizenship and sustainable development areas of the curriculum. A comprehensive set of supporting resources is available, including an image library and guidance on organising visits to real quarries.

The site was unveiled at the BETT educational technology show at Olympia, London on Wednesday 11 January to an audience of some 27,000 teachers.

In May 2006 the site won a major prize in the 2006 Communicators in Business Awards. The Virtual Quarry has created huge amounts of interest since it was launched and enjoyed nearly 45,000 visits in May 2007.

### Aggregate Levy Sustainability Fund

In 2006 QPA lobbied hard for retention of the ALSF and specifically for local authorities to receive more funds.

QPA discovered that, in the fund's first four

years of operation in England, only 70% of the nominal £117.2 million allocation had found its way into ALSF projects. The further cut announced for 2006/7 meant that, in the first five years of the ALSF, at least £40 million of funds promised for environmental benefits had been diverted by Government for other uses. Unless Government is prepared to ring fence ALSF funds for their intended use, further diversion of funds may occur in the future.

In addition, QPA and its members played an active part in supporting ALSF grant awarding bodies and research projects. QPA Scotland and QPA Wales are both active members of the respective national grant awarding bodies.

### Making the Link

It is essential that our members take every opportunity to engage with their local



communities. In order to help them to understand the connection between the built environment and quarrying QPA has produced

written materials, videos and powerpoint presentations that will help quarry managers and other personnel. They can be used at open days or other public events.

## Aspirations

The industry would like to see quarrying and related operations become increasingly valued members of the community. There has been a long-standing relationship between mineral extraction and rural communities in particular. Operators must continue to work on both transparency and performance in order to build trust within communities and co-exist without friction. A reduction in the number of complaints per location would be a significant indicator of performance. As the coverage of the survey increases, the absolute number of complaints may increase, although this may be consistent with a reduction in the rate of complaints. We will also need to ensure that information on complaints is recorded in a consistent manner.

## Partnership with stakeholders

### Core value

**We value our partnerships with all relevant stakeholders and recognise that good communications with them are essential.**

### Performance indicator

- **No specific indicator, but a requirement across the core values.**

### Current position

The industry has a wide range of stakeholders at European, national, regional and local level.

This is the only core value without measurable indicators because partnerships range across all of our core values and are referred to within each section. Some of the other key proactive initiatives are mentioned here.

### Stakeholder engagement

In developing the QPA strategy in 2005 and subsequently publishing the first sustainable development report in March 2006, QPA has recognised and gained value from engagement with its stakeholders.

The aim of the DTI/Defra funded QPA led Sustainable Aggregates Forum was to open up the evolving QPA sustainability strategy to stakeholders and to seek their views on Sustainable Consumption and Production issues and suggestions for collaborative projects.

Workshops took place in January and February 2006 with participants from sectoral associations that represent companies and other organisations in the aggregates supply and recycling chains (eg concrete, construction products, housebuilders, civil engineering, architects and developers). These workshops were complemented by other consultations and research.

Three main areas were shortlisted for development and collaboration and were developed into conceptual project specifications:

- 1 A good practice guide for sustainable aggregates producers.

- 2 Closing the recycled and secondary (RSA) chain, including more involvement by primary aggregate producers.
- 3 Reducing the impact of aggregates transportation.

Following this process, the QPA is now looking to develop a responsible sourcing scheme for the sector.

On 23 May 2006 a consultation meeting was held between the QPA and Government and regulatory stakeholders. The meeting was facilitated by the Environment Council, and included delegates from the DTI, ODPM, Defra, HM Revenue and Customs, Highways Agency, HSE, Building Research Establishment, English Nature, English Heritage and the County Planning Officers Society.

The key purpose of the meeting was to review the importance attributed to the indicators set out in the first SD report, including priorities, to consider suitable indicators where none had been included in the report, and priority indicators for the future.

There were a number of conclusions from the consultation.

Priority indicators as identified by the stakeholders were :

- Number of reportable injuries
- Sales/market share of recycled/secondary materials
- Energy consumption/CO<sub>2</sub> emissions per tonne of output
- Transport mode of delivery
- Aggregates sales and contribution to construction/economy

The outstanding additional indicator requirement was to report on the carbon emissions of transport.

It was also felt that there should not be a specific indicator related to stakeholder engagement, but that each of the QPA core values should include an aspect of stakeholder engagement.

#### Public website

In an effort to improve our communications with all stakeholders, the QPA's public-facing website [www.qpa.org](http://www.qpa.org) was extensively redeveloped and relaunched in autumn 2006.



The new design had a swift and wholly positive impact.

The aim was to create a clean, modern and functional feel that allows our visitors, even if they visit the home page alone, to get a realistic idea of what the quarry industry provides for society, and the issues that our operators face. The site includes an extensive sustainability section and a carbon zone.

Visitor figures for the month of July 2007 have climbed to 30,000.

#### QPA Showcase

Now in its fifth year, the QPA's annual Showcase event revealed progress by the quarrying industry in improving and understanding its footprint both socially and environmentally. Sustainable development was



*Fiona Bruce chairs a live interview with the QPA's Director General Simon van der Byl and Norman Baker MP, Chair of the All-Party Parliamentary Environment Group.*

the main theme and the event focused on the QPA's first SD Report. Hosted by BBC broadcaster, Fiona Bruce, the one-hour ceremony featured video case studies capturing the essence of the effective work taking place across the industry. The short films covered topics such as product innovation, effective community relations, progress on health and safety and the push to increase recycling. The audience for the 2006 Showcase was the highest yet recorded.

# Social progress

## Living with Minerals

In November the CBI Minerals Group, which represents the UK extractive industry (Aggregates, Industrial Minerals and Coal) held its 2nd major mineral industry Conference, in association with the Associate Parliamentary Minerals Group, at the Queen Elizabeth II Conference Centre in Central London. It was followed by a reception hosted by the Associate Parliamentary Minerals Group in the Houses of Parliament at which the new UK National Minerals Forum was formally launched.

## UK National Minerals Forum (UKNMF)

Membership is drawn from across the entire minerals sector as part of the CBI Minerals Group delegation, who are funding and managing the Forum, together with senior departmental representatives from CLG, Defra and BERR as well as the Planning Officers Society, Natural England and The Council for National Parks.

The scope of the Forum is 'all UK minerals extraction including marine aggregates and recycled materials. Oil and gas are currently considered to be out of scope'.

Of crucial importance is the continuing contribution of the various Government Departments involved in industry issues, external organisations and NGOs.

Issues which are likely to feature early in the deliberations of the UKNMF are:

- 1 Declining reserves - the threat to future supply
- 2 The role/operation of the mineral planning system
- 3 Carbon and implications for future of mineral supply
- 4 Cumulative impact of legislation and policy

## Aspirations

**Our sustainable development strategy will act as a catalyst to both improve and extend our relationships with stakeholders. This engagement will help to define priorities in terms of sustainability and identify any new partnerships that would be beneficial.**

## Core value

**We recognise the importance of our national heritage.**

## Performance indicator

- **Land subject to archaeological investigation, pre and post planning permission: 863 ha**



# Heritage

## Current Position

Archaeological resources are an important factor taken into account by QPA members and planning authorities when considering how and where mineral working should take place.

Archaeologists recognise that mineral working often provides them with valuable opportunities to investigate evidence of the past but it has to be acknowledged that mineral extraction can result in the destruction of archaeological remains.

Archaeology can occur almost everywhere but remains are not equal in value. QPA members are committed to ensuring that the most important of them are fully protected and that no archaeological remains are needlessly or thoughtlessly destroyed in the process of mineral extraction.

## Marine protocol

The first annual report of the archaeology reporting protocol, which is in place across all marine aggregate operations was produced by the consultants Wessex Archaeology in 2006. The protocol, which was the product of a

partnership between BMAPA and English Heritage, defines a procedure for reporting and reacting to any archaeological finds encountered either while dredging at sea or while processing the product onshore and has been voluntarily applied by BMAPA across all existing operations. During the period 2005/2006, a total of 19 reports were submitted encompassing over 80 individual items ranging from cannon balls and aircraft remains, to mammoth bones and tusks.

