An Bord Pleanála

Inspector's Report ABP-302621-18

Development	Erection of a small hydro-power scheme (comprising Archimedes screw-type technology).
Location	Rockview Mill, Ennisnag, Stonyford, Co. Kilkenny.
Planning Authority	Kilkenny County Council
Planning Authority Reg. Ref.	17/651
Applicant(s)	Kingsriver Community Ltd.
Type of Application	Permission
Planning Authority Decision	Refuse Permission
Type of Appeal	First Party
Appellant(s)	Kingsriver Community Ltd.
Observer(s)	Inland Fisheries Ireland
Date of Site Inspection	5th December 2018
Inspector	Michael Dillon

1.0 Site Location and Description

1.1. The site, with a stated area of 6.5ha, is located approximately 200m to the southwest of Ennisnag Bridge (a hamlet on the R713 Kilkenny to Knocktopher Regional Road) – just to the north of the village of Stonyford, in Co. Kilkenny. Access is from county road (L42016). The 80kph speed restriction applies on this road. The road is narrow, and it is only possible to pass two vehicles at entrances. There is no public lighting and there are no public footpaths. The access is on the outside of a right-angled bend, and sight distance is good in either direction. The access forms one of a pair to the Kingsriver Community site.

1.2. The site itself comprises a run of approximately 700m of the King's River; within which are a number of small islands and man-made mill races/spillways to feed an old corn mill building: formerly powered by a mill wheel. Historical mapping indicates the one-time existence of a large number of such corn mills on this stretch of the King's River. There is a broken weir on the river at the western extremity of the site (almost entirely submerged on the date of site inspection by this Inspector – owing to the river being in flood, following recent heavy rainfall). The site also includes some lands on the north bank of the river. The river flows from west to northeast in this area. The river is largely flanked by wooded banks at this location. The existing head race was in flood on the date of site inspection. This head race is separated from the garden of the original miller's house by a stone wall of 1.0-1.8m height.

1.3. There are a large number of buildings on the site – principal amongst which is the roofless ruin of the former six-storey corn mill, together with its annexes. In addition, there are a number of single- and two-storey buildings of varying dates, in use for accommodation, training and storage for the Kingsriver Community. There is an old orchard with stone boundary wall, and beyond this again there are gardens and poly-tunnels. There has been extensive earth movement at the western end of the site. A footpath links the buildings on site to a riverside trail, which extends to the west beyond the site.

2.0 Proposed Development

2.1. Permission sought on 3rd October 2017, to erect a small hydro-electric power plant (Archimedes screw-type technology). The plant-room and generator will be located

within a new, single-storey building (with pitched roof), of 47.5m^2: at the end of the head race. A sluice-gate will control the flow into the turbine. The Archimedes screw device will be located externally; immediately outside this building (with a fall of approximately 3.0m). The development involves creation of a new head race (with spill-ways) of approximately 355m length, repair of an existing Victorian weir, and construction of a new rock ramp fish pass on the river, near Rockview Mill (Protected Structure). The development also provides for a new, 300m length footpath along the north side of the new head race – for maintenance purposes. The old head race (original length approximately 365m) is to be largely retained; with a low flow of water. A floating boom is proposed at the mouth of the new head race to catch debris, and send it over the weir. Connection to the national grid will be via an existing three-phase power connection to the site. The facility would be expected to supply electricity to approximately 77 houses-equivalent.

2.1.1. The application was accompanied by the following documentation of note-

- Natura Impact Statement.
- LANDY Hydropower Screws brochure.
- Site Specific Flood Risk Assessment – dated 15th July 2016.
- Architectural Heritage Impact Statement – dated 25th July 2016.
- Summary documents from 'Archimedes Screw Fish Passage Results – Fish Monitoring and Live Fish Trials' – carried out in the UK and Holland on various rivers.
- Board Order in relation to similar-type proposal – ref. PL 01.240850.
- Planning Report from EcoEvolution – dated July 2016.

2.2. Following a request for additional information, revised proposals were received on 2nd August 2018, as follows-

- Flow calculations for the King's River.
- Energy output will be 344,000 kWh – enough for approximately 77 houses.
- There is no timber walkway proposed around the Archimedes screw.

- Outline Environmental Management Plan – dated May 2018 – for construction and operational phases.
- An Ecological Clerk of Works will be present throughout the construction phase – with powers to suspend working, if necessary.

2.2.1. The response is accompanied by-

- Appendix A – Article on 'Survival of migrating sea trout and Atlantic salmon smolts negotiating weirs in small Danish rivers, 2003.
- Appendix B – List of Archimedes screw installations in the UK.
- Two A4, black & white photographs of an Archimedes screw and turbine housing.

3.0 Planning Authority Decision

By Order dated 28th August 2018, Kilkenny County Council issued a Notification of decision to refuse planning permission for one reason as follows-

"The applicant has failed to demonstrate to the satisfaction of the Planning Authority that the proposed development would not have a negative/adverse impact on the aquatic environment and fisheries resource of the Kings River. The Planning Authority is not satisfied that the proposed development would meet the requirements of the Water Frame Work Directive to prevent deterioration of the Kings River and considers the proposed development would be prejudicial to the protection of the environment and therefore contrary to the proper planning and sustainable development of the area".

4.0 Planning History

Ref. 16/544: Relates to an application by Kingsriver Community Ltd, on 16th August 2016, for a small hydro-power scheme (comprising Archimedes screw-type technology); which was subsequently withdrawn.

Ref. 14/542: Relates to a grant of planning permission to Kingsriver Community Ltd, on 24th August 2015: to retain use, changes and alterations to the Community House (which provides residential care for people with a variety of special needs in a

community setting); retain use, alterations and additions to the Workshop/Training Centre Building (which provides day-care educational programmes for people with a variety of special needs); retain internal alterations and change-of-use to the existing old coach house for additional staff/guest accommodation.

Ref. 10/637: Relates to a refusal of permission to Kingsriver Community Ltd, on 10th August 2011: for recommissioning of the mill race & hydro-generating facility at Rockview Mills, including the installation of a new water turbine and ancillary works.

5.0 Policy Context

5.1. Delivering a Sustainable Energy Future for Ireland 2007-2020 – White Paper

This document establishes a strategic goal of accelerating the growth of renewable energy sources and increasing the ratio of renewable energy sources in the overall production of electricity to 33% by 2020.

