

IRELAND

SUMMER 2019

# CIVIL & construction

## **GSA** **GLOBAL STUDENT** **ACCOMMODATION**

**The Eight Building  
Contaminated Land Risks  
Station Building Two  
Constructing Center Parcs**



# THE STORY OF CONSTRUCTING IRELAND'S NEWEST HOLIDAY RESORT

In 2016, An Bord Pleanála granted planning permission to turn a former 400-acre Coillte forest on the outskirts of Ballymahon, Co Longford, into Ireland's newest holiday resort.

The scale of the project is such that it could be considered as Ireland's newest small town.

There was palpable excitement in the region when Center Parcs announced its intention to construct a €233 million forest resort with the prospect of generating 1,000 jobs.

Now, as construction activity on-site hits its peak, the dream will soon become a reality. By mid-2019 a new short breaks destination will open on our doorstep. Center Parcs Longford Forest will be the first of its kind in Ireland.

When open, the 466 lodges and the 30 apartments will provide accommodation for up to 2,500 guests and will create employment for more than 750 people. At full capacity, the forest resort will have a population equivalent to five per cent to that of Co Longford.

#### More than 10km of internal roads

With more than 10km of internal roads and a purpose-built wastewater treatment plant on-site, the scale of this project is such that it could be considered as Ireland's newest small town.

The brief, scale and challenges were formidable. ORS was brought on board at the early stages of the project to provide a range of consultancy services to the client and to provide advice to the predominantly UK based design team.

Our full range of services was instrumental in helping Center Parcs to understand the Irish planning system, its building control regulations and the construction industry in general.

The convenience of our office locations offered speedy on-site advice. We provided the Center Parcs team with a strong platform for it to progress its design and construction programme within its defined strategic goals.

During the initial planning stage, a significant success was the transparent engagement process between Center Parcs, its neighbours and the wider local community.

#### Numerous public events held

Numerous public events were hosted to allow locals gain an understanding about the operation of a Center Parcs Forest Resort, the company's policy of being a good neighbour and the positive benefits to the surrounding area.

Center Parcs ensured that its design team fully engaged with the residents in relation to traffic, noise, environmental concerns and about access to the wider forest. During this engagement process, Center Parcs took the residents' views on board.

It adjusted the proposed plans to minimise the impact on the local area and to include positives initiatives. For example, the company incorporated a 5km public walking route around the perimeter of the development.

One of the primary challenges facing the Center Parcs design team was to accumulate accurate site data. The site was about 400 acres in size and fully covered by forest. This had major issues in relation to GPS cover and required an innovative approach from ORS.

The former 400-acre Coillte forest on the outskirts of Ballymahon, Co Longford.

The team's solution included co-ordinating several surveyors on the ground over a number of weeks to piece together a topographical survey of the site. It involved complex work, linking back to permanent stations and then processing the survey into one overall survey.

This provided enough information to allow the design team to set out where site investigations were needed and to obtain a good inter-operation of the topography. Once areas were marked for site investigation, felling could commence to provide a pathway to these strategic points.

This allowed for additional surveying and over the course of a number of months, additional detail was obtained until a final detailed survey was signed off and used.

#### Development split into three separate construction phases

Marked by an official sod-turning ceremony with an Taoiseach Leo Varadkar, construction work began on-site in 2017. The development was split into three separate construction phases: infrastructure, lodges and the Centre buildings.

Roadbridge was awarded the infrastructure contract. It consisted of the bulk earthworks, internal road network, path networks, utilities, drainage system, the new pleasure lake and the construction of the foundations for the lodges. Sisk was awarded both the Lodges and the Centre buildings packages.

During the preliminary design stage of the project, the geotechnical investigation discovered the presence of rock on-site.

Following some laboratory testing, the rock was deemed suitable to be used as fill material.

The rock on-site provided the opportunity for about 160,000 cubic metres of rock to be quarried and graded on-site. The welcome discovery and use of the on-site quarry removed about 16,000 truck journeys from the local road network. The use of the excavated peat as the quarry's backfill material doubled the truck journey saving to more than 30,000 journeys.