## Aspirations

**National planning policy provides a broad framework for ensuring that these aims are met. However, the interpretation of that policy and the weight placed on the results of research projects has led to inconsistent and in some cases unreasonable requirements from some mineral planning authorities.**

**During the past year major advances have been made in addressing this problem. Working with English Heritage and other key stakeholders, the QPA has contributed to Good Practice Guidance which we hope will be published before the end of 2007. Taken together with the CBI Code of Practice, this Guidance will re-establish a reasonable and consistent basis for the work of Mineral Planning Authorities in identifying areas for future extraction and for mineral operators in preparing their proposals and in the responsible management of archaeological assets in their care.**

*A 44,000-year-old mammoth tusk found within a cargo of marine sand and gravel loaded 100 km east of the River Humber.*



Natural environment • Restoration of land • Biodiversity and geodiversity • Transport of aggregates



*Operational pond with species-rich marginal vegetation at Tarmac's Woodbridge Quarry in Northumberland*

# Environmental protection

Theme	Indicator	2006 (2005) Context	2006	2005	2004
<b>Management systems</b>	EMS certified sites	49% (50.5%) of locations covered by survey	<b>881</b>	917	778
<b>Compliance</b>	Convictions for infringements	Two within survey sample	<b>2</b>	2	0
<b>Land quarried</b>	Hectares being quarried	Equivalent to 0.11% (0.12%) of the land area of the UK, when extrapolated to total UK production of primary aggregates	<b>12,241</b> for survey sample	13,711 for survey sample	14,309
<b>Land prepared for quarrying by soil removal</b>	Hectares		<b>489</b>	438	434
<b>Land restored</b>	Hectares		<b>818</b>	754	868
<b>Planting</b>	Trees planted		<b>218,109</b>	131,663	195,778
	Hedgerows planted (km)		<b>11.4</b>	15.5	19.1
<b>Dry stone walling built</b>	Metres		<b>3,120</b>	1,250	
<b>Marine dredging</b>	Area of seabed licensed	0.152% of UK seabed	<b>1,316 km<sup>2</sup></b>	1,179 km <sup>2</sup>	1,257 km <sup>2</sup>
	Area available to be worked	0.066% of UK seabed	<b>576.0 km<sup>2</sup></b>	595.9 km <sup>2</sup>	779.8 km <sup>2</sup>
	Area dredged	0.016% of UK seabed	<b>140.6 km<sup>2</sup></b>	137.6 km <sup>2</sup>	134.5 km <sup>2</sup>
<b>Transport mode of primary aggregates (GB)</b>	Rail	7.1% of aggregates sold	<b>14.4 m t</b>	13.9 m t	15.8 m t
	Marine dredging	6.9% of aggregates sold	<b>14.0 m t</b>	13.0 m t	13.0 m t
	Ship (imports and UK coastal)	2.9% of aggregates sold	<b>c.6 m t</b>	c.6 m t	6.1 m t
	Inland waterways	Less than 0.5% of aggregates sold	<b>up to 1 m t</b>	up to 1 m t	up to 1 m t
<b>Transport by mode</b>	Road	Virtually all aggregates are moved by road for all or part of their delivery journey	<b>c.200 m t</b>	c.200 m t	c.210 m t
	Average road delivery distance	Aggregates	<b>29 miles</b>	24 miles	
	Average rail delivery distance	Aggregates	<b>94 miles</b>	102 miles	
	Average barge delivery distance	Aggregates	<b>55 miles</b>	21 miles	
	Average road delivery volume	Aggregates	<b>19 t</b>	19 t	
	Average rail delivery volume	Aggregates	<b>1,628 t</b>	1,635 t	
	Average barge delivery volume	Aggregates	<b>396 t</b>	376 t	

# Environmental protection

## Natural environment

### Core value

We recognise the potential that our operations have to affect the environment and are committed to minimising and mitigating such effects.

### Performance indicators

- Sites with certified environmental management system (EMS): **881**
- Proportion of locations covered by a certified EMS: **49%**
- Number of convictions for pollution and planning infringements for locations surveyed: **2**



### Current position

The quarrying industry operates in a highly regulated environment and has a good record of managing these issues.

Many companies have introduced environmental management systems and the latest results confirm that about half of locations covered by QPA SD survey responses operate with certified environmental management systems. 881 locations were identified with certified environmental management systems.

Two convictions were recorded in 2006 across the 1,802 locations covered by the survey.

### Aspirations

We encourage our members to implement high standards of environmental management, including achieving certification to external standards. We believe this in turn will lead to the maintenance of our positive compliance record. We are striving to understand and reduce our environmental footprint by reducing waste disposal and finding new uses for previously discarded material.

### Core value

Quality restoration and aftercare of industry operations, sensitive to local requirements, is an essential part of the responsible stewardship that we expect from QPA members.

### Performance indicators

- Land being quarried: **12,241 ha.**  
Proportion of UK land area covered by primary aggregates extraction (total industry estimate extrapolated from QPA survey)
- Land restored: **818 ha**
- Land prepared for quarrying by soil removal: **489 ha**
- Ratio of land restored, to land prepared for quarrying by soil removal: **1.7**



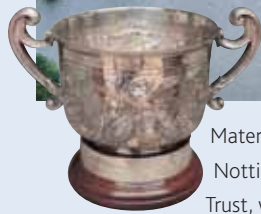
# Restoration of land

## Current position

### Restoration awards

The 36th year of the QPA's annual Restoration Awards saw seven high-quality submissions and the independent judges claimed them to be some of the finest examples yet of restoration following extraction.

The Cooper Heyman Cup, the industry's premier award for best practice in quarry restoration, was presented to CEMEX UK



Materials and Nottinghamshire Wildlife Trust, who worked together

on the Attenborough Nature Reserve near to the city of Nottingham. The reserve, a former sand and gravel quarry, has made huge strides forward in advancing its appeal to the public through an eco-friendly visitor centre, while enhancing the habitat and biodiversity of the area.

Two awards of special merit were presented, to Hanson Aggregates UK for its work at Ripon Quarry in North Yorkshire and to CEMEX UK Materials for Powburn Quarry in Northumberland. The former restored quarry is now home to an ecologically diverse lake and successful fishery, with Powburn offering

similarly high quality conservation waters and angling.

Another former quarry was singled out to receive the Chairman's Trophy in 2006 thanks to its commitment to community involvement, one of the key tenants of the industry's approach to sustainable



development. Brett Aggregates Ltd's Conningbrook Quarry site is now home to the Julie Rose Athletics Stadium, which offers high quality sporting facilities to local people and Olympic-standard training opportunities for athletes who travel from further afield. The company worked closely with Ashford Borough Council and the Julie Rose Stadium Trust in completing the unique project, which will come into its own as we approach the 2012 Olympics.

### Inert waste

With the use of inert waste materials in quarry restoration currently considered "waste disposal" under the rigidly interpreted EU regulations, producers of such wastes are more inclined to take the materials to unregulated disposal sites where costs are reduced. Because of this, some quarry operators are finding that effective restoration is becoming increasingly difficult to carry out in some areas with inert

materials being diverted elsewhere. This in turn makes it more difficult to secure new mineral permissions, as these are contingent on agreed restoration plans when mineral extraction is complete.

The QPA submitted evidence to the Davidson Review in May 2006, highlighting the lack of a level playing field that exists and its views were recognised in the final report review, published in November 2006. At the review's launch, Lord Davidson QC confirmed the Chancellor had accepted all of the report's recommendations and that the Government is committed to delivering them.



Kohlrabi being harvested at Laleham Farm, Shepperton, Surrey, a former sand and gravel quarry restored to high-quality farmland using inert material as the infill.

QPA supports the view that Defra and the Environment Agency (EA) should conduct a full review of the regulation of inert waste with the aim of adopting a more proportionate and risk-based regulatory landscape. As part of this review, stakeholders should be formally consulted by the end of 2007 on options for reform.