5.2. Irish Government's Energy White Paper 2015

This paper is entitled 'Ireland's Transition to a Low Carbon Energy Future". The pillars of the policy are to secure supply, promote environmental sustainability, and improve economic competitiveness, over the period 2015-2030.

5.3. National Renewable Energy Action Plan

The Government is obliged under the Renewable Energy Directive – 2009/28/EC to prepare such a Plan – now its Fourth Progress Report to the European Commission – February 2018. It is now accepted that Ireland cannot meet its 2020 targets. Ireland must achieve a 16% share of renewable energy in overall consumption.

5.4. Development Plan

The relevant document is the Kilkenny County Development Plan 2014-2020. Section 10.7 deals with hydro-power. There was a total of 185kW generated through four hydro-stations within the county in 2010. Figure 10.3 identifies 20 hydro-sites for prioritisation in the county (from document Reclaiming Lost Power – *Kilkenny's*

Potential Hydro Power Sites – LEADER 2010). The appeal site is identified at no. 18 (potential 48kW output). Section 10.7.2 states that- "In the assessment of proposals for hydroelectric schemes the Council will have regard to the provisions of the *Guidelines on the Planning, Design, Construction and Operation of Small Scale Hydro-Electric Schemes and Fisheries*, or any amending or replacement document. In addition, it is recommended that anyone considering a hydro-electrical project should consult the following documents (or any updates thereto);

- *Reclaiming Lost Power, Kilkenny's Potential Hydro power sites* – LEADER 2010.
- *Requirements for the protection of Fisheries Habitat during Construction and Development Works at River Sites* – Eastern Regional Fisheries Board, 2009.

In addition to the effects on fisheries, as covered by the Guidelines, possible impacts from hydro energy developments are outlined in the table below.

Table 10.6: Summary of potential impacts from hydro-power scheme

Issue	**Potential impact**
Visual	Impact on character of landscape, scenic views (turbine houses, embankments, structures, access routes, power lines)
Ecology	Impact on habitats, fish populations and protected species such as otters and bats
Hydrology	Possibility of pollution, effect on water quality and regime, must show compliance with River Basin Management Plan
Noise	During construction and operation
Archaeology	There may be underwater archaeology present
Architectural heritage	Many weirs and mills are protected structures

As part of any planning application for a hydro electric scheme, an Environmental Management Plan will be required to address all environmental issues arising during the construction and operation of the scheme.

The following types of scheme are likely to be detrimental to the fisheries resource and may be rejected by the planning authority:

- New low head schemes that may cause significant obstacles to fish movement.
- In catchments/sub-catchments of importance such as a spring salmon fishery.
- Placing structures/weirs at the outlet of lakes or creating new impoundments.
- The transfer of water from one catchment to another.
- River channel sections of high fisheries value where the impacts of the proposed hydro scheme development would be unacceptable from a fisheries perspective, i.e. in an area of important spawning or nursery area.
- Where there are existing competing uses of the water resource, such as water abstractions, dilution of licensed discharges etc.
- Where there may be an impact on river continuity, fish migration, or fish mortality".

Ennisnag Mill is a Protected Structure (D69) – Massive 7-storey derelict flour mill, also known as Rockview and O'Briens Mills, on left bank of Kells [sic]. Most of the great spurwheel gearing and 4 sets of millstones survive. Its owners The King's River Community, hope to restore it as a heritage centre.

5.5. Guidelines on the Planning, Design, Construction and Operation of Small Scale Hydro-Electric Schemes and Fisheries

These Guidelines were produces by the Central and Regional Fisheries Boards & the Department of Communications, Marine and Natural Resources in 2007.

5.6. Natural Heritage Designations

Within the site boundary, the river and the islands form part of the River Barrow and River Nore SAC (Site code 002162). The area of the SAC extends to cover part of the lands on the southern bank of the river, but not on the northern bank. The river and the islands from part of the River Nore SPA (Site code 004233). This European site does not extend to cover lands on the south bank of the river.

6.0 **The Appeal**

6.1. **Grounds of Appeal**

The appeal from Byrne & McCabe Design Ltd, Architecture & Engineering Services, agent on behalf of the applicant, Kingsriver Community Ltd, received by An Bord Pleanála on 24th September 2018, can be summarised in bullet point format, as follows-

- The Kingsriver Community was established in 1986, and is fully funded by the HSE.
- The generation of electricity will be an income stream for the community.
- The site originally contained a water wheel, to power the adjacent corn mill.
- The Board has previously granted permission for similar-type development in Co. Carlow (PL 01.240850). The Slaney River would be considered a more important salmonid fishery than the King's River.
- Inland Fisheries have raised similar concerns in relation to this application. No new grounds have been put forward which would justify refusal of planning permission.
- No objection was received to the findings and recommendations of the NIS.
- The scheme was designed, having regard to the need to protect species within the SAC.
- Allowing fish passage through the screw is the best way of preserving species – rather than installing screens, which have the potential to damage fish.
- Archimedes screw turbines are in use in the UK (100 units) and 3 in Northern Ireland, and have successfully aided smolt passage downstream. None of the UK screws have fish screens. There is no need for a screen on the Archimedes screw proposed for the King's River. Many of the UK screws are on important salmonid rivers. Screens are used to catch debris.
- The NIS identified potential impacts on lamprey and salmon. A qualified ecologist will be on site during construction to deal with potential siltation. The

needs of eel were also taken into consideration – notwithstanding that it is not a conservation interest of the SAC.

6.2. **Planning Authority Response**

The response of Kilkenny County Council, received by An Bord Pleanála on 16th October 2018, indicates that the PA has nothing further to add.

6.3. **Observations**

6.3.1. There is one observation from Inland Fisheries Ireland, received by An Bord Pleanála on 22nd October 2018, which can be summarised in bullet point format, as follows-

- Under the WFD, all waters; whether or not they are modified; should meet the quality elements to comply with good ecological status for unmodified waters or good ecological potential for modified waters. A recent judgement of the ECJ (Case C-461/13) has clarified that this responsibility applies not just as a generality but to individual projects. The proposed development has the potential to significantly impact on the current status of the King's River. The benefits of the project to the environment or public interest do not outweigh achieving the aims of the WFD.
- The Fisheries (Consolidation) Act, 1959, requires that at the point of divergence from and return to a river, grating bars (not greater than 2" apart must be fitted. An additional lattice must be fitted when the brood of trout and salmon are descending.
- Despite being the site of an old mill, the site is unsuitable, as it is within an SAC designated to protect Annex II species – Atlantic salmon, River lamprey, and Brook lamprey.
- The application does not include any proposals for screens. Reference is made by the applicant, to an appeal to the Board for approval of an hydro-power station in Co. Carlow (PL 01.240850): this scheme has not been constructed, and if it were, it would be in breach of fisheries legislation, and liable to prosecution.

