

## **A RE-EXAMINATION OF BUILDING SAND PROVISION IN ESSEX**

A re-examination for Essex County Council of the evidence and conclusions of a report prepared in 2013 to advise Essex County Council of the practicality and justification in providing a separate landbank for building sand.

John Cowley

Director, Mineral & Resource Planning Associates Ltd

September 2019

## **1 INTRODUCTION**

1.1 As part of the evidence base for the Replacement Essex Minerals Local Plan (REMLP) a report was prepared in June 2013 by this consultancy (“A Review of Building Sand Provision in Essex”, Mineral & Resource Planning Associates Ltd, 2013) for Essex County Council addressing the practicality and justification of providing a separate landbank for building sand.

1.2 The view of the Authority was that such a separate landbank was neither practical nor justified in Essex. That view of the Authority was confirmed in the above report.

1.3 The necessity for the 2013 review was that representations had been made by some consultees during the consideration of the REMLP that such a separate landbank was necessary for building sand (sometimes termed ‘soft’ sand, an anachronous and misleading term). The substantive basis of such representations was that building sand could only be produced from certain geological formations and that sand and gravel quarries producing concreting sand and gravel, or any other source of material, were not viable sources of building sand.

1.4 On that basis the representations considered that there would not be an adequate supply of building sand in Essex and further sites would be required to be allocated in the Plan. The representations also suggested that a separate landbank was required for building sand produced by ‘dry’ processing from that produced by ‘wet’ processing and, if that concept were adopted, that additional sites would be required to be allocated in the Plan to meet the need for ‘dry’ processed building sand.

1.5 The provision of separate landbanks, to differentiate minerals used in different end uses from each other is clearly desirable, where possible, so as to ensure that the planning system actually provides reserves of required minerals in accordance with demand. This has been an objective in national planning guidance, particularly for aggregate minerals, for decades. It is currently referenced in the National Planning Policy Framework (NPPF) and in Planning Policy Guidance (PPG).

1.6 Importantly however, although sometimes explicitly noted and sometimes not, such guidance references that separate landbanks can only be provided if both (i) the specification for end use of minerals, and (ii) the reserves in the ground of material for different end uses, can be identified separately and unambiguously from each other. That clearly is essential.

1.7 In relation to specification however, that for building sand and that for concreting sand actually overlap each other so that in essence while there are two separate uses and markets (concreting sand and building sand) the decision as to end use is mostly merely a commercial substitution decision as to the level of processing of a common resource and the concept of them being two ‘different’ minerals is merely a reflection of that potential.

1.8 The representations to the REMLP on those points sometimes referred to 'soft' sand. The term 'soft' sand is an anachronous imprecise term historically often used to indicate sand that was suitable for use as building sand as opposed to concreting sand, or sometimes used to differentiate between geological units of thick 'bedrock' sand resources and relatively thin 'drift' sand resources, and sometimes used to differentiate between 'dry' screened sand (which effectively only screens out in processing 'oversize' and leaves a proportion of clay and silt 'fines' entrained with the mineral) and 'washed' sand where both the oversize and the fines are screened out by processing.

1.9 That reference in representations therefore sought to justify the requirement for separate landbanks because it correlated and sought to preserve a thesis that certain natural geological deposits, and particularly sands processed 'dry', were the only source of fine aggregate suitable for use as building sand in Essex and that mixed sand and gravel deposits (anachronistically often termed 'sharp' sand and gravel) were incapable of producing building sand.

## **2 THE SUBSTANTIVE CONCLUSIONS OF THE 2013 REPORT**

2.1 That thesis was explored in the 2013 report. The thesis was identified as demonstrably false in Essex because the majority of building sand sales in Essex (circa 90%) were supplied to the market from mixed sand and gravel deposits most of which also produced concreting sand (the 'sharp' sand of the thesis) from the same resource by selective processing.

2.2 Further, the decision to produce building sand and/or concreting sand from that resource was a commercial decision enabled by the ease by which processing plant can be quickly and simply modified to produce either or both building sand and concreting sand. Importantly, most of the operating sites and reserves in Essex were physically able to provide building sand and/or concreting sand. However, the decision to produce building sand was a commercial decision of the site operator in accordance with the actual demand for such sand. Nevertheless a number of sites scattered across the MPA area were selling building sand and there was no local scarcity of such sand.