QPA will continue to proactively work with the

Better Regulation Executive, Defra and the EA to ensure that the commitments made are delivered.

## Aspirations

The industry has a long and widely recognised track record for the effective restoration of mineral extraction sites which enable the re-use or "recycling" of land to beneficial and often improved after-uses. This success is heavily dependent upon the industry being able to attract sufficient and suitable inert materials to infill the voids created by extraction. A combination of increased recycling by the industry of hard construction and demolition waste formerly used in restoration, and increased use of exemptions on unlicensed waste disposal sites, is jeopardising the industry's future restoration ambitions. The industry is working with Defra and the EA to try to secure recognition of the problem and the contribution to sustainability that restoration and "recycling" of land provides.

## Biodiversity and geodiversity

### Core value

We are committed to improving our management of biodiversity and geodiversity.

### Performance indicators

- Trees planted: **218,109**
- Hedgerow planted: **11.4 km**
- Designated Sites of Special Scientific Interest (SSSIs) in each condition category: **Not yet available**



*At Tarmac's Mancetter Quarry in Warwickshire, a series of restoration trials have been established to investigate restoration options for the quarry. They were conceived to investigate different soil and vegetation types and different reclamation methods.*

### Current position

In 2006 English Nature, the Countryside Agency and the Rural Development Service were combined to form the new body Natural England. During this period of integration the QPA and SAMSA have continued to work with Natural England through the Minerals and Nature Conservation Forum. The Forum held two interactive workshops for minerals companies on the development of biodiversity and geodiversity action plans. The workshops brought together key practitioners in the field to discuss and provide advice on the practicalities of delivering such action plans on the ground. The Forum also launched the website [www.mineralsandnature.org](http://www.mineralsandnature.org) designed to provide the industry and other interested stakeholders with a focus for resources on the management of biodiversity and geodiversity in the minerals industry.

Work continued on developing the QPA indicator on the condition category of designated Sites of Special Scientific Interest (SSSI). It is important for the industry to understand the condition of SSSIs for which it has control over to prevent any deterioration in status and to help identify areas for improvement. The quality of SSSI condition data is reliant on a number of factors and QPA and Natural England are carrying out a rationalisation exercise on SSSI ownership and condition status with Minerals and Nature Conservation Forum members.

In November 2006, the ALSF funded 'Nature After Minerals: how mineral site restoration can benefit people and wildlife' was launched by the RSPB. The report showed for the first time the vast areas of priority wildlife habitat that

could be created across England - over 8,000 hectares of reedbed and almost 25,000 hectares of lowland meadows for example – enough to exceed Government UK Biodiversity Action Plan (BAP) habitat creation targets for nine different habitats. It sets out a vision for the future and recommendations for all involved in mineral planning to help make the most of minerals sites, for people and for wildlife.

As the structure of Natural England has become more widely understood following integration, QPA, SAMSA and Natural England will now be reviewing how best the minerals industry can engage with the organisation in coming years at both a strategic policy level as well as a regional operational level. Industry engagement with other key conservation bodies will also be reviewed.

### Aspirations

**We aspire to help nature conservation agencies to achieve the Public Service Agreement target of 95% of all SSSIs in favourable condition by 2010. We would also like to investigate how we can increase the industry's contribution to international and local Biodiversity and Geodiversity Action Plans.**

*In Northumberland, Tarmac has developed county-wide biodiversity action plans covering seven quarries which between them support a wealth of wildlife. Species of national conservation importance include red squirrels, skylarks, bats and linnets as well as plants like orchids.*



*As its contribution to National Tree Week, and to celebrate its own centenary, CEMEX UK teamed up with local schools to plant 100 native trees at each of eight quarry sites across the UK. In all, CEMEX UK planted over 30,000 trees in 2006 and estimates that over the next 100 years the trees could absorb 9,000 tonnes of carbon dioxide.*



*More than 160 million years of Cotswolds history are now available to the public through one protected rock face at Naunton quarry, near Stow-on-the-Wold. The face at the Huntsmans Quarries site even includes footprints of a Megalosaurus dinosaur. Our picture shows David Glenn of Huntsmans unveiling an interpretation board at the opening event, which also doubled as the launch of the Cotswold Hills Geopark. This aims to promote geology as the foundation for the area's unique wildlife habitats, its biodiversity and agriculture. The geopark initiative has come from a partnership led by the Gloucestershire Geology Trust with enthusiastic support from the Cotswolds Area of Outstanding Natural Beauty, English Nature, the Royal Agricultural College and local quarrying companies.*



# Environmental protection

## Transport of aggregates

### Performance indicators include

- Delivery transport by mode.

#### Current position

In 2006 around 35 million tonnes of aggregates were delivered with non-road means of transport as the principal delivery



modes. This figure has remained broadly consistent in recent years. The use of marine dredged aggregates remains an essential source of supply for a number of construction markets, including London and the South-East, South Wales and Merseyside. The role of marine dredged aggregates is reviewed more fully in the first SD Report from BMAPA, shortly available on the QPA and BMAPA websites.

Rail deliveries of aggregates, notably from the East Midlands into the South East and North

West, and from the South West into the South and South East remains key to meeting demands in these areas. As noted in the first



QPA SD Report, there remains concern that the rail capacity available to aggregates freight in and around London could be unreasonably constrained by the powers which the Crossrail Bill may grant the Crossrail operator. Currently the Bill retains clauses which would allow the Crossrail operator priority access to the rail network, to the potential disadvantage of other rail users including aggregates freight operators. QPA formally petitioned the House of Commons Crossrail Select Committee on this issue and appeared before the Committee in July 2006 to support the industry's case for sufficient future access to the rail network around London for aggregates freight.

There is also continuing interest by the aggregates industry in opportunities to move aggregates by inland waterway. Although the total aggregates volume moved by inland waterways is up to one million tonnes per year, and relatively small compared with other modes, these movements enable significant reductions in road transport in the local areas

concerned. A potentially significant development in 2006 was the Government decision to award grant aid for investments designed to facilitate delivery of construction materials into the Olympics site by barge.

However, in spite of these substantial commitments to delivery by rail and water, most aggregates will continue to be transported from quarries, depots and wharves to manufacturing plants and to construction sites by road. Given the number of aggregates sources, customers and construction sites



which can only be accessed by road, the ability of the industry to minimise the environmental and social impacts of road transport will be a key sustainability issue for the industry.

The QPA survey has expanded to collect data on average delivery distances and average delivery volume by mode of transport. These issues are significant because, for example, increasing the average delivery load by road would enable customers' needs to be met with fewer lorry movements.

Driver behaviour is seen as a key factor in reducing such impacts, and two initiatives will have a positive practical impact in this area. First, the ALSF funded SAFED scheme for the sector trained 5500 drivers before scheme funding ran out towards the end of the 2006/7 financial year. The QPA, through its Transport Committee members, worked closely with the SAFED contractors to help ensure the design of the SAFED scheme was appropriate to the sector. Second, in 2006 QPA introduced a driver training policy which aims at ensuring

**Training requirements for drivers in the aggregates sector**  
Background to the course

All industry hauliers need to be aware of a training requirement for LCV drivers of all aggregates businesses who are members of the Quarry Products Association (QPA).

Industry hauliers continue to be one of the highest risk sectors in the industry and QPA members are determined to improve this situation. All hauliers using aggregates, or asphalt, ready mixed concrete and mortar will be required to hold an EPIC Drivers Skills Card.

The training leading to the achievement of this card has been specifically designed to increase the safety awareness of drivers and to encourage safe behaviour at industry sites, delivery sites and on the road.

To obtain an EPIC Drivers Skills Card a driver must:

- Hold a valid LCV licence
- Complete the one day EPIC Driver Skills training course or an EPIC Approved equivalent

The deadline was **April 2009** - Drivers of aggregates business licensed vehicles.

**April 2009** - Major industry events, without an existing QPA aggregates business for 100 days per year or more other than those listed.

