By the mid-nineteenth century concrete was being explored by engineers for use in maritime structures, the most well known being Bindon Blood Stoney’s radical use of precast concrete quay wall elements in the extension of the north quay in Dublin in the 1860s. Though quite unlike what would be understood as concrete today, this experiment nevertheless galvanized the interest of engineers across Ireland and Britain, leading to a seismic shift in the accepted constructive techniques for harbour structures.

Of the thirty odd harbours built or rebuilt during the 1880s by the Commissioners for Irish Fisheries, designed by their Chief Engineer Robert Manning, the harbours at Cheekpoint, Boatstrand, Carnsore and Liscannor were built between 1884-86 by Thomas Ingham Dixon. In all cases a standardized specification was used, which, though it contained provisions for stone construction, predominantly had clauses detailing the use of concrete blocks and in situ concrete. The development and use of such a document is evidence of a shift in attitudes towards this new material that had, prior to Stoney’s work, simply not been considered as a credible material for maritime applications.

More revealing are the handwritten amendments to the standardized form made by Manning and Dixon for these harbours. Although precast concrete ‘blocks’ for the foundations below low water were used consistently, the manner in which the cast-in-situ work was undertaken above the waterline undergoes an evolution as the men grapple with how this material should be best deployed. The adoption of earlier stone-based forms and construction techniques are evident at the two earliest harbours, Boatstrand and Carnsore, where cast-in-situ concrete is used for the outer walls of the pier in the same fashion that stone was earlier deployed and, like these predecessors, the heart of the construction is infilled with hand-packed rubble stone. Similarly, Cheekpoint harbour pictured above, which appears to be a stone construction, is built as Boatstrand and Carnsore, save for the facing stone cast into the concrete wall, a nod perhaps to prevailing aesthetic concerns. The inherent contradiction of infilling a concrete construction with rubble stone is finally acknowledged in the last harbour at Liscannor, Co. Clare, where amendments to the clauses ensure that it is neither stone faced, nor rubble filled, but cast in its entirety of concrete.
Shotton Biography

Dr Elizabeth Shotton is currently Director of Research, Innovation and Impact in the UCD School of Architecture, Planning and Environmental Policy. She teaches in construction technology and design studio, with an emphasis on sustainable building and development, at both undergraduate and graduate level. Elizabeth’s research interests are closely linked to teaching, with a focus on the sustainable use of material resources through advances in materials, construction technologies and design processes. She is currently working on an Irish Research Council funded project Minor Harbours, examining the evolution of maritime engineering in small harbours along the east coast of Ireland from the seventeenth century to the present.

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