2.3 The report concluded that there was no justification for a separate landbank, that there were adequate resources and reserves suitable for use as building sand the provision of which was merely a simple commercial processing decision which could be implemented at any time.

2.4 The report also identified that the thesis, if applied, was demonstrably false in all other MPA areas, even when reports on supply or policies in mineral local plans referenced or were managed by the concept. The report identified how this was potentially leading to unnecessary conflict in the mineral planning process.

2.5 The report further confirmed that throughout the UK a wide variety of materials (including crushed rock fines, sand from non 'soft' deposits, recycled or secondary aggregate, etc) have been used as building sand for decades without any technical problems, and that the specification for fine aggregate for building sand purposes does not preclude any natural or recycled fine aggregate, and indeed noted that washed fine aggregate, as opposed to 'dry' screened fine aggregate, is preferred for technical reasons.

### **3 THE CONCLUSIONS OF THE 2013 LOCAL PLAN HEARING**

3.1 The matter was fully considered at the examination into the Replacement Plan in November 2013. The Inspector considered both the 2013 report noted above and various representations made on the relevant points.

3.2 He concluded in his report into the examination that it was not practical to calculate a separate landbank for building sand and that there was no justification for a separate building sand landbank. However, the Inspector noted that, to be sound, the Plan should contain a commitment to continue to review the situation in relation to the provision of a separate landbank in a future review of the Plan if a shortage of building sand should arise.

3.3 Such a review of the Plan has now been commenced by the Authority and this re-examination report has been prepared to re-examine the position of building sand and the need for a separate landbank as requested by the Inspector. It also considers if there is any purpose or value in renewing the commitment required by the Inspector to keep this matter under review in any future iterations of the Plan.

3.4 This report does not repeat the detailed examination of the position as set out in the 2013 report, the conclusions of which were accepted at the Hearing, but considers if the evidence today confirms the conclusions of the 2013 report and/or if there have been any material changes which would justify the current review taking a different approach, or not, on the need for a building sand landbank.

3.5 The report also considers if the request of the Inspector that there should be a commitment to continue to review the position in the current review and any future reviews is necessary.

## **4 ARE THE CONCLUSIONS OF THE 2013 REPORT STILL RELEVANT – IS A SEPARATE LANDBANK FOR BUILDING SAND STILL UNJUSTIFIED AND IMPRACTICAL?**

### **Introduction**

4.1 The question is if a separate land bank for building sand is now justified.

4.2 In considering if the conclusions of the 2013 report are still relevant this re-examination addresses the topic at a broad level. It does not consider the detail of each site or deposit in Essex as each site is in effect geologically and commercially unique and there will always be circumstances where a particular site can only or might only produce building sand (because, for example, if the coarse part of a resource was processed into concreting sand, it would leave most of the resource as a residue that is too fine to meet the building sand specification and could only be used as fill which may make the operation non-commercial; whereas if all the resource was processed into building sand it could probably meet that specification making the operation commercially viable) or concreting sand (because processing into building sand would waste the coarse element).

4.3 The landbank consideration mainly relates to planning policy. However, provision of minerals such as building or concreting sand is driven by the commercial decisions of the mineral industry to meet the demands of, and the specifications controlling the use of materials in construction. Those commercial and specifications factors are the primary drivers for planning applications to extract mineral. Landbank considerations cannot, or should not, be considered in isolation from the realities of those drivers.

### **Specification**

4.4 The most fundamental point is if there have been any changes in the specification for building sand which redefines its resources in a specific manner thereby limiting such supply sources. If so, there may be justification for specific allocations and reserves for building sand (in total or as washed or 'dry' screened sand), so as to ensure that the landbank is compliant with both specification and policy.

4.5 There have been no such changes. The specification still provides for a wide variety of resources of materials for use as building sand reflecting historical and current evidence of the suitability of a wide range of resources across the UK for use as building sand. There has been no shift in emphasis as to the value of individual resources. There has been no shift in specification requiring different or specific types of processing.