**April 2009** - All drivers making a delivery on behalf of a QPA member company.

An EPIC Drivers Skills Card is likely to be increasingly demanded for access to construction sites, and is already recognised by the Highway Agency.

**Who should attend?**  
LCV drivers of all road hauliers in the aggregate and mineral processing industries sector, except those who have recently attended an EPIC Approved course leading to the achievement of the EPIC Drivers Skills Card.

**Course Objectives**  
The main aims of the EPIC course are to increase driver awareness of health and safety issues at work and to encourage safe behaviour and practices that will improve safety performance during every stage of the transportation of quarry products.

**Course Content**  
The course covers:

- Preventing Multiple Accidents
- Accident Reporting
- Personal Protective Equipment (PPE)
- Vehicle pre-start checks
- Safe Driving Behaviour
- Vehicle Accidents and Emissions
- Site Hazards
- Vehicle Repairing

**EPIC Training and Consulting Services Limited**  
Alan Row  
27 St. Wilfrid Street  
St Albans  
Herts AL3 4DG  
Tel: 01763 263119  
www.epicid.com

that all drivers working for QPA members, whether directly employed or sub-contracted, will receive the training necessary to be awarded an EPIC Drivers Skills card by April 2009. The initial phase of this policy, covering drivers using liveried company vehicles, was implemented in 2006.

The QPA was very pleased to work with the

DfT in the consultation process leading up to the implementation of the 48 hours working week for drivers in 2005 (The Road Transport Directive - RTD). A key practical issue for the industry in this implementation process was to ensure that the implementation guidance



allowed drivers to discount an element of waiting time (so-called Periods of Availability - POAs) from the 48 hour weekly limit. Given the nature of the industry, with frequent, relatively short lorry deliveries which can be subject to delays, this flexibility in the final implementation guidance was very significant for the sector. The DfT is now reviewing the operation of the RTD, and the QPA will be seeking to ensure that the existing interpretation of POAs is retained. If not, there is likely to be an adverse impact on the cost and/or reliability of sector deliveries to customers.

### Aspirations

The aggregates industry is keen to make full use of all modes of transport. In addition, it is important that the transport of aggregates is carried out as efficiently as possible to minimise the impact of transport on local residents.

Currently, we do not know enough about the effect of aggregates transport on carbon emissions, and we see the improvement of this base data and the minimisation of carbon emissions as key challenges to be addressed by the industry in association with our stakeholders.

We aim to ensure that an increasing proportion of industry drivers benefit from industry specific training and the award of a Drivers Skillcard.



# Natural resources

## Resource conservation

Theme	Indicator	2006 Context	2006	2005	2004
Aggregates production	GB volume (aggregates for construction and non-construction uses)	Includes crushed rock and sand & gravel used for both construction and non-construction purposes	<b>225.0 m t</b>	227.5 m t	237.4 m t
	GB volume (primary aggregates)	Construction use only	<b>204.0 m t</b>	204.3 m t	213.7 m t
	GB volume (primary and recycled/secondary aggregates)	Total GB aggregates market including primary aggregates and recycled and secondary materials	<b>274.0 m t</b>	272.3 m t	280.7 m t
	UK volume (primary aggregates)	Primary aggregates only	<b>229.0 m t</b>	228.8 m t	236.6 m t
Sources of primary aggregates	UK crushed rock	Primary aggregates only	<b>142.0 m t</b>	140.8 m t	145.7 m t
	UK sand & gravel	Primary aggregates only	<b>87.0 m t</b>	88.0 m t	90.7 m t
	GB crushed rock	Primary aggregates only	<b>123.0 m t</b>	121.9 m t	127.7 m t
	GB sand & gravel (land won)	Primary aggregates only	<b>67.0 m t</b>	69.4 m t	73.0 m t
	GB sand & gravel (marine)	Primary aggregates only	<b>14.0 m t</b>	13.0 m t	13.0 m t
Recycling	GB supply of recycled and secondary materials		<b>70.0 m t</b>	68.0 m t	67.0 m t
Primary vs recycled	GB ratios recycled and secondary	26% of total aggregates market	<b>26%</b>	25%	24%
	GB ratios primary	74% of total aggregates market	<b>74%</b>	75%	76%
European comparisons	Per capita production EU	Total aggregates per person		7.1 t	6.9 t
	Per capita production GB	Total aggregates per person	<b>4.7 t</b>	4.7 t	4.8 t
Water use	Metered (charged) consumption	0.041 cu m per tonne of QPA production	<b>3.8 m cu. m</b>	7.0 m cu. m	5.6 m cu. m
Energy use	Electricity use		<b>0.95 m MWh</b>	1.0 m MWh	1.6 m MWh
	Gas oil use		<b>215.0 m l</b>	220.9 m l	201.6 m l
	Diesel (non-delivery transport) use		<b>4.7 m l</b>	6.5 m l	6.8 m l
	Heavy fuel oil use		<b>45.8 m l</b>	25.6 m l	0.8 m l
	Light fuel oil use		<b>29.3 m l</b>		
	Natural gas use		<b>1.45 m MWh</b>	1.9 m MWh	2.2 m MWh
	Recovered fuel oil use		<b>22.6 m l</b>	101.4 m l	95.5 m l
Total energy use	Total on-site energy use (excluding delivery). Expressed as kg of CO <sub>2</sub> per tonne	Based on total QPA production of aggregates and value added products	<b>7.71kg of CO<sub>2</sub> per tonne of output</b>	8.41kg of CO <sub>2</sub> per tonne of output	9.98kg
Carbon emissions	Percentage of total UK carbon emissions	Total industry estimate based on QPA data	<b>0.52%</b>	0.52%	0.6%

## Resource conservation

### Core value

We recognise our responsibility to make the most efficient use of all resources.

### Performance indicators

- Tonnage of aggregates produced and landed: **274 million tonnes GB**
- Volume from land sources: **190 million tonnes of primary aggregates GB**
- Volume from marine sources: **14 million tonnes GB**
- Proportion from recycled & secondary sources: **26%**
- Per capita production in GB: **4.7 tonnes (EU: 7.1 tonnes)**
- Water use metred/charged consumption per tonne of QPA production: **0.041 cubic metres**
- Energy use, CO<sub>2</sub> kg per tonne of total production: **7.71 kg**
- Aggregates sector share of UK carbon emissions: **0.52%**

### Current position

The assessment of trends in this area is a key element of the QPA's SD strategy, and this importance has been matched by the challenge of collecting consistent and comprehensive data. At this stage in the QPA's SD reporting initiative, it is clear that some of the available data remains indicative rather than precise, therefore a key requirement for the sector will be to improve the quality and quantity of data availability.

Nonetheless, it is apparent that the volume of recycled and secondary materials used in aggregates markets continues to grow and accounted for 26% of the GB Aggregates market in 2006. An important data source for this sector is the work carried out by Capita Symonds for the Department of Communities and Local Government (DCLG) to assess the arisings and use of recycled and secondary materials in England. The latest report, for

2005, was published in early 2007 and taking account of other available information on the sector, a GB estimate of 70 million tonnes has been derived for 2006. Based upon data from the UEPG and other European sources, the 26% market share of recycled and secondary materials in the GB Aggregates market is the highest in Europe and three times higher than the European average.

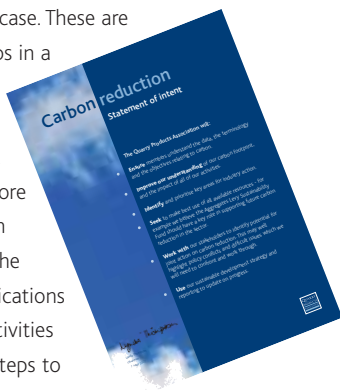
With the exception of the Lime sector, which is an intensive energy user and operates a Climate Change Agreement, the reduction of energy use has not been historically an issue which has generated concerted action in the aggregates sector. However, in view of increasing awareness of the potential impacts of climate change and the need to limit carbon emissions, it is clear that all industry sectors, including less-intensive activities, need to contribute to national plans for carbon reduction. While the forthcoming Climate



Change Bill and Act will clarify national targets for carbon emissions and the powers government will have to manage this process, the QPA recognises that the aggregates industry needs to focus on carbon reduction now.

