

**172439 - Proposed Housing Development,  
The Steeples Road, Duleek**

**Response to MCC Opinion**

**172439-PUNCH-XX-XX-RP-XX-0006**

**March 2022**

## Document Control

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# 1 Introduction

## 1.1 Background

PUNCH Consulting Engineers were appointed by DSPL Limited to prepare engineering documents for the proposed residential development of a site located on The Steeples Road, Duleek, Co. Meath.

As part of the planning process Meath County Council was approached to provide an ‘Opinion’ on the details submitted by DSPL Limited in its request to enter into consultation with An Bord Pleanála for a proposed Strategic Housing Development (SHD) under section 5 of the Planning & Development (Housing) & Residential Tenancies Act 2016 (as amended).

Following the receipt of the opinion from Meath County Council this document has been prepared to outline the response and alterations included in the design package.

## 1.2 Existing Site

The proposed development is located The Steeples Road, Duleek, Co. Meath in the townland of Commons. The site is bounded by the Stoneyford Green housing development to the north, The Steeples Road to the west, and a mix of residential dwellings and green fields along the remaining boundaries, as shown in Figure 1-1. The site is currently a greenfield site, with an area of approximately 4.8 ha.



Figure 1-1: Location of the Proposed development (site boundary indicated in red)

### 1.3 Nature of the Proposed Development

DSPL Limited, intends to apply to An Bord Pleanála for permission for a strategic housing development on a site area of 4.8ha located at Longford Road / The Steeples Road, Duleek, Co. Meath in the townland of Commons. To the north-west of the site is the Stoneyford Green residential estate, to the west, on the opposite side of Longford Road / The Steeples Road, is The Steeples residential estate, with Larrix Mews / Kennel Lane to the east/south-east.

The proposed development will consist of 141 no. dwellings and a 2 storey creche (415sq.m). The residential dwellings will be comprised of 131 no. 2 storey houses and 10 no. 1 bed apartments accommodated 4 no. 2 storey buildings. The proposed houses consist of 4 no. 4 bed detached houses, 18 no. 3 & 4 bed semi-detached houses, 102 no. 3 & 4 bed terraced houses and 7 no. 2 bed terraced houses.

The proposed development provides for all associated site development works, including the provision of a roadside footpath and cyclepath along Longford Road / The Steeples Road, sub-stations, car parking, bin & bicycle storage, public and communal open spaces, hard and soft landscaping, boundary treatments and public lighting. Access to the development will be via one new vehicular entrance off Longford Road / The Steeples Road, with pedestrian / cyclist access along the northern & eastern boundaries.

Please refer to Figure 1-2 for an extract of the proposed site layout.



Figure 1-2: Proposed Site Layout © BKD Architects

## 2 Response to Raised Items

All of the items noted below are related to the PUNCH scope of deliverables. The raised item is noted with the PUNCH response below.

### 2.1 Item 7.4.2 Traffic Assessment

#### *Trip Generation*

*The Applicant has stated that they have utilised the industry standard software programme TRICS (Trip Rate Information Computer System) to determine the traffic generation of the proposed development.*

*Review of the trip rate estimates for houses, apartments and the crèche facilitate appear to be of an appropriate order. It is noted that the Applicant has applied significantly lower trip rates for apartments. Whilst it is to be expected that apartment trip rates would be lower than for houses, apartments can attract tenants who may not own a car. However, given the limited alternative transport options for a location such as Duleek, it is not considered that this would be significantly lower than the house trip rates. Notwithstanding, as there are only 6 no. apartment units, this will have a negligible effect on the overall development traffic generation.*

#### *Trip Distribution*

*The Applicant has not stated the methodology for trip distribution. This should generally be based on local traffic movement patterns determined from classified junction turning count surveys.*

#### 2.1.1 PUNCH Response:

The trip distribution methodology has been outlined in section 5 of the Traffic and Transport Assessment.

