IRISH CONCRETE FEDERATION

Set for life

COSTS OF QUARRIED AND CONCRETE MATERIALS USED IN NEW HOUSE CONSTRUCTION

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Irida Consulting

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1. Background and Executive Summary

1.1 BACKGROUND

This report into the cost of concrete and quarried materials used in new house construction was commissioned in November 2020 by the Council of the Irish Concrete Federation (ICF); the representative body for businesses engaged in the supply of building materials including stone, sand, aggregate; readymix concrete; concrete blocks, precast concrete products and other concrete products such as roof tiles and paving slabs. It is an update of a similar study carried out in April 2018 and some references to this original report are made herein.

1.2 PURPOSE OF THIS REVIEW

The purpose of this report is to provide a basis from which to inform the public and other third parties as to the costs and the impact of the industry's material costs on overall housebuilding costs. We show in this report that the concrete products and quarried materials used in building a standard three bedroomed semi-detached house in the Greater Dublin Area (GDA) currently account for just 3.4% of total build costs[1] and that the industry's impact on overall house building costs is much less than other cost factors.

The key findings from this research are that:

1. The basic construction materials supplied by quarry operators, readymix concrete suppliers, concrete block and other concrete product suppliers account for just 3.4% of the cost of building the most common form of new house in Ireland – the three bedroomed semi-detached dwelling. In this case, the new house building cost excludes the costs of site purchase.
2. Including the site acquisition costs and VAT, the basic construction materials account for just 2.8% of the total cost of providing a standard three-bedroom house in the GDA.
3. The cost of these construction materials have increased marginally since 2018 when these materials accounted for 2.6% of the total cost of providing a dwelling. The increase in costs is due to providing materials to meet new thermal performance requirements and increases in raw material prices.

1 Total Build Costs are defined in this report as the total of all costs excluding the land cost and VAT. Total Build Costs include site development works, development levies, developers margin and marketing costs.

2. Market Context

2.1 MARKET DEVELOPMENTS

Ireland experienced a major property bubble over the past two decades that saw output of new dwellings rise from the order of 50,000 units in 2000 to a peak of some 93,000 units in 2006 followed by a decline to just over 8,000 units in 2012 and 2013. CSO data show that output has risen in more recent years to close to 21,000 units in 2020. These data are based on ESB connections to new dwellings. The ESB now separates reconnections, non-dwelling connections from new dwelling connections to address issues with previous connection data.

It is widely held that completions are far short of the scale needed to cater for our growing population. The Central Bank's Economic Letter: Population Change and Housing Demand in Ireland of 10 December 2019 concludes that:

- Growth in Ireland's population has significantly exceeded the increase in the housing stock since 2011 and the average household size has risen, reversing a previous long-running trend.
- To keep pace with population growth and changes in household formation, its estimates indicate that an average of around 27,000 dwellings would have been required per annum between 2011 and 2019.
- Assuming unchanged household formation patterns and net inward migration close to current levels, around 34,000 new dwellings would be required each year until 2030.

This latter conclusion is consistent with previous estimates of future demand ranging from 30,000 to 35,000 dwellings per annum (ESRI, 2017). The main uncertainty about using these estimates to estimate future construction demand is the extent to which vacant dwellings might be used to satisfy housing demand.

It is generally agreed that the scale of recovery in Ireland's housing market that has occurred to date is not sufficient to allow the market to operate normally. There is unsatisfied demand; but supply is not coming on stream quickly enough to satisfy that demand and there appears to be a range of blockages that is stifling output, not least of which has been the COVID-19 pandemic, which is ongoing at the time of writing.

In this context, there has been much discussion in the recent past on affordability and new house construction costs.

2.2 HOUSEBUILDING COST AND MATERIAL PRICE TRENDS

The Central Statistics Office (CSO) produces a range of price information including new dwelling prices and construction materials wholesale price trends.