The data collected to date in three QPA SD surveys indicates that carbon emissions in the sector, excluding delivery transport, are in the order of 0.8 million tonnes per year. This suggests a sectoral total, including delivery transport, of around one million tonnes per annum, compared with the UK total of over 150 million tonnes per annum.

In order to bring a much greater focus to the reduction of sector carbon emissions, the QPA announced a carbon reduction Statement of Intent at the 2007 QPA Showcase. As part of the associated industry communication exercise, a QPA Carbon Card was also launched at the Showcase. These are the first steps in a process which will see the QPA play a far more active role in identifying the carbon implications of sector activities and taking steps to reduce emissions.



Data quality on water use in the sector remains in need of improvement. The requirement to measure all water use, including dewatering of quarries (which is now defined as abstraction) under the

implementation of the 2003 Water Act should generate better information in this area from 2008.

**Aspirations**

**We aspire to ensure that all minerals are used appropriately and that we maximise the use of previously used materials. We would like to reduce our environmental footprint per tonne of material sold.**



*Day Aggregates is creating high-quality blends of primary and recycled aggregates at its site at Purley in the south of London. The rail-delivered primary aggregate is blended with construction waste from building sites all over London. The computer-controlled mixing process creates blends using anything from five per cent to 60% recycled materials.*



*Redevelopment of St Pancras Station in London.  
Photograph courtesy of LCR/Troika.*

# Economic prosperity

Providing essential materials • Employment

Theme	Indicator	2006 Context	2006	2005	2004
<b>Aggregates production</b>	GB volume (aggregates for construction and non-construction uses)	Includes crushed rock and sand & gravel used for both construction and non-construction purposes	<b>225.0 m t</b>	227.5 m t	237.4 m t
	GB volume (primary aggregates)	Construction use only	<b>204.0 m t</b>	204.3 m t	213.7 m t
	GB volume (primary and recycled/secondary aggregates)	Total GB aggregates market	<b>274.0 m t</b>	272.3 m t	280.7 m t
	UK volume (primary aggregates)		<b>229.0m t</b>	228.8 m t	236.6 m t
<b>Asphalt production</b>	GB volume	GB total est	<b>25.7 m t</b>	27.9 m t	26.9 m t
<b>Ready-mixed concrete production</b>	GB volume	GB total est	<b>23.0 m cu. m</b>	22.4 m cu. m	22.9 m cu. m
<b>Construction and aggregates</b>	Primary aggregates use per £1,000 of construction output	Primary aggregates only	<b>2.53 t</b>	2.56 t	2.67 t
	Total aggregates use per £1,000 of construction output	Includes primary, recycled and secondary aggregates	<b>3.4 t</b>	3.42 t	3.5 t
<b>Construction and the economy</b>	Aggregates use per £1 billion of GDP	Sales of primary aggregates compared with £billion of GDP at market prices	<b>0.18 t</b>	0.18 t	0.19 t
<b>Employment</b>	Direct (GB)		<b>36,686</b>	38,050 (2004)	
	Indirect (GB)		<b>49,674</b>	50,220 (2004)	
<b>Operations</b>	Number of quarries	UK total	<b>1,325</b>	1,350 (2004)	
	Wharves	UK total	<b>88</b>	97 (2004)	
	Rail depots	UK total	<b>45</b>	48 (2004)	

## Providing essential **materials**

### Core value

We recognise that the materials we supply are, and will continue to be, essential for the improvement of standards of living and quality of life in the UK.

### Performance Indicators

- **Tonnage of aggregates produced: 274 million tonnes GB, total aggregates market**
- **Volume from land sources: 190 million tonnes of primary aggregates GB**
- **Volume from marine sources: 14 million tonnes**
- **Proportion from recycled and secondary sources: 26%**
- **Per capita production: 4.7 tonnes in GB and 7.1 tonnes in EU**
- **Primary aggregates use relative to construction: 2.5 tonnes per £1,000 of construction output**
- **Total aggregates use relative to construction: 3.4 tonnes per £1,000 of construction output**
- **Employment: Direct and indirect 86,360**

### Current position

Aggregates and quarry products are the most significant sector of materials supplying the construction industry. Materials such as crushed rock, sand and gravel, recycled and secondary materials, ready-mixed concrete, concrete products, asphalt, mortar and lime are used in all areas of construction, from small scale maintenance work to major national contracts.



*This £100 million bridge to the Thames estuary island of Sheppey will overcome traffic chaos associated with the current bridge, which has to be raised around 20 times a day for ships to pass. The structure has required 59,000 tonnes of ready-mixed concrete using marine aggregate delivered by dredgers.*

In 2006 the aggregates market showed modest growth. This reflected the modest growth of construction output, although there was a market difference between the two per cent improvement in ready-mixed concrete sales and the eight per cent decline in asphalt sales – the asphalt decline providing physical evidence of the national decline in road maintenance and improvement activity.

Current forecasts suggest that construction activity will grow consistently over the next three to five years. Although the outcome of the Chancellor's Comprehensive Spending Review in Autumn 2007, which will determine the level of public investment in the built environment and infrastructure, is still uncertain, Government has announced that two million dwellings will be built in England by 2015 and three million by 2020, representing a significant increase in the rate of housebuilding and associated materials supply. The plans suggest an average level of housebuilding of around 220,000 pa to 2016 compared with the current level of housing completions of around 170,000 pa.



In addition to direct supply to the construction industry, over 20 million tonnes of rock and sand and gravel were used in industries and activities as diverse as glass, iron and steel and cement making, pharmaceuticals, agriculture and reducing acidic power stations emissions.

Within the market, there has been an increasing focus on the sustainability of



*The Diamond Light Source synchrotron is a new scientific facility on the Harwell Chilton science campus in South Oxfordshire. It can be described as a series of 'super microscopes' and is housed in a futuristic doughnut-shaped building which covers the area of 5 football pitches. It will ultimately host up to 40 cutting edge research stations, called beamlines, supporting the life, physical and environmental sciences. Over 35,000m<sup>3</sup> of concrete were supplied during its construction.*

materials supply. For example the Building Research Establishment (BRE) is updating its 'Green Guide', which advises specifiers and designers on the embodied environmental performance of construction materials, and use of the 'Green Guide' is a requirement of the new 'Code for Sustainable Homes', which will make sustainability criteria a more important element of housing development. The QPA has worked with the BRE to update the assessment of the environmental impacts of aggregates, asphalt and ready-mixed concrete. The QPA is also working on the development of a potential responsible sourcing scheme, which would enable participating companies to demonstrate that they meet responsible sourcing criteria within the 'Green Guide', 'Code for Sustainable Homes' and associated initiatives. While the 'Green Guide' is a methodology with flaws and limitations, it represents, together with the Code and associated initiatives, a step change in the "mainstreaming" of sustainability

performance within the construction industry. This is a key commercial trend which the QPA and member companies recognise and are responding to.

### Aspirations

**Quarried materials are essential to the quality of life we expect for ourselves and others. We aspire to achieve the best value for society from each tonne of material extracted and sold, and to improve the transparency of the industry's sustainability performance so that customers and clients can make informed material choices.**



*Crushed rock is essential to railways: 5,000 miles of new track are planned by 2010.*



*Great Western Hospital, Swindon. One hundred new hospitals will have been built in the UK between 1997 and 2010.*

## Employment

### Core value

We recognise that our operations are an important source of employment and economic activity.

### Performance Indicators

- **Employment levels:** **direct (GB) 36,686;** **indirect (GB) 49,674** (The derivation of these figures is set out in the appendices)

### Current position

#### Careers Drive

The UK minerals industry is potentially facing a bottleneck with recruitment within the next five to ten years. This is due to large amounts of the existing workforce approaching retirement age together with challenges in recruiting new workers to replace them. The industry has continued to market itself as a



viable career path for school leavers and graduates, although there is strong competition from other sectors. Although companies within the industry advertise during recruitment phases and larger businesses pursue structured graduate recruitment programmes, there is a need to communicate more generically with key audiences on the breadth of roles available within the industry.

this phase is complete, attentions will turn to ensuring that these materials and resources reach the schools, universities and, perhaps most importantly, careers advisory services, in as effective a way as possible.

