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Architects Report & Design Statement

for the

Proposed Fire Station,
at Straffan Rd,
Greenfield
Maynooth,
Co Kildare.





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1. A short summary of the project brief:

The project involves the design and construction of a new fire station at Mullen Park on Straffran Road, Maynooth, County Kildare.

The building accommodation brief from the client is as follows, with the design team's initial area estimate. In order to ensure that the budget could be met, the overall brief area was adjusted to suit.

Ground Floor	
Appliance bay for 2 no. Class B water tenders and 1 no. 4x4 jeep or a third-Class B water tender or similar 14x11m	174 Sqm
Watch Rm	11 Sqm
Office	13.6 Sqm
Dis /Wc	6.6 Sqm
Lecture	38.5 Sqm
Circulation	40 Sqm
Laundry (Dirty & Dry rm)	13.7 Sqm
Canteen	31.7 Sqm
Muster Bay	37.2 Sqm
Shower	35.3 Sqm
Locker PPE /Seating	8.9 Sqm
Breathing Apparatus rm	16.3 Sqm
Workshop & Storage	20 Sqm
Gym	25.7 Sqm
ESB	5 Sqm
Equipment / Chemical and PPE Store	17.2 Sqm
Plant	9.8 Sqm
First Floor	
Water tank storage	18 Sqm
Total m2	542 Sqm

Drill yard
Drill tower
Forecourt, Apron & Car Parking
Refuse area



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2. A brief review of the site factors and constraints:

The site covers an area of 0.3035 hectares. The development is a greenfield site located north of the M4 and adjacent to the M4 and east of the R406 Straffan Rd. To the north and east of the site, there are existing residential developments. To the west, between the development and Straffan Road are Lidl Supermarket, a car sale premises, and a coach hire service. A vehicular entrance to the site will be gained from Straffan Road via an existing distributor road. The site is located approximately 2.3 km southwest of the boundary of Rye Water Valley / Caton Special Site is located on Straffan Rd adjacent to M4 and adjacent buildings are existing two and three-story houses. Residential development is located to the north and east of the site.



Google map of site



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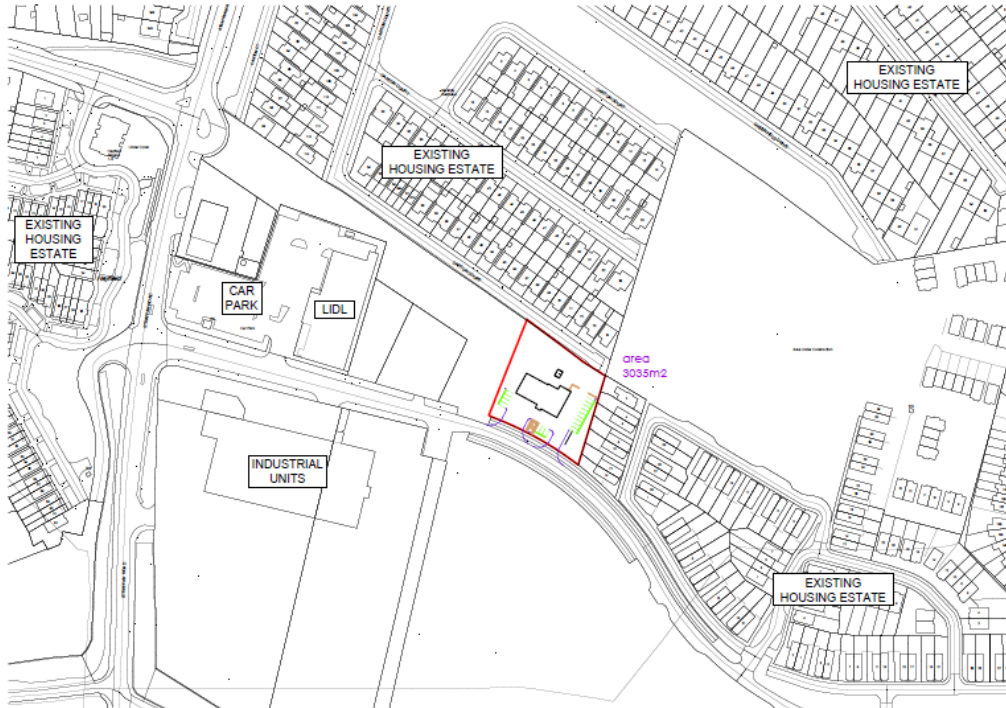
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OS Map for legal transfer