- The proposed water extraction rate exceeds the maximum rate, as outlined in the *Guidelines on Planning, Design, Construction & Operation of Small-Scale Hydro-Electric Schemes and Fisheries*, of 50% of the available flow. The applicant proposes taking more than this amount 45% of the time. This is wholly unacceptable to IFI. In periods of low flow, returning salmonids may be attracted to the tail race rather than the main flow of the river – thereby delaying upstream migration.
- Adequate means to determine the river flow is required by IFI – to ensure that turbines only operate at appropriate-flow periods.
- The fish pass will require the approval of the Minister. It appears from drawings that the hydraulic jump at the top of the pass may be a barrier to the passage of eel and lamprey. Given that there are already two moderate risk barriers to fish migration on the lower reaches of the King's River, this creation of a further barrier has the potential to impact on Annex II species for which the SAC is designated. The presence of another significant barrier at Bennetsbridge may further increase the importance of the King's River to lamprey and eels.

6.3.2. The observation is accompanied by a copy of *Guidelines on Planning, Design, Construction & Operation of Small-Scale Hydro-Electric Schemes and Fisheries* – prepared by the Department of Communications, Energy and Natural Resources in association with the Central & Regional Fisheries Board and the Department of Agriculture, Fisheries and Food.

6.4. **Further Responses**

6.4.1. The appeal was referred by An Bord Pleanála to the following prescribed bodies; for comment on or before 4th December 2018-

- Development Applications Unit of Department of Culture, Heritage and the Gaeltacht.
- Fáilte Ireland.
- An Chomhairle Ealaíon.
- An Taisce.

- The Heritage Council.

6.4.2. There were no observations received.

7.0 Assessment

The principal issues of this appeal relate to impact on the fisheries resource of the King's River and on the ecology of the river.

7.1. Development Plan & National Guidance

7.1.1. The development of renewable energy is in accordance with Government policy in relation to the sustainable energy future of the country, and the need to reduce carbon dioxide emissions.

7.1.2. The development of hydro-power is encouraged in the Development Plan, at section 10.7. The site is identified as an appropriate location, subject to compliance with requirements of the *Guidelines on the Planning, Design, Construction and Operation of Small Scale Hydro-Electric Schemes and Fisheries*, or any amending or replacement document. Schemes are required to have regard to the document - *Requirements for the protection of Fisheries Habitat during Construction and Development Works at River Sites* – Eastern Regional Fisheries Board, 2009. The principle of this development is acceptable, by the terms of the current Development Plan. Table 10.6 of the Development Plan gives a summary of other issues, apart from fisheries impacts (as addressed in the Guidelines referred to above), to which regard must be had, in considering applications for hydro-energy projects.

7.1.3. It is the contention of Inland Fisheries Ireland (IFI) that the scheme does not comply with the *Guidelines on Planning, Design…*, and neither does it comply with Fisheries (Consolidation) Act, 1959; which requires, *inter alia*, the provision of grating bars at the point of divergence and return of any mill race from the main channel. It is further pointed out that the diverging weir and fish pass would require the consent of the Minister of Communications, Climate Action and the Environment, and that the design proposed would not meet requirements in relation to the hydraulic jump at the top of the fish pass. This would be something which could be sorted out at construction stage between the applicant and Inland Fisheries Ireland, as it would appear to be a matter of design rather than principle. The applicant refers to a

recent grant of permission by the Board for a similar-type Archimedes screw hydro-power scheme on the Slaney River (PL 01.240850). This permission was granted by Carlow County Council, but appealed by IFI. Inland Fisheries Ireland states that the permission has not been implement, and could not be; owing to conflict with fisheries legislation. In this regard, I would note section 34(13) of the Planning and Development Act, 2000, as amended, which states- "A person shall not be entitled solely by reason of a permission under this section to carry out any development".

7.1.4. The implementation of the Water Framework Directive requires that no deterioration take place in any waters, and that all waters achieve 'good' status by 2027, at the very latest. By 2015, the core requirements of the WFD were the prevention of deterioration, restoration of 'good' status, reduction in chemical pollution, and achievement of protected areas objectives. Inland Fisheries Ireland refers to a recent ECJ judgement, which has clarified that responsibility applies not just in general, but to specific projects (in this instance in relation to good ecological status). I would not consider that the proposed development would impact on the 'good ecological status' of the King's River, subject to appropriate measures being put in place to protect the movement of fish species upstream and downstream during construction and operation of the hydro-power plant. The proposed development would not be contrary to the Water Framework Directive.

7.2. **Layout & Design**

7.2.1. The new generator house will be located at the end of a new head race (corresponding to the end of the existing head race), which is to be constructed almost entirely parallel to the existing head race; which would once have fed water to the mill wheel at Rockview Mill. This head race contained a strong flow of water on the date of site inspection – the river being in flood.

7.2.2. The generator house is a small, single-storey building of approximately 47m^2. Axonometric sketch drawings, submitted with the application, indicated that it would be clad in stone, and pitch-roofed in slate. However, drawings submitted with the application indicate that it will be clad in green, profiled, metal sheets. The Archimedes screw (3m diameter) will be externally located, to the northeast of the generator house; and will be surrounded by a stone wall – to prevent access. An observation/maintenance deck was indicated on some drawings submitted – but it is

confirmed that this will not now be included. In the context of a former industrial mills complex, the proposed development will not be out of character.

7.2.3. The maximum operational design flow for the unit is 5.0m^3 per second: the minimum design flow is 0.5m^3. The minimum residual flow (Hands-off Flow – HOF) required in the King's River is calculated, by the applicant, to be 1.07m^3 per second. A level sensor will measure the flow at the replacement diverging weir, to establish whether there is sufficient flow to open the sluice at the power house. A notch at the weir will allow for the HOF of 1.07m^3 per second to flow unrestricted into the fish pass area of the weir.