In Wales, the QPA linked up with Careers Wales, the Welsh Assembly organisation, to promote understanding of the industry with

teachers and schoolchildren through attending workshops for teachers and making presentations, followed by quarry visits.

In Scotland, the QPA is working with the MOD Careers Transition Partnership to ascertain whether the industry can provide jobs for former forces personnel.



In 2006, via funding secured through EPIC and the sector skills council, Proskills, QPA started to develop a careers promotion strategy. This includes substantially revising and refreshing the existing [www.careersinquarrying.co.uk](http://www.careersinquarrying.co.uk) website and provision of new supporting materials to help promote the industry. Once

#### Aspirations

We aspire to be an industry of choice for prospective employees.

# Appendices

## Market summary 1980 - 2006

	<b>GDP</b> chained volume measures £m	<b>Construction output (GB)</b> £m 2000 prices	<b>Primary aggregate sales (GB)</b> million tonnes	<b>Crushed rock</b> million tonnes	<b>Sand &amp; gravel (total)</b> million tonnes
<b>1980</b>	607,787	50,728	199	103	96
	599,011	45,829	182	92	89
	610,489	47,487	194	103	91
	632,065	51,576	213	112	101
	648,325	53,627	211	111	100
<b>1985</b>	671,375	54,219	217	115	102
	697,894	56,178	228	123	106
	729,638	62,580	254	142	111
	765,932	68,616	291	162	130
	782,429	71,857	300	169	131
<b>1990</b>	788,152	72,085	278	162	116
	777,403	66,841	246	148	98
	779,563	64,033	233	144	89
	798,489	62,823	239	150	89
	833,681	62,589	259	162	98
<b>1995</b>	857,522	63,381	241	151	90
	880,854	65,776	215	133	82
	908,655	67,369	220	134	86
	938,101	68,411	218	132	86
	966,551	69,294	221	133	88
<b>2000</b>	1,005,542	69,676	219	130	89
	1,027,906	71,087	222	134	88
	1,048,456	74,090	210	127	83
	1,074,858	77,852	203	123	80
	1,108,890	80,254	214	128	86
<b>2005</b>	1,127,741	79,540	204	122	82
	1,157,062	80,569	204	123	81

\*Marine sand and gravel volumes include only UK landings for construction purposes. Total production including beach replenishment and landings at overseas wharves was 24.18 million tonnes in 2006.

<b>Sand &amp; gravel (marine)*</b> million tonnes	<b>Recycled/ secondary (GB)</b> million tonnes (est)	<b>Total aggregates (GB)</b> million tonnes	<b>Asphalt (GB)</b> million tonnes	<b>Ready-mixed concrete (GB)</b> million cu m
12.5	20	219	24	22.4
11.5	18	200	22	19.9
11.9	19	213	26	20.7
12.8	21	234	27.2	21.5
12.6	21	232	25.5	20.8
13.8	22	239	26.9	21.6
15.3	23	251	28.4	21.5
16.2	25	279	29.9	24.3
19.6	29	320	31.8	28.8
20.7	32	332	33.7	29.6
17.2	33	311	36.7	26.8
12.4	34	280	36.4	22.5
10.6	35	268	36.6	20.8
10.1	37	276	36.3	20.8
11.3	39	298	37.7	22.9
11.6	42	283	34.9	21.7
11.5	45	260	29.3	20.9
12	48	268	27.5	22.3
13	51	269	27.7	22.9
13.4	54	275	26	23.6
14.4	57	276	25.7	23
13.6	60	282	26.5	23
13	62	272	27.8	22.5
12	64.5	268	27.8	22.3
13	67	281	26.9	22.9
13	68.3	272	27.9	22.4
13	70	274	25.7	22.9

## Crushed rock and sand & gravel production 2005

Aggregates and non-aggregates uses	2005 Volumes - million tonnes		
	GB	NI	UK
Total crushed rock	141.0	21.9	162.9
Total sand and gravel	86.5	5.8	92.3
<b>Total</b>	<b>227.5</b>	<b>27.7</b>	<b>255.2</b>

Aggregates uses	GB	NI	UK
Total crushed rock	121.9	18.9	140.8
Total sand and Gravel	82.4	5.8	88.2
<b>Total</b>	<b>204.3</b>	<b>24.7</b>	<b>229.0</b>

GB source: 2005 AMRI

NI source: 2005 Minerals Statement (with estimates for aggregates proportion)

	AMRI summary (GB only) - million tonnes			
	Construction use	Building stone	Non-construction use	Total
Sandstone	11.1	0.5	0.04	11.6
Igneous rock	44.8	1.2	0.02	46.0
Limestone/dolomite	66.0	0.59	16.8	83.4
Sand and gravel	82.4	-	4.1	86.5
<b>Total</b>	<b>204.3</b>	<b>2.3</b>	<b>21.0</b>	<b>227.5</b>

## European production of aggregates

	2005 volumes (million tonnes)				
	Sand & gravel	Crushed rock	Recycled/secondary	Total	Per capita
Austria	66.0	32.0	6.5	104.5	12.8
Belgium	13.9	38.0	13.2	65.1	6.2
Czech Republic	25.5	38.0	3.7	67.2	6.6
Denmark	58.0	0.3	NA	58.3	10.8
Finland	53.0	45.0	0.5	98.5	18.8
France**	170.0	223.0	17.0	410.0	6.8
Germany	263.0	174.0	76.0	513.0	6.2
Ireland	54.0	79.0	1.0	134.0	33.3
Italy	225.0	145.0	7.5	377.5	6.4
Netherlands***	85.0	4.0	20.2	109.2	6.7
Norway	15.0	38.0	0.2	53.2	11.6
Poland	104.3	37.7	8.8	150.8	4.0
Portugal*	6.3	82.0	NA	88.3	8.4
Slovakia	8.9	16.9	0.5	26.3	4.9
Spain	159.0	300.0	1.3	460.3	10.6
Sweden	23.0	49.0	8.1	80.1	8.9
Switzerland	46.5	5.3	5.3	57.1	7.7
GB	82.0	122.0	68.0	272.0	4.7
<b>Total</b>	<b>1,458.4</b>	<b>1,429.2</b>	<b>237.8</b>	<b>3,125.4</b>	<b>7.1</b>
<b>Total excluding GB</b>	<b>1,376.4</b>	<b>1,307.2</b>	<b>169.8</b>	<b>2,853.4</b>	<b>7.5</b>

Sources: UEPG and QPA.

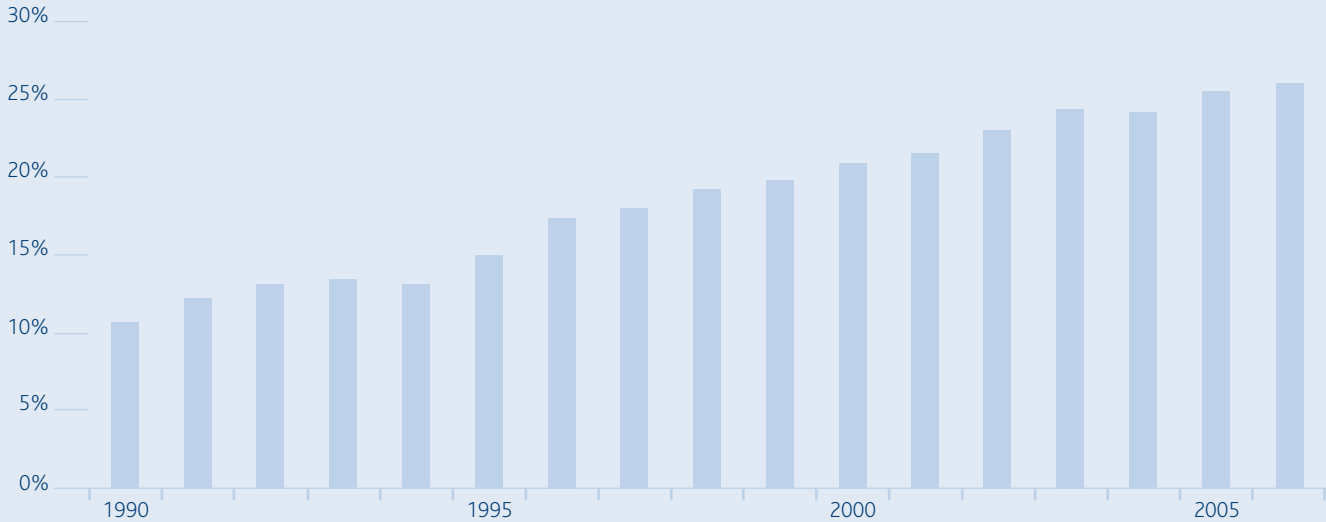
\*2003 data.

