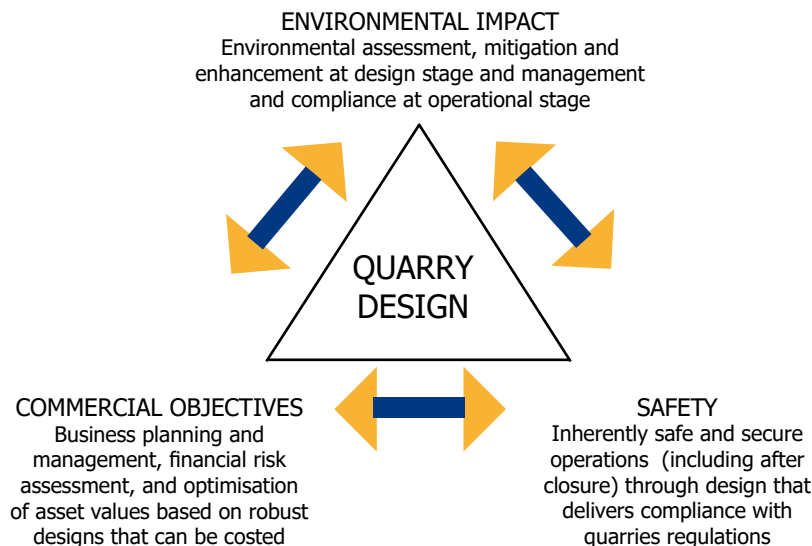


QUARRY DESIGN

The quarry design process is essential to businesses that rely on raw materials recovered from quarries. It is the only logical framework for business planning, management and monitoring of performance. Design and comprehensive environmental assessment of that design is a requirement in most jurisdictions as a basis for obtaining permits and licences to work.

The primary objectives of good quarry/mine design are the safe, efficient and profitable extraction of the maximum usable material from the minimum area of land while causing the minimum environmental disturbance and resulting in beneficial final restoration and land-uses. The essential balance and interaction between these objectives is illustrated in the following sketch.



Failure to achieve a proper balance of these broad objectives benefits no one. An incomplete or ill-considered design may lead to under-performance against the business plan (e.g. increased cost, impacts on productivity compromising the value chain, early closure etc), unacceptable environmental impacts, nuisance or danger to the public, danger to the workforce, or additional monitoring costs for the operator and Regulators. These all translate into cost, litigation risk, and loss of profit or asset value to the operator/landowner. Failure to maximise extraction from a quarry (within acceptable safety and environmental limits) leads to the need for more quarries or unnecessary pressure on other sources of minerals. Therefore good design is an essential step towards sustainability.



Selective experience

The process of quarry design is interactive and typically involves specialists from a number of disciplines:

- Mining engineers
- Mining geologists
- Surveyors
- Environmental specialists
- Planning specialists
- Legal and financial advisors

GWP Consultants LLP (GWP) has over 45 years' UK and international experience in quarry design at every stage of the process from resource evaluation and feasibility studies through preparation of documentation supporting permit applications to detailed quarry working plans that can be implemented and used for monitoring and management purposes.

We maintain all of the primary quarry design skills in-house and have a strong network of environmental, legal and financial specialists with whom we work closely on a regular basis.

GWP has extensive experience both of managing projects and providing specific technical inputs to inter-professional teams.



Selected projects

Numerous resource evaluations and detailed designs as part of planning applications or operational reviews in natural and crushed rock aggregate quarries.

Clients in the UK include international firms such as Tarmac (Anglo), Hanson, Aggregate Industries (Holcim), and Lafarge, as well as many small and medium sized independent operators.

Detailed resource evaluation and design of all UK cement raw material quarries for Rugby Cement (now part of CEMEX).

Work included significant inputs to two major planning applications, both of which were successful without going to a Public Inquiry, and contribution of specialist geological, quality modelling and design inputs to mineral planning reviews.

Strategic market and supply studies in Russia (dimension stone), Poland (aggregates) and central Europe (cement and lime) for major international construction materials businesses considering acquisitions.

Resource evaluation and design inputs to feasibility studies and due diligence reporting for aggregates, cement raw materials, lime, brick and tile clays, and dimension stone in the UK and internationally (e.g. Ethiopia, India, Poland, Jamaica, Czech Republic, Ukraine, Uruguay, Croatia).



Key contact

For details and to discuss your requirements, please contact one of the following:

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