#### New 27km-long gas main will supply finished site

One of the major challenges of the project was the supply of the necessary utilities to the site. Gas Network Ireland's new 27km-long gas main will supply the finished site with its primary fuel source.

It will bring gas from Athlone to Ballymahon town and will also supply fuel to the villages along its route. The high-speed fibre optic cables travels the 7km from Ballymahon town to the site. While an existing watermain close to the site will supply the expected demand of 450m<sup>3</sup> of water per day.

The site's power supply comes from an existing primary substation more than 12km away. During construction, it was identified that this required an upgrade. Nine new substations located throughout the site will ensure that there is ample power supply to the lodges.

The experience of the ORS energy team brought significant value to the project. The team liaised with local authorities, on behalf of the Center Parcs design team, to identify innovative solutions to achieve compliance with Part L of the building regulations. The difficulties in supplying utilities did not stop once they reached the site. Roadbridge encountered peat at depths of 8m at its deepest while constructing the internal utility network and the internal 10km road network.



It will be capable of treating a dry water flow of 655m<sup>3</sup> per day with a biological oxygen demand of 205kg per day.

#### Guest accommodation including 466 luxury lodges

Guest accommodation includes 466 luxury lodges and an apartment block containing 30 units with balconies overlooking the new lake.

The guest accommodation on-site will be in the form of 466 luxury lodges and an apartment block containing 30 units with balconies overlooking the new lake.

Once construction is complete, the lodges on-site will be split into eight

With an area of more than seven acres, Roadbridge constructed what is believed to be Ireland's largest man-made lake (not including reservoirs). Once the site is in operation, it will offer a multitude of water-based activities.

It will be supplied with water from the new stormwater system and will attenuate rainwater on-site. A weir system incorporated into the design will control the rainwater discharge into the forest's existing drain system and eventually the River Inny.

The 6km-long foul drainage network contains more than 500 manholes that will collect foul water and deliver it to the on-site wastewater treatment plant.



different types – from single storey woodland lodges, split-level executive lodges and two-storey luxury lodges.

All lodges will be constructed using prefabricated timber frame structures on RC concrete bases and clad with 300km of timber cladding and 600,000 roof tiles.

All lodges will be constructed to achieve a minimum of an A2 BER energy rating. Sisk completed the first lodge in July 2018 and is now completing 15 lodges a week.

The ORS team is currently monitoring the construction works, snagging lodges and managing the compilation of the handover documentation.

At the peak of construction ORS had five ERE (employer's resident engineers) based on site monitoring the entire construction works.

The 30-unit apartment block is a three-storey building constructed using steel framing system incorporating load bearing metal frames, metal decks and concrete floors.

To ensure a good night's sleep for all guests, great attention was placed on the detail of the steel framing system build. Extensive on-site testing will ensure a minimal transfer of sound between adjacent apartments.



**Leisure activities**

The focal point of the car-free holiday experience will be the Village Square. Here guests will find shops, bars and restaurants under a 21,500m2 roof.

Activities such as squash, badminton, bowling and even an indoor climbing wall will be housed in the Sports Plaza.

The Subtropical Swimming Paradise (STSP) will provide the central attraction to children and adults, with more than an acre of wave pools, whirlpools and water slides. It will be maintained at a constant temperature of 31oC and 60 per cent relative humidity.

It will house more than 2,000 tropical plants from around the world including more than 60 full size trees. The timber roof structure comprises cross-laminated timber panel spanning between glulam timber beams some of which span 53m and weigh 22 tonnes.

The record-breaking glulam beams arrived on-site following a 2,000km journey from their factory in Altheim, Austria.

[www.civilandconstruction.ie](http://www.civilandconstruction.ie)

The use of the polymer ETFE (Ethylene Tetra Fluoro Ethylene) in the Texlon cladding system will provide a large lightweight roof light.

The materials' tensile strength, resistance to tearing, excellent transparency and low flammability has been used in iconic projects throughout the world such as the Eden Project and the National Aquatic Centre (the Watercube) Beijing.