\*\*2004 data.

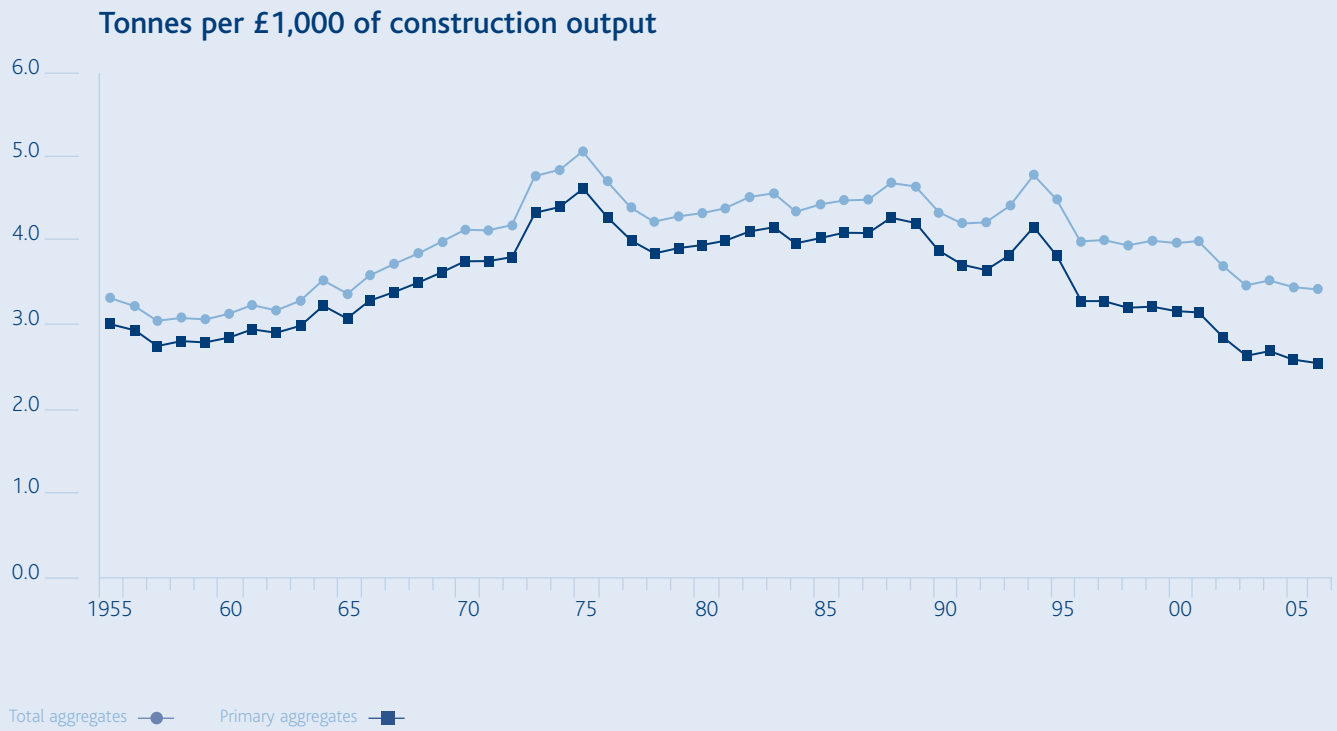
\*\*\*Data for the Netherlands includes estimates of marine dredged sand and gravel.

# Appendices

## Share of recycled/secondary materials in GB aggregates market



## Aggregates intensity of use (GB)



## Assessment of employment in the quarrying industry

### Introduction

Precise data on sector employment can be difficult to establish as there are several sources of employment data, providing different information, and also definitional issues about the scope of sector employment.

### Sources of information

The Annual Minerals Raised Inquiry (AMRI) is carried out by the Office for National Statistics. It collects data on employment in quarry sites in the survey period. As such it will include contractors as well as direct employees working on site in the survey period, but will not include company employees and contractors not on site in the survey period. AMRI results for 2004 and 2005 are shown opposite.

The Labour Force Survey (LFS) is a quarterly survey which estimates employment by standard industrial classification (SIC). The sample of individuals surveyed for the LFS identify which sector they work in, so drivers working within the quarrying sector would probably be recorded in the road transport sector. Given that the SIC categories appear to overlap (for example SIC code 14.11 covers "quarrying construction stone" and SIC code 14.12 covers "limestone gypsum, chalk quarrying") and the LFS results are based on survey samples, the results recorded for specific SIC codes can vary significantly from quarter to quarter. The results opposite are generated by averaging the LFS quarterly surveys for 2005 and 2006.

Mineral	GB Employment	
	2005	2004
Sand & gravel	3,450	4,054
Sandstone	1,354	1,310
Igneous rock	1,683	1,760
Limestone	3,210	3,370
Dolomite	423	453
<b>Total aggregates</b>	<b>10,120</b>	<b>10,946</b>
<b>(+ Industrial sand)</b>	<b>318</b>	<b>550</b>

Classification	2006		2005	
	GB	UK	GB	UK
<b>14.11 Quarrying construction stone</b>	5,083	6,835	4,549	6,152
<b>14.21 Gravel, sand pits</b>	10,256	11,123	11,410	11,631
<b>26.61 Concrete products manufacture</b>	17,791	19,692	19,670	22,098
<b>26.63 Ready-mixed concrete manufacture</b>	2,809	3,962	5,807	5,959
<b>26.64 Mortar manufacture</b>	297	297	457	457

## Conclusion

Given the coverage and caveats associated with the AMRI and LFS figures, the LFS survey should provide a better estimate of the number of people employed in the aggregate/quarry products sector because the results are not constrained by the AMRI restriction to people physically in quarries during the one week AMRI survey period.

In order to assess the number of people employed within the industry and those whose employment is dependant on the industry, the LFS data needs to be supplemented by:

- An estimate of employment at remote (non-quarry) asphalt plants
- An estimate of haulage employment
- An assessment of the wider multiplier effect on employment

### 1 Remote Asphalt Plant Employment

Assume 50% of asphalt sites are remote from quarries, with average employment of three per plant. Therefore 150 plants x 3 = 450 employees.

### 2 Industry Haulage Employment

Centre for Sustainability report 'Alternative Approaches to Reducing the Environmental Impacts of the Transport of Primary Aggregates' (ALSF/MIRO project) March 2005, estimates that 25,000 "full time" vehicles are used in the sector. Therefore the number of drivers in the sector can be estimated as 25,000 (on a full-time equivalent basis) in GB.

### 3 The "Multiplier" Effect

The only assessment of the employment multiplier effect with regards to the quarry industry we are aware of is included in the 1995 Pieda Study for Somerset County Council and the Mendip Quarry Producers Association : 'Mendip Minerals Economic Study.'

