Underground Extraction of Aggregate

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Underground extraction of aggregate seems to offer substantial advantages in sustainable development terms. Conceptually it dramatically minimizes surface impacts on landscape, habitat, and adjacent land uses and increases the resource base by turning non-resources, due to depth of overburden or limiting surface land uses, into resources. Spurred on by those conceptual advantages, a number of countries (including the UK) have over the last 40 years considered underground extraction as a simple and neat solution to the pressing need for aggregate in the future, although it is always in the future. However, while underground extraction of aggregate is a feature of the U.S. Midwest, it is apparently absent elsewhere in the world.

In 1976, a UK government-sponsored committee charged with trying to resolve the aggregate shortfall, particularly in the South East of England around London, saw underground extraction as a possible solution. Ever since then the prospect of underground extraction in the South East has been seen by some as an ideal and smart solution to resolve the aggregate supply problem. The only perceived problem was the extra cost, but this was seen to be resolved by the use of the mine void and the surface for commercial uses. Little consideration has been given to other significant, if not “show-stopping” factors.

Unfortunately, suitable mineral resources cannot be manipulated or moved to where we want them to be, nor is an underground void always ideal for commercial after uses. An in-depth analysis of the barriers to underground extraction in England has identified a number of factors as effectively removing the prospect for underground extraction in the South East of England, but not elsewhere. This paper will describe the problem and the opportunity.