New Dwelling Completions 2015 to 2020

	2015	2016	2017	2018	2019	2020
Single House	3,252	3,654	4,252	4,679	5,067	4,937
Scheme House	3,294	5,067	7,885	10,973	12,513	11,725
Apartment	673	1,161	2,217	2,268	3,507	4,014
Total	**7,219**	**9,882**	**14,354**	**17,920**	**21,087**	**20,676**

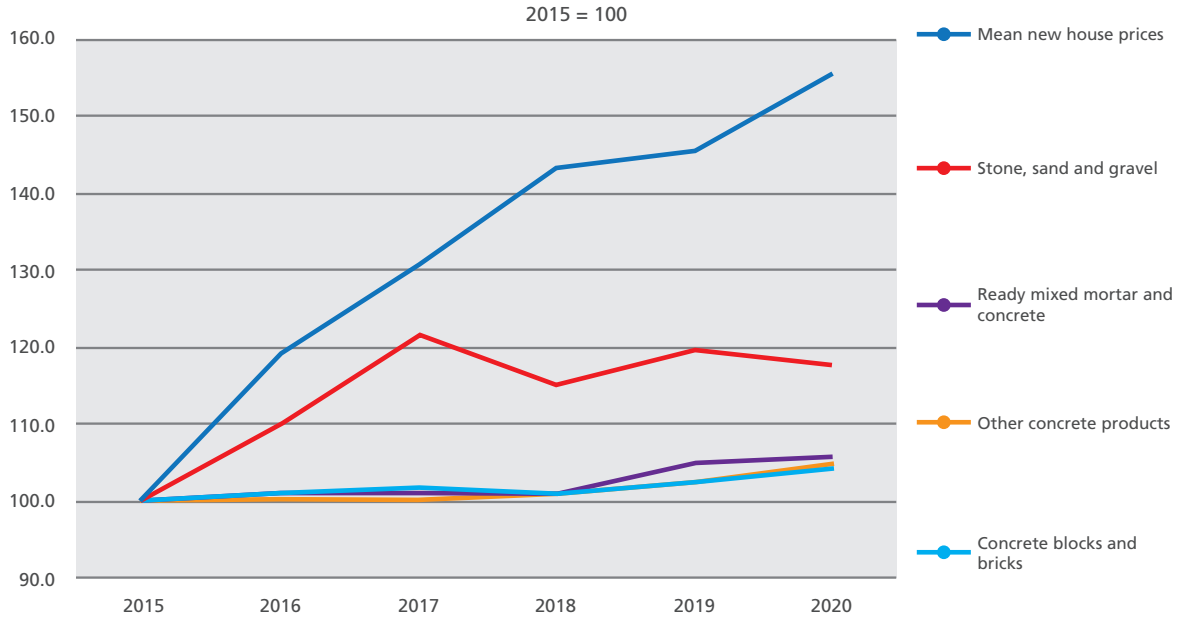
Source: CSO

Data from the CSO Databank for these price indices show the following trends in new house prices and concrete and quarried products material prices from 2015 to 2020.

House prices in Ireland peaked in 2006; declined continuously until 2013 and have recovered steadily since then. The chart below shows that this trend has continued in recent years. Over the same period, construction materials – which were regarded as being competitively priced in 2006 have maintained a relatively steady price level with modest growth in costs, with the exception of the "stone, sand and gravel" product grouping. These are low cost materials, where small increases in money terms show as a relatively high increase in percentage terms. The increase in stone prices is mainly due to additional testing, certification and audit requirements associated with changes introduced in recent years in the specification for aggregate (fill) material placed under concrete floors. Readymix concrete, concrete blocks and other concrete products have moved at much slower rates and are almost indistinguishable in the chart below.

These CSO data show that while concrete and quarried product prices have increased marginally since 2015, new house prices have increased at a much greater rate over that period. The chart below clearly shows that prices for concrete products are not related to the price of dwellings; and, furthermore, the consistency of concrete product prices in the face of marginally increasing demand over the period from 2015 suggests that the industry remains competitive.