This study reports:

6.22: *On the basis of previous studies, and the employee incomes and supplier expenditure totals described above, Pieda would suggest that the local multiplier generating indirect and induced employment would be of the order of 1.4 ie. An additional 734 jobs would be generated from the 1,846 direct total.*

6.23: *The employment multiplier measure can be considered to be a conservative estimate owing to the fact that the quarrying industry creates considerable "spin-off" activities such as stoneworking, which are often small in scale, and will not have been captured in the direct employment total.*

*The direct employment total of 1, 846 includes both permanent employees and contractors, the majority of whom are hauliers.*

*The Pieda conclusions suggest that the wider employment multiplier to be applied to identified quarrying employment (direct employment and contracts such as hauliers) should be 1.4.*

*Various multiplier measures exists. Allowing for the three major leakages of imports, savings and taxation, it has been calculated that for every £1 paid to an employee in the UK, a further 80 pence of expenditure is generated throughout the economy (MJ Survey, 'The Domestic Economy', in Morris (ed) The Economic System in the UK). Localised employment multipliers include an estimate of 1.5 for the Hinckley Point 'C' Power Station in Somerset (Oxford Polytechnic, 1987).*

### Employment conclusions (GB)

Direct quarrying employment (LFS)	15,339
Ready-mixed concrete employment (LFS)	2,809
Additional asphalt employment estimate	450
Mortar employment (LFS)	297
<b>= Direct sub total</b>	<b>18,895</b>
+ Concrete products employment (LFS)	17,791
<b>= Direct sub total inc concrete products</b>	<b>36,686</b>
+ Estimates of full-time hauliers	25,000
<b>= Direct plus hauliers total</b>	<b>61,686</b>
x Multiplier effect (Pieda) 1.4	24,674
<b>= Total employment effect</b>	<b>86,360</b>

# QPA members 2006

## England, Scotland and Wales

Aggregate Industries UK Ltd  
Allen Newport Ltd  
Angle Park Sand & Gravel Co  
Ayton Products  
Ballast Phoenix Ltd  
Barker Brothers Aggregates Ltd  
Barr Industrial  
Bathgate Silica Sand Ltd  
Bestco Surfacing Ltd  
Bonnar Sand & Gravel Co Ltd  
Borough Green Sandpits Ltd  
Brett Group  
Britannia Aggregates Ltd  
Bromfield Sand & Gravel Co Ltd  
Bucbricks Co Ltd  
Burythorpe Silica Sand Products Ltd  
C & G Concrete Limited  
Cardigan Sand & Gravel Co Ltd  
CEMEX UK Materials Ltd  
Civil and Marine (Holdings) Ltd  
Colas Limited  
Day Aggregates  
Ennstone plc  
Erith Haulage Company Limited  
F H Gilman & Co  
FM Conway Ltd  
Francis Flower  
Grafton Group plc  
GRS Roadstone Limited  
H Tuckwell & Sons Ltd  
Hanson Aggregates UK  
Harleyford Aggregates Ltd  
Henry Streeter (Sand & Ballast) Ltd  
Hillhouse Quarry Group Ltd  
Hills Minerals & Waste Limited  
Holderness Aggregates Ltd  
Huntsmans Quarries Ltd  
Independent Aggregates  
J & J Franks Ltd  
J Clubb Ltd  
John Carr (Liverpool) Ltd  
John Williams (Cinetic Sand) Ltd  
Joss (Aberdeen) Ltd  
Kendall Brothers (Portsmouth) Ltd  
Lafarge Aggregates Ltd  
Lafarge Cement Ltd  
Laird Aggregates Ltd  
Lhoist UK Ltd  
McFadyens Contractors  
Mansfield Sand Co Ltd  
Mid-Essex Gravel Pits (Chelmsford) Limited  
Midland Quarry Products Ltd  
Moorhouse Sand & Gravel Pits  
Moreton C Cullimore (Gravels) Ltd  
Morris & Perry (Gurney Slade) Ltd  
MultiServ PLC

Needham Chalks Ltd  
New Milton Sand & Ballast Co Ltd  
Northwood (Fareham) Ltd  
Norwest Sand & Ballast Co  
Patersons of Greenoakhill Ltd  
R.J.D. Ltd  
Readymix Huddersfield Ltd  
Remix Dry Mortar Ltd  
Ringway Roadstone  
Rotherham Sand & Gravel Co Ltd  
S Grundon (Ewelme) Ltd  
Salop Sand & Gravel Supply Co Ltd  
Singleton Birch Ltd  
Smith & Sons (Bletchington) Ltd  
Springfield Farm Ltd  
Steeley Dolomite Limited  
T E Beach (Contractors) Ltd  
Tarmac Limited  
Tendley Quarries Ltd  
Thames & Colne River Aggregates  
Thomas Scourfield & Sons  
Tinto Sand & Gravel Ltd  
Totternhoe Lime & Stone Co. Ltd  
Trefign Quarries Ltd  
Tudor Griffiths Group  
United Marine Aggregates Ltd  
W Clifford Watts Ltd  
WBB Minerals  
West Midlands Surfacing Ltd  
William Boyer & Sons Ltd

## Northern Ireland

A E Mulholland & Sons  
Acheson & Glover Limited  
Ardmore Concrete  
Armagh City Quarries  
AS Ballantine Ltd  
B Mullan & Sons Limited  
Barrick Hill Quarries  
Boville McMullan Ltd  
Cemex (NI) Ltd  
Cemex@SJMartin  
CES Quarry Products Ltd  
Clady Quarries  
Colinwell Concrete Ltd  
Collen Brothers (Quarries) Limited  
Coote Concrete Products  
Creagh Concrete Products Ltd  
Curtis Enterprises  
Devine Sand & Gravel Ltd  
Douglas Acheson Ltd  
Dromalane Quarries Ltd  
F P McCann Ltd  
Finlay Breton  
Francis McCone & Sons  
George Crawford & Son  
G & G Ross

Gibson Bros Ltd  
Hanson Aggregates UK  
Harold Graham  
Irish Salt Mining Ltd  
Irwins Quality Aggregates  
James Balfour & Sons Ltd  
James Boyd & Sons (Carnmoney) Ltd  
John Barnett and Associates Ltd.  
John Bell & Sons  
John McQuillan Contracts Ltd  
Johnston Robinson & Sons Ltd  
Jordan Concrete  
Joseph Barrett & Sons Ltd  
Kennedy Concrete Products Ltd  
Kilwaughter Chemical Co Ltd  
Lafarge Cement  
Lafarge Roofing Ltd  
Lagan Cement Company  
Lagan Tile  
Loughran Rock Industries  
Macrete Ireland  
Miskelly Brothers  
Mulholland Brothers  
MW Johnston  
Norman Emerson Group  
Northstone (NI) Limited - Concrete Division  
Northstone (NI) Limited - Quarries & Asphalt Division  
P Clarke & Sons Ltd  
Patrick Bradley Ltd  
Peter Fitzpatrick Leod Quarries  
Premier Cement Ltd  
Quinn Group  
R Hogg & Sons  
R J Mitten & Sons  
Roadmix Limited  
Robert Robinson & Son  
RTU (Frank McIlroy) Ltd  
S M Curry  
Sluggan Sand & Gravel Ltd  
Stanley Bell Sand & Gravel  
Stoneyford Concrete Ltd  
Supermix Limited  
T H Moore Ltd  
T O'Connell & Sons Ltd  
Tarmac Northern Ltd  
Thomas Kane & Son  
Tobermore Concrete  
Tracey Concrete Ltd  
Tullyraine Quarries Ltd  
W & J Chambers  
W J & H Crozier  
W J McCormick & Sons Ltd  
W J Taggart (Quarries) Ltd  
W McLaughlin & Sons Ltd  
Whitemountain Quarries Ltd  
Woolsey Concrete



The Quarry Products Association welcomes comments and requests for further information about the industry's work

The trade association for companies involved in supplying crushed rock and sand and gravel from land and marine sources, asphalt and flexible paving, ready-mixed concrete, silica sand, agricultural lime, industrial lime, mortar, slag, recycled materials and construction and quarrying plant

**Quarry Products Association Limited**

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