3. Site Zoning & Land Use

Site Zoning

The zoning map of the site indicates that the zoning is M5- General Development. The Local Area Plan (LAP) for Kildare County Council indicates the proposed Fire Station is a suitable development within LAP.

Zone M5 is for community facilities and public service installations. The proposed Fire Station would fall under the Maynooth zoning objective zone M5-General.



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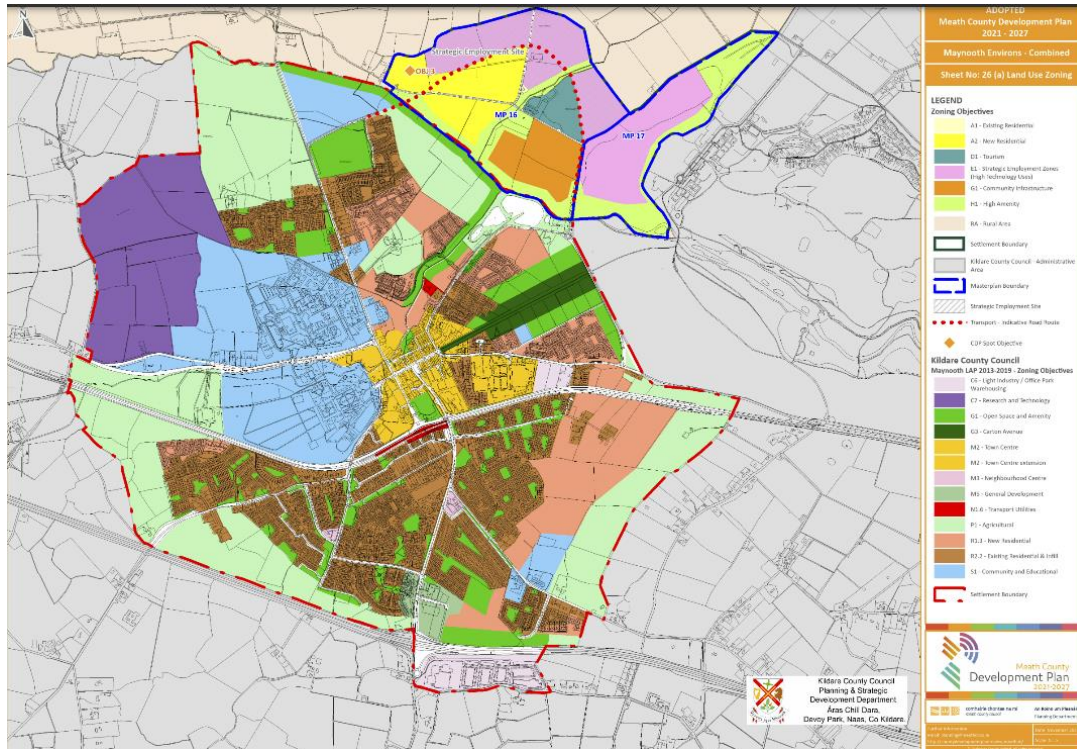
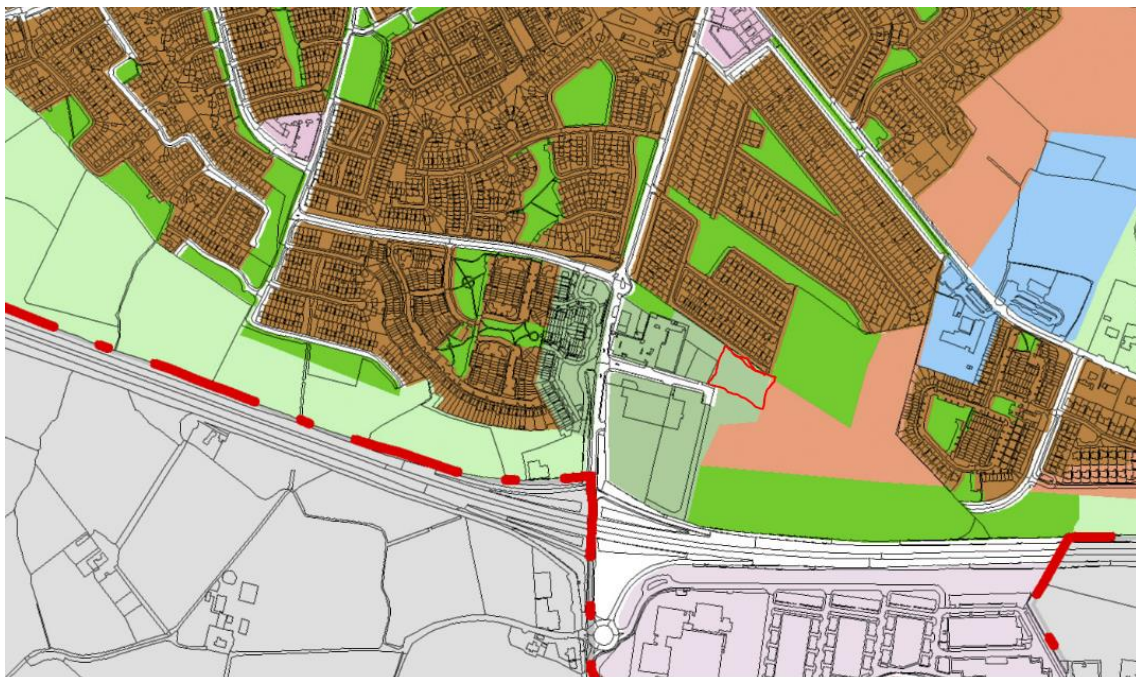