4.6 However, in relation to the latter point, the removal of or the reduction of clayey fines by washing, to create a 'clean' building sand, is of acknowledged importance in improving technical performance. It is also of continuing and growing importance in the volume production of sands of consistent physical, chemical and aesthetic properties.

4.7 Consistent properties have become of greater importance due to changes in the construction industry. Consistent aesthetic properties are also of continuing importance to avoid the disruptive visual impact of changes in mortar colour. Washing of building sand, in more sophisticated plant, not only removes clay fines but also removes lignite which is a relatively common contaminant of sand which can lead to technical problems as well as aesthetic problems due to staining.

4.8 The continued desire to ensure the most sustainable use of both natural and waste resources (both mineral and other wastes) has also directly continued to expand both the range of resources for building sand and the contribution that wastes can make and have made to both production and resource stocks of building sand. The specification for building sand allows, or rather more importantly, does not differentiate supply from wastes as from natural resources, both because such supply is suitable but also because use of such wastes assists sustainability.

### **Processing**

4.9 There have been no changes in processing or production which inhibit the technical ability of a wide range of resources to be processed to meet the building sand specification.

4.10 It is a relatively simple matter to change components within a processing plant to alter the properties of either the end sand product or the proportion of building sand to concreting sand. There has been no change in law or policy that would require such actions to seek planning permission.

4.11 In addition, new or additional plant (both mobile and fixed) can relatively simply be added to a process line. Mobile plant is becoming more and more efficient at processing and more compact. The planning permission position in relation to mobile or fixed plant has not changed.

4.12 In pursuit of technical and sustainability objectives, and in making commercial use of otherwise difficult to process materials, processing plant has become more efficient at recovering all forms of aggregate, including building sand, from what might previously be commercially unviable deposits.

### **Resources**

4.13 For the reasons outlined above the resource range and base of building sand in both the UK and Essex has expanded. Further, most of that resource base is still capable of being processed to produce either building or concreting sand such that most of the resource base cannot be divided separately and unambiguously.

4.14 It remains true that some of the fine sand resource base is too fine not just for concreting sand use but also for building sand. In some MPA areas resources traditionally used for 'dry' screened building sand are not commercially viable to be washed (because the

majority of the sand is so fine that washing would remove and discharge to waste not just the deleterious materials such as clay and lignite, but also a significant proportion of the sand) and are now only suitable for a shrinking demand for 'dry' screened building sand or for fill.

## **Reserves**

4.15 The conclusions as to resources are also generally true for reserves across the UK. However, as noted above and below there has been a significant shift across the UK towards the production of consistent clean building sand for technical and commercial reasons. That thereby has reduced the value and significance of some reserves previously suitable for 'dry' screening to that merely for fill (where other minerals are just as suitable), and as such the sand and gravel landbank may, on paper be adequate, but in some MPA areas be dominated by, or significantly composed of, fine sand only suitable for fill. In those circumstances there may be questions as to the actual adequacy of the sand and gravel landbank.

## **Factory Mixed Mortar**

4.16 There has been one significant change which has had an impact on the conclusions of the 2013 report. That change has been the rapid growth in the use on construction sites of factory mixed mortar. Building sand is the aggregate in such mortar.

4.17 Mortar from mortar plants (quarry based or based elsewhere) and bagged factory mixed mortar have long been used in construction principally at either end of the scale of a construction project (a large housing site or a small house extension/garden wall). The advantages of consistent and known properties, and workability, compared to site mixed mortar using sand of variable moisture, colour, etc and imprecise quantities of cement or lime are obvious. The advantage of the reduction in waste is also clear.

4.18 Factory mixed mortar, and principally that delivered in premixed silos, now dominates the market and nearly all scales of construction activity, except for some small scale works and for renovation works, works on historic buildings or in stone wall construction. There is no specific collected data on the market captured but the Mineral Products Association notes that around 80% of the mortar used in the UK is factory mixed.

4.19 Factory mixed mortar requires sand with consistent properties to enable a consistent production process and to assure customers that such consistent properties will be maintained over a construction project timescale. This has produced a shift in those resources and reserves of building sand used in mortar to those washed sands from deposits which can provide sand of consistent properties and typically such sand which falls within the common range of the specification for both concreting sand and building sand.