7.3. **Architectural Heritage**

7.3.1. Ennisnag (Rockview) Mill is a Protected Structure within with County Development Plan – ref. D69. The application was accompanied by an Architectural Heritage Impact Assessment. The six-storey ruined mill has been stabilised – with collapsed/collapsing sections removed. Lower buildings which surround the ruin remain in use. The Archimedes screw will be located to the southeast of the mill building, but not within it or immediately abutting it. The mill is constructed on the edge of the river, and the new Archimedes screw will be located close to where the original mill wheel pit was located. The new building will be constructed on bedrock, and clad in green, profiled, metal sheets. The building will not be visible from any public road or footpath. I would consider that there would be limited visual impact on the Protected Structure mill building, arising from the construction of this single-storey building and Archimedes screw. The adjoining mill house has been extended in a modern idiom. An old stone wall, which currently separates the garden of the mill house from the river, is to be retained (except for one small gap to permit of pedestrian access).

7.3.2. The Conservation Officer for KCC was concerned that the creation of a stilling basin at the foot of the Archimedes screw, could potentially undermine the foundations of the adjacent ruined mill building (Protected Structure). A Construction Management Plan was required for this work. The King's River was in flood on the date of site inspection. The mill building has survived through countless such flooding events in the river, where the flow is hard against the wall of the building – particularly waters discharging from the existing mill race. The new Archimedes screw is not likely to be

more severe on the base of this wall than existing river flow and flood events. In the context of a former working mill, the proposed development would not be out of character, and will have no significant impact on the Protected Structure.

7.4. Fisheries Impact

7.4.1. *Guidelines on the Planning, Design, Construction and Operation of Small-Scale Hydro-Electric Schemes and Fisheries*, published by the Department of Communications, Energy and Natural Resources in 2007, address issues of excessive abstraction, inadequate fish passage provisions, and inadequate smolt screening. Section 3.1 states that low-head schemes [such as the one proposed here on the King's River], are designed using the long-term mean flow (Q_{mean}) of the river, when on full load. In spate rivers, the long-term mean flow can be ten or more times the dry-weather flow at any time. Because low-head schemes have little provision for storage of water [as in former mill ponds], the economic imperative is to use as much as possible of the total river flow at any time. More efficient turbines allow for operation at as low as one quarter of their full load design. [I note that the proposed Archimedes screw can operate at one tenth of its full load design – 0.5m^3 minimum and 5.0m^3 maximum, per second]. Section 7.2.1.3 refers to low-head schemes, where there is an existing weir/mill race. It is noted that these facilities traditionally operated in daylight hours only, and had much lower water demand than modern hydro-power turbines. These locations may be considered for hydro-power if fish passage is provided/improved and there is no fisheries impact. Operation of small-scale schemes at these low-head locations are unlikely to impact on the fisheries environment subject to criteria, including:

- That fish passage through the depleted stretch is not compromised.
- That compensation flow, described for Category 2 or Category 3 rivers below (as appropriate), is adopted.
- That in cases where the length of the depleted stretch is significant and angling is important in the depleted stretch, additional flow provisions are provided to maintain the angling amenity.
- That there is no deterioration in water quality downstream resulting from the development.

7.4.2. Section 7.2.2 of the Guidelines identifies locations/situations which are considered unsuitable for siting of small-scale hydro schemes, including, *inter alia*, the following-

- New low-head schemes that entail creation of new and significant obstacles to fish movement.
- Schemes proposed in catchments/sub-catchments of importance as a spring salmon fishery, where the development is likely to have any appreciable impact.
- River channel sections of high fisheries value…
- Where there may be potential impact on river continuity, and fish migration, or may cause mortality to migrating fish such as maturing Silver eel.
- Schemes proposed in protected areas for Annex II fish species.

7.4.3. Section 7.4 of the Guidelines sets out requirements for residual flow. Category 3 rivers are river channel sections where there is internal fish movement within the depleted stretch, where there is spawning and nursery potential and where there is also fish movement through the stretch. The river supports populations of Atlantic salmon and Brown trout. For Category 3 rivers, the recommended compensation flow for fisheries is that for Category 2 rivers, plus additional site-specific measures which may include higher base compensation flow provision (normally 12.5% of Q_{mean}), freshet provision, fish escapement measures etc. It is a varying compensation flow regime, which depends on the flow in the river at any one time. The bottom line is that for Category 3 rivers [such as the King's River], Inland Fisheries Ireland requires a minimum of 50% flow rate across the diverging weir (into the main river channel), or a compensation flow provision of 12.5% Q_{mean} – whichever is the greater. This diverted flow rate is at the heart of the IFI objection to the proposal. Q_{mean} generally occurs between Q_{30} and Q_{40} – the percentile flow which occurs 30% or 40% of the time in the river. The applicant has calculated a Q_{mean} of 6.01m^3 per second (based on Q_{30}). A base compensation flow of 12.5% of Q_{30}, would equate to 0.75m^3 per second. The applicant proposes an increased base compensation flow of 17.8% of Q_{30} – 1.07m^3 per second. The full design flow for the Archimedes screw of 5.0m^3 is calculated to occur at the Q_{40} flow. A Hands-off Flow (HOF) of 1.07m^3 per second is calculated as being equal to the Q_{80} flow – a flow which is exceeded for 80% of the year. The turbine cannot operate at less than