Figure 1 Maynooth Environ Combined Land Use Zoning Map (Sheet No:26 A)





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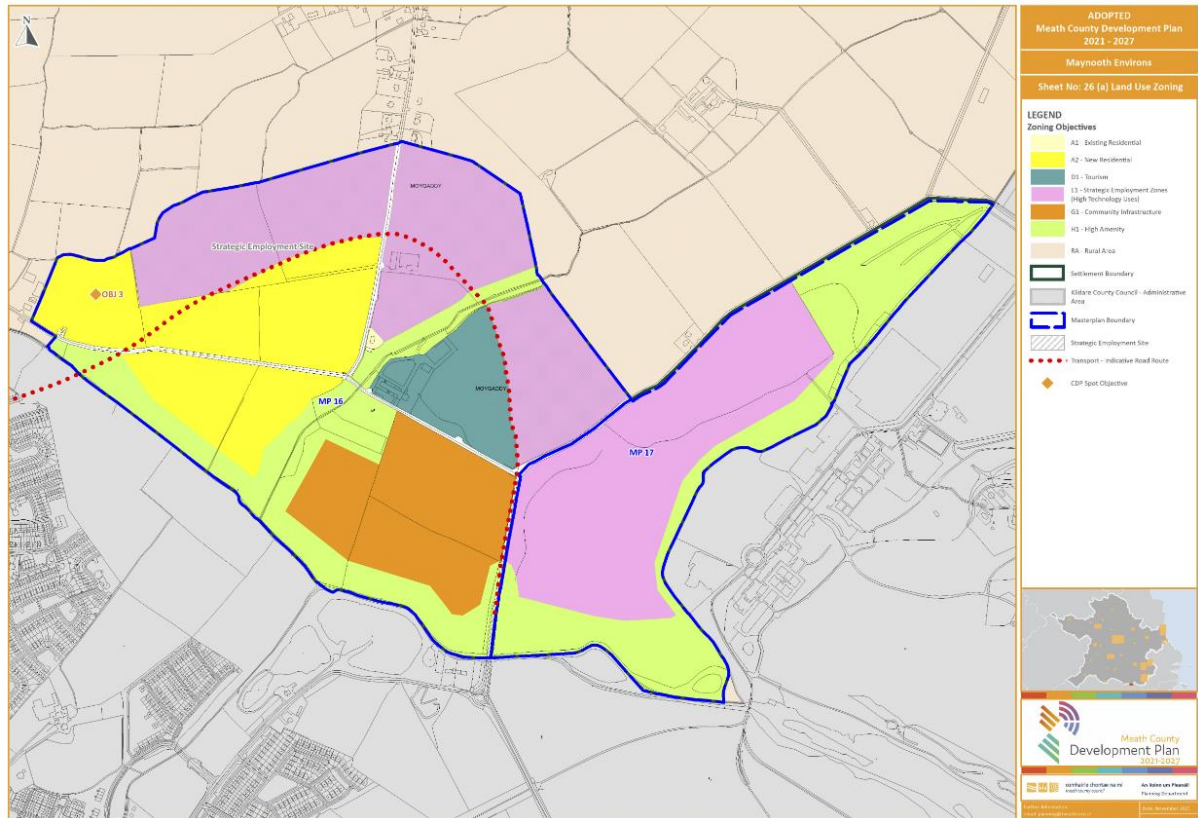
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Green colour M5 is general
development zoning





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4. Summary of Hazards and Risks, and measures to eliminate, mitigate and control such risks

Ecology: An appropriate assessment screening report and an Ecology Report were carried out by MKO dated the 26/08/2022. The conclusion of the report states,

“It can be concluded beyond reasonable scientific doubt, in view of best scientific knowledge, on the basis of objective information and in light of the conservation objectives of the relevant European sites, that the proposed development, individually or in combination with other plans and projects, will not have a significant effect on any European Site.

There is no requirement for Appropriate Assessment.”

MKO carried out an EIA Screening Report also and this concluded that,

The preliminary examination as required by Article 120 of the Planning and Development Regulations 2001 has determined that formal EIA Screening is not required therefore it is not necessary to proceed to step 3

Invasive Species:

Connacht Weed Control carried out an invasive species report and determined that there was no Japanese Knotweed or Invasive Species on the site.

Flood risk: see Tobin Consulting Engineers report

Heritage & Archaeology: Archaeological Consultancy Service unit carried out a heritage and archaeology Report on the site on a previous planning ref 161153 found no distinct archaeological features were identified during the survey. See below the conclusion from the report,

9. CONCLUSIONS

The presence of a number of ESB pylons and poles (B) within the proposed development site was noted in the survey data and interference (C) from overhead electrical cables was also detected. Two ditches (D) & (E) were identified as field boundary ditches visible on earlier OS maps and are likely to be relatively modern.

Despite this the area has a high archaeological potential and it is recommended that further archaeological assessment in the form of test trenching be carried out across the site in order to determine the precise nature and date of the field systems and test the remaining areas to be developed. This testing could be carried out under a condition attached to any grant of permission.



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5. Overview of Proposed Design:

The proposed design of the new fire station is 542 m² and is located on the west/east side of the site to facilitate good sightlines for the fire appliances and exiting the building.