4.20 The increase in use of factory mixed sand has produced a significant shift in supply and markets. 30 years ago building sand was the most obvious example of a local mineral



consumed within a very short distance of its production. Now, that has significantly changed. The sand may be sourced locally to a factory or may be transported tens of kilometres from an extraction site in one MPA to a factory in another MPA. The sand may then be transported, in a pre-mixed silo, a considerable distance (100 kilometres or more) to a construction site.

4.21 The implication of this is a growing focus on exploiting that sand for use as building sand for mortar which is consistent and clean and in that area of specification which overlaps that for concreting sand. That therefore further reduces the ability to differentiate resources or reserves despite the material being sold to two markets. This shift applies across the UK and not just to Essex, although the implications may be more significant elsewhere due to scarcity of suitable resources and more complex commercial positions.

### **Confusion Caused by Using the Term 'Soft' Sand**

4.22 Given the above it is therefore somewhat surprising that a number of MPAs still reference in AWP documents, in policy documents, LAAs, and decisions, the terms 'soft' sand and 'sharp' sand as the supposed link between the supposed properties and the end use of the materials is not true. Indeed, that link was identified as demonstrably untrue in the 1948 Waters Committee reports, the first authoritative study into sand and gravel.

4.23 The confusion so caused is apparent when for example supposed 'soft' sand resources are sold as concreting sand, or when sales from supposed 'sharp' sand resources contribute a significant quantity of building sand. These obvious anomalies seem to be ignored.

4.24 The concern here is not just a semantic or technical point. It bears significantly on planning policy and controversial decisions to, for example, justify the extraction of building sand (referenced as 'soft' sand) from sensitive locations such as in National Parks, AONBs or near Natura 2000 sites.

4.25 Why some MPAs still reference terms and derive policy on a demonstrably inaccurate basis is unclear but this is still causing unnecessary confusion which needs to be removed.

### **Can Building Sand Production in Essex be Maintained?**

4.26 The case submitted in the 2013 report and by ECC at the REMLP was that demand for building sand was being adequately resolved by production from a number of sand and gravel sites in Essex most of which also produced concreting sand, such that a separate landbank was not justified nor could it be provided.

4.27 That position has not changed.

4.28 First, supply of building sand is being maintained to meet the demands of the construction industry and that supply can today be maintained or increased (or decreased) by the minerals industry from existing sand and gravel reserves or allocations as required.

4.29 Secondly, the supply was mainly being provided from a number of sites producing both building sand and concreting sand where the reserves cannot be separated. That remains true today.

4.30 Thirdly, there was a spread of units producing building sand across Essex. That position also remains true today, such that there is no monopoly of supply or any spatial problems in supply.

4.31 Lastly, but most significantly the specification for the supply of building sand has not altered. A wide range of materials meet the relevant specification and the whole thesis that only specific deposits, sometimes only processed in specific manner, can produce building sand remains untrue.

## **5 CONCLUSIONS**

5.1 This re-examination has confirmed that the conclusions of the 2013 report that a split landbank to provide separately for building sand and concreting sand, and possibly to split the building sand landbank into 'dry' screened or washed sand, is neither practical nor justified in Essex.

5.2 It confirms that specifications do not justify a split.

5.3 It confirms that the resources and reserves in the ground in Essex are not capable of being identified separately and unambiguously and therefore a separate landbank cannot be calculated.

5.4 It confirms that the supply of building sand is being maintained to meet demand.

5.5 The Inspector advised in his 2014 report that to be sound that the Plan should continue to review the situation. This re-examination complies with that requirement. However, the conclusions of this re-examination, reinforces the 2013 conclusions that a separate landbank is not possible.

5.6 There therefore seems no practical value in looking at the point again in another future review of the Plan. The question as to 'soundness' may be a matter for debate. It would be clearly 'unsound' if the new Plan sought separate landbanks.

5.7 The provision in the Plan of Indicator 2 – "The need for a separate landbank for building sand" – has also been concluded by this re-examination as no longer relevant.