### 2.2 Item 7.4.3 Access Junction and Site Accessibility

*The turning radius for the development access junction is in accordance with DMURS guidelines which is appropriate.*

*It is noted that the northern tie-in point associated with the proposed cycle facilities along Steeples Road results in an irregular triangular shape. This does not appear to be aligned with the National Cycle Manual and the applicant should be requested to address same.*

*Similarly, the Southern tie-in point for the proposed cycle lane with the existing Steeples Road may present the risk of collision, due to sudden transition, particularly between cyclists moving from the cycle lane to the traffic lane and traffic following behind in the traffic lane. This tie-in point should be in accordance with National Cycle Manual guidelines.*

*It is suggested that the Applicant provides a shared pedestrian and cycling facility as the most appropriate form of facility particularly given that there are no future plans for cycle facilities on the opposite side of the road nor at the northern and southern tie-in points.*

#### *Road Safety Audit*

*The Applicant should be requested to submit a Stage 1/2 Road Safety Audit and ensure that all recommendations noted in the audit report are addressed as part of any planning compliance.*

#### *Quality Audit*

*A Quality Audit has not been submitted as part of the pre-application. The Applicant should undertake a Stage 1 Quality Audit.*

### 2.2.1 PUNCH Response:

The irregular triangular shape at the northern tie-in point associated with the proposed cycle facilities along Steeples Road has been amended. This will have appropriate line marking to direct cyclists.

The Southern tie-in point for the proposed cycle lane with the existing Steeples Road has been changed to a stop junction for cyclists. This was advised as part of the Quality Audit undertaken.

A Stage 1 Quality Audit incorporating a Road Safety Audit was carried out by Bruton Engineering. The recommendations of this Audit were taken into consideration. The findings and Feedback form from the Audit can be viewed under separate cover.

## 2.3 Item 7.4.4 Internal Layout

### **General Street Layout and Street Types**

*The applicant confirms that the design speed is 30 km/h. Therefore, internal sightlines and forward visibility should be in accordance with DMURS, which for 30 km/h is 23m, not 15m as stated by the Applicant.*

*In terms of internal junction radii, the Applicant has proposed these to be 4.5m which is in accordance with DMURS guidelines and is acceptable.*

### **Pedestrian and Cyclist Desire Lines and Crossings**

*Reviewing the general road layout, it is noted that in general the pedestrian crossings and footpaths provided cater for all key desire lines and in particular from units located in the north of the development towards the crèche.*

*It is noted that pedestrian crossings on the approach arms to the roundabout are considerably set back from the yield lines. Given that this roundabout will experience low traffic and low vehicle speeds it is considered that pedestrian crossings should be directly positioned at the yield lines to better facilitate pedestrian desire lines and to give greater priority and comfort to pedestrians.*

### **Internal Roundabout**

*Review of the proposed development layout indicates that the Applicant proposes a roundabout within the development. Whether a roundabout is the appropriate type of junction at this location is not fully accepted. The Applicant should provide a statement justifying the selection of this junction type with reference to DMURS guidelines and reconsider if it is necessary.*

*Should the Applicant demonstrate that this type of junction is appropriate, the Applicant should ensure that the proposed roundabout junction complies with guidance for Shared Roundabouts from the National Cycle Manual. The current design is not compliant in that the circulatory carriageway is too wide (currently 6.0m in width), The circulatory carriageway should be no greater than 4.0m for a shared roundabout in accordance with the NCM. In addition, a central island with solid kerb should be provided with radius of at least 2m or greater. An overrun can be provided outside of this to facilitate HGV.*

### **Cul-de-sac**

*It is noted that Road 2 is a cul-de-sac of extensive length. This is not conducive to permeability. In order to enhance permeability and to eliminate awkward turning manoeuvres and reversing by refuge vehicles the applicant should construct a shared surface along the northern boundary of the site to link the two cul de sacs i.e., Road 1 to Road 2.*

### **Swept Paths**

The Applicant has provided engineering drawings showing the swept path analysis of the internal street layout using a Refuse Vehicle and the Large Car at key locations. The applicant should complete the swept path analysis using the more commonly used 11.0m service vehicle instead of the 7.9m as shown.