Construction Materials and New House Price Indices



Source: CSO

3. Housebuilding and Materials' Costs

3.1 HOUSEBUILDING COSTS

In July 2020, the SCSI [2] published a report on the construction costs of a 114 sq. m. (1,227 sq. ft.) three bedroomed semi-detached house constructed in the private sector; the most common form of dwelling built in Ireland.

The report showed the cost of providing such a standard house to the market in the Greater Dublin Area to be €371,311 including VAT and site costs. See table below.

We use the term "providing" as this amount represents the entirety of what is offered to the purchasers of such a house. The analysis was carried out by the SCSI by way of information gathered "from 30 development sites in the Greater Dublin Area." This area includes counties Wicklow, Kildare and Meath.

House Build Costs – July 2020	€
House Building Cost	138,835
Siteworks within Site Curtilage	12,241
Site Development	27,826
Construction Costs	**178,902**
Professional Fees	5,650
Levies	13,984
Land and Acquisition Costs	60,823
Sales. Marking & Legal	8,400
Finance Costs	16,716
Margin	42,671
VAT	44,165
Total Soft Costs	**192,409**
Total House Costs	**371,311**

Source: SCSI

2 Society of Chartered Surveyors Ireland

The build cost – i.e. all building and site development costs – come to 48.2% of total costs. Site acquisition costs are 16.4% and other costs, including professional fees, margin, marketing, finance and VAT come to 35.4%.

3.2 CONCRETE AND QUARRIED MATERIALS' COSTS

In November 2020, the Irish Concrete Federation engaged Irida Consulting Limited to identify the cost of concrete products and quarried materials used by builders in the course of construction of new houses.

The materials comprise those used for the foundations, sub-floor fill, sand binding, floor slab, walls (assuming concrete block construction); additional elements such as sills and lintels and roof tiles (assuming concrete tiles are used). Readymix concrete supply includes the pouring of the slab.

The Irida assessment has been made on a dwelling of similar size to that in the SCSI survey. It was assumed that the new dwelling comprised:

- A substructure of concrete foundation footings; block rising walls; stone fill under the floor and binding to SR21 specifications; outside footpaths and floor slab;
- A superstructure comprising block walls and concrete roof tiles; and
- All ancillary requirements, such as concrete sills; concrete lintels, mortar and render.

These materials provide much of the structure of a new house and the prices are inclusive of delivery to the construction site.

An analysis of these materials' costs for this new house shows the following average costs as derived from information provided by material providers. The material prices are those of late-2020.

Concrete and Quarried Materials used in New House - 2020

Element	€
Sub-structure	3,525
Superstructure	4,309
Roof and Ancillary	1,148
Total	**8,982**

Source: Irida Consulting Analysis

In total, these costs are 4.9% higher than the costs of €8,563 identified in the similar survey carried out in early 2018 and reported in March of that year. This implies an annual rate of cost inflation of just under 1% per annum for these materials.

The conclusion is that while concrete materials provide much of the visible structure and much of the substructure of a new house, they account for €8,982 or just 3.4% of the construction cost of that dwelling – i.e. excluding the site acquisition costs.

Taken relative to the total cost of providing a house for purchase, which includes the site cost, the concrete and quarried materials come to 2.8% of the costs.

4. Conclusions

The key findings from this research are that:

1. The basic construction materials supplied by quarry operators, readymix concrete suppliers, concrete block and other product suppliers account for just 3.4% of the cost of building the most common form of new house in Ireland – the three bedroomed semi-detached house. This excludes site purchase costs.
2. The basic construction materials accounted for just 2.8% of the total cost of providing a standard three-bedroom house in the Greater Dublin Area.
3. The costs of these materials have increased at a rate less than 1% per annum since 2015.

Irish Concrete Federation
8 Newlands Business Park, Naas Road,
Clondalkin, Dublin 22, D22 R2F8
Tel: 01 464 0082
Fax: 01 464 0087
E-mail: info@irishconcrete.ie

www.irishconcrete.ie

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