

## Major Social and Affordable housing development



### Brief

In 2004 we joined GCA Architects team in design work for the development of over 230 houses, apartments and community facilities for NABCO, the National Association of Building Cooperatives, at a site in Tyrellstown, Dublin. The units consist of 3 storey apartment blocks, Duplexes, 2 storey terraced houses, a crèche, community meeting rooms and other assorted community buildings all arranged around 3.5 kms of new roads. A new park with a 5 a side all weather football pitch was also proposed. Our brief included the design of all sub and super structure elements, new roads, water mains and drainage systems, including substantial surface water attenuation.

### Challenges

This project posed two distinct challenges. The site had a 10m fall across it concentrated mainly in the middle third of the site. This required a substantial re-grading of parts of the site to facilitate acceptable falls along roads and steps in house terraces. Secondly, due to the high density of housing on the site, there were only a few suitable locations for attenuation tanks. As a result a staged attenuation system was devised.

### Innovative solutions

We used PDS site development software which enabled us to develop a 3 dimensional model of the site onto which we were able to overlay new

roads, terraces and drainage systems. The model enabled us to optimise the balance of cut and fill across the site. The software also linked directly with our drainage design software Windes, which facilitated a rationalisation of the drainage system and the easy investigation of alternative designs. Another benefit was that it allowed us to produce high quality accurate drawings, from site sections, road setting out (including cross sections and long sections, drainage long sections), and manhole schedules. The software is also capable of providing information on quantities of materials used including cut and fill calculations.



**LeeMcCullough**  
Consulting Engineers

*Project 3596– New build and social housing*  
**Tyrellstown**

**Client:** NABCO

**Architects:** Gerry Cahill Architects

**Value:** €44m - current

### Lee McCullough Team:

Frank Lee

Richard McCrae

### Project scope:

- *Large housing development*
- *Major civil works*
- *Creche and community buildings*

### Residential

At LeeMcCullough, we have considerable experience of a wide range of Residential projects over the past ten years.

Issues successfully and cost effectively addressed include:

- The phased demolition of existing structures
- Site investigation and management of waterflows, contamination and poor site conditions
- Retention and expansion of services throughout each phase
- Flexible foundation solutions to facilitate architectural design
- Structural and Civil design services that are value driven and cost-efficient in construction
- Innovative engineering solutions that facilitate project compliance, quality and cost.

As part of your project team, LeeMcCullough recognize the need to work in a collaborative and supportive manner to ensure that all engineering aspects of a project are delivered to the required standards, cost-efficiently and on time.