#### **Lands to the Immediate East**

It is noted that there are lands zoned to the immediate east of the site, just beyond the eastern laneway, for new residential. It is considered that the most appropriate means of access to these sites to the east is via the proposed development. The Applicant is requested to ensure that the design levels associated with the Road 5 of the proposed site are suitable to provide access onto the private laneway towards the adjacent site to the east. In addition, Road 5 should be extended towards the eastern boundary of the site to facilitate this future connection.

#### **2.3.1 PUNCH Response:**

All sightlines have now been shown as 23m. Please refer to PUNCH drawing no 172439-PUNCH-XX-XX-DR-C-0600. The pedestrian crossings at the roundabout have now been placed at the yield lines. Please refer to PUNCH drawing no 172439-PUNCH-XX-XX-DR-C-0400 for the Proposed Road Layout.

A shared roundabout has been incorporated as the most appropriate junction for the development. The carriageway lane width has been set at 4m with an over-run for HGVs. The central island has a 2m diameter with a 4m diameter for the over-run.

The cul-de-sac layout is the most appropriate site layout and is consistent with previously approved layouts.

Swept paths for an 11m refuse vehicle have been carried out. Refer to PUNCH drawing no 172439-PUNCH-XX-XX-DR-C-0600 for swept paths. The turning heads were altered to allow for the increased vehicle dimensions.

The layout of Road 5 will allow for a future connection to the zoned lands to the east. Levels design can be reviewed as part of any future development proposals.

## **2.4 Item 7.4.6 - Conclusions and Recommendation**

With reference to documents submitted for Preplanning Application Stage to An Bord Pleanála (ABP-311683-21), it is recommended that the following issues in relation to roads and transportation be addressed by the Applicant prior to submitting for full planning permission:

1. *The Applicant shall provide a design for the upgrade of the R150/Steeples Road junction for approval with Meath County Council. The design should align the junction with DMURS principles and tighten up junction radii to reduce turning speeds and to incorporate pedestrian facilities including footpath widening, pedestrian crossings, dropped kerbs and tactile paving, specifics to be agreed with Meath County Council.*

**PUNCH Response:** Site layout allows for cycle and pedestrian facilities within the ownership boundary. Alterations to the junction of The Steeples and the R150 will have to be implemented by Meath County Council. Any works could be co-ordinated with services extensions required as part of the development.



- The Applicant shall agree the boundary treatment along the public road to include a pedestrian and cycle facility suitable to act as a standalone facility that can cater for two-way movements and allow cyclists to transition between the proposed facility and the adjacent road network. A grass verge should be provided between the road and cycleway in accordance with DMURS Section 4.3.1.*

**PUNCH Response:** Pedestrian and cycle facility has been allowed for along the boundary.

- The Applicant complete a Road Safety Audit and amend the layout as necessary to address the recommendations contained therein.*

**PUNCH Response:** Road Safety Audit has been completed and can be viewed under separate cover as part of this planning application.

- The Applicant shall ensure that the proposed internal roundabout is in line with that of a Shared Roundabout as detailed in the National Cycle Manual. For clarity the Applicant shall note that the current layout is as per a Mini Roundabout and that this differs from a Shared Roundabout, the main differences relating to circulatory carriageway width and the construction of the central island, key geometry to slow vehicles speeds and ensure an appropriate cycling environment.*

**PUNCH Response:** The Internal roundabout is now in-line with that of a shared roundabout.

- It is considered that the extensive length of Road 2 is not conducive to permeability and is undesirable. The applicant should construct a shared surface along the northern boundary of the site to link Road 1 to Road 2.*

**PUNCH Response:** The additional permeability will be achieved through future pedestrian links at these locations. The turning heads have been increased to allow for an 11m refuse vehicle to turn, as demonstrated in the supplied Autotrack drawings. A vehicular link between roads 1 & 2 at this location is not proposed and the incorporation would compromise dwelling numbers, contrary to the site's development density requirements.

