



LeeMcCullough
Consulting Engineers

Project 3855 – Public – New Build

Ballyogan Environmental Services Depot

Client : *Dunlaoghaire Rathdown County Council*

Architects : *Bucholz McEvoy*

Contract Value : *€11.5m*

Project Scope :

- *Administration and Utility Buildings*
- *Storage Bins*
- *Paving and Parking facilities*
- *Boundary Walls*
- *Site Services*

Project Description

Ballyogan Environmental Services Depot is a newly constructed facility for Dun Laoghaire Rathdown County Council. The depot is located on a 2.4 Ha. site adjacent to the former Ballyogan municipal landfill. The project entailed the construction of:

- A three storey over part basement Administration building.
- A separate Utility block including salt barn, equipment stores, basement plant room and two storey staff accommodation area.
- Hard paving for parking of service vehicles and open air storage bins for stockpiling of materials.
- Staff car park.
- Boundary Walls and Site Services

Project Features

Due to site topography and the presence of variable depths of fill overlying the site the buildings were founded on a blanket of granular fill and vibro compacted stone columns.

In the construction of the superstructure for the Administration Building glulam timber was extensively used for the main structural framing and floor/roof decking. With the exception of two insitu RC stability cores located at opposite ends of the building the structure consists totally of a framed timber structure. The timber framing consists of three storey high glulam columns, transverse and longitudinal glulam beams and solid multiply timber decking forming the main structural floor and roof plates.

Glulam members were also used for the separate external structural framing supporting facades of glazed fins. The final design was carried out using the Eurocode 5 Design of Timber Structures (IS EN 1995-1-1).

The roof structure of the Utility Building consisted of Glulam primary beams and purlins.

An innovative solution was adopted in forming structural connections in the timber frames as an alternative to forming structural joints in a conventional way using steel plates, bolts, shear plate connectors etc. The connections were made using long System WT threaded steel screws to anchor steel connection plates to the main timber members and also to secure direct timber to timber joints. The system adopted resulted in advantages with regard to aesthetics, fire protection, accuracy and speed of construction. Much of the external boundary of the site was constructed as a free standing stone filled gabion wall giving the external boundary an unusual and striking appearance.

The Ballyogan Depot Administration Building is a modern energy efficient office block constructed using a high percentage of sustainable materials (soft wood timber). It demonstrates the feasibility of using structural timber elements to construct a multi storey framed building while achieving architecturally aesthetic results. This form of construction, using timber beam and column framing for a multi storey building is in our experience unusual if not unique in Ireland.

Engineering New Buildings

For more than 30 years, we at LeeMcCullough we have been providing structural and civil engineering services for new buildings in the commercial, education, leisure, retail and residential sectors.

Key aspects of our services are:

- An open, collaborative, philosophy providing engineering design solutions that are appropriate for the specific project, will support architectural creativity and are cost-effective in delivery
- A close working relationship with all parties involved; effective team participation; and knowledgeable and experienced integration with other service providers
- A professional commitment to our client's projects: delivering a flexible and quality service, cost efficiently and on time.

At LeeMcCullough we provide senior, experienced personnel supported by the required resources, to lead our involvement in your project, demonstration of our commitment to provide excellent client service and quality/innovative, design solutions.