0.5m^3 per second, so diverting any flows between 1.07m^3 and 1.57m^3 down the head race would be unnecessary, and would be better left in the main channel: this quite apart from the difficulty of diverting exactly 1.07m^3 per second across the weir – particularly if the weir was damaged, subsided, blocked by debris (floating or otherwise) or plant growth etc. I would note, that water currently flows into the disused mill race on the site: certainly, during flood conditions as witnessed by this Inspector. At low flow, the NIS submitted states that above Q_{50}, there is no flow in the mill race – all water going over the broken weir into the main channel of the river. IFI requires 50% of flow across the diverging weir, at any levels above 12.5% of Q_{mean}. This would mean that the turbine could only operate at full load design when the flow in the river was greater than 10.0m^3 – twice the full load design of 5.0m^3. According to charts supplied by the applicant, this would only occur for 17% of the year at Q_{17}. However, according to charts supplied by the applicant, the turbine could operate at Q_{70} (70% of the year, between 0.5m^3 and 5.0m^3 per second load design: depending on flow rates) – when flows in the river exceeded 1.57m^3 per second. The applicant contends that the flow into the head race will only exceed the flow over the diverging weir 45% of the time. This is not to be confused with the requirement of IFI that 50% of total flow goes over the diverging weir at any flow rates above 12.5% of Q_{mean}. The applicant points out that migration of salmon upstream will occur predominantly during flows of Q_{40} to Q_{10} – when flows are highest. The applicant contends that the use of percentage flows (as contained in the Guidelines) could result in examples of where too much water would be diverted into the head race at times of low flow in the river. The use of percentile flow (as has been used by the applicant) ensures that there will be more flow in the main channel of the river at times of low flow [in this instance 1.07m^3 across the diverging weir instead of just 0.75m^3]. The obvious follow-on from this allows for any amount of water exceeding this 1.07m^3 (in reality 1.57m^3) to be diverted down the head race to the turbine – up to a maximum of 5.0m^3 (any amount above this threshold could not be used in the turbine). It is contended that use of percentile flow is more aligned to the requirements of the Water Framework Directive than use of percentage flow of Q_{mean} as set down in the Guidelines.

7.4.4. Section 7.5 of the Guidelines states that for low-head schemes, where feasible, there should be a notch in weirs designed to take 12.5% of the long-term mean flow

(Q_{mean}). The notch will normally form part or all of the fish passage arrangement and must be to a satisfactory design standard. This is a matter which is best left to agreement between the applicant and Inland Fisheries Ireland. IFI have some concerns in relation to the design of the fish passage. It is further noted that for low head schemes the only way of ensuring that turbines are not operated when the river level is too low is by the use of properly-calibrated flow sensors which will automatically turn the turbine off when the river level falls below the minimum residual flow level. The exact position of the sensor should be indicated on approved plans.

7.4.5. Inland Fisheries Ireland is concerned at the impact on upstream movement of Atlantic salmon and Brown trout (and also lamprey and eel species). The principal concern would appear to be that at times of low flow on the river, too much water would be diverted into the head race – resulting in a greater flow than in the main channel of the King's River. This would have the effect of drawing returning salmonids to the tail race flow, rather than to the main river channel flow. A stilling basin/pool is to be used to reduce the velocity of the tail race from the Archimedes screw to 0.5m^3 per second. If properly installed and operated, this should reduce the attraction of the tail race from the Archimedes screw for upstream-migrating fish species. Any evidence of upstream delay for salmon or lamprey species will trigger a temporary shutdown of the Archimedes screw, in order to generate a freshet of water in the main river channel – to divert the migrating species into the main channel. The Archimedes screw is a barrier to upstream movement of fish species (although it is stated not to hinder downstream movement). The absence of any proposals for fish screens at the point of divergence of the head race or re-entry of the tail race (to divert certain fish sizes at certain times of the year), is considered to be a short-coming, by IFI. The applicant argues that such screens are not necessary, and references a number of similar-type hydro-power stations on rivers in the UK, which operate without fish screens. If downstream passage of fish is facilitated by the Archimedes screw, it is hard to see the necessity for a fish screen upstream of the hydro-power facility. A by-wash at the Archimedes screw will facilitate downstream passage of fish, should it be required in an emergency. There is no tail race with this proposed development – the Archimedes screw discharging directly into the main flow of the river. Therefore, it is difficult to see where a

downstream screen could be placed. The Archimedes screw itself will not allow passage of fish species upstream. Again, the necessity for/placing of such fish screens, would appear to be something which could be agreed between the applicant and IFI; particularly if such measures are required by other legislation outside of planning legislation. The repair of the diverging weir, and creation of the new fish pass, would require the approval of the Minister for Communications, Climate Action and the Environment, notwithstanding any planning permission granted. IFI was concerned that the design put forward has the potential to create a further barrier to the passage of eel and lamprey species – the hydraulic jump at the top of the pass being too great. As stated elsewhere in this assessment, this matter could be sorted out between the applicant and IFI through appropriate design of the weir and fish pass. It is further pointed out that the Archimedes screw hydro-power plant, granted permission by An Bord Pleanála on appeal (PL 01.240850), on the Slaney River, has not been built, and if it were, would be in breach of Fisheries legislation, and would be liable to prosecution. This is something outside the consideration of an appeal such as this one. Each case should be dealt with on its merits. The Slaney River and the King's River are not in the same catchment.

7.4.6. I would be satisfied that the applicant has put forward a reasoned argument for the water regime proposed – *vis a vis* what amount of water is diverted into the head race. The development is to be built on the site of an existing head race and former mill wheel (albeit through the creation of a new head race). Compliance with Fisheries legislation is another matter, and one outside of the control of planning legislation. If properly constructed and managed, the proposed Archimedes screw and associated infrastructure would not be a barrier to the movement upstream or downstream of fish species.

8.0 Appropriate Assessment

8.1. General Comment

The application is accompanied by a Natura Impact Statement (NIS) – dated 15th July 2016. The proposed hydro-power scheme is not directly connected with or necessary for the management of an European site. To firstly carry out screening for appropriate assessment, six steps will be followed in this section.

8.2. **Step 1 – Identify European Sites which could potentially be affected by the hydro-power scheme (source-pathway-receptor model)**

Part of the site lies within the River Barrow and River Nore Special Area of Conservation (Site code 002162). Part of the site lies within the River Nore SPA (Site code 004233).

8.3. **Step 2 – Identify the Conservation Objectives of the relevant site(s)**

8.3.1. The qualifying interests of the River Barrow and River Nore SAC are as follows-

- Estuaries.
- Mudflats and sandflats not covered by seawater at low tide.
- Reefs.
- Salicornia and other annuals colonising mud and sand.
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).
- Mediterranean salt meadows (*Juncetalia maritimi*).
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.
- European dry heaths.
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels.
- Petrifying springs with tufa formation (Cratoneurion). [Annex I]
- Old sessile oak woods with *Ilex* and *Blechnum i*n the British Isles.
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*). [Annex I]
- *Vertigo moulinsiana* (Desmoulin's whorl snail).
- *Margaritifera margaritifera* (Freshwater pearl mussel).
- *Austropotamobius pallipes* (White-clawed crayfish).
- *Petromyzon marinus* (Sea lamprey).