- The Applicant shall ensure that an appropriate boundary treatment, in keeping with the existing context, is provided to the laneway on the eastern side of the proposed development. This should consist of a verge and hedgerow, specifics to be agreed with Meath County Council.*

**PUNCH Response:** Please refer to Landscape Architect proposals indicating boundary treatments

- The Applicant shall ensure that the design levels associated with the Road 5 of the proposed development are suitable to facilitate a future access link across the private laneway towards the adjacent site to the east. In addition, Road 5 should be extended towards the eastern boundary of the site to facilitate this future link.*

**PUNCH Response:** The road layout allows for future connections as required.

8. *The Applicant shall ensure that the materials specified are in accordance with MCC Taking in Charge Policy document and in particular shared space areas.*

**PUNCH Response:** Please refer to landscape architect drawings for specified materials.

## 2.5 Item 7.5.1 Surface Water Treatment & Disposal

*The development as proposed broadly meets the requirements of Meath County Council Water Services Section with respect to the orderly collection, treatment and disposal of surface water. Should planning be granted for this proposed development the following technical issues shall be addressed to the satisfaction of Meath County Council Water Services prior to commencing construction on site:*

1. *The applicant shall provide BRE 365 result for the site of the proposed attenuation system, details of the winter ground water level shall also be provided. Where infiltration systems are to be used, they shall be a minimum depth of 1 metre above the winter water table level. The applicant shall design the attenuation system suitable for the ground conditions and acceptable to MCC Water Services Engineer. The applicant shall maximise the opportunity for onsite infiltration where possible. In the event that the formation of the attenuation system is less than 1m above the water table the applicant shall redesign the attenuation system to provide a fully water tight concrete structure acceptable to MCC water Services. Impermeable liners are not considered acceptable to MCC Water Services.*
2. *The applicant shall agree  $Q_{bar}$  greenfield run off rates with MCC water Services.*
3. *The applicant shall provide a breakdown of the impermeable and permeable areas within the proposed development upon which they have determined the attenuation volume for the subject development. The applicant shall agree an attenuation volume for the development with MCC Water services.*
4. *The allowable greenfield discharge rate shall be achieved using a flow control device with a minimum orifice of 100mm. The applicant shall supply a specification for the proposed flow control device which clearly demonstrates the orifice size and discharge rate.*
5. *The applicant shall apply upsize the proposed attenuation system by 20% for climate change.*

### 2.5.1 PUNCH Response:

1. BRE 365 infiltration testing was carried out, the results showed poor infiltration on the site. The results can be viewed in the Appendices of the PUNCH Engineering Planning Report. Ground water monitoring was carried out during and the water table was noted to be between 2-3.4m below ground level. Onsite infiltration has been maximised throughout the site through the use of raingardens, tree pits, swales grasscete and landscaping. The attenuation system proposed is an arch system. The attenuation tank IL is determined by the pipework upstream. GWL was recorded between 2.4 - 3.4m below ground level. The worst-case winter reading of GWL was noted at 2.4m BGL, the attenuation IL is noted at 2.3m BGL. Infiltration is not

proposed as part of this system due to the results from the BRE 265 tests. An arch system is the most efficient and logical system given the size and location within the green area. The tank system is noted to have efficient transport, quick installation and the strength of concrete tanks (Stormtech product catalogue).

2. Qbar calculations can be seen as part of the PUNCH Engineering Services Report. Qbar has been based off the impermeable site area being drained by the network.
3. Please refer to the PUNCH Engineering Services Report for a breakdown of the permeable and impermeable areas. The attenuation volume required and the Qbar discharge rate have been based off the impermeable area only.
4. The flow control device specification can be seen as part of the PUNCH Engineering Services Report.
5. The attenuation system and drainage network allows for 20% climate change.

## **2.6 Item 7.7.2 Taking-in-Charge**

*Taking-in-Charge should be carried out in accordance with the local authority 'Taking in Charge' policy document. The applicant has submitted a Taking-in-Charge layout drawing (No. 6204-P-005) which details the areas to be taking in the charge of Meath County Council. Areas beyond the Taking in Charge extent and outside private ownership should be subject of appropriate management company condition(s) i.e. the communal open space around the proposed duplex apartment units.*

### **2.6.1 PUNCH Response:**

A taking in charge drawing has been prepared by BKD Architects and is submitted as part of the planning documentation.