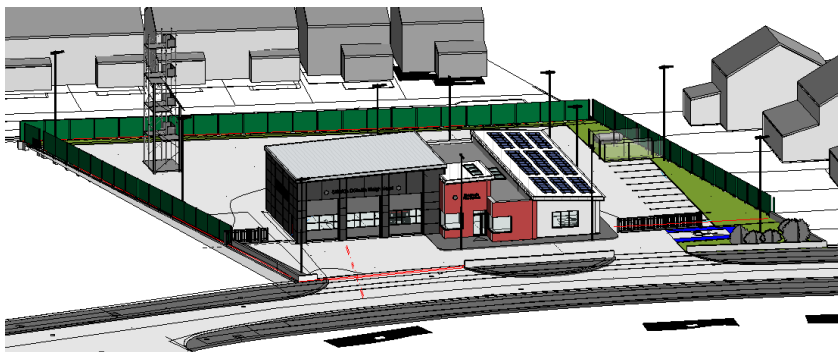
The design considered single- and two-story options. The single-story option was chosen for both cost and functional reasons.

Most of the accommodation is required to have a direct link with the appliance bay and so there was a limited amount of accommodation that could be located at an upper level except for the water tank storage and access to the roof for maintaining PV panels on the mono-pitch roof.

The building is a single-story structure with a large appliance bay made of a steel mono-pitched steel structure covered with a lightweight metal composite or fibre cement cladding. The adjoining support areas are cavity blockwork construction, with a central section of selected colour brick at the entrance.

An elevated section marks the high-volume glazed entrance, and this will facilitate the storage of water tanks at a high level, as well as access to the roof. The watch room is adjacent to the entrance as well as one office space, to control access to the building. All ancillary spaces such as the muster room are behind this and open directly into the appliance bay and changing areas at the rear.

The rest of the building contains a lecture hall to the south and a canteen area to the east. The external treatments of the building use materials common in the area and will link it to the surrounding context. There is brick/stone cladding proposed at the central watch room projection at the entrance to the building and the roadside boundary is a random rubble limestone stone wall.



The rear of the building contains a large asphalt hard standing for appliance turning and



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training. There is 1.8 m steel palisade fencing surrounding this area. To define the perimeter of the site, timber post and rail fences are 1.8m high, and the roadside boundary is a stone wall 0.9m high. The stone wall is constructed of local limestone capped with concrete.

At the rear of the fire station, there is a training tower. This is a steel-framed structure fixed to a concrete base, similar to the one in the photo, with a 2m x 2m footprint, one drill face to the front of the tower, Internal ladders, and safety barriers with self-closing gates, Anti-slip sills, Drop-in barriers Ladders stops, Yellow visual strips, Dummy hoist, rope & pulley Safety mesh to 3 sides, and Anti-vandal mesh and lockable door.





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6. Climate Change:

Over half the energy consumption worldwide is attributable to that used in buildings, the resulting CO2 release adding significantly to climate change. In response to this issue, the Energy Performance of Buildings Directive requires all buildings to be near zero energy buildings (NZEB) by 2020. The fire station proposed in this development will be energy-rated **A** and NZEB compliant.

Other climate-friendly features include:

- Designed to optimize the orientation and aspect to maximize solar gain
- PV Panel installation on the roof
- Reduce heat loss through openings with efficient window specification
- Air-tight construction, reduced thermal bridging, high levels of insulation
- Ventilation requirements met via 'demand control ventilation
- Departure from a fossil-fuel-dependent heating system
- Specification of a high-efficiency air source heat pump providing space heating and hot water needs
- Measures for a reduction in water consumption, e.g., low-flow cisterns
- significantly reduced operating costs of the building.
- Construction phase will require a 'Construction & Demolition Waste Management Plan', stipulating maximum reduction, reuse, and recycling of all materials
- The site location will afford the opportunity for more sustainable modes of transport
- Landscaped site to promote biodiversity
- New public street lighting will be energy-efficient LED lighting
- Kildare County Council habitually utilise an energy supplier that is committed to the development of renewable and sustainable energy sources

This approach will foster a reduction in energy consumption, a reduction in carbon footprint, and a corresponding reduction in factors contributing to climate change. We consider that the design for this fire station is appropriate for the site and we look forward to receiving a grant of permission so that the project can proceed to the next stage.

Brian Fahy MRIAI

Date 30 /08/2022