Editorial

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Editorial

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As deputy-chair of the editorial panel I am particularly pleased to introduce this edition of *Construction Materials* because of the excellent spread of topics covered. While the study of concrete dominates worldwide publications on construction materials this edition covers six different materials in six papers.

Whenever the economy goes into recession it emerges with different priorities. It may be hoped that this time one of the changes will be that, after many false starts, there will be a significant move towards radically reduced energy demand for buildings. Some ideas, such as individual wind-turbines for houses, do not appear to have a future but three of the papers in this edition of the journal describe tests on systems which offer considerable potential. None of the ideas are new; they are all based on traditional systems with hundreds of years of track record. They also have the benefit of offering energy savings both at time of construction and also during use when most of the demand occurs.

Lawrence *et al.*[1] show how straw bales can be used for some structural purposes as well as non-load bearing panels. Since most houses built in the UK do not have structural frames this opens up the possibility of far greater use of this technology. It may be some time before the average house-buyer will accept the idea of straw bales in their walls but their heating bills would be significantly reduced.

Burroughs[2] presents new data on the technology of rammed earth walls. In the UK there are several hundred thousand houses built with rammed earth, most of which are very old (because they are rendered they are difficult to tell apart from stone walls so they are generally un-noticed). With a very high thermal mass these houses are cool on hot days and warm in cool nights.

Heath *et al.*[3] show that unfired masonry units represent a viable option for construction. 85% of the energy used to produce bricks is used in the firing so the savings would be very significant. The load bearing capacity of the units is lower so they would have to be thicker but this would again increase the thermal mass as for the rammed earth.

Two other papers show how opportunities arise to make use of recycled materials in innovative ways. While the resale value of recycled materials has been very unstable during the recession it may be hoped that this is another area where the economy will emerge stronger than it was before.

The paper by Shirley *et al.*[4] is from one of my MSc students and makes use of the ash from coal that is now imported into the UK. Traditional coal supplies have produced ashes that are good for use in concrete but are not self-cementing. Recently imported coal from the far-east yields ash which has a high lime content and is self-cementing and, if used with cement, gives superior strengths. This type of ash is common in other parts of the world, in particular the west coast of the USA, but relatively unusual in the UK.

Chidiroglou *et al.*[5] show that demolition waste can be used as engineering fill in similar ways to other aggregates. This should help industry moves to make full use of this resource.

In their paper, Camposinhos and Camposinhos[6] discuss a problem which has dogged the industry for years, which is the fixing of cladding panels. Dimension stone is natural stone or rock that has been selected and trimmed or cut to specific sizes or shapes and is possibly the most difficult material to fix because fixings cannot be cast into it or welded to it.

In this editorial I have highlighted the significance of the papers within the UK but we would emphasise that this is an international journal and papers which discuss problems with construction materials in any part of the world are most welcome.

We are entering a period of significant change for all technical publications. If you are reading papers in this journal there is a high statistical probability that you are reading a downloaded copy rather than the printed edition. I recently had the pleasure of a discussion with the editor of another journal from the same discipline as this one which has published a number of editions with over 500 pages. These enormous volumes are made economically viable by the income from downloads. I understand that they have found that publishing this number of papers places too much pressure on reviewers and plan to reduce it. There are also a host of new publications entering the market using the ''open publication with authors paying'' model. As a panel we are watching these developments closely.

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