- *Lampetra planeri* (Brook lamprey).
- *Lampetra fluviatilis* (River lamprey).
- *Alosa fallax fallax* (Twaite shad).
- *Salmo salar* (Atlantic salmon) – but only in fresh water.
- *Lutra lutra* (Otter).
- *Trichomanes speciosum* (Killarney fern).
- *Margaritifera durrovensis* (Nore freshwater pearl mussel).

8.3.2. The Conservation objectives for the 12,373ha site, are to maintain the favourable conservation condition of Desmoulin's whorl snail, White-clawed crayfish, Estuaries, Mudflats and sandflats, Salicornia, Killarney fern, Water courses of plain to montane levels, European dry heaths, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, Petrifying springs: and to restore the favourable conservation condition of Sea lamprey, Brook lamprey, River lamprey, Twaite shad, Atlantic salmon, Atlantic salt meadows, Otter, Mediterranean salt meadows, Nore freshwater pearl mussel, Old sessile oak woods, Alluvial forests. The status of the Freshwater pearl mussel is currently under review, to establish whether a site-specific conservation objective is set for this species.

8.3.3. The qualify interests of the River Nore SPA are as follows-

- *Alcedo Atthis* (Kingfisher).

8.3.4. The Conservation Interests of this 414.5ha site are- "To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA". The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The consent of the Minister for Culture, Heritage and the Gaeltacht is required for works on, or alteration to, the banks, bed or flow of a drain, watercourse or waterbody.

8.3.5. Hugginstown Fen SAC and Thomastown Quarry SAC were can be eliminated from consideration arising from separation distance from the appeal site and absence of any pathway connection.

8.4. **Step 3 – Identify the potential- a) likely, and b) significant, effects of the project with reference to the site's Conservation Objectives, in light of best scientific knowledge**

The principal impacts which may occur (both negative and positive), largely relate to water quality during the construction phase, and passage of aquatic species (both upstream and downstream), and include the following-

- Excessive siltation during construction of the turbine, diverging weir and new head race; and impact on aquatic species.
- Barrier to passage upstream and downstream of Brook lamprey, River lamprey, Atlantic salmon and Twaite shad.

8.5. **Step 4 – As above, but considering in-combination effects with other plans or projects**

There are no other plans or projects within the vicinity which could be considered to have in-combination effects. There is an established waste-water treatment plant for Stonyford, immediately downstream of the site – on the opposite bank.

8.6. **Step 5 – Identify any measures which may be put in place to reduce/lessen likely significant impacts on European sites**

Measures outlined include the following-

- Choice of site, at location of a former mill water-wheel.

- Selection of hydro-power system which allows for safe passage of fish species downstream.

8.7. **Step 6 – Determine whether likely significant effects, either individually or in combination with other plans or projects, on European sites, can reasonably be discounted, on the basis of objective scientific information**

The applicant deemed that it was not possible to so discount any likely significant effects (particularly on aquatic species of conservation interest), and so proceeded to the preparation of an NIS for submission to Kilkenny County Council; to enable the Council, as the competent authority, to carry out appropriate assessment. This was reasonable, given the location of the application site within two European sites.

8.8. **Stage 2 Appropriate Assessment**

8.8.1. Baseline ecological survey work for the NIS was carried out in June 2015 and June 2016. No bat surveys were undertaken, but many species would be expected to be present on the site: they will not be impacted by the development. There are a number of badger latrines on the opposite bank of the King's River, but not on the site side – as might be expected arising from the intensive use of the riverbank by the Kingsriver Community.

8.8.2. The Kingsriver Community was in existence when the River Nore SPA was designated in 2010-2011. The development will involve little alteration to the King's River, in an area which is already subject to significant disturbance, due to the presence of the Kingsriver Community and its associated activities – many of which are outdoor, and located along the river bank. The area is stated to contain no nests, following survey work of the river. No works will be carried out at either dawn or dusk, so as to limit the impact on this species. The principle impacts on the European site are determined to be port areas and landfill & land reclamation. The proposed development does not involve any of these types of activities. The proposed development will not impact on the SPA.

8.8.3. The proposed development has the potential to impact on the River Barrow and River Nore SAC – particularly in relation to aquatic species. The NPWS Conservation Objectives document indicates that none of the habitats, which

comprise the conservation interests of the SAC are present at the appeal site. This is borne out by site surveys undertaken in the preparation of the NIS. The following species are not indicated as being present at the site-

- Killarney fern.
- Nore Freshwater pearl mussel – the only know populations being located on the River Nore, upriver of the confluence with the King's River.
- Freshwater pearl mussel.
- Desmoulin's whorl snail.
- Twaite shad.

8.8.4. White-clawed crayfish are identified at a number of sites on the King's River. Otter was recorded as present on the site, but, being amphibious, will not be impacted by the development – particularly in an area which is already subject to such a high degree of human disturbance from the Kingsriver Community and its activities. There will be some disturbance for Otter during the construction phase – particularly at the new diverging weir and fish pass. However, this disturbance period will be limited. The river reach within the site was surveyed, and found to be suitable for Atlantic salmon; but exhibited poor spawning potential. The river also contains the three, lamprey species which are conservation interests of the SAC. The construction period may impact on fish species – particularly at the new diverging weir and the turbine site. The new head race will be largely constructed outside of the river bed.

8.8.5. The Archimedes screw will allow for passage of downstream fish, but will act as a barrier to upstream migration. The outfall for the Archimedes screw may be an attraction for salmon and lamprey migrating upstream, particularly during periods of lower flow in the main river channel. However, it is noted that there is no tail race proposed with this development – the Archimedes screw discharging almost immediately into the main channel of the river. The diverging weir is to be reconstructed, and will be provided with a new fish pass, through which a hands-off flow (HOF) of 1.07m^3 per second, will flow, through a notch in the weir. At flows below this level, all river flow will be through the fish pass. In practice, a flow of 1.57m^3 per second will go over the diverging weir; as the Archimedes screw cannot operate with a flow less than 0.5m^3 per second. Inland Fisheries Ireland expressed

concern that the design of the fish pass might hinder the passage upstream of lamprey species. This is something that could be dealt with at construction stage, requiring agreement with IFI in relation to the design of the hydraulic jump at the top of the pass.

