

# Arklow quarry past & present

By: Derry O'Sullivan, Roadstone Provinces Ltd.

**Roadstone Provinces Ltd., a subsidiary company of CRH Plc, operates a hard rock coastal quarry about 1 Km south of the town of Arklow at Arklow Head.**

The quarry has been in operation in its present form for over 40 years and extracts up to 1 million tonnes of rock per year for processing into aggregates and stone fill. The rock at Arklow Head consists of volcanic tuffs and diorite of the Ordovician Period. This rock, born out of ancient volcanic upheavals, has characteristics of hardness and durability long ago recognised and appreciated. As much as these characteristics are appreciated today, hardness and durability had its drawbacks for early industrial quarrying technology and "Rockbig" the townland of Arklow Head proved difficult to quarry, although cuttings were made from time to time and small quantities of the rock were removed for local civil engineering works.

#### Early History

Local Arklow historian Pat Power, records that in 1847 Dr. H. Griffith as part of the

first geological survey of Ireland, scientifically evaluated Arklow Rock and described it as "the beautiful stone".

Stone from the quarry was used by the Hibernian Mining Company's Avoca river improvement scheme of 1841 and for the development of Arklow Harbour in 1840 - 50. Large scale quarrying ceased in Arklow until 1884 when Charles Stewart Parnell leased Arklow Rock from Lord Proby. Parnell Quarry, as it then became known, started to produce hand dressed "setts" from "the beautiful stone" for street surfacing. Demand for these setts steadily grew and employment at the quarry rose to almost 200 people resulting in an economic miracle for the town of Arklow.

Arklow setts sold for 24 shillings a tonne and were not only used to pave the streets of Dublin but were regularly exported to Liverpool, Bristol, Cardiff and Birkenhead and by 1891 were exported as far as Gibraltar and East Prussia. Stone dressing produced

large quantities of chips and spoil and for capital expenditure of £5,000 Parnell installed a steam powered crusher.

The crusher converted this otherwise waste material into macadam or sub-base, as we would term it today. This innovation proved highly successful and on Parnell's own admission put the quarry on the road to profitability.

From 1886 to 1900 the quarry produced about 6,000 tonnes of setts and about 16,000 tonnes of macadam per year. The death of Parnell in 1891 was a turning point for the quarry and from 1895 the quarry went into slow but steady decline and by 1919 activity had ceased. A silence was to reign for 40 years until Tom Roche of Roadstone Ltd., rediscovered "the beautiful stone".

#### The Roadstone Era

Much of Northern Germany, Netherlands and South East England are of similar geological structure i.e. soft limestone, sand and gravel. Consequently, these regions have to import by land or by sea hard stone for their concrete and road construction requirements. With this developing market, the extraction and shipment of Arklow stone in the form of crushed aggregate became a commercial possibility and in the early

sixties Roadstone built a jetty at the quarry specifically designed for the export of aggregate and later constructed breakwaters to protect ships while loading. The export of Din 4226 single sized aggregate from Arklow commenced to German North Sea ports in 1962 and has continued without interruption to the two original German customers up to the present day to ports such as Emden, Williamshaven, Bremen and Bremmerhaven. Since shipments began as much as 6 million tonnes of Arklow aggregate has been exported to Germany and many millions more has been shipped to the UK, France, Netherlands and even Iceland at various stages down through the years.

#### Armourstone

In more recent times, the value of Arklow rock with its superior durability and high density was further recognised for yet another application, that of armourstone for harbour construction and coastal protection works. About 13 years ago, the company received an order for 20,000 tonnes of armourstone with each individual rock to weigh between three and seven tonnes.

The rock was loaded onto a 1000 tonne capacity dumb barge using a temporary berthing facility and >>

<< towed by tug across the Irish Sea and beached at high tide at Pennmaenmar in North Wales. After being discharged at low tide the barge would be refloated and returned for another cargo. This process was repeated until the total quantity of rock was delivered to the beach site, to complete the project. With a succession of major coastal protection projects being undertaken around the coast of the UK and with the demand for an economically positioned quality source of rock established, Roadstone constructed at their harbour a wharf designed specifically for berthing and loading specialised flat top barges for armourstone. Since its construction hundreds of thousands of tonnes of armourstone, or armour rock as its also known has been shipped to destinations in Wales, England, Jersey and Germany. About two years ago, over one hundred thousand tonnes of rock was shipped

by barge to Dun Laoghaire to form the outer protection of the trailer and car park for the new high speed ferry terminal and last year almost 400,000 tonnes was shipped to the same destination for a marina project. Because of the very high costs involved in producing and shipping armourstone and also in the construction of coastal rock structures to endure heavy seas a draft European standard has now been developed for the specification of armourstone. The draft Standard prEN 13383-1:1998 covers all aspects of the intrinsic and manufactured characteristics of the rock to ensure its long term suitability in high cost strategic coastal structures.

• **Derry O'Sullivan is currently Regional Director of Roadstone Provinces Ltd. He was manager of Arklow Quarry for ten years up to 1995, but still retains overall responsibility for the quarry within the South East Region. O**

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