**Conclusion**

Center Parcs Longford Forest will welcome its first guests in the summer of 2019.

From conception, through to planning, design and now construction, this project has been a huge undertaking that has involved the energy and experience of a large team of highly dedicated people. The result will be a unique and welcome addition to Ireland's tourism industry.

ORS has greatly enjoyed working with the Center Parcs team and the wider project group on this complex and important development for the region.

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## NAMED AS ONE OF THE BEST WORKPLACES IN IRELAND FOR THE FIRST TIME.

ORS is delighted to announce that it has been officially recognised as one of the Best Workplaces in Ireland in 2019.

ORS was recognised at the 17th annual Great Place to Work® Best Workplaces in Ireland awards in the Clayton Hotel on Burlington Road, Dublin on Wednesday 27th February. This is ORS's first year to be named as a top Irish workplace, which is assessed through the Great Place to Work® robust 'Trust Index®' employee survey and a thorough 'Culture Audit®' assessment of their policies and practices.

Commenting on the recognition, ORS Managing Director John Brennan said 'This is by far the most important accolade the firm has ever received. Our people are the back bone of our business. We rely on them to keep our clients and each other happy. Looking after them and creating a great place to work is of utmost important to me.'

John continued 'Flexible working, inclusion, personal development and wellbeing are at the centre of how we run our business. This recognition from Great Place to Work® Ireland has helped to strengthen our determination and drive to maintain this approach. We hope that this acknowledgment will allow us to continue attracting the very best people to our team.'

"With a record high of more than 2.28 million now employed in Ireland, and unemployment at 5.7%, we're on the cusp of the oft-cited 'full employment'. That might serve to explain why this year, the number of employees assessed by Great Place to Work® in Ireland has more than doubled. They've given us a clear sense of their workplace experience and the workplace practices that Irish organisations of every size are putting in place to drive that experience." said John Ryan, CEO of Great Place to Work® Ireland.

"Securing a place on the list of Best Workplaces in Ireland is a greater achievement than ever before. These organisations have opened up to us, giving us a deep understanding of the culture that drives their performance. Even though we're dealing with an unprecedented level of economic and political uncertainty, these Irish organisations are ready to deal with the challenges: they have built agility and plasticity into the core of their workplaces, developing the high levels of trust that are critical for adaptability. We have witnessed great confidence and high expectations across the whole employee population: but while they're demanding a lot from their employers, they're giving it back through high productivity, innovation, and performance. They want to work for organisations who are socially and environmentally responsible, and are voting with their feet for those that aren't.



They demand that management differentiate performance and reward in kind. They refuse to accept low standards of communication, recognition, and management: but they go above and beyond for those that deliver. And that's what allows these organisations to outperform the rest. Today's workplace is a partnership, creating the future in tandem. It's inclusive and has diversity at its core. It's a really exciting place to be, and I'd like to congratulate each and every organisation that has achieved the goal of creating truly sustainable, high trust workplaces all across Ireland. We all deserve a Great Place to Work®: and now we can have it!"



## ABOUT ORS

ORS is a prominent Irish multi-disciplinary building consultancy. We operate in a unique work environment, growing sustainably, while enhancing our community and the lives of our people and their families.

We are a full-service firm of engineers, surveyors and construction specialists. We offer design, planning and management advice that is supported by expert guidance in energy efficiency. Our people are highly skilled designers, consulting engineers, planners, scientists and surveyors.

With offices in the East and West of Ireland, ORS has nationwide reach. This allows our people to quickly respond to on-site requirements and be available for project meetings wherever the location.

For 25 years, we have worked in partnership with property developers, estate managers, architects, solicitors, accountants and planners from both the private and public sectors. The evidence of our proven track record is in the quality of our award-winning work and the ongoing working relationships with our clients.

ORS is ISO 9001 certified and a CPD accredited company with Engineers Ireland. This represents our dedication to quality in the delivery of our services and also our dedication to our staff.



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