8.8.6. The principal mitigation measures identified are as follows-

- Archimedes screw will allow for downstream passage of fish species. A by-wash at the Archimedes screw will facilitate downstream passage of fish, should it be required in an emergency.
- V-notch in diverging weir to allow for a minimum flow of 1.07m^3 per second of water into the main river channel – an amount in excess of 12.5% of Q_{mean} (equivalent to Q_{80}). In practice there will be an additional 0.5m^3 across the weir into the main channel (controlled by a head sensor at the weir).
- Repair and reconstruction of new diverging weir and fish pass – to aid upstream migration of fish species. Precast concrete sections will be used to limit the potential for concrete contamination in the river. The fish pass will be constructed of locally-sourced limestone. Works will only be carried out during the permissible season for instream works. Diversions of the river channel will be used piecemeal fashion, to allow for working in dry conditions (in order to reduce potential siltation of the watercourse).
- Construction of new 355m long head race – in order to limit the impact on the existing head race, and to better control the flow of water to the turbine. At the limited connection points to the river channel and the turbine area (approximately 50m each), dredged spoil will be searched for lamprey or their larvae (and eel) species and will be allowed to settle beside the river bank to allow for species missed to make their way back into the water. The new mill race will be a suitable habitat for Brook lamprey and River lamprey.
- Construction of intake to the head race at 90-degree angle to the flow in the main channel, to discourage fish using it for downstream migration.
- Construction of turbine and housing during dry period when there is no flow in the existing head race. Electrofishing, if required, will be undertaken to effect fish rescue; if required by Inland Fisheries Ireland.

- A stilling basin/pool will be used to reduce the velocity of the tail race from the Archimedes screw to 0.5m^3 per second – over a length of approximately 20m – thereby reducing the attractiveness of any jet flow for fish species migrating upstream.
- Any evidence of upstream delay for salmon or lamprey species will trigger a temporary shutdown of the Archimedes screw, in order to generate a freshet of water in the main river channel – to divert the migrating species into the main channel. [Reference is made to use of underwater cameras to determine if the Archimedes screw is causing a build-up of upstream migrating fish species. However, I would consider that such a facility for a small-scale hydro-power scheme as this one would appear to be excessive].
- Presence of an ecologist for initial instream excavations and dewatering at weir sections to ensure environmental protocols are being implemented.
- Sandbags and cofferdams will be used at areas of potential siltation threat. Any dewatering required will be pumped through a settlement pond or pre-fabricated settlement tank with an oil interceptor. Sediment traps and silt fences will be used during construction. Fuelling of construction vehicles will be undertaken away from the river bank. Fuels, lubricants and hydraulic fluids will be stored in a bunded area away from the river. Any accidental spillages will be immediately cleared-up.
- Dawn and dusk working hours will be excluded – to limit impact on Otter.

Table 9 of the NIS indicates all the recommended mitigation measures.

8.8.7. The principal or 'high' ranking threats and pressures to the River Barrow and River Nore SAC, as indicated by the National Parks and Wildlife Service, are- pollution to surface waters; dykes and flooding defences in inland water systems; modifying structures of inland water courses; erosion; agricultural intensification – without being any more specific. The construction of an hydro-power plant could be considered a 'modifying structure to an inland water course'. The NPWS 'Site Synopsis' indicates that- "The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, over-grazing within the woodland areas, and invasion by non-native species, for example Cherry Laurel (*Prunus laurocerasus*) and Rhododendron (*Rhododendron*

ponticum). The water quality of the site remains vulnerable. Good quality water is necessary to maintain the populations of the Annex II animal species listed above. Good quality is dependent on controlling fertilisation of the grasslands, particularly along the Nore. It also requires that sewage be properly treated before discharge. Drainage activities in the catchment can lead to flash floods which can damage the many Annex II species present. Capital and maintenance dredging within the lower reaches of the system pose a threat to migrating fish species such as lamprey and shad. Land reclamation also poses a threat to the salt meadows and the populations of legally protected species therein". An hydro-plant is not mentioned as a main threat to the SAC.

8.8.8. The issue of in-combination impacts is addressed in the screening stage of this Inspector's Report, and the possibility was discounted. It is not, therefore, necessary to consider such impacts afresh – the likely significant impact being from the construction/operation of the Archimedes screw itself, and the repair/reconstruction of the diverging weir.

8.8.9. It is reasonable to conclude, on the basis of the information on the file, which I consider adequate in order to carry out a Stage 2 Appropriate Assessment, that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of European site no.s 002162 or 004233, or any other European site, in view of the sites' Conservation Objectives.

8.9. **Other Issues**

8.9.1. <u>Development Contribution</u>

As permission was refused, there is no indication given as to whether the development would be subject to a development contribution in accordance with the Kilkenny County Council Development Contribution Scheme 2016-2017. Exemptions are allowed for- "Development by voluntary not for profit clubs, non-statutory groups/organizations for non commercial community related developments". Kingsriver Community Ltd. is indicated as being a 'charity organisation' in the planning application form, and letter which accompanies it. If the Board is minded to grant planning permission, then I would consider that the

proposed development is exempted the requirement to pay a development contribution.

8.9.2. Flooding

The application is accompanied by a Site-Specific Flood Risk Assessment Report. Whilst a new head race and rock weir is to be constructed, these will not significantly alter the flow pattern of the river. The disused head race would originally have fed the corn mill. There is a very gentle gradient within the site – from 36.2m OD in the west to 28.8m OD in the east. The principal threat of flooding is fluvial. There is one hydrometric station on the river – approximately 2.3km downstream – at Annamult House. Predicted 1-in-100-year and 1-in-1,000-year floods are estimated for four points within the site. Water-compatible development is allowable in Flood Zone A (High Probability of Flooding): and a Justification Test is not required. The majority of the site falls within this Flood Zone A. Parts of the 6.5ha site may be subject to flooding; but not the access road into the site or any of the buildings – based on extrapolation of hydrometric analysis, and hydrological modelling. The head race channel and the turbine will be drowned out in an extreme fluvial flood event – 1-in-100-year. The footprint area of the powerhouse is small, and will not act as a significant obstacle to flood flows. It is recommended that the powerhouse be constructed using flood-resistant and flood-resilient materials and techniques. This would appear to be prudent. As noted elsewhere in this Inspector's Report, the river was in flood on the date of site inspection. A small part of the site at the western end (beside the diversion broken weir) was inundated. A small riverside field (immediately to the northeast of the L42016) at the site entrance, was also inundated.

