

## Mbloc – a technical analysis

### INTRODUCTION

I have been requested to analyse the Mbloc construction compared to a similar property of traditional construction. It should be noted initially that SAP (Standard Assessment Procedure) software will produce virtually identical results if similar input data is used. The real purpose of any 'modern method of construction' is to lower carbon emissions, both that in-use and embedded.

### SYSTEM COMPARISON

The Mbloc system, based on a standard 57.8m<sup>2</sup> module, has U values of 0.18 W/m<sup>2</sup>K (floor), 0.19 W/m<sup>2</sup>K (wall) and 0.18 W/m<sup>2</sup>K (roof) which produces 1573 kg/annum of CO<sub>2</sub>. In comparison a traditional masonry construction, using the same U values, produces 1639 kg/annum of CO<sub>2</sub>. Whilst the reduction in CO<sub>2</sub> emissions may appear small, it represents 4%, however considering that construction is believed to represent 39% of total carbon emissions, this reduction is, in context, significant. It should also be borne in mind that using these U values the Mbloc is compliant with the Building Regulations, whereas the traditional (having a higher thermal mass parameter) is not and will require significant improvement to the fabric U values to achieve compliance.

### CONCLUSION

Giving an overall view, whilst the Carbon emissions are reduced, the reduction in embedded carbon is significant. The use of 'pad' foundations and suspended timber ground floor reduces concrete use by some 70%. All fabric materials meet BRE Green Guide criteria and are readily recyclable. Off-site manufacture reduces the amount of site resources and results in more easily controlled thermal bridging (resulting in improved Air Permeability). The Mbloc system is easily extended, both horizontally and vertically, giving long term 'home for life' possibilities.