8.9.3. Environmental Impact Assessment

This application is accompanied by a Natura Impact Statement. Any impacts on the ecology of the King's River are set out within this document and addressed in the Appropriate Assessment section of this Inspector's Report. Having regard to the nature and scale of the proposed development and the nature of the receiving environment, there is no real likelihood of significant effects on the environment arising from the proposed development. The need for environmental impact

assessment can, therefore, be excluded at preliminary examination stage, and a screening determination is not required. Potential impact on fisheries is dealt with elsewhere within this Inspector's Report.

8.9.4. Grid Connection & Carbon Savings

Connection to the national grid will be via an existing three-phase power supply to the site. The scheme is expected to supply approximately 344,000kWh – enough to power approximately 77 houses – with a saving of 190 tonnes per annum of CO_2 emitted to the air. The cable route of this connection is not indicated, but will be wholly within the site.

8.9.5. Archaeology

Having regard to the proximity of the works to a Protected Structure, and in-stream works proposed at an older broken weir, it would be prudent to attach an archaeological monitoring condition to any grant of planning permission. I would note that such was attached to the grant of permission issued by the Board for a similar-type development on the Slaney River in Co. Carlow – ref. PL 01.240850.

9.0 Recommendation

I recommend that permission be granted for the Reasons and Considerations set out below, and subject to the attached conditions.

10.0 Reasons and Considerations

Having regard to:

(a) national policy in relation to renewable energy, climate change and water quality,

(b) the provisions of the Kilkenny County Development Plan 2014-2020, and policy in relation to hydro power,

(c) the identification of this site within the document – *Kilkenny's Potential Hydro Power Sites*, 2010,

(d) national guidelines in relation to small scale hydro-electric schemes and fisheries,

(d) the nature of the proposed development which seeks to utilise a former water-power generation site, and

(e) the modest scale of the proposed development,

it is considered that, subject to compliance with the conditions set out below, the proposed development would not seriously injure the visual amenities of the area; would not conflict with the ecological protection of the River Barrow and River Nore Special Area of Conservation, or the River Nore Special Protection Area; would not unduly impact on the fisheries resource of the river; would constitute a sustainable form of development; and would, therefore, be in accordance with the proper planning and sustainable development of the area.

11.0 **Conditions**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars submitted on the 2nd day of August 2018, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development; and the development shall be carried out and completed in accordance with the agreed particulars.

   Reason: In the interest of clarity.

2. This permission relates only to development as set out in the drawings and documentation submitted on the 3rd day of October 2017, as amended by the further plans and particulars submitted on the 2nd day of August 2018, and shall not be construed otherwise. Any ancillary development not shown in submitted drawings, such as safety fencing, service access devices, radio transmission aerials, lighting and signage shall not be undertaken except with the written agreement of the planning authority.

   Reason: To ensure a proper standard of development.

3. In-stream works affecting the river bed or water quality, including river

crossings, intake and weirs, shall only take place during the months of May to September.

Reason: In the interest of orderly development and the protection of the ecological environment.

4. (1) The developer shall arrange for a suitably-qualified and named consultant, with ecological and engineering expertise, to be responsible for the full application of mitigation measures as outlined in the Natura Impact Statement submitted to the planning authority on the 3rd day of October 2017, and for the prevention of pollution.

   (2) All mitigation measures specified in section 5.0 and Appendix C of the Natura Impact Statement, submitted to the planning authority on the 3rd day of October 2017, shall be fully adhered to in the development.

   (3) A professional ecologist, to be approved by the planning authority prior to commencement of development, shall supervise reinstatement works and be on site throughout the construction period.

   Reason: In the interest of proper planning and sustainable development, and to protect the ecology of the area.

5. (1) An Environmental Monitoring Programme, including frequency of testing, shall be agreed with the planning authority prior to commencement of development.

   (2) All data obtained from monitoring and recording shall be made available to the planning authority. This data shall be placed on the public file. The planning authority shall be afforded the opportunity, at all times during working hours, to inspect, examine and check all apparatus and equipment used or required to carry out the monitoring programme. If adverse impacts are identified by monitoring results, the planning authority may require changes to the site infrastructure to be carried out.

   Reason: In the interest of orderly development.

6. The water abstraction regime shall comply with the plans and particulars submitted to the planning authority on the 3rd day of October 2017, and further plans and particulars submitted on the 2nd day of August 2018. Any

deviation from this abstraction regime shall be the subject of a separation application for planning permission. The quantity of water being abstracted shall be monitored on an on-going basis, and the results of this monitoring shall be submitted to the planning authority and Inland Fisheries Ireland, at intervals to be agreed with the planning authority.

Reason: In the interest of conservation of fish stocks and to protect the amenities of the area.

7. All pipelines and ducts to the turbine house shall be laid underground.

Reason: In the interest of visual amenity and protection of the setting of Ennisnag Mill – a Protected Structure.

8. (1) The developer/operator shall designate a named person (and a replacement when and wherever applicable), who shall be responsible for the operation and maintenance of the plant; and this person shall be formally made known to Inland Fisheries Ireland and to the planning authority.

(2) During construction, the use of this stretch of river as a recreational amenity shall not be unduly impeded.

Reason: In the interest of the proper planning and sustainable development of the area.

9. In the event of decommissioning or abandonment of the proposed development, the developer or their successors, shall be responsible for management of the redundant facility (including potential removal of the Archimedes screw), reinstatement of the weir structure and sluice gates, to the satisfaction of Inland Fisheries Ireland.

Reason: In the interest of proper planning and sustainable development.

10. The developer shall facilitate the preservation, recording and protection of archaeological materials or features that may exist within the site. In this regard, the developer shall -

(a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and

geotechnical investigations) relating to the proposed development,

(b) employ a suitably-qualified archaeologist who shall monitor all site investigations and other excavation works, and

(c) provide arrangements, acceptable to the planning authority, for the recording and for the removal of any archaeological material which the authority considers appropriate to remove.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the site and to secure the preservation and protection of any remains that may exist within the site.

Michael Dillon,
Planning Inspectorate.

2nd January 2019.